PART-A

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CHAPTER - ONE

ROLE OF INDUSTRIALIZATION IN THE ECONOMY OF IRAN

1.1 Introduction:

The problem of development must be defined as a selective attack on the worst forms of poverty. Development goals must be defined in terms of progressive reduction and eventual elimination of malnutrition, disease, illiteracy, squalor, unemployment and inequalities. We were taught to take care of our GNP because it would take care of poverty. Let us reverse this and take care of poverty because it will take care of the GNP. In other words, let us worry about the content of GNP even more than its rate of increase. This was the observation made by Mahboob al Haq (1). Planners and policy makers in all LDCs must divert their concern from a rise in GNP to a more fruitful concern on poverty alleviation measures.

It is now becoming increasingly clear that economic development cannot be simply treated as an outcome of rising GNP. For, such a rise is to be subject to a further stipulation that it is accompanied by certain forces in an interconnected and causal fashion leading to a reduction in the number of people below an absolute poverty line but not leading to a more unequal distribution of income.

It is also clear that economic development cannot be equated with industrialization. That is because a country's
high ratio of agricultural population to total population is a consequence of low productivity in that sector and poverty within it. Consequently, the non-agricultural sector that serves it tends to be small. Also, progress in industrialization is highly dependent on progress in agricultural sector. Again, economic development is much more than a simple acquisition of industries - involving an upward movement of the entire social system based on a rationally coordinated set of policies directed to rise in productivity, social and economic equilibrium, improved institutions and attitudes, etc. - a working out of certain principal forces that reveal the inner logic or consistency of an economy's development. Thus viewed, industrialization would be a concomitant or an ingredient of development but is in itself not a sufficient condition for development. Hence, any attempt at industrializing an economy which may have led to increased GNP per capita in isolation, unaccompanied by other desirable strategies within the industrial sector as also by similar growth inducing objectives and strategies in other sectors, is bound to produce forces that ultimately retard the developmental process. The case of Iran is a classic example where plans to achieve overall economic transformation failed to bring the desired results, despite plentiful resources existing, because policy makers failed to evolve a proper mix of the most desirable strategies.

In an attempt to examine our above mentioned observation in the course of this work, we take up a study of the role of
oil in the industrialisation of oil based countries and the process of industrialisation in Iran.

1.2 Role Of Oil In Industrialization Of Oil-based Economies

In simple terms, the Middle East oil rich countries possess a major resource base but they lack "an economic performance base" to borrow the term from Yusif Sayigh (2). In his book, Sayigh describes how several of these nations do possess other resources besides oil which is the most important in today's world economy. For our own present purpose of examining the impact of oil on industrialization of these economies as also on that of Iran, we ought to have some knowledge of their resource base and why we tend to say that these nations lack an economic performance base. This is also necessary from another angle. The mere existence of a resource base in oil - highly remunerative as it is - alone or coupled with other kinds of resources tended to raise hopes of socio-economic transformation of the Middle East in 1970, but it was soon to be realised that such a transformation was unattainable, unless the economies in question possessed or endeavoured to build other kinds of assets both economic and non-economic, such assets referring to what Sayigh calls the performance base. In other words, in our attempt to look into the overall impact of oil on the Gulf nations, we start with a discussion of their economic structure and how they tended to use resources and what shortcomings were faced in the process so that the expected development and transformation has yet remained unrealised.
A very unique feature of oil based economies is that a major part of their GDP is accounted for by a single resource namely oil revenue. Thus, oil revenue flows determine to a large extent the entire course of economic activities in these countries in general. The process of industrialisation in particular is subject to or determined by the magnitude of revenue that oil based nations earn from export of oil. The dominance of oil revenue in these economies becomes quite clear from Table 1.1

**TABLE 1.1**

Percentage share of oil sector and revenue in GDP and total export in selected oil based nations

<table>
<thead>
<tr>
<th>Country</th>
<th>Share of oil sector in GDP 1978</th>
<th>Share of oil in the total export 1981</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saudi Arabia</td>
<td>57.45</td>
<td>99.911</td>
</tr>
<tr>
<td>Iran</td>
<td>31.8*</td>
<td>85.00</td>
</tr>
<tr>
<td>Kuwait</td>
<td>61.793</td>
<td>86.588</td>
</tr>
<tr>
<td>UAE</td>
<td>62.786</td>
<td>93.530</td>
</tr>
<tr>
<td>Bahrain</td>
<td>87.4*</td>
<td>90.630</td>
</tr>
<tr>
<td>Qatar</td>
<td>88.1*</td>
<td>93.955</td>
</tr>
<tr>
<td>Oman</td>
<td>57.896</td>
<td>99.698</td>
</tr>
</tbody>
</table>

* figures are for 1977.

