FOOD, FUEL AND FOREIGN POLICY: HOW MUCH U.S. LEVERAGE?

NINETEENTH SESSION

SENIOR SEMINAR IN FOREIGN POLICY

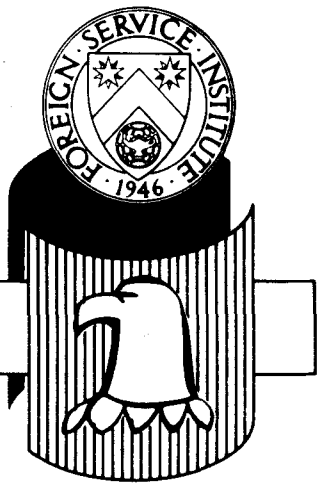
DEPARTMENT OF STATE

1976 - 1977

THIS IS AN EDUCATIONAL EXERCISE AND DOES NOT NECESSARILY REPRESENT THE VIEWPOINT OF THE SENIOR SEMINAR IN FOREIGN POLICY OR OF THE DEPARTMENT OF STATE

FOOD, FUEL AND FOREIGN POLICY: HOW MUCH U.S. LEVERAGE?

Case Study by DUDLEY G. WILLIAMS



NINETEENTH SESSION

SENIOR SEMINAR IN FOREIGN POLICY

DEPARTMENT OF STATE

1976 - 1977

DECLASSIFIED

LIMITED OFFICIAL USE

FOOD, FUEL, AND FOREIGN POLICY--HOW MUCH U.S. LEVERAGE?

By

Dudley G. Williams

SUMMARY

As the United States wrestles with the energy crisis, references to food weaponry as a means of extracting oil from OPEC keep cropping up. These references are frequent during times of hardship such as the winters of 1973-74 and 1976-77, but are by no means limited to the stress periods. For the most part food as a weapon is proposed in the frustration of seeking out a short-term solution to a problem which does not lend itself to short-term solutions.

Basically food weaponry will not work because the United States needs OPEC oil, particularly Middle Eastern OPEC oil, far more than OPEC needs U.S. food.

Since 1972, U.S. production of all oils declined steadily while U.S. energy demands increased. The gap between U.S. oil production and demand spread from 850 million barrels in 1967 to 2.8 billion in 1976 and is projected to widen further to 3.9 billion barrels by 1985. United States dependence on imported oil more than doubled over the past 10 years, increasing from about 20 percent in 1967 to 42 percent in 1976 and by 1985 U.S. dependency is expected to approach 50 percent. Approximately 95 percent of the 1985 import requirements will be from the Middle East and heavy dependence on Middle Eastern oil will continue well into the 1990's and possibly to 2000.

In contrast, the current deficit between OPEC grain production and consumption at 9.2 million metric tons is small compared to total grain moving in world trade (160 million metric tons in 1976). A further widening of the deficit is expected and is projected at 11.7 million tons by 1985, about half of which would normally be expected to be U.S. grain. However, this should not prove to be a burdensome requirement as in most years OPEC could cover the U.S. share of its import requirements from various other grain exporters eager to stay on good terms with the oil exporting countries.

So food is not a bargaining ace in the hole for the United States in negotiating oil supply assurances, where does this leave us? To sum up briefly, it leaves us with extremely limited options. There are no short-term possibilities to increase the domestic U.S. oil supply and the only short and medium-range solution is to reduce energy demand.

Senior Seminar in Foreign Policy
April 1977

DECLASSIFIED

TABLE OF CONTENTS

INTRODUCTION

Since the first painful indications of the energy crisis emerged in 1973, food weaponry has been alluded to by some and proposed by others as a means of forcing oil exporting countries, principally OPEC, to continue uninterrupted oil shipments to the United States at realistic prices.

While the battle cry was muted with the resumption of oil shipments following the 1973 embargo, references to food as a weapon can still be seen and heard. The objective of this case study is to measure the leverage potential of U.S. food exports. While a number of studies, after some examination of the issue, have drawn the conclusion that food cannot be used to effectively improve the U.S. bargaining position for oil, an attempt is made here to identify the specific limitations of such a policy from both short and longer run viewpoints. For the most part, the term food as used in this report refers to grains which make up the bulk of food consideration and concern in the OPEC countries.

Historical, current, and prospective production data and trade patterns for both oil and grain were studied to better focus on the degree of dependency involved in this issue. A number of member countries of the Organization of Petroleum Exporting Countries (OPEC) 1/, some of which are also members of the Organization of Arab Petroleum Exporting Countries (OAPEC) 2/ were visited to examine the options open to oil importing as well as exporting countries in influencing and determining oil production levels and prices. Although the study treats the entire OPEC area, the main thrust was held to the Middle Eastern OPEC members where oil production and price policy initiatives usually emerge.

The author gratefully acknowledges the valuable support and assistance provided by Wayne W. Sharp, Agricultural Attache, American Embassy, Paris; Hans G. Hirsch, Agricultural Attache, U.S. Delegation to OECD, Paris; Robert J. Bushnell, Consul General, American Consulate, Dhahran; Amos D. Jones, Chief Economist, Ministry of Agriculture and Water, U.S. Representation, Saudi Arabian-United States Joint Commission on Economic Cooperation, Riyadh; Caryl M. Courtney, Consular Officer,

1/ OPEC, established in 1960 includes: Ecuador, Venezuela, Algeria, Nigeria, Gabon, Libya, Iraq, Saudi Arabia, United Arab Emirates, Qatar, Kuwait, Iran, and Indonesia.

