

AD-A081 209

CACI INC-FEDERAL ARLINGTON VA POLICY SCIENCES DIV F/G 5/3  
MEDIUM TERM ABILITY OF OIL PRODUCING COUNTRIES TO ABSORB REAL G--ETC(U)  
MAR 76 \ G KEYNON DOS-1722-520061

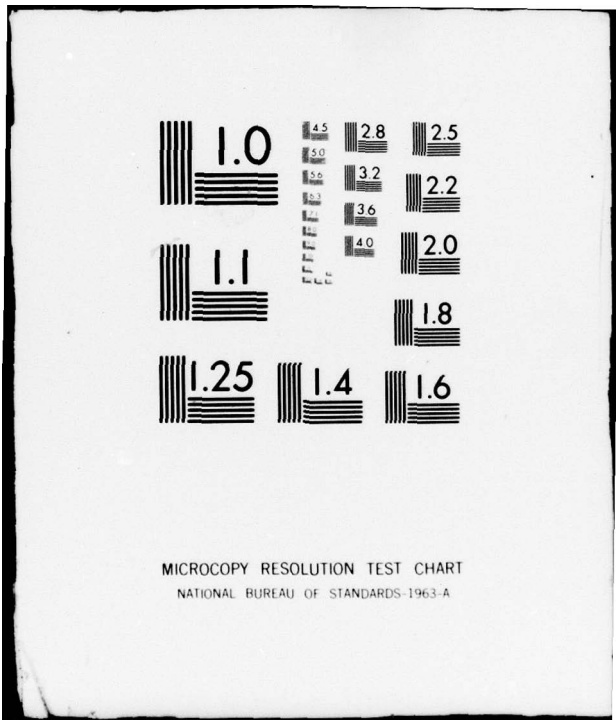
UNCLASSIFIED

FAR-24342

NL

1 OF 1  
AD-  
A081209





~~SECRET~~ (mc)

ADA 081209

# MEDIUM TERM ABILITY OF OIL PRODUCING COUNTRIES TO ABSORB REAL GOODS AND SERVICES

Volume I  
Executive Summary

March, 1976

DDC FILE COPY

**DISTRIBUTION STATEMENT A**  
Approved for public release  
Distribution Unlimited

DDIC  
ELECTE  
S FEB 27 1980  
A

This study is one of a number done by academic and other research institutions for the Department of State, as part of its external research program. It differs from many of these studies in that it is also supported by the Departments of Treasury and Commerce. This study is designed to supplement the research capabilities of these three agencies and provide independent expert views to policy officers and analysts on key questions with important policy implications.

The idea for this study on the Medium Term Ability of Oil-Producing Countries to Absorb Real Goods and Services was proposed by the Office of Economic Research and Analysis in the Bureau of Intelligence and Research (INR) in the Department of State. The work statement for the project was developed in discussions with officers in the appropriate bureaus of State, Treasury and Commerce, the sponsoring agencies, the National Science Foundation, Council on International Economic Policy, and the Federal Energy Agency. Overall monitoring of the project was under the direction of Warren H. Reynolds, Senior Program Officer in INR's Office of External Research, with the assistance of an interagency working group.

The State Department's External Research Program is planned and coordinated by the Department of State Research Council and managed by the Office of External Research. Comments on this study or queries about State's program may be addressed to:

E. Raymond Platig  
Office of External Research  
Bureau of Intelligence and Research  
Department of State  
Washington, D.C. 20520

This research is supported by the Departments of State, Treasury, and Commerce under Contract 1722-520061. Views and conclusions contained in this study should not be interpreted as representing the official opinion or policy of the United States Government.

LEVEL #

18 FAR 19 24342

1

6 MEDIUM TERM ABILITY OF OIL PRODUCING COUNTRIES TO ABSORB REAL GOODS AND SERVICES

Volume I Executive Summary

11 Mar 1976

12 33

10 Gary Keyrow

15 DOS-1722-520461

Accession For	
MEMO GR&I	<input checked="" type="checkbox"/>
DOC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	<input type="checkbox"/>
By	
Dist	
Availability Codes	
Dist	Avail and/or special
A	

DTIC ELECTE FEB 27 1980 S D

A

POLICY SCIENCES DIVISION CACI, INC.—FEDERAL

1815 North Fort Myer Drive, Arlington, Virginia 22209, Telephone (703) 841-7800

407941

Handwritten signature

---

PREFACE

---

This volume is one of three written under Department of State contract number 1722-520061 on the "Medium-Term Ability of Oil Producing Countries to Absorb Real Goods and Services." The three volumes -- Volume I (Executive Summary), Volume II (Research Findings), and Volume III (Technical Appendices) -- present the result of a major effort by CACI, Inc.-Federal to study the current economic conditions, government policies, development plans, and prospects of the 13 members of the Organization of Petroleum Exporting Countries (OPEC). Based on these assessments, a forecasting model was developed and applied to study the economic growth and absorptive capacity of each of these countries from 1975-1985. A081209  
A081210

Four members of CACI's professional staff contributed far beyond the call of duty to the successful completion of this effort. Gary Keynon and Farid Abolfathi made outstanding contributions to the development and conceptualization of the study. Keynon, who guided the overall research effort as principal investigator, formulated and programmed the elaborate forecasting model that was used to assess the absorptive capacity of the 13 members of OPEC. He also participated heavily in data acquisition. Among other responsibilities, Abolfathi wrote most of the country studies and directed data acquisition. Margaret Hayes drafted two chapters of the final report and commented on many others. She also helped gather data on selected countries and all data on trade with the OPEC countries. Robert Crain assisted with data collection and contributed greatly to the computer programming and data management.

