CHAPTER I

OIL IN SAUDI ARABIA'S ECONOMY

1.1 Oil Production in Saudi Arabia
1.2 Types of Crude Oil
1.3 Major Oil Fields
1.4 Saudi Arabian Oil Industry
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Oil is the most important of the natural resources of Saudi Arabia. The discovery of huge oil reserves under the desert sands have provided the kingdom with unheard of new wealth. Along with it have come hope, better standards of living and a spectacular increase in the demand for goods and services. Oil is expected to continue playing a very important role in the economy of Saudi Arabia and the kingdom's known reserves are expected to last for nearly a

1. In its geological context 'oil' is shortened version of crude oil, or more appropriately Petroleum. A mixture of hydrocarbons found underground in a gaseous or liquid state, the term oil is applied to the liquid form. It is often greenish or dark brown, and sometimes black. Archaeological excavations in Iraq and Iran indicate that oil is the form of bitmen was used for building roads, and for coating the hulls of ships and walls. In more modern times petroleum replaced whale oil in lamps as an illuminating fuel. Its mining involves prospecting, drilling and extraction. The first Petroleum well was drilled in 1859 in the United States (US) town of Titusville, Pennsylvania. In the West Asian region the first commercial drilling for oil occurred in 1908 at Masjid-e Suleiman, Iran.

After extraction, often called recovery, oil is refined by distillation, which separates it into factions of varying volatility. These are put through chemical conversion processes known as cracking and reforming to produce a variety of end products: asphalt, cleaning agents, explosives, fertilisers, filues, gasoline/petrol, jellies, jet fuel, paraffin/kerosene, medicines, naptha, paints, plastics, synthetic rubber and waxes. Carbon accounts for 82-87 percent of the weight of crude oil, and hydrogen 12-15 percent of the three, series of compounds contained in an oil, the paraffin series is the most extensive, ranging from methane gas to petrol/gasoline to waxes; followed by the napthene series yielding volatile liquids to tarry/bitumens; and the aromatic series, yielding mainly benzene. The arrival of the motor car run on gasoline at the turn of the 20th century provided the single most important incentive to develop the oil industry.

century.  

Before the discovery of oil, Saudi Arabia's economy had been very limited and based on revenues from pilgrimage traffic, Oases and agriculture. Traditional characteristics of Saudi economy were poverty, illiteracy, disease and primitive techniques. The outstanding source of revenue for the newly established kingdom in the early 1930s was pilgrimage traffic which declined as the world was hit by the great Depression, resulting in a worldwide economic crisis.

Saudi Arabia was rescued from this financial disaster by the American oil companies, which had already started their exploration. Since then "oil has become the dominant feature of the economy, providing some 85 percent of government revenue and 90 percent of foreign exchange." The discovery of oil changed the entire economic situation of Saudi Arabia. It has provided a vast majority of Saudi nationals high income wages. Oil royalties created changes and enabled the country to acquire many technological innovations.

The Saudi Arabian economy is deeply involved in the production and exportation of crude oil. Found in great abundance, it dominates the resource base of the economy.


4. Ibid.

Saudi Arabia has the largest proven oil reserves in the whole world. Its proven oil reserves increased from 133,680 million of barrels in 1973 to 164,770 millions of barrels in 1979. In 1994, Saudi Arabia's proven oil reserves was estimated at 260.1 billion barrels approximately 35 per cent of the kingdom's Gross Domestic Product (GDP) and in 1996-97 oil revenues made up about 40 percent of the Gross National Product (GNP). About 90 per cent of total export earnings are oil related. The intensive extraction and export of oil has made it the largest exporter, and the third largest producer in the world. It holds 25 percent of known world oil reserves and produces 8 million barrels of oil per day, accounting for one-third of Organisation of Petroleum Exporting Countries (OPEC) output. Its spare capacity of 2 million barrels per day holds the key to world energy security and the stability of world energy markets.


7. Proven reserves are defined as those pools of crude known and recoverable with current technology and available equipment in place.


12. Ibid.

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Given its relatively high production levels, accounting for nearly 13 percent of world output and 35 percent of total OPEC output in 1991, and more significantly, its small domestic needs, the kingdom's dominance of international crude oil markets is unchallenged. The oil sector is the key domestic production sector. Oil revenues constituted 73 percent of total budgetary revenues in 1991. By virtue of being Swing Producer Saudi Arabia brings balance or main-
tains balance between demand and supply.14

During 1973 to 1991 Saudi Arabia produced oil at an average rate of 6.968 m.b.d. During the same period OPEC and world oil production averaged 24.04 m.b.d. and 60.72 m.b.d. respectively.15 Saudi Arabia is the most important world oil producer and largest exporter of crude oil.

Since the late 1940s, when oil first began to be exported in commercial quantities oil resources established a new economic dimension, bringing modernization to the entire kingdom. The growth of the country's economy and the building of its infrastructure has proceeded through five phases:16

(i) 1930 to 1960 - Oil was found in the late 1930s, but revenues and fiscal systems remained inadequate to permit the making of major development advances. Nevertheless, basic steps were taken to transform the kingdom into a modern state.

(ii) 1960 to 1973 - The years preceding the oil boom were a period of steady growth. The formal economic planning process began in the late 1960s and, although oil was king, Saudi economic policies even then aimed to diversify the economy.

(iii) 1973 to 1982 - Marked by oil price boom, this was a period of great infrastructure building and the development of the Saudi welfare state as the government opted for a general distribution of the oil bonanza, including a subsidy programme for income distribution purposes.

(iv) 1982 to 1990 - As world oil prices dropped, this


15. Figures are calculated from Table 1.1.

was a period of economic slowdown followed by recovery, a pattern which largely followed developments in world oil markets.

(v) **1990 to 1995** - This was a period of slower economic growth and major effort was made to increase the role of private sector and to reduce the dependence on government funds. Oil remained paramount, but was not expected to cover government expenditures.

