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The Industrial Bank of Kuwait K.S.C.

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INTRODUCTION

Quite early on, it became clear that Qatar's oil reserves were very small compared to those of some of its neighboring Gulf State neighbors. The country has estimated crude reserves of 3,200 million barrels, or less than one percent of the world total. This is equivalent to about 30 years output at current levels and represents a tiny proportion of the Gulf region's reserves. The country does have significant gas reserves which are estimated at 4,400 million cubic meters, or more than four percent of the world total. Only the US, Soviet Union, Iran and Abu Dhabi have larger reserves.

As a result of its somewhat limited natural wealth, Qatar was the first of the Arab Gulf states to commit itself firmly to industry as a means of diversifying its economy. To this end, a detailed study of development opportunities in Qatar was undertaken shortly after the accession (1972) of Shaikh Khalifa.

A plan was accepted by the government at the end of 1973 providing development guidelines for the next two decades. It emphasized the need for acceleration in housing and paid special attention to the development of the capital city of Doha, as well as encouraging light and heavy industry and expansion of the fishing industry[1].

The overall approach endorsed by Shaikh Khalifa was to concentrate on infrastructure and diversification of the economy. Initially, a Japanese-run steel plant, a Norwegian-run nitrogen fertilizer plant and a French-run petrochemicals plant gave the Qataris a chance to initiate the industrialization process. As a result of these developments Qatar did get in ahead of some of its neighbors in the development of heavy industry.

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(1) Economist Intelligence Unit, **Arabian Peninsula: Economic structure and Analysis** (London: Economist Intelligence Unit, 1988), p.95.

The purpose of this paper is to assess Qatar's industrialization efforts to date. What progress has been made toward industrial diversification and in what sense? How has Qatar's industrial performance compared with that of neighboring Arab Gulf economies? What particular problems must be overcome if the industrial diversification process is to continue? What are the prospects for the future?

The Manufacturing Sector: Overview

The policy of industrial diversification pursued since independence in 1971 has given Qatar one of the most advanced heavy industries in the Gulf. The principal manufacturing industries are based at Umm Said, which has now become the country's industrial center. The majority of small industries are also located there.

The manufacturing sector in Qatar is dominated by downstream oil processing as well as steel, fertilizer and cement production. The manufacturing sector also encompasses a large number of small establishments as well as a few food processing, plastic and general hardware factories which account for about one third of manufacturing output. The light industries are largely oriented to meet the local demand for products.[2]

The main manufacturing plants outside the oil and gas sector include the Qatar Steel Company, the Qatar National Cement Factory and the Qatar Flour Mills Company.

The manufacturing sector in Qatar encompasses two distinct segments: on the one hand there is a handful of energy-intensive heavy industrial installations which are primarily joint ventures between the government and foreign partners, and there are a number of relatively small-scale industries owned by the Qatari private sector.

The manufacturing sector in Qatar ranges from simple traditional crafts to some of the most modern sophisticated plants. At one end, it includes a host of small and quasi-artisan establishments, at the other, the manufacture of steel and major world-scale operations in the petrochemical and NGL industries. In the early 1980s more than one half of total manufacturing employment was in establishments employing less then five employees. Thus, industrial development in Qatar represents

(2) United Nations Industrial Development Organization, **Qatar: Towards Industrial Diversification of an Oil-based Economy** (Vienna: UNIDO, 1988), p.5.

an unusual combination of a few giant enterprises and a large number of small enterprises.

The North Field Gas Project

Qatar is embarking on its most ambitious development project to bring its giant North Field gas fields into production. It is one of the largest accumulations of non-associated gas in the world, whose productive life span could stretch for as long as 200 years. The project itself represents a total investment of $ 950 million and is designed to provide the capacity to produce 23 million cubic meters/day of gas. Marketed gas output amounting to some 20 million cubic meters/day will be supplied to industrial users within Qatar.

The importance of North Field gas to Qatar cannot be overstressed. All of Qatar's national industries, power, and water stations have been designed to use gas as an energy source. When the projects were being installed, daily production of oil was around 450,000 barrels, providing a ready source of associated gas which was stripped to provide fuel feedstock for the petrochemicals plant and liquid gases for domestic users and export.

A supplementary source of gas was available from a small concentration of non-associated gas in the Khuff formation near the oil fields in the west of the penisula. The decline in oil output and the near exhaustion of the Khuff source has made the North Field project a necessity rather than a luxury. Production of gas should be underway by late 1989 or early 1990.

Government Policies Towards Industry

In pursuit of the Government's goal of diversifying and expanding the country's manufacturing base and to increase the involvement of authority, the Industrial Development Technical Center (IDTC) was set up in 1981 to monitor the development of the country's industrial sector.

The center plays a vital and pioneering role in organizing and directing the pattern of industrialization. The Center prepared the First Five-year Industrial Development Plan for 1974-78, all elements of which were successfully put into effect. The projects conceived under the plan were all operational by the end of 1982, including a number of huge and sophisticated industries such as the manufacture of steel,

chemical fertilizers, petrochemicals, refined petroleum products, natural gas liquids, cement, as well as important domestic and socially necessary projects such as an organic fertilizer plant and a modern plant to meet the local demand for fresh meat.

The center played a pivotal role in the development of the industrial part of Umm Said and the conversion of Umm Said to a major industrial center. Projects being undertaken by the Center at present include a scheme for the development of medium and light industries. In 1985 the IDTC carried out studies on a number of industrial projects, including a sheet glass factory, production of silicone and ferro silicone, expansion of the cement factory, extraction of argon gas from by-products of QAFCO, manufacture of acetylene, production of calcium carbide, production of medical compounds, manufacture of benyoic salts and recycling of waste paper.

The Center is presently engaged in promoting the development of import-substituting light and medium-sized industries. A new law relating to industrialization was enacted in March 1985 with a view to limiting foreign ownership to certain specific industrial projects. Non-Qataris are allowed to own only small business and light repair facilities which do not employ more than one person. However, foreign participation is welcomed in industrial projects, with the general provision that the local partner holds at least 51 percent of the company's capital.[3]

Incentives such as tax relief and extremely low rents in specified industrial zones are offered in addition to free infrastructure and subsidized utilities to enterprises favorably considered by the Industrial Development Technical Centre for fostering the process of industrialization in Qatar.

Two employment surveys conducted in January 1983 and during October 1984-February 1985 show that Qatar continues to be heavily dependent on expatriate workers who constituted about 80 percent of the country's total labor force in 1985. However, about 42 percent of the government employees were Qatari nationals. The government policy aims at minimizing the need for foreign labor.

(3) UNIDO, op. cit., p. 5.

Incentives for Potential Investors

A unique aspect of industrial development policy in Qatar is the assistance provided by the government in the pre-investment phase.[4] This involves two forms of assistance: first, a specialized government agency prepares investment feasibility studies on industries and offers them to the private sector as potential investment opportunities; and second, the Government supplements the efforts of private investors in preparation of economic and technical feasibility studies on new ventures selected as possible targets for investments.

