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THE ENERGY CRISIS AND THE LESS-DEVELOPED COUNTRIES

by

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Petroleum consumption and import requirements of the less-developed regions of the world are only a fraction of those of the major industrialized nations. This situation is but a reflection of the close association in our age between the stage of economic development and the level of petroleum consumption. The recent dramatic reversal of the international energy-petroleum situation has caught most less-developed countries still at the beginning of the development process involving transformation of their economic structures. The change, therefore, promises to have an even greater impact on their future economic development course and energy-petroleum requirements than on the already industrialized countries with well-established patterns of production and energy consumption. We will review the energy-petroleum position and perspectives of the less-developed countries in Asia, Latin America (including Caribbean area), Africa and the Middle East, with the exception of the few major oil producing and exporting countries, members of the Organization of Petroleum Exporting Countries (OPEC).

Current Position in Petroleum

The combined oil demand of non-OPEC less-developed countries (LDCs) comprised a mere 14 per cent of the combined oil demand of the United States, Western Europe and Japan in 1960, and only 12 per cent of the combined demand of all non-communist countries and regions of the world. (Table 1). In the first half of the 1960's, most LDCs developed at a much slower rate than Western Europe and Japan. Besides, petroleum consumption of the industrialized nations, including the United States, expanded at an even faster rate than their GNP because of the rapid substitution of oil for coal in their total energy requirements. As a result, the LDCs' proportion in the world oil consumption had dropped below 12 per cent by 1965.

Growth rates of petroleum consumption in Europe and Japan slackened somewhat in the second half of 1960's, while a number of LDCs, particularly in Asia and Latin America, sharply stepped up growth rates of their GNP and petroleum consumption. Economic development in the 1960's clearly meant a massive adoption of Western, petroleum-dependent technologies and patterns of urban living. Even so, in 1971, at the end of the "development decade," LDCs still accounted for only 13 per cent of the world oil consumption, a mere one percentage point increase from a decade ago (Table 1).

developed and
Economic disparity between /less-developed countries is revealed even more dramatically when we compare their per capita oil consumption. Thus in 1971, an average of 1.15 barrels per person was consumed in the less-developed countries, compared to 26.17 barrels per person in the United States, 13.15 barrels in Western Europe and 11.78 barrels in Japan, or an average of 16.90 barrels per person in all developed countries taken together.1/ Overall figures, however, conceal significant disparities in the levels of economic development and petroleum consumption between regions and individual countries.

Although the share of LDCs in the world's petroleum consumption hardly changed at all in the past decade, their share of the world's net petroleum imports significantly declined, from 13.4 per cent in 1960 to 9.9 per cent in 1965, and then to 9.1 per cent in 1971. The main reason for this divergence between the two trends lies in the rapid expansion of indigenous oil production in a number of LDCs, particularly during the second half of 1960's. In comparison, expansion of oil production in the industrialized countries was much slower, and the rates of expansion declined significantly in the second half of 1960's.

Among the less-developed parts of the world, Asia is by far the most populous, as well as the most rapidly developing region. This is reflected in the fact that growth rates of oil consumption are higher in Asia than in other regions. Asia also accounts for the largest proportion of the combined net oil imports of LDCs, almost 62 per cent of the total in 1971, and is the most dependent upon imports for its oil requirements. The region's net imports comprised 73 per cent of its petroleum consumption in 1960, and 78 per cent in both 1965 and 1971. (Table 2).

Besides Indonesia, which is a member of OPEC and a giant in oil production by regional standards, Brunei is the only other oil exporter in Asia at present. Malaysia, whose oil production in Sarawak and Sabah commenced only in 1971, is virtually self-sufficient in oil, and may soon become a small net exporter as well. At the moment, no other country in the region has such a hope. A massive search for offshore deposits in the region has been underway since 1970, but the results so far have not been too encouraging. The region's most rapidly developing countries, South Korea, Singapore, Taiwan and Thailand, all

1/ Population data from U.N. "Statistical Yearbook, 1972"; petroleum consumption data from the U.S. Department of the Interior, Bureau of Mines "International Petroleum Annual, 1971" March 1973.

lack indigenous energy resources and are almost totally dependent on oil imports for their energy needs. (Table 2).