2/ OAPEC, established in 1968, includes: Algeria, Bahrain, Egypt, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, Syria, and the United Arab Emirates.

DECLASSIFIED

American Embassy, Abu Dhabi; Stephan H. Buck, Economic Officer, American Embassy, Kuwait; and Paul J. Ferree, Agricultural Attache, Richard M. Bash, Petroleum Officer, and Clyde D. Taylor, Economic Officer, American Embassy, Tehran. Special thanks are also extended for the essential information provided by all those in the Departments of Agriculture and Commerce and other U.S. Government agencies as well as to the many foreign government and U.S. and foreign trade sources contacted.

BACKGROUND

Early Warning

By the late 1960's and early 1970's the rising United States dependence on imported oil was attracting some serious attention. The warning flags were up. The proportion of imports to the U.S. demand for all oils rose steadily from 20 percent in 1966 reaching 26 percent in 1971 and 29 percent in 1972. OPEC, which had been in existence since 1960 largely as an uncoordinated paper organization, began to pull itself together and emerge as a force to be reckoned with by the early 70's as the members recognized their unique position of power. The United States and the world had to have OPEC oil to survive. Unfortunately, the early alerts were ignored and no action was taken to turn the energy situation around and the public continued its wasteful ways--poorly insulated and overheated houses, gasoline guzzling automobiles, etc. At the same time environmental concerns were driving United States industry away from coal to oil based energy sources.

Initial Shock

In 1973 the rude awakening came with the Arab embargo. For the first time in history all America was suddenly aware of their dependence on imported oil and the frightening insecurity which such dependence entailed. Lines at gasoline stations lengthened and the threat of even more personal discomfort and sacrifice was real. Even more disquieting, however, was the impact of the embargo and sharply higher OPEC prices on the world economy which was thrown into confusion and disarray. Current account balances of the OPEC countries soared reaching $60-70 billion in 1974. This was substantially in excess of what could be absorbed in those countries and the question of recycling of the petro dollars became a prime concern. At the same time, reserves of most of the industrialized and non-oil producing developing countries were drastically drawn down to meet the higher cost of oil and other commodities driven up by rampant inflation. Economic growth rates declined reflecting the close relationship between gross national product and energy, i.e., oil consumption. In the United States inflation moved into double digit proportions, unemployment soared, and "stagflation" was added to the economic vocabulary.

World food production setbacks due to unfavorable weather, heavy consumer demand, and panic or near panic buying by some importing countries moved the United States from a surplus position in a number of food commodities to one of scarcity. This coupled with the oil price increases and higher food production costs caused the price

of grain and other products to soar. At that particular time both food and oil were precious commodities and since the United States normally accounts for roughly half the grain moving into world trade there perhaps was a natural tendency, in looking for a solution, to overestimate food leverage in extracting oil supplies.

Reassurance

The oil boycott eased and Arab oil flowed again. Gasoline supplies were adequate, although at higher prices. There were three warmer than so called "standard design" winters in succession, inflation and food prices eased somewhat. Economic recovery was underway and although many were still suffering from energy related unemployment, most were again receiving about what they expected from life. As a result, the public was lulled into a hopeful reassurance that things were looking up, and that except for the manipulations of the big oil companies, there would have been no shortage in the first place. Again there was no really measurable government action to deal with the problem. Highway speed limits were maintained (if not enforced) and voluntary restraints on energy use such as lower thermostat settings in the winter, better insulation, etc. were encouraged--all minor measures to deal with a mammoth problem. The voluntary conservation measures have been compared to an alcohol base patent medicine in that neither have true medicinal benefits, but nevertheless make the patient feel better.

The After Shock

The period of uneasy reassurance ended abruptly in the winter of 1976-77 and the scars are still much too fresh to make a detailed accounting necessary. Factories closed leaving thousands jobless, schools closed, personal discomfort was commonplace and the uncertainty as to where it all would end was disquieting. As things return to normal many feel that the winter of 1976-77 was what the country needed to face up to the crisis, and that the vivid memories of the past winter will generate the support needed for the enactment of a realistic U.S. energy policy in 1977.

FOOD FOR OIL--A WAY OUT?

As mentioned earlier, references to food weaponry are seen more during times of hardship and stress such as the winters of 1973-74 and 1976-77, but are by no means limited to these more critical periods. To arrive at an estimate of the degree of food leverage held by the United States concerning the food/oil issue, an analysis of some basic supply and utilization data for both oil and food is necessary.

Oil

Since 1972 U.S. production of all oils has declined steadily with an increasing disequilibrium in distribution. With the entry of north slope Alaskan oil in 1977, the production curve will turn upward. However, at best, production by 1980 will only be back at the 1973 level and then will level off again. The U.S. West Coast will be the direct beneficiary of north slope oil, while the East Coast will continue to be as dependent on imported oil as most European countries.

Concurrent with the decline in U.S. oil production, U.S. energy demand increased at an annual rate of 5 percent until the early 1970's and then dropped back to an increase of 2 to 3 percent per year. This rate is expected to continue until 1985 and perhaps beyond with oil continuing to be the primary energy source. Although somewhat lower than earlier years, annual increases of 2 to 3 percent will result in burdensome deficits. The gap between U.S. production and demand widened from 850 million barrels in 1967 to 2.8 billion barrels in 1976 and is expected to widen further to 3.9 billion by 1985 (Chart 1). United States exports of all oils, always relatively insignificant, have declined in recent years and were only 72 million barrels in 1976 with further declines expected. The production/demand gap translates into import requirements.