The Government set up the Doha Industrial Estate at a site on the Salva Road for the use of light and medium industries while other industrial zones have been provided in Umm Said for medium and heavy industries. In these zones land and services are offered at subsidized prices. Land required for industrial projects at the Doha Industrial Estate is provided on long-term lease at token rents according to the size and nature of the project. Plots range from 1,500 sq.m to 3,000 sq m while rents range from QR25 per sq.meter to QR50 per sq meter per annum. In Umm Said ground rent is net at QR1.00 per sq. meter annum. Given the increase in land prices and ground rent outside the industrial areas, these prices are a considerable incentive. Leases are normally offered for 30 years, which are renewable. Essential utilities such as water, electricity and gas are provided to industrial ventures in the industrial zones.

Under the terms of Article 1 of Law No. 3/66 the Minister of Finance and Petroleum is empowered to exempt national joint stock companies from payment of tax on net profits provided that the companies concerned establish and operate permitted indusries in the interests of of the national economy. The exemption is valid for five years form the date of establishment of the company and may be renewed for a further period of five years.

Government spending is the main catalyst for economic activity in Qatar and priority is given to national products by state purchasing departments. This policy provides a major incentive for local industries. But preference is only given provided that the local product is similar in

(4) United Nations Industrial Development Organization, Industrial Development Review Series, **Qatar: Towards Industrial Diversification of an Oil-based Economy** (Vienna: UNIDO, 1988), p.26.

quality, specifications and price to rival imported products. The limit is to ensure that new industries grow on a healthy competitive basis and are attuned to the reality of world market conditions.

Under the Industry Law No. 11 of 1980, the following incentives are granted to manufacturing establishments:[5]

1. Customs tariffs may be increased for limited periods on the goods imported that are similar to those produced locally. There is however a requirement that the quality of the local production is satisfactory, and that the discouragement of imports is in the interest of consumers.
2. Holidays from incomes tax may be granted for five years as from the commencement of production.
3. Holidays from customs duties may be granted on the following imports needed by industrial firms: (machinery, equipment and spare parts, and (b) raw materials, semifinished goods and packing materials.
4. Exports of goods produced locally are exempted from export taxes, should these be imposed. At present no duties are levied on exports.
5. Goods produced locally are given priority for government purchases, provided they are similar in quality and kind to imported equivalents. The priority still prevails even if the local price is up to 5 percent higher than the imported one.
6. The establishment of new industry is encouraged by the supply of land and utilities at reduced rates.
7. The Ministry of Industry and Agriculture may participate in the costs of studies and research carried out by the owners of proposed industrial projects to ensure the feasibility of such projects.
8. Loans may be granted to any industrial firm with a capital of less than QR 20 million at low interest.

Perhaps as a direct result of these policies the economy has undergone rapid structural change since the early 1970s. In particular the manufacturing sector has experienced a major expansion in its contribution to economic activity.

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(5) Saba and Co., Touche Ross International, **Tax and Investment Profile: Qatar, Restricted Activities**, July 1986.

Recent Economic Trends

Crude oil accounted for approximately 30 percent of GDP in 1987 (Table 1). Between 1983 and 1987 it account for 91-94 percent of export earnings. Since 1981 Qatar has, like other OPEC states, suffered from the impact of the world oil glut. Between 1983 and 1987 the oil sector declined by 15 percent with the non-oil sectors increasing by only 0.3 percent for the period as a whole.

Qatar's manufacturing sector accounted for 5.0 percent of GDP and 11.0 percent of non-oil GDP in 1980. There was a fairly steady increase in manufacturing output in the 1980s so that by 1987 the sector accounted for 9.9 percent of GDP and 14.3 percent of non-oil GDP. Of course, the increase in the share of GDP accounted for by manufacturing is somewhat inflated by the decline in the oil sector. The increase in manufacturing's share of non-oil GDP therefore is more indicative of the success achieved by the country at industrial diversification. But even here we get an inflated figure because of various subsidies--low utility rates, low rents etc., received by industry.

Qatar's accomplishments at industrial diversification are impressive when compared with the progress made by other Arab Gulf countries. For the basis of this comparison, an analysis was made of the movements over time of the four main components of non-oil Gross Domestic Product: manufacturing, construction, services and the distributional sectors. Here the distributional sectors consist of: (a) commerce, restaurants, and hotels, (b) transportation, commerce and storage, and (c) finance, insurance and banking. Services include: housing, government services and other services.

As noted above, there are serious problems in using movements in sectoral output as a measure of structural change. Yet, the selection of any alternative definition of sectoral output would be somewhat arbitrary. To overcome these problems, an index was created for each of the four main sectoral outputs. The index was formed from two measures of each sector's output: (a) share of non-oil GDP, and (b) absorption (total consumption and investment expenditures).

To avoid using a simple arbitrary weighting system, a orthagonal factor analysis was made on the eight observations for each of three years: (a) 1974, the beginning of the oil boom, (b) 1981, the end of the oil boom, and (c) 1985, the last year for which comparable data was

Table 1
Qatar: Gross Domestic Product by Sector, 1982-87

(QR million, at current prices)

Sector	1982	1983	1984	1985	1986	1987
Oil Sector	**15,001**	**10,790**	**11,330**	**9,595**	**5,395**	**5,630**
Non-Oil Sectors	**12,651**	**12,815**	**13,787**	**12,803**	**12,868**	**12,950**
Agriculture	190	195	206	213	237	241
Manufacturing	1,391	1,464	1,829	1,770	1,777	1,847
Electricity	89	133	165	191	363	359
Construction	1,829	1,395	1,411	1,313	1,054	1,086
Trade	1,775	1,587	1,506	1,186	1,149	1,172
Transport	458	450	480	450	410	412
Finance	2,308	2,031	1,919	1,899	1,842	1,958
Other services	4,611	5,560	6,162	5,781	6,036	5,875
Gross Domestic Product	**27,652**	**23,605**	**25,008**	**22,398**	**18,263**	**18,580**
% GDP						
Oil	54.2	45.7	45.3	42.8	29.5	30.3
Agriculture	0.7	0.8	0.8	1.0	1.3	1.3
Manufacturing	5.0	6.2	7.3	7.9	9.7	9.9
Electricity	0.3	0.6	0.7	0.9	2.0	1.9
Construction	6.6	5.9	5.7	5.9	5.8	5.9
Trade	6.4	6.7	6.0	5.3	6.3	6.3
Transport	1.7	1.9	1.9	2.0	2.2	2.2
Finance	8.3	8.6	7.7	8.4	10.1	10.6
Other services	16.7	23.6	24.6	25.8	33.1	31.6
% Non-oil GDP						
Agriculture	1.7	1.5	1.5	1.7	1.8	1.9
Manufacturing	11.0	11.4	13.3	13.8	13.8	14.3
Electricity	0.7	1.0	1.2	1.5	2.8	2.8
Construction	14.5	10.9	10.2	10.3	8.2	8.4
Trade	14.0	12.3	10.9	9.3	8.9	9.1
Transport	3.6	3.5	3.5	3.5	3.2	3.2
Finance	18.2	15.8	13.9	14.8	14.3	15.1
Other services	36.4	43.4	44.7	45.2	46.9	45.4

Source: Qatar Monetary Agency, Department of Research and Statistics, **Annual Report**, various issues.

available. The data sample was taken from the Arab Monetary Fund,[6] and included the twenty Arab members of the Fund.

The factor analysis identified four main trends in the data. As it turned out, the sectoral shares of non-oil GDP and absorption are correlated closely enough so that each of the factors represented one of the four main sectors. The resulting factor scores for each sector (Table 2), therefore, represent the relative[7] ranking of each of the twenty countries in terms of the development of each sector.