India, the most populous country in the region, also ranks first in oil consumption and net oil imports. Her on-land oil production, which presently meets about a third of the domestic oil demand, has apparently reached its peak. Barring major discoveries off-shore and a significant cut-back in oil consumption growth rate (the country can probably make a greater use of its rich coal deposits), India's dependence on oil imports will most likely rapidly increase in years to come. Provided that she is able to procure the needed oil imports, their share in domestic oil consumption may reach as much as three-quarters by 1980.2/

Prospects for indigenous oil production look much brighter in Latin America. Nearly all large countries in the region have significant oil and other energy resources, and enjoy complete or near self-sufficiency in petroleum. (Table 3). Even so, the combined oil production in the region in 1972 was only half as large as that of Venezuela, the only major oil exporter and a member of OPEC in Latin America. Only Central America and the Caribbean (with exception of Trinidad) seem to be devoid of indigenous oil and other energy resources. The region as a whole exceeds the Asian region in oil consumption, but ranks second to it in net oil imports.

Besides Venezuela, four other countries in Latin America, Bolivia, Colombia, Ecuador and Trinidad, are presently net exporters of oil. Production in Colombia has been declining since 1970, resulting in a sharp drop in her oil exports, although both production and exports are increasing in Bolivia, Ecuador and Trinidad. (Table 3). At the moment, the highest expectations are centered on Ecuador, whose large new oilfield in the Amazon jungle commenced production in 1972, propelling the country into the ranks of net oil exporters. Oil production in Ecuador is expected to triple in 1973 over the 1972 level, and oil exports are expected to reach 145 million barrels a year by 1977, more than 15 times their 1971 level, and second largest after Venezuela in Latin America.

Two of the largest and the most developed countries in the region, Mexico and Argentina, are also the largest oil producers at the moment, and enjoy a virtual self-sufficiency in petroleum. In recent years, Mexico's oil consumption has been expanding almost twice as fast as indigenous production, resulting in the loss of her traditional role of a net oil exporter. With declining reserves-to-production ratio,

2/ Petroleum Press Service, April 1973, p. 141.

Mexico may soon lose her still remaining basic self-sufficiency in oil as well, unless exploration efforts are stepped up and the growth rate of oil consumption is reduced. Argentina, on the other hand, has just achieved a basic self-sufficiency. The country enjoys a healthy reserves-to-production ratio in oil, and is richly endowed with natural gas and coal, enough to assure her energy-petroleum self-sufficiency for many years to come.

Another major country in South America, Chile, may also be on the verge of becoming self-sufficient in oil. Considerable natural gas deposits have been discovered off shore in recent years and are being developed for production, while a giant oil-field has been reportedly discovered in the Straits of Magellan in 1973. Peru, once a net oil exporter, became a net importer in 1960's, but more recent discoveries have raised the hope that the country may again become self-sufficient in oil.

The largest country in Latin America, Brazil, is also its largest oil consumer and importer, accounting for almost a quarter of the region's total oil consumption and for a half ot its total net oil imports in 1971. (Table 3). Indigenous oil production in Brazil has been growing at the rate of almost 11 per cent a year. Although rich in may other minerals, Brazil is relatively poor in fossil fuels. She has, however, an enormous potential in hydropower, which is providing about 80 per cent of electric generating capacity. In a rapidly growing economy, it was inevitable that the share of petroleum in total energy consumption should rise, as it did, reaching about 50 per cent in 1972.[3/] There is little hope that Brazil may ever become self-sufficient in oil.