United States dependence on imported oil, which stood at about 20 percent in 1967, more than doubled by 1976 reaching 42 percent and will be about 50 percent by 1985. OPEC oil made up about 50 percent of total U.S. import requirements in 1967, increased to 70 percent in 1976, and may reach 95 percent by 1985.

Food

The Middle Eastern OPEC countries continue to rely heavily on imports to meet their food needs. A recent study on Saudi Arabia, for example, showed that country to be importing more than three-fourths of its grain needs, 90 percent of its fats and edible oils, 60 percent of its meats, and 50 percent of its milk and dairy products. The report goes further and predicts that Saudi Arabia's dependency on food will continue to increase, reflecting the expanding oil economy.

For OPEC as a whole, grain consumption requirements increased 44 percent--from 33.5 million metric tons in 1967 to 48.9 metric tons in 1976. During the same period OPEC grain production increased only 30 percent, spreading the gap between production and consumption from 2.8 million tons in 1967 to 7.4 million in 1976. The deficit is expected to reach 10.6 million tons by 1985. (Chart 2)

OPEC's grain import deficit to meet consumption and stock needs increased from 3.3 million tons in 1967 to 9.9 million in 1976, with further increases to 10.9 million and 11.7 million tons projected for 1980 and 1985, respectively.

CHART 1: ALL OILS--U.S. PRODUCTION, IMPORTS, AND DEMAND
SELECTED YEARS BETWEEN 1967-76 AND PROJECTED 1980 AND 1985

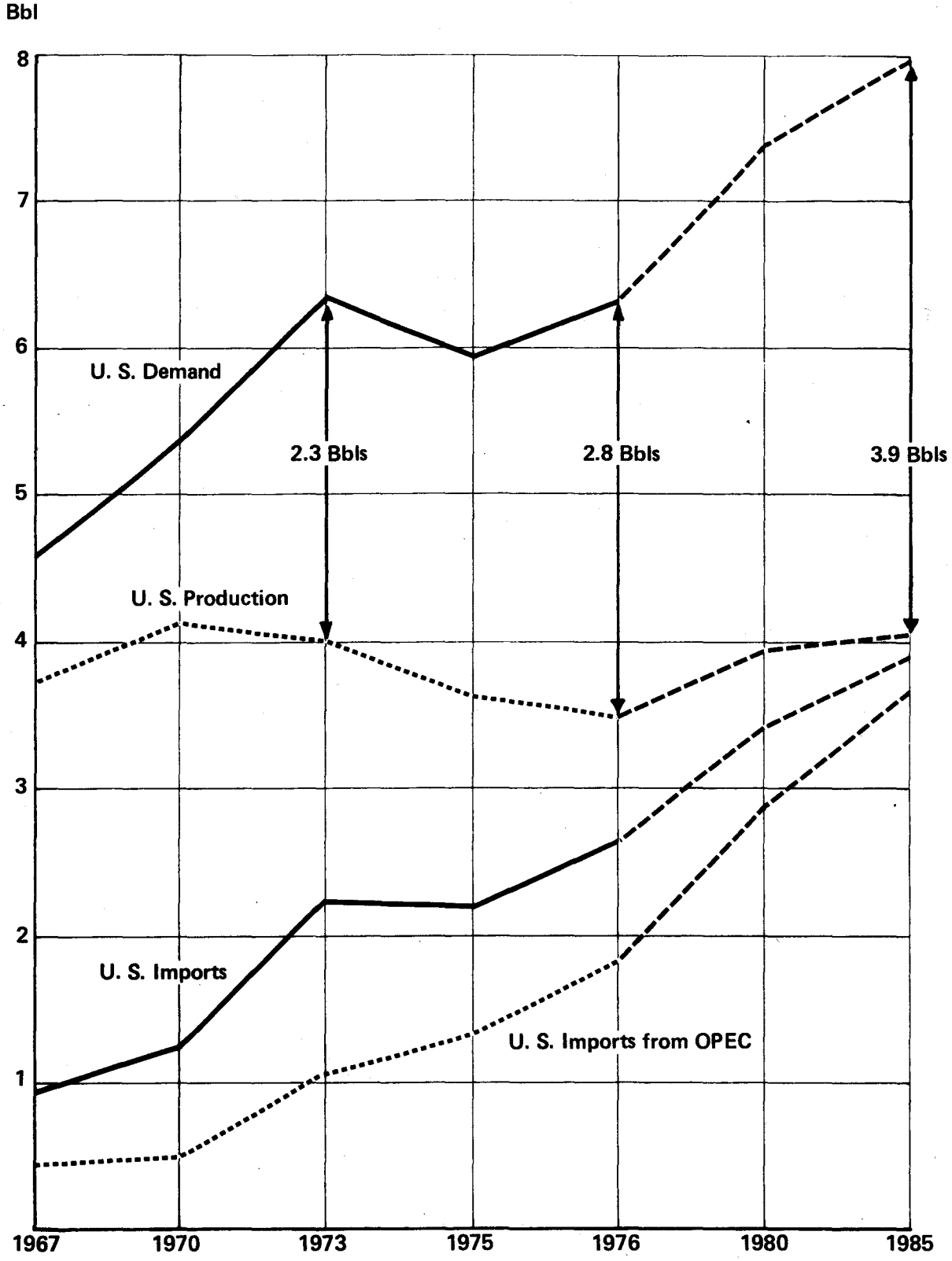
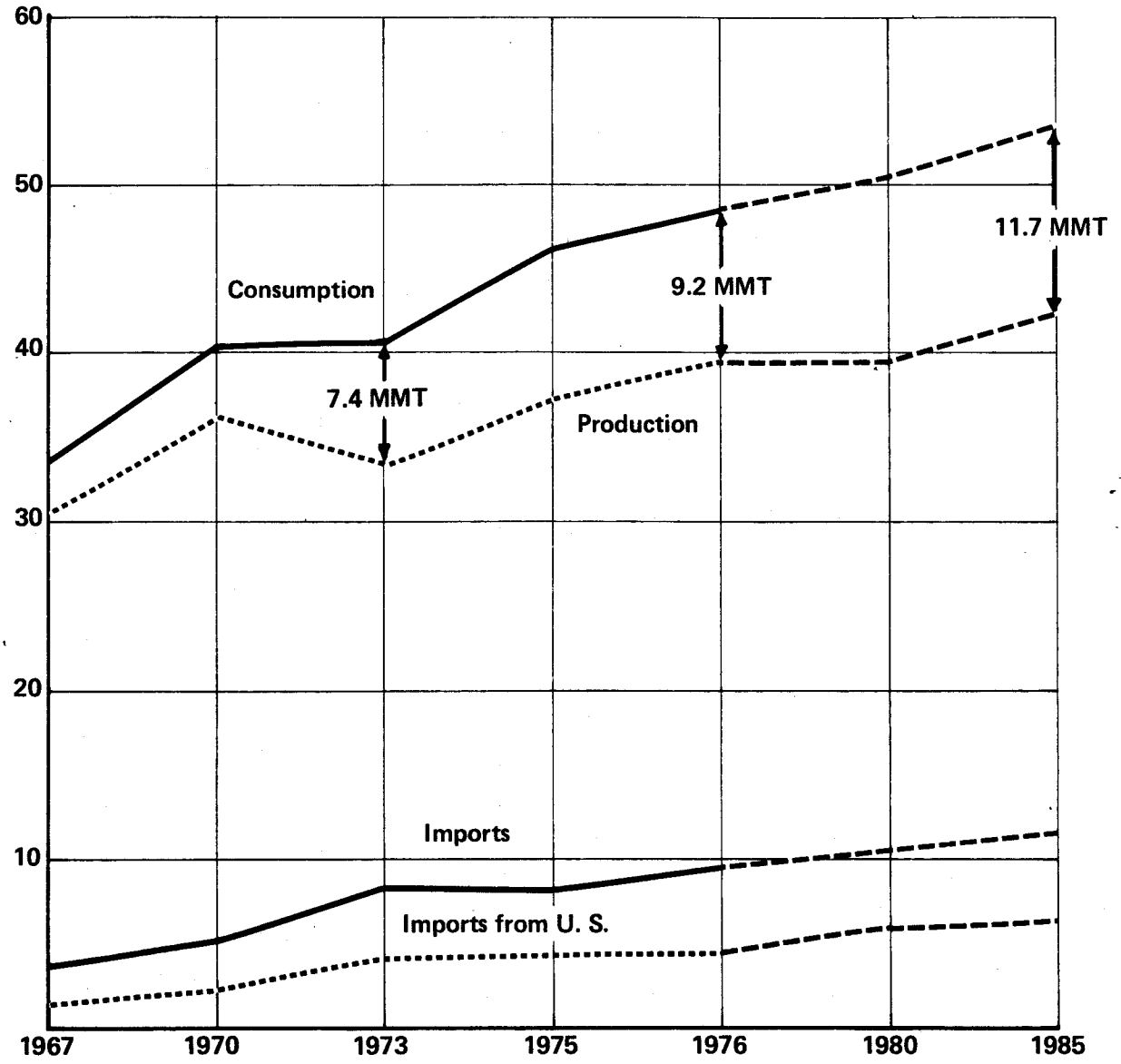