SHARE OF OIL SECTOR IN GDP 1978

SHARE OF OIL IN TOTAL EXPORT 1981
1.2.1 Capital Surplus:

In terms of their economic surplus, these oil producing countries possess a natural resource that has a high degree of demand which is also inelastic. These economies enjoy the advantage of utilising their surplus capital resources via oil exports for developmental purposes with easy import of capital and intermediate goods. It is also significant that they can raise levels of taxation on the oil industry that is mostly managed by foreigners or multinational corporations and hence enjoy favourable balance of payments unlike other LDCs.

But the oil sector poses serious disadvantages too. Capital is not generated from this sector as a function of the productive forces of their economies but it originated, as pointed out by Mallakh and Kadhim (3), in oil sector with its few and ineffective linkages to the national economy. They are thus rentier economies in the sense that the exhaustibility of oil gives rise to scarcity rent.

1.2.2 Uncertain export earnings:

Even though both oil producing countries and other LDCs have uncertainty of export earnings, there is a higher degree of uncertainty in the former because of the high degree of dependence on oil as a single source of foreign exchange. Thus, there is very little diversifications of exports which shows the degree of dependence of these countries on oil revenues.
1.2.3 Technological dualism:

Technological imparity is a common characteristic of both the oil-based and non-oil exporting economies. But the gap between technologically developed oil sector and other backward sectors is greater in oil producing countries than in the latter case in respect of gap between the modern and traditional sectors in other LDCs. Even though the oil sector itself was established in the early part of 1900s, the sector has remained in an enclave with sophisticated technology characterizing it as against the other sector that continues to employ traditional technique of production. Hence there is a wide gap between the two sectors.

1.2.4 Wage dualism:

A serious consequence of such a technological dualism is that the sophisticated modern oil sector needs highly skilled labour, managerial expertise, etc. Since these are not always locally available, in most cases dependence on foreign labour necessitates offer of far higher wages in the sector compared to that in other sectors. A wage policy with such a bias would tend to push the economy into higher cost structure by encouraging attempts at equalisation of wages by other sectors with oil sector wage rates. There is also a tendency towards higher rates of migration of rural people from traditional sector to urban areas in search of high wage jobs. It would affect development of the primary sector on
the one hand while it creates open unemployment in cities as the modern sector has limits to the absorption of unskilled labour and demands to a large extent highly skilled labour.

1.2.5 Inadequate development of primary sector:

Since the oil sector dominates these economies, there has always been a bias in favour of its development to the neglect of agricultural sector. Though, these economies are also characterised by the lower growth of agriculture while the bulk of population is engaged in the agricultural sector, however, this low agricultural performance does not derive from their poor agricultural potential which is fairly high. It is largely due to the fact that no attention was paid to this sector.

1.2.6 An overview of industrialisation:

An overview of industrialisation in these countries shows that even though the process can be said to have started when oil was discovered, it was not until 1973 when there was boom in oil prices that a real beginning was made. The two inordinate goals of planning that was initiated in various years in these countries was (1) reducing dependence on oil revenues and (2) to diversify economic resources to attain self sustained economy. In order that these are realised, efforts are underway to promote education of the people, to provide skill and training, transportation, communication, piped water, etc. through plans. Many of them have adopted the concept of growth poles whereby it was
expected that development would be diffused to rural areas. While such efforts are commendable, it has to be realised that the demands of industrialization were never taken into account. The authorities adopted these ideas that had already proved ineffective elsewhere. The pattern of industrialisation as evolved in these countries was one of developing light consumer goods industries first and moving to import substitution industries next and finally to capital intensive industries. In the process, they have encountered problems related to inadequate managerial expertise and skilled labour, technical knowhow, infrastructural bottlenecks, etc. They have realised the limited absorption capacity that is the result of these deficiencies in the context of abundant capital. The required sociopolitical and economic institutions being absent in them, they have realised that there are limits to the rate of development of their economies.