In comparison with Latin America, Africa and the Middle East (excluding members of OPEC and South Africa) are much less developed, as shown by the fact that their average per capita oil consumption in 1971 was only 0.96 barrels compared to 3.13 barrels in Latin America.[4/] The combined oil demand in the two regions in 1971 was the lowest of all less-developed regions of the world, accounting for only 15 per cent of the LDCs' total. (Table 1). The overall figures, however, conceal even greater intra-regional disparities in petroleum position in their case than in either Asia or Latin America.

3/ Frank Brandenburg e Associados "The Brazilian Economy in 1972", Brazil, 1972.

4/ U.N. "Statistical Yearbook, 1972"; U.S. Department of the Interior, "International Petroleum Annual, 1971".

Besides Algeria and Libya, two other countries in North Africa, Egypt and Tunisia, are presently net oil exporters. (Table 4). With recent discoveries in the Western Desert, Egypt's oil output is expected to continue increasing in years to come, and the country may continue to enjoy an appreciable exportable surplus. Prospects for increasing Tunisia's oil output and exports, however, appear to be poor. In the rest of North Africa, Morocco, which has a very small indigenous oil production, together with Mauritania and Sudan are and most probably will remain net oil importers. Besides Nigeria, the only countries in Sub-Saharan Africa presently producing and exporting oil are Angola and Gabon. There is a hope, however, that oil production may soon commence in Congo (Brazzaville) and Zaire as well. So far, no oil has been discovered in other parts of the African continent, but some areas have substantial hydropower potential.

While their neighbors in the region enjoy the largest oil reserves in the non-communist world, four Middle Eastern countries, Lebanon, Jordan, Yemen (Sanaa) and Yemen (Aden), have no oil of their own and depend on oil imports for most of their energy requirements. Syria, a net oil exporter since 1969, is the only other Arab country in the region which is not an OPEC member. Virtually all of Israel's oil production since 1967 has been from the Sinai oil-fields. (Table 4).

New Opportunities for Economic Development

Sharp discontinuity in the world energy-petroleum situation has made predictions of future oil demand in LDCs hazardous. Forecasting by a simple extrapolation of past growth rates of their energy and petroleum consumption and the relationship between GNP and energy demand will not suffice. The energy crisis will certainly have an early and far-reaching effect on economic perspectives of LDCs, on the rates and nature of their economic development, and consequently on their energy-petroleum needs. The effect will be direct, through steeply rising oil costs and tightening oil supplies and indirect, through changes induced by the energy crisis in other commodity markets and in the industrial structure of developed countries.

The new energy-petroleum situation confronts the energy-deficit industrial powers with the need to curtail further expansion of their energy-petroleum consumption, and thus threatens to slow down their economic growth. The effects on the less-developed countries, however, could be potentially just the opposite. Beyond the immediate difficulties that the energy crisis has created for some energy-deficit LDCs, it may soon open for most of them considerable new opportunities for accelerated economic growth.

In the past, under the conditions of declining energy costs and a strong buyer's market for petroleum and other mineral resources of LDCs, it was both possible and advantageous, from economic and political points of view, to locate mineral processing, material and energy-intensive industries in the industrialized countries, close to the principal consuming areas. Sharp increases in energy-petroleum and transportation costs, as well as the growing uncertainty of future oil supplies, combined with severe environmental constraints now existing in the industrialized countries, have radically altered this situation. Present conditions strongly favor location of processing and other energy and material-intensive industries, which are also among the most polluting, in the less-developed, less-congested areas, as close as possible to energy sources and mining sites. The countries that allow establishment of such industries within their borders may experience rapid increases in their domestic energy-petroleum requirements.

Less-developed countries with substantial indigenous petroleum and other exploitable energy resources will be in a particularly favorable position to take advantage of the new opportunities for industrialization. As the preceding survey of the LDCs' position in petroleum shows, even with the major oil producers - the members of OPEC - excluded, a significant number of them, particularly in Latin America and West Africa, are well endowed with oil and other energy resources.