**TYPES OF CRUDE OIL**

The oil produced by ARAMCO\(^\text{17}\) is a complex mixture of organic compounds known as hydrocarbons, most of which are normally liquid and some of which are normally gaseous, although they remain dissolved in the liquids as long as they are kept under pressure in the ground. The mixture is different in each field and each producing reservoir - not all crude oil is the same. Some is 'light', with a low specific gravity, some is thick and viscous. Some is 'sour' or full of sulphur, and some is sulphur-free or 'sweet'. The different types of crudes require different kinds of handling and processing. Market demand, refining needs, safety factors, conservation considerations, and availability of manpower and facilities determine how much of any particular grade is produced in any given period. To achieve a proper balance of all these factors call for a high level of skill in both long-term planning and short-term scheduling.\(^\text{18}\)

Saudi Arabia's production of oil consist of five different crudes. They are:

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17. Earlier it was known as California Arabian Standard Oil Company. On 31st January 1944, its name was changed to ARAMCO (Arabian American Oil Company) which is a unique consortium of four major American oil companies: SOCAL, TEXACO, EXXON and MOBIL).

(i) Berri, 38° (degree refers to the level of density) API.
(ii) Crude Arabian Light, which varied from 32° to 36° API.
(iii) Arabian Medium, with a range from 29° to 31° API.
(iv) Arabian Heavy with a range of 26° to 28° API. 19
(v) Arabian super light. 20

In addition to crude oil Saudi Arabia has vast reserves of natural gas, including dissolved, associated and non-associated gases in association with the oil in the ground. Most of the natural gas produced is associated gas-light hydrocarbon gases such as ethane and propane produced in association with crude oil. Until 1970s, most of this gas was flared (burned) off and hence wasted except for relatively small amounts which were sold in the local market as liquified petroleum gas (LPG) for industrial and home use. Aramco began working in 1975 on the design and gas gathering centres in the country.

19. API gravity is a measure of the density of crude oil as established by the American Petroleum Institute. The quality of crude oil is partially measured by its degree of API gravity and the amount of sulphur and wax it contains. It should not be confused with specific gravity. The lighter the crude oil i.e. the higher the API gravity, the more desirable it is, because larger products can be refined from it. The degree of gravity of a given crude can be used as a rough measure of the yield of various refined products.

Sulphur is an undesirable contaminant of crude oil, and its presence lowers and quality of various products distilled. It is contained in crude, either in gaseous form as hydrogen sulphide or as chemical compounds that remain in solution in the crude.

The Master Gas System, constructed and operated by Saudi Aramco enables Saudi Arabia to use approximately two-thirds of the gas associated with onshore oil production. The remaining one-third is re-injected into oilfields, thereby eliminating flaring. The system consists of networks of plants for gas-oil separation, processing and fractionation, linked by a computer-controlled pipeline system totalling 7,266 miles.\(^\text{21}\)

Gas is also used for economic purposes e.g. it is utilized to manufacture fertilizer under the supervision of PETROMIN (General Petroleum and Mineral Organisation). The kingdom is also well on its way to develop its recoverable gas reserves, assessed at 181.65 trillion cubic feet.\(^\text{22}\) The exploration in 1994 uncovered gas fields in the central and north western parts of the country. These reserves are a plentiful natural resource whose utilization does not depend upon crude oil production. Their use further diversifies the nation's economy by feeding industrial facilities that utilize gas as a source of energy or as a feedstock to produce petrochemical products. Saudi Basic Industries Corporation (SABIC) operates 14 factories in Jubail, Yanbu and Dammam that process gas from Saudi fields to produce petrochemicals, steel and other products.

In addition to the kingdom's production of crude oil, the Saudis production of refined products is both substantial and diverse. In the 1960s, Saudi Arabia began to build refineries for domestic and export production. Prior to that, the kingdom had to send its crude oil to foreign refineries for processing and import refined products for its own use. The country rapidly expanded its refining capacity under the development plans in the 1970s. In 1994 the number of refineries went up to nine, ranking among the world's most technologically advanced. Production of petroleum products at these refineries rose from 1.8 million

\(^{21}\) Saudi Arabia, Energy and Mineral Resources, n.9, p.5.

\(^{22}\) Ibid.
barrels per day in 1970 to more than 1.8 million barrels per day in 1992. These products include gasoline, fuel and diesel oil, liquefied petroleum gas (LPG), jet fuel, kerosene, asphalt, naptha and other commodities. 23

MAJOR OIL FIELDS

Until the mid 1980s, all the oil that had been discovered had been found in the Eastern Province. Aramco had forty seven oil fields including some during the 1970s in the Rubal Khali.

The largest oilfield, Al Ghawar, located in the Al Ahsa region of the Eastern province, is 250 kilometers long and 35 kilometers wide at its greatest extent. The field is so vast that names have been given to separate subsections such as Ain Dar, Shadqam, Al Hawiyah, Al Uthamaniyah and Harad. Discovered in 1948, the field began output in 1951. By 1990 Al Ghawar had 219 flowing wells. 24 Saudi Arabia also possessed the world's largest offshore field. As Saffaniyah, located in the Gulf near Kuwait and the divided zone. As Saffaniyah was discovered in 1951, it began output in 1957 and by 1990 had 223 flowing wells. 25

Of the four fields discovered before Al Ghawar - Ad Dammam, Abu Hadriyah, Abqaiq (also seen as Buqayq), and Al Qatif - only Abqaiq and Al Qatif were still producing in 1990. Abqaiq had forty seven flowing wells. The major producing fields discovered after Al Ghawar mainly in the 1960s and early 1970s are offshore and include Manifah, Abu Safah, Al Barri, Az Zuluf, Al Marjan, and Al Khafji in the divided zone. Saudi Arabia had a total of 789 flowing wells during 1990, up from from 555 producing wells in 1983. 26

23. Ibid., p.4.
25. Ibid.
26. Ibid.
The quality of crude oil flowing from these wells is based on density (measured by the gravity standards established by the American Petroleum Institute - API) and the amount of sulphur and wax it contains. Light crude oil is generally more desirable and commands a higher price because it yields more high-value products such as gasoline and jet fuel. Several Saudi fields, including those in the Divided zone, contain heavier-grades by international standards.

