

# Development Prospects of the Capital-Surplus Oil-Exporting Countries

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Staff Working Paper No. 483

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DEVELOPMENT PROSPECTS OF THE CAPITAL-SURPLUS OIL-EXPORTING COUNTRIES:  
IRAQ, KUWAIT, LIBYA, SAUDI ARABIA, QATAR, UNITED ARAB EMIRATES

A Background Study for World Development Report 1981

The objective of this paper is to provide an assessment of the political and economic factors that are likely to determine, in the next five years, the absorptive capacity for investment and consumption in the capital-surplus oil-exporting countries, in order to evaluate the prospective size of their oil surplus under specific assumptions of oil export volumes and oil prices.

Starting with an analysis of the notion that the volume of oil production, beyond a specific point for each country, is of a discretionary nature (Section I), the paper proceeds to review the experience of the oil-surplus countries during the last seven years in absorbing an ever-growing amount of oil income for the rapid development of their economies and for creating a domestic income base for the post-oil era (Section II). The results of this experience, as well as its side effects (inflationary pressures, mounting requirements of immigrant labor) and their political and economic implications, are then reviewed in the context of different resource endowments and societal structures, with a view to understanding the likely posture to be taken by the governments in the coming years with regard to development and expenditure policies (Sections III, IV, and V).

The paper concludes with a prognosis of likely levels of total oil income, domestic absorptions, and oil surpluses (discretionary income) for the six countries (Section VI).

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The author is greatly indebted to Goran Segerlund who, partly assisted by Elizabeth Gross, carried out all the computations and data aggregations, as well as the projections shown in the Annex, thus providing much of the quantitative framework for the study.

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## Acronyms and Abbreviations

IBRD	International Bank for Reconstruction and Development (World Bank)
IMF	International Monetary Fund
LPG	Liquid petroleum gas
LNG	Liquid natural gas
mbd	Million barrels a day
OECD	Organisation for Economic Co-operation and Development
OPEC	Organisation of Petroleum-Exporting Countries
UAE	United Arab Emirates

## I. DISCRETIONARY OIL

Production and export of oil can be termed discretionary if its supply can be reduced or increased without any significant consequences on the economy of the supplying country. For a long time, Saudi Arabia has been the outstanding example of an oil-exporting country which produced far less oil than its production capacity would allow. In this position it was considered by the oil-importing countries as the principal "swing supplier," adjusting its production upward or downward in response to changes in world demand, vis-a-vis a supply that was otherwise fixed to the extent that all other oil-exporting countries were operating at full capacity, or alternatively, to changes in total supply due to supply interruptions in other oil-exporting countries. Saudi Arabia could open or close the oil tap at the government's discretion since it was producing, during the 1970s, below capacity and above the foreign exchange requirements of the domestic economy.

A different meaning of discretionary production has evolved, however, between the first and the second oil price increase. In the first place, Saudi Arabia, while still a swing supplier, has lost much of its upward room of maneuver as the assessment of sustainable capacity went down and production went up, especially since 1978. In the second place, a small group of other countries within the Organization of Oil-Exporting Countries (OPEC) emerged whose capital surpluses were of a size to remain substantially beyond domestic absorption and, after the second round of oil price increases in 1979, reached amounts that raised questions by the recipients about their desirability. The "recycling" of these surpluses, while crucially important from the point of view of the deficit countries, has come to be seen by the surplus countries as both burdensome and unrewarding. Rates of return on these assets, after inflation and currency depreciations, have been unsatisfactory in the 1974-79 period; at the same time, the development of the world oil market, especially since 1979, holds out the prospects for further continued price increases for three reasons. One is the increasingly firm expectation for continued slowness and increasing cost of technological substitution. The second is the consolidation of the sellers' market position of OPEC as Saudi Arabia's production reached capacity. The third is related to the recognition on the part of the importing countries that, world production capacity being near its limits, any supply projection model will need a built-in coefficient for the probability of supply interruptions triggering new pressures on prices.

As a consequence, the real rates of return on recycled surpluses experienced in the past are now compared at a much higher level of clarity with the likely future appreciation of oil in the ground. This new awareness, in quantitative terms, of the option of investing in future oil instead of foreign securities has already led some of the smaller capital-surplus oil-exporting countries in 1980 either to announce cutbacks in production or actually to cut back production.

The ability to exercise this option is determined by the present and future domestic capital requirements. Above this level, generation of capital surpluses by producing oil up to production capacity is at the discretion of the governments. In this sense, all six countries of the group (Saudi Arabia, United Arab Emirates (UAE), Kuwait, Libya, Iraq and Qatar) are discretionary oil producers, with the temporary exception, by force majeure, of Iraq.

Within the range of discretionary oil production, the actual level will, of course, depend not only on perception of alternative rates of return and differences of risk, but also on the evaluation of the likely effects of any discretionary change on the world economy and the political scene in the Middle East. For example, too large a cutback in oil production, by inducing another round of inflation and recession, would have adverse effects on the investments already held by the oil-surplus countries in the industrialized world. These assets, already over US\$300 billion ("billion" is equivalent to "thousand million"), will increase more rapidly in the coming years than they have ever done in the past.

Political factors are equally important. In the majority of the six countries there exist a certain solidarity with Western society and its values and a degree of responsible commitment to an orderly development of the world economy, even though the two socialist countries (Iraq and Libya) are motivated somewhat differently from others with respect to the use of oil production and pricing policies. The political and ideological alignments in and between the various countries in the Middle East are complex, and no judgement is attempted here on the prospect for the discretionary oil producers to align themselves on political or any other motivation for parallel action in the area of oil supply. So far, discretion has been applied in opposite directions by different members of the group (e.g., Kuwait reducing it, Saudi Arabia increasing it to push world supply higher than world demand for over a year).

It is clear on the one hand that any discretionary reduction of supplies, motivated by preference for real assets over recycled assets, will by itself be a factor to maintain or increase the upward pressure on the market price of oil, and thus reinforce that same preference through revaluation of the asset in the ground and devaluation of the recycled asset (through oil-price-induced inflation). On the other hand, the larger the accumulated surpluses become, the greater the stake in maintaining their value. A balance between different stakes will be perceived at one or the other level of reality and of expectation and will also depend on the time perspective for the depletion of a country's oil reserves.

If discretionary oil is defined as that part of total oil exports which generates a surplus in the balance of payments available for recycling, discretionary oil in 1980 was more than 8 million barrels a day (mbd) at prevailing prices, which is almost half of total 1979 exports by the six countries, or 30 percent of total OPEC exports. This is a very large amount potentially available for reduction, but it is a direct function of the 1979 doubling of oil prices. As domestic absorptive capacity continues to grow at rates that will overtake the rate of oil income growth, the discretionary part of oil exports will diminish again, as happened in the 1973-78 period, at the end of which discretionary oil was about 4 mbd.

There is a significant difference in the nature of the discretionary oil income in 1980 compared with 1974. At that time, the emergence

of large surpluses preceded any worked-out plans for their disposition either through domestic absorption or through investment abroad. There was no real-life experience on which to base estimates for future growth in domestic absorption, and therefore there was no basis to question the economic rationality of obtaining a surplus of the size that was obtained. There also was less than full certainty that the prices, after being quadrupled, would actually stick. Finally, the phenomenon of "stagflation" that occurred in industrialized countries after 1974, combined with dramatic exchange rate movements between major currencies, could not have been predicted but had a negative effect on the economics of oil surplus disposition.

In 1980, the production of discretionary oil was undertaken with much greater consciousness of its discretionary nature, of the risks of accumulating fixed-income-yielding assets in an inflationary world, and of the likely future consolidation of the sellers' market position of the oil exporters. Future production of discretionary oil will be governed by a backward-sloping supply curve, subject only to less easily determined countervailing factors such as the economic and political stake in an orderly progression of the economies of the Organisation for Economic Co-operation and Development (OECD).

## II. DIVERSIFICATION

When the gates of prosperity were opened wide for the oil-producing countries in 1974, the accrual of sudden wealth immediately led them to calculate its duration. Especially in the Gulf countries, with a tradition of Bedouin poverty and frugality many centuries old, a 30 or 50 year lifetime of oil reserves is seen by many as a short period in history.

The fact did not escape the oil-surplus countries that the dramatic additions to their national incomes from the oil price increase still left their economies outside the oilfields in a state of underdevelopment; that their high per capita GNP figures, widely publicized, vastly misrepresented the actual situation for the majority of their populations; that any event that would devalue their oil might bring financial disaster and evoke the spectre of a society of nomads and merchants in the condition before the gates of prosperity were opened; and, in any case, that the oil would run out within the lifetime of the present generation (Qatar, Libya, Iraq), their children (UAE), or their grandchildren (Saudi Arabia, Kuwait).

Hence the urge for economic development outside of oil, or economic diversification. It is instructive to juxtapose this objective with the alternative avenue in the hypothetical case where oil reserves would be everlasting. In that case, economic diversification would be pointless, and the objective for the governments would be to institute mechanisms for an effective and continuous "trickle-down" of oil revenues

to the totality of their populations, so as to uplift their standard of living to what current per capita income statistics purport. This avenue would be tantamount to acknowledging that all the people living on the land are collectively the owners of the oil under the ground, and, if the oil were everlasting, would be entitled to the perpetual rent accruing therefrom.

As will be noted later on, the presence of the rent concept, however modified and diminished by the non-everlasting nature of the oil reserves, tends to interfere with the objective of diversification, inasmuch as any trickle-down of rent to domestic labor will tend to incapacitate the function of that labor as a factor of production in a diversified economy that is exposed to international competition. This effect operates either by adversely affecting the work motivation, and therefore productivity, or by causing wage income to rise to levels that will price the employers out of their market, or both. For this and other reasons, economic diversification and income distributional objectives will tend to conflict with each other in the oil-surplus countries to the extent that a claim on the part of the people on the oil rent is either tacitly acknowledged by the governments or might explicitly be voiced by the working people. The situation is somewhat complicated on the one hand by the presence of increasingly large numbers of expatriate workers from low-income countries, which, at least so far, has tended to keep general wage levels from rising too fast; on the other hand, the presence of large numbers of expatriates from high-income countries has tended to create a demonstration effect of the opposite kind.

In any case, economic diversification means the creation of a viable modern economy outside of oil that will sustain a relatively high income level after the end of the oil era. Such an economy is achieved by maintaining extremely high ratios of investment to non-oil GDP for a long time while at the same time sustaining a maximum effort, in terms of expenditure, for manpower development and education. These extremely high levels stand out as the principal difference between economic development in other developing countries and in the oil-surplus countries.

The accumulation of physical capital has elsewhere traditionally taken place at the cost of consumption. In the countries described here, savings generated in the non-oil domestic economy play a negligible role in generating funds for investment. Such domestic savings as do occur are in most cases partly offset or more than offset by consumption subsidies transferred from the oil sector through the government. Savings for investment then acquire a meaning applicable nowhere else: in simplified terms, nobody saves by foregoing consumption, but savings accrue from the oil enclave sector in such amount that the capital available for investment at all times exceeds physical and economic possibilities of investment. In other words, at the margin of investment the savings available are always unlimited, and the domestic opportunity cost of capital falls to zero. (See Table 1 on domestic revenue absorption in the oil-surplus countries.)

Table 1

AGGREGATE DOMESTIC REVENUE ABSORPTION						
(US\$ billion)						
	1973	1974	1975	1976	1977	1978
Non-oil GDP	14.6	22.5	31.5	42.2	53.5	63.6
Oil Revenue	17.8	62.1	56.2	71.2	81.1	73.7
Investment	5.8	11.7	20.2	26.4	35.1	41.1
Total Domestic						
Absorption	13.5	20.3	27.5	37.2	50.7	55.2
Absorption as						
% of Non-oil GDP	92	90	87	88	95	87

Source: Annex Tables A.4 and A.6.