More specifically, the factor scores have a mean of zero. The country with the highest positive factor score on a particular sector possesses the largest share (relative to the other nineteen countries) of that sector in its economy. Similarly, the country with the lowest (negative) factor score has the smallest share of that sector in its economy. The rest of the countries will be ranked between.

Several interesting trends were identified:

1. Qatar began the period (1974) with a factor score of 0.56. This placed the country in the lower half of Arab states in terms of industrial diversification, and fourth among the six Gulf Cooperation Council (GCC) countries.
2. At this time, the country's development of distributive activities ranked first among Arab states. In addition, the country had a large proportion of its economic activity devoted to construction (second among GCC states), but ranked relatively low in terms of service activities.
3. By the end of the oil boom (1981), several dramatic changes had taken place. Most importantly, the country now ranked in the top half of Arab World states in terms of industrial diversification (and third among GCC countries).
4. Growth during the years of expanding oil revenues had also resulted in the relative expansion of the service sector, so that by 1981 Qatar ranked first among GCC countries in terms of the relative share of its output devoted to these activities.

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(6) Arab Monetary Fund, **National Accounts of Arab Countries, 1974-85** (Abu Dhabi: Arab Monetary Fund, 1987).

(7) Only the results for the Gulf Countries are reported here.

Table 2
Arab Gulf States:
Structural Evolution, 1974-85

(Factor Scores)

	Factor 1 Manufact	Factor 2 Construct	Factor 3 Distrib	Factor 4 Serv
Oil Economies		**Sectoral Dimension--1974**		
Qatar	**-0.56**	**1.18**	**3.04**	**0.47**
UAE	−1.01	0.71	1.45	−0.76
Bahrain	2.27	0.34	−0.88	2.03
Saudi Arabia	1.50	0.32	0.34	−0.46
Oman	−1.54	2.22	−0.87	0.16
Kuwait	0.10	−0.37	−1.20	0.93
Oil Economies		**Sectoral Dimension--1981**		
Qatar	**0.50**	**0.37**	**0.89**	**1.64**
UAE	0.59	1.22	1.26	−0.58
Bahrain	2.32	−0.31	2.26	0.72
Saudi Arabia	0.24	2.07	−0.97	0.21
Oman	−1.67	0.24	1.34	0.36
Kuwait	−0.02	−0.33	0.56	1.36
Oil Economies		**Sectorial Dimension--1985**		
Qatar	**0.79**	**0.29**	**0.16**	**2.75**
UAE	1.37	1.23	1.34	−0.02
Bahrain	0.86	0.40	1.96	0.59
Saudi Arabia	−0.16	1.60	−0.78	0.57
Oman	−1.53	0.39	1.11	0.23
Kuwait	−0.42	−0.87	−0.22	1.00

Notes: Factor analysis based on orthagonal rotation. Data from Arab Monetary Fund, **National Accounts of Arab Countries,** 1974-85 (Abu Dhabi: Arab Monetary Fund, 1987).

5. In contrast to the UAE and Saudi Arabia, the growth of manufacturing and services in Qatar occurred in part at the expense of construction and distributional activities.
6. In contrast to Bahrain, Qatar was able to expand its manufacturing sector in an environment characterized by a high proportion of activities devoted to distribution.

7. By the end (1985) of the period under consideration, Qatar ranked only behind the UAE in terms of relative industrial diversification. At the same time, Qatar had expanded its service activities to rank first in the Arab World.

8. Despite the rapid development of services, the country had achieved balance among its major sectors-all four ranked in the top half relative to the nineteen other Arab world countries. Of the GCC states, only Bahrain achieved similar sectoral balance.

In sum, the factor scores show that Qatar underwent major structural changes during the decade following the 1973/74 oil price increases. This structural change resulted in the achievement of a major national objective--industrial diversification and reduced dependence on the oil sector.

Industrial Performance

Before one can conclude that Qatar's development has been a major success story, a more detailed examination has to be made of developments in specific industries (Tables 3 and 4). In this regard, the overall performance of the manufacturing sector does not seem to have matched the rate at which the country's industrial base expanded along the path of economic diversification.[8] In particular, the performance of Qatar's heavy industries remains vulnerable to the supply of feedstock and to fluctuating and, more recently, declining demand and prices for its major exports.

(8) A conclusion also reached by UNIDO. See United Nations Industrial Development Organization, **Qatar: Towards Industrial Diversification of an Oil-based Economy** (Vienna: United Nations, 1988), p.16.

Table 3
Qatar: Production (Value) of Major Industrial Companies, 1982-1987

(Million QR)

	1982	1983	1984	1985	1986	1987
Qatar Fertilizer Co.						
Ammonia/Urea	438.8	416.8	541.7	450.0	311.6	284.1
Organic Fertilizer Factory						
Organic Fertilizer	0.66	0.73	0.60	0.90	1.00	1.90
Qatar National Cement Co						
Portland Cement	67.7	38.9	52.8	43.3	29.4	20.7
Resisting Cement	–	–	–	8.4	13.0	18.7
Quick Lime	7.2	6.3	6.5	6.0	4.9	4.2
Hydrated Lime	–	–	–	0.9	0.4	0.6
Qatar Steel Company						
Concrete Bars	490.5	457.1	417.2	429.5	439.5	420.8
Iron ore fines	2.0	10.0	2.0	1.0	2.8	0.6
Qatar Flour Mills Company						
Flour No. (A)	13.3	12.5	12.8	13.5	16.7	17.6
Flour No. (B)	4.0	5.6	6.3	2.1	3.3	3.8
Bran	3.2	3.3	3.4	3.4	3.7	4.0
Qatar Petrochemical Company						
Ethylene	13.2	14.1	60.2	29.2	54.5	83.6
Low Density Polyethylene	265.3	336.0	364.2	266.6	368.7	453.6
Sulphur	3.0	9.8	11.1	15.3	23.8	17.3

Source: Central Statistical Organization, **Annual Statistical Abstract**, eighth Issue, July 1988.

Table 4
Qatar: Production (quantity)
of Major Industrial Companies, 1982 - 1987

(thousand tons)

	1982	1983	1984	1985	1986	1987
Qatar Fertilizer co.						
Ammonia/Urea	677.0	883.2	918.7	894.9	1018.5	964.0
Organic Fertilizer Factory						
Organic Fertilizer	13.2	15.0	12.0	12.2	21.3	23.7
Qatar National Cement Co.						
Portland Cement	288.5	162.1	259.5	239.0	165.9	124.1
Resisting Cement	–	–	–	72.4	115.1	174.8
Quick Lime	20.1	18.5	19.1	17.8	15.8	13.5
Hydrated Lime	–	–	–	0.2	0.6	1.1
Qatar Steel Company						
Concrete Bars	484.6	465.0	470.8	503.7	495.5	502.6
Iron ore fines	15.2	65.0	15.1	10.0	26.0	6.0
Qatar Flour Mills Company						
Flour No. (A)	18.5	17.3	17.9	18.2	21.7	22.7
Flour No. (B)	6.5	6.9	5.3	2.0	3.3	3.9
Bran	5.4	5.5	5.7	5.7	6.2	6.6
Qatar Petrochemical Company						
Ethylene	8.0	11.5	54.7	31.1	76.1	94.4
Low Density Poly-ethylene	126.5	139.4	153.3	137.9	198.3	167.8
Suphur	6.0	25.0	28.0	29.2	48.2	47.4

Source: Central Statistical Organization, Annual Statistical Abstract, eighth Issue, July 1988.