Al Ghawar field produces crude ranging from API gravity 33 degrees to 40 degrees, which is considered light crude oil in the kingdom but is generally heavier than most international light crude oils. As Saffaniyah produces heavy crude oil with API gravity ranging from 27 degrees to 32 degrees.27

The historical production pattern until the early 1980s contained greater proportions of light and very light crude oils. By the mid 1980s government policy sought to adjust output between heavy and light crude oils to reflect actual users of each, so that the kingdom would not exhaust its supply of light crude oils. Estimates for 1991 showed that this balance was not achieved, however, Extra Light (from Al Barri field) and Arab Light (crudes from Abqaiq, Al Ghawar Abu Hadriyah, Al Qatif and others) recorded production levels close to 70 per cent of total output of 8.2 million b.p.d. whereas Arab Medium (from AZ Zuluf, Al Marjan, Al Kharsaniyah, and other fields) and Arab Heavy (from Saffaniyah, Manifah and other fields) production levels approached 11 percent and 19 percent respectively.

In the early 1990s, the consensus was that after capacity was expanded, the split between light and heavy would shift to 10 percent more heavy crude oils despite recent discoveries of very light grades south of Riyadh.

During the 1980s, technological developments in refining narrowed the differentials between light and heavy crudes. Therefore, the traditional price disadvantage that

27. Ibid., p.149.
the Saudis faced was steadily being erased because of the more sophisticated refineries being brought on line.

Saudi crude oil also contain high sulphur levels. Crude from Al Ghawar has sulphur content ranging from about 1.9 percent to close to 2.2 percent by weight, which is generally considered high. Saffaniyah crude's sulphur content is even higher at above 2.9 percent by weight. Sulphur compounds are undesirable, often contaminating crude oils and corroding processing facilities.

The Saudi Arabian Oil Industry

The history of the oil concessions in Saudi Arabia dates back to 1923, when Ibn Saud granted a concession, covering an area of more than 30,000 Square miles in eastern Arabia, to the Eastern and General Syndicate, a British group; but since the Syndicate lacked funds to cover the cost of exploration, the concession was allowed to lapse four years later. King Ibn Saud was in urgent need of funds. His principal source of revenue was the pilgrimage traffic, which declined from 200,000 persons in 1927 to 20,000 in 1933, as a consequence of the great world wide depression.28

The Saudi government's bargaining power was weak in 1933. On 29th May, 1933 the Standard Oil Company of California obtained exclusive oil rights to a vast area in Saudi Arabia, which were subsequently assigned to the California Arabian Standard oil company. The original concession covered 360,000 Square miles along the east coast of Saudi Arabia. The lease came into effect in July, 1933 and was to run for 60 years; the terms called for a loan of £ 35,000 Sterling and an annual rent of £ 5,000 Sterling until such a time as oil was discovered in commercial quantities.

The rest of Saudi Arabia remained unleased until 1939 when concessions were granted, which added 80,000 Square

miles to the original concession, thus bringing the total to 440,000 Square miles and involving an additional cash payment of £140,000 Sterling and a dead rent of £25,000 Sterling per year.29

The success of the California Arabian Standard oil Company over its German, Italian, and Japanese Competitors was received as a major victory in the United States. The United States, which had no diplomatic relations with Saudi Arabia, soon established relations with the Kingdom. "President Roosevelt approved a proposal that the American Government purchase a controlling interest in the Company, but the negotiations failed".30

Following the discovery and development of large petroleum reserves in Saudi Arabia, serious disputes arose after World War II concerning the financial terms of the concessions. As a result, Saudi Arabia was the first country in the Middle Eastern region to introduce the 50-50 profit sharing formula. Once this principle was put into effect in 1950, it increased Saudi revenues immensely but cost Aramco little because the local tax could be credited against United States tax liability.

Several issues were raised in the following years in the application of the original concession agreement. Issues concerning the abolition of Special discounts on posted prices,31 Saudi participation in the board of directors of Aramco, and the Tapline revenue were resolved to the mutual satisfaction of both parties.

Apart from financial terms, another primary issue was that of relinquishment of large areas covered by the origin-

30. Ibid, p.117.
31. Posted price is the price arrived at by the OPEC Countries on the basis of their mutual negotiations.
nal concession. The original territory granted in 1933 to Aramco, together with the 1939 agreement to expand the concession, gave it a total of 496,000 Square miles. By 1963, Aramco's concession area had been reduced to 125,000 Square miles. The remaining area was to be reduced gradually at five year intervals, so that Aramco would be left with about 20,000 Square miles in the last year of its operation.

The reduction in Aramco's exclusive concession enabled the Saudi Government to negotiate new agreements on more favourable terms. Thus, oil concessions more favourable to Saudi Arabia were granted to Getty Oil Company (American), Arabian Oil Company (Japanese) AUXIRAP (French) and ENI (Italian).

Following application of the 50-50 profit sharing principle, oil revenues to Saudi Arabia almost doubled within a year rising from $56.7 million in 1950 to $110 million in 1951. After that the oil revenues escalated continually, reaching a total of $2,734.1 million in 1972. During the post war period, foreign investment in oil has been the greatest in Saudi Arabia, and investment growth has been rapid. The operating Company of Aramco started its activities in the Kingdom in 1933, with an original Capital of $500,000 which was raised to $700,000 in 1936. By 1946, Aramco had invested $115 million. In 1956, the total value of Aramco's gross fixed assets increased to $608.7 million. After the deduction of $269.4 million for depreciation and amortization, Aramco's net assets were $339.3 million by the end of 1956, which, after an addition of the company's net working Capital of $67.7 million plus other assets of $64.3

million, stood at $471.3 million.\textsuperscript{34} Aramco's total investment in Saudi oil production facility in 1973 reached $2 billion.\textsuperscript{35}