The process of economic development under these conditions will be subject to the phenomenon of absorptive capacity being limited by non-financial factors, will be accompanied by inflation, and will induce massive immigration. These three topics will be pursued in the next three chapters. In what follows, the economic development of the non-oil productive sectors, mainly manufacturing industry and construction, will be described for the period 1973-78.

Most of the countries in the group have two principal constraints for balanced growth of their economies: very limited availability of agricultural land, and, with the exception of Iraq, very limited supply of domestic labor. There is no scope for any significant development of agriculture in Kuwait, Qatar, and the Emirates. In Saudi Arabia, it is very limited and made more difficult by the deterioration of the agricultural terms of trade, as well as by the exodus to more remunerative urban occupations. The limitations of domestic labor supply, a pervasive feature for these countries, was overcome in the first boom period 1974-78 by massive importation of expatriate labor. The issue of resuming a similarly massive inflow after 1980 is a delicate and many-faceted problem.

In the circumstances given by these physical limitations, diversification of the domestic economy largely means, in descending order of importance, investment in: (a) infrastructure, (b) capital-intensive industries, (c) supporting industries, and (d) productive services (trade, transport, banking, hotels, etc.).

In the first boom and till the end of the 1970s, the countries of the group devoted a large proportion of total investment to the building up of the physical and social infrastructure, especially housing, roads, ports, electricity, and water. A relatively smaller proportion went for investment in productive sectors for diversification. This observation is

less true for Kuwait and Iraq than for the other four countries because the infrastructure of these two was more developed and their requirements for additional housing was less.

Diversification can be measured by the rate of growth of the productive sectors of the economy outside of petroleum. In these terms, the oil-surplus countries have made remarkable progress in the period 1973-78. As shown in Table 2, their non-oil GDP expanded at an annual rate of about 35 percent in current prices; appropriate GDP deflators are not available in most cases, but a rough estimate suggests that for the six countries the average real rate of growth may have been 15 percent a year. It was higher in Saudi Arabia and lower in Kuwait.

Table 2

AGGREGATE GDP BY INDUSTRIAL ORIGIN, 1973 AND 1978 (current US\$ million)						
	1973	Percent 1973	1978	Percent 1978	Growth Rate	Real Growth Estimate
Agriculture	1,336	9	2,973	5	17.3	5
Manufacturing	2,640	19	7,130	11	22.0	12
Construction	2,057	15	16,351	26	51.4	30
Electricity/Water	246	2	605	1	19.7	15
Services incl. Government	<u>7,852</u>	<u>55</u>	<u>35,343</u>	<u>57</u>	<u>35.1</u>	<u>12</u>
Non-Oil GDP	14,131	100	62,402	100	34.6	15
Non-Oil GDP p.cap.	677		2,398		28.8	9

Source: World Bank estimates.

The most rapid advance took place in the construction sector, while manufacturing industry expanded at a slower pace than all other sectors except agriculture.

Manufacturing Industry. The direction of the industrialization process so far pursued in the oil-surplus countries can broadly be divided into capital-intensive, hydrocarbon-related export industries on the one hand and more average labor-intensive industries, largely producing for the domestic or regional markets, on the other. The former category includes petroleum refineries, petrochemical industries, liquid petroleum gas and liquid natural gas (LPG and LNG) plants, and aluminum smelting and steel-making industries. The latter includes building materials and equipment industries, ship repair, metal engineering and electrical industries including repair and parts manufacturing, appliances, and food industries.

It is a happy coincidence for the oil-rich countries with small populations that hydrocarbon industries are by and large extremely capital intensive, a fact that provides an almost perfect fit to their resource endowment: low-cost hydrocarbon, in some cases with zero opportunity cost for flared gas, capital abundance, and scarce domestic labor. However, for an important range of petrochemical products (especially methanol) the period 1974-79 has been a period of prospective world excess production capacity (with additional excess capacity still coming on stream in Western Europe), low prices, and lack of partners ready to enter into new large-scale ventures requiring their technology that would compete against themselves. These problems gradually diminished, and by the end of the decade a considerable number of large petrochemical projects reached the construction or contract stage in Saudi Arabia, Kuwait, Iraq, and other oil-surplus countries, with a prospect of coming on stream at a time when world excess capacity will begin to disappear. A methanol plant went on stream in Libya in 1978.

Gas liquefaction for export is an expensive process and requires expensive transportation; it therefore cannot compare in profitability with oil. Still, the prospect of a reasonable return has induced several oil-surplus producers to aim at using all of the previously wasted petroleum gas for this purpose. Plants were completed in Kuwait, Qatar, the Emirates, and Libya (both LPG and LNG) and were initiated in Saudi Arabia and Iraq. Except in Saudi Arabia, many more plants cannot be expected in the future because the quantity of the gas available is a function of the quantity of oil produced, and Kuwait for example will operate its LPG plant at less than half of capacity after cutting back oil production to 1.5 mbd. The liquefaction of non-associated natural gas is economically less attractive at present since this resource, if not extracted, is not wasted and will appreciate if left in the ground.

Basic metal industries are more labor intensive than petrochemicals and have therefore never been considered (e.g., by Kuwait). However, aluminum smelters were built in the UAE and in Bahrain, and steel mills in Qatar and Iraq. Saudi Arabia will construct a steel mill during the current five-year plan.

The second category of industries, generally smaller in scale and more domestic market-oriented and typically more labor-intensive, has the advantage that it tends much more to engage domestic entrepreneurship because it depends much less on highly sophisticated technology involving, e.g., long-term technical management and marketing contracts, as in the case of petrochemicals. Diversification has much more meaning if it implies the development of indigenous entrepreneurship and skills.

Given the fact that historically the moneyed class in the Gulf was the merchant class, it is not surprising that manufacturing enterprises were not the first ventures to spring into being in the wake of the oil bonanza. Rather, the phenomenal growth of import demand provided far more lucrative opportunities in new trade agencies and expansion of existing

merchant houses. Furthermore, the communities of importers--represented in Chambers of Commerce, and generally constituting powerful interest groups --regarded the importation of an article as far more interesting than its domestic production and tended, in asserting their vested interests, to retard the advent of industrialization to some degree. Such manufacturing industries as did come into being were often opportunities for nationals to become silent partners in ventures that were officially encouraged and provided with easy finance. Others started as sidelines of import businesses. Larger projects were incorporated under government sponsorship. All of them, however, imported most of the skilled as well as the unskilled labor, except in Iraq.

By all standards of developing countries, the discretionary oil producers have shown a fairly rapid growth of manufacturing industries (other than hydrocarbon-based industries) in spite of the psychological and commercial constraints referred to above. Since this had led to what might be called foreign enclaves (imported capital equipment, imported raw materials, imported management, imported labor), the question of their future viability is perhaps not as pressing for the policymakers as is the question of the socio-political feasibility of ever-growing foreign enclaves. Several governments, before the second 1979 oil price increase, were beginning to ponder the budgetary implications of providing free health and education services, subsidized housing and electricity, and other consumer subsidies to a rapidly expanding expatriate population, and whether the social cost of foreign labor, if added to their wages, might not in some cases exceed the value added in production and therefore nullify the objectives of diversification. While most of these industries may be competitive with imports or in export markets, this might well be due to the absence of taxation, the availability of concessional credit, heavily subsidized power, free gas, free infrastructure layout, and other props. If diversification means the creation of a viable economy without oil, it means it would have to stand on its own without subsidies, pay taxes, and not have the benefit of cheap wages made possible by increasingly heavy subsidization of consumer prices.

With the advent of the second oil bonanza, some of these concerns of an economic nature have again receded into the background and given way to the more fundamental assertion that there simply is no other way to diversify than through industrialization. All the while the political concern remains about the perpetual advance of the expatriate work force.

It must be assumed that, while these concerns linger on, the general laissez-faire free enterprise philosophy of the Gulf countries will lead to continued, fairly rapid expansion of private sector industries as in the recent past. In Iraq political concerns do not apply to the same extent, and in both Iraq and Libya the more socialist approach will favor public enterprises. Saudi Arabia is presently embarking on a massive public investment program in heavy petrochemical and steel industries.

Construction. The common experience of the oil-surplus countries has been an unprecedented boom from 1974 to 1977 in construction activity.

While a sizable part of the construction was carried out by foreign contractors with foreign labor, total demand was such that the domestic construction industry also had an opportunity to expand and develop. Infant industry protection was not necessary, since contract prices soared ahead of the prices of imported building materials.

The construction boom turned out to be one of the more problematic aspects of the developments in the period. The sector received government priority for a number of reasons. First, current and prospective requirements for housing and administrative buildings, as well as civil works for infrastructure, were enormous. Second, prestige was one of the considerations in selecting the style and size of new buildings, sports stadiums, and tree-lined, six-lane seaside avenues. Third, in contrast to manufacturing industry, where a wrong choice in product line or production process can easily result in the loss of the investment, the usefulness or beauty of new cities is not easily impaired by the absence of rate-of-return calculations or market analysis before construction starts. Finally, the real estate sector was a convenient vehicle to make a start in the transfer of part of the oil wealth from governments to private citizens. This took place in a variety of forms among which the most important were purchases of land at generous prices by the government, guaranteed loans to would-be builders/proprietors of office or apartment blocks, and massive housing grants and subsidized loans to public servants and other deserving citizens.

Large-scale official encouragement of bank credit to new entrants into real estate investments could not fail to create a class of investors who, lacking experience but willing to ride the wave, went in large numbers into any construction projects that had shown success in the past. Such was the speed of this type of construction that by 1977 a number of cities in the Gulf had whole sections of newly completed apartment or office blocks looking for tenants that would not appear, leaving the governments with the task of debt restructuring. Another aspect of the boom was the high cost of construction resulting from the speed of bidding and contracting. But the worst aspect was the evolution of land prices, which in some instances made it cheaper to reclaim land from the sea, ironic considering the large desert hinterland.

The speculative fever in the real estate sector in several Gulf countries ran its course in the classical sequence of boom and bust. The termination of the boom in 1977 and 1978 was partly supported, if not actually induced (as in Qatar), by the governments cutting back their own expenditure programs for construction. This was done in recognition of the fact that real estate price escalation was fueling general inflation, eroding real wages (especially of those to be newly housed), defeating the objective of income distribution, and benefiting speculators and foreign contractors.

The period 1977-79 has been a period of consolidation of construction activities: a significant slowdown and in some cases reversal of the

previous rates of increase; a temporary reduction in the expatriate labor force employed in the sector; a significant change in the market for building contracts, with many contractors competing for a much smaller number of new projects; and a normalization of real estate prices, reflected in some cases in a reduction by more than half in the prices for new housing.

Other Sectors. The low growth of agriculture has been due to the limitations of natural endowment, migration to urban occupations, and lack of price incentives. It is unlikely that agriculture will make more rapid progress in future years, except perhaps in Iraq.

Electricity and water expanded rapidly in response to high growth of demand, supported by pricing policies that encouraged wasteful consumption. Air conditioning in several countries is approaching saturation in terms of market coverage and typically takes up more than half of the summer peak load of electricity. A somewhat slower rate of growth may be expected in the future.

Transport and communications, finance, and other services have grown in response to demand generated from other sectors, but government services have expanded autonomously at rates somewhat higher than total non-oil GDP. This was due to: (a) rapid expansion of educational facilities, health and other social services; (b) growth of public administration, partly as a result of liberal employment policies; and (c) salary raises.