CHART 2:
OPEC PRODUCTION, CONSUMPTION, AND IMPORTS OF ALL GRAINS
SELECTED YEARS BETWEEN 1967-1976 AND PROJECTED 1980 AND 1985



Leverage Limitations

The foregoing data reveal the basic conditions setting the stage for a multitude of limitations, i.e., the United States needs OPEC oil substantially more than those countries need U.S. grain. This is not only true today, but will be the case for years to come.

The United States with only 33 billion barrels of known oil reserves has little hope of boosting production significantly in the foreseeable future, except for the north slope oil. At the same time, energy demand continues to rise.

The development of alternate energy sources is subjected to severe environmental pressures and consequent delays. Nuclear energy, once the dream for the future, is in serious difficulty and now accounts for only 10 percent of total electricity generated. Secondary and tertiary oil recovery is still far from economical as the cost of recovered oil could run as high as $40 per barrel. New sources of energy, including oil from shale, gas and oil from coal, and solar energy, will contribute little to overall U.S. needs prior to 1990, because of either economic or environmental constraints.

Middle Eastern countries sitting on 60 percent of the world's known reserves will be the source of an increasing proportion of U.S. oil import needs until the 1990's and probably beyond the year 2000. Depleting reserves, changing policies, and increasing domestic requirements of some traditional U.S. suppliers outside the Middle East will reduce export availabilities. For example, Canada, once the largest U.S. supplier of crude oil, plans to phase out all imports to the United States by 1983.