Members of the interagency working group proved themselves constructive critics throughout the research process. They continually probed fundamental assumptions and provided valuable information that enhanced the research process. Warren H. Reynolds, who served as the contract monitor in the Office of External Research, greatly facilitated efforts to gain key information, gain access to government analysts, and keep the

project on a course that would be most useful to the Department of State. The members of the study team offer their sincere thanks to each of these individuals.

Last, but hardly least, CACI's support staff labored extremely long hours over the seemingly endless drafts of the three volumes. Carol Franco and Nancy Streeter smoothed the prose, standardized the formats, and gently reminded the authors that even social science findings can be communicated with a certain amount of style and grace. However, it should not be assumed that they are responsible for what has survived their efforts. Sharon O'Rourke, CACI's ever resourceful office manager, worked diligently to help meet project deadlines. Ann Yamat and Kathy Harris typed repeated drafts of the report, managing to remain understanding to authors who always wanted to make one last change in what was to have been the final, final, final draft. Again, the study team expresses its thanks.

7

---

TABLE OF CONTENTS

---

	<u>Page</u>
INTRODUCTION.....	1
THE ABILITY OF OIL PRODUCING COUNTRIES TO ABSORB REAL GOODS AND SERVICES.....	5
Growth of the OPEC Economies from 1975-1985.....	5
Growth of Imports by the OPEC States from 1975-1985.....	9
Commodity Breakdowns.....	12
The U.S. Trade Share of OPEC Imports.....	13
POLICY IMPLICATIONS.....	19
LIMITATIONS ON THE SCOPE OF THE STUDY.....	23

---

LIST OF TABLES

---

	<u>Page</u>
Table 1. Projected Growth Rates of Gross Domestic Product for OPEC Countries.....	8
Table 2. Projected Growth Rates of Imports for OPEC Countries.....	10
Table 3. Projected Commodity Breakdown for 1980 by Country.....	14
Table 4. Projected Commodity Breakdown for 1985 by Country.....	15
Table 5. Projected U.S. Imports by OPEC Countries for Selected Years.....	17

---

## INTRODUCTION

---

The increase in petroleum prices established during the last quarter of 1973 by the 13 members of the Organization of Petroleum Exporting Countries (OPEC) dramatically altered magnitudes and patterns of trade and payments in the international economy. In 1974, the exports of OPEC exceeded \$130 billion, approximately three times the previous year's total, and nearly four times OPEC imports of \$33 billion.

Given the magnitude of the change in the volume of trade and the resulting current account surpluses of OPEC, an assessment of the future role of OPEC in the international economy is vital. This study, concerned with estimating future imports of real goods and services by the OPEC members, is one element of the continuing effort to discover and understand the implications of higher energy prices for the coming decade. It attempts to bridge the abyss between the fully detailed forecasting structure capable of distinguishing the effect of narrowly defined changes in initial conditions and a relatively short period of time available to construct the forecasts. The result is a forecast system that is credible in its own right that permits the development of alternative forecasts as better and more recent information becomes available. The range of information that can be included is rather large. It is possible to amend the information base of each OPEC country to generate different projections and to alter the basic assumptions regarding future oil revenues to generate different projections. Consequently, both the results and techniques of the study can be employed as complements to studies of related OPEC issues.

Analytical procedures for the study were divided into four stages. These were not a rigid progression accomplished one after another. Rather they formed a framework for analysis and discussion. They are as follows.

- The assessment of development potential, including an evaluation of current conditions, the prospects for growth, and the obstacles to development.
- The analytic determination of maximum absorptive capability, the preliminary identification of reasonably expected growth performance, and the initial estimates of development-related expenditures and import requirements.
- The identification of important social and political influences on government behavior and the estimation of expenditures and import requirements resulting from these factors. Discussions of military spending and departures from technically efficient development programs were included.
- The final estimation of goods and services to be imported and the identification of likely suppliers for these imports.

Completion of these research stages required large amounts of data on the economic structures in each of the OPEC countries. Once gathered, checked for plausibility against other sources, and systematically examined, each piece of data was synthesized with other existing information. Statistical information -- whether available for long-time series or for individual years -- was used as the basis for estimating the future performance of every sector of each OPEC economy. Existing trade data were used to allocate market shares for major trading partners.

Additionally, considerable information was gathered from extraordinary numbers of reports, discussions, analyses, and interpretations of the current conditions in each of the 13 OPEC countries. This information, having been synthesized and evaluated against other materials on each country and compared against the statements of national goals contained in each country's developmental plan, was used to systematize the large amount of "soft" data that is necessary to understand the current conditions and existing constraints in each OPEC country.

Regardless of how carefully executed a study is, every research effort makes certain assumptions and incurs certain limitations because of the

procedures used. The most important of these limitations on the scope and and conclusions of the study are detailed in the last section of this Executive Summary. All findings reported in the next section and the policy implications developed in the following section should be interpreted in light of these limitations.

---

## THE ABILITY OF OIL PRODUCING COUNTRIES TO ABSORB REAL GOODS AND SERVICES

---

This section summarizes some of the major findings on the capacity of the 13 members of the Organization of Petroleum Exporting Countries (OPEC) to absorb real goods and services from 1975-1985. These findings are presented in greater detail in Volume II (Research Findings), Chapters 4-16, where each of the 13 OPEC economies is discussed separately.

Three forecasts of growth of the gross domestic product (GDP), imports, and shares of imports were developed for each OPEC country. The reported values for GDP and imports are in U.S. dollars at constant 1975 prices. Imports include commodities and related service payments but exclude factor payments of wages and profits. Finally, the forecasts are based on a particular oil revenue scenario (detailed in Volume III, Appendices A and B) and specific constraints for each country (detailed in the country chapters in Volume II).