### III. ABSORPTIVE CAPACITY

In the context of the capital-surplus oil-exporting countries, it is convenient to use the term "absorptive capacity" in the wider rather than the narrower sense, including not only the capacity for fixed asset formation but also the capacity to consume goods as well as services. What is of interest in particular is to determine how much of total oil income, at a given price and export volume of oil, will be "absorbed" in the current account balance of payments in the form of imports of goods and services, including remittances abroad of immigrant workers. This will be a function of the level of domestic investment and consumption that can be envisaged in a particular period and of the import content thereof in that particular period. The resulting current account surplus could then be considered as available for foreign capital investment and accumulation of monetary assets abroad, often referred to as "recycling."

What will be discussed in the following is the period 1973-78 as a basis for assessing the possibility for the six economies to further expand their absorptive capacity in the first half of the 1980s. It could be argued that the 1979 oil price increase was just as large, if not in proportion then at least in magnitude, as the increase in 1973, and that it created an equally large boost to the revenue bases as the 1973 increase. Consequently, the appearance of much greater financial prudence in 1977 and

1978 (when the earlier oil price increase became increasingly eroded by inflation) could be dismissed as ephemeral, since the 1979 price increases wiped out any earlier expectations of an end to discretionary income and of an approaching need to streamline expenditures, husband financial resources, and prepare for external borrowing. Now, the road would again be open for a spending spree of the kind embarked upon in 1974-76. All indications, however, point to the likelihood of a substantially different posture in the 1980s compared with the 1970s.

For one thing, it can be assumed that the period 1980-85, in contrast to 1974-79, will see no erosion of the real value of oil exports through changes in the terms of trade. While in the recent past it has been difficult to make medium- or long-term price forecasts for oil, it has become somewhat less difficult to make such forecasts for 1980-85. All factors considered, including probability factors for supply interruptions in the Middle East and the closeness of Saudi Arabia's actual production to its lifting capacity, it may be assumed for present purposes that the price of oil in 1980-85 will increase in current dollars at a rate of between 10 and 15 percent a year. The lower figure is used for illustrative purposes.

The level of oil revenues in the 1974-79 period has been an important determinant for the absorptive capacity of the capital-surplus oil exporters, inasmuch as its phenomenal increase prompted a volume of domestic absorption and a growth of import capacity that was well beyond anything that could have been predicted by conventional economic modeling. In other words, absorptive capacity proved to be revenue elastic in a high degree almost resembling Parkinson's law. One of the reasons behind this, though not the most important, was psychological: the initial specific effect of the OPEC cartel's success on its members left them uncertain about its duration. Therefore, there was a sense of anxiety to use the bonanza as quickly as possible for modernization and development of their economies. In this respect, 1980 is different from 1974 in the sense that the anxiety element will be absent on account of the much greater certainty, noted above, of lasting surpluses.

The 1974-79 period has enabled the majority of the countries in the group to embark upon an experiment in national economic management that is unique in modern history. It has consisted of pushing the investment/GDP ratio in the non-oil economy beyond all historical records and precedents and of testing the achievable speed at which economically backward, traditional societies--with a predominant pastoralist and/or agricultural sector, very low literacy rates, and little or no manufacturing other than handicrafts--could be modernized by implanting the basis for a fully operational and economically viable economy in the style of the advanced countries of the world. (See Table 3.)

Table 3

NATIONAL EXPENDITURES, 1973-78  
(billion US\$ in current prices)

	1973	1974	1975	1976	1977	1978	Average Growth Rate
Total GDP	50.9	84.4	95.4	117.1	132.9	138.9	22.2
Non-Oil GDP	14.6	22.5	31.5	42.2	53.5	63.6	34.2
Investment	5.8	11.7	20.2	26.4	35.1	41.1	47.9
Consumption	16.1	25.2	36.0	45.8	59.2	63.7	31.7
Investment as % of Non-Oil GDP	39.7	51.8	64.2	61.6	65.6	64.6	
Investment Growth Rate (%)	-	102	73	31	33	17	

Source: World Bank estimates.

It was not clear in 1973 precisely what direction this experiment would take. Government policies were guided by the general theme of diversification. In the early years of the glut of government revenues, all possible programs for expenditure on physical infrastructure were undertaken, while offices and agencies were set up to start an intensive search for productive ventures that would utilize, and benefit from, this infrastructure.

By 1978 governments had reached levels of expenditure both capital and current that made it possible, with then prevailing oil prices, to forecast the emergence of budgetary and, in some cases, balance of payments deficits within only a few years. These forecasts were the first signal for turning the experiment from an open-ended enterprise into a finite one, notwithstanding the subsequent reversal of these forecasts in 1979. More important, a number of observations made by the policymakers in the 1974-79 test period brought the negative implications of the experiment into sharp focus. The two outstanding phenomena in this context were (a) the growth rate of the expatriate labor force and (b) inflation. In addition, it became clear that the investment boom had carried with it a component consisting of ventures with a minimal economic return, if any, and that the danger of misallocation of resources was present in a high degree.

The primary concern of governments regarding expatriate labor has become a broader concern regarding the structure of their society in the future under continuation of recent trends, a question of national identity. This is particularly the case in those countries where the

foreign population today already outnumber the citizen population (UAE, Kuwait, Qatar), and again in a more pronounced fashion where expatriates from neighboring Arab countries are outnumbered by expatriates from Asia. Already, a continuation of past rates of immigration in 1980-85 would require an ever-growing population of non-Arab immigrants on account of emerging labor shortages in neighboring Arab countries in those categories required in the labor-importing countries.

The secondary concern regarding expatriate vs. domestic labor has to do with the occupational structure. Given the predominance of relatively low educational and skill levels among the domestic labor force, the inevitable takeover of higher-echelon, higher-pay occupations by expatriates has tended to bias the personal income distribution at least partly in favor of the foreigners. This has led governments to go a long way towards overexpanding government administrations with citizen employees, more or less qualified, while much of the work actually done in government is carried out again by expatriates. One conclusion drawn from this situation is the need for maximum development of the domestic human capital as an objective that will acquire priority over any other spending on infrastructure and diversification.

A third concern, not yet manifest but likely to acquire importance in the future, is about the economic consequences of the "brain drain" and of critical skill shortages in the labor-supplying developing countries, and about action needed to be taken by the latter to reduce the rate of export of human capital.

These concerns, of varying but growing importance among the six countries, have already had a dampening effect on expenditure policies in very recent years and will not disappear because oil revenues have taken another spectacular leap. Of course, the containment of domestic inflation, which the majority of the six governments have pursued with remarkable success--and with salutary effects--since 1978, is another priority that will not easily be overridden by renewed expenditure pressures. The issue of foreign labor and of inflation will be discussed in more detail in Sections IV and V.

Investment. In consequence of the above, an adjustment process is taking place, on the basis of the lessons learned in the 1974-79 experiment, that will result in circumscribing the domestic investment capacity of the oil-surplus countries substantially in terms of containing the labor force problem and the danger of repeated bouts of inflation.

Furthermore, the pattern of investment will undergo significant shifts, which by their nature will also tend to contain the expansion of expenditure to some extent. In many areas of physical infrastructure, a certain degree of saturation has already been reached. All seaports have been expanded to excess capacity for some time to come. Very large infrastructure facilities for industry are completed (e.g., in Saudi Arabia and

the UAE). Highway networks have been built to high standards and on a large scale that greatly limits the scope for additional investments in the medium term for this purpose. Impressive administrative building complexes are completed or will be completed in the next few years. Large housing projects have in some cases been postponed either because of excess capacity or in light of the likely slowdown in the growth rate of the expatriate population. Large new hospitals are either under construction or completed, and in some cases completed but inoperative because of unavailability of personnel or lack of demand.

Saudi Arabia's current five-year plan can be seen as paradigmatic for the oil-surplus countries. In the preceding five years, priority investments had been concentrated in transport and communications, power, urban construction and housing, and industrial infrastructure. In the 1980-85 period, physical infrastructure is relegated to a second place and will absorb a smaller proportion of total outlays, while first priority is given to manufacturing industry and to education and manpower development.

No matter how many new universities are built and to what standards, the absorptive capacity of the education sector for investments is finite. In the case of manufacturing industries, however, there is a degree of shyness of private investment capital of a kind observed in many bazaar merchant societies. Partnerships of private domestic capital with foreign companies for new ventures will be moderated by a degree of circumspection on the part of the foreign investors with regard to the ventures' economic and financial viability. A bigger push for diversification through industrialization will have to take place in the public sector, also in partnerships with foreign companies. The requirement of feasibility studies that take time to complete, and the renewed concern for ensuring an acceptable rate of return, will again be principal determinants for the absorptive capacity of this sector, besides considerations of capital vs. labor intensity for each project. As noted elsewhere, industries that are both capital and energy (hydrocarbon) intensive will be those with a comparative advantage. These are typically on a very large scale and high-technology intensive, and the speed at which such an industry can grow even in advanced countries is limited by technical factors and the need for contractual marketing arrangements, on the one hand, and the supply of high-technology skills on the other. The current speed--far from remarkable despite the urgency--of diversification of the United States from oil into coal, shale oil, and synfuels illustrates this problem.

These observations tend to underscore the point that in the next five years total investments in the oil-surplus countries are most unlikely to be larger, in relation to non-oil GDP, than they have been in the last five years, and that this ratio might in fact decline somewhat. In making projections of investments and total domestic absorption (Section VI), the assumption has been made that this ratio would be maintained at the 1973-78 average, even though it might well turn out to be less. The intention was to show a resulting surplus for recycling that could well be larger, but hardly smaller, than the value shown.

Consumption. As noted at the beginning of this section, the absorptive capacity for oil revenue must be defined as including consumption. There has been a remarkable increase in consumption per capita since 1973, as is shown by the estimates in Table 4.

Table 4

CONSUMPTION PER CAPITA							
(US\$ at current prices)							
	1973	1974	1975	1976	1977	1978	Average Growth Rate
Non-Oil GDP per capita	702	1035	1393	1782	2144	2444	28.3
Consumption per capita	774	1160	1592	1934	2373	2448	25.9
Consumer Price Index <sup>/a</sup>	100	111.9	128.2	146.2	159.0	174.0	11.7
Consumption per capita (constant prices)	774	1037	1242	1322	1492	1407	12.7

/a Based on sample consisting of Saudi Arabia, Iraq, Kuwait, and Libya.

Available data are insufficient to separate public from private consumption for 1973-78, but it appears that the growth rate of government consumption has been only slightly higher than for the general public. As shown earlier, total consumption expanded almost 50 percent faster than total GDP, but somewhat slower than non-oil GDP, with the notable result that per capita non-oil GDP, as shown above, caught up with consumption in 1978.

As regards private consumption, there is no obvious reason for assuming a slowdown in the 1980-85 period compared with 1973-78. For some sections of society, especially for the upper class, there is visual evidence that personal consumption has reached or surpassed the level of the corresponding class in the industrially advanced countries, but it would be hazardous to assume the existence of a saturation point. As regards the middle and lower classes, future growth of personal consumption is difficult to assess because it will be determined by several mutually independent factors. One factor, concerning the working population in a mixed labor market of both citizens and expatriates, will be the growth rate of non-oil GDP which provides the value added for disposal as personal

income. The second factor in the same market will be the continuation or otherwise of the hitherto liberal immigration policy: in the case of restrictions, competition of immigrant labor would diminish, and this would tend to push up wages. A third factor will be the future policies concerning the consumptive use of oil revenue through redistribution or trickle-down.

