COMPARATIVE DEVELOPMENT WITH LARGE ENDOWMENTS OF CAPITAL: (OIL REVENUE) THREE CASE STUDIES NIGERIA, IRAN AND LIBYA

THESIS

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Eno F. Inyang
Denton, Texas
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This study is an examination and comparison of the manner in which Nigeria, Iran and Libya used oil revenue for their economic development. The research methodology was the case study approach, utilizing statistical time series data, as well as a historical profile of each country's income and expenditure accounts. As a prelude to the oil injection, the pre-oil revenue economy, the history of the oil industry, and the previously implemented development plans of each of these nations is surveyed. The impact of the oil revenues on the standard of living and the non-oil sectors of these economies is examined.

The paper concludes with projections concerning each country's ability to continue to promote economic development when its exhaustible oil reserves runs out.

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CHAPTER I

INTRODUCTION

In Nigeria, Iran and Libya, oil revenue has played an important role in economic development, since oil was discovered, refined and marketed. The economies of these three countries are mainly based upon the revenues earned by selling oil. The degree of dependence on oil revenue varies with the proportion of oil revenues in the Gross National Product (GNP). Oil revenues have been and continue to be the major source of funds to finance economic development plans, the principle source of foreign exchange and the mainstay of government budgets. Oil revenues have helped these three countries increase both public consumption and public investment expenditures. The substantial and significant contribution of oil incomes is fundamental to any research on these three economies.

Purpose of Thesis

The purpose of this study is to examine and compare the petroleum export-led growth in Nigeria, Iran and Libya, and the extent of the economic gains associated with their oil. The paper compares the problems

associated with reliance on oil revenue in these countries and analyzes the impact of oil revenues on other sectors of the economies and on their development plans.

Methodology

The methodology used in this study is comparative, numerical, and descriptive analysis. The second chapter of this study compares the pre-oil revenue economies of these three countries. The third chapter summarizes the history of oil development in Nigeria, Iran and Libya. In the fourth chapter, the comparative impact of oil revenue on the economic development plans of these three nations is analyzed. Chapter five surveys the comparative impacts of oil-revenue on non-oil sectors of the economy. Chapter six gives a summary and the conclusions of the study.

Significance of Thesis

The importance of this thesis is to analyze the dependence of these three countries on oil revenue for growth and development during the period of this thesis. The study shows that the economy of each of these three countries is dependent on its oil industry and that oil provides the only industry which transmits growth to the rest of the economy by attracting or creating factors of production. The study demonstrates that oil industry payments to these governments lead to potential domestic public savings. Petroleum export earnings and net private

foreign capital inflows are shown to have provided foreign exchange in amounts significantly in excess of the oil industry account requirements in Iran, Libya and Nigeria. This sector contributes nearly one-half of the total amount of foreign exchange available for use by the non-oil sectors. The oil sector has upgraded human resources in these three countries through employment in the oil industry. The paper shows that dependence on the petroleum industry can be reduced by placing greater emphasis on industrial sector improvement.

Sources of Data

Unavailability and unrealiability of data are serious problems for research on these three countries. Upon this, the references utilized to analyze these three countries were obtained from reliable sources such as United States Department of Commerce, United Nations Statistical Year Book, each country's central bank annual statistical report, Organization of Petroleum Exporting Countries (OPEC) Bulletin, oil and gas journals, each country's oil industry quarterly reports, magazines and journals that give reliable information on the topic of this study, and International Monetary Funds Statistical Year Book. The library of North Texas State University was used to obtain books and information for this study.

CHAPTER II

COMPARATIVE ANALYSIS: PRE-OIL REVENUE ECONOMIES OF NIGERIA, IRAN AND LIBYA

Introduction

Purpose of Chapter II

The purpose of this chapter is to analyze the economies of Nigeria, Iran and Libya before oil revenue had its significant effects. The performance of the economy and the leading economic sector in each country is reviewed. The periods selected for this analysis vary according to when the oil sector was developed in each country. For Nigeria, the period selected is from 1950 to 1961, prior to the First National Development Plan. Libya's pre-oil revenue economy era is from 1951 to 1961. In the case of Iran, the period dates as far back as 1900 to 1911. The pre-oil economy analysis of Iran will be very brief, as, according to Malcolm E. Yapp, "There was no such thing as the Iranian economy" during this period from 1900 to 1911 (5, p. 1) For Libya, John L. Wright, author of Libya: A Modern History, said "At independence Libya was one of the poorest countries in the world, with annual income estimated at $35 per capita" (7, p. 4). For

Nigeria, between 1940 and 1960 colonial economic policy was instituted by Great Britain. In summary, Nigerian colonial development policy from 1900-1960 was in British hands (4, p. 8).

Nigeria

Population

The Nigerian population, according to the 1952/1953 census, is indicated in Table 2.1. This early census in Nigeria was probably subject to the error of under enumeration. Official estimate of the growth rate of population from 1951 to 1959 was 3.5 per cent per annum. Registration data for 1955 to 1959 suggest that the growth rate of population during that period was 3.7 per cent per annum (2, p. 74). Tables 2.2 and 2.3 show Nigerian population distribution and population age structure, respectively.

Agriculture

In any economy one or more sectors serves as a prime mover, driving the rest of the economy forward. During the 1950s agriculture was the engine of growth in the Nigerian economy. According to the 1952/1953 census, 78 per cent of the total male working force was engaged in agriculture. Agriculture accounted for almost two-thirds of Gross Domestic Product (GDP) in 1956/1957 as oil

TABLE 2.1

NIGERIA POPULATION BY REGION: 1952/1953

Regions	Persons	Percentage of Total
Northern Region	16,840,000	55.36
Western Region	6,087,000	20.01
Eastern Region	7,218,000	23.73
Lagos	272,000	0.89
Total Federation	30,417,000	99,99

Source: United Nation Economic Commission for Africa, Economic Bulletin for Africa, June 1962, p. 74.

TABLE 2.2

NIGERIAN POPULATION DISTRIBUTION

Regions	Population Per Square Mile Area
Northern Nigeria	60
Western Nigeria including Midwest	134
Eastern Nigeria	245
Lagos	10,070
Nigeria (Federation)	85

Source: Federal Office of Statistics, Digest of Statistics, No. 12, Lagos, July 1963, p. 3.

TABLE 2.3

PERCENT OF TOTAL POPULATION

	0-16 Yrs	7-14 Yrs	15-49 Yrs	50 Yrs and Over
Northern Nigeria	27.74	14.60	48.21	9.45
Western Nigeria including Mid-West	30.09	17.55	44.45	7.95
Eastern Nigeria	28.79	17.44	48.80	5.00
Lagos	20.59	16.10	58.54	4.49
Nigeria (Federation)	28.40	15.86	47.68	8.05

Source: Computed from National Economic Council, Economic Survey of Nigeria, 1959, p. 104.

accounted for more than two-thirds of GDP in 1980/1981. The importance of agriculture in Nigeria during this period was so great that it generated almost 85 per cent of revenue for foreign exchange, balance of payments, financing oil exploration, and development plans. In 1960 agricultural products accounted for about 86 per cent of the total export value of major commodities (12, p. 7).

The growth rate of production in principal agricultural commodities in Nigeria during this period was 5.1 per cent as Table 2.4 indicates. Table 2.5 shows estimated produce income of principal agricultural commodities. During this period Nigeria was the world's largest exporter of ground nuts and palm kernels, and the second largest exporter of cocoa (12, p. 9)

Manufacturing Industy

There was little or no manufacturing industry prior to the 1950s, and thus it played only a small role in the Nigerian economy prior to 1950. From 1950 to 1962 manufacturing grew at the remarkable rate of about 16.6 per cent annually (4 , p. 74). The growth rates for the various components of the industrial sector can be ascertained from Table 2.6. On the basis of these data, the mining component was virtually stagnant. Public utilities increased consistently during the fifties at a compound annual rate of 19 per cent. Manufacturing

TABLE 2.4

GROWTH RATE OF PRODUCTION IN NIGERIAN PRINCIPAL AGRICULTURAL COMMODITIES 1956-1960

Commodity	Per Cent per Annum
Cocoa	9.0
Rubber	8.5
Timber	6.5
Ground nuts	6.3
Cotton	6.1
Palm produce	-0.3
Average	5.1

Source: Central Bank of Nigeria, Lagos, Annual Report for the Year Ended 31 December 1960.

TABLE 2.5

ESTIMATED PRODUCE INCOME OF PRINCIPAL AGRICULTURAL COMMODITIES 1958/1959 TO 1962/1963 £'S MILLIONS
(1£ Nigerian = U.S. $2.80, 1959-60)

	1958/59	1959/60	1961/61	1961/62	1962/63
Ground nuts	22.9	19.6	27.9	28.8	33.9
Cocoa	19.6	23.2	20.1	18.3	17.8
Palm Kernels	12.4	12.3	12.5	9.1	10.3
Seed Cotton	4.7	5.0	8.3	4.1	6.3
Palm Oil	8.7	8.7	8.0	5.0	5.8
Beni Seed	0.6	0.8	1.3	0.9	1.0
Soya Beans	0.1	0.1	0.4	0.4	0.6

Source: Central Bank of Nigeria, Annual Report for the Year Ended December 31, 1963, p. 5.

TABLE 2.6

VOLUME INDEX OF INDUSTRIAL PRODUCTION 1950-1961

	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961
Manufacturing	29	29	44	48	59	66	93	100	117	....	136	157
Mining	81	82	83	88	83	93	98	100	82	88	113	174
Public Utilities	41	42	51	59	63	75	95	100	116	124	151	228

Source: O. Aboyade, Foundation of an African Economy, New York, Praeger, 1960, p. 134. Index computed from the files of the Federal Office of Statistics.

products included such goods as beer, soft drinks, tobacco, textiles, margarine, cement, asbestos, plastics, phonograph records and grew at a rate of about 3 per cent during the period. In addition, oil milling, rubber processing, baking, tanning and saw milling were important secondary industries (12, p. 10).

Mining.--The contribution of the mining industry to Gross Domestic Product during this period was rather small. In the national income report of 1956/1957, the mining industry contributed only about 1.2 per cent of Gross Domestic Product. The principal mineral resources during this period were limestone, columbite, tin, metal, cassisterite, gold clay and coal (12, p. 10).

Infrastructure

Infrastructures, such as education, transport and communication, were expanded during this period.

Transport and Communication.--Nigeria's transport and communication facilities during this period required improvements. All regional governments had extensive road building programs (12, p. 11)

There were 2,198 route miles of line on 3 ft. 6 in. guage in Nigeria during this period. In 1950-1951, 5,600,000 passengers travelled an average distance of over 60 miles, 1,700,000 tons of goods were carried an average

distance of 400 miles. In 1959-1960, 7,989,000 passengers travelled an average distance of 45 miles, 2,811,000 tons of goods were carried an average distance of 447 miles. There were 37,844 miles of maintained roads in Nigeria during this period, and over 5,000 miles were tarred. The Post and Telegraphs Department provided postal facilities at over 1,240 offices and agencies during this period. At the end of 1960, Nigeria had a total of 36,352 telephones in use as compared to only 72 telephones in 1950.

Education.--The educational system in Nigeria during the pre-oil revenue economy was better than that of Iran and Libya. According to the 1952-1953 census, about 65 percent of the population was illiterate. The illiteracy rate was lower in Nigeria than Iran and Libya. In 1951, five million school age pupils enrolled in primary school, 23,358 enrolled in secondary school and 8,592 students attended teachers training colleges. Most schools were owned and maintained by government and voluntary agencies (mainly Christian missionary bodies), native administrations and private individuals. In 1951, there were 674 primary schools, 11 middle schools, 9 secondary schools and 11 teachers training colleges. The estimated expenditure by the government on education for the financial year 1950/1951 was N£2,457,860. An autonomous university was established in 1947 at Ibadan; in 1950/1951

a total of 322 students were enrolled; in 1951/1952 there were 339 students; in 1953/1954 enrollment rose to 405; in 1956/1957 the number was 594; and 1,000 students were in the University of Nigeria, Ibadan in the 1958/1959 school year (10, 1951-1962). The number of educational institutions in Nigeria in 1952 was as follows: primary school, 10,406; secondary school, 135; and 123 for teacher's training colleges. In 1953, primary school enrollment jumped to 7,177,789, secondary schools had 32,500 students, and teacher's training colleges had 14,560. The total number of institutions in 1953 was 11,364, 127 and 139 for primary schools, secondary schools and teacher's training colleges, respectively (10, p. 343).

In 1954, education became the responsibility of the regional governments. During this year, free education for all primary school children was implemented in the western region for ages 6-12. In 1955, the eastern region followed suit, while in January 1957 the same benefit was enacted in Lagos. Because of this, secondary school's and teacher's training college's enrollment in the country went up by 20 per cent. In 1956 the teacher's training colleges were 285, and secondary schools went up by 84 more from 1955. In 1958 teacher's training colleges were 331. The number of trained teachers went up from 8,592 in 1951 to 14,012 in 1958 (10, p. 344).

During this period education was financed from public funds--the Nigerian Development Scheme and Colonial Development and Welfare Scheme. In 1950 £1.5 million came from the above foundations. In the 1951/1952 financial year expenditure on education went thus: £4,587,555 and £480,960 came from the Nigerian Development Scheme and Colonial Development and Welfare Scheme plus the native administration, respectively. In 1953/1954 expenditure from both of the foundations totaled £4,406,540, an increase of £1,029,437 from the 1952/1953 school year.

In the long run, an attempt to offer primary education to every child in Nigeria successfully stimulated what Albert Hirschman called "unbalanced growth" (4, p. 80). The very pace of expansion created intolerable strains which forced the Nigerian regional governments not only to stablize primary school enrollment and expenditure, but also to undertake vigorous efforts to expand secondary schools, universities, technical and teacher training facilities. The campaign left Nigeria better able to meet her "high level" manpower requirements in the long run than she might otherwise have been (4, p. 80).

National Income

Gross Domestic Product (GDP).--Table 2.7 shows Gross Domestic Product in thousands of Nigerian pounds for the period 1950-1960. The annual growth rate of Gross

TABLE 2.7

NIGERIA NATIONAL INCOME 1950-1960
£'000
(1£ Nigerian = U.S. $2.80, 1950-1960)

Year	GDP £'s Thousands	Percentage Change
1950	600.3	
1951	754.0	7.8
1952	809.3	7.3.
1953	827.7	2.2
1954	892.8	7.9
1955	921.8	3.3
1956	903.5	-2.0
1957	938.7	3.9
1958	970.7	3.4
1959	982.7	1.8
1960	1,023.8	3.6

Source: Compiled from First Nigerian National Development Plan 1962, p. 13.

Domestic Product was about 4 per cent between 1950 and 1957 as the table shows. The per capita income in Nigeria during this period was £29.6. Between 1958 and 1960 the Gross Domestic Product growth rate went up to 4.5 per cent. An overall estimate of the growth of national income as a whole is determined partly by the estimate for each sector taken separately and partly by the weighting of the sectors. Table 2.8 shows Nigeria's Gross Domestic Product for 1956/1957 broken down by sector.

Public Finance.--Table 2.9 shows Nigerian Government Revenue Sources and Development expenditure for 1950-1960 in thousands of Nigerian pounds. This table shows that most of the public expenditures came from customs and excise, direct taxes, colonial development welfare grant, development schemes and other revenue. The 1960 figures of this table were estimated. Period year ended 31 March of every year (11, p. 152)

Libya

Libya became an independent sovereign state on December 24, 1951. During the first decade of independence, 1951-1961, Libya was too poor to think of any ambitions beyond economic and political survival. The new "United Kingdom of Libya" was established as a federal state with three consituent provinces of Tripolitania, Cyrenaica, and Fezzan. The new country is 1,760,000

TABLE 2.8

NIGERIA'S GROSS DOMESTIC PRODUCT
BY SECTOR 1956-1957
(1£ Nigerian = U.S. $2.80, 1950-69)

Sector	Value in £'s Millions	Percentage of Total GDP
Field Crops: Cocoa and Palm Products	333.5	41.0%
Tree Crops: Rubber, Kilanuts, Bananas	76.2	9.5%
Livestock 7% Fishing 1%	64.6	8.0%
Forest Products	26.7	3.25%
Transport and Distribution	119.1	14.5%
Construction and Civil Engineering	89.4	11.0%
Government	44.9	5.5%
Manufacturing Craft Industries Others Minerals Remainder	58.5	7.25%

Source: Compiled from First Nigerian National Development Plan 1962, p. 13.

TABLE 2.9

NIGERIAN GOVERNMENT REVENUE SOURCES
AND DEVELOPMENT EXPENDITURE
1950-1960 in £'000
(1£ Nigerian = U.S. $2.80, 1950-69)

Year	Customs and Excise	Direct Taxes	Colonial Development Welfare Grant	Development Schemes	Other Revenue	Total
1950	17,195	4,830	2,292	2,258	6,448	30,765
1951	18,161	5,344	2,271	2,602	7,018	32,794
1952	32,106	6,777	2,499	3,849	8,945	50,327
1953	33,948	6,810	2,903	4,339	7,245	50,906
1954	42,104	5,691	3,027	4,797	8,434	59,950
1955	43,960	6,713	1,519	2,078	10,289	62,481
1956	44,753	6,757	121	357	8,319	59,950
1957	50,790	6,557	661	8,589	12,559	70,567
1958	51,695	6,666	.....	6,102	12,584	70,945
1959	55,918	6,678	.....	9,296	14,720	77,316
1960*	61,359	5,575	.....	4,000	16,990	83,924

*Estimated

Source: The Federal Ministry of Commerce and Industry: Nigeria Handbook of Commerce and Industry, 1960, p. 152.

square kilometers in size with an Arab-speaking Muslem population. On its establishment, Libya was endowed with a constitutional monarchy. During this period Libya was an economic wasteland that could not effectively utilize foreign aid. Thus, analysis of the Libyan pre-oil economy will be very brief. During this period Libya was marked by low levels of economic performance. Throughout the 1950s, the American and British economic aid was the source of most of the Libyan government revenues.

At independence, Libya's total budget recommended for the first phase of economic and social development was £L2,800,000 to be spent over the next five years (8, p. 142).

Population

A census taken in 1954, with the help of the United Nations Mission, showed a total Libyan population of 1.1 million. The population growth rate was as low as 1.1 per cent, due to the infant mortality rate. Population density, shown in Table 2.10, in 1954 averaged 62 persons per 100 square kilometers. The Libyan birth rate was extremely high, about 5.2 per cent per annum, and the death rate was 4.2 per cent per annum (8, p. 142). Table 2.11 shows the population of Libya between 1954 and 1964.

TABLE 2.10

POPULATION DENSITIES, 1954 CENSUS

	Population Area Density				
Provinces	Per Cent	Thousands of Persons	Per Cent	Thousands of Sq Km	Pop. per 100 Sq Km
Cyrenacia	27	291	49	855	34
Tripolitania	68	738	14	250	296
Fezzan	5	59	37	654	9

Source: United Kingdom of Libya, Ministry of National Economy, Statistical Abstract of Libya, 1958-1962 (Tripoli: Census and Statistical Department).

TABLE 2.11

POPULATION 1954-1964
MID-YEAR ESTIMATES

Year	Population Mid-Year Estimates
1954	1,088,889
1955	1,128,706
1956	1,169,976
1957	1,212,759
1958	1,257,106
1959	1,303,075
1960	1,350,725
1961	1,400,117
1962	1,451,315
1963	1,504,388
1964	1,559,399

Source: Kingdom of Libya, Ministry of National Economy, Statistical Abstract, 1964, Tripoli, Census and Statistical Department, 1964.

Agriculture and Livestock

Agriculture and animal husbandry were the two important sectors of the Libyan economy during this period. There was enough land and water in Libya according to the United Nations Mission to Libya in 1953, and arid soil and uncertain rainfall were believed to be major drawbacks for agricultural development. The mission made the following estimates of output in these two sectors in 1957/1958 (see Table 2.12). The breakdown of the estimate was estimated by the mission due to unavailability of data during this period. A rough check of numbers made by the agricultural departments in May each year produced the following figures (11, p. 28).

	1955	1956	1957	1958
Tripolitania				
Sheep	429	503	574	631
Goats	436	469	573	631
Cattle	49	45	47	52
Camels	70	74	81	89
Cyrenacia				
Sheep	1,032	815	545	785
Goats	641	586	524	661
Cattle	86	60	33	59
Camels	76	76	76	83

TABLE 2.12

AGRICULTURAL AND LIVESTOCK PRODUCTION
1957/1958 BY REGION
(£L millions)
(1£ Libyan = U.S. $2.80)

	£L Millions
Tripolitania	
Cereals	1.2
Olives	2.3
Fruit and nuts	2.1
Vegetables	1.2
Other agricultural production	0.8
Animal products	2.7
Total	10.3
Cyrenaica	
Cereals	0.9
Olives, fruit and nuts	0.4
Other agricultural production	0.4
Animal products	1.2
Exports of live animals	0.8
Total	3.7
Fezzan	
Agricultural and livestock production	0.5
All Libya	
Gross value of agricultural output	14.5
Less input of fertilizer, machinery, seed	2.0
Net value of agricultural output	12.5

Source: World Bank Mission, The Economic Development of Libya, 1960, p. 28.

The United States Embassy in Libya compiled estimates of maximum and minimum numbers of livestock in Libya during the period 1950-1956, and these were as follows:

	Minimum Numbers	Maximum Numbers
Sheep	300,000	1,236,000
Goats	667,000	1,232,000
Cattle	50,000	96,000
Camels	93,500	197,000
Horses, mules and asses	59,500	95,000
Pigs	2,000	3,000

The area of uncertainty covers not only the numbers of animals, but also the production derived from any given number. The estimates used by the mission gave a per capita consumption of 7-8 kilograms of meat a year in Cyrenaica and 8-9 kilograms a year in Tripolitania. For milk and milk products the corresponding figures are 70 kilograms a year and 50 kilograms a year in Cyrenaica and Tripolitania, respectively, Table 2.13 shows public expenditures on agriculture, water resources and forestry.

Education

The educational condition of Libya during this period was poor. According to the official census figures of 1954, 81.1 per cent of the main Libyan population was illiterate. The illiteracy rate was higher for women

TABLE 2.13

PUBLIC EXPENDITURES ON AGRICULTURE,
WATER RESOURCES AND FORESTRY
(£L '000: Fiscal Years Beginning April)
(1 Libyan Pound equals U.S. $2.80)

	1954/55	1955/56	1956/57	1957/58	1958/59
Federal Government[a]	5	234	267	204	182
Tripolitania	255	348	218	341	378
Cyrenaica	107	123	149	156	189
Fezzan	24	26	23	27	28
LARC[b]	...	822	1,238	871	510
LPDSA	217	391	270	197	84
Total	608	1,944	2,165	1,796	1,371
Of which					
General Administration	96	122	151	148	161
Soil and water conservation	83	366	454	377	146
Irrigation and wells	93	116	236	230	82
Water investigations	6	15	42	68	42
Forestry and dune fixation	90	119	176	228	196
Land settlement	32	49	48	61	92
Horticulture	5	40	91	40	64
Animal husbandry	66	191	201	129	130
Agricultural tools and machinery	...	23	26	22	156
Agricultural credit	...	500	500	...	...
Assistance to cooperatives	7	45	6	15	18
Grain storage	...	...	12	28	48
Training and research	80	86	155	267	165
Extension services	5	14	19	41	25
Miscellaneous[c]	45	258	48	142	46
Total	608	1,944	2,165	1,796	1,371
Of which:					
Recurrent Expenditure	342	803	697	932	900
Capital expenditure[d]	266	1,141	1,468	864	471
Total	608	1,944	2,165	1,796	1,371

TABLE 2.13--continued

[a]Includes expenditures out of the Exceptional Budget. The figures for 1955/56 and 1957/58 contain £L211,000 and £L89,000, respectively, for expenditures on locust campaigns.

[b]Includes £L500,000 in each of the years 1955/56 and 1956/57 for capitalization of the National Agricultural Bank.

[c]The figures for 1955/56 and 1957/58 contain £L211,000 and £L89,000, respectively, for expenditures on locust campaigns.

[d]The distinction between recurrent and capital expenditures, being largely based on the mission's own estimates, is subject to a considerable margin of error.

Source: World Bank Mission, The Economic Development of Libya, 1960, p. 28.

(90.1 per cent) than for men (72.1 per cent) (9, p. 82). In the same year the percentage of pupils and students enrolled in schools and colleges at all levels (excluding religious and private schools) was estimated at less then 3 per cent of the total estimated population of 1.1 million (6, p. 21). Statistical comparisons of educational status between early years of Libyan independence and 1963 (the beginning of the First Five Year Plan) are tabulated in Table 2.14. At independence Libya was clearly in a bleak position in the field of high-talent manpower. An estimated total of 14 Libyans had university degrees. Table 2.15 shows public expenditures on education for the period 1954/1955-1958/1959 (6, p. 21).

Industry

During the early phase of Libyan independence the Libyan market was much too small and widely dispersed for the development of manufacturing on a large scale. Lack of indigenous supplies of raw materials and fuel was an additional factor inhibiting the growth of industry. Quite a wide range of small factory industries were established. These industries included flour-milling, olive-oil refining, tobacco, salt manufacturing, curing, tanning, leather manufacturing, soap, weaving, beer manufacturing and printing. Factory industries employed 15,000 to 20,000 people and contributed one-tenth of the

TABLE 2.14

STATISTICAL COMPARISONS OF EDUCATIONAL STATUS
1950/1951 and 1962/1963

Item	1950/1951	1962/1963
Level of Education:	Number of Students	Number of Students
Kindergarten	.....	1,414
Primary	32,155	144,511
Preparatory	.....	14,691
Secondary	300	2,708
Technical	237	1,497
Teacher's training	89	2,295
Total	32,741	167,116
Total male students	29,077	135,753
Total female students	3,664	31,363
University and higher education enrollment	32 (1955/56)	1,028
Number of Government Schools at All Levels of Education Except Universities:		
Kindergarten	.....	14
Primary	194	663
Preparatory	.....	100
Secondary	4	16
Technical	8	11
Teacher's training	2	13
Total	208	817
Total number of teachers at all levels of education except universities	1,104	6,382
Public expenditure on education (in Libyan pounds)	599,000 (1952/53)	5,466,000
Public expenditure on education as % of public budget	9.6	20 (1963/64)
Number of illiterates aged 10 years and over	607,738	773,003
Percentage of illiteracy among pupulation 10 years and over	81.1 (1954)	69 (1954)*

TABLE 2.14--continued

*Document No. 1 in sources below gives the illiteracy as 69.3% in 1964 (p. 22); Document No. 8 as 77% in 1964 (p. 13); cf. with The Libyan Review, II (November, 1966), 20, which gives a figure of 77.6% for 1964.

Sources: United Kingdom of Libya, Ministry of National Economy, Statistical Abstract of Libya, 1958-1962; Kingdom of Libya, Ministry of National Economy, Statistical Abstract, 1964, Tripoli: Census and Statistical Dept.; Kingdom of Libya, Ministry of Education, The Development of Education in Libya and Eradication of Illiteracy and Adult Education, Ministry of Education Documents No. 1 and No. 8, respectively, Tripoli, n.d..

TABLE 2.15

PUBLIC EXPENDITURES ON EDUCATION
(£L'000: Fiscal Years Beginning April)
(1 Liyan pound = U.S. $2.80)

	1954/55	1955/56	1956/57	1957/58	1958/59
Federal Government	49	68	224	376	549
Tripolitania	630	691	824	1,116	1,136
Cyrenaica	397	420	491	549	676
Fezzan	32	42	58	101	143
LARC	.....	18	97	331	790
LPDSA	69	103	47	26	28
Total	1,177	1,342	1,741	2,499	3,322
Of which:					
General administration	87	109	129	160	195
Teacher's salaries	620	755	900	1,034	1,353
Schools	385	362	375	699	890
Teacher and vocational training	42	59	95	142	213
Libyan University	.....	5	42	176	342
Higher Institute of Mahomed el-Senussi	.....	.....	110	130	160
Scholarships abroad	42	52	59	94	98
Adult education and miscellaneous	1	.....	31	64	71
Total	1,177	1,342	1,741	2,499	3,322
Of which:					
Recurrent expenditures*	1,070	1,216	1,637	2,034	2,779
Capital expenditures*	107	126	104	465	543

TABLE 2.15--continued

*The distinction between recurrent and capital expenditures, being largely based on the mission's own estimates, is subject to a considerable margin of error.