As a descriptive device, the three forecasts were labeled "high" and "low" projections and "best estimate." All three were generated from the same forecasting system, using different constraints. They suggest a range of plausible patterns of economic growth and import expansion. The three forecasts for each country are presented in Volume II (Research Findings), Chapters 4-16. Chapter 17 of the same volume gathers these three forecasts together for all of the countries. For ease of presentation only one of these forecasts -- CACI's "best estimate" -- is presented in this summary. Volume II should be examined for the other forecasts generated for each country.

### GROWTH OF THE OPEC ECONOMIES FROM 1975-1985

Table 1 presents the CACI best estimate of the GDP of each of the 13 members of OPEC for 1980 and 1985. Average annual increases (expressed

as a percentage) are also presented for the 1976-1980 and 1981-1985 periods. This table indicates several facets of growth in the OPEC countries.<sup>1</sup>

- The combined GDP of the 13 members of OPEC, projected to equal \$246.7 billion in 1975, will reach \$385.2 billion in 1980 and \$488.3 billion in 1985.
- Over 65 percent of the combined GDP for 1980 comes from the 8 OPEC countries located in North Africa and the Middle East. Almost 62 percent of the combined GDP in 1985 will come from these same 8 states.
- The projected GDP size for the OPEC countries in 1980 ranges from Iran's \$107.8 billion to Qatar's \$2.9 billion. The range broadens in the 1985 projections as Iran's GDP reaches \$114.4 billion while Qatar's GDP reaches \$3.2 billion.
- Iran retains the largest GDP among the OPEC countries throughout the forecast period, but Indonesia (with the third largest GDP in 1980) replaces Saudi Arabia as the second largest OPEC economy by 1985. Nigeria has the fourth largest GDP through the forecast decade, but Iraq moves ahead of Venezuela as the fifth largest OPEC economy in 1985.

Substantial differences in economic growth are projected for the 13 members of OPEC. Five distinct patterns of economic growth can be distinguished in Table 1.

- Three states -- Ecuador, Qatar, and Venezuela -- have a less than 3 percent average annual GDP increase for both 1976-1980 and 1981-1985. Each of these economies averages less than 2 percent annual growth in one of these two periods.
- Three OPEC members -- Gabon, Kuwait, and Libya -- average 3-5 percent annual growth throughout the decade. Gabon, with the smallest economy of the three, grows more rapidly than do the other two countries.
- Two countries -- Algeria and Iraq -- experience appreciably stronger economic growth in the second half of the

---

<sup>1</sup> All figures are in constant 1975 U.S. dollars.

forecast decade (1981-1985) than in the first half (1976-1980). Algeria's GDP averages a 1.7 percent annual increase until 1980, then averages 6.9 percent annually after 1981. Iraq's GDP averages 6.6 percent annual growth from 1976-1980 and 9.6 percent from 1981-1985.

- Three oil exporters -- Iran, Saudi Arabia, and the United Arab Emirates -- suffer major growth slowdowns from 1981 onward after strong growth from 1976-1980. Iran's average annual growth drops from 8.6 percent to 1.3 percent. Saudi Arabia's GDP growth declines from a 9.3 percent average annual increase in 1976-1980 to 3.1 percent annually from 1981-1985. The United Arab Emirates virtually stands still from 1981 onward as average annual GDP growth declines from 5.4 percent for the first 5 years to 0.4 percent for the second 5.
- Two OPEC members -- Indonesia and Nigeria -- experience strong growth over the forecast decade, although growth in each slows somewhat after 1981. Indonesia, with a 12 percent average annual growth from 1976-1980, slows to a 7.4 percent average annual growth from 1981 onward. Growth of Nigeria's GDP also slows, but only drops from a 9.1 percent to a 7.7 percent average annual increase over the two forecast periods.

Economic growth slows appreciably over the decade for several different reasons. Saudi Arabia and the United Arab Emirates do not continue to grow at their earlier rates because both face substantial and long-term problems of small population and severely limited non-oil investment opportunities. The early growth exhausts the more readily available development opportunities. In contrast, Iran's growth in the 1980's is lower than in the first 5 years, but the lower growth is in itself a remarkable achievement. Because Iran's petroleum sector is projected to decline significantly during the 1980's, the maintenance of some growth is indicative of a dramatic performance from the non-oil economy. Finally, Indonesia and Nigeria, which suffer a limited decline in GDP growth, appear to be among the states in the best position to utilize oil revenues for overall economic progress.<sup>2</sup>

---

<sup>2</sup> The reasons for these growth patterns differ widely. The forecasting system utilized is sensitive to economic history, planning, infrastructure, manpower availability, and skill levels, among other considerations. Each projection is reviewed and evaluated in detail in Volume II (Research Findings).

TABLE 1  
 Projected Growth Rates of Gross Domestic Product for OPEC Countries  
 (Based on CACI "Best Estimates" for 1980 and 1985<sup>a</sup>)

<u>Country</u>	<u>1980</u>	<u>1985</u>	<u>Average Annual Percentage Growth 1976-1980</u>	<u>Average Annual Percentage Growth 1981-1985</u>
Algeria	16.6	22.8	1.7	6.9
Ecuador	7.5	9.1	1.0	2.5
Gabon	3.1	3.9	4.8	4.8
Indonesia	51.6	78.9	12.0	7.4
Iran	107.8	114.4	8.6	1.3
Iraq	28.0	44.0	6.6	9.6
Kuwait	14.0	20.4	3.7	3.6
Libya	17.9	21.2	3.9	3.2
Nigeria	37.7	57.7	9.1	7.7
Qatar	2.9	3.2	2.3	1.8
Saudi Arabia	53.5	63.6	9.3	3.1
United Arab Emirates	11.1	11.4	5.4	0.4
Venezuela	33.5	37.7	1.9	2.7
Middle East and North Africa OPEC Total	251.8	301.0	---	---
Total	385.2	488.3	---	---

<sup>a</sup> In billions of 1975 U.S. dollars.