From the American point of view, Saudi Arabia was of primary importance, since it contained the largest "US-owned" oil reserves and the concessions were entirely operated by American companies. In 1972 Saudi Arabia produced 37.1 percent of the total oil production of all Arab countries and 22.6 percent of the total oil production of all members of the organization of Petroleum Exporting Countries (OPEC).\textsuperscript{36}

Aramco's Saudi Arabian venture developed into one of the greatest oil undertakings in the world. The first commercial oil field was discovered at Dammam in 1938, by the end of 1951 it was producing 90,000 barrels a day. Abu Hadriya and Abqaig fields were explored in 1940. Qatif and Ain Dar developed in 1945 with a daily production of 20,000 and 150,000 barrels, respectively. Other oil fields were discovered in 1949 and 1951. By 1955, 154 wells in Saudi Arabia averaged 965,000 barrels of oil production per day.\textsuperscript{37} Saudi production reached 8,290,000 barrels of oil per day before the renewal of the Arab-Israeli war in 1973.\textsuperscript{38}

Aramco built a network of some 330 miles of pipeline, ranging from 10-30 inches in diameter and from 18 to 45 miles in length, in addition to the main Trans-Arabian

\textsuperscript{34} Charles Issawi and Mohammed Yeganeh, The Economics of Middle Eastern Oil (New York: Frederick A. Praeger, 1962),p.47.


\textsuperscript{36} Ali, n.28, p.11.

\textsuperscript{37} Arabian American Oil Company, Middle East Oil Development, quoted in Ali, no.28, p.12.

Pipeline the famous tapline, 1,070 miles in length, to bring oil from the fields to the Bahrain refineries and to tanker loading stations. By the end of 1945 the refinery at Ras Tanura had been expanded to a 50,000 barrel daily capacity, and after further expansion, the run to the refinery in 1954 amounted to 79,000,000 barrels. In general, Saudi Arabian oil exports are moved by pipelines to the Sea terminal and delivered to tankers for transport to world markets.

The legal ownership of petroleum resources in Saudi Arabia belongs to the king. Petroleum operations in the kingdom have been developed and, until 1950 had been completely controlled by American oil companies under concessionary agreements reached with the king. The absence of general mining or petroleum laws in the kingdom necessitated negotiations and bargaining or the formulation of the terms and patterns of the concessions.

On 30 December 1950 Saudi Arabia and Aramco made a major change in the concession, under which Aramco was operating in the Kingdom, by concluding a profit-sharing agreement, which is commonly known as the above mentioned 50-50 or "equal" profit-sharing agreement. "The agreement was of great importance in as much as it set a precedent for similar formulas in other oil producing countries of the Middle East". 39

By a royal decree on 21 February 1973 the participation agreement which was signed on 20 December, 1972 was ratified. The agreement provided Saudi Arabia with an initial participation of 25 percent in the oil production, pipeline, storage, delivery, and export facilities. The agreement entitled Saudi Arabia to have an annual increment of 5 percent in its participation, starting from January, 1978 with a final increment of 6 percent culminating in an ultimate participation of 51 percent in 1982. The agreement also gave the kingdom the right to play an active role in

the management of Aramco. Aramco has moved the seat of its board of directors from New York to Dhahran.

Organisational structure of Oil Sector

Historically, three oil companies have been involved in the country's oil sector. They are ARAMCO, Getty Oil Company and Arabian Oil Company. Aramco received an oil concession to explore oil in the early thirties. All Companies participate in the production, refining and export of Oil. Aramco has added responsibility of supervising the gas-gathering project. The dominance of Aramco is best illustrated by its contribution to both oil revenues and oil exports.

The Ministry of Petroleum and Minerals and the PETROMIN (General Petroleum and mineral organization) established in 1962 are the government agents in the oil industry. The Saudis created Petromin to oversee their move into the downstream sector while the Ministry has direct oversight of oil policy relating to both production and pricing, as well as responsibility for PETROMIN, the latter has the task of active participation in oil related production activities. In particular it is expanding refining capacity in the country, distributing fuel to the domestic market and has responsibility for exporting both crude and refined oil as well as gas products. It has the power to take over companies involved in any activities within its sphere of operation.

Petromin's first downstream project was the construction of fairly low-tech refineries in Jeddah and Riyadh. Under the leadership of Abdul Hadi Taher, Petromin handled all hydrocarbon-related industries until 1975 when the Saudi Basic Industries Corporation (SABIC) was created to oversee the country's petrochemical industry. By the end of 1987, Petromin consisted of over twenty firms, each of which operated independently. Petromin owned or had partial stakes in one lubricant base oil refinery, three domestic refineries, three joint venture export refineries, two joint venture lubricant blending plants, and one wholly owned lubricant blending operation. Petromin also sold crude oil,
handling state-to-state deals as well as the odd private sale by members of the al-Saud. The company also handled liquified petroleum gas (LPG) sales to foreigners and sale of gas to SABIC companies. Petromin's best profits, however, came from sending crude oil abroad for refining, and re-importing it for resale. Petromin's large size and unwieldy composition acted as determinants to its overall efficiency. Also having an impact was the government's decision to sell many of Petromin's products, including gasoline at below cost. 

The kingdom's recession led to the reorganization of the Saudi petroleum industry as profitability became a major priority. With the fall of Yamani in 1986, his successor, Hisham Nazer, moved to undertake a reorganization. Nazer's first act was to complete the nationalization of Aramco. Although the oil company had been 'nationalized' in the seventies, the final paperwork had not been finished, and Aramco remained an American-registered company. Nazer scrapped the existing Corporation and its vestiges of American ownership and transformed it into a Saudi entity called 'SAUDI ARAMCO'. However, Nazer's main focus was Petromin. In January 1989, Petromin was turned into a holding company and had the scope of its operations further reduced. Its crude sales division was passed to Saudi Aramco and Petromin was then broken up into three divisions:

(i) Saudi Arabian Marketing and Refinery Corporation (SAMAREC).
(ii) Petrolube (which produces gaseous and lubricants) and
(iii) a vaguely defined Minerals division. 