Sources: United Kingdom of Libya, Ministry of National Economy, Statistical Abstract of Libya, 1958-1962; Kingdom of Libya, Ministry of National Economy, Statistical Abstract, 1964 (Tripoli: Census and Statistical Dept.); Kingdom of Libya, Ministry of Education, The Development of Education in Libya and Eradication of Illiteracy and Adult Education, Ministry of Education Documents No. 1 and NO. 8, respectively (Tripoli, n.d.).

Gross Domestic Product (GDP) (5, p. 24). Table 2.16 indicates the public expenditures on industries, fisheries and minerals.

National Income

The Libyan Central Statistics Office in June 1959 published a preliminary estimate of the national income of Libya. The Gross Domestic Product at factor cost was estimated at (£L52.2) 52.2 million Libyan pounds, made up as in Table 2.17. During this time the income per capita in Libya was (£L41) 41 Libyan pounds approximately $35.

Public Finance.--Almost half of all public expenditures in Libya from 1954-1959 were financed out of domestic revenues. The other half was financed through foreign grants and loans. The United Kingdom contributed £L3.25 million a year directly in support of the Libyan budget. The United States grant and loans mounted to about $30 million a year. The United States loan was to finance specific development projects. In 1958/1959, $2.8 million was allocated for budget support by the United States, and $5.2 million in the form of non-profit assistance to be spent by the foreign aid agencies.

Custom duties were the main source of domestic revenues. It contributed about £L5 million to the federal government in 1957/1958 and £L6.4 million in 1958/1959 at Table 2.17 shows. Personal income tax and business profit

TABLE 2.16

PUBLIC EXPENDITURES ON INDUSTRIES, FISHERIES AND MINERALS
(£L'000: Fiscal Years Beginning April)
(1 Libyan pound = U.S. $2.80)

	1954/55	1955/56	1956/57	1957/58	1958/59
LARC	.....	64	47	53	70
LPDSA	20	56	23	5	2
Total	20	120	70	58	72
Of which:					
Vehicle workshops and equipment	.....	40	31	38	15
Agricultural processing	20	69	28	5	52
Fisheries	.....	.....	1	.....	.....
Minerals investigation	.....	11	10	15	5
Total	20	120	70	58	72
Of which:					
Recurrent expenditures*	.....	7	.....	.....	.....
Capital expenditures*	20	113	70	58	72

TABLE 2.16--Continued

*The distinction between recurrent and capital expenditures, being largely based on the mission's own estimates, is subject to a considerable margin of error.

Sources: United Kingdom of Libya, Ministry of National Economy, Statistical Abstract of Libya, 1958-1962; Kingdom of Libya, Ministry of National Economy, Statistical Abstract, 1964 (Tripoli: Census and Statistical Dept.); Kingdom of Libya, Ministry of Education, The Development of Education in Libya and Eradication of Illiteracy and Adult Education, Ministry of Education Documents No. 1 and NO. 8, respectively (Tripoli, n.d.).

TABLE 2.17

ANALYSIS OF DOMESTIC REVENUES
(£L'000: Fiscal Years Beginning April)
(1 libyan pound = U.S. $2.80)

	1954/55	1955/56	1956/57	1957/58	1958/59*
Federal					
Customs (gross)	1,455	3,381	3,873	4,899	6,400
Post and telecommunications (net)	40	50	82	54	.....
Miscellaneous	66	134	145	137	132
Total	2,561	3,565	4,100	5,090	6,532
Tripolitania					
Income tax	512	638	680	862	1,118
Other direct taxes	133	156	231	276	350
Indirect taxes	209	270	302	362	406
Tobacco and salt monopolies	315	443	576	584	714
Sugar trading	211	190	241	193	350
Miscellaneous	404	546	575	709	771
Total	1,784	2,243	2,605	2,986	3,709
Cyrenaica					
Income and property tax**	150	175	218	279	419
Indirect taxes	86	102	127	152	169
Tobacco monopoly	195	194	233	277	285
Sugar trading	218	212	235	118	192
Miscellaneous	77	91	119	117	124
Total	726	774	932	943	1,189
Fezzan					
Direct taxes	8	16	22	28	37
Indirect taxes	22	15	28	39	52
Public services	10	20	14	27	30
Total	40	51	64	94	119**
Municipalities					
Tripolitania	246	274	291	301	n.a.
Cyrenaica	192	154	155	181	n.a.
Total	438	428	446	482	500**
TOTAL DOMESTIC REVENUES	5,549	7,061	8,147	9,595	12,049**

TABLE 2.17--Continued

*Property tax varies around £L15,000 a year.
**Estimates, not actuals.

Sources: United Kingdom of Libya, Ministry of National Economy, Statistical Abstract of Libya, 1958-1962; Kingdom of Libya, Ministry of National Economy, Statistical Abstract, 1964 (Tripoli: Census and Statistical Dept.); Kingdom of Libya, Ministry of Education, The Development of Education in Libya and Eradication of Illiteracy and Adult Education, Ministry of Education Documents No. 1 and NO. 8, respectively (Tripoli, n.d.).

tax contributed £L1,138,000 in 1957/1958 and £1,468,000 in 1958/1959 to Tripolitania provinces. £L714,000 came from tobacco and salt monopolies and sugar trading contributed £L350,000 in 1958/1959. The profit from operation of Port of Tripoli gave the government £L241,000 while indirect taxes and miscellaneous amounted to £L406,000. The province of Cyrenaica raised its revenue in the same way as Tripolitania but on a small scale. In 1958/1959 £L1,189,000 was raised in Cyrenaica as compared with £L3,709,000 for Tripolitania. The revenues of Fezzan was £L1000,000. The federal government was responsible for only one-third of total public expenditure in Libya. In 1958/1959 Tripolitania, Cyrenaica, Frezzan and the federal government spent £L5 million, £L3.2 million, £L1 million and £L5 million, respectively. The Libyan American Reconstruction Commission (LARC) and Libyan Public Development and Stabilization Agency (LPDSA) together contributed £L4.6 million. As a result of foreign aid increase during this period, government revenues exceeded expenditures and both federal and provincial government accumulated cash reserves of £L4.5 million. In addition, the foreign aid agencies had unspent balances of about £L5.5 million. Libya at this time had no internal public debt. Its external public debt in the beginning of 1960

was $3.5 million and $5 million which was limited to United States Government and the Development Loan Fund in 1959 (9, p. 52).

Transport and Communications

Like most other sectors, transport and communications started with a disadvantage when independence was declared. The transportation complex suffered from severe war damage during World War II. But before the war, the harbors, roads, bridges, and railways had all suffered from years of neglect. Two small single-track narrow-guage (95 centimeters) railways operated in Libya during the early years of independence. The Tripolitaian railway (178 track kilometers with 42 kilometers of sidings and branches) and the Cyrenaiean railway (164 track kilometers of sidings and branches) operated at a considerable loss in the six year period 1952/1953 to 1957/1958 (9, p. 230).

The most important road in Libya was the federal coast road. The length was 1,822 kilometers and ran the whole way from the Tunisian to the Egyptian border. In 1959, about £L4.3 million was spent on rehabilitating Libya's road system (9, p. 232). The types of roads and their lengths in Libya are shown in Table 2.19 while the expenditure on these roads during the 1954/1955 to 1958/1959 are shown on Table 2.20. Table 2.18 shows public expenditures on transport and communications.

TABLE 2.18

PUBLIC EXPENDITURES ON TRANSPORT AND COMMUNICATIONS
(£L'000: Fiscal Years Beginning April)
(1 Libyan pound = U.S. $2.80)

	1954/55	1955/56	1956/57	1957/58	1958/59
Federal Government	301	392	272	259	479
Tripolitania	530	470	427	510	548
Cyrenaica	330	305	312	328	381
Fezzan	50	60	65	48	6
LARC	.....	100	972	1,439	1,476
LPDSA	196	342	221	289	356
Total	1,407	1,669	2,269	2,873	3,306
Of which:					
General administration	105	84	95	110	153
Roads	487	615	1,227	1,161	810
Railways[a]	56	57	54	75	79
Ports and lights[b]	94	140	130	161	174
Civil aviation[c]	202	202	126	151	256
Telecommunications[d]	.....	18	60	336	724
Meteorological Department	38	43	41	47	102
Broadcasting	.....	.....	64	373	409
Road transport	378	378	427	451	557
Posts	47	132	45	8	42
Total	1,407	1,669	2,269	2,873	3,306
Of which:					
Recurrent expenditures[e]	1,054	1,035	923	1,105	1,225
Capital expenditures[e]	353	634	1,346	1,768	2.081

TABLE 2.18--Continud

[a] Figures represent subsidies paid to railways by provincial governments to cover their operating losses and capital expenditures.
[b] Capital expenditures only, financed by LARC and LPDSA.
[c] Figures include operating losses covered by government subventions, plus capital expenditures which have been mainly financed by LARC and LPDSA.
[d] Expenditures by LARC on the telecommunications project plus capital expenditures financed through the ordinary budget of the Ministry of Communications.
[e] The distinction between recurrent and capital expenditures, being largely based on the mission's own estimates, is subject to a considerable margin of error.

Source: World Bank Mission, The Economic Development of Libya, 1960, p. 28.

TABLE 2.19

LENGTHS OF ROADS IN LIBYA[a]
(kilometers)

Administration	Black-top	Macadam	Tracks	Total
Tripolitania	860	342	1,349	2,551
Cyrenaica	482	.....	1,921	2,403
Fezzan	10[b]	.....	1,433	1,443
Federal Government	1,951	.....	1,252[c]	3,203

[a]Does not include roads within major cities and towns.
[b]Approximate figure which includes roads in or near oases.
[c]About 600 kms. of track are now being converted to a black-top road.

Source: World Bank Mission, The Economic Development of Libya, 1960, p. 28.

TABLE 2.20

EXPENDITURE ON LIBYAN ROADS
(£L'000)
(1 Libyan pound = U.S. $2.80)

Administration	1954/55	1955/56	1956/57	1957/58	1958/59*
Tripolitania	233	170	182	140	184
Cyrenaica*	35	45	40	78	54
Fezzan**	6	4	4	3	3
Federal Government	201	205	109	157	166
Aid agencies	8	191	895	805	495
Total	483	615	1,290	1,183	902**

*Estimated.
**Excluding expenditure on the Fezzan Road to Sebha.

Sources: United Kingdom of Libya, Ministry of National Economy, Statistical Abstract of Libya, 1958-1962; Kingdom of Libya, Ministry of National Economy, Statistical Abstract, 1964 (Tripoli: Census and Statistical Dept.); Kingdom of Libya, Ministry of Education, The Development of Education in Libya and Eradication of Illiteracy and Adult Education, Ministry of Education Documents No. 1 and NO. 8, respectively (Tripoli, n.d.).

The Port of Tripoli and Benghazi were the two major ports in Libya during this period. Tripoli port handled more than three-quarters of all of Libya's foreign trade and operated at a substantial profit, while the Benghazi port handled under one-forth of the foreign trade.

During this period telecommunications and broadcasting were under construction. Approximately £L2.35 million was made available out of U.S. funds for the telecommunications project and £L1 million for the broadcasting project (9, p. 247).

Iran

Pre-Oil Revenue Economy 1900-1910

In 1900 Iran possessed most of the attributes of what social scientists term a traditional society (7, p. 1).

Population

The Iranian population during this period was less than 10 million. Ninety per cent lived by farming or herding, more than half were peasants. One in four belonged to a nomadic tribe, and only one in five lived in a town. The largest towns were Tehran and Tabriz, each with 200,000 inhabitants; Isfahan had 100,000 and no other more than 75,000 (3, p. 3).

Economy

There was no such thing as a nationally systematized Iranian economy. Agricultural production was mainly for local consumption. Only crops such as cotton had a wider sale. Modern industry was non-existent, and production which consisted of a few insignificant mines, made little use of productive factors. Poor communications and credit facilities, among other things, ensured the persistence of innumerable local economies occasionally linked regionally, never nationally.

Iran was no more one society than it was one economy. Like many other traditional societies it was a mosaic of social units.

Summary and Conclusion

In summary, these three countries differ in population. Nigeria had a population of about 30 million, Iran less than 10 million and Libya about 1.1 million.

Agriculture was the engine of growth in the Nigerian economy, in the pre-oil period, accounting for more than two-thirds of Nigerian GDP during this period. It provided 85 percent of revenue for foreign exchange, balance of payment, financing oil exploration, and the first development plan. There were few manufacturing industries in Nigeria and thus manufacturing played a small role in the economy during the 1950s.

Infrastructures, such as education and transport and communication were expanded during this period. Between 1950 and 1960 Nigeria National Income rose from £₦699.3 to £₦1,023.8 as Table 2.7 indicates, and the annual growth rate of GDP was 4 per cent.

The Kingdom of Libya pre-oil economy was dominated by the traditional sector of animal husbandry and agriculture. Before oil, industrial activity was confined to food processing and handicraft industries. Industrial development was slow as a result of the small labor force, inadequate transportation network and absence of a major source of income.

Most of the Libya's domestic revenue came from custom duties as Table 2.17 shows. Half of the Libyan expenditure came in the form of grants and loans.

There were little or no improvements in infra-structure sector such as transport and communications, and education. Libya during this period had an illiteracy rate of about 72 per cent for men and about 90 per cent for women (9, p. 82).

In conclusion, in the energy of its population, economy and the capability of its entrepreneurs, Nigeria's pre-oil economy stood well ahead of Libya and Iran. The most outstanding feature of Nigeria's performance was its fiscal achievement. Revenues of all the governments together (excluding Marketing Board surpluses) rose from

$97 million in 1950 to $417 million in 1962/63, or form 6.8 to 12.7 per cent of Gross Domestic Product. Libya's fiscal achievement rose from $114.80 millions in 1954 to $145 million with two-thirds of this in the form of grants. In addition, Libya at the end of this period had an external debt amounting to $5 million.

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CHAPTER III

OIL HISTORY: THE DEVELOPMENT AND GROWTH OF THE OIL INDUSTRY IN NIGERIA, IRAN AND LIBYA

Introduction

The purpose of this chapter is to survey the history of Nigeria, Iran and Libya's oil industry. The chapter analyzes the development and growth of the oil industry in these three nations. This chapter shows which oil companies were involved at the initial stages and which one dominated each country's oil industry. This chapter surveys each country's national oil company and exploration and production activities. Production and export levels of oil in each country and laws and ordinances governing each country's oil industry are surveyed.

Nigeria

Searching for Oil

In 1908 a German Company, the Nigerian Bitumen Corporation started exploration in Aroromi, in the present Ondo State of Nigeria, in an attempt to search for hydrocarbons. Unfortunately, this pioneering effort did not last long. The company terminated its operations at the

outbreak of the First World War in 1914. Two decades passed before another major exploration effort was embarked upon. An Anglo-Dutch consortium came to Nigeria as Shell D'Arcy (the forerunner of the present Shell Petroleum Development Company of Nigeria) to start exploration activities in 1937. The company was awarded the sole concession rights covering the whole country. Shell D'Arcy's activities were interrupted by the Second World War. After the Second World War the pioneer company operated under the Mineral Oil Ordinance No. 17 of 1914, and its amendments of 1925 and 1950. The ordinance allowed only companies registered in Britain or its protectorates the rights to prospect for oil in Nigeria and further provided that the principal officers of such companies must be British subjects (3, p. 3).

In 1946 Shell returned to Nigeria, in a partnership with British Petroleum. They concentrated their exploration efforts in the Southern part of the country. In 1956 Shell-BP made the first discovery of commercial volume at Oloibiri in the Niger Delta. In 1958, Shell oil production and export from the Oloibiri field in the present Rivers State was at the rate of 5,000 barrels per day (bpd) (3, p. 3).

In 1959, the sole concession rights over the whole country previously granted to Shell were reviewed. Exclusive exploration rights were extended to companies of

other nationalities. The successes of Shell encouraged other oil companies to join in the exploration. By 1962, Mobil, Gulf, Azienda Generale Italiana Petzoli (AGIP), Safrap (now Elf), Tenneco, and Amoseas (now Texaco/Chevron) joined the explorers for oil in the onshore and offshore area of Nigeria. The first offshore discovery was made by Gulf on the Okan Structure of Bendel State in 1964 (6, p. 136).

All crude oil produced was initially wholly exported unrefined, while Nigerian needs for petroleum products were satisfied through importation. In 1965, a refinery with a processing capacity of 35,000 barrels per day was commissioned in Port Harcourt. After the Civil War in 1970, the installed processing capacity was increased to 60,000 barrels per day to meet increasing local demand. In 1978 and 1980 two refineries were built at Warri and Kaduna, respectively. Between 1958 and 1965 all of Nigeria's crude oil production was exported abroad as Table 3.1 shows. About 80 per cent of the oil exports went to Western Europe (6, p. 136). Table 3.2 illustrates production and export figures from 1970-1974, while Table 3.3 shows the destinations of Nigerian Crude oil exports for 1970-1971. The table shows that the United States, France, and the United Kingdom accounted for about 58 per cent of the daily oil exports (6, p. 137).

TABLE 3.1

NIGERIAN PETROLEUM PRODUCTION AND EXPORTS, 1958-67
(IN £N MILLIONS)
VOLUME = 1,000 BARRELS PER DAY

Year	Crude Oil Production		Exports		Local Sales	
	Volume	Value	Volume	Value	Volume	Value
1958	5	1	5	1	.....	.....
1959	11	3	11	3	.....	.....
1960	17	4	17	4	.....	.....
1961	46	11	46	11	.....	.....
1962	68	17	68	17	.....	.....
1963	76	20	76	20	.....	.....
1964	120	32	120	32	.....	.....
1965	270	69	266	68	.....	.....
1966	415	100	383	92	4	1
1967	317	77	300	72	32	8
					17	5

Source: Compiled from the Annual Report of the Petroleum Division of the Federal Ministry of Mines and Power, 1965-1966, Lagos, Nigeria, 1967; Scott Pearson, "Nigerian Petroleum: Implications for Medium-Term Planning," in Growth and Development of the Nigerian Economy, ed. Carl K. Eicher and Carl Liedholm (Michigan: Michigan State University Press, 1970), p. 357.

TABLE 3.2

A SUMMARY OF PRODUCTION AND EXPORT FIGURES, 1970-1974

Year	Volume of Production Thousands of Barrels per Day	Export Volume Thousands of Barrels per Day	Export (N Million)
1970	1,100	1,030	2,842
1971	1,500	1,434	953
1972	1,800	1,717	1,176
1973	2,100	1,866	1,842
1974	2,400	.....	2,842*

*Value of oil export for the first six Months of 1974.

Note: Export volume figures represent daily average for the years 1970-173. The figure for 1974 is not available. For conversion purposes, £N = N2.00 and N1.66 = $1.66 = £0.6836 sterling.

Source: Compiled from various issues of Standard Bank Review, Standard Bank Ltd., London, 1973-1974.

TABLE 3.3

DESTINATIONS OF NIGERIAN CRUDE OIL EXPORTS, 1970-71
(IN BARRELS PER DAY)

Export Destination	First Half 1971	First Half 1970
United States[a]	288,922	156,210
France	283,434	73,380
United Kingdom	273,279	220,233
Netherlands	207,429	148,999
Germany (West)	74,202	32,046
Italy	70,339	10,101
Spain[b]	49,603	57,915
Brazil	36,562	33,533
Denmark	33,532	2,649
Sweden	32,715	34,079
Norway	28,463	14,489
Canada	28,146	30,576
Japan	8,083	.....
Ivory Coast	7,741	.....
Others	38,029	104,290
Total	1,460,479	918,500

[a]Includes 54,103 barrels per day (BPD) primarily to Virgin Islands in the First Half 1971; 47,055 BPD Second Half 1970; and 37,303 BPD First Half 1970.

[b]Incluces 1,374 BPD to Canary Islands in First Half 1971; 24,004 BPD Second Half 1970; 22,994 BPD First Half 1970.

Source: Petroleum Intelligence Weekly, October 25, 1971.

Oil Ordinance and the Petroleum Profit Tax Ordinance of 1959

During the early phase of the Nigerian oil industry development the British colonial government laid down legislation to govern the operations of oil companies. In particular, the terms of the Mineral Oil Ordinance and the Petroleum Profit Tax Ordinance. The terms of this legislation were highly unfavorable to Nigeria's public finance, as compared with the terms governing the operations of the same oil companies in Iran and Libya. The ordinance provisions favorable to the oil companies were:

1. Variable royalties of between 8 and 12.5 per cent were assessed on the value of the crude at the extraction point.
2. A 50 per cent share of revenue profits that belong to Nigerian government also included royalties and other duties.
3. The reference price for the assessment of profits for tax purposes was the realized price.
4. The depreciation rates allowed the oil companies were excessive and had no rational economic basis. The first year rate was usually in excess of 50 per cent of the expenditure on plant and equipment (6,p. 139).

These provisions precluded bilateral agreements on prices, and the ability of the Nigerian government to obtain equitable prices for oil was restricted. These conditions and the absence of a stable basis for estimating government revenues from oil caused the persistent shortfall in revenues from oil throughout the 1960s. This shortfall also caused major problems in the implementation of economic development plans (6, p. 139).

The Nigerian National Petroleum Corporation (NNPC)

The Nigerian National Petroleum Corporation is the government agency charged with responsibility for public sector involvement in the local oil industry. Its history goes back to 1958, when the production of oil for export necessitated that government set up a machinery for the coordination of the activities of the petroleum industry. The public sector of the Nigerian oil industry started as a section in the Mines Division of the then Ministry of Lagos Affairs, originally a one-man unit (4, p. 41).

In 1963, with oil becoming more significant in the national economy, the Hydrocarbon Section of the Mines Division was upgraded to a division within the Ministry of Mines and Power. By this time, the senior staff strength had risen to four, with four trainee engineers. Field

offices were open in Port Harcourt and Warri in 1962 and 1967, in order to cover field operations more effectively.

The work of the division and the level of statutory responsibilities continued to increase. Twelve years after its establishment, the public sector of the oil industry could only boast of a handful of well trained engineers. In 1975, the Department of Petroleum Resources was graded to a full-fledged ministry, the Ministry of Petroleum Resources and Energy, which finally became the Ministry of Petroleum Resources the following year (4, p. 5).

The Nigerian National Oil Corporation (NNOC) was established by decree in 1971 as an integrated oil company to explore, produce, transport, process, refine, distribute, and market crude petroleum and its refined products. It was established to carry out the government's policies and to ensure the government's effective participation in the oil industry. In 1977, as a result of Decree No. 33, the NNOC was merged with the former Ministry of Petroleum Resources to form the Nigerian National Petroleum Corporation (NNPC). This legal instrument establishing the corporation gave it a unique feature, the creation of an operational/commercial arm and a regulatory arm vested in the Petroleum Inspectorate.

Joint Ventures in Nigerian Oil Industry

First Equity Participation.--The Nigerian Azienda Generale Italiana Petzoli oil company NAOC in 1962 signed concession agreements with the Nigerian government. In this agreement AGIP offered to the government an option to acquire 33-1/3 per cent equity interests in the company, if and when the oil company discovered oil in commercial quantities. In 1970 NAOC discovered oil in commercial quantities, and the federal government decided to exercise its option in the concession agreement. In April 1971, the government acquired 33-1/3 per cent equity interest in the company. NAOC carried out all the operations including exploration, production, and marketing and shared in the profits of the company. In the same year, the government also acquired 35 per cent equity interest in Safrap (now EIF), as a punitive measure for the stand and posture of France in the Nigerian Civil War of 1967 to 1970 (3, p. 4).

Acquisition of Joint Venture Working Interests.--Nigeria joined the Organization of Petroleum Exporting Countries OPEC) in July 1971. During this era, OPEC was striving to acquire more power in the exploitation of petroleum resources of its member nations. Some of the alternatives which OPEC considered included taking working interests in the operations of the concession-holding

companies. This strategy was enunciated in Resolution XVI.90 of June 1968, enjoining all members of OPEC to acquire participating interests in the operations of the oil companies according to a prescribed time table by which each member country would achieve 51 per cent participation by 1982 (3, p.4). The Nigerian government went ahead and acquired a uniform 35 per cent participating interest in the other oil producing companies at that time, namely Shell-BP, Gulf and Mobil. By the acquisition of participating interests in oil companies' operations, the Nigerian government assumed the role of a joint venture partner (3, p. 4).

To effect this the Nigerian government had to contribute proportionately to the costs of carrying out the oil operations of each company. The government also collected its remuneration "in kind," that is, in crude oil. This form of agreement, in which government is a non-operating partner (non-operating) with the foreign oil company, who is the operator of the concession, may be termed the traditional joint venture relationship. Table 3.4 shows the Nigerian Government's Joint Venture participation interests in the exploration and exploitation sector of the oil industry (3, p. 5).

TABLE 3.4

GOVERNMENT'S JOINT-VENTURE PARTICIPATION INTEREST IN THE EXPLORATION AND EXPLOITATION SECTOR OF THE OIL INDUSTRY

Company	Participation Per Cent	Date Acquired	No. of Licenses	Production Barrels per Day
ELF	35	Jan. 4. 1971	4	40,000
	55	Jan. 4, 1974	4	85,000
	60	Jan. 7, 1979	4	78,000
AGIP/Phillipa	33-1/3[a]	Apr. 1, 1971	4	30,000
	55	Apr. 1, 1974	4	125,000
	60	July 1, 1979	4	230,000
Shell-BP	35	Apr. 1, 1973	58	1,240,000
	55	Apr. 1, 1974	58	1.380.000
	60	July 1, 1979	58	1,360,000
	80	Aug. 1, 1979	58	1,360,000
Gulf	35	Apr. 1, 1973	10	368,000
	55	Apr. 1, 1974	16	390,000
	60	July 1, 1979	16	380,000
Mobil	35	Apr. 1, 1973	4	210,000
	55	Apr. 1, 1974	4	245,000
	60	July 1, 1979	4	270,000
Texaco	55	May 1, 1975	6	10,000
	60	July 1, 1979	6	56,000
Panocean	55	Jan. 1, 1978	1	10,000
	60	July 1, 1979	1	10,000
Ashland	N/A	June 1, 1973	2	13,000

[a]Equity Participation

Source: NAPERTCOR, Quarterly Magazine of the Nigerian National Petroleum Corporation, Vol. 2, No. 1, January -March 1981, p. 6.

The Production Sharing Contract (PSC).--The Production Sharing Contract (PSC) is not strictly a joint venture but is related to it. The PSC emerged from the concerted attempt to improve the traditional joint venture arrangement to the advantage of Nigerian government. Faced with lack of an adequate technological base and financial resources, the PSC was the most attractive experiment to Nigeria in the early 1970s. The PSC was signed with Ashland Oil Company in 1973, the agreement requiring Ashland to put up the necessary funds with which it would explore, develop and produce oil on behalf of the Nigerian government. From the proceeds, up to 40 per cent was set aside to amortize the company's investment and pay royalties. Fifty-five per cent was set aside for the payment of Petroleum Profit Tax (PPT) and whatever was left would be shared between the producing company and Nigerian government at a ratio of 35/65 per cent, respectively. Then, this ratio would be increased to 30/70 per cent if production topped 50,000 barrels per day (3, p. 5).