This is because their first attempts at massive industrialisation were associated with a negative impact on the primary sector and traditional industries, unhealthy urbanisation, heavy influx of foreign labour, inflation, regional disparities and unequal distribution of income.

Rural urban migration become a regular feature as industrialisation was underway and contributed to agricultural stagnation. Though attention was paid to promote education and skill formation, the process was very
slow in yielding results commensurate with industrial requirements and hence resulted in employment of foreign labour at all levels. In certain places like Qatar, foreign labour constituted as much as two-third of total labour force thus denying opportunities of employment to local labour force as industrialization spread. Again, the concentration of industries in a few cities has meant regional differences in terms of development and has left a feeling of denial of a proper share in oil revenue among citizens of backward regions.

Industrial products produced in these countries have hardly been able to withstand competition in international markets as production costs are high and quality being poor. Most of these countries have concentrated on petro-chemicals in which advanced nations already enjoy a cost advantage. By the time petrochemical industries are operative, there may be overproduction and hence price may come down drastically. Hence, there is a reconsideration of their plans in respect of petrochemical industries on a collective basis by oil rich countries to avoid duplication and competition among themselves.

It is clear from the forgoing discussion that in the oil rich countries, attempts are underway to transform their economies from one where they are raw material processors to one promoting resource based industrialization with greater comparative cost advantage. But the success of such a strategy of resource based industrialisation depends to a
large extent on viability and competitive strength of what is produced. Such a strategy may be considered successful provided it offsets the present tendency towards increased inequality in distribution of income, growing unemployment and regional imbalances.

In the following pages, an attempt has been made to assess the industrialization of Iran in the context of the performance of oil industry and the non-oil industrial activities to get an idea how revenue from oil generated forces of economic transformation in Iran and what potentials for further development did they contain.

Industrialization of Iran

1.3 Origin and development of oil industry:

The oil industry which is the most important industry in the economy of Iran, had its origin at the turn of the century when an Australian, William Knox D'Acry, in 1901, was granted by the Imperial government of Mozafar-ed-Din Shah a sixty year concession to the exploitation, exploration, production and refining of oil. In return, the government was to receive 20,000 pounds in cash and an additional sum of 20,000 pounds in paid up shares of the first company organized to explore oil in the country. In addition, Iran was to receive a royalty of 16% of the company's annual net profits (4) plus all the assets of the company upon the
expiry of the concession. Between 1901 and 1905 D' Aery invested 2,03,000 pounds for the exploitation of oil. But, his efforts were unsuccessfull and financial difficulties threatened to halt operation. However, in the year 1906 the oil Syndicate came to his rescue with an investment of 1,77,000 pounds in the venture over the next three years. About two years later, on May 26, 1908, their efforts were rewarded with the discovery of the first rich strike in Masjid-Sulaiman, and with that Iran became the first oil producer in the Middle East.

Immediately a year after the first oil discovery, on 14th April 1909, the Anglo-Iranian Oil Company (AIOC), with a capital of 2 million pounds, was formed. In the year 1914, the British Government bought a 50 percent interest (5) in AIOC to ensure the vitally needed supply of oil for the British Navy. During the same year, the production of crude oil was 2,74,000 tons a year, which rose to 13,85,000 tons, in the year 1920, further to 5 million tons per annum by 1928. Inspite of rapid rise in production, the initial revenue was small for the government. Between 1911 and 1919 Iran received a mere 3,35,000 pounds as royalties; and in the next ten years, annual income averaged just over one million pound (6). In the year 1933, a new agreement was signed which gave Iran a greater share of the proceeds from the oil industry. The agreement provided a fixed sum of four shillings per ton of oil sold instead of earlier 16 percent of net profit. Hopes for higher revenue were dashed by the
depression in the 1930's and soon after that with the advent of II World War, the government was receiving only 4 million pounds per annum. At the same time, the government started launching a series of development plans; and the oil revenue was the only major hope for financing the development. But the amount which they were getting was woefully short of financing Iran's ambitious plans for construction and development. So, they urged for a more equitable share of the oil income. But AIOC, refused to make any more concessions. After a series of long and fruitless discussions over the period of more than two years, on 15th March, 1951, parliament decreed nationalization of the industry; and the National Iranian Oil Company (NIOC) was formed. However, nationalisation did not mean easy flow of revenue that they were hoping for. In fact, the net result of abortive nationalization attempt was disastrous. There was an oil blockade by U.K. and refusal of financial grants by the U.S. The British staff of AIOC withdrew, oil production came to a temporary standstill and the industry virtually closed down. The first development plan which was already launched (1949-56) was completely undermined for lack of funds to carry out the plan.