Fertilizer

While considered a major success by many analysts[9], the country's fertilizer industry is beset with a number of problems:

(9) See for example, "Qatar," in **Arab Industry Review, 1987/88** (Bahrain: Falcon Publishing Co., 1987), p. 124

1. Sales of ammonia and urea manufactured by Qatar Fertilizer Company (QAFCO) fell consistently during 1980-1983, and the turnaround in 1984 (Table 3) was not sufficient to restore production to its 1980 level. Sales fell again in 1985, and by 1987 were only 52 percent of their 1984 value.
2. In 1984, QAFCO made a record net profit of QR170 million but this fell back to QR109 million in 1985, despite record output with ammonia production up to 640,000 tons and urea up to 744,000 tons. In 1986, production again set a new record, totalling 1,018,000 tons. In 1987, QAFCO reduced its losses by around QR12 million, with ammonia production rising to 682,000 tons, although urea production fell.
3. At present, QAFCO is facing difficulties because of the adverse trends in world markets and the glut in the oil market and subsequent reductions in feedstock. Despite this, QAFCO has been considering building a third ammonia plant to produce up to 500 tons of ammonia a day.
4. Although QAFCO feels confident about competition from other producers given the advantages of cheap gas, the company's two major markets, India and China, set up their own fertilizer industries and this trend will challenge QAFCO to find new markets for its products.

Petrochemicals

In the case of petrochemicals:

1. Sales of ethylene produced by Qatar Petrochemical Company (QPCO) have been volatile. A drastic fall in its sales in 1982 and 1983 was a reflection of feedstock shortages which limited gas to the Umm Said facility, resulting in capacity under-utilization of about 50 percent. The situation worsened as associated gas supplies declined in 1982 and 1983.
2. Around 73 percent of the designed capacity was utilized in 1984, leading to a 25 percent increase in the production of ethylene. However the rise in production in 1984 was more than offset by a 30 percent drop in ethylene prices on the world market.
3. Sales of ethylene soared in 1984 but fell by 51.4 percent in 1985, compared with a 326 percent increase in sales in 1984.

4. QAPCO was operating at 55 percent of its installed capacity in 1985. The fall in output was due to Qatar's decision to bring crude oil production into line with its OPEC quota, resulting in a reduced supply of feedstock to QAPCO.
5. The company's QR156 million loss in 1985 was its biggest ever, when ethylene production fell to only 66 percent of capacity. Higher output in 1986, amounting to 90 percent of capacity, helped to push QAPCO's losses down to QR57 million in 1986. In 1987, cost cutting measures and stronger polyethylene prices helped turn this loss into a QR85 million profit.
6. With completion in late 1985 of a $60 million ethane recovery unit (which maximizes ethane recovery from the ethane rich gas), a sufficient supply of feedstock to allow production at full capacity will be available in coming years as long as oil production does not drop below 300,000 barrels per day.
7. Most of the ethylene output has been absorbed until now in the manufacture of low density polyethylene, mostly for use in the plastic and packaging industries in neighboring countries.
8. The long term advantage of QAPCO is that the plant is designed to run on gas, while most petrochemical plants run on naphtha. With abundant cheap gas available in the near future as a result of the North Field project, QAPCO is expected to be competitive even in a depressed market.

Cement

The cement industry has also experienced a series of major difficulties:

1. Qatar's cement factory at Umm Bab was the first of the country's non-oil heavy industries established and is a joint venture between the government and the private sector. Production started in 1969 with an initial annual capacity of 100,000 tons. Capacity was increased to 260,000 tons in 1974/75 and to 300,000 tons by 1976/77. An ambitious plan to increase cement production capacity by a further 2,000 tons a day was unveiled in the early 1980s, but has not been implemented because of the large financial costs to both the government and private sector and the general slowdown in the demand for cement brought on by the decline in economic activity following the post 1982 deterioration in oil revenues.

2. Increasing competition from low cost foreign suppliers, mainly in the Gulf region, has also played a major role in reducing output and sales.

3. A twenty percent protective tariff on imports of cement was introduced in Qatar when the cement factory started production in 1969. In the 1970s, this tariff was lifted as the construction boom caused the demand for cement to exceed local production capacity. As the demand for cement dropped again in the early eighties, the cement industry could not benefit from tariff protection since imports were now coming from the neighboring countries and were not subject to tariffs in accordance with Gulf Co-operation Council regulations.

4. Faced with these realities, the Qatar National Cement Company, which owns and operates the factory, cut the price of its cement twice during the latter part of 1983 in order to regain its share of the local market. Sales of ordinary and sulphate resisting cement improved quickly to 259,500 tons in 1984, an increase of around 60 percent over the 1983 level, though they remained at around 82 percent of total production capacity. The company's share of the local market also increased to around 65 percent in 1984 as compared with an average of 35-40 percent during 1981-83, but its total revenue did not improve significantly because of the price cutbacks.

5. In 1985 sales dropped again by around 7.5 percent to 240,000 tons of Portland Cement. This decline continued, so that by 1987 (Table 3) company sales were QR44.2 million versus 74.9 in 1982.

Prospects for Qatar's cement industry do not look bright. The recent sharp fall in oil prices and the slowdown in public and private building activity has reduced domestic demand. Export possibilities are bleak in the already glutted Gulf market.

In addition, the Qatar National Cement Company suffers from the disadvantage of being one of the oldest and smallest plants in the region. It does not enjoy the economies of scale that the larger plants have and it is consequently less efficient.

The situation has not been helped by the fact that influential merchants are planning to build mills which would use imported clinker in direct competition to QNCC. The struggle for market share is likely to become even more fierce because of the general decline in demand and

the higher Omani tariffs which have almost closed-off that important market[10].

Steel

Qatar was one of the first Arab countries to capitalize on the potential offered by new iron and steel industries, making the decision to build a direct reduction-based steelworks as early as 1974. The works started up in 1987, with production rising gradually to a peak level of 484,600 tons of steel bars in 1982, dropping again slightly in 1983 and 1984, attaining a new peak of around 503,000 tons in 1985, and leveling off at this rate in 1987. For the period from 1980 to 1985, actual production of steel bars was an average of nearly 146 percent of rated capacity.