In order to eliminate the less desirable aspects of the PSC, the NNPC adopted the Risk Service Contract. Three companies, AGIP Africa, ELF and Nigus Petroleum, signed the contract in 1979. The main elements of this type of contract are:

1. The contractor (oil company) provides all the funds of exploration, development and production activities.
2. Each service contract relates to a single block or contract area (unlike PSC which covers more than one oil prospecting lease).
3. The primary term of the contract is not more than five years, and it is as short as two years in some cases.
4. If no commercial discovery of oil is made in the primary term of the contract, the contract automatically terminates with no obligation to each other.
5. The contractor has no title to crude oil, but has the option to be repaid to purchase certain fixed quantities of crude oil produced from the contract area (3, p. 5).

The terms of the Service Contract are designed to (a) guarantee an accelerated exploration of the contract areas, (b) provide a fair return on investment to the contractor, once a commercial discovery is made, and (c) guarantee for a period well beyond the termination of the Service Contract, the availability of a source of some quantities of crude oil for the contractor who has discovered a commercial field (3, p. 5).

Manpower Development in Nigerian Oil Industry

Nigeria has not yet succeeded in acquiring the technology of the oil industry after 25 years of oil operations. Oil technology has remained foreign largely because of institutional inadequacies and lack of an effectively coordinated manpower development policy. Oil companies were not interested in developing indigenous experts in the early years of the industry. Most oil field problems were solved by seeking advice from oil company home offices or flying down experts from abroad. The 1969 Petroleum Decree was drawn up in recognition of the necessity to force the oil companies to train Nigerians to man the industry. The Decree requires the holder of an Oil Mining License (OML) to ensure

> that within ten years from the granting of the license, the number of citizens of Nigeria employed by him in connection with the license in managerial, professional and supervisory grades shall reach at least 75 per cent of the total number of persons employed by him. The number of citizens of Nigeria in any one such grade shall be not less than 60 per cent of the total (4, p. 6).

Further, all skilled, semi-skilled and underskilled workers are to be citizens of Nigeria.

The oil companies did not find it difficult to comply with the stipulations of this edict. Available statistics indicate that, in 1979, exploration and production

companies had 50 Nigerians to 44 expatriates in the management cadre and 1,255 Nigerians to 295 expatriates in the professional grades (3, p. 6). In spite of these impressive statistics there is still a measure of window dressing in promoting Nigerians to key positions for which they are not adequately prepared. Consequently, there is currently a more intensive use of consultants and contract staff who are not listed in the manpower returns of the companies (4, p. 8).

When one looks at the oil service companies that provide the vital skills and technologies required to sustain the industry, the situation is depressing. Of the total of 123 staff in the managerial category in 1979, 35 were Nigerians to 212 foreigners. Unfortunately, the 1969 Decree did not regulate the activities of the oil service companies. The worst scarcity of local manpower and effective Nigerian participation is still in the service sector. The poor manpower development in the oil industry cannot be wholly blamed on foreign companies. Nigerians have their share of blame, in their attitude to work and lack of national commitment. The Third National Plan (1975-1980) made a provision for the sum of ₦5 million to be spent on manpower training during the period. Also a special fund (Petroleum Training Development Fund) for training Nigerians in oil matters in universities at home and abroad was established (4, p. 6).

Iran

Searching for Oil

Anglo-Persian Oil Company (APOC).--In 1901, William Knox D'Arcy, got a concession from the Iranian government for sixty years for exclusive rights to explore, exploit, and export oil resources in Iran except in five northern provinces. Two years later, 1903-1904, two wells were discovered, but the quantities were not sufficient to warrant commercial production. In 1903, the first exploration company was registered by the D'Arcy group. "After several failures and the absorption of most of his capital, when D'Arcy was almost ready to abandon the enterprise, large quantities of oil were finally discovered in 1908 near the seepage of Masjid-1-Sulaiman" (7, p. 41).

The D'Arcy concession included tax exemption and the right to build oil pipelines. The Iranian government, in return, was to receive $20,000 cash, $20,000 in stocks, a fixed annual sum of $1,800 in lieu of taxes, and 16 per cent of the annual net profits. After the Masjid-1-Sulaiman discovery, other foreign interested firms started to negotiate with the Iranian government about oil agreements (11, p. 12).

In 1909 the Anglo-Persian Oil Company (APOC) was formed in London to take over the operation of the concession to explore, produce, and refine oil. The company (APOC) in 1913 constructerd the Abadan Refinery which was a turning point in Iranian oil history, because it enabled Iran to export refined oil in large quantities. The initial capacity of the refinery was the production of 100,000 barrels and refining 80,000 barrels per day (BPD) (10, p. 12). (APOC) continued its operation with success in the south of Iran, but the company needed more capital to expand its activities, so the British government provided the extra funds (11, p. 12).

After the agreement with APOC in 1909, a considerable dispute, on two points, arose. Although the D'Arey concession clearly specified that the Persian governments were to receive 16 per cent of the net profits, APOC argued that since these subsidiaries were operating outside Iran, then the government should not receive any benefit. "The company also deducted from 16 per cent royalty in its exclusively Iranian operations certain amounts each year as payments for damages caused to its assets by local tribes" (1, p. 51). The result was an agreement prepared by Armithage Smith in 1920, but never approved by the Iranian Parliament.

The 1933 Concession

The dispute between APOC and the Iranian government continued until 1932 when D'Arcy was cancelled by the government due to its shortcomings. In April 1933 a new concession was granted when APOC changed its name to Anglo-Iranian Oil Company (AIOC). "The new agreement assured minimum royalty and a specific tax payment to the Iranian government. In return, the life of the original concession was extended sixty years to terminate in 1993" (2, p. 17). The agreement also reduced the concession area to 100,000 square miles from the original 500,000 square miles. In this new agreement the exclusive right of AIOC to construct pipelines to the Persian Gulf was withdrawn. As a result of the concession, the production of crude oil increased rapidly from 6.5 million long tons in 1932 to 10.2 million long tons in 1938 (5, p. 157). A new refinery was constructed at Kermanshah which could provide for domestic demands. Shortages of tankers during World War II decreased production to 6.6 million long tons, but by the end of the war, production increased by 155 per cent (5, p. 158).

Tables 3.5 and 3.6 show crude oil production by AIOC and annual direct revenues from AIOC, between 1912 and 1951. During the D'Arcy's Concession (1910-1933), the Iranian government exported 418 million barrels and received $71 million (at 17 cents per barrel). During the

TABLE 3.5

CRUDE OIL PRODUCTION BY AIOC, 1912-1951

(in 1000 Long Tons)

Year	Production	% Increase	Year	Production	% Increase
1912	43	.....	1932	6,446	12
1913	800	85	1933	7,087	10
1914	273	240	1934	7,537	6
1915	375	37	1935	7,477	- 1
1916	449	20	1936	8,198	9
1917	644	43	1937	10,168	23
1918	897	39	1938	10,195	0
1919	1,106	23	1939	9,583	- 6
1920	1,385	25	1940	8,627	-10
1921	1,743	26	1941	6,605	-23
1922	2,327	33	1942	9,399	42
1923	2,959	27	1943	9,706	3
1924	3,714	25	1944	13,274	37
1925	4,334	16	1945	16,839	27
1926	4,556	5	1946	19,190	114
1927	4,832	16	1947	20,195	5
1928	5,358	11	1948	24,871	23
1929	5,461	2	1949	26,807	8
1930	5,929	8	1950	31,750	18
1931	5,750	- 3	1951	16,177	-49

Sources: Longrig, S.H., Oil in the Middle East, London, 1968, pp. 20 ff; Ministry of Industry and Mines, Industry of Mines Statistical Yearbook, 1958, Tehran, 1959, p. 50.

TABLE 3.6

ANNUAL DIRECT REVENUES FROM AIOC, 1912-1951
(Million Dollars)

Year	Payment	Year	Payment
1912-18	2.26	1935	3.37
1919	0.76	1936	4.38
1920	1.00	1937	9.43
1921	1.00	1938	5.62
1922	0.90	1939	4.70
1923	0.70	1940	6.80
1924	1.41	1941	6.80
1925	1.78	1942	6.80
1926	2.38	1943	6.80
1927	0.85	1944	7.58
1928	0.90	1945	9.55
1929	2.44	1946	12.12
1930	2.19	1947	12.07
1931	2.27	1948	15.58
1932	2.60	1949	22.93
1933	3.07	1950	27.25
1934	3.27	1951	14.11

Source: Longrig, S.H., Oil in the Middle East, London, 1968, pp. 20 ff; Ministry of Industry and Mines, Industry of Mines Statistical Yearbook, 1958, Tehran, 1959, p. 50.

1933 to 1951 agreement the export of crude oil amounted to 1,753 million barrels and the revenue gained was $400 million at 23 cents per barrel (10, p. 15).

Nationalization and NIOC

The oil nationalization was one of the most remarkable events in Iranian oil history, because its implications were so important. One, it cancelled the 1933 concession. As indicated above, the concession was a continuation of the D'Ary agreement signed "at the time when the government of Qeyars did not realize what was being taken from it and what it was given (1, p. 51). The 1933 Concession raised oil revenues in favor of Iran, but they were still much less than the Iranian government expected. However, oil nationalization and resulting industrialization enabled Iran to earn more income by exporting both crude oil and refined oil. After the oil industrialization in 1951, the price of each exported barrel of oil increased to 80.4 cents in 1964 (5, p. 16). Two, relative to the period of pre-nationalization, the Iranian government obtained more strength to manage the operations of exploration, production and refinement. Three, Iran could begin to negotiate with other foreign countries' companies interested in making agreements about oil (11, p. 16).

Nationalization was based on four principles. First, any foreign groups interested in the Iranian oil industry

could only work as agents for or in partnership with Iran. Second, any companies interested in Iranian resources were expected to show faith by prospecting at their own risk and expense. Third, any oil found in commercial quantities would be produced with Iran participating both financially and managerially and would in no way be or become the exclusive monopoly of any company. And fourth, there would no longer be a 50/50 split in revenues which would be inconsistent with the spirit of nationalization (2, p. 24).

In 1951, the National Iranian Oil Company, NIOC was formed to do these functions and take care of any operation and negotiation. Since 1951, NIOC has been the sole owner of Iran's oil reserves and assets as well as any affair relating to oil being performed under NIOC's jurisdiction. The nationalization stirred up a dispute between the Iranian government and AIOC, and as a result there was a standstill in the production and refinement of oil for three years (1951-1954). The oil production was 350 barrels per day in 1951, which declined to 28 barrels per day in 1952 and 27 barrels per day n 1953 (10, p.17).

The 1954 Agreement and Consortium

August 1954 started another era in Iranian oil industry. The three year old dispute between Iranian government and AIOC came to an end and a new agreement was

signed between NIOC and an international consortium which contained several major and some independent oil companies. AIOC accepted the principle of nationalization, changed its name to British Petroleum Company and became one of the consortium members. The shares of each member company were the British Petroleum Company (former AIOC) 40 per cent; Gulf, Socony, Standard Oil of California, Standard Oil of New Jersey and Texaco, each with 8 per cent, 40 per cent; Royal Dutch/Shell, 14 per cent; and Compagine Francaiso des Petroles, 6 per cent (10, p. 18). "British Petroleum was compensated for nationalization of its assets by the sum of 25 million pounds sterling, to be paid in ten yearly installments by the Iranian government (1, p. 57)."

The life of the new agreement was 25 years, renewable for another fifteen years, and the area covered was about 100,000 square miles. In order to operate the Iranian Oil Industry on behalf of NIOC the agreement created two companies, Iranian Oil Exploration Company and Oil Producing Company, based on a 50/50 profit sharing formula. As indicated, the nationalization of oil raised Iran's revenues from oil. In 1953, the first full year before nationalization, Iran exported 29.3 million tons of oil and received the sum of $42 million; in 1955, the

first full year following nationalization, exports amounted to 16 million tons, for which Iran received $140 million (10, p. 18).

Petroleum Act and New Agreements

In 1957, the Iranian Parliament passed the Petroleum Act. The reasons for the passage of this Act was:

1. Even though the new agreement was a great step forward, the 50/50 profit sharing formula was still far from satisfying and NIOC was looking for opportunities to make beneficial agreements.
2. Iran had several undeveloped oil fields outside the consortium area. The Petroleum Act, which was actually the NIOC's Constitution, resulted in new and more profitable agreements. The first agreement after passing the Petroleum Act was signed between NIOC and AGIP Minerania Company to form a new joint company to be known as the Société Irano--Italiane des Petroles. Following this agreement, a new agreement was signed with Standard Oil of Indiana in 1958, and a new joint company, Iran Pan American Oil Company (IPAC). These agreements were based on "seventy-five/twenty-five" profit sharing formula in favor of Iran which was a real

success for Iran. (11, p. 19) A new agreement was concluded in 1966 between NIOC and the European Group of Oil Companies (EGOCO).

In 1971, three new agreements were signed with independent Japanese and American companies--Iran Nippon Petroleum Company (INPECO) and Amerade Hers Company which together with NIOC established Bushehr Oil Company (BUSHCO). Also, Hormoz Petroleum Company (HOPECO) was jointly formed by the American Mobil Oil Company and NIOC. There were two new companies--Lauan Petroleum Company (LAPCO) and Iranian Marine International Oil Company (IMINCO) which together with IPAC and STRIP had successfully reached the stage of commercial exploitation by 1957. Altogether, between 1957 and 1977 NIOC concluded 20 separate joint venture and service agreements with 34 foreign oil companies from nine various countries (1, pp. 55-58). Between 1954 and 1973 (Consortium Agreement Period), NIOC produced 12,900 million barrels which brought in revenues of $12,871 million to the Iranian government, an average of one dollar per barrel (10, p. 20).

1973 and Absolute Independence

In July 1973 a new law named the New Petroleum Act was passed by the Iranian government in which the functions of NIOC were carefully described. The new act

replaced the former Petroleum Act of 1957. According to the new act, Iran was completely free to negotiate and make agreements with any company. Actually, the Iranian oil industry's independence was guaranteed by the passage of the new law. In addition, after 1973, OPEC's strength in making decisions caused oil prices to increase (11, p. 21).

In 1974, Iran's oil revenues reached about $20 billion, which was more than the total oil revenues during the first 61 years of oil operations. This brought the price of oil to about $10 per barrel. Table 3.7 shows the gradual increase in oil price since D'Arcy's concession. Table 3.8 shows the number of barrels of oil exported and the revenues in three different periods. Table 3.9 shows Iranian oil revenues and production in four separate periods since 1912 (11, p. 22).

In 1957, oil output was 720 thousand barrels per day, while in 1976, that figure rose to 6.5 million and oil revenues increased 100 fold from $200 million to over $20 billion per year during that period. In 1977, Iran possessed 10 per cent of the world's proved oil reserves, over 17 per cent of the Middle East's oil reserves and 14.5 per cent of OPEC countries' oil reserves. Furthermore, Iran's share of the world's oil production is over 27 per cent, and its share of OPEC's oil production was 19 per cent. Iran was the second largest oil producer in the

TABLE 3.7

IRAN'S REVENUE FROM EACH BARREL OF EXPORTED OIL*
(dollars)

D'Arey's Concession 1912-1932	0.17**
1933 Agreement 1933-1951	0.23
1963	0.77
1964	0.80
November 1970	0.87
November 1970	1.00
February 1971	1.25
June 1971	1.36
January 1972	1.42
October 1973	3.09
January 1974	9.32
June 1974	9.57
July 1974	9.61
October 1974	9.81
November 1974	10.22
January 1975	10.23
October 1976	11.12
January 1977	12.13

*These figures have not been adjusted for inflation.

**These figures have been rounded-off.

Source: Farid, Abolfazl, The Iranian Oil Concession and Its Various Aspects, Tehran, Public Relations of NIOC, 1977, p. 33.

TABLE 3.8

NUMBER OF BARRELS OF OIL EXPORTED AND REVENUES IN THREE DIFFERENT PERIODS

	Pre-Nationalization	Post-Nationalization	Post Absolute Independence
Years	1911-1951	1952-1972	1973-1975
# of Years	40	20	2
Total Oil Exported (Barrels)	2.5 billion	11.5 billion	5.9 billion
Iran's Revenue	$479 million	$11,748 million	$42,500 million
Oil Revenue per Barrel	$0.19	$1.02	$7.0
Percentage of Profit Sharing	20-80	50/50 75/25 90/10	98/20

Source: Mina, Parviz, The Position of the Iranian Oil Industry during the Pahlavi Dynasty, Tehran Public Relations of NIOC, 1975, p. 12.

TABLE 3.9

COMPARISON OF PRODUCTION AND INCOME

Period	Production (Barrel)	Income $ Million	Income Per Barrel
D'Arey's Concession (1912-1932)	366	63	$.17
1933 Agreement (1933-1973)	1,767	406	$.23
Consortium Agreement (1954-1973)	12,900	12,871	$1.00
Absolute Independence (1974-1976)	5,783	54,662	$9.50

Source: Farid, Abolfazl, The Iranian Oil Concession and Its Various Aspects, 1977, p. 37.

Middle East, after Saudi Arabia and the fourth largest in the world, after Russia, Saudi Arabia, and the USA, respectively (11, p. 24).

Libya

Searching for Oil

In 1953 nine international petroleum companies began geological reconnaissance in Libya. These companies were:

1. Mobil Company through its affiliate, Mobil Oil Canada, Libya branch.
2. The Standard Oil Company of New Jersey through its affiliate Esso Standard Libya. The Royal Dutch Shell group through its affiliate the Anglo-Saxon Petroleum Company.
4. The Compagnice Francaise des Petroles through its affiliate Compagnie Francaise des Petroles Total (Libya).
5. British Petroleum through its affiliate D'Arey Exploration Company (Africa) Ltd.
6. American overseas acting as operator for California Asiatic Oil Company and Texaco Overseas Petroleum Company.
7. Oasis Oil Company (Libya affiliate of the Ohio Company also acting as operator for Amerada

Petroleum Corporation and Continental Oil Company.

8. Nelson Bunker Hunt, an American independent operator.
9. The Libyan-American Oil Company, also an independent (8, p. 32).

The Award of Concessions.--The first two concessions were awarded to Esso and Nelson Bunker Hunt on November 1955. In 1956 awards were followed by many others. A total of 47 concessions were allocated in 1956, thereafter others followed at irregular intervals. On June 18, 1960 a total of eighty-nine concessions were awarded. These awards went up to 95 by 1961. The above concession awards were under the unamended 1955 Petroleum Law (8, p. 73).

Exploration and Production Activities 1961-1965

Work in oil exploraton actively started in 1956 with gravity and magnetometer surveys. In 1957 Esso produced the first oil in Libya with only 500 barrels per day. In 1959 Esso made the first commercial oil strike at Zelton with initial quantity of 17,500 barrels per day. This placed Libya among the oil producing and exporting countries (8, p. 81). The number of producing wells in the

Zelton field increased from three in 1961 to 43 in 1964 with an average flow of about 500,000 barrels per day (9, p. 19).

Table 3.10 indicates oil production from the Zelton oil field, while Table 3.11 shows a summary of petroleum discoveries in 1958/1959. In 1961 Esso Standard began regular exports of oil. Three oasis partners, namely, Marathon, Continental and Amerada, followed in July 1962. In 1963 Mobil joined them as exporters. In 1964 Amoseas, Esso Sirte in 1962 and Phillips in 1965. Tables 3.12 shows a record of production from 1961 to 1965 by individual operating companies. Table 3.13 shows a total annual production of crude oil and total exports for 1961-1965. The revenue accruing to the government of Libya from 1955/66 increased from £L51,000 in 1955/56 to £L111,000 in 1965/1966 as Table 3.14 indicates (8, p. 118).

Production and Exports of Crude Oil 1961-1970

The record of Libyan oil production from its beginning in 1961 until 1971 is given in Table 3.15. This table shows each operating company's contribution to the total production. By the middle of 1969 Libya was exporting oil on a monthly basis of 3.1 million barrels a day (1, p. 206). In terms of its share of OPEC and world

TABLE 3.10

PRODUCTION OF ZELTEN OIL FIELDS
1961-1964 (ESSO STANDARD)

Year	Oil Production in Barrels
1961	6,641,886
1962	46,012,020
1963	91,262,136
1964	149,259,417

Source: Kingdom of Libya, Ministry of Petroleum Affairs, Petroleum Development in Libya, 1954-1964.

TABLE 3.11

SUMMARY OF PETROLEUM DISCOVERIES, 1958/1959

Company (Operator)	Field Name	Completion Date	Production Rate BOPD	API Gravity	Approx Depth to the Pay (feet)
Esso Std.	El Atshan	20 Jan. 1958	508	44.5	2,200
Oasis	El Bahi	27 July 1958	500	39.0	5,840
CPTL	Oued Tehara	26 Dec. 1958	100	45.0	4,580
Oasis	Dahara F	30 Apr. 1959	1,061	41.0	3,200
Esso Std.	Zelten	13 June 1959	17,500	37.0	5,500
Esso Sirte	Greater Mabruk	30 July 1959	500	40.0	5,700
Gulf	Emgaget	7 Sept 1959	888	37.9	4,100
Amoseas	Beida	26 Sept 1959	3,650	36.6	4,000
Shell	Bir Tlacsin	30 Oct. 1959	700	44.0	5,700
Mobil	Amal	1 Nov. 1959	990	34.0	9,900
Oasis	Dahra B.	14 Nov. 1959	36	43.5	2,800
Oasis	Waha	27 Dec. 1959	226	21.6	1,500

Source: Kingdom of Libya, Ministry of Petroleum Affairs, Petroleum Development in Libya, 1954 -1964

TABLE 3.12

CRUDE OIL PRODUCTION BY OPERATING COMPANIES
1961-1965
(Thousands of Barrels a Day)

Company	1961	1962	1963	1964	1965
Esso Standard	18.2	126.2	250.2	408.9	471.7
Esso Sirte	....	.....	43.6	73.1	95.4
Oasis	....	57.7	167.2	324.0	505.8
Mobil	....	.....	2.8	45.6	100.7
Amoseas	....	.....	.....	13.1	43.7
Phillips	....	.....	.....	.....	2.9
Total	18.2	183.9	463.6	864.7	1220.2

Source: Ministry of Petroleum Affirs, Libya.

TABLE 3.13

TOTAL ANNUAL CRUDE OIL PRODUCTION
AND EXPORTS, 1961-1965
(Million of Barrels)

	1961	1962	1963	1964	1965
Production	6.6	67.1	169.2	315.6	445.4
Exports	5.2	65.5	167.8	313.9	442.7

Source: Kingdom of Libya, Ministry of Petroleum Affairs, Petroleum Development in Libya 1954-1964.

TABLE 3.14

GOVERNMENT REVENUES FROM OIL, 1955/56 to 1965/66
(Libyan Fiscal Year April/March)
(In Thousands of Libyan Pounds)
(£L1 = U.S. $2.80)

Year	£L'000
1955/56	51
1956/57	62
1957/58	77
1958/59	91
1959/60	97
1960/61	115
1961/62	2,000
1962/63	7,200
1963/64	23,800
1964/65	56,000
1965/66	116,000

Source: Ministry of Petroleum Affairs in Libya.

TABLE 3.15

LIBYAN CRUDE OIL PRODUCTION BY OPERATING COMPANIES
1961-1971
('000 B/D)

Company	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Esso standard	18.2	126.2	250.0	408.9	471.7	488.1	495.9	615.4	618.3	580.6	349.1
Esso Sirte	....	.....	43.6	73.1	95.4	95.8	107.2	128.0	127.9	121.4	98.2
Oasis	....	57.7	167.2	45.6	505.8	650.5	630.0	687.9	789.0	946.1	824.4
Mobil	....	.....	2.8	13.1	100.7	170.5	204.2	237.7	264.2	252.9	186.5
Amoseas	....	.....	.....	.....	43.7	81.9	128.9	244.5	369.1	322.9	261.5
BP/NB Hunt	....	.....	.....	.....	.....	4.0	168.5	304.9	321.3	412.9	419.6
Phillips[a]	....	.....	.....	.....	2.9	8.2	4.8	7.5	6.0	4.2	3.7
Amoco	....	.....	.....	.....	.....	8.3	4.4	1.1	0.4	7.7	14.6
Occidental	....	.....	.....	.....	.....	.....	.....	382.1	607.8	659.4	586.4
Aquitaine	....	.....	.....	.....	.....	.....	.....	.....	5.1	19.9	16.8
Total	18.2	183.9	463.6	864.7	1220.2	1507.3	1743.9	2609.1	3109.1	3318.0	2760.8

Source: Ministry of Petroleum Affairs; Kingdom of Libya, Libyan Oil, 1954-1967, Ministry of Petroleum, Libyan Arab Republic, Libyan Oil, 1954-1971.

[a]Phillip's Concession was turned over to National Oil Company in November 1970.

crude oil production for the years 1961-1970, Libya's record is given in Table 3.16 (8, p. 208).

Distribution of Exports

Exports to individual countries during this period are recorded in Table 3.17. Ninety-three per cent of Libyan production went to Western European countries of which West Germany received the largest single share followed by Italy and the United Kingdom (8, p. 209).

The Libyan General Petroleum Corporation, 1968

The General Petroleum Corporation was established as the National Oil Company by Law No. 13 of 1968. The law was isssued as a Royal Decree on April 14, 1968. In creating a state-owned oil company Libya was following the example of other major oil producing countries. The immediate occasion for setting it up was that this government agency should carry out its participation in a joint-venture agreement--which was being negotiated at that time. The corporation, according to the terms of the law, should endeavor to promote the Libyan economy by undertaking the development, management and exploitation of oil resources. The establishment of national petroleum industries, and the distribution of locally manufactured and imported petroleum products, as well as participating with the authorities concerned in planning and executing the general oil policy of the state, and determining the

TABLE 3.16

LIBYAN CRUDE OIL PRODUCTION AND EXPORTS 1961-1970, AND ITS SHARE OF OPEC AND WORLD PRODUCTION

Year	Crude Production mb	Oil Exports mb	Crude Oil Production	
			Share of OPEC Per Cent	Share of World Per Cent
1961	7	5	.....	.....
1962	67	65	1.8	0.8
1963	169	168	4.2	1.8
1964	316	314	7.0	3.1
1965	445	443	9.1	4.0
1966	550	547	10.3	4.6
1967	637	627	11.2	4.9
1968	952	945	14.1	6.8
1969	1135	1120	15.5	7.5
1970	1211	1209	15.0	7.3

Source: Kingdom of Libya, Ministry of Petroleum Affairs, Petroleum Development in Libya 1954-1964.

TABLE 3.17

COUNTRIES TO WHICH LIBYAN CRUDE OIL EXPORTS
WERE DELIVERED, 1961-1971
(Millions of Barrels)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1966-71 Total
West Germany	0.01	10	53	105	169	188	149	260	274	285	212	1705
Italy	0.08	11	22	38	44	65	129	183	242	275	219	1230
United Kingdom	3.00	21	47	72	88	76	76	172	153	179	163	1049
France	0.20	2	13	18	42	64	81	75	122	120	112	648
Netherlands	0.50	7	13	26	34	53	58	68	113	123	57	552
Spain	....	..	2	15	16	21	28	57	59	59	46	302
USA	....	7	8	14	15	27	18	53	57	34	56	290
Belgium	0.70	7	6	10	12	21	33	30	45	47	26	236

Smaller amounts in total to:

	mb
Switzerland	76
Trinidad	68
Denmark	56
Bahamas	48
Norway	47
Turkey	20
Canada	20
Egypt	17
Brazil	13

Note: Amounts less than 10 mb in total to Austria, Bulgaria, Canaries, Curaccao, Finland, Ghana, Greece, Ireland, Japan, Morocco, Panama, Romania, Sweden, Tunisia, Uruguay, Yugoslavia.

Total exports of crude oil 1961-71: 6,477 million barrels. Percentage of total delivered to Western European countries--93.