The only good result of the blockade came in the form of boosting Iran's non-oil exports. Though the goods exported were mostly traditional goods, yet it was a way to cover up the deficit in the balance of trade account.
A solution to the three year old dispute was finally found in Oct. 1954, with the conclusion of a new agreement with an international Consortium comprising of seven major oil companies. The agreement provided for an equal share between the Consortium and NIOC of the profits from oil operations in Iran. Under this agreement, the Consortium was granted rights of exploration, drilling, refining and transportation in a specified area of Southern Iran called "Agreement Area". The duration of agreement was 25 years and the companies had the right to extend it by three periods of five years each. Under the agreement, the Consortium had direct control over oil production, export, domestic sales and even oil prices.

Though the agreement was far from satisfactory, still it was a great step forward for Iran. The production of oil suddenly increased. In the year 1957 a law was passed which made NIOC responsible for the development of oil resources, in all parts of the country outside the Agreement Area and encouraged the participation of foreign companies in the form of partnership. Soon after the passing of the law, NIOC discovered an oil field at Elburz near Qum, another large oil field was discovered and put into production in Naft-i-Shah at the northern end of Khuzistan close to the Iraqi frontier which yielded almost 5,00,000 tons in 1961.

When the Consortium, which also operated in some other countries of Middle East, cut 10% of prices of Middle East crude oil without a mere consultation with the concerned
governments in 1959 and carried out a subsequent reduction up to 6% in 1960, the six members of Middle East formed the organizations of petroleum exporting countries (OPEC) to safeguard their rights. The OPEC members demanded reduction of marketing expenses and royalty payments. By 1970, the demand for crude oil increased, OPEC members which were getting a low share of revenue raised the posted prices of crude oil and asked for equity participation in the oil companies operating in their countries. It meant that at least, the government could rely on oil as a main source of revenue. Price of oil increased from 142.3 to 308.4 cents per barrel (8), and further achievement was the Iranian take over of the operation of consortium.

The years following 1973, were the years of glorious economy with booming of the oil revenues. The economy was growing rapidly and at the same time becoming more dependent on oil until 1978-1979. That was the year of revolution in which the oil production came to a standstill. As a result, the economy was also shattered. Further, the disastrous event of the war imposed constraints on Iran which disrupted economic development and brought more dependence on oil revenues.

Having discussed the origin of the oil industry, now, we switch to a study of the impact of oil revenues on the economy of Iran during plan periods and early years of revolution.
1.3.1 Impact of oil on the economy:

The significant impact of oil industry on the economy can be examined through revenue earning capacity for government spending. i.e., backward linkage and inter-relationship of oil sector with other sectors of the economy i.e., forward linkage.

Prior to the plan period and nationalisation of oil industry, the revenue received by the government was relatively small and, therefore, the budgetary impact of oil was correspondingly small. Oil revenue constituted only a modest proportion of total government receipts. A major part of government finances during 1910-50 period came from sources other than oil. Thus, about two-thirds of total government revenue were generally derived from taxes, including special excise taxes on sugar and tea, customs and road levies. Monopoly revenues, excises, and customs duties on an average furnished about 60% of total government receipts during the years prior to nationalisation (9).

In respect of forward linkage, except for the sale of oil for domestic consumption, the impact was negligible as the industry remained virtually divorced from the rest of the economy. No by products industries were established and there was no link between the company's end product and other industries.

After nationalisation of oil industry, Iran witnessed
the launching of four consecutive development plans. Oil production rose significantly during these plans. The production of oil, contribution to GNP and export of oil, during plan periods are computed in the following Table 1.2.