In contrast, the deficit between OPEC grain production and consumption projected to reach 11.7 million metric tons by 1985 is small compared to the total quantity of grain moving in world trade. The United States traditionally accounts for one-third to one-half of the OPEC grain imports, but only with active sales efforts. In the absence of such efforts, competing grain exporters would have undoubtedly cut into the U.S. share. In other words, OPEC is by no means tied to the United States for even a third or half of their import requirements in most years.

Some are convinced that weather patterns are changing and that warming trends or cooling trends, depending on the particular school of thought, will drastically reduce grain production in much of the world leaving the United States as the only country capable of producing an exportable surplus. While this might increase grain leverage, most meterologists agree that the probability of forward forecasting over extended periods is close to zero, and in the foreseeable future grain supplies will likely be adequate to meet world consumption needs in most years and more than adequate much of the time.

Furthermore, the projected deficit for 1985 and the intervening years could be reduced through production improvements as well as improvements in transportation, storage, and distribution of grain. Saudi Arabia probably has the land and water resources available to reach self-sufficiency. However, the shortage of labor, management skills, and incentives are serious constraints which may be impossible to overcome in this century. On the other hand, the Arab Fund for Economic and Social Development, with financing mainly from Kuwait and Saudi Arabia and additional assistance from the eleven other Arab country members of the Fund, is embarking on an agricultural development program in the Sudan with the objective of food security and maximum self-reliance in food production. In addition, the project will open investment opportunities within the Arab world by expanding the capital absorptive capacity.

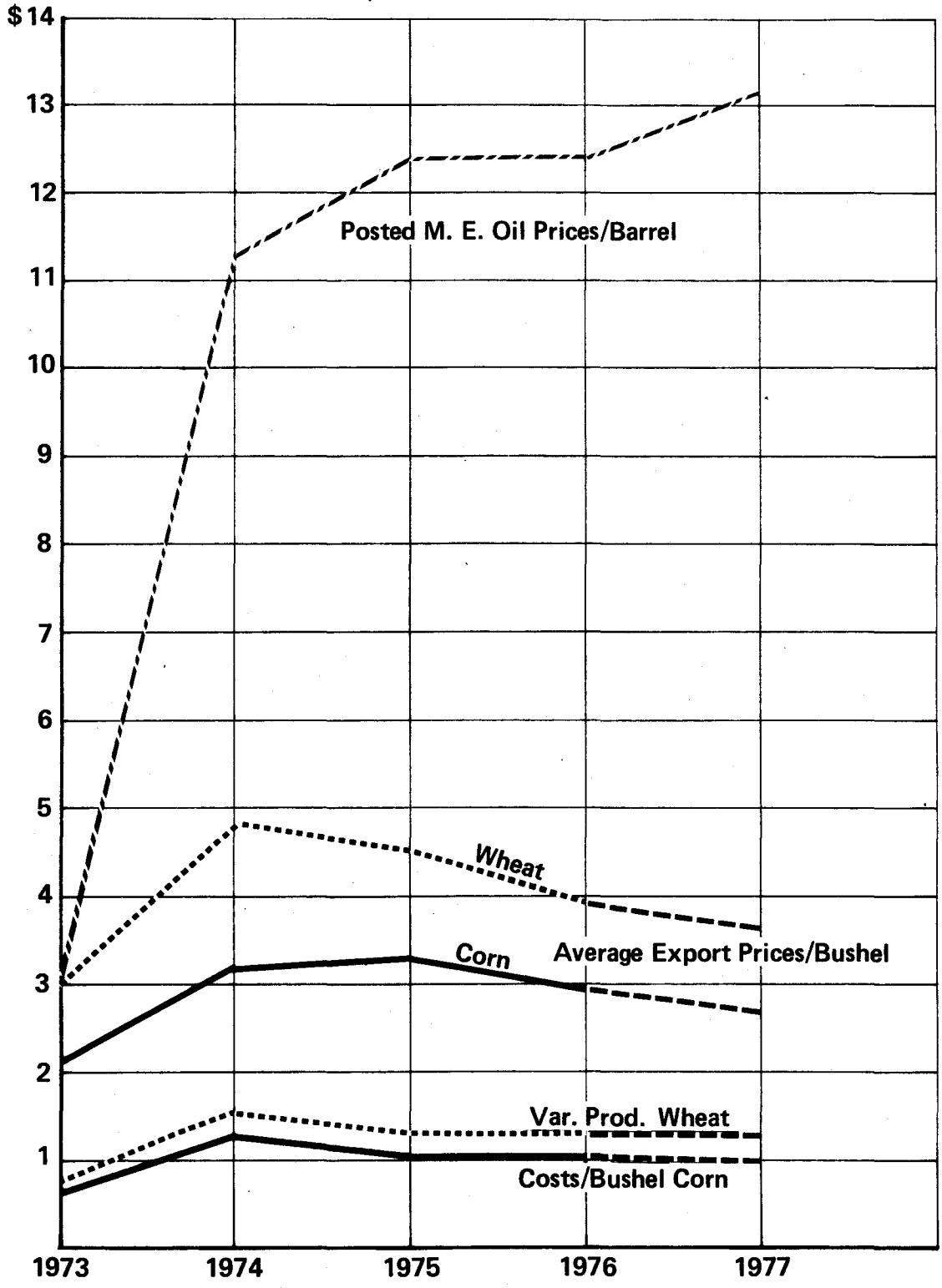
The goal of the Sudanese program is to eventually increase total acreage under cultivation from 15.6 million acres to 83 million, within which irrigated acreage would increase from 3.1 million acres to 9.3 million. Under the plan Sudanese grain production would increase from the present level of just under 2 million tons annually to over 13 million tons by 2000. Marked increases are also projected for other food crops and livestock products. Plans call for food self-sufficiency in the Sudan by 1985, with exportable surpluses thereafter.