Source: Ministry of Petroleum Affairs, Kingdom of Libya, Libyan Oil, 1954-1967; Ministry of Petroleum; Libyan Arab Republic Libyan Oil, 1954-1971.

prices of crude oil and products, and safeguarding price levels. To carry out the above objectives the corporation was to operate within the Kingdom of Libya or outside it, in the petroleum industry. Also, any of its various phases including prospecting, exploration and drilling for oil, natural gas and other hydrocarbons, production, refining, transportation and storage of these substances and their derivatives including chemicals extracted from crude oil. The corporation would train Libyan nationals to occupy technical and administrative posts in the petroleum industry. The corporation could act either directly or in participation with other operating companies in exploration and production and supervise the implementation of the concession holders' obligations. The national company came to be called Lipetco. In an introduction to the published text of the law Jeroushi wrote "in establishing Lipetco, the government was creating a practical instrument for efficiently and positively utilizing the Libyan experience in exploiting the petroleum wealth," which hitherto had been done exclusively by the oil companies within the legal framework under government supervision and control (8, p. 176). During the first eighteen months of Lipetco's life its major activity was concerned with joint ventures.

Joint-Venture Agreements

The first joint-venture agreement was made in the spring of 1968 with the French state companies, namely Erap, (later called ELF) and SNPA (Aguitaine). The agreement stipulated that the French partners would take exploration with very substantial minimum working obligations ($22.5 million expenditure in ten years). The general conditions to be applicable to all joint ventures, which were communicated to applicants in letters from the Minister of Petroleum Affairs are:

1. No exploration expenditure shall be reimbursable by Lipetco in any circumstances.
2. The maximum amortization allowed for cash bonuses will be:
   a) Signature bonus not amortizable;
   b) Subsequent production bonuses may be amortized up to a maximum of 50 per cent and at a maximum rate of 10 per cent per annum. If production reaches 550,000 barrels per day, no further amortization of cash bonuses will be allowed. Any application already containing more favorable terms than the above for Libyan will not be subject to alteration.

3. Expenditure by joint-ventures on extra benefits offered (e.g. industrial plants, pipelines, etc.) shall in no case be a current deductible from taxable income under the Petroleum Law. Amortization allowed, if any, in petroleum accounts will be clearly defined in the individual joint-venture agreement.
4. Expenditure on a joint venture may not be consolidated with existing production operations, but must be treated separately for accounting purposes.
5. Rents may not be deducted from royalties on reaching production, but will continue to be paid in addition to royalties. Such rents may not be treated as tax credits, but as deductible expenses under the Petroleum Law.
6. Royalty shall be fully expensed and no part of it treated as a tax credit.
7. The joint-venture shall finance Lipetco's share of appraisal and development expenditure and recover Lipetco's share of expenditure from proceeds of Lipetco's oil at an agreed rate (say 10¢ a barrel) with an appropriate interest charge. The joint venture shall, if Lipetco so wishes, purchase Lipetco's share of oil, or

> undertake to market it at a price guaranteed to equal current Libyan realization prices in general (8, p. 178).

In May of 1964 four agreements were announced with Shell, ENI (AGIP), Ashland Oil and Refining and an unknown company named "Chappaqua." Shell's agreeement was the most favorable to Lipetco. Shell undertook to spend £L11 million ($30.8 million) on exploration within nine years, to provide cash bonuses of £L2 million on reaching 100,000 barrels per day production and £L3.5 million at 500,000 barrels per day production. The company agreed to finance Lipetco's development cost at 6½ per cent interest, repayable by Lipetco from 50 per cent of the proceeds of sales to Shell of its own oil. In addition, Shell undertook to build a refinery of 25,000 barrels per day initial capacity, rising to 40,000 barrels per day, and a lubeoil plant of 600 barrels per day capacity. The company would be reimbursed for the costs of these over a period of 10 years and would manage the plant for a similar period. In marketing Shell was to hand over to Lipetco fifteen of its existing service stations at an agreed price and build ten more for Lipetco in Libya (8, p. 179).

Azienda Generale Italiana Petzoli's agreement was the construction of a gas line from the Sirte Basin to Benghazi. Ashland undertook to erect a carbon black plant

in Libya. Chappaqua offered 57-1/2 per cent share in profits in lieu of participation. It also offered a 19 per cent at 500,000 barrels per day production (8, p. 179).

Summary and Conclusion

Searching for oil in Nigeria began in 1908, in Iran in 1901 and in Libya in 1953. In 1908 a commercial strike was made in Iran by William Knox D'Arcy. In 1958 Shell made the first commercial oil strike in Nigeria, and in 1959 commercial oil discovery was made in Libya.

"The Seven Sisters" which is made up of Exxon, Texaco, Royal Dutch/Shell, Mobil, Gulf, British Petroleum and Standard Oil of California were the major oil companies initially involved in the operation of these three countries' oil industries.

Each of these three countries later established its own oil industry. In 1971 Nigerian National Petroleum Corporation (NNPC) was established, National Iranian Oil Corporation (NIOC) was established in 1951, and the Libyan General Petroleum Corporation was established in 1968. These three countries became member of the Organization of the Petroleum Exporting countries (OPEC). Iran was one of the pioneer members in 1960, Libya became a member in 1961, while Nigeria joined in 1971.

In conclusion, the importance of this chapter is to show the growth and development of this export-lead

TABLE 3.18

OPEC COUNTRIES: 1973 OIL PRODUCTION AND RESERVES

	Population (millions)	Proven Reserves (billion tons)	Output (million barrels per day)	Reserves Years of (at 1973 output rate)
GROUP I				
Saudi Arabia	8.1	19.3	7.5	51
Libya	2.1	3.4	2.1	32
Kuwait	.9	10.1	3.0	66
Qatar	.2	.9	.5	31
Abu Dhabi	.1	2.9	1.2	45
Subtotal	11.5	36.4	14.3	50
Share of OPEC		65%	48%	
GROUP II				
Iran	31.9	8.2	5.9	28
Venezuela	11.3	2.0	3.5	11
Iraq	10.4	4.3	2.0	44
Algeria	14.7	1.0	1.0	20
Subtotal	68.3	15.5	12.4	25
Share of OPEC		28%	41%	
GROUP III				
Nigeria	73.4	2.7	2.0	27
Indonesia	125.0	1.4	1.3	22
Subtotal	198.4	4.2	3.3	25
Share of OPEC		7%	11%	
TOTAL	278.2	56.1%	30.2	

Source: Hollins B. Chenery, "Restructuring the World economy," Foreign Affairs, An American Quarterly Review, January 1975, p. 250.

resource in each of these countries. It also shows that with the establishment of the oil industry each country would be able to control oil production in order to prevent waste, so that they can continue to use oil revenue to provide jobs for their people, education, health care and raise living standards for a long time until these countries' economies can survive without relying on money from oil. It was to satisfy this aspiration that the Organization of the Petroleum Exporting countries (OPEC) was formed, where their Ministers of Oil and Finance would meet one or more times a year to discuss various issues which concern the members of OPEC and the oil they own.

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CHAPTER IV

COMPARATIVE IMPACT OF OIL REVENUE ON THE ECONOMIC DEVELOPMENT PLAN OF NIGERIA, IRAN, AND LIBYA

Introduction

This chapter analyzes the impact of oil revenues on the economic development plans of Nigeria, Iran and Libya. Development planning involves the organization of human and capital endeavors towards the maximization of economic performance, consistent with other social and political objectives (12, p. 106).

According to Lewis, the purpose of the development plan is threefold:

> To help the government pursue policies which encourage private individuals to make decisions favoring growth, to invest more, plant more, use fertilizer, undergo training, and change; to determine priorities for the governments own expenditures on cement and capital accounts, including investments in government enterprises; and to help ensure that adequate finances is mobilized for private and public investment. (15, p. 35)

While these above planning elements are held to be vital, it is the thesis of this chapter that effective development planning needs to embrace: (a) the objectives and priorities of the plan, (b) overall strategy, (c) overall desired rate of growth of the economy, (d) the

desired capital/output ratio, (e) investment targets, (f) the structure of investment, (g) human-capital development, (h) sound financial management geared toward maximization of plan objectives, and (i) phasing in and implementing the plan.

Implementation of a development plan also requires understanding the motivations of the population and the manner in which it is likely to respond to incentives, exhortations, and directions. It is from these frames of reference that the validity and effectiveness of Iran's, Nigeria's and Libya's national development plans were evaluated. It is the contention of this paper that, considering the immensity of Nigeria, Iran, and Libya's development potential, substantial improvement in the technique of plan formulation and implementation might insure the social and economic transformation that these three nations are seeking.

From the viewpoint of these three country's fiscal policies, oil revenue affected the economies in two different ways. First, it provided sources of income for the usual governmental functions; and second, it is the single largest source of income for implementation of various plans for economic development. To analyze the significance of oil revenue for development projects, this chapter analyzes the three plans for Nigeria, five plans for Iran and four plans for Libya which have been implemented.

Nigeria

Nigeria's oil industry was at its early stage when the First National Development Plan was launched, and the country's oil resources were not fully explored. For this reason oil revenue did not have strong impact on The First National Economic Development Plan in Nigeria. In 1959 The National Economic Council specified that a national development plan should be prepared (1, p. 132).

The First National Development Plan: 1962-1968

Nigeria's 1962 to 1968 National Plan represented the country's first attempt at comprehensive, intergrated planning (7, p. 189). Nigeria attached the greatest importance to this six year plan. This plan came two years after the attainment of the nation's political independence in 1960. The country, at that time, was still economically depending on the United States and Great Britain, and therefore the structure of the plan, in some measure, reflected their goal and objectives.

During the Prime Minister's plan speech in October 1962, Sir Abubakar Tafawa Balewa said:

> With a population of at least 40,000,000, growing at a rate of 2 per cent a year and living conditions considerably below those obtaining in the more advanced countries, our greatest task has been to make life more satisfying for our people. (1, p. 132)

Sanu, the former ambassador of Nigeria in the United States during this period, noted:

> The colonial economy was structurally tied to the west. . . .In order to increase the structural economic dependence on the west, an economic plan whose financing would depend substantially on foreign capital was imposed on us. . . .As such, it was imperative, and in order to achieve the objectives of the plan whose relevance to the true needs of Nigeria could not be rationalization, that our government had to cultivate the friendship of the west (8, p. 6).

The First Development Plan called for a total expenditure of $1.9 billion, of which as much as $949 million would have to come from the west (8, p. 5). Table 4.1 and 4.2 show the dependence on foreign technoligical resources from the west by Nigeria.

Tables 4.1 and 4.2 both reflect the importance of foreign aid to the financing of the plan. Each regional government limited its capital expenditure program to twice the amount of funds that it was able to provide itself so that the dependence on foreign aid might not exceed half of its required finances. Thus, about 50 per cent of the total budget came in the form of foriegn aid.

> In a country where over four-fifths of the population depends on agriculture, forestry, livestock and fisheries, and more than half of the Gross National Product is derived from these sources, expansion and modernization of agriculture and related production are of crucial importance to the development of the economy (1, p. 133).

TABLE 4.1
EXPECTED SOURCES OF FUNDS FOR THE GOVERNMENT
CAPTITAL EXPENDITURES PROGRAMS
1962/1963-1967/1968
(In Million Nigerian Pounds)[a]

Expected Sources	Federal	Western Region	Eastern Region	Northern Region	Total
Resource					
Existing sources[b]	428.5	130.2	135.2	140.5	834.4
New soources	232.2	44.8	45.6	60.0	382.6
Sub-total[c]	660.7	175.0	180.8	200.5	1,217.0
Recurrent expenditure					
Proposed	484.3	149.8	167.4	195.0	996.5
Less underspending	-24.3	.....	- 8.4	- 9.8	-42.5
Sub-total	460.9	90.3	75.2	98.8	676.8
Available for capital expenditure	200.7	25.2	21.8	15.3	263.0
Planned capital expenditure	412.5	90.3	75.2	98.8	676.8
Less underspending	- 5.6	.....	- 7.5	- 9.9	-23.0
Requirement for capital program	406.9	90.3	67.7	88.9	653.8
Available for capital program	200.7	25.2	21.8	15.2	263.0
Gap[d]	206.2	65.1	45.2	72.6	389.8
Assumed foreign aid	203.5	45.2	33.9	44.5	327.1
Uncovered gap	- 2.7	-19.9	-12.0	-29.1	-63.7

Source: [a]Edwin, Dean, Plan Implementations in Nigeria, 1962-1966, p. 26.
[b]Projected to increase at the rate of 12 per cent per annum.
[c]Underspending has already been estimated in budgeted figure. Including
[d]4.4 million education grants from Federal Government Capital Program.
It is expected that a substantial portion of this gap will be financed by capital generated by the use of Marketing Board funds allocated to the proposed Development Bank.

TABLE 4.2

EXPECTED FUNDS FOR THE CAPITAL-EXPENDITURE PROGRAMS, 1962/1963--1967/1968 BREAKDOWN BY MAJOR CATEGORIES (In Millions of Nigerian Pounds)

Expected Funds	Federal	East	West	North	Total
Recurrent budget surpluses	27.0	6.0	11.5	-16.1	28.4
Domestic borrowing and Central Bank	63.7	....	....	12.0	75.7
External reserves and other accumulated funds	30.0	1.7	3.5	....	35.2
Internal resources of the statutory corporations	80.0	....	....	....	80.0
Marketing boards	.....	14.1	10.0	15.0	39.1
Foreign aid	203.5	33.9	45.2	44.5	327.1
Other	.....	....	0.2	4.4	4.6
Uncovered gap	2.7	12.0	19.9	29.1	63.7
Total capital program (Less underspending)	406.9	67.7	90.3	88.9	653.8

Source: Federal Ministry of Economic Development, National Development Plan: Progress Report 1964, Lagos, 1965, p. 27.

The National Plan, therefore, accorded highest priority to agriculture, industry, and technical education. Agricultural production, therefore occupied a prime place in the plan.

If the targets, with respect to growth, were to be achieved, the plan had to represent a marginal shift of government effort toward directly productive types of investments in the agricultural and industrial sectors. The capacity of these sectors to absorb investment effectively was limited, and this constituted effective limitations on the rate of growth. The causes of limited absorptive capacity were to be traced, to shortages of knowledge and trained manpower, hence, the emphasis on increased training of intermediate and higher-level skilled personnel (7, p. 259).

There was significant amount of underspending for development during the first four years of the plan. Dean attributes this underspending primarily to a lack of executive capacity among the indigenous administrators of the government (5, pp. 116-124). He also observed that the great shortfall in finance was ascribed to "tied foreign" aid, which was no longer forthcoming owing to the diversion of some of the specific projects to other uses. Would-be donors did not feel obligated to honor their initial promises, and this shortfall tended to destroy the financial feasibility of the plan (5, pp. 116-117).

TABLE 4.3

FEDERAL GOVERNMENT OF NIGERIA, RECURRENT REVENUE,
1964/65 THROUGH 1970/71[1]
(In Million Nigerian Pounds)[2]

	1964/65	1965/66	1966/67	1967/68	1968/69	1969/70[3]	1970/71[4]
Customs and excise duties:							
Import	83.4	74.9	58.5	53.3	58.0	69.1	69.7
Export	14.4	15.9	14.0	15.0	14.8	19.7	22.1
Excise	13.6	21.5	36.0	24.8	28.2	38.0	54.2
Other	0.2	0.2	0.2	0.2	0.2	0.2	0.3
Subtotal	111.6	112.5	108.7	93.3	101.2	127.0	146.3
Income taxes:							
Corporations	5.4	7.6	10.1	11.2	14.6	15.2	17.3
Individuals	2.4	2.9	3.0	4.8	0.7	0.4	0.1
Petroleum profits	0.4	1.3	2.9	6.0	2.6	11.1	57.8
Subtotal	8.2	11.8	16.0	22.0	17.9	26.7	75.2
Mining revenues:							
Minerals	2.5	3.4	2.4	2.4	1.8	2.1	2.4
Oil	7.8	12.2	16.0	14.6	9.0	21.9	38.1
Subtotal	10.3	15.6	18.4	17.0	10.8	24.0	40.5
Miscellaneous government services	7.9	8.5	2.3	1.5	1.3	1.1	0.9
Interest received	4.6	4.6	5.8	6.1	7.0	6.3	7.8
Other revenues	4.8	5.7	8.4	5.3	7.6	2.5	3.3
TOTAL	147.4	158.7	159.6	145.2	145.8	187.6	274.0

TABLE 4.3--Continued

	1964/65	1965/66	1966/67	1967/68	1968/69	1969/70[3]	1970/71[4]
Less transferred to regions (states)[5]:							
Import duties	12.5	11.6	2.0	4.2	12.9	14.1	8.4
Export duties	14.7	15.9	20.4	14.3	13.5	19.7	22.0
Excise duties	6.3	7.9	11.3	12.7	5.5	19.0	27.1
Mining royalties and rents	6.4	7.6	9.2	8.0	3.4	10.8	18.2
Distributive pool	28.5	22.7	25.6	22.1	17.6	29.4	39.5
Other	0.1	n.a.	n.a.	0.1	0.1	n.a.	n.a.
TOTAL	63.7	65.6	68.6	61.4	53.0	93.0	115.3
Total retained by Federal Government	83.7	93.1	91.0	83.9	92.8	94.6	168.7[6]

n.a.--not available.
[1]Fiscal year, from April 1 through March 31.
[2]One Nigerian pound euqals U.S. $2.80.
[3]Revised estimates.
[4]Budget estimates.
[5]Includes nonstatutory appropriations.
[6]Total as in sources.

Source: Area Handbook for Nigeria, Foreign Area Studies, The American University, Washington D.C., p. 302, 1970.

TABLE 4.4

CONSOLIDATED FEDERAL AND REGIONAL (STATE) FINANCES OF NIGERIA[1]
1964/65 through 1970/71
(In Million Nigerian Pounds)[2]

	1964/65	1965/66	1966/67[3]	1967/68[3]	1968/69[3]	1969/70[3]	1970/71[4]
Current revenues:							
Federal revenues:							
Collected by federal government	145.6	156.5	156.8	142.0	142.8	210.1	270.4
Transferred to regions (states)	60.7	65.6	68.6	61.4	53.0	91.0	115.3
Net	84.9	91.0	88.2	80.6	89.8	119.1	155.1
Regional or state revenues:							
Collected by federl government	60.7	65.6	68.6	61.4	53.0	91.0	115.3
Collected directly	28.9	29.4	29.8	15.9	23.8	19.3	40.3
Subtotal	89.6	95.0	98.4	77.3	76.8	110.3	155.3
TOTAL	174.5	186.0	186.0	157.9	166.6	229.4	310.7
Current expenditures:							
Federal expenditures	76.4	84.1	78.6	116.8	149.4	296.2[5]	138.0
Defense and internal security	(22.7)	(25.1)	(23.8)	(61.8)	(91.4)	(190.5)	(55.7)
Interest on public debt	(6.7)	(8.9)	(10.7)	(12.6)	(20.6)	(n.a.)	(16.5)
Regional or state expenditures	73.2	81.7	86.6	59.0	73.2	96.2	147.9
TOTAL	149.6	165.8	165.2	175.8	222.6	392.4	285.9
Current surplus:							
Federal government	8.5	6.9	9.6	-36.2	-59.6	-177.1	17.1
Regional or state governments	16.4	13.3	11.8	18.3	3.6	14.1	7.7
TOTAL	24.9	20.2	21.4	-17.9	-56.0	-163.0	24.7

TABLE 4.4--Continued

	1964/65	1965/66	1966/67[3]	1967/68[3]	1968/69[3]	1969/70[3]	1970/71[4]
Capital expenditures:							
Federal government	39.2	52.5	57.6	39.6	45.0	n.a.	n.a.
Investment expenditure	(31.8)	(33.9)	(28.0)	(27.6)	(20.6)	(22.4)	(n.a.)
Repayment of principal	(5.5)	(6.2)	(3.3)	(8.0)	(11.8)	(n.a.)	(n.a.)
Regional or state governments	35.2	33.1	38.3	26.1	23.7	50.3	107.9
TOTAL	74.4	85.6	95.9	65.7	68.7	n.a.	n.a.
Overall deficit:							
Internally financed	41.1	39.9	57.0	64.4	117.7	225.0	n.a.
Externally financed	8.4	25.5	17.5	19.2	7.0	10.7	n.a.
TOTAL	49.5	65.4	74.5	83.6	124.7	235.7	n.a.

n.a.--not available.
[1]Fiscal year, from April 1 through March 31.
[2]One Nigerian pound equals U.S.$280.
[3]Comparability of figures for the period 1966/67 through 1969/70 is impaired by uneven and incomplete coverage of the three eastern states.
[4]Budget estimates.
[5]Includes capital expenditure other than investment expenditure.

Source: Area Handbook for Nigeria, Foreign Area Studies, The American University, Washington D.C., p. 306.

TABLE 4.5

FEDERAL GOVERNMENT OF NIGERIA, EXPENDITURE BY FUNCTION
SELECTED YEARS, 1965/66 to 1969/70[1]
(in Million Nigerian Pounds)[2]

	1965/66 Total	1967/68 Total	1968/69			1969/70[3]		
			Recurrent	Capital	Total	Recurrent	Capital	Total
Administration:								
General administration	18.7	15.1	13.0	1.4	14.4	14.3	6.3	20.6
Defense and internal security	25.1	61.8	59.3	32.1	91.4	30.9	23.7	54.6
Subtotal	43.8	76.9	72.3	33.5	105.8	45.2	30.0	75.2
Social and community services:								
Education	9.8	8.2	6.1	0.8	6.9	8.4	3.5	11.9
Health	6.5	6.2	3.2	n.a.	3.2	3.9	0.1	4.0
Other social and community services	3.3	1.3	0.6	0.1	0.7	0.7	0.5	1.2
Subtotal	19.6	15.7	9.9	0.9	10.8	13.0	4.1	17.1
Economic services:								
Agriculture	4.2	1.6	2.0	1.2	3.2	2.3	5.6	7.9
Transport and communications	22.3	13.2	2.0	6.3	8.3	6.2	26.5	32.7
Construction	12.4	18.2	5.8	8.1	13.9	6.0	10.9	16.9
Other economic services	2.5	2.1	0.8	2.7	3.5	1.0	3.7	4.7
Subtotal	41.4	35.1	10.6	18.3	28.9	15.5	46.7	62.2

TABLE 4.5--Continued

	1965/66 Total	1967/68 Total	1968/69			1969/70		
			Recurrent	Capital	Total	Recurrent	Capital	Total
Pensions and gratuities	4.2	3.9	3.9	n.a.	3.9	6.3	n.a.	6.3
Other[4]	12.4	4.0	n.a.	12.6	12.6	n.a.	10.8	10.8
Subtotal	20.5	20.5	24.5	12.6	37.1	19.9	10.8	30.7
TOTAL	130.3[5]	148.4	117.3	65.4	182.7	93.4	91.9	185.3[5]

[1]Fiscal year, from April 1 through March 31.
[2]One Nigerian pound equals US$2.80.
[3]Budget estimates.
[4]Includes loans (net) to regions and states and financial obligations; for example, compensation payments to former civil servants and subscriptions to international organigations.
[5]Total as in sources.

Source: Area Handbook for Nigeria, Foreign Area Studies, The American University, Washington D.C., p. 310.

As a result, the plan's targets were not fully attained. Poor coordination of resources, administrative deficiencies, combined with the plan's reliance on foreign aid and the changing political climate and institutional frame work of aid administration accounted for disappointing results in the implementation of the plan. From 1966 to 1970 the plan was interrupted, as a consequence of the political instability that led to the Civil War. The federal government, in response to that situation, formulated a Second National Plan for reconstruction and development (25, p. 23).

The Second National Development Plan 1970-1974

The Second National Deveolpment Plan was primarily designed as a reconstruction plan. It stressed repairing the damaged and destroyed facilities of the economic infrastructure (17, p. 133). More than a quarter of plan funds were spent on the transportation and communications sector alone. The plan raised capital investment to ₦1560.0 million. Of this the federal government provided 54 per cent. Distribution of investment by sectors showed 13.5 per cent for agriculture, 17 per cent for industry, 21.9 per cent for the social services, 28.8 per cent for transport and communications, 15.1 per cent for administration, and 2.1 per cent for distribution (21, p. 157).

The major priorities of the second plan were:

1. Higher-level agricultural output to produce cheaper food and combat inflation;
2. Improvement of the infrastructure framework for balance economic and social development;
3. Intensification of rural development;
4. Measures to solve the huge problems of unemployment and illiteracy; and
5. Greater Nigerianization of the economy (21, p. 157).

These major objectives of the plan represented a fairly good response by the planners to the needs of the nation.

This plan introduced, for the first time, the technique of "phasing" the whole plan. Such phasing (for formulation of medium-type plan) demanded constant monitoring of both economic development and the decision-making tools for short-term economic policy. Humagun Mira, during his World Bank's mission to Nigeria observed "the obstacle to the development of this country isn't money. It is the lack of institutions and management to meet the needs of the country" (18, p. 38).

Even though priority was given to agriculture, output continued to decline, Due to insufficient investment in agriculture, urban drift and an absence of any coordinated agricultural policy (18, p. 38). Education also received high priority in the plan. The planners were fully aware

of the agricultural, educational and infrastructure problems that confronted them, but their policy lacked techniques to alleviate those problems.

In summary, the Second National Plan was no better than the first, because of coordination and implementation problems. The main bottlenecks were lack of preparedness for specific projects and limited executive capacity in critical sectors. These resulted in large under expenditure of the allocated funds. In agriculture for example, 43 per cent of the planned allocation remained unspent, due to inadequacies in both design and the implementation of specific project plans. Unlike the First National Plan oil contributed about 44 per cent of the total expenditure for the Second Plan. Oil revenue started to play an important role during this period. This was due to the 1973/74 oil price increase.

The Third National Development Plan 1975-1980

The Third National Development Plan, 1975 to 1980 was formally launched on March 29, 1975 and was revised in the spring of 1977. The 1975-1980 plan was much more ambitious than its predecessors and aimed at radically transforming the national economy, and securing significant improvements in all sectors of the economy (21, p. 158).

The plan proved too ambitious for the country, as oil revenues increased substantially. The plan envisioned expenditure of 68 billion Nigerian naira, about $115 billion. The plan's $115 billion expenditure had a multiplier effect of about $130 billion of improvements. The goal was a more diversified economy and wider distribution of income (24, p. 4). The Third Plan investment was twelve times as great as that of the second as a result of increased revenue from oil.

At the beginning of the planning period, petroleum income accounted for 85 per cent of Nigeria's public sector expenditure, while the 15 per cent expenditure investment came from agriculture and other sectors of the economy. The plan envisaged an average real economic growth rate exceeding 9 per cent (19, p. 7).

Objectives and Strategy.--The broad objective of the Third National Development Plan was the same as that of the Second Plan, establishing Nigeria as a self-reliant country. The goals of the plan were:

1. Rapid growth in per capita income, which was expected to increase on the average by 6.5 per cent a year, assuming that the population would grow at an average rate of 2-5 per cent;
2. More even distribution of oil income, the benefits of economic development being so spread out

as to bring about a marked improvement in the standard of living of the masses of the people;

3. Reduction in the level of unemployment;
4. Adequate supplies of all categories of manpower required for sustained economic growth;
5. Increased diversification of the economy through rapid expansion and broadening of industrial activities;
6. Balanced development to insure simultaneous growth of of all the country's geographical areas, reduction of the disparity in living standard between the urban and rural areas, and lessening of mass migration of population to the urban centers; and
7. Indigenization of economic activity (6, p. 69).

The overall strategy of the plan was to use the nation's substantial revenues from oil to increase the productive capacity of the economy by creating the economic and social infrastructure necessary for a self-sustaining growth. Toward this end, the approved revenue-allocations system was designed to ensure that all governments in the federation would have adequate financial resources to implement their respective programs fully (22, p. v).