## GROWTH OF IMPORTS BY THE OPEC STATES FROM 1975-1985

The projected capacity of the members of OPEC to import real goods and services is reported in Table 2. As noted previously, these figures (c.i.f., expressed in constant 1975 U.S. dollars) include commodities and related service payments but exclude factor payments of wages and profits. Data for 1980 and 1985 and average annual growth rates for 1976-1980 and 1981-1985 are presented. Several aspects of the growth of OPEC imports are reflected in Table 2.

- Combined imports by the 13 members of OPEC (projected at \$56.9 billion in 1975) will reach \$100.3 billion in 1980 and \$121.7 billion in 1985.
- Approximately 69 percent of the total OPEC imports in both 1980 and 1985 will come from the 8 members located in the Middle East and North Africa. These states will import \$69.3 billion in goods and services in 1980 and \$83.9 billion in 1985.
- Iran will import more than twice as much as any other single OPEC country in 1980 and almost twice as much as any other in 1985. Its projected 1980 imports (\$27.3 billion) are more than 27 percent of the OPEC total and its 1985 imports (\$30.5 billion) constitute 25 percent of the projected total.
- The relative rankings of the five largest importing countries in OPEC -- Iran, Iraq, Indonesia, Saudi Arabia, and Nigeria -- do not change over the forecast period. By 1985 each of these countries is importing at least \$10 billion in goods and services.

The contents of Table 2 suggest six patterns to the import expansion over the forecast decade.

- Imports by three countries -- Algeria, Indonesia, and Libya -- are generally stable over the entire forecast period. Algeria's average annual percentage growth in imports increases from 3.8 percent to 4.4 percent by the second half of the forecast decade. Comparable figures for Indonesia drop slightly (from 7.3 percent to 6.0 percent), while those for Libya vary by only 0.7 percent across the 1976-1980 and 1981-1985 periods.

- Qatar's imports increase substantially after 1981, rising from an average annual increase of 8.6 percent to 17.1 percent. Despite this growth Qatar's imports only equal slightly more than \$1 billion in 1985.
- Two countries -- Kuwait and the United Arab Emirates -- have substantially higher imports in the second half of the forecast period. Kuwait's average annual growth in imports increases to 5.2 percent from 1981 onward after a very small 1.9 percent average annual increase from 1976-1980. The UAE's imports average 9.9 percent annual growth after 1981 following an earlier 1.2 percent average annual growth.
- Import growth slows in the second half of the forecast period for two countries -- Iraq and Saudi Arabia. The Saudi average annual import growth drops from 14.4 to 4.7 percent and the Iraqi figure drops from 10.3 to 6.3 percent from 1981 onward.
- Three countries -- Ecuador, Iran, and Venezuela -- experience a major post-1981 downturn in imports after impressive growth from 1976-1980. Annual growth in imports by Ecuador and Iran average over 10 percent from 1976-1980, but fall to a less than 1.5 percent average annual increase after 1981. Venezuela's average annual import growth suffers similarly, declining from a strong 9.6 average annual percentage to 2.4 percent annually over the two segments of the forecast.
- Imports of the two African members of OPEC -- Gabon and Nigeria -- decline sharply from a 6-7 percent average annual growth in 1976-1980. After 1981, Nigeria's imports grow less than 3 percent per year and Gabon's average import growth has stopped.

CACI's best estimate for 1980, \$100.2 billion, is considerably lower than figures that have received wide public circulation. While few estimates for 1985 exist, the CACI research staff believes that the \$121.7 billion presented here is also lower than those currently being assumed by many planners and decision-makers in business and government.<sup>3</sup>

---

<sup>3</sup> Estimates from existing public studies are compared in Volume II (Research Findings), Chapter 17.

TABLE 2  
 Projected Growth Rates of Imports for OPEC Countries  
 (Based on CACI "Best Estimates" for 1980 and 1985<sup>a</sup>)

<u>Country</u>	<u>1980</u>	<u>1985</u>	<u>Average Annual Percentage Growth 1976-1980</u>	<u>Average Annual Percentage Growth 1981-198</u>
Algeria	7.8	9.4	3.8	4.4
Ecuador	2.6	3.1	12.7	1.2
Gabon	3.0	3.0	6.6	0.0
Indonesia	9.2	14.5	7.3	6.0
Iran	27.3	30.5	16.4	0.8
Iraq	12.7	17.1	10.3	6.3
Kuwait	3.3	4.3	1.9	5.2
Libya	6.2	7.4	4.0	3.3
Nigeria	8.7	10.0	6.9	2.6
Qatar	0.7	1.0	8.6	17.1
Saudi Arabia	9.1	11.0	14.4	4.7
United Arab Emirates	2.1	3.2	1.2	9.9
Venezuela	7.4	7.2	9.6	2.4
Middle East and North Africa OPEC Total	69.3	83.9	---	---
Total	100.3	121.7	---	---

<sup>a</sup> In billions of 1975 U.S. dollars. All import figures are c.i.f.

Other than the "newness" of the OPEC problem and the great difficulty in assembling an accurate data base from which to make estimates, two basic factors appear to have inflated hopes about OPEC imports. Crudely stated, many forecasters have simultaneously under and overestimated the capability of oil revenues to sweep aside traditional obstacles to development and have underestimated the learning and adaptive capabilities of the OPEC governments. CACI has estimated 1976 and 1977 imports above the levels commonly found in other studies. CACI believes the short-term transport problems potentially limiting imports will be overcome by the OPEC economies. At the same time CACI has given greater weight to the longer-term problems associated with creating or expanding non-oil sectors of the economy. Consequently, import estimates for the later years are lower than those found elsewhere. Moreover, the OPEC governments are unlikely to sustain spending levels requiring imports if their economies do not develop the capacity to utilize them well.