Many LDCs are also well endowed with non-fuel mineral resources, metallic and non-metallic, and they may now have an opportunity to accelerate development of their mining and processing industries. Lack of sufficient local energy resources should not be an insurmountable obstacle for such a development. Processing industries are among the most energy-intensive, and the amount of energy needed to extract a unit of substance, metal, usually decreases more than proportionately to the increase in the grade of ore being processed. Rising energy costs thus tend to raise the value of mineral deposits of higher grade, giving their owners an important leverage for forcing the consumers to establish processing facilities close to the mining sites, and to lift import restrictions against processed materials. The producing countries would acquire a greater control over their resources, and would derive a greater benefit from their exploitation.

Even LDCs with mineral resources of average or below-average grade may offer a significant advantage as a site for processing facilities. Their location close to the site of mining would offer a saving in transportation costs which tend to rise more than proportionately to the rise in fuel costs. Furthermore, processing facilities in the less-developed countries would be able to use sulfur-rich fuels that are

cheaper and more abundant than low-sulfur fuels preferred by the industrialized nations. The practice of Indonesia and Malaysia which export their low-sulfur "sweet" crude petroleum to the developed countries, while importing for domestic consumption sulfur-rich "sour" crude from the Middle East is noteworthy in this respect. Indeed, the world-wide shortage of "sweet" crude and the growing environmental constraints in the principal oil-consuming industrial powers on the use "sour" crude are one of the key factors behind the current energy-petroleum crisis, which is in part a "sulfur crisis."

Largely for the same reasons, the energy crisis may also reduce the competitiveness of the remaining mining in the developed countries. This would happen not so much because of the rise in energy costs of the mining industry (which is not very energy-intensive), but mainly because of the expected sharp increase in the energy costs of processing low-grade domestic ores. The resulting decline in domestic mining may remove an important reason for maintaining large processing facilities in the developed countries, and that in turn would further accelerate the development of substitute facilities in LDCs.

Availability of energy and other mineral resources within a nation's borders, however, is no more a guarantee of successful development than is their absence a bar to economic progress. Indeed, during the past decade, a number of LDCs virtually without any indigenous energy and other mineral resources, were able to achieve high growth rates. South Korea's GNP, for example, was growing in real terms at the rate of 10.5 per cent a year in the second half of 1960's, while her exports were growing at an average rate of 40 per cent a year. The principal advantage of countries like South Korea, Singapore and Taiwan has been and still is an abundant, well-trained, disciplined, and yet relatively inexpensive labor, as well as relatively efficient administration and prudent, outward-looking economic policies that favor massive foreign investments. They have been able to attract a variety of labor-intensive manufacturing industries from developed countries that have experienced steeply rising labor costs.

The energy crisis promises to enhance the comparative advantage of such countries not only for the industries that are by nature labor-intensive, but also for those industries that can choose between a more labor-intensive, or more capital-intensive technologies. Almost invariably, capital-intensive technologies are also energy-intensive. Most heavy and engineering industries in the developed countries are in this category. Faced with growing labor shortages and costs, some of them

have been confronted in recent years with a difficult choice: to shut down domestic operations and to transfer existing facilities overseas, or to adopt a fully automated, highly energy-intensive technology. The energy crisis may help to tip their choice in favor of the first alternative. LDCs with well-developed infrastructure and trained labor would be able to offer such industries an opportunity to employ a more labor-intensive and less capital and energy-intensive technology, as well as to use cheaper and more abundant sulfur-rich fuels.

Those LDCs that are able to take advantage of the new opportunities for industrialization would experience a rapid growth of their energy-petroleum requirements. An indication of how fast energy-petroleum consumption can grow under such circumstances is provided by the experience of a few countries that have already taken advantage of similar opportunities. Thus, while totally lacking indigenous energy resources, South Korea increased her domestic oil consumption 7 times over in just 6 years between 1965 and 1971, Singapore increased it 4 times, Taiwan 3.6 times and Thailand 3 times. (Table 2). In Brazil, half of whose total energy requirements are met by other than oil energy resources, oil consumption almost doubled during the same period. (Table 3).