Planned Capital Investment Expenditures.--During the Third National Plan the official exchange rate was one Nigerian naira equals U.S. $1.65 (₦1 = $1.65). Highlights of the plan's investment program included huge sums for the transportation sector: ₦5.4 billion for roads building, ₦885 million for railroad construction and locomotive purchases, and ₦322 million for port development. Among the many large-scale industrial projects planned were an iron and steel plant, a petrochemical complex, refinery expansion and two Liquid Natural Gass plants. To develop the petroleum industry, ₦2.532 billion was allocated for improvement of distribution, exploration activities and government investment in production. Key programs in other areas included the ₦429 million for agricultural infrastructure development; ₦1.180 million for telecommunications expansion; ₦500 million for classroom and teacher training facilities to implement Universal Primary Education (UPE); ₦760 million for health care facilities and services; and ₦1.5000 million for low rental housing units (19, p. 8).

Tables 4.6, 4.7 and 4.8 provide a breakdown by economic sector of the total planned capital investment expenditures for both the public and private sectors which amounted to more than 45 billion Nigerian naira, referred to as the "nominal investment program." Nominal investment here means the amount could be more or less.

TABLE 4.6

NIGERIA'S SECTORIAL DISTRIBUTION OF GROSS FIXED CAPITAL FORMATION
(in Millions of Naira)

Sector	Effective Public Sector Program	Private Sector Investment	Total Investment
Agriculture	1,300	1,200	2,500
Mining and quarrying	1,400	1,000	2,500
Manufacturing and crafts	3,800	2,000	5,800
Electricity and water	1,000	.....	1,000
Building and construction	.....	2,700	2,700
Distribution	100	1,400	1,500
Transport and communication	5,500	500	6,000
General: government	3,000	.....	3,000
Education	1,500	.....	1,500
Health	400	100	500
Other services	200	1,000	3,000
Total	20,000	10,000	30,000

Source: Federal Republic of Nigeria, Third National Development Plan, 1975-1980.

TABLE 4.7

NIGERIA'S PUBLIC SECTOR NOMINAL CAPITAL INVESTMENT PROGRAM
(Actual Disbursement Expected to Outlast
Five-Year Plan Period)
₦1 = U.S. $1.65

Sector	N Million	Per Cent of Total
Agriculture	2,200	6.7
Mining and quarrying	2,680	8.2
Manufacturing	5,315	16.2
Power	1,061	3.2
Communications	1,339	4.1
Transport	7,303	22.2
Commerce and finance	559	1.7
Education	2,464	7.5
Health	759	2.3
Information	380	1.2
Other social services	183	0.5
Housing	1,836	5.6
Water supply	930	2.8
Other regional development	1,377	4.2
Defense and security	3,326	10.2
General administration	1,124	3.4
Total	32,855	100.0

Source: Federal Republic of Nigeria, Third National Development Plan, 1975-1980.

TABLE 4.8

NIGERIAN PRIVATE SECTOR NOMINAL CAPITAL INVESTMENT PROGRAM 1975-1980
(in N Million)

Sector	Five Year Total	1975-76	1976-77	1977-78	1978-79	1979-80
Agriculture, forestry and fishing	1,326	217	187	216	288	242
Mining and quarrying	1,200	195	209	187	245	264
Manufacturing	3,000	163	274	374	504	685
Building and construction	3,680	260	387	503	680	870
Distribution	1,514	200	250	300	350	414
Road transport	900	100	150	200	220	230
Other services	1,250	174	201	234	272	319
Total	12,780	1,219	1,658	2,014	2,499	3,024

Source: Federal Republic of Nigeria, Third National Development Plan, 1975-1980.

The reason was because slippages were anticipated to arise from delays in the disbursement of funds and the restraints imposed by procurement problems, the need to mobilize technical know-how, etc. Estimated actual expenditures are referred to as the "effective investment program," which totaled 30 billion naira as shown in Table 4.6.

Public Sector.--Public sector nominal expenditures were allocated to four broad categories: economic, administration, regional and social. Each of these sectors had a total of ₦20.5 billion, or 62.3 per cent, 13.6 per cent, 12.6 per cent and 11.5 per cent, respectively as Table 4.6 indicates. The breakdown shows transport with 22.2 per cent, with emphasis on infrastructure facilities, such as roads, bridges, ports in order to enable the private sector to provide goods and services adequately to the people. The second largest allocation went to the manufacturing sector, with 16.2 per cent. Various educational and training programs were designed to eliminate the problem of the shortage of manpower. In order to reduce unemployment, some labor-intensive projects were included in the plan.

The External Sector.--The balance-of-payment position was projected to remain favorable throughout the plan period. External reserves rose by a yearly average of

over ₦3 billion. Agriculture had about 5.8 per cent of total nominal allocations. There were two investment strategies: (1) assistance to private farmers, and (2) direct government involvement in production. The former took the form of subsidies, credit and monetary incentives and support services. Farmers' efforts were supplemented by direct government investment in large-scale plantations, land development, and irrigation schemes (5, p. 74).

Private Sector.--The sectoral distribution of the investment is clearly defined in Table 4.8. As the table shows, building and construction, manufacturing, distribution, agriculture, forestry and fishing, other services, mining and quarrying and road transport were the order of priority. Finance for the private-sector program came from both domestic and external sources, including expenditure by foreign investors.

General Policy Measures.--In order to ensure that the private sector played a role which was consistent with national objectives and priorities, certain policies were pursued throughout the plan period. The main policy goals were the attainment of rapid economic growth and development, price stability, and social equity. Policy instruments were selected from fiscal, monetary, and income areas according to the plan document. Fiscal policy was

directed to combat inflation, and redistribution of personal income. Imports were anticipated to be liberalized through the removal of all administrative controls and nontariff barriers and the further reduction of import and excise duties. The National and State supply companies inensified the importation of goods. It was hoped that the Price Control Board would intensify its activities in order to ensure that government concessions resulted in lower consumer prices. In order to facilitate redistribution of income, the marketing-board ensured reasonable farm prices. Farm equipment was given further subsidy support. The government guaranteed minimum prices and incomes for food producers (6, p. 74).

The focus of monetary policy was considered to be the control of inflation. The problem of excess liquidity in the banking system resulted from government's spending of its oil revenues accentuated during this plan period. Monetary policy corrected the imbalance in the monetary sector by directing credit to needy sectors. Growth of the money supply was controlled in order to fight inflation. Selective credit and variations in lending and deposit rates of interest were other policy instruments that were directed toward the attainment of high savings and investment with minimum inflation (6, p. 75).

Income policy focused on personal income, interest income, profits and dividends, and rents. Two

organizations, an income analysis unit, and a pay research unit, were set up to help in the formulation of an operational income policy. In the area of personal income, salaries and wages, as well as incomes from agriculture, were the most sensitive components of incomes. Interest income rose in the financial sector as the result of antiinflation measures. It was expected that such income would largely accrue to the government through its participation in the financial sector. Profits were regulated through the control of commodity prices. Monopolistic practices were also controlled. The capital ownership base was broadened by the enforcement of the provisions of the Nigerian Enterprises Promotion Decree on relevant businesses that were still ineffective.

Rents were regulated in order to ensure equitable distribution of income. Existing rent tribunals were strengthened to deal with breaches against the rent control laws. Further, government, through its housing programs, coorporations, and mortgage banks intensified the expansion of the supply of low income dwelling houses. Based on the performance of the economy during the first two years of the plan period, it can be concluded that the 1973/74 oil price contributed to the tremendous strides in economic growth and development in all sectors of the economy. This stride can be seen in comparing Tables 4.3, 4.3 and 4.5 with Table 4.9 to see the impact of oil

TABLE 4.9

TOTAL PUBLIC SECTOR CAPITAL PROGRAMS: 1975-1980*

Sector	Fed. Govt.	State Govt.	Total	Percent of Nominal Total
Economic	17,469.0	3,005.1	20,474.1	63.2
Agriculture	750.9	895.0	1,645.9	5.0
Livestock	173.1	170.9	344.0	1.0
Forestry	30.0	79.7	109.7	0.3
Fishery	58.6	43.0	101.6	0.3
Mining and quarrying	2,680.4	.....	2,680.4	8.2
Manufacturing and craft	4,907.2	408.7	5,315.9	16.2
Power	932.0	143.2	1,075.2	3.2
Commerce and finance	323.5	235.9	559.4	1.7
Transport	6,274.4	1,028.7	7,303.1	22.2
Communications	1,338.9	.....	1,338.9	4.1
Social	2,272.9	1,513.9	3,786.8	11.5
Education	1,656.2	807.6	2,463.8	7.5
Health	314.1	455.8	759.9	2.3
Information	234.3	145.9	380.2	1.2
Labour	43.2	.....	43.2	0.1
Social development and sports	25.0	114.6	139.6	0.4
Regional development	2,388.6	1,755.5	4,144.1	12.6
Water supply	317.4	612.6	930.0	2.8
Sewerage, drainage, etc.	154.5	274.0	428.5	1.3
Housing	1,650.0	187.4	1,837.4	5.6
Town and country planning	250.5	504.4	754.9	2.3
Cooperative and community development	16.2	177.1	193.3	0.6
Administration	4,034.8	414.9	4,449.6	13.6
Defense and security	3,325.6	.....	3,325.7	10.1
General administration	709.2	414.9	1,124.1	3.4
Nominal total	26,165.3	6,689.4	32,854.7	100.0

*Source: Central planning Office, Third National Development Plan, 1975-1980.

revenue during this period. The manpower problem that existed during the First and Second Plan was reduced to a great extent, as much was pumped into education during this plan period (6, p. 89).

Iran

The First Development Plan 1949-1955

The First Development Plan in Iran stretched from 1949-1955. As with Nigeria, agriculture and irrigation, followed by industry and mining, and transport and communications had priority. The total expenditure of the plan was about $656 million. This amount came from two sources: oil and loans, both domestic and foreign. Oil revenue accounted for 37 per cent, local loans for 21.4 per cent, and foreign loans had 31.9 per cent. In Table 4.10 the share of each sector is shown. As the table indicates emphasis was placed on oil as the largest contributing revenue to the First Plan, which brought the plan to a standstill in 1951. Nationalization of the oil industry brought about curtailment of oil operations and incoming revenues. This resulted in a discontinuity in the plan operation, for three years from 1951 to 1954, until a consortium agreement was signed and oil revenues flowed again. Due to this discontinuity, only about 16 per cent of the planned projects were executed. Two sugar

TABLE 4.10

PROJECTED REVENUES AND EXPENDITURES OF THE FIRST SEVEN-YEAR PLAN, 1949-1955
(Million Dollars)

Revenues and Expenditures	Amount	Per Cent of Total
Revenues:		
Oil revenue	104.00	37.1
Sale of government property	13.33	4.8
Private participation	13.34	4.8
Bank Melli Iran loan	60.00	21.4
World Bank loan	89.33	31.9
Total	280.00	100.0
Expenditures:		
Agriculture	70.56	25.0
Roads, railroads, ports and airports	66.56	23.8
Industry and mines	39.00	14.3
Oil industry	13.22	4.8
Communicationas	10.60	3.6
Social projects	80.00	28.5
Total	280.00	100.0

Source: Plan Organization, Review of the Second Seven-Year Development Plan, Tehran, Bureau of Information and Public Relations, 1964, p. 4.

refineries were completed during this plan period. A cement plant was also opened in 1955 (20, p. 10). Industry and mining had $166 million allocation, but the Iranian oil crisis reduced these funds to $50 million. Overall, the anticipated investment expenditure of $280 million, was reduced to $68 million, because of management and financial crises, so that the first plan could not achieve its original projections (23, p. 29).

The Second Plan (1955-1962)

The Second National Development Plan was more sophisticated than the First Plan, because it contained more targets and priorities. Its total outlay was projected to be $933 million, which was later revised upward by 20 per cent to $1120 million. The Second Plan was financed mainly by oil revenues. Initially, 60 per cent of total oil revenue was to be devoted to development under the Plan, but this was later raised to 70-80 per cent (2, p. 162). The non-oil sources of funds were domestic and international loans and credit. In comparison with the First Plan, the Second Plan used a larger share of oil revenues; about 37 per cent was used in the First Plan and 75 per cent in the Second Plan. Table 4.11 shows the revised Second Plan revenues and expenditures, indicating that priority in the Second Plan was given to transport and communication, agriculture and irrigation and

TABLE 4.11

REVISED SECOND PLAN REVENUES AND EXPENDITURES
(in Million Dollars)

	Actual 1955-58	Estimated 1959-62	Total Estimated	%
Expenditure:				
Agriculture and irrigation	104.00	148.00	252.00	21
Communications and transportation	160.00	245.33	405.33	35
Industry and mines	64.00	26.67	69.33	8
Social affairs	60.00	84.66	156.00	14
Regional development	44.00	118.67	162.67	14
New Programs*	.....	113.33	113.33	1
Unclassified	2.66	.....	2.67	...
Non-program expenditure	21.34	60.00	81.34	7
Total Expenditure	456.00	706.66	1,162.66	100
Revenue:				
Share of oil revenues	304.00	573.33	877.33	75
Foreign loans	122.66	162.67	285.33	25
Total revenue	462.66	736.00	1,162.66	100

*Includes manpower planning, rural development and preparation for the Third Plan; foreign loans used for second half of plan.

Source: Plan Organization, Division of Economic Affairs, Review of Second Seven Year Plan Program for Iran, Tehran, 1960, pp. 7-8.

industries. Infrastructure projects like dams, roads and communication facilities received heavy attention, because infrastructure development was necessary for large scale industries to operate efficiently. As indicated above, the First Plan was interrupted by the oil crisis; therefore, some projects under the plan were not completed. Consequently, about a quarter of expenditures under the Second Plan were used to meet commitments carried over from prior years (2, p. 162).

Industry and mining received only 7 per cent of total expenditures. They developed rapidly by private sector investment. Industrial projects included the production of textiles, cement, sugar, bricks, pasteurized milk, rubber goods, leather goods, ceramics, detergents, plastic articles, radios, television receivers and oil heaters.

The number of industrial enterprises increased from about 45,000 in 1957 to nearly 70,000 in 1960. Industrial fuel oil sales doubled in the same period. The industrial labor force expanded by nearly 20 percent. The gross value of manufacturing output rose almost 20 per cent from the beginning of the plan to 1962 (20, p. 13). Supplies of credit for investment in industry and mining were provided by domestic banks, the Bank of Melli and the Industrial and Mining Development Bank of Iran (IMDBI). These funds originated in the reevaluation of the gold reserve of the Bank of Melli, the government's foreign

exchange and reserve bank, which held a total of $45 million, and the devaluation of the Iranian Rail from 35 to 75 to the dollar in 1957 (10, p. 79). Consequently, $90 million worth of available loans went into industrial investment and the development of numerous industries. The annual textile-producing capacity of the country was raised from 60 million meters in 1955 to 416 million meters in 1962; the cement producing capacity increased from 82,000 to 1.2 million tons; and the capacity to produce sugar from 85,000 to 216,000 tons a year during the same period (3, pp. 44-45).

In the social services, health care was improved and electricity was provided for 270 cities and towns. As with the first plan, some problems arose. An unfavorable balance of payments, coupled with severe inflation, forced a reduction in the scope of the development plan. As a result, oil's share in the plan's expenditures decreased from 80 per cent to 55 percent of total oil revenue.

The First and Second Plans were not able to achieve plan goods due to lack of experience, inadequate statistics, unskilled personnel and dearth of cooperation among the agencies involved. In addition, "they were more in the nature of financial allocation, without precise clarification regarding the strategy underlying the expenditures" (23, p. 33).

The Third Plan
1962-1968

The Third Iranian National Development Plan was for five years and was later extended to five and a half years, from September 1962 to March 1968. The total expenditures of the plan were originally projected to be $2.66 billion, which was later revised to $3,093 million for the public sector and $2.1 billion for the private sector. Like the previous two plans, the Third Plan was also financed predominantly by oil revenues. Oil revenues' share in the platarted at 55 per cent of the total in the first year and became 80 per cent during the last year. That is, their share increased 5 per cent annually as Table 4.12 shows.

The increase in oil revenues was responsible for revising the plan. Actually, 66.1 per cent of total expenditures was financed by oil income, followed by domestic financing (18.8 per cent including, 12.9 per cent domestic borrowing and 5.9 per cent treasury securities) and foreign borrowing (9 per cent). Table 4.13 details the sources and uses of development funds of the Third Plan. The table implies that development expenditures absorbed the highest rate of spending, 88.2 per cent, concentrated in the ten sectors as shown in Table 4.14.

TABLE 4.12

OIL REVENUES ALLOCATION TO THE THIRD PLAN, 1962-1968
(Million Dollars)

Year	Government Oil Revenues	The 3rd Plan's Share	Per Cent
1962-63	$464	$245	55%
1963-64	645	387	60%
1964-65	726	472	65%
1965-66	732	511	70%
1966-67	820	615	75%
1967-68	920	714	80%

Source: Iran Facts and Figures on Oil Industry in Iran, Tehran: Ministry of Information, 1970, p. 35.

TABLE 4.13

SOURCES AND USES OF DEVELOPMENT FUNDS
DURING THE THIRD PLAN, 1963-1967
(Million Dollars)

	Amount	Per Cent
Sources:		
Oil revenues	1,932.00	62.5
Oil (bonus)	112.00	3.6
Treasury securities	184.00	5.9
Domestic borrowing	400.00	12.9
Foreign borrowing	277.33	9.0
Other	188.00	6.1
Total	3,093.33	100.0
Uses:		
Development expenditures	2,728.00	88.2
Repayment of domestic loans	17.33	0.6
Repayment of foreign loans	116.00	3.7
Interest on treasury securities and domestic loans	50.67	1.6
Interest on foreign loans	73.33	2.4
Administrative expenditures	44.00	1.4
Other	64.00	2.1
Total	3,093.33	100.0

Sources: Plan Organization, Report on the Performance of the Third Development Plan, Tehran, 1968, Table 9, pp. 22, in Persian.

TABLE 4.14
PLANNED AND ACTUAL OUTLAYS OF FUNDS UNDER THE THIRD PLAN BY SECTORS
(Million Dollars)

Sector	Planned		Actual			
			Allocation		Disbursement	
	Amount	%	Amount	%	Amount	%
Agriculture	600.00	22.5	638.66	21.5	630.66	23.1
Industry and mines	292.00	10.9	364.00	12.3	228.00	8.4
Power and fuel	360.00	13.5	468.00	15.8	426.66	15.6
Transport and communications	666.66	25.0	760.00	25.6	717.34	26.3
Education	238.66	9.0	234.66	7.9	230.66	8.5
Health	158.34	7.0	177.34	6.0	176.00	6.5
Manpower	106.66	4.0	28.66	1.3	37.34	1.4
Municipal development	106.66	4.0	97.34	3.3	96.00	3.5
Statistics	10.66	0.4	21.33	0.7	20.00	0.7
Housing and construction	100.00	3.7	165.33	5.6	162.66	6.0
Total*	2,600.00	100.0	2,965.33	100.0	2,728.00	100.0

*Total includes $3 million paid to the Ministry of Finance on account of continuing development projects.

Source: Plan Organization, Outline of the Third Plan 1962-1968, p. 72, and Report on the Performance of the Third Development Plan, p. 23.

TABLE 4.15

APPROVED THIRD PLAN ALLOCATIONS
FOR INDUSTRY AND MINES
(Million Dollars)

Allocation	Amount	Per Cent
Technical assistance to private investors	7.42	2.0
Investment in existing government plants	27.92	7.7
Technical assistance to private investors in mines	3.70	1.0
Investment in new government mines	5.30	1.5
Investment in new government industries	252.62	69.3
Long-term credits for private investors	67.30	18.5
Total	364.26	100.0

Source: Plan Organization, Report on the Performance of the Third Development Plan, p. 82.

General Objectives of the Plan.--The general objectives were as follows:

1. Achieve a Gross National Product annual growth rate of 6 per cent;
2. Create optimum employment opportunities; and
3. Accomplish better distribution of income through implementation of social and economic reforms, particularly in agriculture (13, p. 26).

During the period of the plan the GNP per capita increased at an annual rate of 6.5 per cent from $195 to $269 per year. In addition, the growth of GNP in real terms amounted to 8.8 per cent per year (2, p.164).

Table 4.14 shows that transport and communication received priority. With 26 per cent of total expenditures. As a result roads were expanded, tramways constructed, airports developed and news media advanced. Road building programs received substantial assistance from the International Bank for Reconstruction and Development (3, p. 50). Agriculture came next in order of priority, but its final success was less than planned. Agricultural growth annually, according to the plan, was to rise 4 per cent, but the actual growth showed only 3 per cent. Hard winters, which were harmful to livestock, severe drought during the first three years of the plan, and a decline in the necessary investment were

contributing factors (23, p. 37). Power and fuel received the third priority. The Iranian Electricity Authority was created during this plan period, and in 1964 the Ministry of Water and Power (now Ministry of Energy) was formed. Ten regional companies, plus the Iranian Power Generation and Transmission Company, were established. Also, a large number of private power companies were nationalized. The total installed capacity at the end of the Third Plan reached 1,559 megawatts as compared with 400 megawatts in the Second Plan. Generation of electricity at the beginning of the plan was at an annual rate of 2.3 billion kilowatt hours and climbed to 4,133 billion kilowatts by the end of the Third Plan (2, p. 102).

Industry and mines had 10.9 per cent of the total spending projected. Its growth was 12.7 per cent per year. Petrochemicals, automobile assembly, and aluminum and steel were some of the large industrial projects. A steel mill project at a cost of $266 million was also established during this plan period. Table 4.12 demonstrates the share of various industrial sectors of the Third Plan. The largest share of the industrial allocation went to new industrial enterprises. About 80 per cent of all private loans were channeled through the Industrial Mining and Development Bank of Iran and the Industrial Credit Bank. On the whole, the Third Plan was

a successful program as compared with the first two plans. Total investment for the period amounted to about $5.7 billion or an average annual rate of about 18 per cent of GNP (in 1965 prices), with the highest rate of about 20 per cent in 1967. Of this total gross investment, some $2.5 billion (43 per cent) was public and $3.2 billion (57 per cent) was private (3, p. 50).

During the Third Plan, the Iranians did not suffer from the inflation experienced under the Second Plan. The reasons for this are: first, private consumption expenditures, which, were allowed to grow faster than under the Second Plan, were met by increased production from the privately owned consumer goods industries; second, many of the long-gestation Second Plan projects began to pay dividends in the Third Plan; and third, the oil revenues, either through bonus payments or the revision of royalty, production, or taxation terms, were sufficient to meet the growing import bill. The real income of individuals grew steadily and little of the increase was absorbed by taxation (4, p. 89).

The Fourth Plan

1968-1973

The Fourth National Eonomic Development Plan covered from March 1968 to March 1973. It called for a total investment of $10.8 billion. The public sector

implemented 55 per cent, while the remaining 45 per cent was undertaken by the private sector. The major objectives of the plan were:

1. Acceleraton of economic growth and national income by placing the highest priority on industrial development;
2. Movement towards economic self-sufficiency by increasing agricultural and consumer goods production;
3. Utilization of national gas for domestic consumption, as well as export;
4. Distribution of income on a more equitable basis by creating employment;
5. Narrowing the gap between rural and urban levels of living, and rapid expansion of power supply, both for industry and agriculture;
6. Export diversification to reduce the overwhelming dependence on oil revenue; and
7. Modernization of production and management techniques (23, pp. 40-41).

As in previous plans, the major source of financing was oil revenues. This time oil revenues provided 63.1 per cent of total expenditures. Another source of money to finance this plan was gas and petrochemical revenues which indirectly came from oil. The details of the

sources and uses of funds of the Fourth Plan are shown in Table 4.16. Out of $6.5 billion from the oil sector, 80 per cent was allocated to the plan organization and the remaining 20 per cent was absorbed by the government for routine public expenditures. The share of oil revenues constituted more than 80 per cent of the planned development expenditures of the plan organization (3, p. 52). Table 4.17 shows the allocation of expenditures by sectors during the plan period.

The Fourth Plan gave priority to the industrial sector, unlike the three previous plans that gave priority to agriculture and communication. The industrial sector received 21 per cent of total expenditures. This sector grew at an annual rate of 13.8 per cent, an 0.8 per cent increase from 13 per cent expected annual growth rate.

Agriculture did not succeed as well as was expected. The projected share of this sector from total expenditures was 9 per cent, of which 88 per cent was utilized. The agricultural sector grew at an annual rate of about 4 per cent, while the planned target was 4.5 per cent. The Agricultural Development Bank and the Pastures Development Fund were established in order to accelerate the institutionalization of agriculture. Two machine plants in Arak and Tabriz were erected and four large dams in Esfahan, Shiraz, Aras and Gorgan were completed. These dams fulfilled the triple functions of water supply,

TABLE 4.16

SOURCES AND USES OF FUNDS OF PLAN ORGANIZATION
DURING THE FOURTH PLAN PERIOD
(Million Dollars)

	Amount	Per Cent
Sources:		
Oil Income	385	63.1
Foreign Borrowing	150	24.6
Income from gas and petrochemicals	21	3.4
Domestic borrowing	50	8.2
Other	4	0.7
Total	610	100.0
Uses:		
New development projects	480	78.7
Third Plan projects	45	7.4
Gas transmission	5	0.8
Foreign debt repayment	47	7.7
Domestic debt repayment	28	4.6
Administrative and other	5	0.8
Total	610	100.0

Source: Plan Organization, Fourth National Development Plan 1968--1972 (Tehran), 1968, p. 62.

TABLE 4.17

DEVELOPMENT DISBURSEMENTS OF THE PLAN ORGANIZATION FOR THE FOURTH PLAN
(Million Dollars)

	Estimated Expenditure	Sector as % of Total	Actual Expenditure	Actual as % of Estimate
Agriculture	622.66	9	549.33	88.2
Industires/ mining	1,541.66	21	1,508.00	97.8
Oil/gas	822.66	11	764.00	92.9
Water	604.00	8	560.00	92.7
Electricity	562.66	8	502.67	89.3
Transport/ communications	1,124.00	15	952.00	84.7
Telecommunications	620.00	8	516.00	83.2
Rural development	137.34	2	130.66	95.1
Urban development	121.34	2	110.66	91.2
Housing construction	573.33	8	554.66	96.7
Education	253.33	3	236.00	93.2
Culture	20.00	-*	18.66	93.3
Tourism	46.67	-*	44.00	94.3
Health/sanitation	290.33	3	189.34	90.4
Social welfare	76.00	1	68.00	89.5
Statistics/ research	24.00	-*	22.66	94.4
Regional development	34.67	-*	30.66	88.5
Total	7,393.33	100.0	6,757.30	91.4

*Less than 1 per cent.

Source: Central Bank of Iran, Annual Reports, 1971.

irrigation, and production of hydroelectric energy. The plan increased power production, by installing larger generators under the new dams order to reach 8,000 million megawatts, as compared with only 1,559 megawatts in the previous plan (23, p. 79).

The unfinished 5,700 kilometers of roads remaining from the previous plan were completed. New asphalt roads of 2,610 kilometers were constructed and 1,860 kilometers of old roads were asphalted. A total of 825 kilometers of new primary and secondary rail lines were installed. It is important to note that one of the reasons that caused the Plan Organization to pay so much attention to industry in the Fourth Plan was to reduce the nation's reliance on oil revenues (23, p. 46).

The Fifth Plan (1973-1978)

The Iranian government was encouraged by the successes of the Fourth Plan, and started the Fifth Plan which covered 1973-1978. The original expenditures of the plan were projected to be $36.4 billion, $25.6 billion more than the Fourth Plan. The public sector was allocated $22.9 billion, with $13.5 billion to the private sector. In 1973/74 oil revenues increased tremendously. Consequently, a revision in all sectors of the Fifth Plan was necessary to absorb the new oil revenues. The total

expenditure of the plan was raised to $69.5 billion ($46.1 billion in the public sector and 23.4 billion in the private sector). There was a 150 per cent increase in industry, 100 per cent in agriculture and 150 per cent in transport and communication. The projected and actual disbursement of fixed capital formation during the Fifth Plan is shown in Table 4.18. The socio-economic goals and the major objectives for the quality of life in the Fifth Plan were:

1. To raise living standards of all social strata in the economy, and to enhance social justice by providing equal economic, political and cultural opportunities for all individual groups;
2. To maintain a high and sustained rate of growth consistent with relative price stability and a more equitable distribution of national income and welfare;
3. To improve the quality and size of the country's active labor force in order to increase productivity;
4. To preserve, rehabilitate, and improve the environment, especially in over populated areas;
5. To upgrade the level of science, technology and creativity; and (6) To preserve the country's cultural heritage (2, p. 167). .