The kingdom's oil industry was altered in 1993 for the second time in less than four years when SAMAREC was scrapped and its operations, and those of Petromin were merged with Saudi Aramco in a royal decree issued by Fahd on July 1. Fahd's action made Saudi Aramco the largest state

41. Ibid.
owned integrated oil company in the world. The forced merger was undertaken for a number of reasons.

First and foremost was the desire for greater efficiency. The creation of SAMAREC had failed to solve the problems it had inherited from Petromin, including a bloated work force of 12,000. Saudi Aramco, it was felt, with its long history in the industry and with the vestiges of American management, could get SAMAREC into shape faster than any domestic management. Saudi Aramco was also conceded to have better technicians and training expertise.

A second reason for the merger was the expansion of the kingdom's oil industry. Saudi Aramco's financial status was stronger than SAMAREC's.

The third reason for the merger was that as Saudi Arabia pushed into downstream products, Saudi Aramco's marketing might was perceived as greater.

Under terms of the agreement, Saudi Aramco took all of Samarec's assets in the three domestic refineries at Yanbu, Riyadh, and Jeddah, the domestic distribution network in kingdom, and SAMAREC's overseas marketing operations for refined products, sulphur and LPG. Saudi Aramco also took the shares in joint venture refineries that Petromin operated with Mobil, Shell and Petrola as well as Perolube.42

SAUDI ARABIA'S OIL POLICY

Oil policy in Saudi Arabia is determined at the highest levels of government. The king, the Crown Prince (Deputy Prime Minister), and the second deputy Prime Minister, are the ultimate decision makers, some input is solicited from the Higher Petroleum Council composed of selected members of cabinet.43

42. Ibid., p.211.
Saudi Arabia's oil policy has been historically motivated by broad economic and political considerations, as opposed to purely technical factors.

Economic factors include long-term diversification from oil and short-term revenue needs to meet both domestic and external financial obligations.

The major political considerations have been Arab solidarity, the Arab-Israeli conflict and regional politics, cohesiveness within OPEC, and Third World and Western (especially US) support. Among these political motivations Arab solidarity and the Arab-Israeli conflict are closely related. In the aftermath of the October War (1973) and the helplessness of the Arab World, oil was seen as the only weapon available to show Arab anger at US support of Israel.

Saudi Arabia's political influence in International Affairs is derived from various sources. In part it comes from its position as the protector of the two holiest cities in Islam: Mecca and Medina (beginning in 1986, the King has asked to be referred to as the 'Custodian of the Two Holy Mosques). But Saudi Arabia's power flows mainly from its economic position. As the giant among oil producers, Saudi Arabia is important to the well-being of oil exporters and importers alike. Through its wealth and its ability to render assistance to Third World countries it has gained significant influence. In the late 1970s and early 1980s its financial assets made it an important voice in international capital markets.

Apart from Economic and Political factors the oil policy of Saudi Arabia is influenced by the following factors:

(i) Maintaining moderate international oil prices to ensure the long term use of crude oil as a major energy source;
(ii) Develop sufficient excess capacity to stabilize oil markets in the short-run;
(iii) To maintain the importance of the kingdom and its permanence to the west as a crucial source of oil in
the long term; and

(iv) Obtaining minimum oil revenues to further the development of the economy and prevent fundamental changes in the domestic political system. 44

The period prior to 1981 can be characterized as a period when Saudi oil policy focused on short-run considerations and on the absence of a long-run policy. Production was essentially demand driven. Saudi Arabia acted as a 'Swing Producer' filling any gaps in demand, to the extent possible, by increasing output and thus moderating price increases.

Excess capacity for Saudi Arabia was at its lowest in the period 1979-1981, largely as a result of the decline of production in Iran and Iraq. Saudi Arabia was producing close to 10 million barrels per day (m.b.d.) for the period 1979-81. Saudi Arabia's share of OPEC production increased from 25.3 percent in 1975 to 42.6 percent in 1981. In effect, Saudi Arabia did prevent a further price rise during the 1978-79 period. It was clearly in Saudi Arabia's interest to prevent a severe shock to the world economy and to keep the oil-market intact. Official government statements, however, convey a concrete Saudi oil policy and a definite goal:

As far as Saudi Arabia is concerned, our interests are clear. First, we do not intend to exhaust this wealth quickly and deprive our future generations of it, on the other hand, we do not want to shorten the life span of oil as a source of energy before we complete the elements of our industrial and economic development and before we build our country to be able to depend on sources of income other than oil. In this respect, the Kingdom's interest might differ from those of its OPEC's colleagues.

And the government's admission of past mistakes is also apparent: in 1979-1980 we made a mistake. We

44. Metz, n.14, p.142.
raised prices without regard for actual demand.\textsuperscript{45}

It is difficult to reconcile these statements with actual Saudi policy.

**SAUDI OIL POLICY DURING 1981-85**

Demand for oil in the non-Communist world declined after 1979, world consumption decreased from 51.2 m.b.d. in 1979, to 45.7 m.b.d. in 1985, or by about 11 percent. Concurrently, non-communist world oil production, decreased by 17 percent over the same period, OPEC production decreased by 42 percent, and Saudi Arabia's production dropped even further. Again the major contributing element in this production decline was the role of Saudi Arabia as a 'Swing Producer'. Saudi Arabia acted as a Swing Producer because it was unwilling to accept a quota. Saudi Arabia curtailed its output to maintain higher price levels. World prices were even higher in view of the appreciation of the dollar.

The acting as a Swing Producer had its consequences. In Saudi Arabia, the production differential between the highest and lowest level was 6.5 m.b.d. during 1980-85. Such fluctuations in production translate into similar savings in export revenues, and in the case of a highly oil-dependent economy such as Saudi Arabia, on its government revenues.

Saudi Arabia's share of production within OPEC decreased from 42.7 percent in 1981, to 20.9 percent in 1985. Among OPEC countries, Saudi Arabia and other GCC members of OPEC were the only countries in the aggregate where excess production capacity exceeded oil production between 1982 and 1985.