The experience of governments in this respect has been that the social elite and the educated middle class can be reached with relative efficiency, but that the large mass (where they exist) of illiterate farmers and pastoralists are difficult to enrich by any means short of systematic distribution of outright gifts. Furthermore, governments cannot ignore the likelihood that the objective of economic diversification in the form of an internationally competitive production apparatus would be frustrated by excessive generosity that would push a majority of the domestic labor force into rentier class status with no need to work for a living. If they were to envisage a future society of non-working rentier citizens and a diversified economy operated by non-citizens, they could easily perceive strong possibilities for the emergence of serious conflict in such a two-tiered society. As the governments are already on the point of searching for ways to stem the flow of immigrants, they are of two minds with respect to the incomes policy to be pursued for their domestic working class. It is to be expected, therefore, that they will promote upward mobility but maintain restraint in feather-bedding their domestic low-income working population. Hence, the disposable income and consumption levels of low-income workers will rise relatively more slowly than that of the educated middle and upper class. It would seem reasonable to project that total personal consumption will grow, as in the past, at a rate somewhat slower than non-oil GDP, and that the difference between the two rates might be somewhat larger in the future than in the past.

As regards government consumption, it is quite possible that the 1980-85 period will see a continuation of the recent rates of expansion in government services. The first results of the educational efforts already under way will result in considerable numbers of graduates at various levels entering the labor force with expectations for remuneration and promotion that cannot be met in the private sector, and therefore will be met by the governments. Since the social sectors have already reached or will reach a saturation point in numbers of teachers, health and social workers, etc., the process of substituting expatriates with nationals in these occupations will be the primary concern. This process will be slow, and the result will therefore be the continued creation of new positions in excess of requirements to accommodate, in the public sector, a growing number of citizen school leavers unemployable elsewhere.

To the extent these processes will on balance lead to a less rapid expansion of government services than in the 1970s, the difference could be more than offset by the growth of defense and security requirements. In conclusion, the growth of total consumption should not be expected to slow down from the average 1973-79 rates; rather, on a conservative basis, it

may be projected to increase at the same pace. The possibility of a higher rate would be associated with that of a higher degree of political and military insecurity in the Middle East.

The import content of domestic expenditures is likely to decline somewhat as far as investment and private consumption is concerned. The domestic construction industries will achieve some increase in the domestic value added; some improvement in repairs and maintenance capacity for machinery and appliances in some countries will reduce the amount of throw-away replacement imports; some degree of saturation will be reached in some cities for the importation of air conditioning equipment, etc. For simplicity, the ratio of expatriate remittances to total domestic expenditure may be assumed to remain constant, while the purchase of services from abroad will increase more rapidly, especially for travel abroad. It is reasonable, however, to expect that any net decline in the marginal propensity to import resulting from these factors would be offset by the import content of expanded outlays for defense equipment. On this basis, it would not seem unreasonable to project consumption by linking it to the growth of the non-oil GDP with coefficients derived from the 1973-78 base period. In Section VI, total absorption of oil income will be projected by correlating both investment and consumption of oil revenue to the growth rate of non-oil GDP.

#### IV. INFLATION

If measured by the consumer price indices available, the rate of inflation in the oil-surplus countries since 1973 has not been excessive by international standards. On average, consumer prices have since that year gone up by about 12 percent annually, with a pattern of somewhat higher rates in 1975 and 1976, and of somewhat lower rates after 1978. Saudi Arabia had the highest trend rate of 16 percent a year and rates in excess of 30 percent a year in 1975 and 1976.

One factor to remember is that domestic price inflation occurred under conditions of extremely liberal trade policies, which should have had a dampening effect on domestic inflation provided that import prices themselves were not inflationary. Conversely, given these policies the oil-surplus countries are fully exposed to imported inflation to the extent that it occurred in the countries of origin of these imports.

The export-value index for the industrialized countries moved upward at a yearly rate of just under 12 percent from 1973 to 1979, with a higher rate for investment goods and a lower rate for consumer goods. The relevant rate to be linked to the oil-surplus countries' consumer price movements would be the consumer-goods export-value index of the industrial countries, which although not available may be assumed to be closer to the index of their domestic consumer prices. The latter increased by about 9 percent a year during the period.

It is reasonable to conclude that, on balance, the combination of foreign inflation and exchange rate movements in the last seven years had an inflationary impact on domestic prices in the oil-surplus countries that was rather less than the recorded increase in their consumer price indices, and substantially less than their overall inflationary phenomena. Hence, domestically fuelled inflation has been the dominant factor. This is consistent with the monetary mechanisms related to large incremental oil revenues spent on the domestic economy. Unlike taxation, which confers command over real domestic resources to the government by transferring money already in circulation from the private sector to the public, oil revenue confers command over international resources by transferring foreign exchange from abroad to the government. Conversion of an increment of oil revenue into domestic currency is therefore equivalent to domestic money creation, and its spending is inflationary except for that part which is absorbed in real growth of the domestic economy and that part which is offset through additional imports.

Following the quadrupling of oil prices and oil revenues in 1974, the six governments combined increased their expenditures from 86 percent of non-oil GDP in 1973 to 113 percent in 1974 and to 145 percent in 1979. From 1973 through 1977, their aggregate money supply increased at an annual rate in excess of 40 percent, with a peak rate of nearly 50 percent in 1976. There are several reasons why this massive monetary expansion did not push the cost of living beyond the recorded average of about 12 percent a year. First, a large part of the excess demand was absorbed by additional consumer goods imports. Second, non-oil GDP in real terms expanded by about 15 percent a year. Third, governments imposed controls on prices of essential consumer goods and introduced subsidies. Finally, a large part of the additional expenditure was for investment, in turn again partly translated into imports.

That part, however, of the additional investment demand that was deployed on domestic non-tradables had much more substantial effects on their prices than in the case of consumer goods. Urban land prices skyrocketed. Prices of construction contracts followed the law of supply and demand in a sellers' market, at least for a number of years, and large commissions and other favors were factored into the prices. The housing markets developed in a disorderly fashion, starting with extraordinary returns, resulting ultimately in excess supply and, as in the case of the UAE, in a collapse of the real estate market. Speculation and graft became increasingly visible features of the development process.

Starting in 1977, some governments, aware of the inflationary pressures both in consumption and investment markets, began to restrain the growth of public expenditures, with the twin effect of a reduction in the inflow of expatriate workers and an easing of prices, especially rents.

Since then, an anti-inflationary posture, in line with a pre-1973 historical tradition of financial prudence and conservatism, has been restored and maintained and has helped to redefine absorptive capacity

within limits somewhat narrower than was apparent during the 1973-77 period. This has to be seen, of course, in conjunction with cooperative factors among which the concern about the rising tide of immigration is the most important.

Not to be neglected in this context are two additional factors closely related to inflation as a general phenomenon. The first is a concern about the income effects of high expenditure growth and its long-term implications for diversification; the second is the growing awareness of the long-term budgetary impact of consumption and other subsidies if they are allowed to grow exponentially in line with inflation.

To start with the first, there is a political as well as a psychological need for a better income distribution; the accrual of unheard-of wealth to the upper strata in these societies generates a strong case for a sharing of that wealth by those who have remained relatively poor. Subsidization of basic consumer goods is one possible redistributive measure, but it cannot do much more than compensate for inflation and make it possible to keep nominal wages at levels that pose no threat to the viability of the enterprises in which the labor is employed. Some sharing of the wealth is also achieved psychologically by the building of modern cities where there was desert before, with public amenities, parks, fountains, and architectural achievements engendering a sense of national pride in the people. However, nothing strengthens allegiance as much as actual purchasing power in the hands of the people.

Because the native populations in these countries are either small or unequipped with modern skills, or both, they have been eclipsed by immigrant labor in the building of a modern economy. An incomes policy to distribute the oil wealth to the native population in the form of legally enforced wage levels would be impossible without including the expatriates. Already, the expatriates are often benefiting as much if not more from the subsidization of consumer goods. Hence the search for indirect ways of benefiting the native population through privileged access to public grants for free ownership of housing, concealed as loans, and to specific occupations, especially in government. Other ways are being found (e.g., stipends as concealed wage supplements, etc.).

All these attempts have one effect in common: to improve social satisfaction while in the same degree reducing work efficiency and motivation. The long-term threat to the future viability of a diversified economy, especially manufacturing industry, is evident, unless it is conceived as operated by expatriates forever, which it is not. Already it is observed that Norway, as a consequence of the income effects of its oil revenue, is in a process of de-industrialization.

The second concern is about the long-term budgetary effect of cumulative subsidies. There is only so much oil in the ground to support exponential growth of the subsidy bill. After the oil runs out, it is inconceivable that an economy built on subsidies will switch from receiving

subsidies to paying taxes. The subsidies themselves, inasmuch as they apply to domestic energy consumption (which consequently grew four times as fast as non-oil GDP in recent years), will advance the day of reckoning. On this logic, subsidization ought to be gradually reduced, which is politically possible only by avoidance of future inflation.

The lesson of an overheated economy through forced absorption of rapidly growing oil revenues has been learned, and the governments now have their own specific set of reasons to be at least as fearful of inflation as the governments of the industrialized countries.

#### V. MIGRATION

One part of the 1973-78 experiment in economic modernization was the rapid setting into place of a physical transport, housing, and urban infrastructure, largely undertaken by foreign contractors who would be capable of supplementing, where necessary, the available local labor with foreign construction workers during the period of construction. It was clear from the beginning that large numbers of expatriate workers would have to be imported for this purpose.

What was not envisaged from the beginning was that, once the borders were opened to immigrant workers, every investment project not only in infrastructure but also in industry, power and communications, retail trade and other services would result in additional labor importation, and that backward and forward linkages of every aspect of economic development would create demand for more of the same.

Between 1973 and 1978 the six economies grew at an annual rate of about 15 percent in real terms (excluding the oil sector). This was far in excess of the growth of the domestic labor force which could in no case exceed 3.5 percent a year and was furthermore drawn to a considerable extent into non-productive service activities in the government sector, as noted earlier. Productivity growth per unit of labor during this period is both difficult to measure and difficult to visualize, considering the speculative elements in one part of the investments and the novelty of many others. Hence, a growth rate of foreign workers in excess of 10 percent of the total work force a year was inevitable.

The process of labor immigration did not start but greatly accelerated in 1973. Historical labor statistics are incomplete but in 1975 it is estimated that the expatriate labor force in the six countries was on the order of 1.5 million; with dependents, they constituted an expatriate population of about 2.5 million against a combined national population of 20 million. The distribution was of course uneven; on the one hand Iraq, with a native population larger than the other five countries combined, had by far the smallest number of expatriates. In the UAE, on the other hand, the expatriates already outnumbered the national population by a factor of 1.8

(but in 1980 by a factor of 3). In terms of the actual working population, UAE nationals were outnumbered already in 1975 by a factor of 9.

Officially recorded remittances abroad by expatriates from the six countries increased from \$1 billion in 1973 to \$4.7 billion in 1979, or at an annual rate of 30 percent. These remittances accounted for a fairly stable proportion of 6-7 percent of aggregate non-oil GDP and, of course, constituted a not negligible amount of assistance to the balance of payments of the labor-supplying countries. In the case of Pakistan, for example, remittance receipts have reached an amount equal to the total of merchandise exports.

The outflow of these savings have not been a source of concern to the labor-importing countries since they were relatively small if compared to either their oil revenues or their total savings. They were only half as large as the outflows of official aid to other developing countries. What has become of some concern is the sheer physical presence of the growing masses of non-nationals and their increasing rather than decreasing role in the productive sectors of the economy outside of the construction sectors.

Studies <sup>1/</sup> have shown that, if the six countries were to grow at an average rate of about 10 percent between 1975 and 1985, the expatriate work force would probably increase from 1.5 million in 1975 to about 3.5 million in 1985. Since the proportion of single male laborers in the total foreign work force tends to decline over time in favor of more workers living with dependents, the non-national population grows faster than the work force alone. Projections indicate that the expatriate population, which was about 3.1 million in 1975, might well grow to reach 11 million by 1985. This would imply a yearly growth rate of 13.5 percent, while the national population might be growing at a yearly rate of only 3.5 percent.