It should be noted that with the marked exception of QASCO, actual production at plants in operation in the Gulf has been generally well below design capacity, primarily because of a lack of adequate training of personnel, outdated technology and competition from imported products. QASCO achieved its high rates of productivity because of new technology (the Midrex gas fed direction reduction process) in a new factory, in addition to advanced management systems including employee incentive programs, productivity and quality improvement schemes, and careful control of specifications of production.[11]

In spite of its excellent production figures and even though its steel is of highest quality, the Qatar Steel Company has faced increasing financial problems since the start of production:

1. Initial capital costs were significantly higher than expected and interest charges have been an important financial burden on the company.
2. Operating costs have also been quite high, because of the high management and marketing fees charged the company.
3. Beginning in 1986, the company experienced for the first time a fall in demand for its output. At the beginning of 1986 Qasco asked its shareholders for a QR 150 million ($ 41.2 million) capital increase to ease its financial problems-- the company lost $ 13.7 million in 1985,

(10) Charles Gurdon, "Cement," in **Arab Industry Review, 1987/88, p. 52.**
(11) Nazzar Abbas al-Rabi'i, "Towards a Strategy for Steel," **Arab Gulf Industry** (August 1986), pp. 66-68.

bringing accumulated losses since it started in 1987 to about $ 109 million. Qasco is presently capitalized at QR 300 million ($ 82.4 million).[12]

4. Qasco has faced growing competition in its main export markets in recent years when demand for steel has been on the decline. These markets are the lifeline of the company since in the period from 1980 to 1985 an average of nearly 90 percent of its annual output of steel bars was exported, with the domestic market absorbing about 10 percent of output.
5. Foreign competition forced Gulf prices down to around $220 a ton in 1986, about $ 20 a ton below the world level. In April 1985, the GCC recommended introduction of a 20 percent tariff on imports from non-member countries.

Export sales are concentrated in the Gulf where Qatar enjoys the advantage of low transport costs and fast delivery times. Saudi Arabia alone accounted for around 45 percent of exports in 1984-85 with Kuwait and the UAE accounting for a similar proportion. The remaining 10-12 percent went mainly to Bahrain, Iraq and Oman.

With the start of production in 1984 at the large complex of the Saudi Iron and Steel Company at Jubail, which has a capacity of 800,000 tons of steel rods and bars a year, much of the potential of the Saudi market has been lost. Saudi steel has also become a direct competitor in the Gulf market where demand has dropped gradually since 1983, because of the slowdown in construction activity.

In the face of these challenges, Qasco has had to cut its export price a number of times since 1982. As a result, revenue per ton of steel bars exported dropped by nearly 30 percent between 1980 and 1984 thus exacerbating the company's financial problems.

In the final analysis it is possible to argue that the problems that have beset Qatar's steel industry are in part symptomatic of the problems of the steel industry worldwide and in part due to the failure of the Gulf countries up to now to achieve any degree of industrial co-ordination and integration.

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(12) "Oil slump Kills Hopes of Qapco Revival, "**Middle East Economic Digest, MEED Social Report, Qatar** (August 1986), p. 10.

Qatar's pioneering effort to introduce integrated direct reduction/ electric arc furnace steel-making to exploit the available resources of associated gas which had previously been flared at oil well sites set the pattern for the second generation of Gulf steel plants. But when the third generation is installed, the plants will most likely have much greater production capacity, following the international trend and facilitating competition on equal terms with the huge plants now installed around the world. In the meantime, the relatively small scale steel producers in Qatar will continue to face severe threats from the much bigger plants in other regions.[13]

Industrial Efficiency

One of the aims of industrial planning has been to encourage the establishment of industries that use the output of Qatar's heavy industries as intermediate products. Industries producing tiles, pre-cast concrete items, fine lime and plastic products fit this category very well, although their combined demand for cement, steel bars, lime and polyethylene is still only a small proportion of the total output of the industries concerned.

As might be expected, the four heavy manufacturing industries accounted for the bulk of the gross value of output and valued added. Thus, the gross value of output in the chemical and plastic products, non-metallic mineral products and basic metal industries amounted to QR1, 905.8 million in 1983 which is nearly 72 percent of the total gross value of output in manufacturing industry. The combined value added in these three industry categories also amounted to around 78 percent of total value added in the manufacturing sector, which stood at QR1,464 million in 1983.

In terms of value added another picture of the country's dual economy emerges:[14]

1. The share of value added in gross output is the highest in the manufacture of fabricated metal products (106.7 percent), followed by jewelry (87.6 percent), fertilizers and pesticides (84.7 percent).

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(13) Nabil al-Tayyeb, "The Future for Steel in the Arab Gulf States, "**Arab Gulf Industry** (August 1986), p. 93.

(14) United Nations Industrial Development Organization, **Qatar: Towards Industrial Diversification of an Oil-Based Economy** (Vienna: United Nations, 1988), pp. 18-19.

2. The high share of value added in gross output in most of the heavy industries partly reflects the incidence of technical progress that has gone into the productive process.
3. The relatively low share of value added in gross output (23.3 percent) in the manufacture of food, beverages and tobacco is a reflection of the high cost of imported raw material and services. The country is almost totally dependent on imports for manufactured food items.

The Industrial Survey of 1983, published by the Central Statistical Organization in 1985, attempted to measure productivity levels in the sub-sectors of manufacturing. That survey produced several interesting patterns:

1. In 1983, 15,558 persons were engaged in maufacturing industries, of which 4,058 were employed in non-metallic mineral products and 2,557 in chemical and petroleum industries.
2. Value added per employee was the highest in petroleum refineries (QR480,000), followed by industrial chemicals other than fertilizers (QR360,000) and fertilizers and pesticides (QR316,000).
3. Labor productivity was the lowest in the manufacturing of soap, cleaning preparations and perfumes (QR10,000).
4. Value added per worker in light activites was far below the average for the manufacturing sector (as it was in the case of the share of gross output).
5. A number of industries--slaughtering, preparing and preserving meat and grain mill products which operate under economies of scale, have working costs which are quite high as a result of the high cost of raw materials.

Internal Integration

As Whittingham[15] has noted, the problem for Qatar is that a handful of small export-oriented factories, of the kind to be found in any oil-producing country, will never be able to compete with much larger production facilities. At the same time, Qatar's domestic market has minimal need for heavy industrial products.

(15) Ken Whittingham, "Qatar," in **The Middle East Review, 1988** (Saffron Walden, Essex: World of Information, 1987), p. 135.

What it does require are semi-manufactured goods, machines and equipment; yet these kinds of industrial ventures do not exist in the country. In short, industrial growth may be slowing down not just due to developments in the external markets, but also because of the inability of industries to date to integrate themselves into the domestic market.[16]

This is another aspect of the country's dualistic industrial structure. The extent to which problems exist are, of course, an empirical question, but one that should be addressed before any conclusions can be drawn as to the future development of the manufacturing sector.

To determine the relative extent to which manufacturing has been affected (positively or negatively) by developments in the rest of the economy, the factor analysis described above (Table 2) was extended to identify a series of potential impacts on the industrial sector.

The mechanism by which exports could act as an "engine of growth" (or leading sector) and the determinants of the overall impact of an export stimulation on the economy have been well discussed in the literature.[17] In the classic situation of staples, exports contributed to economic growth directly (through direct contributions to Gross Domestic Product), and indirectly through contributions to GDP through the medium of spread (or carry-over) effects.[18]

This indirect contribution to growth embraces Hirschman-type linkages[19] and can broadly be considered as a sequence of multiplier-accelerator mechanisms, whereby increases in non-oil GDP augment demand for various sectoral--manufacturing, services, distribution--outputs. Theoretically, indirect contributions (or spread effects) can continue to accrue long after some export stimulus has occurred. The overall impact of an export stimulus on the economy has many determinants including technology, the propensity to import, the extent to

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(16) **Ibid.**

(17) G.W. Bertram "Economic Growth in Canadian Industry, "**Canadian Journal of Economics and Political Science** (May 1963); and G.W. Bertram, "The Relevance of the Canadian Wheat Boom in Canadian Economic Growth," **Canadian Journal of Economics** (1973).