The Organization of Arab Petroleum Exporting Countries (OAPEC) plans to establish petro-protein manufacturing in the Arab world to produce single cell protein for livestock feed. Studies have been underway for some time and any breakthrough in this area would be significant in meeting Middle Eastern food requirements.

While some of the plans for increasing food production may prove to be overoptimistic, the efforts undoubtedly will help bring the Middle Eastern food problem into more manageable proportions and make the area less vulnerable to outside influences.

Other specific limitations include the differing characteristics of food and oil. When oil prices soared in 1973, grain export prices also increased as did the variable production costs for grain. Since 1974, except for a slight rise in the average export price for corn during 1974, grain prices have declined and production costs for grain leveled off at the higher 1974 level, but oil prices continue to rise (Chart 3). Unlike oil, grain production cannot be regulated by turning a valve. Grain production involves lead-time planning and even then yields are variable depending on climatic and other growing conditions. Unsold quantities must be stored at added expense to the grower or to the taxpayer. Competition is usually great between producing and exporting countries to sell, and to attempt to use grain as a bargaining device the U.S. Government would have to reenter the picture with strong controls, such as existed

CHART 3:
POSTED PRICE OF MIDDLE EAST OIL, VARIABLE PRODUCTION COST IN U. S. FOR WHEAT AND CORN AND AVERAGE EXPORT PRICE FOR U. S. WHEAT AND CORN, 1973-76 AND PRELIMINARY 1977



during the 40 years prior to 1970, and to be effective, understandings and agreements would have to be reached with the other large grain exporters, which are under pressure most of the time to move grain. Also, each of the grain exporting countries have individual political considerations and relations regarding the oil exporting countries, which they would be reluctant to jeopardize through an attempt at regulating grain supplies.

Domestic political pressures in the United States to export wheat are far greater than similar pressures on oil exporting countries. The U.S. farmers' reaction to export embargoes is a matter of record. They reacted harshly and bitterly to both the 1973 soybean embargo and the temporary suspension of grain shipments to the USSR and Poland in 1975. Although the suspended grain shipments were not official embargoes, but were designed in part to conclude agreements permitting the United States to better plan for meeting Soviet and East European grain needs, the farmers saw no technical distinction between the 1973 and 1975 actions. While there are still some farmers who, perhaps in a weak moment, wonder why food is not used to bring OPEC to its knees, for the most part they would have second thoughts about selective grain export controls and/or embargoes. Any action which might impair the image of the United States as a dependable supplier of agricultural commodities could spell ultimate disaster for a substantial sector of agriculture.

Then there is the group, largely non-farmer, advocating more food for humanitarian purposes at the expense of commercial sales to which embargoes would be morally reprehensible. While some public opinion surveys have shown the American public as a whole to be in favor of increased food aid abroad only if it doesn't cost more in terms of higher taxes, it too would probably voice a strong moral protest if selected starve outs were attempted. Except for concessional or grant shipments under Public Law 480, food has never played a major role in foreign policy. Since its inception in 1954, some $26 billion worth of agricultural commodities, mostly food, have moved under the various titles of PL-480. Alhtough programs have been withheld in some instances for political reasons, the foreign policy implications have in most cases been more subtle. In recent years the law has been progressively sterilized as a foreign policy instrument by amendments, administrative determinations, and interagency deliberations.

Finally, United States leverage is limited by the necessity to export agricultural commodities. Any country such as the United States which exports the production from one out of every three acres (translating into two-thirds of its wheat, half of its soybeans and products, 40 percent or more of its rice, and a fourth of its corn production) must export. Without exports entire agricultural producing and processing industries would disappear with resultant sharp increases in consumer prices in the United States and deteriorating trade balances.

Agricultural exports from the United States totaled a record $23 billion in calendar year 1976. This included grain exports valued at $10.9 billion--the largest single category in the 1976 shipments abroad. The agricultural trade performance resulted in a favorable agricultural trade balance of about $12 billion, partially offsetting a non-agricultural trade deficit of $18.9 billion during the same period reflecting to a large degree the increasing imports of higher priced oil. In other words, without the strong showing in agricultural exports, the overall U.S. balance of payments deficit would have been much greater than the $6.9 billion registered for 1976 with all the obvious adverse impact on the economy.

OUTLOOK AND ALTERNATIVES

Short term solutions to the energy crisis are not in the cards. The United States will be dependent on OPEC oil, more specifically Middle Eastern OPEC oil, well into the 1990's and perhaps until 2000 even if a strong and effective energy policy is enacted immediately. The political situation in the Middle East probably will remain volatile at best and the United States with its commitments to Israel is the most vulnerable to Arab boycotts. Despite some improvement in the political climate, emotional reactions by the Middle Eastern oil producing countries are always just under the surface. For example, rigid legislation by Congress to deal with the Arab boycott of Israel could set the stage for another round of embargoes or threats of embargoes. This issue is so close to the hearts of Arab nations any protest against U.S. legislation would be unanimous--with no hold outs.

The theses that Middle Eastern countries have a stake in the world economy because of considerable investments abroad, that the adverse impact of rising oil prices on the third world, that the pressing financial commitments to economic development by some oil producing countries, and the maturing diplomatic status of the Saudis will act to moderate OPEC actions are to a large degree wishful thinking. None of the above considerations, either individually or collectively, are sufficient to deter strong OPEC action should an emotional issue arise, because they are just not in proportion to the political considerations involved in the Arab/Israeli issue.