The results of this policy for Saudi Arabia were as follows:

(i) A significant loss in market share (even though the

1981 share for Saudi Arabia was artificially high).

(ii) Proportionally lower export and government revenues than other OPEC countries due to the kingdom's high degree of reliance on oil exports.\textsuperscript{46}

(iii) Current account and budget deficits being financed from earlier savings.

These losses were aggravated further by the 1985-1987 depreciation of the US dollar. Government officials felt that the downturn in demand was temporary and had resulted from the world economic downturn. They, therefore, believed that the market would soon turn around. This expectation was clearly erroneous. Most oil analysts also did not foresee the dramatic and sustained downturn in the market between 1981 and 1985.

There are several political motivations.

(i) First and foremost, has been the Saudi desire to maintain political cohesiveness among other Arab oil producers and also among OPEC members. Saudi Arabia's political importance and prestige emanates from accumulated financial reserves, oil policy, and the location of Islam's two holiest cities. Saudi Arabia has consistently used these three assets to gain political support. As a result, Saudi Arabia has been reluctant to use its oil policy in ways that might lose support among countries, especially among countries in its region and sphere of influence.

(ii) Second, Saudi Arabia had hoped that if it led the way, other oil-producing countries, within and outside of OPEC, might also reduce output. This was a clear miscalculation, which was not based on Economic realities for other countries. What is even more difficult to comprehend, is that it took Saudi Arabia four years to see its policy shortfalls. But even this had its roots in the Saudi approach to decision making.

\textsuperscript{46} It should be recognized that lower oil production means that savings have been achieved in the form of oil in the ground (i.e. not produced).
According to Raymond E. Mabus⁴⁷ Saudi Arabia's oil policy since mid 1980s sought to:

(i) maintain moderate, market-based oil prices to ensure oil's competitiveness vis-a-vis other fuels and
(ii) avoid disrupting the industrial economies, which were its principal customers.

It was for this reason that Saudi Arabia in the mid-1980s abandoned the Swing Producer role it had played within OPEC, tying its oil policy to its long-term economic interests. Saudi policy makers were firmly committed to a healthy economic interrelationship with the industrial countries as the key to the kingdom's own economic stability and growth. Though US dependence on Saudi Arabia during this period was for 10 percent of its total oil needs and the kingdom's dependence for its economic security on US was even more than that.

SAUDI OIL POLICY AFTER 1985

Given the aforementioned changes in the world oil market, the impact of the economy of Saudi Arabia, and public opinion, which was opposed to the Swing Producer role, Saudi Arabia decided to abandon its role as a Swing Producer and increase output up to its OPEC quota by instituting a policy of pricing its oil on a 'netback' basis. This did not occur until after Saudi Arabia had tried all possible avenues unsuccessfully to get other OPEC countries to produce within their quotas. Consequently, world crude oil prices dropped for a while to below US $10 per barrel.

When oil production hit a low of 2 m.b.d. for a brief period in 1985, and external reserves began to decline more rapidly than envisaged under the budget, a general sense of panic emerged. The root of the panic was two fold.

Economically, the situation was disastrous, as Saudi Arabia's budgetary deficit was increasing. Government subsidies and military expenditures could not be signifi-

cantly reduced in the short run.

Politically, Saudi Arabia was losing influence with no tangible appreciation from countries that were benefiting from Saudi oil policy. At the same time, Iran was making some headway in its war efforts and Iraq was unable to reduce Iran's oil exports.

Finally, the Saudis felt that a temporary increase in production would soon bring OPEC countries in line and more importantly, they felt that important non-OPEC producers, especially Mexico, Norway, the Soviet Union, and the United Kingdom would also cooperate to reduce output. As the policy was instituted, they saw that their revenues did not decrease substantially, but most importantly, lower oil prices had more seriously affected Iran's ability to finance its war efforts (selling its restricted amount of oil output at lower prices) than anything Iraq had been able to do.

In December 1985, OPEC's announced objective, proposed by Saudi Arabia and the GCC was to increase market share.

In August 1986, OPEC reached what might at best be characterized as a 'temporary' agreement. The agreement was to set an aggregate quota of 16.8 m.b.d. This agreement was made possible by other OPEC members, especially Iran's suggestion to exclude Iraq from any output limitations.48 The October 1986 OPEC meeting extended this fragile agreement with a slight production increase for the rest of the year.

Saudi Arabia's oil production was too low after 1981, resulting in an inappropriately high price, especially high for many non-dollar currencies as the dollar started a

48. This statement may at first glance appear to be inconsistent as Iran was implicitly supporting, or endorsing, potentially higher revenues for its enemy, Iraq. But given Iran's production limitations, revenue needs and limited ability to pay for imports through credit, a doubling of oil prices then, was more beneficial than the negative effects of higher Iraqi revenues in the future.
period of long and sharp appreciation. This high price level induced further (to what had started in 1974) conservation, the development of alternative sources of energy, and increased exploration and production of oil outside of OPEC. Overtime these developments resulted in a continual reduction in OPEC's share of world oil output, and especially Saudi Arabia's role in the crisis of 1985-1986.

Revenue maximization does not seem to have been the objective of Saudi decision makers since policies did not even tend toward this goal. The reversal of Saudi policy in 1986, to allocate quotas to support a price of US $18 was in the first instance motivated by short - as opposed to long-term economic considerations.

Some observers have argued that the Saudis felt that a stable price of roughly US $18 was a 'wish' of the United States, as indirectly indicated by former Vice President Bush during his visit to Saudi Arabia in 1986. The Saudis claimed that this was being done to support Iran, but all in all, this policy was again motivated by short as opposed to long-term economic considerations.

SAUDI OIL POLICY IN THE 1990S

Short term oil policy during the early 1990s was shaped by two major sequences of events.

(i) The first was Saudi Arabia's refusal to play the role of Swing Producer in the mid-1980s, its subsequent bid to maintain its market share, and abandonment of the fixed oil price system after the 1986 price crash.