TABLE 4.18
FIFTH PLAN, FIXED CAPITAL FORMATION,
PROJECTED AND ACTUAL DISBURSEMENT
(Million Dollars)

	Projected			Actual
	Public* Sector	Private** Sector	Total	Public Sector
Public affairs	5,074.66	.....	5,074.66	2,166.66
Social affairs	7,886.66	6,598.66	14,485.32	3,046.66
Education	1,690.66	64.00	1,754.66	737.33
Culture & arts	121.34	13.33	134.67	62.67
Health	560.00	49.33	609.33	166.66
Urban development	980.00	.....	980.00	332.00
Rural development	800.00	.....	800.00	197.33
Housing	3,200.00	913.33	4,113.33	1,356.00
Environment	81.33	.....	81.33	10.66
Regional development	133.33	.....	133.33	6.67
Social welfare	120.00	.....	120.00	25.33
Physical education	200.00	5.33	205.33	152.00
Econoomic affairs	28,620.00	11,305.33	39,925.33	8,605.33
Agricultural & natural resources	2,358.66	1,765.34	4,124.00	1,065.33
Water resources	2,162.66	53.34	2,216.00	865.33
Electricity	4,140.00	.....	4,140.00	753.33
Manufacturing	3,694.66	6,706.66	10,401.32	2,234.67
Oil	7,146.66	1,170.66	8,317.32	804.00
Gas	1,600.00	633.33	2,233.33	250.67
Mining	824.00	60.00	884.00	534.67
Transportation	5,362.66	1,200.00	6,562.66	1,584.00
Post & telecommunication	1,217.34	.....	1,217.34	456.00
Tourism	113.34	216.00	329.34	57.33
Total	41,581.32	17,903.99	59,485.31	13,818.65

*Includes development credits from the Plan and Budget Organization and investment from public enterprises' own resources.

**Includes government credits to the private sector on top of private savings.

Source: Plan and Budgert Organization, Iran's 5th National Development Plan (1973-1978, revised); and Bank Markazi Iran, Annual Reports, 1977.

These objectives indicated a special focus on the quality of life. Since education, in any society, is the most significant factor which results in "quality development" of life, the planners raised the total investment in education from $253.33 million in the Fourth Plan to $1,754.66 million in the Fifth Plan as Tables 4.17 and 4.18 show.

Again the industrial sector received the largest single allocation, $10.5 billion. The share of each sector in the plan for fixed investment is shown in Table 4.19. Among the industrial sectors, petrochemicals and steel were allocated the largest share of fixed investment, $3.1 billion in metals and steel and $2.17 billion in chemicals and petrochemicals, in which the private sector was expected to finance over 50 per cent of the investments. One of the objectives relating to industries in the plan was to complete, equip and expand existing industrial units. The automotive industry which grew rapidly, rose from 50 per cent in the Fourth Plan to 75 per cent in the Fifth Plan. Overall, the annual growth rate of this industry was 17 per cent during the plan period (2, p. 252).

The private sector was to finance almost 65 per cent of the fixed investment. The government was responsible for about 33 per cent. The public sector invested in

TABLE 4.19

FIXED INVESTMENT IN INDUSTRY--FIFTH PLAN
(Million Dollars)

	Public Sector	Private Sector	Total	Sector Total Total (%)
Food Industry	695.20	533.33	852.53	8.2
Textiles, handicrafts and leather	75.73	460.00	715.73	6.9
Cellulose and painting	237.20	666.67	903.96	8.7
Chemicals and petro-chemicals	1,055.20	1,120.00	2,175.20	20.9
Mining (non-metal)	99.73	1,000.00	1,099.73	10.6
Metals and Steel	1,100.93	2,000.00	3,100.93	29.8
Mechanical	407.20	80.00	487.20	5.7
Electric and electronics	180.66	293.34	474.00	4.6
Transport	161.73	333.33	495.06	4.8
Miscellaneous	.....	40.00	40.00	.4
Technical aid	57.60	.....	57.60	.6
Total	3,695.20	6,706.66	10,401.86	100.0

Source: Irans Fifth Plan 1973-78, Tehran, 1974, p. 76.

social affairs such as urban and rural development, environmental, regional development, and social welfare. Emphasis was placed on the rural areas. The improvement in these areas was both quantitative and qualitative. Quantitatively in the first three years of the plan (1973-1976), the rate of growth of agricultural output reached 6 per cent and increased to 7 per cent in 1975-1976. Qualitatively, the plan aimed at eradicating illiteracy in the population. A comprehensive program to increase the percentage of literate people in the 10-44 age group to about 80 per cent by the end of the plan was launched.

Job-training programs were projected in the rural areas in order to increase the productivity and efficiency of agricultural labor. By 1978, about 8 per cent of the 4.12 million hectares of irrigated land was exploited by the agroindustrial units. About 12 per cent was exploited by farm corporations and rural cooperatives. Commercial mechanized units exploited 30 per cent and 50 per cent by individual farmers. Small farmers were assisted through cooperative organizations at all levels of consumption, production, distribution and technical services. The projected average annual rate of growth in livestock production in the Fifth Plan was about 8.3 per cent. The

annual output of meat was 520,000 tons; milk output was 2.8 million tons, and poultry was 200,000 tons (23, p. 51).

During the plan period, 17 million people in rural areas were supplied with tap water. This increased the total area of irrigated cultivation from 3.5 million hectares to about 4 million hectares. Hydroelectric power generating capacity increased from 804 megawatts to 1,824 megawatts. In 1977-1978 the country's use of electric power reached 32,000 million kwh (2, p. 172).

The Fifth Plan was the most successful plan because it accomplished most of its projects, but the agricultural sector still needed a lot of improvement. During this Plan period, the 1973/74 oil price increase played an important role and the tremendous success in the Fourth Plan helped Iran to carry forward oil revenues from that Plan. The $1 billion increase in oil revenue during the Fourth Plan contributed to the great success. All this success is attributed to oil income (2, p. 172).

Libya

The prospects of oil revenue in Libya were such that the spectacular new financial strength became a conventional expectation. It reflected in the dissappearance of the need for foreign aid to support Libyan economic development, and the precipitous increase

under the annual development budget of allocations for the plans. For this reason the impact of oil revenue on economic development plans in Libya is surveyed.

First Five-Year Development Plan 1963-1968

The First Five-Year Plan for the Economic and Social Development of Libya was launched in August 1963. The plan anticipated an expenditure of 337 million Libyan Dinar (LD 337) or 169.1 Libyan pounds (25, p. 37). Rising oil revenues enabled the plan to be expanded to March 1969.

The emphasis of the First Plan (1963-68) rested heavily on agriculture and infrastructure, including power, transportation, and municipal improvements (26, p. 206). Infrastructure absorbed about 43 per cent of the total amount budgeted, compared with 17.3 per cent for agriculture, 13.2 per cent for education, 4.1 per cent for industry, 7.4 per cent for public health as Table 4.20 indicates (14, p. 79).

During this plan period, 70 per cent of the total expenditure came from oil revenues. In 1972 the Department of Planning publication outlined that oil revenue amounted to over 1,500 million Libyan pounds in the 1963 to 1968 period. Another publication (Ministry of Planning, 1971) shows the spending performance in this

TABLE 4.20

YEARLY ALLOCATIONS, FIVE-YEAR DEVELOPMENT PLAN, 1963-1968
(£L '000)
(1£L = U.S. $2.80)

Sector	Total Allocated	1963/4	1964/5	Balance to Complete	Per Cent
Agriculture and forestry	29,275	2,350	4,850	22,075	17.3
Industry	6,900	545	1,245	5,110	4.1
National economy	2,870	440	680	1,750	1.7
Communications	27,460	5,067	8,678	13,715	16.2
Public Works	38,662	5,882	10,940	21,840	22.9
Education	22,365	1,975	3,895	16,495	13.2
Health	12,500	775	2,425	9,300	7.4
Labour and social affairs	8,690	940	2,060	5,690	5.1
News and guidance	2,550	575	655	1,320	1.5
Public administration	6,425	2,535	1,290	2,600	3.8
Planning and development	11,400	650	1,600	9,150	6.7
Total	169,097	21,734	38,318	109,045	99.9

Source: Ministry of Planning and Development, 1963.

period much more favorably as Table 4.21 indicates. This table shows development expenditures, 1962-1971, indicating that oil revenues contributed more as the plan progressed (14, p. 82).

Military expenditure increased rapidly by 1967-1970 as the revolutionary government took over (see Table 4.22). This table indicates that 16 per cent of oil resources were spent on defense and Arab aid in the two accounting years of 1968-1969 and 1964-1970. As military spending was increasing, allocations to development were falling from 66 per cent in the First Five-Year Period to 38 per cent in the two accounting years 1968-1970 (14, p. 83).

Table 4.23 shows the comparison of proposed percentage allocations with the actual expenditure. This provides important insights into what was expected of the government and its planners. Under-allocation was also significant in the field of education at 8.7 per cent, rather than the planned 13.1 per cent. There was over allocation for the services of Ministry of the Interior, and for housing. This was not figured in the original plan as a separate item.

One of the plan objectives outlined above, was that relating to agriculture which was pursued with significant financial investment. Agricultural production increased as a result of the intensification of irrigation. This

TABLE 4.21

CURRENT AND DEVELOPMENT EXPENDITURES
1962-1971

	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Current expenditure	30.5	40.3	56.0	76.6	105.7	156.7	212.4	281.2	298.6	324.0
Development expenditure	15.9	16.7	24.5	44.5	69.4	107.4	122.5	111.4	122.6	175.9
As % total	(34%)	(29%)	(30%)	(37%)	(39%)	(41%)	(37%)	(28%)	(29%)	(35%)
Total	46.4	57.0	80.5	121.1	175.1	264.1	334.9	392.6	421.2	499.9
Compare total revenues	30.9	43.2	76.0	103.2	151.2	385.0	299.4	430.7	532.8	661.8
Oil revenues	2.4	8.6	28.6	65.4	100.1	233.0	229.2	333.3	436.2	562.5

Source: Ministry of Planning, 1972.

TABLE 4.22

INCOME AND GOVERNMENT EXPENDITURES
1963/64-1969/70
(£L m)

Fiscal Year	Actual Income			Actual Expenditure (current prices)		
	Oil	Total	Current Account	Defense	Development Budget	Total
1963/64	23.8	60.3	46.1	.....	16.9	63.0
1964/65	54.7	95.9	64.2	.....	38.3	102.5
1965/66	83.6	127.8	83.2	.....	58.0	141.0
1966/67	141.8	195.2	112.8	.....	92.3	215.1
1967/68	191.0	249.4	121.5	15.0	119.7	276.2
1968/69	396.2	475.5	162.1	70.9	193.9	460.0
1969/70	353.0	426.3	190.3	75.0	145.0	415.3

Notes: National Defense & Arab Aid.
Total includes reserve fund.
Estimated expenditure.

Source: Department of Planning, 1976.

TABLE 4.23

COMPARISON OF THE PROPOSED AND ACTUAL ALLOCATIONS
FIRST-FIVE YEAR PLAN PERIOD
1963-1968

Proposed in 1963 (1)			Estimated Actual Expenditure (2)		
	£L m	%		£L m	%
Agriculture	29.3	17.3	Agriculture	37.8	12.7
Industry	6.9	4.1	Industry	14.7	4.9
National economy	2.9	1.1	Economics, etc.	2.9	1.0
Communications	27.5	16.2	Communications	52.7	17.7
Public works	38.7	26.2	Public works	87.3	29.2
Education	22.4	13.1	Education	25.9	8.7
Health	12.5	7.4	Health	8.7	2.9
Labour and social affairs	8.7	5.1	Labour and social affairs	13.8	4.6
News and guidance	2.6	1.5	Interior	19.8	6.7
Public administration	6.4	3.8	Planning and development	3.4	1.1
Planning and development	11.4	6.7	Housing	29.5	9.9
			Other	1.8	0.6
Total*	169.1	100.0	Total	298.2	100.0

Note: *Discrepancies in totals through rounding.

Source: (1) Ministry of Planning and Development, 1963;
(2) Department of Planning, 1971.

commendable achievement was swamped by the change in food consumption patterns which caused food imports to increase while agricultural exports declined. Food imports increased at 15 per cent per year (14, p. 86).

Another objective was to improve the standard of living of the people. Average per capita income rose from under $291 to over $840 at the end of the plan period. There was urban and rural electrification, and sewage schemes were pushed ahead, contributing to the general improvement in the standard of living (14, p. 87)

Table 4.24 shows public sector actual development expenditure by kind and industrial classification from 1962-1971 (in Libyan Dinars '000).

At this point, it is difficult to obtain quantitative evidence of the real economic advance achieved during the First Plan period. Nevertheless, this First Plan was relatively primitive compared to the development plans formulated in Iran and Nigeria. Many of its assumptions were too conservative; others too optimistic (11, p. 182). The implementation of the Plan was hampered by manpower and transportation bottlenecks.

The Second Five-Year Development Plan

The Second Five-Year Plan was drafted twice, and both plans were overtaken by political changes. The first was prepared by the Ministry of Planning during 1967-1968 for

TABLE 4.24

PUBLIC SECTOR ACTUAL DEVELOPMENT EXPENDITURE BY KIND AND INDUSTRIAL CLASSIFICATION
1962-1971
(LD '000)

	1962	%	1963	%	1964	%	1965	%	1966	%
Kind of expenditure classification										
1. Construction	10,996	69.1	10,214	61.0	16,347	66.8	27,994	62.9	49,212	71.0
2. Machinery and equipment	3,646	22.9	5,005	29.9	5,519	22.6	12,963	29.2	14,871	21.4
3. Other development expenditure	1,261	8.0	1,521	9.1	2,593	10.6	3,531	7.9	5,261	7.6
Total	15,903	100.0	16,738	100.0	24,459	100.0	44,488	100.0	69,351	100.0
Industrial classification										
1. Agriculture	1,418	8.9	756	4.5	1,102	4.5	3,209	7.2	5,901	8.5
2. Mining and quarrying	33	0.2	13	0.1	14	0.1	8	0.1	52	0.1
3. Manufacturing	137	0.9	334	2.0	265	1.1	477	1.1	714	1.0
4. Electricity and gas	1,250	7.9	1,673	10.0	2,924	7.9	3,718	8.4	5,827	8.4
5. Water supply and sewerage	2,049	12.9	2,236	13.4	5,588	22.8	6,043	13.6	6,428	9.3
6. Wholesale and retail trade	161	'1.0	86	0.5	61	0.2	376	0.8	483	0.7
7. Transport and communication	4,481	28.2	5,170	30.9	7,248	29.6	11,575	26.4	12,311	17.8
8. Public administration	4,515	28.4	2,754	16.5	2,199	8.7	4,459	10.0	6,476	9.3
9. Education	722	4.5	654	3.9	844	3.4	4,280	9.6	8,211	11.8
10. Health	423	2.7	361	2.2	456	1.9	899	2.0	2,022	2.9
11. Community development and town planning	495	3.1	767	4.6	1,171	4.8	1,880	4.2	3,697	5.3
12. Dwellings	80	0.5	1,732	10.3	3,223	13.2	5,768	13.0	13,170	19.0
13. Other services	139	0.8	202	1.1	446	1.8	1,614	3.6	4,059	5.9
Total	15,903	100.0	16,738	100.0	24,459	100.0	44,488	100.0	69,351	100.0
Institutional classifications										
1. Central government	14,339	96.5	16,021	95.7	23,612	96.5	43,015	96.7	64,595	93.1
2. Local authorities	574	3.5	717	4.3	847	3.5	1,473	3.3	4,756	6.9
3. Social security fund	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	15,903	100.0	16,738	100.0	24,459	100.0	44,488	100.0	69,351	100.0

Source: Ministry of Planning, 1972, pp. 90-93.

TABLE 4.24 (Continued)

1967	%	1968	%	1969	%	1970	%	1971*	%
86,145	80.2	102,202	83.4	93,570	84.0	101,346	82.7	123,818	74.7
14,768	13.8	13,867	11.3	14,895	13.4	16,550	13.5	32,407	19.5
6,470	6.0	6,449	5.3	2,956	2.6	4,686	3.8	9,636	5.8
107,383	100.0	122,538	100.0	111,421	100.0	122,582	100.0	165,861	100.0
6,450	6.0	5,687	4.7	5,292	4.7	10,733	8.8	21,256	12.8
89	0.1	276	0.2	84	0.1	.....	.....	648	0.4
911	0.8	1,155	0.9	720	0.6	4,419	3.6	20,128	12.1
14,045	13.1	15,964	13.0	18,418	16.5	14,893	12.1	22,569	13.6
8,519	7.9	9,748	8.0	7,727	6.9	21,649	17.7	22,138	13.1
829	0.8	1,019	0.8	730	0.7	810	0.7	1,205	0.7
18,855	17.6	23,308	19.0	19,379	17.4	15,757	12.89	25,994	25.3
6,151	5.7	5,655	4.6	5,411	4.9	3,323	2.7	2,966	1.8
9,730	9.1	11,469	9.4	9,408	8.4	8.116	6.6	11,341	6.8
5,087	4.7	5,373	4.4	4,645	3.3	5,447	4.4	5,420	3.3
6,876	6.4	7,630	6.2	4,399	3.9	4.131	3.3	2,164	1.3
23,058	21.5	26,501	21.6	31,194	28.0	30,229	24.7	26,523	16.0
6,783	6.3	8,753	7.2	5,114	4.6	3,075	2.4	4,209	2.6
107,383	100.0	122,538	100.0	111,421	100.0	122,582	100.0	175,861	100.0
100,375	93.5	117,704	96.1	104,392	93.7	112,088	91.4	140,480	84.7
7,008	6.5	4,834	3.9	6,821	6.1	9,947	8.1	23,761	14.3
.....	.....	.....	.....	208	0.2	547	0.5	1,620	1.0
107,383	100.0	122,538	100.0	111,421	100.0	122,582	100.0	165,861	100.0

Note *Provisional estimates.

Source: Ministry of Planning, 1972, pp. 90-93.

the period 1968-1973. In 1968 there was a change of Prime Ministers. The new Planning Minister judged that the plan was based on inadequate data and insisted on a new plan, but the Second Five-Year Development Plan was aborted in the first year by the revolution. Then two annual development plans (1969-1971) were initiated that emphasized the productive sectors more heavily than the former plan.

It is interesting to compare the allocations of the First and Second Plans and to observe shifts in emphasis. Table 4.25 sets out the relevant details. This shows that more attention was given to industry, with investment doubling from 4.1 per cent to 7.9 per cent.

Agricultural investment fell from 17.3 per cent to 13.1 per cent. Public works allocations also fell, but housing which did not figure in 1963 made up the difference. A new department, that of Municipalities, added a further 8.9 per cent to the proposed investment in construction (14, p. 92).

Physical and social infrastructure accounted for 49.7 per cent and 17 per cent, respectively. The former included transport, public works, municipalities and housing while the latter was comprised of health, education, labor, and social affairs.

TABLE 4.25

A COMPARISON OF THE FIRST AND SECOND FIVE YEAR PLAN ALLOCATIONS AND OF THE FIRST DEVELOPMENT BUDGET OF THE REVOLUTIONARY GOVERNMENT

First Five Year Plan 1963-1968			Per Cent Allocated		First Development Budget Revolutionary Government 1970-1971	
	% Allocated	% Spent	Second Five Year Plan 1969-1971	%		
Agriculture	17.3	(12.7)	Agriculture	13.1	Agriculture	25.0
Industry	4.1	(4.9)	Industry	7.9	Industry	10.0
National economy	1.1	(1.0)	Economy and trade	1.4	Economy and trade	0.2
Communications	16.2	(17.7)	Transport and communications	14.2	Transport and communications	13.6
Public works	26.6	(29.2)	Public works	15.4	Public works	8.9
Education	13.1	(8.7)	Education	10.1	Education	5.5
Health	7.4	(2.9)	Public health	4.9	Public health	3.2
Labour and social affairs	5.1	(4.6)	Labour and social affairs	2.0	Labour and social affairs	0.2
News and guidance	1.5	(6.7)	Interior	1.7	Interior	0.5
Planning and development	6.7	(1.1)	Planning and development	0.6	Planning and development	0.8
Housing	.....	(9.9)	Housing	11.2	Housing	15.5
Other	.....	(0.6)	Municipalities	8.9	Municipalities	12.5
			Reserves	5.0	Reserves	1.3
			Tourism and sport	2.3	Tourism and sport	0.3
			Civil service	0.2	Civil service	0.1
			Information and culture	2.6	Information and culture	1.1
Total plan allocation	169.1	.....	£ Libyan m	1149.5	LD m	200.0
Total spent	£L m 298.2	.....	(plan not implemented)	.....		

TABLE 4.25--continued

Note: Totals may not equal 100% through rounding.

Source: First Five Year Plan--Ministry of Planning, 1971; Second Five Year Plan--Farley, 1971, p. 311; First Development Budget of Revolutionary Government--Ministry of Planning of the Libyan Arab Republic, 1970; Actual 1963-1968 expenditure--Department of Planning, p. 135.

The First Three-Year Plan After the Revolution 1972-1975

A total of $3,541 million was allocated initially for investment during this plan period. In April 1973 the investment allocation was revised upward to $7,815 million a process that occurred a number of times as oil revenues increased (11, p. 183).

Special importance was given to industry, agriculture and communications. During the plan period the Libyan GNP grew rapidly and value added in non-oil sector increased by 20 per cent in each of the first two years. In the last year, a slow-down occurred, as public sector investment eased off due to the decline in oil revenues in that year.

Overall growth during the plan was high and, at its end, per capita income, was about LD1,439 ($4,864) one of the highest in the world (26, p. 37).

Third Five-Year Development Plan 1976-1980

The ambitious Five-Year Development Plan, known as the "Economic and Social Transformation Plan," was allocated at LD9,250 million (more than $30 billion). Top priority was given to agriculture and land reclamation (16 per cent), followed by industry and mineral resources (13

per cent), housing (12 per cent) and transport and communications (10 per cent) (25, p. 37).

The oil sector accounted for only 7.2 per cent. Sectors of infrastructural nature, including housing, accounted for 38 per cent of total allocations. This indicated that government continued to emphasize on social welfare. The main task of the plan was real GNP growth rate of 10.7 per cent. The oil sector was expected to grow by 7.8 per cent and non-oil sector by 14.1 per cent. Table 4.25 indicates expenditure under the development plans. This plan was the first Libyan plan to emphasize the development of non-oil industry.

Summary and Conclusion

In conclusion, these three countries' governments used their oil revenues to pursue policies that favored growth both in private and public sectors. Economic development plans which were too difficult to get off the ground in Nigeria, Iran, and Libya due to the lack of funds were no problem when oil revenues started to come into these countries. Thus, most of the plan priorities like infrastructure development, investment targets, rapid increase in the industrial sector, human-capital improvements were all met with the use of sufficient oil revenues. Due to this improvement in the technique of plan formulation and implementation there were social and

economic transformation that these three nations were seeking to use oil revenues for.

In Nigeria during the Second Plan the "phasing" technique was introduced. This technique required the availability of adequate and timely information on the overall and sectoral performance of the economy and on the problems, and incipient problems which develop inevitably from time to time. These qualities and capacities were not available in Nigeria, but an extensive economic plan encouraged by oil revenue was introduced into the system. This technique increased absorptive capacity of investment in both agricultural and industrial sectors, and thereby increased their rate of growth, hence, shortages of knowledge and trained manpower was reduced, and quality of life was raised as one of their objectives.

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CHAPTER V

IMPACT OF OIL REVENUES ON THE ECONOMIES OF NIGERIA, IRAN AND LIBYA

Introduction

This chapter compares the impact of oil revenues on the economies of Nigeria, Iran and Libya. Both direct and indirect impacts will be surveyed. Chapter Four of this paper discussed the impact of oil revenues on most of the domestic sectors in each country through the analysis of each country's development plans. In this chapter the sectors chosen are: balance of payments, defense, national income, foreign exchange, gross domestic product, direct impact of oil revenues on the national economy, the relationship of oil revenues to central government revenue, and the interdependence of the oil sector with the rest of the economy. Here the comparison will examine under linkage effects--petrochemicals, refineries and natural gas.

Nigeria

Balance of Payments

The oil sector in Nigeria provides a considerable amount of foreign exchange, contributing to the maintenance of favorable balance of payments. From the

end of 1959 to the end of 1968, Nigerian reserves of foreign exchange rose from 446 million naira to 94 million Nigeria naira. During this period oil production and revenue had not assumed any phenomenal dimension in the national economy. However, from 1970 onward, foreign exchange was no longer a constraining factor in the development of the Nigerian economy, as Table 5.1 indicates (10, p. 142).

The Table 5.1 shows that from 1970 to 1973, Nigeria's visible merchandise trade balance was favorable, and the invisible trade balance negative. The result was that in 1973 the country's current account and the overall balance recorded a small surplus. By the end of 1974, Nigeria was reaping the full benefits of the four-fold increases in the price of oil, agreed upon by the Organization of the Petroleum Exporting Countries (OPEC) members at the end of 1973. For that year, the current account and overall balance of payments surplus stood at over 3 billion Nigerian naira, about $4.8 billion (10, p. 143).

In 1975, Nigeria went on a shopping spree around the world. The value of its imports rose by 115 per cent from the previous year, to ₦3.8 billion, about $6.08 (3, p. 93). During that year, the value of oil exports declined by 15 per cent due to the oil glut on the petroleum markets. The result of the divergent trends was

TABLE 5.1

BALANCE OF PAYMENTS OF NIGERIA
1970-1978 IN NAIRA
(Million)
(1 Nigerian naira = U.S. $1.60)

Year	Visible Merchandise Trade Balance	Invisible Trade Balance	Current Account: (+) Surplus (-) Deficit	Overall Balance: (+) Surplus (-) Deficit
1970	+ 173	- 268	- 50	- 59
1971	+ 285	- 516	- 229	+ 129
1972	+ 478	- 786	- 328	- 40
1973	+1,167	-1,079	+ 53	+ 174
1974	+4,439	-1,315	+3,063	+3,102
1975	+1,487	-1,368	+ 43	+ 158
1976	+1,294	-1,455	- 259	- 340
1977	+ 628	-1,166	- 657	+ 447
1978	-1,173	-1,037	-2,380	-1,296

Source: Central Bank of Nigeria. Nigeria's Principal Economic and Financial Indicators, 1970-1978, Lagos, 1979.

that, as compared with 1974, the surplus on the current account was a meager 43 million Nigerian naira (11, p. 143).

In 1976, a progressive deterioration in the current accounts occurred. During that year, the imports of capital goods comprised 44 per cent and raw materials accounted for 26 per cent of all visible imports; consumer goods accounted for 31 per cent. At the end of 1976 Nigeria was in the red in the current account, as well as in the overall balance (10, p. 143).

In 1977, total visible exports increased by 18 per cent and reached the level of ₦7.6 billions, with oil exports accounting for 92.5 per cent of the total. Imports grew rapidly with the continued negative invisible trade balance. As a result, the current account wound up in the red, by ₦657 million as Table 5.2 indicates.

In 1978, the Central Bank of Nigeria reported that the "progressive deterioration observed in the current account since 1975 persisted, but at a sharply accelerated pace" (4, p. 69). The value of visible imports rose by more than ₦2 billion (over $3.2 billion), and the country ended the year with a huge ₦1.3 billion balance of payments deficit. All this was due to the oil glut that curtailed oil revenues' inflow to the country (10, p. 144).