#### COMMODITY BREAKDOWNS

The information presented in Tables 3 and 4 reflects the anticipated breakdown of imports of the OPEC countries by Standard International Trade Categories (SITC). These are based on the best estimate aggregate import figure in Table 2, the most recent trade figures on each country, the economic growth and sectoral projections for each country, and the qualitative judgment of the CACI research staff. The contents of these tables can be summarized as follows:

- Commodity orderings are stable for 1980 and 1985. The same major SITC groups are distributed similarly for both periods.
- Machinery and transportation equipment will constitute almost 48 percent of the commodities in 1980 and over 45 percent in 1985.
- Manufactured goods will make up almost 25 percent of the 1980 imports and about 23 percent of the 1985 imports.

- Food and live animals will contribute 9.3 and 9.1 percent, respectively, in 1980 and 1985.
- Chemicals will comprise about 9 percent of the total OPEC imports in both 1980 and 1985.

The acquisition of machinery and transportation equipment reflects the heavy expenditures planned by most OPEC governments for infrastructure and industrial development and the total absence of domestic sources for these industrial components. Substantial imports of manufactured goods reflect the small industrial capacity of most members of OPEC and the substantial consumer sectors present in many of them. Agricultural products, the third largest category, are likely to be imported heavily by Algeria, Indonesia, Iran, Iraq, Libya, Nigeria, and Saudi Arabia. The chemicals commodity includes industrial chemicals needed for basic industrial processes and fertilizers.

By 1985, chemicals decline somewhat as domestic fertilizer and chemical processing capabilities come on-line. Growth of raw material imports reflects the anticipated industrial developments within OPEC. Even with these increased raw materials imports, however, machinery and transportation equipment and manufactured goods continue as the largest commodity groups.

#### THE U.S. TRADE SHARE OF OPEC IMPORTS

The CACI best estimates of U.S. exports to the OPEC countries in 1980 and 1985 are shown in Table 5. These values were calculated using a constant market shares approach based on trade data for 1973 between each OPEC country and the United States, Western European countries, Japan, and Communist countries.<sup>4</sup> As Table 5 indicates:

- U.S. exports to the 13 members of OPEC should equal \$15.1 billion in 1980 and \$18.0 billion in 1985, or roughly 15 percent of the OPEC market.

<sup>4</sup> Again, all figures are in constant 1975 U.S. dollars. Imports are as previously defined.

TABLE 3  
Projected Commodity Breakdown for 1980 by Country  
(in billions of 1975 U.S. dollars)

Country	Food and Live Animals	Beverages and Tobacco	Crude Materials	Minerals, Fuels, and Lubricants	Animal and Vegetable Oils	Chem- icals	Manu- factures	Machinery and Transport	Misc. Manufactures	Other	Total
Algeria	.941	.078	.235	.157	.078	.784	1.795	3.528	.235	.008	7.84
Ecuador	.066	.032	.130	.021	.024	.317	.608	1.293	.132	.021	2.64
Gabon	.303	.076	.012	.015	.018	.182	.667	1.515	.212	.050	3.03
Indonesia	.784	.046	.369	.046	.009	1.106	2.351	4.656	.507	.175	9.22
Iran	1.777	.019	.820	.082	.273	2.461	7.302	13.670	.136	.856	27.34
Iraq	1.524	.013	.317	.063	.038	1.460	3.515	5.461	.254	.013	12.69
Kuwait	.362	.082	.013	.033	.016	.165	.707	1.448	.461	.003	3.29
Libya	.744	.031	.186	.124	.124	.248	1.240	3.100	.372	.031	6.20
Nigeria	1.038	.069	.173	.087	.017	1.125	1.730	4.239	.130	.043	8.65
Qatar	.158	.007	.014	.007	.014	.029	.108	.259	.108	.014	.72
Saudi Arabia	1.005	.183	.091	.091	.046	.229	2.376	4.387	.640	.091	9.14
UAE	.316	.032	.053	.106	.021	.084	.675	.528	.274	.021	2.11
Venezuela	.312	.030	.304	.052	.052	.816	1.492	3.728	.594	.059	7.42
Middle East and N. Africa total <sup>a</sup>	7.570	.451	1.884	.694	.629	6.172	19.572	35.043	2.604	1.043	75.53
Total	9.330	.698	2.717	.884	.730	9.006	24.686	47.812	4.055	1.365	100.29

<sup>a</sup> Includes only Algeria, Iran, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and UAE.

<sup>b</sup> Row and column totals not equal due to rounding.

TABLE 4  
Projected Commodity Breakdown for 1985 by Country  
(in billions of 1975 U.S. dollars)