Expatriates, especially those from non-Arab supplying countries, not only introduce different cultural values into hitherto traditionalist Islamic societies, and therefore are viewed with increasing uneasiness, they also tend to create new demands on the economy, especially in terms of social infrastructure and housing but also of other services. In turn, to meet those demands requires the importation of still more expatriates, and so on.

Also, consumer subsidies on food, fuels, water, and electricity tend to absorb budgetary resources that grow with the size of the total, rather than that of the native, population. At the point where the non-national population exceeds the national population, the government's subsidy bill will be seen as favoring the foreigners more than the citizens, and there will always be enough citizens whose personal income

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<sup>1/</sup> "International Labor Migration and Manpower in the Middle East and North Africa" (Washington, D.C.: World Bank; internal circulation only).

will compare very unfavorably with that of the large groups of expatriates in executive, managerial, supervisory technical, and professional positions. This situation will breed uneasiness as time passes.

This and other real or imagined causes of resentment among nationals are readily noticed by governments alert to emergent political problems, and this alertness has been enhanced by events in Iran. So long as the growth of oil revenues seems secure and budgetary constraints are absent, governments in response to this problem easily yield to the temptation of offering relatively well-paid government jobs to nationals with little regard to either qualification or the need for these additional jobs. Kuwait, with a longer record of this type of experience than that of the other countries of the group, now employs 70 percent of the national work force in government, while nationals employed (e.g., in manufacturing industry) constitute less than 10 percent of those employed in the sector. Pursuit of this avenue evidently links the objective of economic diversification and growth with an even larger rate of immigration than would otherwise be the case. Awareness of this fact has already led the Government of Kuwait in the 1970s to strive for lower economic growth targets than those of the other countries of the group.

Growth can of course also be the result of increases in productivity. This is possible through (a) deployment of incremental labor into more capital-intensive activities over time, (b) introduction of labor-saving technology in existing labor-intensive activities, and (c) improving productivity in existing occupations through rationalization, improved management, and incentives.

As regards capital-intensive activities, this has been a major priority in investment policies by the oil-surplus countries all along, and significant future changes in overall factor proportions are not easily achievable except in cases where, as in Saudi Arabia's third five-year plan, a substantial shift in investments from construction to large-scale petrochemical industries takes place. Even so, the shift will affect only incremental output in future years, and its impact on aggregate labor productivity will therefore be slow.

As regards substitution of technology in labor-intensive activities such as construction and services, this would require a reversal of past policies of taking advantage of the availability of cheap foreign labor. As long as immigration policy remains liberal, contractors will continue to choose the most cost-efficient technology, which in this case will be a relatively labor-intensive one. A more restrictive immigration policy, as already noted, has to be considered with a degree of caution because the ensuing wage pressures would change the cost parameters for the future viability of industrial diversification.

The improvement, finally, of productivity--through rationalization, improved incentives, and other means--while possible, has to be seen in light of the fact that the expatriate workers already have maximum

motivation to perform, since their insecurity of residence enhances the competitive threat of being replaced. In the case of the nationals, any productivity increase would have to be achieved by factors other than their motivation, which in large part is difficult to improve because the privilege of citizenship tends to dissociate reward from effort. As regards improvement in management, it is to be kept in mind that it will be government policy to change the situation prevailing at present in many fields where expatriate executives manage expatriate labor, through rapid promotion of nationals into executive positions. Such a change in the occupational structure might well tend to diminish, at least initially, the potential for managerial improvements of productivity.

Assuming, as a hypothesis, constant productivity in the economy as a whole, simple laws of arithmetic will apply to manpower and population projections. Any GDP growth in excess of the growth rate of the native labor force will cause the proportion of expatriates in the total labor force to increase year by year. Annual net immigration of workers, in proportion to the existing work force, will be higher the larger the expatriate contingent already is within the existing work force. For example, at a 10 percent GNP and 3.5 native labor force growth, the annual immigration will be 5.5 percent of the labor force if nationals still account for 70 percent of the total, but 9.5 percent if nationals account for only 10 percent of the total. In other words, in the case of the UAE, where nationals already account for less than 10 percent of the work force, the annual inflow of foreigners will be equal to the total stock of nationals, and it will double in seven years.

For the population projections one will also have to keep in mind the tendency for the expatriate population to have a declining activity rate in the long term as a consequence of acquiring dependents. This will accelerate the process of nationals' being more and more outnumbered by foreigners.

There has been a gradual recognition that the types of arithmetic suggested above are inescapable. In the mid-1970s, governments still tended to think in terms of large numbers of construction workers returning to their home countries once the major construction jobs were completed. Today, it is more clearly perceived that construction workers constitute a declining part of the growing expatriate work force; that in the rest of the economy none of the jobs are of a temporary nature; and that construction activity does not cease where economic development starts.

All these observations have a profound effect on the attitude of governments toward rapid economic expansion. Their attitude in 1980 differs from that in 1973 in that it is tempered by serious reservations concerning the manpower implications of rapid economic growth. Not all governments among the six countries share the same degree of concern. Iraq does not have an expatriate population to speak of, and therefore will not need to pay much attention to domestic problems of this kind. Kuwait has been aware of the problem for a long time and deliberately remained on a

low growth path throughout the 1970s. It is in Saudi Arabia, Qatar, the UAE, and Libya that the absorptive capacity in the next five years will be moderated by manpower considerations that were not operative in the last seven years.

## VI. DISCRETIONARY INCOME

In 1978, the oil-surplus countries exported 16.8 mbd of oil. Total oil revenue amounted to about US\$79 billion, of which about US\$60 billion was absorbed domestically, leaving a surplus in the balance of payments of US\$19 billion. This suggests that about one-quarter of oil exports was used to generate surplus funds for recycling and aid to developing countries. In 1980, exports were 17.5 mbd, and the full effect of the 1979 price increases brought the surplus to about US\$98 billion from a total oil revenue of US\$190 billion. These figures imply that from 1978 to 1980 the proportion of discretionary oil in total oil exports of the surplus countries has gone up from one-quarter to about half. Assuming a more modest rate of oil price increases in the future and some decline in the volume of exports, the domestic absorption will again preempt a gradually expanding part of oil revenue.

In considering prospects for oil production in the next five years, one has to start by considering the level of present sustainable lifting capacity, its past evolution, and the likely future changes.

In the course of the seven years from 1973 to 1980, aggregate production by the six countries (see Table 5) has increased at an average annual rate of 1.1 percent, compared with a much more rapid increase of about 10 percent a year in the preceding five years. Were it not for the continued substantial increases by Saudi Arabia, which is now providing more than half of the total, the total would have grown at much lower rates, if at all. What is important therefore is the fact that Saudi Arabia, with an estimated sustainable capacity of about 10.5 mbd, is now near the upper limit of its capacity.

The second important fact is that all countries of the group in the course of the last ten years have either halted or scaled down new investments in oilfield developments, either because all known fields have been fully developed or because of the desire to avoid further shortening of the productive period of total proven reserves. The exception to this is Iraq, which has substantially expanded its production capacity in the 1970s. The most important supplier, Saudi Arabia, has already reached a reserve/production ratio of less than 50:1, which means at current production levels the lifespan of its oil reserves is less than fifty years. Efforts to expand sustainable capacity in the future are unlikely as long as the discretionary part of production is as high as 50 percent of the total. The only reason for Saudi Arabia to maintain current levels of petroleum production is to keep some control on oil prices and moderate the scope of another "oil crisis," as could have occurred in 1980 subsequent to the Iran-Iraq war. As soon as considerations of international oil policy permit, Saudi Arabia will reduce its oil production.

Table 5

PETROLEUM PRODUCTION, 1968-80  
(mbd)

	1968	1973	1978	1979	1980	Annual Change 1968-73	Annual Change 1973-80	Reserve/ Production Ratio 1980	Sustainable Capacity 1980
Iraq	1.505	2.020	2.562	3.477	2.707	+6.1%	+4.2%	30	4.0
Kuwait	2.420	2.755	1.865	2.210	1.338	+2.6%	-9.8%	118	2.5
Libya	2.602	2.175	1.983	2.092	1.792	+3.6%	-2.7%	34	2.1
Qatar	0.340	0.570	0.487	0.508	0.474	+10.9%	-2.6%	21	0.6
Saudi Arabia	2.830	7.345	8.270	9.250	9.686	+21.0%	+4.0%	44	10.5
UAE	0.497	1.533	1.830	1.831	1.712	+25.2%	+1.6%	46	2.5
Neutral Zone	<u>0.405</u>	<u>0.535</u>	<u>0.460</u>	<u>0.560</u>	<u>0.539</u>	<u>+5.7%</u>	<u>0.1%</u>	<u>30</u>	<u>0.6</u>
Total	10.600	16.930	17.480	19.745	18.249	+9.8%	+1.1%	46	22.8

Considering that the current reserve/production ratio is already in the neighborhood of 30:1 or less for Iraq, Libya, and Qatar, there is little motivation to expand capacity to accelerate reserve depletion. Furthermore, the events since 1979 provided the majority in the group with a motivation to actually cut back oil production: the massive accrual of "petrodollar" surpluses, increasing from US\$15 billion in 1978 to US\$98 billion in 1980, and the fact that Saudi Arabia's production increase from 9.3 to 10.0 mbd in 1980 sufficed to more than neutralize potential further price movements that might have been caused by the substantial drop-off in output in Iran and Iraq, owing to a decline in world demand. Consequently, production levels in 1980 were already lowered by Kuwait, Libya, and the UAE by an average 16 percent, and by mid-1981 were reduced by another 14 percent, though by that time the loss of output from Iraq alone was almost twice as large as the combination of these cutbacks. In mid-1981 total output of the group was as low as 16.0 mbd, compared with 18.3 mbd in 1980 and 19.8 mbd in 1979, the year in which production had peaked, prices had undergone their second major increase, and OECD growth was set to start on its present stagflationary path.

Table 6 presents a possible projection of oil production, domestic consumption, and exports by the oil-surplus countries for 1985. The methodology underlying these projections is relatively simple: total production levels are projected to remain at their mid-1981 point for Kuwait, Libya, Qatar, and the UAE. For Iraq, 1985 production is assumed to be equal to that of its previous peak year of 1979, and for Saudi Arabia a reduction to 8.5 mbd is projected. Domestic consumption is extrapolated individually for each country, and the difference between production and consumption represents exports for 1985.

Table 6

OIL PRODUCTION AND EXPORT OUTLOOK FOR 1985

(mbd)

	1980			1985		
	Production	Consumption	Exports	Production	Consumption	Exports
Iraq	2.71	0.22	2.49	3.40	0.40	3.00
Kuwait	1.61	0.05	1.56	1.25	0.06	1.19
Libya	1.79	0.09	1.70	1.50	0.17	1.33
Qatar	0.47	0.02	0.45	0.50	0.02	0.48
S. Arabia	9.96	0.33	9.63	8.50	0.67	7.83
UAE	<u>1.71</u>	<u>0.06</u>	<u>1.60</u>	<u>1.60</u>	<u>0.09</u>	<u>1.51</u>
Total	18.25	0.77	17.48	16.75	1.41	15.34

Source: Annex Table A.2.

The projected reduction in output by Saudi Arabia would be in line with repeated policy statements and with the assumed need for Saudi Arabia at a suitable time to re-establish substantial room for maneuver between total lifting capacity and current production. Such a suitable time could well be in the relatively near future, as and when Iraq, as well as Iran, would resume their position as major exporters, and world supply would be sufficiently balanced with demand to offer the prospect of an orderly evolution of oil prices.

The projected 15.3 mbd of oil exports in 1985 would be about 2 mbd less than in 1980. In the world context, however, this reduction may be assumed to be more than offset in 1985 by Iranian exports specifically and by increases in supply from non-surplus oil producers more generally. For the oil-surplus countries, as will be evident further below, the size of the surplus and its prospective longevity is seen as a sufficiently strong reason to remain within the export volume as shown. This means that their combined production would remain at about three-quarters of their 1980 sustainable capacity. Even so, their oil revenue is likely to remain substantially above their absorptive capacity throughout the next five years.