The energy petroleum-crisis has already resulted in an acute supply shortage and sharp price increases of various petroleum-based synthetic products, from fertilizers to plastics. Faced with growing uncertainty of future costs and supplies of petroleum feed-stocks, the synthetics industry has been unable to expand its production sufficiently to meet the growing demand for synthetic products, while more recent oil shortages have resulted in underutilization of already existing capacities. The expected deepening petroleum crisis in years to come may only worsen this situation, but it would improve the competitive position of various natural products that lost most of their traditional markets to synthetic substitutes in the past two decades.

We may thus witness the beginning of a new era of backward substitution of natural products for synthetics, which opens new perspectives for commercial cropping and plantation-type agriculture in LDCs. The success of a large-scale, efficiently run plantation industry in raising national income and helping to finance an ambitious economic development program, has been demonstrated by Malaysia and Thailand. Their natural rubber, palm oil, kenaf and other commercial crops have been able to compete against synthetics even prior to the recent changes in the international petroleum situation. Although highly labor-intensive, an effective, commercial cropping and plantation-type agriculture requires much wider

utilization of energy-petroleum-using equipment in cultivation, transportation and processing, and much greater use of various petroleum-based inputs than traditional, small scale farming. Those LDCs that take advantage of the new opportunities in this field would experience a rapid increase of energy-petroleum consumption by their agricultural sector.

As the above mentioned opportunities for the development of export-oriented industries and commercial agriculture materialize, the less-developed countries able to exploit them would experience rising incomes and domestic consumption demand giving a boost to all-around economic development. Growing energy-petroleum demand by the service household, transportation and other domestic sectors would add significantly to the demand by the export sectors. The total energy-petroleum demand by the entire less-developed world may grow at rates significantly higher than the historical rates experienced in 1960's or the rates that are being currently projected. The OECD Oil Committee forecasts that the total energy consumption will grow during 1970's at an average annual rate of 8.8 per cent in Asia, 8.1 per cent in Africa and 7.7 per cent in Latin America, with petroleum demand growing at 7.5 per cent, 7.8 per cent and 7.1 per cent respectively.5/ In the light of recent dramatic changes in the international energy-petroleum situation and new trends in the world economy, these projections may prove to be on the low side.

It is doubtful, however, that all LDCs would be able to benefit to an equal extent from the new opportunities, or that their energy-petroleum demand would grow at uniformly high rates. Substantial disparities in this respect can be expected not only between the resource-rich and resource-poor countries, but also among the countries within each of these groups. The transfer of processing and especially manufacturing capacities from a developed to a less-developed country entails the formation of close productive cooperation, or even vertical type integration between the industries concerned. Under the terms of the new partnership, a joint-venture type enterprise in the less-developed country would be provided not only with necessary technology, but also with necessary industrial inputs including fuels and with a guaranteed export market for its output.

Formation and successful operation of such a partnership would require an efficient administration with a minimum of red tape, prudent and outward-looking economic policies with minimum of restrictions on foreign investments and foreign commerce. Some LDCs, for various non-economic reasons, would not be able to join into the new partnership with

5/ OECD Oil Committee "Oil-The Present Situation and Future Prospects" Paris, 1973, pp. 48-49.

the industrialized nations, and thus would not be able to take full advantage of the new opportunities for economic development. Those among them that also lack sufficient indigenous fuels and other mineral resources, could face an increasing difficulty in meeting rising costs of imported fuel and critical industrial inputs, or in making long-term arrangements for their supplies. Largely for these reasons, some LDCs already suffer declining capacity-utilization in industries that were developed in the past on the mistaken expectation that the costs of fuels and other imports would continue to decline. Clearly, under the new economic conditions now emerging in the world, the cost of economic nationalism and unsound economic policies, especially in the resource-deficit countries, means economic stagnation and possibly decline.