(18) M.M. Metwally and H.U. Tamaschke, "Oil Exports and Economic Growth in the Middle East," **Kyklos** (1980), pp. 499-500.

(19) Cf. A.O. Hirschman, **The Strategy of Economic Development** (New Haven, Conn: Yale University Press, 1958).

which investment opportunities generated are accepted domestically, the ability to attract foreign factors and so on.

Obviously, neither the timing pattern exhibited by, nor the relative sizes of, exports' direct and indirect contributions to growth need be fixed and could conceivably vary between subperiods, especially over long periods of economic development. Provided that investment opportunities generated by the growth of the export sector are exploited, the model predicts that economic growth will be a process of diversification about an export base.

For policy purposes, it is of some interest to determine the factors responsible for these movements. Were improvements in industrial diversification largely the response to spread effects-increases in industrial demand created by an expanding non-oil sector of the economy?

These first two effects are fairly straighforward, and have been identified in a number of case studies on primary product exporters.[20]

A third effect is the one related to oil financed government expenditures or the so called "Dutch Disease" effect. This phenomenon stems from the overvalution of the domestic exchange rate following an oil revenue boom. Here, it is assumed that the increase in domestic inflation stemming from stepped up governmental expenditures is concentrated in those sectors of the economy that do not face foreign competition.

Due to the presence of foreign substitutes for most manufactured goods produced in Qatar, economic theory would predict a lower relative rate of price increase in the country's industrial sectors. Along the lines identified in the section on productivity, the resulting fall in the relative profitability of manufacturing (cheaper imports and price/cost squeeze) may have caused a shift in resources to non-traded activities.

In Qatar, the resulting suppression of the industrial sector should depend in large part on the composition of industry i.e., the relative amounts of traded and non-traded goods produced, and the extent to which domestic producers of traded goods are protected by tariffs

(20) For an excellent series of case studies see Raymond F. Mikesell, **Foreign Investment in the Petroleum and Mineral Industries: Case studies of Investment in the Petroleum and Mineral Industries** (Baltimore: Johns Hopkins University Press, 1971).

and/or quotas from foreign competitors. *Ceteris paribus* we would expect the effect to be present in Qatar because of the dominance of the oil sector and the fact that the country is largely open to world market forces and foreign competition. In addition, the Dutch Disease effect has been identified in two neighboring countries: Kuwait and Saudi Arabia.[21]

In his study of Saudi Arabian industrialization, Looney[22] found in the case of tradeables that:

1. Government expenditures and credit have played a major role in stimulating production.
2. The problems associated with an appreciating exchange rate, the Dutch Disease, have tended to reduce output. This applies to both long and short run movements in the case of agriculture, mining and refining, and shorter run movements in the case of non oil manufacturing.

There is evidence that, at least in the case of Saudi Arabia and Kuwait, oil revenues have tended to work at somewhat cross proposes for the general class of tradeables. On the expenditure side, oil revenues have been converted into both effective demand and available credit that would obviously not have been present otherwise. On the other hand, the competitive effects associated with exchange appreciation have apparently offset any cost reducing affects stemming from lower cost imports of capital, intermediate goods, and labor.

Clearly governments burdened with an overvalued real exchange rate will find it increasingly difficult to attain diversification through expansion of the traded goods sector.

The methodology used to measure the relative extent of these effects in Qatar consisted of the following:

1. The factor analysis presented above was extended to include on a case-by case basis proxies for each of the three linkage effects. Three dates were examined: (a) 1975--incorporating the initial effects of the

(21) Mohammad Al-Sabah, "The 'Dutch Disease' in an Oil-Exporting Country: Kuwait," **OPEC Review** (Summer, 1988), pp. 129-144.

(22) Robert E. Looney, "Oil Revenues and the Dutch Disease in Saudi Arabia, Differential Impacts on Sectoral Growth," **Working Paper, Department of National Security Affairs** Naval Postgraduate School (1988).

oil price shocks, (b) 1981--the last year of expanding oil revenues, and (c) 1985--the last year for which comparable data was available.

2. The first set of factor analysis for each year are teh same as those presented in Table 2. Four sectors and eight variables are included. Each variable is depicted twice: (a) its share of non-oil GDP, and (b) its share of absorption (consumption plus investment expenditures).

3. The second set of four factor exercises examined the sectoral linkage effects associated with the development of the oil sector. Here the oil sector is also depicted by its share of non-oil GDP and its share of absorption. The impact of the oil sector is measured by its correlation coefficents on each of the four sectors (for brevity only the resulting factor scores are presented).

4. Generalized linkage effects were estimated in the third set of factor exercises. Here linkages are defined in terms of sector correlations on non-oil GDP, with non-oil GDP included in the analysis as its share of absorption and total Gross Domestic Product. As with oil the extent of these linkage effects are measured by the correlation of non-oil GDP variables with each of the four sectors.

5. Finally, the Dutch Disease or sectoral shift factors were introduced with the four sectoral variables. Here the shift factors are proxied by the change in inflation (from 1974 to the year examined) and the appreciation of the real exchange rate (again from 1974 to the year examined). The assumption here is that inflationary periods will increase the profitability of non-oil tradeables and the expense of tradeables, with manufacturing considered a tradeable. The same is true for appreciation of the real exchange rate. As with the previous two linkage effects, shift effects were measured by the correlation of non-oil GDP variables with each of the four factors.

6. The factor scores were computed for each of the oil producing countries (Libya was added for the basis of comparison) for each of the four exercises. The linkage and shift effects are depicted by the change in factor scores (from the initial structural dimension) to the ones obtained by introducing (again on an individual basis) each of the three effects under examination.

The results (Tables 5-7) of these exercises show several interesting patterns. Initially in 1975:

1. The oil sector had not had time to have much of an impact on the

Table 5

Qatar: Factors Affecting Relative Industrial Performance--Linkage and Shift Effects, 1975

(Factor Scores)

	Factor 1 Manufact	Factor 2 Construct	Factor 3 Distrib	Factor 4 Serv
Oil Economies		**Sectoral Dimension**		
Qatar	**0.27**	**1.82**	**1.84**	**0.13**
UAE	−1.15	2.00	1.88	−0.90
Bahrain	2.74	−0.35	0.91	−0.01
Saudi Arabia	0.90	1.06	−1.00	0.65
Oman	−1.53	1.10	−0.21	0.59
Kuwait	0.05	−0.83	−0.50	2.08
Libya	−0.73	0.98	−0.60	1.35
Oil Economies		**Impact of Oil**		
Qatar	**0.18(=)**	**1.79(=)**	**1.90(=)**	**0.14(+)**
UAE	−1.23(=)	1.66(−)	1.90(=)	−1.00(=)
Bahrain	2.69(=)	−0.38(=)	0.92(=)	0.06(=)
Saudi Arabia	0.98(=)	1.81(+)	−1.09(=)	0.70(=)
Oman	−1.56(=)	1.03(=)	−0.20(=)	0.50(=)
Kuwait	0.21(+)	0.24(+)	−0.90(−)	2.22(=)
Libya	−0.83(=)	0.57(−)	−0.40(+)	1.20(−)
Oil Economies		**Impact of Domestic Linkages**		
Qatar	**0.43(+)**	**1.86(=)**	**1.64(−)**	**0.71(+)**
UAE	−1.33(−)	1.83(−)	1.99(+)	0.14(+)
Bahrain	2.51(−)	−0.31(=)	0.85(=)	0.94(+)
Saudi Arabia	0.97(=)	1.22(+)	−0.99(=)	−0.50(−)
Oman	−1.32(+)	1.14(=)	−0.04(+)	−1.49(−)
Kuwait	0.60(+)	−0.25(+)	−0.43(=)	−2.29(−)
Libya	−0.32(+)	0.98(=)	−0.58(=)	0.98(−)
Oil Economies		**Impact of Dutch Disease Factors**		
Qatar	**0.19(−)**	**1.73(=)**	**1.25(−)**	**0.18(=)**
UAE	−1.01(−)	2.25(+)	1.30(−)	−1.01(−)
Bahrain	2.73(−)	0.02(+)	0.65(−)	−0.17(−)
Saudi Arabia	1.04(+)	1.70(+)	−1.42(−)	0.36(−)
Oman	−1.71(−)	0.48(−)	0.41(+)	0.89(+)
Kuwait	0.07(+)	−0.90(=)	−0.04(+)	1.93(−)
Libya	−0.96(−)	0.34(−)	0.07(+)	1.64(+)