TABLE 5.2

TOTAL NIGERIAN EXTERNAL ASSETS, 1970-1979
IN MILLIONS OF NAIRA
(at the End of December 1979
one Naira = $1.6)

1970	177 million
1971	303 million
1972	271 million
1973	438 million
1974	3,541 million
1975	3,696 million
1976	3,483 million
1977	3,040 million
1978	1,349 million
1979	3,270 million

Source: Central Bank of Nigeria's Principal Economic and Financial Indicators, 1970-1978, Lagos, 1979. Also Central Bank of Nigeria, Annual Report and Statement of Accounts for the Year Ended 31st December, 1978, p. 82.

Defense

An Austrian firm Steyr-Daimler-Puch was awarded a $60 million contract to build armoured personnel carriers and an assembly plant to be completed in 1983, as a part of a multimillion dollar armed forces modernization plan in 1980 (2, p. 259). This project was designed to produce 200 armoured vehicles and other cross-country vehicles annually. In the same year, diplomatic sources in Lagos said that "Nigeria was also negotiating large arms deals with six other West European countries, the United States and India" (2, p. 2604). In the same year the Federal government announced another $6.6 million budget for defense and security projects.

Despite its economic difficulties, Nigeria recently concluded another large arms agreement with Britain. After three years of talks, Nigeria ordered 18 Jaguar jet fighters, co-manufactured by France and Britain, at a cost of more than $150 million (11, p. 32), with revenue from oil to be used for payment

Availability of Foreign Exchange

Unlike many new countries which suffered from severe foreign exchange constraints during the 1970s, Nigeria was one of the lucky exceptions. The $800 million the Nigerians spent in buying did not have effect on the economy. The petroleum sub-sector was calling the tune in

the economy, and during the first five years of the 1970s, the average growth rate of petroleum output was roughly 37 per cent. Petroleum also generated virtually all the foreign exchange that rapidly filled the coffers of the treasury (10, p. 140)

Foreign trade can give extremely precise indications of the internal functioning of the Nigerian economy. The best way to suggest why Nigeria became such a typical developing country during the 1970's would be to indicate the availability of and developments in its external asserts, as shown in Table 5.2. During the first Post-Civil War year of 1970, Nigeria's external assets amounted to $283 million. For the next two years they hovered around ₦300 million ($480 million). The upward trend continued in 1973. The startling jump in total external assets, was due to the four fold jump in the OPEC price of oil in late 1973 (10, p. 141).

In 1974 external assets rose eight-fold to ₦3.5 billion ($5.67 billion). In that year Nigeria joined the ranks of the "oil-rich" developing countries. As an official U.S. government publication put it, petroleum financed development became imperative (15, p. 1), even though in 1977 the country's external reserves remained at ₦3 billion mark ($4.8 billion).

Trends and Vicissitudes of the Gross Domestic Product

The macro-economic framework of Nigeria is best indicated by the emperical development of its Gross Domestic Product during the decade of the 1970s. Gross Domestic Product is widely used by economists as a frame of reference, providing the best available indicator of national economic power. It is also the most convenient indicator of general welfare and living standards. When GDP is rising, there is a better standard of living and prosperity in the future and when GDP declines, recession, hardship and gloom are in the corner. One problem with this prescription is that it does not indicate the long-term consequences of what is currently being produced; rather it simply reflects that period's market price of the yearly output of goods and services (10, p. 130).

The Nigerian data on annual GDP during the decade of the 1970s, when oil played an important role in the economy, are confusing. For one, nobody quite knew what rural Nigerians, who represent 70 per cent of the total population, earned per annum. The majority of them still live outside the monetary economy. Furthermore, the calculations made by the Nigerians are inconsistent, so that making comparisons between the pre-oil era and the oil era is difficult. To clear up these inconsistencies in the national accounts and to recalculate it, a National

Account Survey Team was set up in 1973 under the leadership of Dr. Aboyade. Table 5.3 shows Gross Domestic Product, at 1973-1974 factor cost, from 1974-1975 to 1978-1979.

During the five-year period, the GDP rose from ₦12.8 ($20.5) to ₦17.2 ($27.52) billion or at a compounded annual rate of 5.9 per cent. During the oil depressed year 1978, the annual growth rate was 5.5 per cent (10, p. 132).

The sector contribution of the gross domestic product during 1974-1975 to 1979-1980 is shown in Table 5.4. The table shows the Gross Domestic Product, value added at 1974-1975 factory cost, from N14.4 billion in 1974-1975 to ₦22.7 billion in 1979-1980, an average rate of 9.5 per cent over the period 1975-1980. Per capita income rose from N205 in 1975-1976 to ₦290 in 1979-1980. Average annual growth rates of 20 percent and above were estimated for such sectors as education, electricity and water supply, health, building and construction (10, p. 132).

Since no firm national income data was available at that time, the World Bank's data on yearly growth rates of the real GDP over the decade is used. This is shown in Table 5.5. As seen in the table, the annual growth rate of the GDP was uneven. During this nine-year period the arithmetic average growth rate came to 8.44 per cent, even

TABLE 5.3

GROSS DOMESTIC PRODUCT IN 1973-1974 FACTOR COST FROM 1974-75 to 1978-79 MILLIONS OF NAIRA
(N1 = $1.60)

Year	GDP (N)
1974-75	12.794
1975-76	13.393
1976-77	14.993
1977-78	16.285
1978-79	17.182

Source: Central Bank of Nigeria. Nigeria's Principal Economic and Financial Indicators, 1970-1978, Lagos, 1979; International Monetary Fund. Nigeria: Recent Economic Developments, Washington, D.C., August 1977, p. 68, contains data on Nigeria's GDP at constant 1974-75 price from 1970-71 to 1976-77.

TABLE 5.4

CONTRIBUTION TO SECTORIAL GROSS DOMESTIC PRODUCT AT
1974–1975 FACTOR COST
(N Million)*
(N1 = $1.60)

Item	1974–1975	1975–1976	1976–1977	1977–1978	1978–1979	1979–1980
Agriculture, forestry and fishing	3,372.7	3,490.7	3,665.2	3,866.8	4,079.5	4,303.9
Mining and quarrying	6,552.3	6,886.5	7,244.6	7,635.8	8,055.8	8,506.9
Manufacturing and crafts	683.9	755.0	857.0	1,038.6	1,358.8	1,558.4
Electricity and water supply	58.7	67.8	80.0	98.4	122.7	154.0
Building and construction	821.4	939.7	1,114.5	1,345.0	1,651.0	2,048.3
Distribution	971.2	1,068.3	1,178.3	1,315.0	1,472.8	1,656.9
Transport and communication	325.0	365.6	423.7	497.8	597.4	725.8
General government	901.8	1,037.1	1,192.6	1,431.2	1,717.4	2,060.9
Education	376.4	447.9	542.0	661.2	813.3	1,008.5
Health	132.0	155.8	185.4	224.3	271.4	328.4
Other services	215.3	233.4	254.4	278.8	307.2	340.4
Total	14,410.7	15,447.8	16,755.7	18,392.9	20,347.3	22,692.4

Source: Central Planning Office, Third National Development Plan, 1975–1980.

TABLE 5.5

GROWTH OF THE REAL GROSS DOMESTIC PRODUCT
1971-72 TO 1979-80, IN PER CENT

Year	Per Cent Growth
1971-72	18
1972-73	10
1973-74	7
1974-75	10
1975-76	-1
1976-77	11
1977-78	6
1978-79	6
1979-80	9

Source: World Bank, Nigeria: Country Economic Memo, Washington, D.C., June 19, 1979.

though 1975-76 record was at negative 1 per cent. All these ups and downs can be attributed to the price of oil. As the oil price increased, GDP followed, and as oil price declined, GDP declined (4, p. 63).

Nigeria's oil dependence was exemplified in May 1975, after the launching of the Third National Development Plan when oil production fell to 1.5 million barrels per day, from 2.3 million barrels a day in October 1974. Nigeria was particularly hard hit due to not lowering the crude price quickly. However, in January 1979, during the ouster of the Shah of Iran, Nigeria's oil fortunes improved rapidly. Iran cut off its oil to the U.S.A., and Nigeria was able to pick up more oil business. During that same year there was a surplus of up to $4 billion in the balance of payments (12, p. 82).

Direct Impact of Oil Revenue on the National Economy

As noted in Chapter Four, the oil sector contributed to the economic development of Nigeria by generating income, which stimulated growth through the operation of a multiplier effect. Before surveying how oil revenues directly contribute to the national income, the contributions of the oil industry's value added to the Gross National Product (GNP) are analyzed.

Table 5.6 shows the value of GNP estimates and oil exports between 1958 to 1976. The role of oil exports in the Nigerian economy could be said to have begun in the fiscal year 1969/70. Between 1970 and 1976, the value of petroleum exports increased from ₦262 million to about ₦7,120 million. Over the same period GNP increased by 137 per cent. The magnitude of the petroleum value added to GNP depended on the value of oil exports and local sales. It could also be calculated from gross proceeds, such as the value of intermediate inputs and taxes (13, p. 14).

In 1965, petroleum contributed 1.2 per cent of total GNP. But from 1969 onward, the operation of crude oil marketing gained added importance and the industry value-added rose. The increase in oil prices in 1973/74 and world demand for oil were major contributory factors. Thus petroleum value-added to GNP in 1974 rose to over 60 per cent of total GNP (10, p. 114).

Direct Contribution of Oil Revenues to Nigerian National Income

The main source of the Nigerian petroleum industry's receipts is oil exports. Local sales contributed about 5.4 per cent of total receipts between 1963 and 1968. This proportion subsequently dwindled significantly to about one per cent of total proceeds. The receipts of oil exports financed three major types of expenditures, which

TABLE 5.6

VALUE OF GNP AND OIL EXPORTS IN NIGERIA
(₦ Million)
(₦1 = $1.6)

Period	GNP[a]	Oil Exports[b]
1958/59	1848.6	1.8
1959/60	1964.4	5.2
1960/61	2244.6	8.8
1961/62	2373.4	23.1
1962/63	2630.4	33.5
1963/64	2806.4	40.4
1964/65	2914.0	64.1
1965/66	3041.8	136.2
1966/67	3172.0	183.9
1967/68	2792.0	144.2
1968/69	2973.0	74.0
1969/70	3504.0	261.0
1970/71	5629.4	509.8
1971/72	6853.2	953.0
1972/73	7132.6	1176.2
1973/74	n.a.	1841.7
1975	8294.2	6458.1
1976	n.a.	7120.3

[a]GNP Estimates based on GDP less net factor payments made abroad.
[b]Based on Calendar Year 1958 to 1975.
n.a.--not available.

Source: Nigerian National Petroleum Corporation. Federal Office of Statistics, Scott Pearson.

in turn became the source of further demand. The three main streams of expenditures were: first, current costs such as purchases of materials and salaries, which constituted assurance of consumer spending; second, oil taxes; after payment, and third, the remainder is gross profits which financed oil investment and concessions.

Oil production and refining employs large amounts of capital and requires high technological skills. This induced high economic "rents." The various local expenditures and personal incomes generated were conducive to rapid development of the national economy. The Nigerian National Petroleum Corporation which employed over 1,000 employees, coupled with numerous of major related oil projects skyrocketed the manpower needs of the industry. With increased employment, local salaries and payments increased simultaneously (12, p. 14).

Relationship of Oil Revenues to Nigerian Federal Government Revenue

Revenues paid to the government became the major source for public spending. Government revenues from oil ranged from .08 per cent in fiscal year 1958/59 to about 86.98 per cent during the 1975/76 period. The ability of the Nigerian crudes to compete with other crudes constituted the basis for the stability in government revenues over the years.

Investment in the 1962 to 1968 development plan was estimated to be about ₦2.4 billion. Government provided N1.588 million or 67 per cent of the total gross investment, and the private sectors' share was 33 per cent. Foreign sources of plan expenditure was 50 per cent, and these foreign loans and grants amounted to only 25 per cent at the end of the period. In absolute terms, capital formation rose from ₦315.8 million in 1962 to ₦485.2 million in 1966/67.

Table 5.7 shows the relationships between oil revenues and government revenues. From this it can be seen that oil revenues did not play any significant role in the 1962-1968 Plan Period. During fiscal year 1968-69, oil revenue, for instance, constituted 13.53 per cent of government revenue. In the 1970 to 1974 period 19.4 per cent of public investment was anticipated from external sources while the rest came from domestic savings. Oil revenues between this period total about ₦8 billion. Over 50 per cent of this was realized in fiscal year 1974/75. Hence, the oil sector played a major role during the 1974/75 fiscal year (12, p. 15).

The Interdependence of the Oil Sector with the Rest of the Economy

Linkage Effects.--Interdependence of an industry with the rest of the economy may be defined in terms of a

TABLE 5.7

OIL REVENUE CONTRIBUTION TO GOVERNMENT REVENUE
AND EXPENDITURE
(Million Naira)
(₦1 = $1.6)

Year	Total Revenues (Current) Million N	Oil Revenues (Petroleum Reserves) Million N	Oil Revenue/ Total Revenue %	Total Government Expenditure (Current Capital) Million N	Oil Revenue/ Government Expenditure %
1958/59	154.6	.12	.08	135.3	.09
1959/60	177.6	1.8	1.01	150.8	1.19
1960/61	223.6	2.5	1.10	163.0	1.53
1961/62	229.7	17.1	7.46	169.9	10.43
1962/63	231.6	16.9	7.30	167.5	10.09
1963/64	249.2	10.1	4.05	183.5	5.50
1964/65	299.1	16.1	5.38	218.2	7.38
1965/66	321.9	29.2	9.07	236.4	12.35
1966/67	339.2	45.0	13.27	255.1	17.64
1967/68	300.2	41.9	13.96	258.0	16.24
1968/69	300.0	40.6	13.53	349.9	11.60
1969/70	435.9	75.4	17.30	556.2	13.56
1970/71	755.6	219.1	29.00	1,130.0	19.38
1971/72	1,410.9	623.0	44.16	928.4	67.10
1972/73	2,240.0	1,410.7	63.48	1,863.7	75.68
1973/74	2,171.4	1,582.9	72.89	1,778.8	38.98
1974/75	5,177.1	4,181.1	80.82	4,260.3	98.20
1975/76	5,252.3	5,202.6	99.05	8,285.3	63.00
1976/77	7,222.6	6,300.0	87.23	9,701.5	64.94

Source: NAPETCOR, NNPC Quarterly Magazine, April-June 1981, p.18.

number of linkages. An industry is considered to have high backward linkages if inputs purchased from other industries constitute a large share of its value of output. An industry has high forward linkages with the rest of the economy if a large share of its output is purchased by other industries (13, p. 19).

As compared with Iran, both backward and forward linkages for Nigeria during this period were low. The automobile industry and petrochemical plants were still undeveloped. Of 1980 daily average oil production, of about 2.3 million barrels, only 60,000 barrels of the domestically produced crude was refined in Nigeria. This was due to the shortage of skilled labor in the three refineries at Port Harcourt, Warri and Kaduna (12, p. 15).

In 1980, the Port Harcourt and Warri refineries produced conventional petroleum products like bottled gases for cooking, two grades of motor spirit, kerosine, both for household and aviation purposes, gas and fuel oil. The Kaduna refinery produces lubricating oils, asphalt, waxes and grease all of which have always been imported into Nigeria. Consequently, the refineries now conserve the portion of Nigerian foreign exchange which was being spent on importation of these essential commodities. The two refineries required 200,000 barrels,

which was less than 100 per cent of the then current daily production. However Nigerian crude oil was not suitable for the production of lube oil and asphalt, and 50,000 barrels per day cames from Kuwait or Venezuela (7, p. 25).

Petrochemicals.--Petrochemicals are very significant to the economy of Nigeria, providing virtually all nitrogen fertilizers, pesticides and herbicides needed to control crop-destroying insects, weeds and fungi. In this area, the oil sector contributes to the improvement of the agricultural sector. Plastic films and foams for packages are a few applications in the food industry. In manufacturing and industry, synthetic fibers made from petrochemicals provide about 60 per cent of all fabric converted into apparels (12, p. 19).

The health care sector is among the major users of petrochemicals based products, as many drugs and pharmaceuticals are made from petrochemicals. Artificial limbs and a variety of internal organs, such as artificial human hearts, are made from petrochemicals. Hospital supplies, such as bandages, gloves, surgical gowns and intravenous tubing, are all petrochemical-derived products (12, p. 19).

Petrochemical based products are an important part of every segment of the transportation industry in cars and trucks, ships and aircraft. The automobile industry in Nigeria gained a lot from these oil products. A 50 per

cent of the volume of a typical automobile today is composed of petrochemical products including the synthetic rubber in tires, hoses and gaskets, foams and films for seats and panels, hydraulic fluid, anti-freeze coolants, paints, headliner, dashboard, trim, stop light coverings, grill window frames and steering wheel (12, p. 19).

The Natural Gas Question.--Associated natural gas was a nuisance to oil producers in a country like Nigeria that had no industrial base to utilize the gas. In Nigeria natural gas discovery was incidental to oil exploration as no diliberate search for gas was embarked upon by oil prospecting companies. By 1980, natural gas had made significant inroads into the share of coal, electricity and petroleum products, such as fuel oil and gas oil in the global energy mix. Nigeria is richly endowed with natural gas. With oil production of about 2 million barrels a day in 1980, about 2 billion cubic feet of associated natural gas was produced daily, owing to the high gas/oil ratio averaging 1,000 standard cubic feet per barrel. As Table 5.8 indicates Nigeria flared or burned gas was estimated at the equivalent of about 400,000 barrels of oil per day (12, p. 8).

Nigeria's gas resources are not limited to just associated gas. There are vast reserves of free or unassociated gas. The proven reserves of natural gas in

TABLE 5.8

NIGERIA NATURAL GAS PRODUCTION CHARACTERISTIC
IN MILLION CUBIC METERS

Year	Proved Reserve	Gross Production	Flaring	Net Production
1971	909,090	12,980	12,796	184
1972	909,090	27,122	18,849	273
1973	909,090	20,561	20,258	303
1974	1,022,727	26,623	26,219	404
1975	1,006,818	18,955	18,553	402
1976	1,000,000	22,101	21,469	632
1977	954,545	21,445	20,945	500
1978	977,272	20,428	20,048	380
1979	940,909	30,049	28,671	1,378
1980	931,818	24,552	23,482	1,070

Source: The Secretariat, U.S. Department of Energy, World Natural Gas, Annual Cedigaz, Oil and Gas Journal, United Nations, World Energy Supplies World Energy Conference, June 1980.

Nigeria were put at between 90 (American) trillion cubic feet (tcf) and 140 tcf. This is composed of about 30 per cent associated gas and 70 per cent non-assoicated gas. The total Nigerian ultimate natural gas reserves are estimated at about 300 tcf. This makes Nigeria one of the twelve countris with the largest gas reserves amounting to 1.6 per cent of the world total (12, p. 9).

The level of domestic demand for natural gas consumption is very small. The tropical climate limits domestic consumption to thermal power generation in Nigeria. The industrial demand for gas was limited to about 316 million cubic feet per day as Table 5.9 shows. The iron and steel project at Apaokuta requires gas in their operations. Power stations, petrochemical projects, fertilizer plants and the new capital city of Abuja require substantial quantities of natural gas.

In conclusion, the economic impact of linkage effects was reducing importation of petroleum products, hence, a big savings to the government and improving the living standard in Nigeria.

Iran

Impact of Oil Revenues on Balance of Payment

During the 1968-1972 period, oil income increased at an annual rate of about 22 per cent. It averaged about 75

TABLE 5.9

LOCAL DEMAND FOR NIGERIAN NATURAL GAS

Consumers	Contract Quantity Million Cubic Feet/Day
Nigerian Breweries Ltd.	0.240
Associated Industries, Ltd., Aba	0.850
Lever Brothers, Aba	0.520
International Equitables, Aba	0.144
Aba Textile Mills	1.500
International Glass Industries, Aba	1.200
R.S.U.B., Port Harcourt	1.800
Nigeria Petroleum Refinery Company Alesa, Eleme	7.200
Bendel Glass, Ughelli	0.850
NEPA, Ughelli	90.000
NEPA, Afam	90.000
NEPA, Sapele	120.000
Total	316.552

Source: NNPC Gas Department, Lagos.

per cent of total foreign exchange receipts on current account. Table 5.11 summarizes Iran's foreign exchange receipts and payments from 1971/72 to 1975/76. In 1974/75 the current account showed a hefty surplus of over $8.5 billion. The capital accounts position shows a dramatic reversal from a net inflow of nearly $925 million in 1973/74 to a net outflow of $3,254 million in 1974/75. This includes transfer payments and disbursements on bilateral and multilateral commitments for foreign aid, loans and investment. The overall balance of payments accordingly registered a surplus of over $5 billion in 1974/75 (1, p. 214).

Impact of Oil Revenues on Defense

Military expenditure, in the 1976 budget, amounted to $8.1 billion (exchange rate of 69.14 rials to the dollar). At that time military expenditures accounted for 27 per cent of the general budget. It also represented 12 per cent of GNP (13, p. 88).

Until 1978, Iran did not reduce its defense expenditures in line with its decline in oil revenues. Iran's decline in oil revenues during 1978 exchanged oil in payment for aircraft from General Dynamics (F-16), McDonnel Douglas/Horthrup (F-18) and Boeing (AWACS--Airborne Warning and Control System).

TABLE 5.10

NIGERIA'S REVENUE FROM OIL, 1958/59-1980
(In Million Naira [₦])

Year	Million Naira (₦)	
1958/59	0.2	
1959/60	3.4	
1960/61	2.4	
1961/62	17.0	
1962/63	17.0	
1963/64	10.0	
1964/65	16.0	
1965/66	29.2	
1966/67	45.0	
1967/68	41.8	
1968/69	29.6	
1969/70	75.4	
1970	176.4	
1971	603.0	
1972	735.0	
1973	1,368.6	
1974	4,184.0	
1975	4,568.0	
1976	4,834.0	
1977*	6,299.2	(9,600)
1978*	5,183.7	(7,900)
1979*	10,433.1	(15,900)
1980*	13,123.4	(20,000)

Source: OPEC Annual Statistical Bulletin, 1980.

* Exchange rate ₦1 = US$1.524.
Figures in parenthesis are in million U.S. dollars.

TABLE 5.11

IRAN'S BALANCE OF EXTERNAL PAYMENTS
(Million Dollars)

	1971/72	1972/73	1973/74	1974/75	1975/78
Current account (net)	281	105	353	8,529	2,946
Current receipts:	2,734	3,337	6,232	20,922	21,971
Oil revenues	2,114	25,536	5,073	18,672	19,053
Gas revenues	36	61	87	131	202
Export receipts	584	740	1,072	2,119	2,716
Goods	(329)	(403)	(548)	(563)	(448)
Services	(255)	(337)	(524)	(1,556)	(2,268)
Current payments:	-3,015	3,502	-5,879	-12,393	19,025
Goods	-2,571	-2,993	-4,969	-10,644	-16,046
(Non-monetary gold)	(-3)	(-3)	(-3)	(-11)	(122)
Services	- 444	- 509	- 910	- 1,749	- 2,979
(Interest)	(-110)	(-157)	(-228)	(-332)	(299)
Capital account (net)	668	592	925	- 3,254	- 3,639
Receipts:	1,014	1,064	1,505	702	961
(Public loans and credits)	(958)	(978	(1,296)	(257)	(300)
(Private loans and capital)	(56)	(86	(209)	(445)	(661)
Payments:	- 346	- 472	- 580	- 3,956	- 4,600
(Prepayment of loans)	(-326)	(-455)	(-541)	(-1,313)	(-729)
(Foreign investments)	(-1)	(-5)	(-1)	(-2,388)	(-2,941)
(Grants in Aid)	0	0	0	(-34)	(-18)
(Private capital outflow)	(-19)	(-12)	(-18)	(-46)	(-259)
(Other)	.....	.....	(-20)	(-175)	(-653)
Errors and adjustments	-25	4	109	-199	- 298
Transfers	117	62	-236	0	0
Balance of payments	479	493	1,151	5,076	- 991

Source: Bank Markazi Iran, Tehran, 1978.

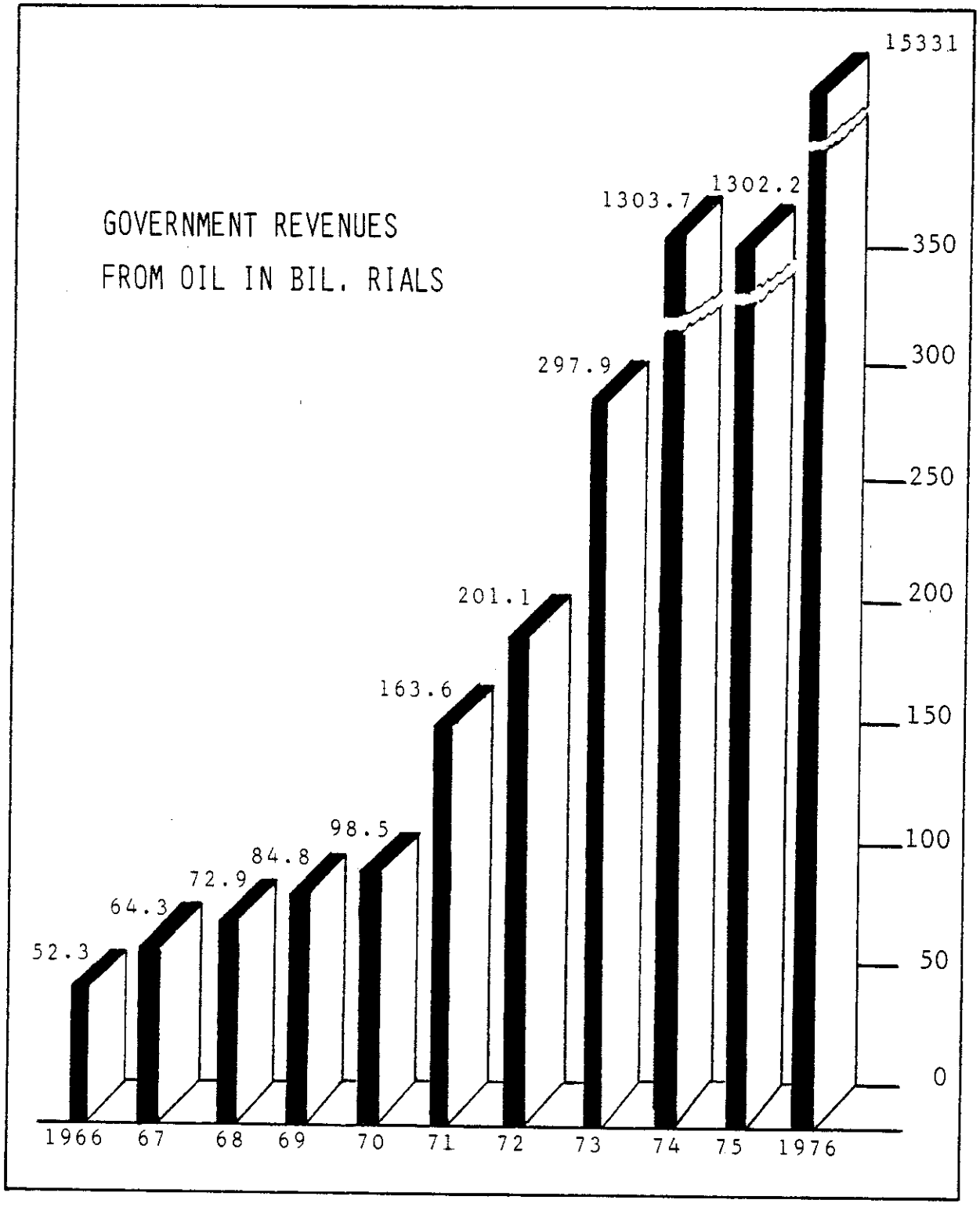
The official figures also conceal a number of expenditures that probably should be included as military expenditures, by placing them in other categories. For example, the budget did not give figures for military-related construction or establishment of military industries. Out of $1.7 billion allocated for government buildings, up to 70 per cent, or $1.2 billion covered military construction (new air and naval bases, expansion of army buildings). Elsewhere in the budget $106 million was allocated to the military industries organization. If all these allocations are included with the military budget, it increased to $9.5 billion in 1976 or about 17 per cent of GNP. Compared with Nigeria's defense budget about $6.5 million in the same period, this allocation is very high.