Table 1: Energy-Deficit Countries and Regions:[1/] Petroleum Production, Net Imports, Consumption in (10^6Bbl./Yr.) and Average Annual Rates of Change in (per cent)

Production	1960 (%)	1965 (%)	1971 (%)	1961-65	1966-71
United States	2989 (85.5)	3322 (82.8)	4072 (76.3)	+ 2.2	+ 3.4
Western Europe	101 (2.9)	142 (3.5)	157 (2.9)	+ 6.9	+ 1.7
Japan	4 (.1)	5 (.1)	6 (.1)	+ 5.8	+ 2.3
Sub-total:	3094 (88.5)	3469 (86.4)	4235 (79.3)	+ 2.3	+ 3.4
Asia	44	60	139	+ 6.1	+15.1
Latin America	323	417	547	+ 5.2	+ 4.7
Africa	32	60	223	+14.1	+24.6
Middle East	1	1.5	81	+10.0	+94.0
Sub-total:	401 (11.4)	538 (13.4)	991 (18.5)	+ 6.1	+10.7
Australia		3	113 (2.1		+92.0
TOTAL	3495 (100)	4010 (100)	5339 (100)	+ 2.8	+ 4.9
Net Imports					
United States	547(21.3)	804(17.1)	1351 (15.9)	+ 8.0	+ 9.1
Western Europe	1307(51.0)	2612(55.5)	4700 (55.3)	+14.8	+10.3
Japan	239(9.3)	631(13.4)	1487 (17.5)	+21.5	+15.4
Sub-total:	2093(81.6)	4047(86.0)	7538 (88.6)	+14.1	+10.9
Asia	122(4.7)	208(4.4)	479 (5.6)	+11.3	+14.9
Latin America	93(3.6)	107(2.3)	329 (3.8)	+ 2.8	+20.0
Africa	67(2.6)	82(1.7)	-42	+ 4.0	
Middle East	62(2.4)	70(1.5)	8 (.1)	+ 2.6	-44.5
Sub-total:	344(13.4)	467 (9.9)	772 (9.1)	+ 6.3	+ 8.8
Australia, New Zealand & S.Africa	124(4.8)	193 (14.1)	193 (2.2)	+ 9.3	
TOTAL	2561(100)	4707 (100)	8505 (100)	+12.9	+10.4
Consumption					
United States	3536(58.4)	4126(47.3)	5418(40.0)	+ 3.1	+ 4.7
Western Europe	1409(23.3)	2753(31.5)	4858(35.9)	+14.3	+ 9.9
Japan	242(4.0)	636(7.3)	1237(9.1)	+21.5	+11.7
Sub-total:	5187(85.6)	7515(86.1)	11513(85.0)	+ 7.7	+ 7.4
Asia	166(2.0)	267(3.0)	608(4.5)	+ 9.9	+14.7
Latin America	426(7.0)	537(6.1)	852(6.3)	+ 4.7	+ 8.0
Africa	91(1.5)	135(1.5)	172(1.3)	+ 8.2	+ 4.8
Middle East	63(1.0)	79(.9)	89(.6)	+ 4.7	+ 2.0
Sub-total:	746(12.3)	1018(11.7)	1721(12.7)	+ 6.4	+ 9.1
Australia,New Zealand & S.Africa	124(2.0)	196(2.2)	307(2.3)	+ 9.6	+ 7.8
TOTAL	6057(100)	8729(100)	13541(100)	+ 7.6	+ 7.6

1/ Except: Canada, members of Organization of Petroleum Exporting Countries (OPEC), and Communist countries.

Sources: See Table 2. It will be noted that production plus net imports do not equal consumption in all cases because of unexplained discrepancies in the sources employed. In these cases the magnitudes must be considered approximations.