Given the large discretionary element of oil production in the next five years, there is no economic link between projected total oil production and domestic economic development; rather, production levels have to be gauged on the basis of total capacity on the one hand and various economic and non-economic factors that will govern discretionary output on the other. The dimensions within which this will take place become clear if an attempt is made to project the absorptive capacity of the oil-surplus countries. In what follows, this will be done on the basis of some strong assumptions regarding continuation of high levels of domestic expenditures. The dimensions will further be widened by defining the total annual surplus as the sum of the annual surplus of oil revenues and the income from accumulated assets abroad. The latter element will gain in importance until it exceeds, under various assumptions, the oil surplus itself.

The basic assumption is made that aggregate non-oil GDP will grow in 1980-85 at about the same nominal rate as in 1976-80--i.e., about 19 percent annually--with some variations from case to case. 1/ Translated into real terms, and assuming inflation to be kept at about 8 percent, the resulting real growth rate is about 11 percent a year. Assuming further that the ratio of investment to non-oil GDP will remain the same as in the past, the volume of investment is determined. To arrive at total revenue absorption, a historical 1976-80 average ratio between total absorption and domestic investment is applied to the investment projections. The difference between oil revenues and total absorption is the oil revenue surplus.

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1/ For details, see Annex Table A.3.

Oil revenue itself is projected by assuming oil production to remain constant at the mid-1981 level <sup>1/</sup> and by deducting projected domestic consumption. To the resulting export volume, a low (10 percent) and a high (15 percent) annual rate of price increase is applied. With regard to investment income from abroad, it derives from an initial stock of foreign assets in 1980 of US\$300 billion, to which the annual surpluses are added each year together with the putative receipts of interest, dividends, and appreciation. Putative annual investment income receipts are projected at 10 percent of the principal amount each year. The results of these projections for the six countries are shown in aggregate form in Table 7.

Table 7

CAPITAL-SURPLUS PROJECTIONS, 1981-85					
(current US\$ billion)					
	<u>Oil</u>				<u>Total</u>
	<u>Revenue</u>	<u>Absorption</u>	<u>Oil Surplus</u>	<u>Investment Income</u>	<u>Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
<u>Case I (10% annual price increase)</u>					
1981	187.8	125.9	61.9	37.9	99.3
1982	217.8	149.3	68.5	49.2	117.7
1983	237.8	174.5	63.3	60.5	123.7
1984	259.6	205.8	53.8	71.7	125.5
1985	283.3	242.5	40.8	83.2	124.0
<u>Case II (15% annual price increase)</u>					
1981	187.8	125.9	61.9	37.9	99.3
1982	227.8	149.3	78.5	50.3	128.8
1983	259.8	174.5	85.3	64.1	149.4
1984	296.7	205.8	90.9	79.3	170.1
1985	338.1	242.3	95.8	96.8	192.9

Source: Annex Table A.13.

The striking feature of this projection is the size and permanence of the capital surplus. Doubts about their realism could be expressed by questioning some of the underlying assumptions, principally the future price of oil and the returns on foreign assets but also the volume of oil exports. It requires no extensive analysis, however, to recognize that the price of oil is to some extent a function of supply and demand, and a more

<sup>1/</sup> Except for Iraq and Saudi Arabia.

than marginal reduction in supply, if unmatched by a corresponding reduction in demand, would tend to push prices further up than whatever is assumed in the base assumptions.

Regarding the oil price assumptions of 10 and 15 percent a year, it has to be remembered that in the last ten years the average annual price increase, in a period of rapidly increasing supply, has been near 30 percent, and that the future will hold no more than marginal supply increases. At the same time, technological substitution will not make substantial inroads into energy markets until the second half of the 1980s. In these circumstances, and assuming a world inflation rate of about 8 percent, a 2 percent real annual increase in the price of oil would appear comparatively modest. The second case of a 15 percent nominal (7 percent real) annual increase may at present appear out of line with realities in a situation where Saudi Arabia is making every effort, by keeping its production at a high level, to rally the prices charged by other OPEC members to its own lower price. This action is attributed to the perception of a threat to future oil from technological substitution as a result of the 1979 oil price increase, which is said to have gone beyond, or at least close to, what the future market will bear once the induced competition from alternative sources of energy is geared up. There are no generally accepted facts, however, to support a judgment of this kind, even though there are also very few facts to contradict it. Saudi Arabia's action may have been prompted more directly by other considerations, such as the protection of its large external assets and the avoidance of another oil crisis and its political implications.

The existence of an "oil glut" in 1981 and the short-term production policy of one country, in conjunction with a state of belligerency between two major Middle Eastern oil producers, should not distract from the long-term prospects of the global energy balance. Nor should the achievement of the United States as the largest oil importer in reducing consumption be used for extrapolations. The fact remains that the 1981 energy balance rests precariously on the OECD recession and Saudi Arabia's maximum production. Hence Saudi Arabia's plans to increase substantially its production capacity, even though it is by no means anymore the country with the longest lifetime of its reserves. The long-term outlook for world oil supplies is in the form of a downward trend in physical availabilities. In the period up to 1985, the resumption of output in Iraq and Iran would offer the possibility of some increase over current levels, but the oil-surplus countries as a group will have neither the incentive nor the physical option of resuming the rate of growth of output that ended in 1979 (see Table 5 above). Possibilities of further price increases are therefore to some extent open-ended. The case of a 15 percent nominal annual increase has to be seen in this light, and it has been used as an alternative projection for illustrative purposes.

As regards domestic absorption of revenue by the oil-surplus countries, all the observations made in earlier sections point to the likelihood of various degrees of restraint being put on domestic investment. The majority of the countries in the group will make increasing

efforts to stem the inflow of expatriate labor and to control inflation. Any serious attempt in these directions will be ineffectual unless the ratio of investment to non-oil GDP 1/ is brought down by a considerable amount from the current extraordinary levels.

The upshot of this will be that the assumptions made in the above projections for domestic absorption constitute a maximum and will in all likelihood not be achieved (11 percent real growth of non-oil GDP and the same investment rates as in 1973-80). Any shortfall from these assumptions will, of course, translate into larger surpluses than those projected.

Finally, the rate of return on foreign assets is not known as far as the past and the present are concerned, and therefore any assumption for the future will be the most arbitrary of all assumptions in the model. A 10 percent rate was chosen to permit, with an 8 percent inflation rate, at least a minimal real return, equal to the lower of the two rates of appreciation for oil in the ground. It could well be that a rate of return of less than 10 percent on foreign assets would be a strong motivation to curb the production of discretionary oil. From that point of view, it will be quite obvious to the consuming nations that a collaborative attitude toward ensuring a satisfactory and positive real rate of return on recycled petrodollars will be in their own interest. It is with these considerations in mind that a nominal rate of return of 10 percent may for present purposes be viewed as a minimum requirement rather than as a high case.

To some degree, therefore, the assumptions made in the projection model are mutually supportive, and a downward adjustment in one parameter might require an upward adjustment in another. Nevertheless, they are meant to be illustrative, and no systematic sensitivity analysis was undertaken to test their robustness.

If realistic, these projections would indicate that the present rate of asset accumulation of the oil-surplus countries will remain, as a minimum, at the present annual rate of about US\$100 billion and could increase considerably above this level. Consequently, total assets accumulated by the six countries might pass the trillion dollar mark by 1985 or 1986.

Regarding the disposition of the surplus, it may be assumed that most of it, other than aid to developing countries, which at present is in the order of US\$8 billion a year, will take the form of placements in advanced industrialized countries and in Eurocurrency markets. A breakdown of these placements and subscriptions to the World Bank (IBRD) and International Monetary Fund (IMF) is shown in Table 8 for the period 1974 through 1979.

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1/ See Table 3, above, and Annex Table A.4.

Table 8

NET AGGREGATE CASH DISPOSITION, 1974-79  
(Excluding Flows to Developing Countries)  
(US\$ billion)

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	Amount	Percent of Total
Bank deposits	95	41
Direct placements in banks	20	9
Short-term government securities	8	3
Long-term government securities	25	11
Other flows <u>/a</u>	77	33
IBRD/IMF subscriptions	<u>6</u>	<u>3</u>
	231	100

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/a Acquisition of stocks, bonds, real estate, and other direct investment;  
bilateral government lending.

Source: IMF staff estimates.

ANNEX:

MAIN ASSUMPTIONS BEHIND CAPITAL-SURPLUS PROJECTIONS

This annex first sets out the framework for the main assumptions on the capital-surplus projections, which follow in the statistical tables.

A. Oil Revenue

With the exception of Saudi Arabia and Iraq, it is assumed that total oil production of the oil capital-surplus countries will remain constant at the mid-1981 level. While it is expected that Saudi Arabia will cut down its production in 1982 from 10.3 mbd to 8.5 mbd, it is assumed that Iraq will resume and maintain its pre-1980 production.

Projected oil exports are the difference between oil production and domestic oil consumption. Domestic oil consumption is assumed to increase by 10 to 15 percent per year, reflecting both a projected high growth of non-oil GDP and lack of incentives for energy conservation.

Oil revenue projections are obtained by using annual rates of price increases of 10 percent (Case I) and 15 percent (Case II).

B. Non-Oil GDP

The basic assumption is for non-oil GDP to grow in 1980-85 at the same nominal rate as in 1976-80; i.e., in most cases in the neighborhood of 19 percent per year. In the case of Saudi Arabia, adoption of a more restrained growth policy in the third five-year plan is expected to cause a decline in the nominal growth rate to 17 percent in 1984 and 1985. However, the present high rate of 20 percent is expected to prevail throughout 1982, reflecting the present high level of capital expenditures. For Iraq, the policy stance is to proceed with an ambitious development and reconstruction program. The Iraqi growth rate, estimated at about 25 percent in 1980, is expected to increase to 35 percent in 1982 following a positive impact at the end of the war situation, and thereafter to stabilize at 20 percent in the end of the projection period. In the case of UAE the historic rate has been higher, but for the projections a 20 percent nominal rate was used, thereby bringing it in line with the average for the six countries.

C. Growth of Domestic Investment and Absorptive Capacity

Domestic investment is projected by assuming a constant ratio of investment to non-oil GDP and by using the average ratio of the period 1976-80 (Table A.4). The rationale for this approach is that this ratio has been exceedingly high in most cases and is unlikely to be exceeded in the future. To assume that it will not decline will make the projection deliberately conservative with respect to the size of the oil surplus.

To arrive at total revenue absorption, a historical 1976-80 average ratio between total absorption and domestic investment is applied to the investment projections. The absorption in the base period is defined as the difference between oil revenue (including investment income) and capital surplus. The capital surplus in turn is defined in balance-of-payments terms as the sum of change in reserves, direct investment, foreign aid, and errors and omissions. The errors and omissions are considered to constitute mostly private capital outflows.

D. Investment Income and Total Capital Surplus

The investment income from abroad is derived from an initial stock of assets in 1980 of US\$300 billion, to which annual surpluses are added each year. A 10 percent rate of return was used for the projections, and the returns were added annually to the capital.