Share of the Oil Industry in the Gross National Product

Before surveying the above relationship it is important to show the Iranian government's income derived from oil from 1967 to 1976, Chart I shows this. The graph shows the tremendous increase in oil revenues since 1970.

Since export began in the petroleum industry has been pumping its revenues into the economy of Iran. Table 5.12 details the relationship between oil revenues and Gross National Product and the government budget for 1954-1975.

Figure 1: Iranian Government Revenues from Oil



Source: Iranian Oil Industry in 1976, Tehran National Iranian Oil Company, 1976, p. 15.

TABLE 5.12

RELATIONSHIP BETWEEN OIL REVENUES, GNP, AND GOVERNMENT'S BUDGET
(Million Dollars)

Year	GNP	Govt.'s Budget	Govt.'s Income from Oil	Share of Oil in GNP	Share of Oil in Govt.'s Budget
1954	2,100	162	20.7	7%	13%
1955	2,246	158	90.2	4	57
1956	2,608	242	150.7	6	62
1957	2,841	274	212.8	7	78
1958	3,094	376	247.2	8	66
1959	3,665	413	262.4	7	64
1960	3,837	490	285.0	7	58
1961	4,018	502	291.2	7	58
1962	4,243	565	342.4	8	61
1963	4,474	589	380.0	8	65
1964	4,859	609	482.2	10	79
1965	5,310	767	514.1	10	79
1966	5,721	954	608.2	11	64
1967	6,392	1,034	751.6	12	73
1968	8,373	1,238	853.4	10	69
1969	9,346	1,896	922.8	10	49
1970	10,494	2,244	1,109.3	11	49
1971	12,819	4,230	1,851.1	14	44
1972	15,490	5,516	2,396.0	15	43
1973	26,553	8,345	4,399.0	17	53
1974	46,594	22,348	19,535.0	42	87
1975	53,500	26,051	18,800.0	35	72

Source: Annual Report of NIOC 1973-1974-1975. Economic Report and Balance Sheet of Central Bank of Iran, 1975.

This table shows the importance of oil revenues in the economy of Iran.

Oil revenues in the GNP increased from 6 per cent in 1954 to 12 per cent in 1967 and to 42 per cent in 1974. According to the plan and Budget Organization of Iran, the Iranian GNP at current prices reached over $54 billion in 1975/76. The largest contributing factor was the oil industry, accounting for over 39 per cent of total growth (14, p. 58).

Oil Industry and Plan Organization

With the formation of the National Iranian Oil Company, the flow of monies into national coffers from oil exports increased. The government allocated a high portion of this income to developmental projects. Plan organization benefited from two main sources of income which allowed for the implementation of economic plans. Oil revenues, the major source, and loans (both domestic and foreign) as the minor sources. In this case oil revenue is the engine of growth. As Arthur Lewis wrote:

> The engine of growth in the economy of oil producing nations is oil. In this economy it serves as a prime mover driving the rest of the economy forward. So long as it advances, the rest advance, if it stops, they stop. (15, p. 15)

The history of planning in Iran shows that any interruption or standstill in the operation of the oil industry would result in the discontinuation of the plan under execution. This was the case during the First Plan during the oil nationalization in 1957. Chapter Four also shows that when oil revenues increased, the planners revised the plan under execution, as occurred under the Fifth Plan.

Table 5.13 shows total government revenues from oil and the share of plan organization and the National Iranian Oil Company (NIOC) from 1954 to 1975. The table shows that since 1954/55 the major portion of oil revenues went to plan expenditure. In 1966/67 plan expenditure from oil revenues was 80 per cent for plan organization and 20 per cent for the Ministry of the Treasury.

Interdependence of the Oil Sector with the Rest of the Economy

The influence of the oil sector on the rest of the economy is important from the standpoint of its linkages.

Backward and Forward Linkages.--Backward linkages include the magnitude of the demand by the oil sector for domestic goods and services. In Iran this effect was relatively small. Due to the highly capital intensive,

TABLE 5.13

DISTRIBUTION OF OIL REVENUES IN IRAN
(Million Dollars)

Year	Government's Revenues from Oil	% Received by P.O.	% Received by Ministry of Treas.	% Received by NIOC
1954/55	110.8	59	12	29
1956	150.9	53	22	25
1957	212.8	50	34	16
1958	247.2	46	43	11
1959	262.3	50	41	9
1960	285.0	55	38	7
1961	291.2	55	40	5
1962	342.4	40	58	2
1963	380.0	65	35	..
1964	482.2	70	30	..
1965	514.1	75	25	..
1966	608.2	75	25	..
1967	751.6	80	20	..
1968	853.4	80	20	..
1969	922.8	80	20	..
1970	1,109.3	80	20	..
1971	1,851.1	80	20	..
1972	2,369.0	80	20	..
1973	4,399.0	80	20	..
1974	19,535.0	80	20	..
1975	18,800.0	80	20	..

Source: Sadre, Monsour, The Role of Oil in the Iranian Economy, Public Relations of the Iranian Oil Industry, 1976, p. 22.

sophisticated nature of the oil industry, the main investment needs could not be supplied from domestic sources.

Forward linkages were better than backward linkages. The flow of oil and oil products to other sectors, (i.e., domestic consumption of oil and oil domestic goods and services. In Iran this effect was relatively small. Due to the highly capital intensive, sophisticated nature of the oil industry, the main investment needs could not be supplied from domestic sources.

Forward linkages were better than backward linkages. The flow of oil and oil products to other sectors, (i.e., domestic consumption of oil and oil derivatives), increased 17 times since 1950 (1, p. 66). In the 1970s, nearly 70 per cent of domestic energy requirements were supplied by the oil industry. Oil and gas together provided about 90 per cent of energy needs. If this growth continues, almost half of the output of the Iranian oil sector will be consumed domestically. In that case, the oil sector would cease to be wholly export-oriented and would instead become an integral part of the general economy (1, p. 249).

Petrochemicals and Refineries.--In 1965, the National Petrochemical Company of Iran (NPCI) was established as a subsidiary of the National Iranian Oil Company. In 1963

Iran Fertilizer Company in Shiraz was established to utilize hydrogen and nitrogen piped from Gachsasan. Another plant of mixed fertilizer was established. In 1975 a total of six petrochemical plants were established. All these petrochemical plants produce ammonia, nitric acid, ammonium nitrate, ethylene, propylene, liquid caustic soda, chlorine, sulfur, liquified gas, phosphoric acids, ammonium phosphate, black carbon and plasticizers. In 1975, the six operating petrochemical companies, with a combined total investment of Rls 29 billion, produced some 1.79 million tons of fertilizers, PVC, detergent, ammonia, sulfur, carbon black and liquid gas at the total value of Rls 12.9 billion. The total output of fertilizers, PVC, detergent and carbon black was consumed domestically. Part of the production of ammonia and sulfur was exported.

Natural Gas.--Until 1966 when the National Iranian Gas Company (NIGC) was established, much of its natural gas was flared. Table 5.14 shows natural gas production and utilization. Iran's proven reserves of natural gas given by NIGC was 395 billion cubic feet. This put Iran's reserve at about 15 per cent of the world total and second only to the Soviet Union's estimated reserves of 550 trillion cubic feet (1, p. 98).

About 1.5 million cubic feet of natural gas daily from Aghajan oil fields to Abadan for use in the oil

TABLE 5.14

NATURAL GAS PRODUCTION AND UTILIZATION
(Billion Cubic Feet)

Year	Production		Utilization			
	Consortium OSCO	NIOC and Affiliates	Flared	Exports	Domestic Consumption	Others*
1962	322.0	4.0	219.0	.....	107.0	.....
1967	707.0	47.0	613.0	.....	141.0	.....
1971	1,207.6	97.5	751.6	148.6	11.8	343.1
1972	1,385.4	132.2	907.6	284.5	21.0	299.2
1973	1,609.6	130.3	1,051.8	306.5	47.7	339.9
1974	1,684.8	126.8	1,071.1	321.1	68.0	351.4
1975	1,513.0	134.0	886.0	337.8	74.1	346.9
1976	1,648.5	140.0	1,058.5	332.0	88.0	310.0

*Includes internal use by NIOC, NIAC, Abadan Refinery and Petrochemical Companies.

Source: National Iranian Gas Co.

refinery. By 1976 NIGC concluded contracts with almost 300 major industrial units throughout the country for the use of natural gas as the basic fuel (1, p. 77).

In 1976, total natural gas production was 1788.5 billion cubic feet. Out of this 730 billion cubic feet was consumed or exported, and the rest was flared. Export of gas to the Soviet Union continued to rise since it began in 1970. The export to the Soviet Union amounted to 332.0 billion cubic feet. Table 5.15 shows gas consumption and export in Iran in 1975, 1977 and 1978. Despite Iran's achievements, its gas industry was still young in the late 1970s. Major aims of the National Iranian Gas Company (NIGC) in pursuing further development and expanson were: to supply the vast quantities of gas needed for reinjection into the oil fields; to build domestic consumption of natural gas in order to lessen reliance on oil as the chief source of energy and to prepare Iran as the major exporter of natural gas that can be used as another source of revenue.

In conclusion, the total economic impact of gas was lowering fuel cost of manufacturing firms, thereby effecting considerable savings for households. This may contribute to raising the standard of living in Iran.

TABLE 5.15

GAS CONSUMPTION AND EXPORT TO THE USSR: 1975, 1977, and 1978
(Million Cubic Feet Per Day)

	1975	1977	1978
Oil fields and refineries*	578.0	650.7	750.0
Domestic Consumption**	321.7	560.7	1,858.1
Households	(3.1)	(9.5)	(52.2)
Industries	(106.8)	(190.6)	(944.2)
Electric generation	(106.8)	(255.6)	(756.7)
NIGC Use	(105.0)	(105.0)	(105.0)
Export to the USSR	925.0	965.0	965.0
Total	1,824.7	2,175.7	3,573.1

*Excluding requirement of gas injection in oil fields.
**Excluding petrochemical feed stock.

Source: National Iranian Gas Company

Libya

Balance of Payments

The current account balance in Libya over the period 1960-1978 shows a fundamental change. A deficit of $3 million was recorded in 1961. In 1969 there was a surplus of $328 million. In 1974, the balance of payments on current account had a surplus of $2,700 million. In 1975, the surplus declined drastically to less than $500 million. As occurred in Iran and Nigeria, the reduction was attributable mainly to the slack demand for oil. In that year oil revenues declined by 15 per cent from their 1974 level as Table 5.16 shows (16, p. 51).

During the three year period 1976, 1977, and 1978, the current account balance recorded surpluses of $2,845 million, $3,293 million and $2,121 million, respectively. Again the decline in 1978 was due to low demand for oil and a resulting drop in oil production, by 4 per cent, from the 1977 level(16, p. 38).

In 1979, the current account surplus reached its highest level for twenty years at about $7 billion. This significant change was attributed to the increase in oil exports and the adjustment in oil prices which took place during the year.

It is apparent that the sole force fueling changes in the Libyan Balance of Payments was income from the oil

TABLE 5.16

LIBYA'S BALANCE OF PAYMENTS, 1960-1978
(US $ Million)

	1964	1961	1962	1963	1964	1965	1966	1967	1968	1969
Merchandise exports (fob)	10	21	141	335	620	797	1,002	1,176	1,867	2,168
Oil sector	....	11	131	328	606	786	990	1,164	1,860	2,162
Other sectors	10	10	10	7	14	11	12	2	7	6
Merchandise imports (fob)	-176	-151	-207	-240	-295	-320	405	-476	-645	676
Trade Balance	-166	-130	- 66	95	325	477	597	700	1,222	1,492
Export of services	....	....	....	....	....	....	....	....	.....	.....
Import of services	....	....	....	....	....	....	....	....	.....	.....
Balance of goods and services	- 27	- 30	- 40	- 12	- 18	116	145	165	379	490
Transfers (private)	3	- 3	- 15	- 16	- 21	- 21	- 38	- 44	- 44	- 44
Transfers (official)	32	30	30	29	17	6	.....	- 77	- 83	-118
Current account balance	8	- 3	- 25	1	- 22	101	107	44	252	328
Direct investments (net)	- 5	- 2	8	8	54	- 29	- 28	13	- 65	137
Other long-term capital (net)	2	- 1	1	- 1	....	....	.....	.....	.....	.....
Other short-term capital	2	- 1	....	- 3	- 2	- 3	- 1	5	2	- 23
Errors and omissions	1	12	26	17	21	2	13	- 16	- 34	- 66
Counterpart to valuation change	....	....	....	....	....	....	.....	.....	.....	.....
Total change in reserves (--: Increase in net assets)	- 8	- 5	- 10	- 22	+ 51	- 71	- 91	- 46	- 155	-376

TABLE 5.16--Continued

	1970	1971	1972	1973	1974	1975	1976	1977	1978
Merchandise exports (fob)	2,397	2,714	2,470	3,528	7,803	6,418	8,748	10,405	9,900
Oil sector	2,389	2,709	2,458	3,509	7,796	6,410	8,737	10,393	9,888
Other sectors	8	5	12	19	7	8	11	12	12
Merchandise imports (fob)	- 674	- 930	-1,290	-2,011	-3,746	-4,424	-4,277	-4,929	-5,764
Trade Balance	1,723	1,784	1,180	1,517	4,057	1,994	4,471	5,476	4,136
Export of services	139	172	225	216	434	375	349	379	468
Import of services	-1,059	-1.034	- 758	-1,237	-1,372	-1,553	-1,574	-1,607	1,815
Balance of goods and services	803	922	647	496	3,119	816	3,246	4,248	2,789
Transfers (private)	- 45	- 48	- 306	- 273	- 350	- 260	- 257	- 857	- 577
Transfers (official)	- 113	- 90	- 102	- 156	- 69	- 164	- 144	- 98	- 91
Current account balance	645	784	239	67	2,700	392	2,845	3,293	2,121
Direct investments (net)	139	140	- 4	- 148	- 241	- 616	- 521	- 411	- 557
Other long-term capital (net)	.....	- 10	39	- 362	- 182	- 908	- 987	-1,085	- 817
Other short-term capital	5	10	244	485	388	305	348	211	- 212
Errors and omissions	- 104	- 52	- 25	-1,024	- 926	- 823	- 573	- 66	- 980
Counterpart to valuation change	.....	.....	- 154	248	- 236	245	- 40	- 209	- 232
Total change in reserves (--: Increase in net assets)	- 685	- 872	- 261	734	1,503	1,405	-1,072	-1,733	677

Source: IMF Balance of Payments Yearbooks; IMF, International Statistics.

sector. This sector accounted for 50 per cent of total exports in 1961, 93 per cent in 1962, and by 1979 the sector accounted for 99.9 per cent (15, p. 39). See Table 5.16.

Interdependence of the Libyan Oil Sector with the Rest of the Economy

Effect of Backward and Forward Linkages.--As in Nigeria and Iran, backward linkages in Libya were small, due to oil's high-technology industry that Libyan technical know-how could not supply.

For forward linkages, the flow of oil products to other sectors of the economy was improving. Refineries, petrochemicals, natural and liquified natural gas plants were built in Libya during the late 1970s and early 1980s.

Petrochemicals.--From the early days of oil production in Libya, the construction of chemical plants using petroleum and natural gas as feed stocks was comtemplated. Three petrochemical complexes at Marsa Berga, Abul Khammash, and Ras Lanuf were established. The Marsa Berga plant was for production of ammonia. This plant produced about 2,000 tons of ammonia. In 1977 a methanol plant with a daily output of 1,000 tons was established. In early 1980, a 1,000 tons per day ethanol plant was opened. In the same year an installation for

the manufacture of phosphate and nitrogen fertilizer and sulphuric acid went into operation. At Abu Khammash a $151 million plant for the production of caustic soda, poly vinyl chloride (PVC), hydrochloric acid, liquid chlorine, hydrochloric solution and sodium chloride went into effect in 1980. The Ras Lanuf plant was for ethylene production.

Refineries.--Three refineries were in operation during the period 1978-1981. These were the Tubruq refinery, the Zawiyah refinery and the Marsa al Bregah refinery. The Tubruq refinery produced the main derivatives, such as naptha, kerosine and diesel oil.

Natural Gas.--Even though known reserves of natural gas in Libya were small compared to Iran, Libya still ranked as one of the world's largest liquified natural gas (LNG) producers (5, p. 188). The problems of gas utilization in association with crude oil were common to Libya and the other two oil producing countries, where the fields were far from inhabited centers that provided markets. As in the other two countries, several gas fields were discovered.

Most of the gas associated with oil production was flared, except for that part used by local companies in their operations. In 1968, the largest liquified natural gas plant in the world was constructed with an initial

capacity of 345 million cubic feet of gas a day (6, p. 199). The cost of this project was estimated at $200 million. In 1969, an additional plant to produce liquid petroleum gases (butane and propane) of lower calorific value in liquid form, but on a volume basis richer, than LNG and NGL (natural gas liquids--naphtha) was installed, for both domestic market and export at an estimated extra cost of $14 million. Pipelines were constructed at an estimated cost of $55 million to all parts of the country in order to ensure maximum utilization of gas (6, p. 199).

Impact of Oil Revenues on Defense

The pattern of Libyan defense spending has been difficult to establish with any degree of certainty since the mid-1970s. During this time, government restrictions on the publication of military information were imposed.

Nonetheless, it was apparent that defense spending rose dramatically since the Qadhaafi regime assumed power in 1969 (9, p. 250). This increased spending has been made possible by the vast revenues from petroleum. Table 5.17 shows defense expenditure and military manpower for selected years. The table shows that the defense budget for the fiscal year ending December 31, 1978, estimated at an equivalent of US$448 million, about 19.5 per cent of

TABLE 5.17

DEFENSE EXPENDITURE AND MILITARY MANPOWER IN LIBYA, FOR SELECTED YEARS, 1964-1978

Year	Expenditure (in Million of US Dollars)	Percent of Total Expenditure	Per Cent of GNP[1]	Military Man-Power[2]
1964	17	n.a.	2.2	n.a.
1965	28	n.a.	n.a.	6,900
1968	37	n.a.	1.2	71,000
1973	145	18.5	2.3	25,000
1974	169	16.1	1.4	32,000
1975	203	13.7	1.7	32,000
1976	229	n.a.	n.a.	29,700
1977	338	17.4	1.8	29,200
1978	448[3]	19.5[3]	n.a.	37,000

n.a.--not available.
[1]Gross National Product.
[2]Does not include militia.
[3]Budget allocations only.

Source: Country Study: Libya, p. 294.

the central government's total budget. This did not include an estimated US$2.5 billion in military equipment provided by the Soviet Union.

In conclusion, considering the Libyan oil industry as the youngest among the three, its effort in using its oil revenues in a short period of time show a tremendous improvement in its standard of living and in the oil industry.

Summary and Conclusion

Overall, these oil exporting countries' governments have channeled their oil revenues into the economic life of the people gradually and in return for productive economic performance, even though they all need to improve and professionally develop this limited source of revenue. The problem in following this policy is that it takes a long time and requires sound development policy, skillful economic management, and above all flexible and stable political institutions, which these three countries lack.

In Nigeria, the oil industry ws to its economy from 1970s as agriculture was during the 1950s and 1960s. In Libya, reliance on foreign aid grants and loans for economic development ceased after oil revenue renewed its economy. Iran, a country with no economic activities

before the discovery of oil, became one of the best industrialized nations among developing countries. All this was caused by oil, "The Black Gold."

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CHAPTER VI

SUMMARY AND CONCLUSION

Nigeria, Iran and Libya differ from one another in many respects: size of population, in area, oil reserves, process of economic development, standard of living, international reserves, money supply and a host of social and cultural values.

Table 6.1 indicates population, density, area, oil reserves and production of Nigeria, Iran and Libya. The table shows that Nigeria ranks 10th, Iran ranks 22nd and Libya ranks 108th in the world in world population statistics in brief 1979. From 1960 to 1970 Nigeria's rate of growth was 2.5 per cent; Iran was 2.9 per cent; and Libya's population growth rate was 3.9 per cent. Between 1970 and 1976, Nigeria's population growth rate increased to 2.7 per cent, Iran's decreased to 2.7 per cent while Libya's increased to 4.0 per cent as Table 6.1 shows. The population density of Nigeria, Iran and Libya in 1976 was seventy people per kilometer, twenty people per kilometer and one person per kilometer, respectively. In area, Libya is 1,759,540 square kilometers; Iran is 1,648,000 square kilometers; and Nigeria is 923,768 square kilometers (2, p. 12).

TABLE 6.1

POPULATION, AREA, DENSITY, OIL RESERVES AND PRODUCTION IN NIGERIA, IRAN AND LIBYA

Year	Characteristic	Nigeria	Iran	Libya
	Area (sq. kilometer)	923,768	1,648,000	1,759,540
	Population (in millions)			
1960		42.95	21.52	1.35
1970		55.07	28.66	1.99
1976		64.75	33.59	2.51
	Population Rate of Growth			
1970-1976		2.7%	2.7%	4.0%
	Population Density (per square kilometer)			
1976		70	20	1
	Oil Reserves (in million metric tons)			
1978		1,678	6,148	3.719
	Oil Production (in thousand metric tons)			
1970		542,003	191,296	159,814
1975		88,440	267,623	71,533
1976		103,479	295,084	93,452
1977		102,970	282,608	99,503
1978		94,900	262,808	95,377

Source: United Nations Statistical Yearbook, Department of International Economic and Social Affairs, Statistical Office 1979/1980, Thirty-First Issue, New York, 1981.

In volume of oil reserves, Table 6.1 shows that Nigeria in 1978 had 1,678 million metric tons, Iran had 6,148 million metric tons, while Libya had 3,719 million metric tons. Oil production in these three countries differ as Table 6.1 shows. For the period 1970, 1975, 1976, 1977 and 1978 Libya's oil production was the lowest. The reason for this decline in Libya was due to government policy which aimed at matching production levels to the optimum rates of economic and social development, oil resources for future generations (3, p. 35).

The economic progress of these three countries began to develop as the oil revenues increased, revealing that as oil revenues increased the stage of economic progress also increased. Oil revenues have had great impact on the economy of these three nations. The impact of oil revenue can also be seen in its relationship with each country's Gross National product. Table 6.2 compares the relationship of GNP and oil revenue of these three nations. The table shows that as oil revenues increased their GNP, the rate of GNP growth and the GNP per capita increased. This means that the contribution of the oil sector to GNP was very significant in that the big shift in Gross National Product in these three nations would have been impossible without the contribution of oil revenue.

TABLE 6.2

RELATIONSHIP BETWEEN OIL REVENUES
AND GROSS NATIONAL PRODUCT
IN IRAN, NIGERIA,
AND LIBYA

Year	Characteristics	Nigeria	Iran	Libya
	Gross National Product (in Millions of US$)			
1960		$ 2,401	$ 3,837	n.a.
1970		5,125	10,494	$ 3,388
1975		20,059	53,500	9,464
1978		28,716	n.a.	15,753
	Oil Revenues (in Million of US$)			
1960		$ 4	$ 285	$ n.a.
1970		351	1,109	1,351
1975		8,324	18,800	4,591
	Gross National Product Average Annual Growth Rate			
1960-1970		4.4%	10.4%	23.8%
1970-1976		7.8%	10.2%	15.9%
	Gross National Product Per Capita Growth Rate			
1960-1970		1.5%	7.3%	19.0%
1970-1976		4.6%	7.4%	12.1%

Sources: OPEC Annual Statistical Bulletin, various issues; International Financial Statistics Yearbook, 1983; United Nations Statistical Yearbook, 1974/80; The Economist, The World in Figures, 1980.

In foreign trade and balance of payments these three nations made great advances. Their total imports increased as oil revenues began their remarkable flow into these economies, particularly, in 1973-1974, when the quadrupling of oil prices, and corresponding revenues accrued directly to each ofthese state treasuries. In 1976 imports of services for Nigeria, Iran and Libya amounted to $3,884 million, $6,384 million, and $2,497 million, respectively. In the same year their exports amounted to $2,844 million in Iran, $794 million in Nigeria, and $349 million in Libya. Oil accounted for 90 per cent of these countries exports. The balance of payment position in these three countries over the period 1973-1976 showed a fundamental change. These countries balance of payments were in deficit for nearly a decade between 1963-1972, but from 1973/74 on to 1976/77 all of them recorded surplus in their balance of payments. In 1973/74 Nigeria recorded a surplus of $4,897 million. In 1975/76 the surplus declined to about $42 million. In Iran, during 1973, 1974, 1975, and 1976 its balance of payments were $154 million, $12,267 million, $4,707 million and $5,064 million. Again in Libya, 1973/74 balance of payment was $2,700 million surplus. In 1975/76, the surplus declined drastically to less than

$500 million. This reduction was attributed mainly to the slack in international demand for oil, and to the decline in oil revenues (1, p. 814).

The foreign exchange and international reserves (excluding gold) of these three nations also responded to the flow of oil revenues into their economies. Also the value of these nation's currency was higher in value as compared with the United States dollar. The reason was also because of oil industry. The foreign exchange and international reserves of these nations are compared in Table 6.3.

Raising the standard of living in these three countries depended upon how effectively they could use their oil revenues. Their countries standards of living are compared by national income per person, rate of literacy and life expectancy in Table 6.3.

In conclusion, Plan Organization, in charge of economic development plans in these three nations benefited tremendously from oil revenues. They were able to fulfill most of their planned objectives, and they also introduced new plans that were for the well being of the entire country. In the face of their outstanding physical diversities and inequality of natural and technological endowments, the one common binding element among these three countries has been oil wealth. There has been a strong correlation between oil revenue and the economic

TABLE 6.3

COMPARATIVE DATA ON FOREIGN EXCHANGE, INTERNATIONAL RESERVES (EXCLUDING GOLD), INCOME PER PERSON, RATE OF LITERACY, LIFE EXPECTANCY AND VITAL STATISTICS (RATE PER 1,000 PEOPLE: BIRTH AND DEATHS) IN NIGERIA, IRAN AND LIBYA (FOR SELECTED YEARS

Year	Characteristic	Nigeria	Iran	Libya
	International Reserves (in Millions of US$)			
1972		$ 355	$ 818	$2,832
1974		5,602	8,223	3,511
1975		5,586	8,744	2,095
1978		1,887	11,977	4,105
	Foreign Exchange (in Millions of US$)			
1972		$ 292	$ 760	$2,826
1974		5,503	7,652	3,504
1975		5,270	7,556	2,088
1978		1,323	10,907	4,097
	Income per person (in US$)			
1976		350	1,700	5,000
1980		870	.....	8,450
	Life Expectancy (Years)			
1976		49	53	57
1978		51	60	57
	Adult Literacy (Percent)			
1976		34	41	..
1980		43	..	..

Sources: OPEC Annual Statistical Bulletin, various issues; International Financial Statistics Yearbook, 1983; United Nations Statistical Yearbook, 1974/80; The Economist, The World in Figures, 1980.

growth of Nigeria, Iran and Libya. They all have been blessed with the prospect of receiving revenues from petroleum exports in a most fortuitous form, which economist call "rent." Jahangir Amuzegar, in his article titled "Oil Wealth: A Very Mixed Blessing" defined "economic rent" as a

> special, and unearned reward to the least-cost producers of a commodity in temporary short supply. Thus, due to the relatively low costs of extracting a barrel of crude in some oil-rich countries compared to the expenses of oil extraction elsewhere (or the costs of alternative sources of energy), the low-cost producers are able to anticipate and reap "windfall" profits from the sale of their oil. (1, p. 817)

They have also shared the aim of using the oil proceeds to achieve three targets: raise the living standard of the present generations, follow a domestic development strategy which can ensure the welfare of future generations, and reduce dependence on oil through domestic diversification and external investments.

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