Also, OPEC contends that the aid which it is providing and is prepared to provide to the third world is responsive to the need to offset the effects of higher oil prices. While some argue that OPEC aid efforts could and should be greater, it did disburse $2.5 billion to the non-oil producing developing countries in 1974 and $2.7 billion in 1975--not insignificant sums. Secondly, the

apparent increasing financial problems of some OPEC countries are related to their development budget objectives and to some degree are paper problems. Many of the planned budget items are postponable and in any event fulfillment of planned objectives rarely exceeds 60 percent and in most cases is much lower. And as far as the Saudis are concerned, their total commitment to the Arab cause overshadows any desire they may have to become a force in international diplomacy. Finally, it must be remembered that while it doesn't require a degree in economics to recognize where the power lies, OPEC has no shortage of sophisticated business analysts who are very much aware of the extent to which they have the United States and other industrialized countries in a corner. They also recognize that they are dealing with a depletable resource for which there is a tremendous world demand. They, therefore, can be expected to continue to strive for all the tariff will bear, and the danger here is that a miscalculation could trigger another worldwide recession--a danger as real as the threat of embargoes.

Efforts by the United States to improve political conditions must continue and every effort must be made to keep relations with OPEC on track. However, the risks are high that derailments will occur. Consequently, the United States is vulnerable and will be living under the threat of OPEC embargoes, particularly over the next 6-10 years, and must always be prepared for the worst.

Alternatives

On the basis of the data presented, it is clear that food is no ace in the hole for the United States in negotiating for oil supplies. In fact, and somewhat ironically, United States agriculture is now so heavily based on petrochemicals that OPEC price actions may very well be reflected either directly or indirectly in the price the American consumer pays for food. Then what are the options during the vulnerable period ahead? They obviously are few and all limited to reducing energy demand.

There are no short-term possibilities to increase the U.S. oil supply and the only short and medium-term solution is to use less. This will require strong mandatory and in most cases politically unpopular conservation measures, recognizing that it is not possible to realize significant energy saving without changing lifestyles. At the same time, every effort must be made to develop alternate energy sources. To attempt easy solutions to the energy crisis will merely postpone and make the inevitable day of reckoning even more difficult to face.

Environmental and other trade offs will be substantial but necessary in both the short and longer term. Those close to the issue point out that the development of any energy resource involves some risk to the environment. Therefore, high employment, warm homes, etc. will perhaps require some additional pollution and scarred landscapes. But can we safely choose any other route?

TABLE 1: U.S. IMPORTS OF CRUDE OIL BY SOURCE, 1967-76 (Thousand Barrels)

YEAR	CANADA	MEXICO	COLUMBIA	VENEZUELA	ALGERIA	EGYPT	LIBYA	NIGERIA	UAE	IRAN	IRAQ	KUWAIT	NEUTRAL ZONE	SAUDI ARABIA	INDONESIA	OTHERS	TOTAL
1967	150,409	-	11,855	131,089	1,447	1,318	15,293	1,432	1,936	23,781	1,716	6,859	4,006	29,679	22,519	-	411,649
1968	169,418	-	11,981	125,737	1,944	10,795	41,591	3,131	5,605	21,154	-	15,863	10,749	18,959	26,555	-	472,323
1969	203,298	-	15,551	111,722	358	14,778	48,862	17,958	5,051	15,306	-	12,539	15,864	12,665	32,271	-	514,114
1970	245,258	-	7,313	97,996	2,093	7,626	17,156	17,490	23,047	12,184	-	12,123	8,398	6,140	25,670	-	483,293
1971	263,294	-	3,175	110,574	4,685	6,924	19,426	34,826	29,026	38,576	3,932	10,650	(1)	41,971	40.232	2,567	613,417
1972	312,440	-	1,695	93,300	31,753	3,091	40,069	88,887	26,873	49,700	1,315	13,205	(1)	63,626	59,633	1,616	811,135
1973	365,370	489	778	125,742	43,619	5,296	48,585	163,687	25,764	78,990	1,529	15,208	(1)	168,525	73,055	234	1,183,996
1974	288,763	597	-	116,437	65,764	3,227	1,495	254,358	25,158	168,956	-	1,820	(1)	159,827	103,482	832	1,269,155
1975	219,175	25,660	-	144,221	96,459	1,687	81,403	272,265	42,585	101,575	707	1,444	(1)	256,036	138,270	15,277	1,498,181
1976	135,690	31,670	2,041	88,139	149,190	6,311	162,457	371,092	93,421	109,073	9,542	451	(1)	447,071	196,283	132,711	1,935,142

(1) Included in Saudi Arabia

SOURCE: Bureau of Mines as Quoted by Twentieth Century Petroleum Statistics, 1967-75, Bureau of Mines, 1976.