Table 2: Asian Countries:[1] Petroleum Production, Net Imports or Exports and Consumption in (10^6Bbl./Yr.) and Average Annual Rate of Change in (per cent)

	Million Bbl./Year Production				Net Imports or Exports(-)			Million Bbl./Year Consumption		
	1960	1965	1971	1972	1960	1965	1971	1960	1965	1971
Brunei	34.1	29.3	47.5	67.2	-33.4	-28.7	-46.3	.7	.6	1.2
Burma	3.7	3.7	6.7	7.3	.5	1.3	2.1	4.2	5.0	8.7
India	3.7	22.3	55.1	54.8	52.9	62.7	109.7	56.6	85.0	154.7
Malaysia	.8	.8	25.4	33.8	13.5	27.2	3.3	14.3	28.0	30.6
Pakistan	2.2	3.6	3.6	3.1	14.5	23.0	25.1	16.7	26.6	26.9
Taiwan			.8	.8	7.9	13.1	48.5	7.9	13.1	48.2
Hong Kong					8.5	14.1	29.5	8.5	14.1	28.9
Philippines					19.6	33.7	61.3	19.6	33.7	61.9
Singapore					13.1	17.2	68.2	13.1	17.2	68.2
South Korea					4.9	12.0	97.1	4.9	12.0	84.6
Thailand					8.6	17.8	45.8	8.6	17.8	51.4
Other					11.2	14.3	35.0	11.2	14.3	35.0
Total	44.5	59.7	139.1	167.0	121.8	207.7	479.3	166.3	267.4	608.4

	Av. Change/Year		Net Imports		Av. Change/Yea	
	1961-65	1966-71	1961-65	1966-71	1961-65	1966-7
Brunei	- 2.6	+ 8.4			- 3.1	+12.3
Burma		+10.4	+21.0	+ 8.3	+ 3.6	+ 9.7
India	+43.5	+16.3	+ 3.5	+ 9.7	+ 8.5	+10.5
Malaysia		+77.0	+15.0	-42.0	+14.4	+ 1.5
Pakistan[2]	+10.3		+ 9.7	+ 5.6	+ 9.8	+ 4.0
Taiwan			+10.6	+24.5	+10.6	+24.7
Hong Kong			+10.6	+13.1	+10.6	+12.7
Philippines			+11.4	+10.5	+11.4	+10.7
Singapore			+ 5.6	+26.0	+ 5.6	+28.5
South Korea			+19.6	+43.0	+19.6	+38.7
Thailand			+15.7	+17.0	+15.6	+19.4
Other			+ 5.0	+12.0	+ 5.0	+12.0
Total	+ 6.1	+15.1	+11.3	+14.9	+ 9.9	+14.7

1/ Excluding Indonesia
2/ Including Bangladesh

Sources: U.S. Department of the Interior, Bureau of Mines "International Petroleum Annual, 1971" March 1973;
U.S. Department of the Interior, Geological Survey "Summary Petroleum and Selected Mineral Statistics for 120 countries, Including Offshore Areas" 1973;
Joel Darmstadter "Energy in the World Economy" Resources for the Future, Inc., 1971;
Petroleum Press Service, August 1973, p.294.

Table 3: Latin America and Caribbean:[1/] Petroleum Production Net Imports or Exports and Consumption in (10^6 Bbl./Yr.) and Average Annual Rates of Change in (per cent)

	Million Bbl./Year Production				Net Imports or Exports(-)			Million Bbl./Year Consumption		
	1960	1965	1971	1972	1960	1965	1971	1960	1965	1971
Argentina	65.6	100.9	154.5	158.5	36.3	25.1	23.1	101.9	126.0	156.5
Bolivia	3.8	3.5	13.4	16.4	-1.0	-.2	-8.3	2.8	3.3	4.4
Brazil	28.3	32.8	61.3	60.4	66.3	79.9	157.2	94.6	112.7	205.4
Colombia	54.3	71.7	78.6	71.0	-34.2	-44.3	-25.5	20.1	27.4	55.9
Chile	7.5	14.4	12.9	12.6	9.7	10.8	27.8	17.2	25.2	40.7
Ecuador	2.9	3.0	1.3	29.1	1.8	2.5	9.5	4.7	5.5	10.1
Mexico	99.0	117.9	155.7	162.0	-3.4	-15.7	5.2	105.4	116.0	188.9
Peru	20.1	23.9	22.6	24.0	-1.5	1.5	14.0	18.6	25.4	37.7
Trinidad	42.0	48.5	47.1	50.4	-25.6	-25.9	-28.4	16.4	22.6	18.2
Other					44.8	73.3	154.1	44.8	73.3	134.7
Total	323.5	416.6	547.4	584.4	93.2	107.2	328.7	426.5	537.4	852.5