### TABLE 1.2

**Development of oil sector and its contribution to GNP and export under plan periods**

<table>
<thead>
<tr>
<th>Years/Plan</th>
<th>Production of oil in 000 barrel per day</th>
<th>Share in export in 000 barrel per day</th>
<th>Contribution to GNP in billion rials (at current price)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Plan (1949-56)</td>
<td>240</td>
<td>192.0</td>
<td>10.63</td>
</tr>
<tr>
<td>II Plan (1956-62)</td>
<td>964</td>
<td>867.6</td>
<td>64.4</td>
</tr>
<tr>
<td>III Plan (1963-67)</td>
<td>2000</td>
<td>1886.7</td>
<td>112.7</td>
</tr>
<tr>
<td>IV Plan (1968-72)</td>
<td>4416.3</td>
<td>3956.2</td>
<td>264.0</td>
</tr>
<tr>
<td>V Plan (1973-78)</td>
<td>5523.7</td>
<td>4712.0</td>
<td>1658.0</td>
</tr>
<tr>
<td>1979-84</td>
<td>2351.5</td>
<td>1759.0</td>
<td>504.1</td>
</tr>
</tbody>
</table>


As Table 1.2 indicates, the contribution of oil sector to GNP increased about 155 times from 1949-50, to the end of V Plan. Oil revenue grew about six times between the first and second plan, but then it was moderate as the economy
OIL SECTOR AND ITS CONTRIBUTION TO GNP

PLAN PERIOD

OIL PRODUCTION
EXPORT SHARE

PLAN I  PLAN II  PLAN III  PLAN IV  PLAN V  1979-84

000 BARREL PER DAY

0  1000  2000  3000  4000  5000  6000
passed through the third and fourth plans doubling itself each time but then it rose very sharply in the fifth plan period by six times. The Table also reveals that between 1978 and 1984, there was a substantial decline in oil revenue. Both these features of rise on previous occasions and decline later up to 1984 were due to rise initially of oil production that stabilised through the 1960s and until mid 1970s but subsequently fell to very low levels. Corresponding changes are also seen in respect of the quantum of oil exported throughout the period from 1949-50 to 1984.

The impact of oil industry during these plans is quite impressive. The indirect impact of oil industry or backward linkages was in terms of financing of the development plan or budgetary support. All the plans for development were financed by the revenues from oil. It has been the largest single source of income. It has contributed enormously to the country’s foreign exchange earnings, and this abundance of foreign exchange has allowed the government to pursue its development objectives with considerably greater ease and without the usual concern for sudden and unpredictable fluctuations in the balance of international payments. The significance of the direct impact of oil revenue can be measured only in terms of its relative share in financing of various development plans of the economy as indicated in the following Table 1.3 below.
TABLE 1.3

Share of oil revenue in financing development plans
(figures in billion rials)

<table>
<thead>
<tr>
<th>Plan period</th>
<th>Investment</th>
<th>Contribution of oil revenue</th>
<th>% share of oil in total investment in different plans</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Plan</td>
<td>21</td>
<td>7.8</td>
<td>37.1</td>
</tr>
<tr>
<td>II Plan</td>
<td>81.1</td>
<td>60</td>
<td>73.0</td>
</tr>
<tr>
<td>III Plan</td>
<td>230</td>
<td>144</td>
<td>62.6%</td>
</tr>
<tr>
<td>IV Plan</td>
<td>554</td>
<td>349</td>
<td>63</td>
</tr>
<tr>
<td>V Plan</td>
<td>2461</td>
<td>1969</td>
<td>80</td>
</tr>
</tbody>
</table>


That oil revenue constituted by far the biggest source of development finance in Iran can be seen from Table 1.3. It is revealed here that the share of oil revenue in percentage terms stood at 37.1%, during the first plan, doubled itself during the second plan, slightly declined in the periods of third and fourth plan. But in the fifth plan itself, the share of oil revenue in total plan outlay reached the 80% mark indicating the heavy dependence of the economy on this resource.