TABLE 2: ALL OILS--U.S. PRODUCTION, IMPORTS, EXPORTS AND DEMAND
1967-76 AND PROJECTED 1980 AND 1985
(Thousand Barrels)

YEAR	PRODUCTION	IMPORTS		EXPORTS	DEMAND	IMPORTS AS % DEMAND	OPEC OIL % TOTAL IMPORTS
		TOTAL	FROM OPEC				
1967	3,730,285	925,991	455,520	112,060	4,584,526	20.2	49.2
1968	3,882,730	1,039,369	464,280	84,544	4,901,789	21.2	44.7
1969	3,956,205	1,115,551	467,565	84,885	5,159,930	22.4	40.5
1970	4,129,604	1,248,062	490,560	94,458	5,364,473	23.3	39.3
1971	4,077,803	1,432,880	610,280	81,845	5,552,560	25.8	42.6
1972	4,103,702	1,735,314	752,995	81,389	5,990,316	29.0	43.4
1973	4,006,042	2,283,493	1,092,080	84,413	6,317,303	36.1	47.8
1974	3,831,740	2,230,947	1,195,740	80,491	6,078,239	36.7	53.6
1975	3,661,785	2,198,996	1,311,810	76,428	5,946,176	37.0	59.7
1976[1/]	3,504,000	2,628,000	1,843,250	72,200	6,309,215	41.7	70.1
1980	3,980,000	3,430,000	2,900,000	70,000	7,410,000	46.3	84.5
1985	4,050,000	3,905,000	3,700,000	65,000	7,985,000	48.9	94.8

1/ Estimate

SOURCE: Bureau of Mines 1967-76. Shell Oil Co. 1980 and 1985. Exxon and Independent Petroleum Association of America.

TABLE 3: OPEC, PRODUCTION, CONSUMPTION AND IMPORTS ALL GRAINS, 1967-1976 AND PROJECTED 1980 and 1985
(Thousand Metric Tons)

Year	Production	Consumption	IMPORTS		Imports as % Consump.	U.S. as % Total Imports
			Total	U.S.		
1967	30,735	33,525	3,300	1,453	9.8	44.0
1968	33,760	36,557	3,706	1,722	10.1	46.5
1969	35,028	38,257	3,940	2,208	10.3	56.0
1970	36,087	40,216	5,172	2,322	12.8	44.9
1971	32,661	39,571	7,139	2,591	18.0	36.3
1972	37,340	42,803	6,830	3,576	16.0	52.4
1973	33,608	40,988	8,516	4,496	20.8	52.8
1974	37,094	44,855	9,823	4,850	19.0	49.4
1975	37,357	46,291	8,193	4,812	17.7	59.1
1976	39,965	48,931	9,892	4,973	20.2	50.3
1980	39,980	50,590	10,910	6,135	21.6	56.2
1985	42,130	53,825	11,780	6,685	21.9	56.7

Source: Foreign Agricultural Service, USDA.

TABLE 4: POSTED PRICE FOR MIDDLE EAST OIL, VARIABLE PRODUCTION COSTS FOR U.S. CORN AND WHEAT AND AVERAGE EXPORT PRICES FOR U.S. CORN AND WHEAT, 1973-76, PRELIM. 1977

YEAR	YR. END OIL PRICES	VARIABLE PROD. COSTS		AVGE EXPORT PRICE (FOB GULF PORTS)	
		CORN	WHEAT	CORN	WHEAT
	$/bl.	$/bu.	$/bu.	$/bu.	$/bu.
1973	$ 2.90	$ .63	$ .73	$2.16	$2.94
1974	11.25	1.31	1.57	3.20	4.80
1975	12.40	1.05	1.36	3.36	4.54
1976	12.40	1.08	1.35	2.98	3.98
1977	13.15 1/	1.02	1.30	2.70 2/	3.70 2/

1/ Effective 1-1-77

2/ Projected

SOURCE: Middle East Oil Exxon EBS, Aug. 1976; Petroleum Intelligence Weekly, Special Supplement, March 1977; Economic Research Service/USDA

SELECTED REFERENCES

Emma Rothschild, "Food Politics," Foreign Affairs, January 1976.

Maurice J. Williams, "The Aid Programs of the OPEC Countries," Foreign Affairs, January 1976.

Staff of the New York Times, "Give Us This Day" (New York, 1975).

Donald E. Carr, Energy and the Earth Machine (New York, 1976).

Barry Commoner, The Closing Circle (New York, 1971).

Barry Commoner, The Poverty of Power (New York, 1976).

Congressional Research Service, Use of U.S. Food Resources for Diplomatic Purposes--An Examination of the Issues (Washington, 1977).

The National Energy Outlook 1980-1990, Shell Oil Paper, September 1976.

Middle East Oil, Exxon Background Series, August 1976.

United States and World Fertilizer Outlook 1974 and 1980, Agricultural Economic Report No. 257, Economic Research Service/USDA, May 1974.

Evaluation and Use of Area Resources, Surveys for Agricultural Development in Saudi Arabia, Special Report No. 1, Stanford Research Institute, January 1971.

Procurement, Handling, Storage, and Distribution of Essential Food Stuffs in Saudi Arabia, A report to the Ministry of Commerce, Kingdom of Saudi Arabic, by Erik Kissmeyer-Nielsen, October 1976.

Economic Research Service/USDA, Costs of Producing Selected Crops in the United States-1974 (Washington, 1976).

Economic Research Service/USDA, Costs of Producing Selected Crops in the United States-1975, 1976, and Projections for 1977 (Washington, 1977).

The Organization of Arab Petroleum Exporting Countries, Secretary General's Second Annual Report (Kuwait, 1975).

Organization of Arab Petroleum Exporting Countries (OAPEC), Prospects of Introducing the Petro-Protein Industry in the Arab World (Kuwait, 1976).

International Economic Report of the President, Transmitted to the Congress January 1977.

Arab Fund for Economic Social Development, Basic Programme for Agricultural Development in the Democratic Republic of the Sudan, 1976-1985 (Kuwait, 1976).

DECLASSIFIED

DECLASSIFIED

DECLASSIFIED