Country	Food and Live Animals	Beverages and Tobacco	Crude Materials	Minerals, Fuels, and Lubricants	Animal and Vegetable Oils	Chemicals	Manufactures	Machinery and Transport	Misc. Manufactures	Other	Total
Algeria	1.22	.094	.282	.188	.094	.939	1.972	4.132	.376	.094	9.39
Ecuador	.038	.031	.126	.031	.025	.308	.844	1.456	.154	.022	3.08
Gabon	.303	.085	.030	.030	.021	.212	.712	1.364	.024	.030	3.03
Indonesia	.723	.145	.868	.145	.290	1.735	3.181	6.941	.578	.116	14.46
Iran	2.285	.305	2.136	.061	.549	2.747	7.630	12.208	.610	2.136	30.52
Iraq	2.294	.086	.513	.086	.086	1.539	3.913	8.208	.513	.086	16.83
Kuwait	.449	.107	.043	.043	.021	.257	.856	1.840	.621	.428	4.28
Libya	.736	.037	.221	.147	.147	.368	1.398	3.680	.515	.110	7.36
Nigeria	1.004	.080	.301	.100	.040	1.406	1.807	5.221	.060	.030	10.04
Qatar	.202	.020	.030	.010	.030	.040	.182	.303	.172	.020	1.01
Saudi Arabia	1.322	.220	.220	.055	.055	.331	2.314	5.510	.771	.220	11.02
UAE	.447	.048	.096	.032	.032	.128	1.005	0.909	.447	.032	3.19
Venezuela	.438	.039	.305	.078	.046	.821	1.916	3.598	.547	.031	7.82
Middle East and N. Africa total <sup>a</sup>	9.199	.937	3.663	.642	1.034	6.714	20.222	38.734	4.147	3.146	87.92
Total	11.161	1.297	5.171	1.006	1.436	10.831	28.317	55.370	5.388	3.355	122.264 <sup>b</sup>

<sup>a</sup> Includes only Algeria, Iran, Iraq, Kuwait, Libya, Qatar, Saudi Arabia, and UAE.

<sup>b</sup> Row and column totals not equal due to rounding.

- Between 58-59 percent of the total U.S. exports to OPEC will go to the OPEC countries in North Africa and the Middle East. In 1980 U.S. exports to these countries should equal \$8.9 billion. In 1985 they should reach \$10.5 billion.
- Four countries in 1980 and five in 1985 will import at least \$1 billion in goods and services from the United States. Iran and Venezuela are the largest importers of U.S. goods and services in 1980 and 1985. Saudi Arabia (third largest importer of U.S. goods and services in 1980) and Indonesia (fourth largest importer) reverse positions in 1985. By 1985 Iraq and Ecuador are both expected to import over \$1 billion in goods and services from the United States.

Prospects for improving U.S. export shares are discussed in the country chapters in Volume II (Research Findings), Chapters 4-16, and in the next section on policy implications. Traditional trading relationships with European Governments make an increase unlikely in Libya, Gabon, Algeria, and Nigeria. Foreign policy preferences, the kinds of imports needed, and basic market forces are other major factors that must be considered.

Iran is the most important importer of U.S. goods and services. Venezuela and Indonesia are also very important markets and may be overlooked by those watching only for trade opportunities in the Middle East. Because they have more diversified economies than many of the oil-dominated states, Indonesia and Venezuela are in a better position to purchase a wide variety of consumer and industrial products. Saudi Arabia and Iraq represent important markets of the machinery, transportation, and food types that are considered typical of OPEC states.

Ecuador and Nigeria are moderately large markets for U.S. goods in countries with new oil wealth, tremendous infrastructure needs, and potential for large consumer goods imports. Algeria will be a good market for heavy industry even though the United States is likely to have only a portion of total imports there.

TABLE 5  
 Projected U.S. Imports  
 by OPEC Countries for Selected Years  
 (Based on CACI's "Best Estimate")

<u>Country</u>	<u>% Imports from U.S.</u>	<u>Projected Imports in Bil. 1975 Dollars</u>	
		<u>1980</u>	<u>1985</u>
Algeria	7.2	.564	.676
Ecuador	33.1	.874	1.019
Gabon	5.5	.167	.167
Indonesia	18.5	1.706	2.675
Iran	16.5	4.511	5.036
Iraq	6.2	0.788	1.064
Kuwait	11.2	.368	.479
Libya	5.7	.353	.420
Nigeria	8.5	.735	.853
Qatar	10.0	.072	.101
Saudi Arabia	12.2	1.938	2.336
United Arab Emirates	13.0	.274	.415
Venezuela	37.9	2.812	2.733
Middle East and North Africa OPEC Total and Percent <sup>a</sup>		8.868 (58.5)	10.527 (58.6)
Total		15.162	17.974

<sup>a</sup> Includes only Algeria, Iran, Iraq, Kuwait, Libya, Qatar, Saudi Arabia and United Arab Emirates.

---

## POLICY IMPLICATIONS

---

This study was undertaken because forecasts of Organization of Petroleum Exporting Countries (OPEC) absorptive capacity have wide-ranging, substantive implications. The findings are relevant to a broad range of policy concerns, including the commercial, economic, and political arenas. This section of the Executive Summary briefly presents some implications of the study and considers various types of policy considerations simultaneously.

The results of our forecasts of economic growth within the 13 members of OPEC suggest that the North African and Middle Eastern members of OPEC may have been overemphasized as commercial and economic actors at the expense of OPEC members in Africa, Asia, and Latin America. By 1980 the combined gross domestic product (GDP) of the five OPEC states outside of the Middle East and North Africa (Ecuador, Gabon, Indonesia, Nigeria, and Venezuela) are forecast to equal 35 percent of the OPEC total. By 1985 they will equal over 38 percent. Indonesia and Nigeria, for example, are two of the fastest expanding OPEC economies. Together with Iran, they constitute over 50 percent of the combined OPEC GDP. By adding Venezuela as a fourth country, they comprise 60 percent of the combined total.

A similar situation is obtained in distributing imports across members of OPEC. The five African, Asian, and Latin American OPEC states are forecast to purchase over 30 percent of the total OPEC imports in both 1980 and 1985. Iran, Indonesia, and Nigeria account for 45 percent of the OPEC imports. With the addition of Venezuela, these four countries will import over 50 percent of the total goods and services purchased by the 13 major petroleum producers.