	Av.Change/Year		Net Imports		Av.Change/Year	
	1961-65	1966-71	1961-65	1966-71	1961-65	1966-71
Argentina	+ 9.0	+ 7.4	-7.5	- 1.4	+4.4	+ 3.7
Bolivia	- 1.6	+25.2			+3.3	+4.9
Brazil	+ 3.0	+11.7	+3.8	+11.9	+3.6	+10.6
Colombia	+ 5.8	+ 1.5			+6.4	+12.6
Chile	+13.9	- 1.8	+2.2	+17.1	+7.9	+ 8.3
Ecuador	+ .7	+15.0	+6.8	+24.8	+3.2	+10.7
Mexico	+ 3.6	+ 4.7			+2.0	+ 8.5
Peru	+ 3.5	- 1.0		+45.0	+6.4	+ 6.8
Trinidad	+ 2.9	- .4			+6.6	- 3.7
Total	+ 5.2	+ 4.7	+2.8	+20.6	+4.7	+ 8.0

1/ Excluding Venezuela

Sources: Same as in Table 2. Also see footnote to Table 1 on discrepancies in data.

Table 4: Non-OPEC Africa and Middle East:[1] Petroleum Production, Net Imports or Exports and Consumption in (10^6Bbl./Yr.) and Average Annual Rates of Change in (per cent)

	Million Bbl./Year Production				Net Imports or Exports(-)			Million Bbl./Year Consumption		
	1960	1965	1971	1972	1960	1965	1971	1960	1965	1971
Africa										
Egypt	24.2	45.7	107.4	73.6	17.5	7.7	-58.3	34.3	46.8	47.3
Tunisia			32.3	30.6	3.1	5.8	-18.2	3.8	5.7	10.2
Angola	.7	5.0	41.0	49.7	.9		-34.0	1.6	3.9	4.9
Gabon	5.8	8.6	41.8	46.9	-4.5	-8.1	-35.0	.3	.5	7.2
Other Africa:	1.0	1.0	.5	.6	51.0	76.3	103.1	51.2	78.3	102.9
Total	31.7	60.3	223.0	201.4	67.1	81.7	-42.4	91.2	135.2	172.5
Middle East										
Syria			36.5	42.4	6.4	8.0	-17.5	6.4	8.0	19.0
Israel	.9	1.5	1.1	.3	12.3	20.8	-3.9	13.2	22.3	40.7
Sinai[2]			43.5	38.6						
Other					43.2	48.7	29.1	43.2	48.7	29.1
Total	.9	1.5	81.1	81.3	61.9	70.3	7.7	62.8	79.0	88.8

	Av. Change/Year		Net Imports		Av. Change/Year	
	1961-65	1966-71	1961-65	1966-71	1961-65	1966-71
Africa						
Egypt	+13.5	+15.3	-17.5		+6.4	+.2
Tunisia			+13.3		+8.5	+10.2
Angola	+48.0	+42.0			+19.5	+ 3.9
Gabon	+ 8.2	+30.5			+10.8	+55.5
Other:					+ 8.4	+ 5.2
Total	+14.1	+24.6	+ 4.0		+ 8.2	+ 4.2
Middle East	+10.8	+94.0	+ 2.6	+44.5	+ 4.7	+ 2.0

1/ Other than members of the Organization of Petroleum Exporting Countries that comprise in Africa of: Algeria, Libya and Nigeria; in the Middle East of: Bahrain, Iran, Iraq, Kuwait, Oman, Qatar, Saudi Arabia, and United Arab Emirates.

2/ Occupied Sinai.

Sources: Same as in Table 2. Also see note to Table 1 on discrepancies in data.