Note: ( ) indicates movement in ranking relative to sector dimension factor scores.

Table 6

Qatar: Factors Affecting Relative Industrial Performance--Linkage and Shift Effects, 1981

(Factor Scores)

	Factor 1 Manufact	Factor 2 Construct	Factor 3 Distrib	Factor 4 Serv
Oil Economies		**Sectoral Dimension**		
Qatar	**0.50**	**0.37**	**0.89**	**1.64**
UAE	−0.59	1.22	1.26	−0.58
Bahrain	2.32	−0.31	2.26	0.72
Saudi Arabia	0.24	2.07	−0.97	0.21
Oman	−1.67	0.24	1.34	0.36
Kuwait	−0.02	−0.33	0.56	1.36
Libya	−1.22	1.54	−0.88	0.54
Oil Economies		**Impact of Oil**		
Qatar	**0.12(−)**	**0.92(+)**	**1.26(+)**	**1.99(+)**
UAE	0.45(−)	1.32(+)	1.30(=)	−0.29(+)
Bahrain	2.33(=)	−0.38(=)	1.97(−)	0.51(−)
Saudi Arabia	0.06(−)	2.17(+)	−0.66(+)	0.46(+)
Oman	−1.85(−)	0.57(+)	1.45(+)	0.64(+)
Kuwait	−0.31(−)	0.17(+)	0.87(+)	1.64(+)
Libya	−1.11(+)	1.28(−)	−0.91(−)	0.33(−)
Oil Economies		**Impact of Domestic Linkages**		
Qatar	**0.44(=)**	**0.47(+)**	**1.05(+)**	**1.69(+)**
UAE	0.47(+)	1.24(=)	1.19(=)	−0.43(−)
Bahrain	2.41(=)	−0.54(−)	2.22(=)	0.55(−)
Saudi Arabia	0.15(+)	1.98(=)	−0.85(=)	0.29(=)
Oman	−1.75(+)	0.54(+)	1.32(=)	0.58(+)
Kuwait	−0.26(+)	0.11(+)	0.65(=)	1.56(+)
Libya	−1.21(−)	1.47(=)	−0.84(=)	0.55(=)
Oil Economies		**Impact of Dutch Disease Factors**		
Qatar	**0.22(−)**	**0.24(−)**	**0.85(=)**	**1.52(−)**
UAE	0.87(+)	1.18(=)	1.15(+)	−0.42(+)
Bahrain	1.78(−)	−0.44(−)	2.34(+)	0.49(−)
Saudi Arabia	−0.12(−)	1.85(−)	−0.96(=)	0.03(−)
Oman	−1.37(+)	0.45(+)	1.26(=)	0.46(+)
Kuwait	−0.44(+)	−0.23(+)	0.49(=)	1.52(+)
Libya	−1.00(+)	1.62(=)	−0.86(=)	0.56(=)

Note: ( ) indicates movement in ranking relative to sector dimension factor scores.

Table 7

Qatar: Factors Affecting Relative Industrial Performance--Linkage and Shift Effects, 1985

(Factor Scores)

	Factor 1 Manufact	Factor 2 Construct	Factor 3 Distrib	Factor 4 Serv
Oil Economies		**Sectoral Dimension**		
Qatar	**0.79**	**0.29**	**0.16**	**2.75**
UAE	1.37	1.23	1.34	−0.02
Bahrain	0.86	0.40	1.96	0.59
Saudi Arabia	−0.16	1.60	−0.78	0.57
Oman	−1.53	0.39	1.11	0.23
Kuwait	−0.42	−0.87	−0.22	1.00
Libya	−0.94	1.53	−0.83	1.04
Oil Economies		**Impact of Oil**		
Qatar	**1.03(+)**	**0.20(=)**	**−0.09(−)**	**2.36(−)**
UAE	0.88(−)	1.39(+)	1.63(+)	0.77(+)
Bahrain	1.02(+)	0.30(=)	1.63(+)	0.12(−)
Saudi Arabia	−0.15(=)	1.53(=)	−0.75(=)	0.59(=)
Oman	−1.72(−)	0.50(+)	1.37(+)	1.01(+)
Kuwait	−0.62(−)	−0.84(=)	−0.01(+)	1.49(+)
Libya	−0.77(+)	1.47(=)	−0.85(=)	0.98(=)
Oil Economies		**Impact of Domestic Linkages**		
Qatar	**0.51(−)**	**0.33(=)**	**−0.12(−)**	**2.51(−)**
UAE	1.35(=)	1.33(+)	1.54(+)	0.34(+)
Bahrain	0.80(=)	0.37(=)	1.70(−)	0.37(−)
Saudi Arabia	0.02(+)	1.53(=)	−0.57(+)	0.67(+)
Oman	−1.52(=)	0.48(+)	1.44(+)	0.61(+)
Kuwait	−0.14(+)	−0.82(=)	0.24(+)	1.33(+)
Libya	−1.04(−)	1.51(=)	−0.80(=)	1.05(=)
Oil Economies		**Impact of Dutch Disease Factors**		
Qatar	**0.87(=)**	**0.48(+)**	**0.06(−)**	**2.91(+)**
UAE	1.25(−)	1.23(=)	1.24(−)	−0.02(=)
Bahrain	0.88(=)	0.44(=)	1.89(=)	0.62(=)
Saudi Arabia	−0.35(−)	1.56(=)	−0.85(=)	0.54(=)
Oman	−1.58(=)	0.30(=)	1.14(=)	0.14(−)
Kuwait	−0.70(−)	−0.97(−)	−0.26(=)	0.84(−)
Libya	−0.88(=)	1.48(=)	−0.75(=)	1.02(=)

Note: ( ) indicates movement in ranking relative to sector dimension factor scores.

seven countries under examination. As might have been anticipated, this impact was generally positive (the negative impacts for UAE and Libya are most likely the result of the simple fact that these countries began their construction boom shortly after the others and as a result had a relative-but not absolute decline-in construction activity).