While the Middle Eastern and North African members of OPEC are clearly important commercial and economic actors and will remain so for the

foreseeable future, they may have been overemphasized in recent plans reacting to oil wealth. Hence, policy alternatives that focus on selected important members of the organization, regardless of their location, should be considered carefully.

Within OPEC as a group the central role of Iran as a commercial and economic actor should be emphasized. Iran's GDP and imports constitute over 25 percent of the total figures projected for the entire OPEC membership. It makes up around 40 percent of the GDP and imports of the North African and Middle Eastern members of OPEC. Hence, leaving aside Iran's traditionally active political posture, its sheer economic size makes it a critical part of the OPEC system and a crucial factor in diplomatic and economic efforts to deal with OPEC.

While the project did not focus on balance of payments questions, one of the implications of the forecasts is that the development prospects of the 13 OPEC states will vary greatly. Three sets of outcomes are considered likely. Three countries -- Algeria, Ecuador, and Indonesia -- are expected to have severe balance of payment deficits over the 1975-1985 forecast period as their ambitious development plans exceed the available revenues. A second group -- Gabon, Iran, Iraq, Nigeria, and Venezuela -- will have long-term balance of payments problems as oil revenues begin to decline at varying points over the next 10 years. Finally, Kuwait, Libya, Qatar, Saudi Arabia, and the United Arab Emirates are expected to accumulate long-term balance of payments surpluses as available revenues far exceed the demands of even the most optimistic of the development plans.

It is the second group that presents one of the most difficult circumstances for U.S. policy. Four of the most powerful "price hawks" within OPEC (Iran, Iraq, Nigeria, and Venezuela) are part of this group. One way for them to avoid revenue shortfalls that might threaten their elaborate development plans is to increase petroleum prices regularly. Yet two of these countries (Iran and Iraq) have substantial gas reserves that could provide the needed revenue at critical times over the next

decade, thus reducing some of the pressure for increasing petroleum prices. One alternative that should be considered very seriously is the use of U.S. and other Western technology to accelerate exploitation of the associated gases as one means to provide the needed revenue for development and ease the pressure for petroleum price increases.

These same groupings also suggest different development needs and hence potential cleavage lines in OPEC. Central to this analysis is the pivotal role of Saudi Arabia. Saudi Arabia provides the ultimate weapon in large-scale oil price changes (such as those of 1973-1974) through its gigantic oil reserves, production capacity, and large foreign exchange reserves. Should it wish to increase the price of oil through market mechanisms, Saudi Arabia can drastically cut its production and not slow its economic growth. Alternatively, the Saudi oil reserves and production capacity constitute a powerful market club against the price hawks that can dramatically undercut existing or planned price increases. In short, Saudi Arabia sits in a pivotal position on future energy cost and availability. This fact should be emphasized in U.S. policy discussions.

While Saudi Arabia must be assigned a central role in all U.S. dealings with OPEC, substantial commercial and economic opportunities also exist in the members of the second group of oil exporters (Gabon, Iran, Iraq, Nigeria, and Venezuela) where the elaborate development plans are likely to outstrip available revenues. Important commercial inroads can be made in these countries to increase the sale of U.S. goods and services.

Based on the most complete data for all trading partners available at the time of the study (1973), the U.S. trading share with the four largest countries ranged from 6.2 percent (Iraq) to 37.9 percent (Venezuela). Considerable commercial payoffs are available if the United States can increase its trade share in the countries that have available revenues and are moving rapidly to implement their development plans. The value of short- and long-term purchases with U.S. commercial concerns that have flexible financing arrangements should be reemphasized.

These arrangements will provide the countries with needed services on a pricing schedule that can be met even as revenues become relatively less available. They also will give U.S. companies a competitive edge in exporting technology and training skills needed in the area.

Finally, the central role of the export commodities in which the United States excels and for which the OPEC states are large buyers should be stressed. OPEC countries are expected to buy substantial quantities of machinery and transportation equipment, manufactured goods, food products, and chemicals. U.S. efforts should be focused in these areas, particularly where our advanced industrial and mass production technology, advanced mineral and resource extraction capabilities, and the products of our agro-industry are superior. The major OPEC countries are likely to be in the market for each of these commodities to meet the industrialization goals of the development plans, to expand domestic manufacturing capabilities, and to handle increasing consumer demands for more numerous and varied foodstuffs. Systematic marketing strategies focusing on selected countries (such as those in the second group) with selected products could greatly increase the share of the OPEC imports that come from the United States. The development of such a concentrated effort should be considered actively as U.S commercial policy is formulated.

---

## LIMITATIONS ON THE SCOPE OF THE STUDY

---

It is important to emphasize what this study has sought to do and what it has not attempted. This study fits into the group of research efforts investigating how OPEC countries will be paid. It is not an all-inclusive exercise. It is directed toward estimating OPEC imports over the coming decade. Consequently, it considers only one possible payment mechanism, offsetting trade flows. It does not consider other payments systems, for example, short-term capital flows, long-term capital flows, direct investment, or official settlements transactions. Alternate payment systems are not included in the analysis in an attempt to focus more directly on trade flows. Similarly, the question of how much OPEC will be paid is not included as a question for investigation although a most important set of assumptions regarding the magnitudes and time paths of oil payments was made. Thus, the study abstracts from, or treats by assumption, all aspects of the topics relating to how much will be paid to OPEC. Accordingly, the results of the study must be understood as conditional results, conditional on assumed oil payments.

The results summarized in this Executive Summary constitute an important element, but only one element, of an investigation of the international financial position of the OPEC members. Questions of oil production, oil revenues, internal absorption, and other means of revenue disposal are all closely interwoven. This study has examined only one facet of a very complex set of problems. Hence, other researchers may draw upon these findings to begin studies to investigate international currency rates, long- and short-term capital flows, alternative financial assets to attract surplus OPEC funds, or other related issues.