The second seven year plan was launched in 1956 and called for an expenditure of 70 billion (10) rials which later on increased to 81.1 billion rials, divided among four
remaining share was to be spent on the unfinished projects initiated in the first plan. About 60 billion rials was allocated from Iran's share of oil profits and 26 billion rials from foreign borrowing. During the years of this plan, 80% of oil revenue was to be devoted directly to the organization of the plan, while the remainder was to be paid into the general budget. This policy was however, slightly modified for the III Five Year Plan.

The Third Five Year Plan was initiated with the total expenditure of 190 billion rials which increased in subsequent years to 230 billion rials with a notable increase in the share allocated to industry (industry and mines 24%, agriculture 23%, transport and communication 25%, social programmes 28%). Though the government had changed its policy regarding share of oil in plan organisation and reduced it from the earlier 80% to 55%, yet oil was still the main source of finance.

The oil revenue constituted by far the most important source of development funds representing 62.6%, followed by total domestic financing upto 28.4%, and foreign loans representing 9%. Receipts from oil allocated to the plan organisation in III Plan period represented about three-fourth of total disbursements for development expenditure. The achievement of the plan was also impressive particularly in the area of industries. The rate of growth of industries during III plan period was 13.7% which was more than the rate of growth (11) of the other sectors.
The role of oil revenues in financing the fourth development plan, stretching over the period of 1968-1972, is clearly apparent from the Table 1.3. The total outlay of the plan was 554 billion rials allocated to the major sectors of the economy. The contribution of oil sector to this ambitious plan was 80% of its total receipt i.e., 349 billion rials, which constituted 63% of the total investment of 554 billion rials during IV plan. As a result, many industrial ventures were inaugurated. Most of the industrial expansion was in the field of automotive, electrical and petrochemical industries.

The Fifth development plan began in 1973 and was completed by the end of 1978 with the total revised investment of 2461 billion rials. The plan, as government declared, was supposed to be almost "equal to all the four previous plans combined". The contribution of oil to this plan was 1969 billion rials i.e., 80% of total investment.

Thus, it is apparent from the above analysis, as oil revenues increased during plan periods, the economy became more dependent upon them and the inherent threat of lower oil revenues became potentially more damaging. For instance, the III Plan was 62 percent dependent upon oil revenues, while during the IV plan it was 63% and in the V plan the dependence had risen to 80%. This dependence on oil revenue had decreased during the post revolution years. However, it seems appropriate to mention that this reliance had decreased
not because of diversification or due to more self sufficiency, but due to war and the government was hence obliged to raise revenue from other sources like imposition of more taxes, etc. The oil revenue therefore, throughout, was the backbone of the economy. Further, as Mr. Vakil (12) has opined "these revenues are on the one hand, like the blood of the economy, carrying badly needed investment resources to particular areas for purposes of expanding productive capacity, and, on the other hand, they are capable of producing an excessive liquidity situation, if capital resources become suddenly out of line with other complementary factors of production such as skilled labour, technology, organisational skill, natural resources or general infrastructural services, etc.

The influence of forward linkages of oil on the economy represents the flow of low cost fuel from the oil industry to the national economy. The cheap source of fuel was expected to provide an inducement to the economy to substitute oil for other energy resources and to create a petroleum based economy with petrochemicals and chemical industries (13).

1.4 Origin and development of non oil sector:

When the first session of the VIII Parliament reopened in December, 1930, it was to be known in the history of the country as the "Economic Parliament". From that time on, every effort was made to make Iran as self-sufficient as possible and the government began the task by assuming the
role of the "Supreme Economic Organizer (14)". Industrial development of the nation which was, handicapped by restrictions or changes in tariffs imposed by treaties during the previous dynasty, was to be developed on a large scale. The notification of the government monopoly of the foreign trade on February 1931, gave the government the necessary instruments to encourage the development of private and public industrial establishment and exercise the principle of the protection of the infant industry.