(ii) The second was the Iraq's invasion of Kuwait, the kingdom's replacement of most of the oil lost from these two members, and its ascendance as unchallenged leader within OPEC after August 1990.

Both periods shaped an oil policy that called for OPEC decisions to promote moderate and stable oil prices but not compromise the kingdom's demand for its market share. Before the Iraq's invasion of Kuwait, Saudi Arabia demanded about 25 percent of OPEC production ceiling, after the invasion the shares rose to 35 percent. Saudi Arabia's
behaviour in the oil market since 1986 demonstrated its attempts to ensure both goals.

**IMPACT OF OIL ON SAUDI ECONOMY**

It is difficult to evaluate precisely the effect of oil on the Saudi economy. The general impact of oil on the economy of Saudi Arabia has been considerable. In the absence of oil some economists believe the situation would have been disastrous. Without oil revenues, it is probable that Saudi Arabian economy today would not be appreciably different from what it was during the great depression of the 1930s.

Saudi Arabia has benefitted from oil exploration. The impact of oil revenues has influenced Saudi Arabia's social and political life. 49 Oil production in Saudi Arabia started in 1937, it was discovered in commercial quantities in 1938. 50 By 1945 Saudi production of oil rose to 21,311 thousand barrels annually. The oil production registered an average growth of 6 million barrels a day in 1972. The total annual production thus rose to 2,201.8 million barrels in 1972. 51 The same year Saudi revenue increased by 45 per cent and amounted to 2,734.1 million. 52

**PRE BOOM ERA**

In the pre-boom era, oil had an important but limited impact on the overall economy as its absolute value remained small. From a modest 50,000 barrels for the entire year in 1938, production hit over 546,000 barrels a day by 1950, but


52. Ibid.
prices remained low as supply growth was greater than demand increases. Saudi Arabia's oil exports, while growing steadily year after year, did not bring the great funds before the 1970s. The government remained prosperous but without enough surplus to develop the country.53

Development of oil after World War II resulted in the development of wage payments and gradually increasing linkages with local providers of goods and services for Aramco. While it initially had to do most everything by itself, Aramco, in order to concentrate on the oil business as quickly as possible handed the grocery, hardware, clothing, and other business to local enterprises which had sprung up to profit from the opportunities.

On the oil coast north of Dhahran in 1943, construction began on the great refinery at Ras Tanura along with its supporting infrastructure and housing. The initial need was strategic: to produce fuel for the World War II allies. After the war was over, the focus changed to building the economy and speeding development. In March 1945, an underwater oil pipeline to Bahrain went into operation.

On the other side of the peninsula in 1946, most Muslim pilgrims to Mecca travelled over a 45 mile road from Jeddah. An ambitious plan to elevate for drainage, widen and black top the road was undertaken in order to provide safe and smooth passage for an increasing volume of motor traffic.

In 1947, with daily oil production approaching 250,000 barrels per day and climbing, the Bechtel Corporation, working for Aramco, started mapping out the great Trans Arabian pipeline (Tapline) from the Gulf through the hot northeastern part of Arabia towards Sidon, South of Beirut. Much of what went into the Tapline had to be imported, including 265,000 tons of pipe, food, housing and equipment. The project resulted in more than 1,200 miles of new roads and gave jobs to 12,000 Arabs working side by side with

53. Rehfuss, n.16, p.51.
Another dramatic example of the economic impact of oil has been in the health sector. Initially, Aramco had a malaria control programme for its employees. Then, in the mid-1940s, Aramco expanded its anti-malaria campaign to surrounding villages and towns. In 1948, under this programme, DDT was sprayed in houses in over 30 towns and villages. Tests showed 950 percent reduction in malarial infection in children. Repeated cases dropped from 2,100 to under 100 in 1949.55

During 1950-60 Aramco supported the main agricultural development project at Al Kharj outside of Riyadh, which became a grower of vegetables and grains for the growing city of Riyadh as well as a demonstration farm for modern farming techniques.

In 1951 a new radio station, a new power station and sewer system for Mecca, the electrification of Jeddah and Riyadh, extension of water supply system in Jeddah and airports for Jeddah and Riyadh were completed. Jeddah was modernized. Its encircling walls was razed, its streets were widened and paved, and it received its first central electricity plant. One of the best and largest airports in the West Asia was built in Jeddah, along with the first pier for ocean going vessels on the kingdom's Red Sea coast. By 1952, Aramco's capital budget was almost one-half of the amount of Saudi Arabian government budget, still the government carried out important public works in this period.

In the mid-1950s the first paved roads were completed in Saudi Arabia. It was also in the 1950s that the government made the strategic decision to expand school education beyond the larger cities to the entire country. The first university was opened in 1957. Government structures, including many ministries and economic agencies, also developed in the 1950s. The central bank was created in 1952.

54. Ibid., p.52.
55. Ibid.
In the 1960s, Saudi Arabia started sending large number of students abroad to receive the education needs to assume responsible positions in the rapidly expanding government.

At the same time, there were widespread fears that a modern educational system would damage the fabric of the profoundly religious society. The Wahhabi Islam has largely been a legitimizer of the Saudi rule and a justifier of its policies but it has posed minor challenges to the system at various points. In the early years the Wahhabi leaders vehemently opposed each new innovation that was introduced in the country - the telegraph, telephone, radio, television, modern education and so on.56

Outside of Aramco's infrastructure - building of refineries, roads, schools for its workers, and other facilities, the great nationwide infrastructure building era of the 1970s and the great period of economic planning lay ahead.

THE OIL BOOM YEARS

Spurred by the worldwide shortage of oil from the end of the 1960s, and the subsequent boom in exports and oil prices after 1971 that culminated with the Arab oil boycott against the US and the Netherlands, Saudi Arabia embarked on one of the largest development plans in history. This was aimed at transforming the desert Kingdom into a modern state, while retaining its traditional Islamic values and roots.

It was in this era that the private sector took off. The major private sector areas were construction, real estate, banking and finance, agriculture and wholesale and retail trade. In all of these areas, government spending, and often government policies were very important.