Similarly, the study has not questioned the stability of OPEC as an organization or possible motives among the OPEC members to promote or restrict future oil price increases or declines. Consideration of the

potential animosities or cooperative actions between oil exporters and oil importing countries has also been omitted. Properly viewed, this study has attempted to quantify that level of imports that OPEC members can internally absorb to benefit their own economies. The results presented here represent one approach to the capacity of the OPEC countries to absorb real goods and services over the next decade given existing information on the current economic conditions, societal needs, and national goals of the 13 members of OPEC.

The results reported in this study are the product of a complex forecasting model that focuses on government spending, the responses of the economy to alternative spending patterns, and alternative constraints to economic growth. Petroleum revenues, the largest revenue source for OPEC, are not forecast but are established by an independent projection. Consequently, the results of the forecasts for each country are conditional upon a particular revenue scenario that is presented in Volume III (Technical Appendices), Appendices A and B. Under different revenue projections, the forecasts of economic performance and import levels would be different for most countries.<sup>5</sup>

The actual structure of the forecasting model can be separated into two parts. The first part is the determination of government spending patterns and the second is the response of the economy. The separation provides a convenient framework for this discussion. More importantly, it follows from the remarks in earlier sections of this chapter. The forecast of each economy moves one year at a time into the future. At the start of each year, the government's spending program is established and cannot be altered during that year. Any changes in program emphasis must await the next year's spending program. The model then estimates

---

<sup>5</sup> Some care must be exercised in interpreting the amount of changed revenue required to constitute "a difference." For some countries, revenues (as projected) are a constraint on government spending and relatively small changes in either direction would alter the forecasts. For other countries, a dramatic decrease in projected revenues would be required before government spending would be affected. Iran and Saudi Arabia, respectively, are examples of each possibility.

the performance of the economy by estimating the performance of individual sectors. National accounts items (for example, consumption and investment) are estimated and compared to the sector's performances to develop the projected imports for the year. After all values of all variables are determined, the cycle is repeated.

Determining the government's spending program is the first element of the forecast cycle because the intention is to approximate the problems of decision-makers seeking to promote development without perfect foresight regarding the future of the economy. Two types of decisions are required to establish the government's spending for the year. First, the overall level of spending must be set. Second, the composition of spending is identified. The level of spending is determined by computing a moving, weighted average of previous years' (1 to 3) spending as a proportion of revenue. The resulting average is then applied to the projected revenue of the current year to generate the overall spending level.<sup>6</sup> Projected revenues are the sum of known oil revenues for the year and estimated non-oil revenues. Actual revenues are not known until the end of the forecast cycle for the year because non-oil receipts cannot be computed until the performance of the economy is known.

The second type of decision necessary to set the government's spending is the breakdown of spending into component programs. The hierarchy followed is a division between current and capital budgets followed by allocations within each budget. Some variation among classes within each budget exists but the essential elements of each are: public administration, defense, health and education, economic services, subsidies, and spending to promote the individual sectors of the economy. (The exact classes used for a particular country depend on the reporting system

---

<sup>6</sup> The discussion in the text describes the manner of computing the "historical patterns" of government spending associated with many of the forecasts presented in Volume II (Research Findings), Chapters 4-16. Within the computer program, it is possible to "override" parts or all of this computation, allowing an analyst to alter any one or all proportions, or to set directly the exact value of each item of spending.

employed by the country.) For each stage of the hierarchy, spending is computed by applying a moving, weighted average of past spending proportions to the total spending of the particular type.

The second part of the forecast cycle, estimating the economy's performance, is somewhat more complex and is accomplished in two interdependent phases. The actual output of the economy is developed on a sector-by-sector basis. Estimates of national income accounts variables are developed independently but are forced to be consistent with the sector projections. Within the forecast model, a computation loop is established to permit recalculations of output and income accounts variables until consistency is achieved. Within this section, forecasts of imports are developed, making the imports values consistent with other national accounts items and with sector output projections.

This process is followed for each year of the forecast period. If for any year the analyst chooses not to consider available labor supplies as a potential constraint on the economy, the estimation of economic performance is complete as described. If potential labor restrictions are to be considered, labor demands are computed and the labor force is distributed among the sectors of the economy. If there is a labor shortfall, the process is repeated to develop estimates of all variables consistent with lower output levels.

The labor constraint segment of the forecast model provides several complementary means of influencing the economy's performance. Critical variables that are always computed internally but may be exogenously set include: population growth, labor force participation, time trend variations in output per worker (aggregate and sector specific), and labor productivity increases dependent on past investment spending levels (aggregate and sector specific). In addition, immigration can be permitted up to any desired percentage of the labor force for each year. Finally, the demand based allocation of labor to the individual sectors can be voided in favor of a different pattern by specifying exact allocations to individual sectors.

The final step of the forecast for one year is to compute the actual revenue of the government. Oil revenues are known by assumption. Non-oil revenues are computed by employing the tax rates in effect and the performance (now known) of the non-oil sectors of the economy. If there is an imbalance (the most likely case) on the current year's budget, it is assumed that a surplus is invested in foreign assets or a deficit is covered by foreign borrowing. In either case, a 7 percent effective interest rate has been assumed.<sup>7</sup> Should there be a foreign debt, the model forces the following year's government spending program to reserve an amount sufficient to service the interest payment. The principle is not retired unless an explicit directive is instituted for the next year's spending allocations.

---

<sup>7</sup> Only the previous year's cumulative surplus earns interest. A cumulative surplus is applied to a current deficit before borrowing is enforced and a current surplus is applied to any outstanding debt before investment is permitted.