1.4.1 Development of industrial units:

As a result of the government policy, a relatively larger number of industrial units with more and more investment were established since 1930 as shown in the Table.
### Table 1.4

**Industrial Establishment**

<table>
<thead>
<tr>
<th>Years</th>
<th>No. of large units</th>
<th>Trend %</th>
<th>Total No. of establishments</th>
<th>Trend %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1930</td>
<td>38</td>
<td>-</td>
<td>939</td>
<td>-</td>
</tr>
<tr>
<td>1935</td>
<td>79</td>
<td>208</td>
<td>1,952</td>
<td>208</td>
</tr>
<tr>
<td>1940</td>
<td>470</td>
<td>595</td>
<td>11,615</td>
<td>595</td>
</tr>
<tr>
<td>1945</td>
<td>635</td>
<td>135</td>
<td>15,692</td>
<td>135</td>
</tr>
<tr>
<td>1950</td>
<td>665</td>
<td>105</td>
<td>25,000</td>
<td>159</td>
</tr>
<tr>
<td>1955</td>
<td>694</td>
<td>104</td>
<td>35,000</td>
<td>140</td>
</tr>
<tr>
<td>1960</td>
<td>2,178</td>
<td>314</td>
<td>70,000</td>
<td>200</td>
</tr>
<tr>
<td>1965</td>
<td>3,661</td>
<td>168</td>
<td>164,115</td>
<td>234</td>
</tr>
<tr>
<td>1970</td>
<td>5,651</td>
<td>154</td>
<td>225,000</td>
<td>137</td>
</tr>
<tr>
<td>1975</td>
<td>7,535</td>
<td>133</td>
<td>300,000</td>
<td>133</td>
</tr>
<tr>
<td>1980</td>
<td>8,037</td>
<td>107</td>
<td>320,000</td>
<td>107</td>
</tr>
<tr>
<td>1985</td>
<td>8,984</td>
<td>118</td>
<td>357,690</td>
<td>112</td>
</tr>
</tbody>
</table>

**Source:**

A feature of the process of industrialisation in Iran is the growth of various kinds of industrial activities manufacturing hundreds of products that economy would require continuously. The number of establishments as seen in Table 1.4.
1.4 not only indicates the magnitude of industrial units, but also reveals the momentum of such activities. For, industrial growth in Iran was characterised by increasing number of small units always accounting for more than 90% of the total units existing. From less than 1,000 units in 1930, small establishments in 1985 numbered around three and a half lakhs. Much of this growth took place between 1955 and 1975 and especially during years of economic recovery after 1955 and later after 1964. The same trend is indicated by large units also.

Many of these industrial units were concentrated round the capital. In the year 1940, out of 470 large units 251 of such units were located in Tehran and 219 in other areas (15) of the country.

After the outbreak of II World War, very few industrial units were started. By the end of the war, there were only 15,000 such units (16) in operation throughout the country, out of which, 635 units were comparatively large units. The number of industrial workers exceeded 2,00,000. Among the largest categories of industries(17) oil industry accounted for workers 50,000; Railways for 24,000; Carpet weaving for 30,000; Textile plants for 28,000; sugar factories for 5,000, and match factories for 4000.

There was a set back to industrial activities as a result of nationalisation of oil in 1951. Not only did it mean inadequate mobilisation of capital for industrial
investment but indirectly it resulted in serious foreign exchange shortage, raising domestic costs of production and thus making imports cheaper than domestic products. It was only three years later, after a new agreement was reached for oil production that the position eased and imports became dearer that had an expansionary effect on industries. Thus, in the 1950s, industrial activities in Iran tended to fluctuate with the changing fortunes of oil sector. Throughout the course of the next two and a half decades, we witness the same tendency and oil revenues have always been the only determining factor of the process of Iran's industrialisation and in fact of the whole course of its economic development.

In the late 1950s, the government was committed to industrial development with greater degree of policy orientation. The II development plan was launched in 1956 and in order to facilitate the process, the Industrial and Mining Development Bank of Iran (IMDBI) was established. The bank was to provide finance for industrial expansion and help industries in their feasibility studies. Between 1956 and 1967, there was a period of steady growth. The share of industry in total investment was small in relation to the communication and other infrastructural facilities without which the development of a modern manufacturing sector was impossible.

That the government focussed its attention on industrialisation at least in theory from the beginning might
have been dictated by the general belief all over the world that industrialisation was a necessary ingredient of development. But when it was adopted as a practical policy during the 1950s and especially after 1956, the reason was a more conducive economic situation created by an easy flow of oil revenue.

In 1958, 300 different products were manufactured, while the number had increased to over 450 by 1960 including those from many foreign ventures (18).