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TABLE A.1: AGGREGATE PROJECTION OF OIL PRICES AND OIL REVENUES, 1980-85

Case I : 10% oil price increase  
Case II: 15% oil price increase

Oil Prices  
(US\$/barrel)

	<u>Iraq</u>		<u>Kuwait</u>		<u>Libya</u>		<u>Qatar</u>		<u>S. Arabia</u>		<u>UAE</u>	
	I	II	I	II	I	II	I	II	I	II	I	II
1980	28.9		28.5		35.2		36.3		27.3		30.2	
1981	36.2		35.5		40.4		37.3		32.0		36.5	
1982	39.8	41.6	39.1	40.8	44.4	46.7	41.0	42.9	35.2	36.8	40.2	42.0
1983	43.8	47.9	43.0	46.9	48.9	53.4	45.1	49.3	38.7	42.3	44.2	48.3
1984	48.2	55.1	47.3	54.0	53.8	61.4	49.6	56.7	42.6	48.7	48.6	55.5
1985	53.2	63.3	52.0	62.1	59.1	70.7	54.6	65.2	46.9	56.0	53.4	63.8

Oil Export Revenues  
(US \$ billion)

	<u>Iraq</u>		<u>Kuwait</u>		<u>Libya</u>		<u>Qatar</u>		<u>S. Arabia</u>		<u>UAE</u>		<u>TOTAL</u>	
	I	II	I	II	I	II	I	II	I	II	I	II	I	II
1980 <sup>/a</sup>	26.1		17.9		22.6		5.4		99.0		19.6		190.6	
1981	7.9		16.3		21.1		6.4		115.5		20.6		187.8	
1982	44.4	46.4	17.2	18.0	23.1	24.3	7.0	7.3	103.5	108.2	22.6	23.6	217.0	227.8
1983	48.3	52.8	18.8	20.5	25.3	27.6	7.7	8.4	112.9	123.4	24.8	27.1	237.8	259.8
1984	52.5	60.1	20.6	23.5	27.7	31.6	8.4	9.7	123.1	140.7	27.3	31.1	259.6	296.7
1985	57.3	68.2	22.6	27.0	30.2	36.1	9.3	11.1	134.0	160.0	29.9	35.7	283.3	338.1

/a Preliminary figures.

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TABLE A.2: AGGREGATE PROJECTION OF OIL PRODUCTION AND OIL EXPORTS, 1980-85

(million US barrels per annum)

	Iraq	Kuwait <sup>/a</sup>	Libya	Qatar	S. Arabia <sup>/a</sup>	UAE
	<u>Oil Production</u>					
1980	988	587	654	173	3634	630
1981	241 <sup>/b</sup>	474	574	175	3748	575
1982	1228	456	574	175	3102	575
1983	1228	456	574	175	3102	575
1984	1228	456	574	175	3102	575
1985	1228	456	574	175	3102	575
	<u>Oil Exports</u>					
1980	914	570	606	168.1	3512	620
1981	219	459	523	170.9	3608	564
1982	1115	440	520	170.7	2941	563
1983	1102	438	517	170.5	2917	562
1984	1090	436	514	170.3	2889	561
1985	1078	434	511	170.1	2857	560

<sup>/a</sup> Includes share of the Neutral Zone.

<sup>/b</sup> Estimate based on January and February figures.

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TABLE A.3: AGGREGATE NON-OIL GROWTH, 1974-80,  
AND PROJECTION OF NON-OIL GDP, 1979-85

Non-Oil GDP Growth (%)						
(current prices)						
	Iraq	Kuwait	Libya	Qatar	Saudi Arabia	UAE
1974	32.6	19.6	42.7	30.0	89.9	66.6
1975	26.6	29.8	22.0	30.0	70.2	60.0
1976	23.4	34.2	17.8	30.0	42.2	58.3
1977	15.8	19.7	16.0	30.0	30.9	47.0
1978	14.0	8.9	12.2	20.0	25.5	1.0
1979	20.0 <sup>/a</sup>	20.1	10.6	10.0	19.2	14.9
1980	25.0 <sup>/a</sup>	14.3	16.3	15.0	21.1	23.8
Average Annual Growth Rate 1976-80 (current prices)	19.6	19.4	14.6	21.0	27.7	29.0
Average Annual Growth Rate 1976-80 (constant prices)	n.a.	13.4 <sup>/b</sup>	13.1	n.a.	14.8	22.8
Implicit Non-Oil GDP-Deflator 1980	n.a.	6.5 <sup>/c</sup>	1.6 <sup>/d</sup>	n.a.	8.3	7.8
Projected Annual Growth Rate 1981-85	- <sup>/e</sup>	19.4	14.6	21.0	- <sup>/f</sup>	20.0

Projected Non-Oil GDP, 1979-85  
(US\$ billion at current prices)

	Iraq	Kuwait	Libya	Qatar	Saudi Arabia	UAE
1979	12.0	7.3 <sup>/g</sup>	11.5	1.2	37.5 <sup>/g</sup>	11.0 <sup>/g</sup>
1980	15.0	8.4	11.4	1.5	45.5 <sup>/g</sup>	13.2 <sup>/g</sup>
1981	18.8	10.0	13.1	1.8	53.2	15.8
1982	25.3	11.9	15.0	2.2	62.2	19.0
1983	31.6	14.2	17.2	2.7	72.8	22.8
1984	38.0	17.0	19.7	3.2	85.1	27.4
1985	45.6	20.2	22.5	3.9	100.0	32.8

<sup>/a</sup> World Bank estimate

<sup>/b</sup> For the period 1976-1979.

<sup>/c</sup> Year 1978.

<sup>/d</sup> Year 1979.

<sup>/e</sup> Non-oil GDP growth assumptions:

1981 : 20%, 1982 : 20%, 1983 : 18%, 1984 : 17%, 1985 : 17%.

<sup>/f</sup> Non-oil GDP growth assumptions:

1980 : 25%, 1981 : 25%, 1982 : 35%, 1983 : 25%, 1984 : 20%, 1985 : 25%.

<sup>/g</sup> Actual figures.

TABLE A.4: AGGREGATE DOMESTIC INVESTMENT/NON-OIL GDP RATIO

(current prices)

Domestic Investment/Non-Oil GDP Ratio 1973-80

Year	Iraq		Kuwait		Libya		Qatar		S. Arabia		UAE	
	Domestic Investment	Non-Oil GDP	Domestic Investment	Non-Oil GDP	Domestic Investment	Non-Oil GDP	Domestic Investment	Non-Oil GDP	Domestic Investment	Non-Oil GDP	Domestic Investment	Non-Oil GDP
1973	1.0	3.4	.5	2.2	2.1	3.5	.42	.30	1.8	4.2	.5	.9
1974	2.1	4.5	.6	2.7	3.5	4.7	.33	.40	4.1	7.9	1.0	1.5
1975	3.6	5.7	1.8	3.5	3.9	5.8	.49	.50	8.3	13.5	3.1	3.4
1976	3.5	7.0	2.5	4.7	4.0	6.8	.60	.86	12.7	19.2	4.2	4.9
1977	4.0	8.4	3.8	5.6	4.7	7.9	.83	.89	17.0	25.1	5.8	7.3
1978	5.5	9.9	3.6	6.1	5.0	8.9	.66	.60	17.9	31.5	6.7	8.6
1979	8.0 <sup>/a</sup>	12.0	2.5	7.3	5.3	9.8	.66	.55	22.8	37.5	7.4	11.0
1980	12.0 <sup>/a</sup>	15.0	2.9 <sup>/a</sup>	8.4	7.8	11.4 <sup>/a</sup>	.97	.64	28.5	45.5	8.2	13.2

Average Domestic Investment/Non-Oil GDP Ratio (1973-78) .60 .50 .59 .71 .63 .74

Projected Domestic Investment/Non-Oil GDP Ratio (1980-85) .60 .50 .59 .71 .63 .74

Projected Domestic Investment 1980-85

	Iraq	Kuwait	Libya	Qatar	S. Arabia	UAE
1981	15.0	5.0	7.7	3.6	28.3	11.7
1982	17.0	6.0	8.7	4.4	39.2	14.1
1983	19.0	7.1	10.1	5.3	45.9	16.9
1984	22.8	8.5	11.6	6.4	53.7	20.3
1985	27.3	10.1	13.2	7.8	62.8	24.3

<sup>/a</sup> Bank estimate.

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TABLE A.5: AGGREGATE  
INVESTMENT/NON-OIL GDP RATIO

(US\$ billion at current prices)

<u>Year</u>	<u>Investment</u>	<u>Non-Oil GDP</u>	<u>Investment/ Non-Oil GDP Ratio</u>
	(1)	(2)	(3)=(1÷2)
1973	6.3	14.5	.43
1974	11.6	21.7	.53
1975	21.2	32.4	.65
1976	27.5	43.5	.63
1977	36.2	55.2	.66
1978	39.3	65.6	.60
1979	46.7	78.2	.60
1980	60.4	94.1	.64
<u>Projected</u>	<u>Investment</u>	<u>Non-Oil GDP</u>	<u>Investment Non-Oil GDP Ratio</u>
1981	71.3	112.7	.65
1982	89.4	135.6	.65
1983	104.3	161.3	.65
1984	123.3	190.4	.65
1985	145.5	225.0	.65

Source: Aggregate of figures in Table A. 4.

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TABLE A.6: AGGREGATE INVESTMENT/ABSORPTION RATIO, 1973-80

	(US\$ billion)				
	<u>Oil Revenue</u> <sup>/a</sup>	<u>Capital Surplus</u> <sup>/b</sup>	<u>Absorption</u>	<u>Investment</u>	<u>Investment/ Absorption Ratio</u>
	(1)	(2)	3=(1-2)	(4)	5=(4+3)
1973	18.7	3.8	14.9	6.3	.42
1974	65.0	40.8	24.2	11.6	.48
1975	61.0	-25.6	35.4	21.2	.60
1976	75.8	30.7	45.1	27.5	.61
1977	84.5	26.5	58.0	36.2	.62
1978	84.8	14.5	70.3	39.3	.56
1979	137.9	51.6	85.9	46.7	.54
1980	202.5	97.7	104.8	60.4	.58

Note: Average annual investment/absorption ratio, 1976-80: .58.

/a Includes investment income.

/b Foreign aid is included in capital surplus:

1973 - 1.4	1977 - 6.8
1974 - 2.8	1978 - 6.0
1975 - 5.8	1979 - 6.9
1976 - 5.4	1980 - 8.1.

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TABLE A.7: SAUDI ARABIA: INVESTMENT/ABSORPTION RATIO, 1973-80

	(US\$ billion)				
	<u>Oil Revenue</u> <sup>/a</sup>	<u>Capital Surplus</u> <sup>/b</sup>	<u>Absorption</u>	<u>Investment</u>	<u>Investment/ Absorption Ratio</u>
	(1)	(2)	3=(1-2)	(4)	5=(4+3)
1973	7.7	2.6	5.0	1.8	.34
1974	31.2	22.9	8.3	4.1	.43
1975	27.9	14.1	13.8	8.3	.53
1976	36.3	13.7	22.6	12.7	.56
1977	41.2	12.0	29.2	17.0	.51
1978	37.9	-1.6	39.5	17.9	.43
1979	57.7	9.7	46.3	22.8	.49
1980	99.0	37.8	61.2	28.5	.47

Note: Average annual investment/absorption ratio, 1976-80: .48.

/a Includes investment income.

/b Foreign aid is included in capital surplus:

1973 - .5	1977 - 3.9
1974 - 1.0	1978 - 3.9
1975 - 3.1	1979 - 3.5
1976 - 3.3	1980 - 4.0.

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TABLE A.8: IRAQ: INVESTMENT/ABSORPTION RATIO, 1973-80

	(US\$ billion)				
	<u>Oil Revenue</u> <sup>/a</sup>	<u>Capital Surplus</u> <sup>/b</sup>	<u>Absorption</u>	<u>Investment</u>	<u>Investment/ Absorption Ratio</u>
	(1)	(2)	3=(1-2)	(4)	5=(4+3)
1973	2.0	.8	1.2	1.0	.83
1974	6.8	2.4	4.4	2.1	.47
1975	8.4	.3	8.1	3.6	.44
1976	9.2	2.5	6.7	3.5	.52
1977	9.8	3.0	6.8	4.0	.59
1978	11.1	3.2	7.9	5.5	.69
1979	22.5	11.7	10.8	8.0	.74
1980	26.1	11.1 <sup>/c</sup>	15.0 <sup>/c</sup>	12.0	.80

Note: Average annual investment absorption ratio, 1976-80: .67.