Between 1973 and 1980, annual government revenues jumped from US $4.3 billion to over US $101 billion. By the mid-1970s the government had decided to invest most of this surplus in a massive industrialization and development effort. Among the most risky and expensive projects (and eventually among the most profitable) were the building of the key industrial cities of Jubayl on the Gulf and Yanbu on the Red Sea. The aim was to diversify away from overwhelming dependence on crude oil exports. Bechtel President, Steve Bechtel Jr., whose firm was in charge of building Jubayl, called the vast undertaking one of the most sophisticated planning and building efforts ever done.57

The strategic decision to build Jubayl and Yanbu was based on three considerations:

First, such projects were capital intensive, which made sense with the kingdom's small population.
Second, the aim to capture more profit by transforming locally the natural gas into immediate products.
Finally, much of the natural gas feedstock, largely derived from the production of crude, previously been wasted.

During the same period, very large sophisticated oil refineries were built in Jubayl and Yanbu.

**IMPORTANCE OF OIL TO THE OVERALL ECONOMY**

In 1970, oil represented 63 percent of total Saudi gross domestic product. Twenty years later the direct contribution was a more balanced 37 percent of the GDP. In 1994-95 petroleum continued to contribute about 75 percent of all government income. By the end of 1985, the infrastructure building effort planned in the first three five year development plans was largely completed: many new airports, vast new seaports, one of the best medical care systems anywhere, and free schools and universities, as well as the great construction accomplishments of building the highways across the desert and up the west coast escarpment.

57. Rehfuss, n.16, p.54.
from Jeddah to Taif. Minister of Finance Abalkhail told the New York Times in August 1993 that the kingdom had invested more than $900 million in infrastructure, social and transportation development projects. Under King Faisal in the mid-1970s, educational spending rose to nearly 10 percent of the national budget. In 1983, there were 1.5 million male and female school students. By 1987, the number had grown to 2.1 million. In the same period, the number of higher education students increased 40 percent to over 114,000 of whom over 40 per cent were women.58

THE PAST AND THE FUTURE

For the period since 1960, annual oil revenues have varied between 80 to 90 percent of total government revenues. The oil revenues have relieved Saudi Arabia of any appreciable foreign exchange restraint in endeavouring to promote development. But the Saudi capacity to utilize effectively its foreign exchange reserves has been less than its earnings.

The abundance of easily earned money has created an atmosphere resulting in heavy dependence on imported luxury goods, an extravagant display of consumption, a sense of vanity and little concern for efficiency in administration. A man of superior class never performs any manual labour in Saudi Arabia. Wealth is concentrated in the hands of a few, while inertia and an attitude of let the government do it overtake the majority.

Yet with the help of oil revenues, the government erected seaports, airports refineries, hospitals, clinics and schools in the cities, as well as in the remote corners of the country. In the socio, political and cultural fields, a new concept of living is born in Saudi Arabia since 1933. In this Aramco has played a special and unique role. Oil constituted the wedge by which American culture, American attitudes and technology have intruded into the kingdom.

58. Ibid., p.55.
Until the 1970s, the kingdom lacked sufficient funds to develop Saudi Arabia on its own. Oil funded the training of Saudis with many skills. And they rose to the opportunities and prospered. Aramco served as a catalyst to intensify and accelerate the modernization process which had started with the coming of western influences early in this century.

The process of modernization since the 1970s has been spectacular everywhere: in the Eastern Province; in Riyadh with its royal courts and officialdom, banks and service industries in the vast malls and merchant facilities of the Jeddah metropolitan area; and in the schools, bank branches and running water in every town outside the big cities. Growing modernization also meant growing national control of the economy. In the 1990-91 period, Saudi construction firms controlled about 22 percent of the local market, second after US firms, 25 percent share of construction contracts. The proportion of Saudi contracts steadily grew since the 1940s.

From the beginning, the ambitious development plans were also aimed at encouraging local investors to invest at home and to support future domestic consumption. Since the mid-1980s, with the physical infrastructure of roads, ports, telecommunications and the like largely in place the emphasis has changed to encourage the production of goods and services to the private sector. In 1994-95 the government announced that there were over 2,500 manufacturing companies employing over 140,000 people; and the private sector's proportion of the GDP stood at 44 percent.

The kingdom's authorities acknowledge that oil remains of overwhelming importance for the future, as it has been since the beginning. They also agree that its relationship to the rest of the economy is changing as the kingdom has increased in population and matured economically. To fill the economic growth gap that lies between oil's contributions and national development requirements, the kingdom looks to the private sector as the long term salvation. The policy changes, including increasing prices for domestic petroleum products as well as electricity and other utility
rates support that goal.

CONCLUSION

Before the discovery of oil, the outstanding source of revenue in the newly established kingdom of Saudi Arabia was pilgrimage traffic which had declined due to great worldwide economic crisis of the 1930's. Oil was discovered by American companies when standard oil company of California obtained exclusive right for exploration of oil in Saudi Arabia by King Abdul Aziz. The discovery of oil changed the entire economic situation of Saudi Arabia. By 1950 the vast extent of the oil reserves had been recognised and the government demanded an increase in its share of wealth. Following intense negotiations an agreement was concluded in December 1950, providing for 50-50 division of net profits. Throughout the 1950's and in the early 1960's the government's participation in the management of the nation's resources was limited. This was due to the lack of trained Saudi personnel. The lack of trained Saudi personnel meant that the government was merely an observer and an enforcer of the agreement terms.

Oil revenues led to economic development and planning in Saudi Arabia. The Saudi economy has long been overwhelmingly dependent on oil. The general impact of oil revenue on the economy of Saudi Arabia has been considerable. According to some analysts without the oil revenues the situation in Saudi Arabia would not be different from what it was during the 1930's.

The oil revenue has benefited only a considerable number of people in Saudi Arabia. The principal beneficiary of the oil income has been the royal family. The royal family wants to preserve its rule by maintaining economic and social stability within the existing religions and social framework.