2. At the beginning of the period under consideration, and before its heavy industries existed, the manufacturing sector was significantly integrated with the non-oil sectors of the economy. This linkage was both positive in the sense of demand linkages with non-oil GDP and negative in the sense that Dutch Disease effects were reducing its output below that anticipated from the benchmark results.

By the end of the oil boom (1981):

1. Qatar as well as most of the oil countries were receiving net impacts from the oil sector. Most likely this reflects the fact that the direct government expenditure of oil revenues has gone to expand government services and construction. The expansion of these sectors, along with distributional activities, has drawn resources that might otherwise have been used in industrial activities.

2. In terms of domestic linkages, Qatar was still not experiencing any positive impacts. This is in contrast to the UAE, Saudi Arabia, Oman and Kuwait, each of which saw their industrial activities increase as a result of the growth of their non-oil economies.

3. Finally, manufacturing in Qatar was still feeling some of the effects of the Dutch Disease, which apparently resulted in a shift of resources to other activities. It should be noted however that these shifts were not nearly as great as those experienced by Saudi Arabia and Kuwait.

Finally, by 1985:

1. Manufacturing in Qatar was finally experiencing some positive linkages with the oil sector. However, this was offset by negative linkages with the non-oil sector of the economy. In this regard, Libya was the only other country experiencing similar effects.

2. Perhaps because of relatively prudent monetary and fiscal policy during most of the period under consideration, industrial output in

Qatar was no longer affected by Dutch Disease effects. Again this is in fairly sharp contrast to the situation in Kuwait and Saudi Arabia.

The findings presented above are largely consistent with earlier studies of development in oil based countries--these countries have for the most part developed along lines fundamentally different than those experienced by the staple economies. On the other hand, it appears that in oil economies such as Qatar the general absence until fairly recently of significant spread efforts has made the industrialization process much less predictable than in those countries experiencing classic patterns of stable development. The large role played by the governments of Qatar and the other oil economies has resulted in the predominance of discretionary elements over market prices as the chief factor responsible for the allocation of resources.

As noted, the arrival of a viable and self sufficient manufacturing industrial structure has long been the prime objective of Qatar's government. Industry is seen as the key to successful economic diversification and as the main assurance of continued self-sustaining economic growth. Since the large increases in oil revenues in the 1970s, the government has directed a substantial portion of its huge development outlays towards the creation of an adequate industrial infrastructure and the establishment of certain major state and joint public/private heavy industries.

It is clear from the patterns described above, however, that industrial diversification has proceeded at rates lower than might have been anticipated and that this has stemmed from the lack of internal stimuli from other sectors of the economy. Consequently the process of industrialization has depended on external rather than internal dynamics[23].

As Abdulla Hamad al-Moajil has noted for the Gulf countries as a whole:

The fact that industrialization has been an external rather than internal process for the societies of the Gulf resulted in a false understanding of the true meaning of industrialization based on a confusion between the theory of industrialization in its broadest sense and the practical process of installing industrial plant through turnkey contracts

(23) Abdulla Hamad al-Moajil, "Industrialization in the Arab Gulf States," **Arab Gulf Industry** (January 1986), p. 9

with foreign construction and engineering companies. Factories set up in the Gulf on this turnkey basis belong to the region in a graphical sense, but the existence and continued functioning of the factories is dependent on external factors. In other words, the process of industrialization in the Gulf has tended to be a geographical rather than an historical phenomenon[24].

These effects appear to have been magnified in Qatar.

Conclusions

Several tentative conclusions can be drawn concerning Qatar's industrialization experience to date:[25]

1. In Qatar the manufacture of higher-value products requires imported technology, and this requires the intensive application of working capital and energy.

2. The nature of high-technology industry creates a demand for highly trained manpower and for experience in management, neither of which can be built up quickly. This has forced Qatar to depend on imported skilled manpower in order to fill the local manpower gap.

3. Individual emirates such as Qatar find it difficult to enter international markets, and this forces Qatar to depend on foreign companies for international sales of the products of its factories. It is here, perhaps, in the problem of entering international markets, that the Gulf Co-operation Council could strengthen the position of Qatar as well as that of the rest of the Gulf Emirates.

More specifically, the problems facing heavy industry in Qatar stem from the fact that:[26]

1. No really autonomous, integrated, multi-sector industrial basis is being established. Instead, scattered industries have been established, with each plant related to a parent company abroad.

2. In many areas, the country is facing poor prospects for its major

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(24) **Ibid.**, p. 9

(25) See also Mohammed Al-Kubaisi, "Manufacturing Industry in Qatar," **The Arab Gulf Journal** (April 1982), pp. 91-92.

(26) A general discussion of these points is given in Muhammad Abd Al-Shafi, "Industrial Development in the Persian Gulf," **The Jerusalem Quarterly** (1986), pp 141-43.

exports because of saturated world markets and duplication of productive facilities in other Gulf countries.

3. A complex dependence upon foreign countries has come into being: commercial, financial and technological.

4. Because of problems in expanding agriculture there is little integration between that sector and industry. This is particularly the case in areas such as fertilizers, where local demand is fairly stagnant.

Qatar's heavy industries will continue to face a challenge as the world markets for almost totally import-oriented products continue in a recession. While the Qatar Fertilizer Company continues to earn a profit, the Qatar Steel Company and Qatar Petroleum Company are running at a loss. A potential threat to the country's heavy industries is the emergence of heavy industries in the neighboring Gulf countries that edge into traditional Qatari markets.

Since the profit margins from trade have fallen in recent years, Qatari nationals seem to look for long-term potential returns from well-planned and virtually guaranteed import-substituting industries and industries producing products for the regional market.

A major factor behind the establishment of the Gulf Cooperation Council in 1981 was the desire to create a regional marketplace to relieve the almost total dependence on oil revenues and the massive cost of imports to meet the needs of the fast-growing population in the Gulf, whether native or immigrant. Unfortunately, however, Qatar's import statistics show that in the first five years of the Council little had changed:

1. Around 50% of the country's imports still came from Japan, Britain, West Germany and the United States.
2. Imports from the GCC states amounted to only 5% of the country's foreign supplies.
3. More than QR2000 million of a total import bill of QR3046 million was spent on machinery, transport, semi-manufactured and manufactured goods.

Clearly, until Qatar and its Gulf neighbors develop an engineering industrial sector, the idea of a regionally integrated industrial economy will remain a dream.

Kuwait long ago gave up the idea of investing heavily in all but the most obvious import substitution industries, relying instead on foreign investment of accumulated surpluses, profits from which now provide around 50 percent of state revenues. Qatar may be tempted to change course and follow the same path, once gas income joins oil receipts which are expected to increase in the next decade.

It is quite apparent that the banks operating in Qatar have little confidence in the industrial process. While plenty of credit is available for consumer spending and short-term investment loans, few banks are prepared to offer the long-term financing needed for private sector industrial projects.[27]

With the sharp fall in oil prices, the era of the rapid transformation and growth of Qatar's manufacturing industry is over. The heavy industries are now in place and are required more than ever to prove their worth. The current economic slow-down and the proliferation of competing light industries throughout the Gulf can only reduce the incentives for private sector investment in industry.[28]

(27) Ken Whittingham, "Qatar," in World of Information, **The Middle East Review, 1988**, p.138.
(28) **Arab Industry Review 1987/88**, p.127