/a Includes investment income.

/b Foreign aid is included in capital surplus:

1973 - —	1977 - .1
1974 - .4	1978 - .1
1975 - .2	1979 - .9
1976 - .2	1980 - .9 (estimate).

/c World Bank estimate.

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**TABLE A.9: LIBYA: INVESTMENT/ABSORPTION RATIO, 1973-80**

	(US\$ billion)				
	<u>Oil Revenue</u> <sup>/a</sup>	<u>Capital Surplus</u> <sup>/b</sup>	<u>Absorption</u>	<u>Investment</u>	<u>Investment/ Absorption Ratio</u>
	(1)	(2)	3=(1-2)	(4)	5=(4+3)
1973	3.5	-1.9	5.4	2.1	.39
1974	7.9	4.3	3.6	3.5	.97
1975	6.4	1.5	4.9	3.9	.80
1976	8.7	3.4	5.3	4.0	.75
1977	10.3	3.8	6.5	4.7	.72
1978	10.0	2.4	7.6	5.0	.66
1979	16.1	8.3	7.8	5.3	.68
1980	22.8	13.4	9.4	7.8	.83

Note: Average annual investment/absorption ratio, 1976-80: .73.

/a Includes investment income.

/b Foreign aid is included in capital surplus:

1973 - .2	1977 - .1
1974 - .1	1978 - .1
1975 - .3	1979 - .2
1976 - .1	1980 - .2 (estimate).

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TABLE A.10: KUWAIT: INVESTMENT/ABSORPTION RATIO, 1973-80

	(US\$ billion)				
	<u>Oil Revenue</u> <sup>/a</sup>	<u>Capital Surplus</u> <sup>/b</sup>	<u>Absorption</u>	<u>Investment</u>	<u>Investment/ Absorption Ratio</u>
	(1)	(2)	3=(1-2)	(4)	5=(4+3)
1973	3.2	1.5	.8	.49	.61
1974	10.6	6.3	4.1	.62	.15
1975	9.2	5.6	3.3	1.82	.55
1976	10.5	5.8	3.8	2.54	.66
1977	10.6	5.2	5.0	3.83	.77
1978	12.1	6.2	4.1	3.55	.86
1979	20.5	14.6	3.4	2.50	.74
1980	23.9	19.9 <sup>/c</sup>	4.0	2.90	.73

Note: Average annual investment/absorption ratio, 1976-80: .75.

/a Includes investment income.

/b Foreign aid is included in capital surplus:

1973 - .3	1977 - 1.4
1974 - .6	1978 - .9
1975 - 1.0	1979 - .8
1976 - .6	1980 - 1.0 (estimate).

/c World Bank estimate.

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TABLE A.11: UAE: INVESTMENT/ABSORPTION RATIO, 1973-80

	(US\$ billion)				
	<u>Oil Revenue</u> <sup>/a</sup>	<u>Capital Surplus</u> <sup>/b</sup>	<u>Absorption</u>	<u>Investment</u>	<u>Investment/ Absorption Ratio</u>
	(1)	(2)	3=(1-2)	(4)	5=(4+3)
1973	1.7	.8	.7	n.a.	n.a.
1974	6.4	3.6	3.2	1.0	.30
1975	7.2	3.2	4.0	3.1	.49
1976	8.9	4.6	4.3	4.2	.98
1977	10.4	2.2	8.2	5.8	.71
1978	11.2	3.6	7.6	6.7	.88
1979	17.1	5.6	11.5	7.4	.64
1980	24.9	12.2	12.7	8.2	.65

Note: Average annual investment/absorption ratio, 1976-80: .77.

/a Includes investment income.

/b Foreign aid is included in capital surplus:

1973 - .3	1977 - 1.1
1974 - .5	1978 - .9
1975 - .9	1979 - 1.2
1976 - 1.0	1980 - 1.7 (estimate).

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TABLE A.12: QATAR: INVESTMENT/ABSORPTION RATIO, 1973-80

	(US\$ billion)				
	<u>Oil Revenue</u> <sup>/a</sup>	<u>Capital Surplus</u> <sup>/b</sup>	<u>Absorption</u>	<u>Investment</u>	<u>Investment/ Absorption Ratio</u>
	(1)	(2)	3=(1-2)	(4)	5=(4+3)
1973	.6	.0	.5	.42	.80
1974	2.1	1.3	1.1	.33	.30
1975	1.9	.9	1.3	.49	.39
1976	2.2	.7	1.6	.60	.38
1977	2.2	.3	2.0	.83	.42
1978	2.5	.7	1.7	.66	.27
1979	3.6	1.7	2.0	.66	.33
1980	5.8	3.3 <sup>/c</sup>	2.5 <sup>/c</sup>	.97	.38

Note: Average annual investment/absorption ratio, 1976-80: .36.

/a Includes investment income.

/b Foreign aid is included in capital surplus:

1973 - .1	1977 - .2
1974 - .2	1978 - .1
1975 - .3	1979 - .3
1976 - .2	1980 - .3 (estimate).

/c World Bank estimate.

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TABLE A.13: AGGREGATE CAPITAL-SURPLUS PROJECTIONS, 1981-85

(US\$ billion)

Case I<sup>/a</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	187.8	125.9	61.9	37.9	99.3
1982	217.8	149.3	68.5	49.2	117.7
1983	237.8	174.5	63.3	60.5	123.7
1984	259.6	205.8	53.8	71.7	125.5
1985	283.3	242.5	40.8	83.2	124.0

Case II<sup>/b</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	187.8	125.9	61.9	37.9	99.3
1982	227.8	149.3	78.5	50.3	128.8
1983	259.8	174.5	85.3	64.1	149.4
1984	296.7	205.8	90.9	79.3	170.1
1985	338.1	242.3	95.8	96.8	192.9

/a Assuming 10% nominal change in oil prices and 10% rate of return on external assets.

/b Assuming 15% nominal change in oil prices and 10% rate of return on external assets.

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TABLE A.14: SAUDI ARABIA: CAPITAL-SURPLUS PROJECTIONS

(US\$ billion)

Case I<sup>/a</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	115.5	67.5	48.0	19.6	67.6
1982	103.5	81.0	22.5	24.6	47.1
1983	112.9	95.6	17.3	28.8	46.1
1984	123.1	111.9	11.2	32.8	44.0
1985	134.0	130.8	3.2	36.4	39.6

Case II<sup>/b</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	115.5	67.5	48.0	19.6	67.6
1982	108.2	81.0	27.2	25.1	52.3
1983	123.4	95.6	27.8	30.4	58.2
1984	140.7	111.9	28.8	36.3	65.1
1985	160.0	130.8	29.2	42.8	72.0

/a Assuming 10% nominal change in oil prices and 10% rate of return on external assets.

/b Assuming 15% nominal change in oil prices and 10% rate of return on external assets.

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TABLE A.15: IRAQ: CAPITAL-SURPLUS PROJECTIONS

(US\$ billion)

Case I<sup>/a</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	7.9	22.4	-14.5	.8	-14.2
1982	44.4	25.4	19.0	2.7	21.7
1983	48.3	28.4	19.9	5.0	24.8
1984	52.5	33.9	18.6	7.3	25.9
1985	57.3	40.7	16.6	9.7	26.3

Case II<sup>/b</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	7.9	22.4	14.5	.3	14.2
1982	46.4	25.4	21.0	3.0	24.0
1983	52.8	28.4	24.4	5.8	30.2
1984	60.1	33.9	26.2	9.0	35.2
1985	68.2	40.7	27.5	12.6	40.4

/a Assuming 10% nominal change in oil prices and 10% rate of return on external assets.

/b Assuming 15% nominal change in oil prices and 10% rate of return on external assets.

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TABLE A.16: LIBYA: CAPITAL-SURPLUS PROJECTIONS

(US\$ billion)

Case I<sup>/a</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	21.1	10.5	10.6	4.5	15.1
1982	23.1	12.2	10.9	6.0	16.9
1983	25.3	13.8	11.5	7.8	19.3
1984	27.7	15.9	11.8	9.7	21.5
1985	30.2	18.1	12.1	11.9	24.0

Case II<sup>/b</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	21.1	10.5	10.6	4.5	15.1
1982	24.3	12.2	12.1	6.2	18.3
1983	27.6	13.8	13.8	8.2	22.0
1984	31.6	15.9	15.7	10.5	26.2
1985	36.1	18.1	18.0	13.4	31.4

/a Assuming 10% nominal change in oil prices and 10% rate of return on external assets.

/b Assuming 15% nominal change in oil prices and 10% rate of return on external assets.

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TABLE A.17: KUWAIT: CAPITAL-SURPLUS PROJECTIONS

(US\$ billion)

Case I<sup>/a</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	16.3	6.7	9.6	7.6	17.2
1982	17.2	8.0	9.2	9.3	18.5
1983	18.8	9.5	9.3	11.1	20.4
1984	20.6	11.3	9.3	13.1	22.4
1985	22.6	13.5	9.1	15.4	24.5

Case II<sup>/b</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	16.3	6.7	9.6	7.6	17.2
1982	18.0	8.0	10.0	9.3	19.3
1983	20.5	9.5	11.0	11.4	22.4
1984	23.5	11.3	12.2	13.7	25.9
1985	27.0	13.5	13.5	16.4	29.9

/a Assuming 10% nominal change in oil prices and 10% rate of return on external assets.

/b Assuming 15% nominal change in oil prices and 10% rate of return on external assets.

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TABLE A.18: UAE: CAPITAL-SURPLUS PROJECTIONS

(US\$ billion)

Case I<sup>/a</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	20.6	15.2	5.4	4.2	9.6
1982	22.6	18.3	4.3	5.0	9.3
1983	24.8	21.9	2.9	5.8	8.7
1984	27.3	26.4	.9	6.5	7.4
1985	29.9	31.6	-1.7	7.0	5.3

Case II<sup>/b</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	20.6	15.2	5.4	4.2	9.6
1982	23.6	18.3	5.3	5.1	10.4
1983	27.1	21.9	5.2	6.2	11.4
1984	31.1	26.4	4.7	7.2	11.9
1985	35.7	31.4	4.3	8.4	12.7

/a Assuming 10% nominal change in oil prices and 10% rate of return on external assets.

/b Assuming 15% nominal change in oil prices and 10% rate of return on external assets.

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TABLE A.19: QATAR: CAPITAL-SURPLUS PROJECTIONS

(US\$ billion)

Case I<sup>/a</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	6.4	3.6	2.8	1.2	4.0
1982	7.0	4.4	2.6	1.6	4.2
1983	7.7	5.3	2.4	2.0	4.4
1984	8.4	6.4	2.0	2.3	4.3
1985	9.3	7.8	1.5	2.8	4.3

Case II<sup>/b</sup>

<u>Year</u>	<u>Oil Revenue</u>	<u>Absorption</u>	<u>Surplus Component</u>	<u>Investment Income</u>	<u>Total Capital Surplus</u>
	(1)	(2)	(3)=(1)-(2)	(4)	(5)=(3)+(4)
1981	6.4	3.6	2.8	1.2	4.0
1982	7.3	4.4	2.9	1.6	4.5
1983	8.4	5.3	3.1	2.1	5.2
1984	9.7	6.4	3.3	2.6	5.8
1985	11.1	7.8	3.3	3.2	6.5

/a Assuming 10% nominal change in oil prices and 10% rate of return on external assets.

/b Assuming 15% nominal change in oil prices and 10% rate of return on external assets.

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