The first of these was car assembly industry. An agreement to assemble a passenger car, the Fiat-1100, was signed (19) in 1960. Another agreement came with the Rootes groups of the United Kingdom, whereby Hillman cars were assembled in Iran using British made components. The agreement was kept operative even when the American Chrysler Company took over Rootes. The model produced was family size Hillman Hunter and Avenger cars, called PAYKAN.

Establishment of heavy industry was a major stimulus in the process of industrialisation of Iran. In this regard, the Soviet Agreement was an historic turning point. In October, 1965, Soviet Union agreed to the following proposals:

1. Establishment of a steel mill in Isfahan with initial capacity of 500 to 600 thousand tons per annum and an annual expansion capacity of 2 million tons.
2. The construction of a pipeline to transport natural gas from Iran to the country.
3. The construction of a motor and machine factory.
4. Extension of 260 million rubles of credit with 2.5 % interest per annum.
5. Repayment of the debt within a period of 12 years in twelve equal instalments, beginning a year after the contract had started (20).

After this agreement, many other industrial deals with both Socialist and Imperialist countries were finalised, the most important of them being, the 3 joint ventures of petrochemical project with American companies, a fifty/fifty export oriented venture with Allied Chemical for ammonia, urea, phosphoric acid and aluminium phosphate; an LPG plant for export on a 50/50 basis with AMOCO; a plant to produce PVC and detergents for the domestic market on 26/74 basis with B.F.Goddrich (21).

A tractor plant was set up with Romanian collaboration in Tabriz in 1968, a joint venture of Iran-Czech machine tools unit came up at Tabriz in 1970, and Iran Czech motorcycle plant in 1971. A heavy metal plant and an aluminium smelter at Arak were the other ventures taken up. By the end of the 1960s there were 90 foreign companies (22) established in Iran.

1.4.2 Surge And Swing Back Of Non-Oil Sector

The years between 1970 and 1984 were eventful years as
far as Iran's economy in general was concerned and in particular the industrial sector. This period may conveniently be divided into two equal periods—the period from 1970 to 77 witnessing industrial boom and that between 1977 and 1984, industrial decline. It is difficult to say whether in the latter period a decline in modern sector was the cause for or an outcome of political upheavals in terms of revolution that occurred in 1979 or war with Iraq that commenced in 1980. However, the period 1970-77 was marked with increased industrial activity because in 1973, Iran experienced an unexpected inflow of oil revenue which was also unprecedented. As Table 1.5 indicates, industrial investment rose from 27.3 billion rials during third plan period ending in 1967 to 113.1 billion rials during the fourth plan and further to 846.4 billion rials between 72-78 i.e. end of fifth plan period but declined to 127.6 billion rials during 1978-79 1984-85 period. However, data with reference to employment generation indicates the same rate of increase over different periods indicating that the labour absorptive capacity of industries was very low. Much of the rise in industrial investment was accounted for by imported machinery and equipment and by construction activity, the former absorbing very less of labour force and the latter accounting for major share in additional employment creation as a result of boom in construction activity. Thus, out of total labour force of 2.5 million employed in the economy, only 70,000 were employed in the non-oil industries. But,
construction activity on the other hand absorbed about a quarter of additional (23) labour.
TABLE 1.5

Industrial development during plan periods

<table>
<thead>
<tr>
<th>Plan period</th>
<th>Investment in billion rials</th>
<th>Employment in thousand</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Plan</td>
<td>3.0</td>
<td>1176</td>
</tr>
<tr>
<td>II Plan</td>
<td>7.0</td>
<td>1520</td>
</tr>
<tr>
<td>III Plan</td>
<td>27.3</td>
<td>1891</td>
</tr>
<tr>
<td>IV Plan</td>
<td>113.1</td>
<td>2730</td>
</tr>
<tr>
<td>V Plan</td>
<td>846.4</td>
<td>3770</td>
</tr>
<tr>
<td>1984/85</td>
<td>127.6</td>
<td>4697</td>
</tr>
</tbody>
</table>

Source: 1. Ministry of Industries and mines.  
2. Central Bank of Iran.  
3. Iran V development plan.

The process of industrialisation between 1970-77 was carried out with import concession made available to entrepreneurs. Easy credit facilities that possible with excessive exploitation of the economy’s oil resources, profit motive that ruled high in the minds of entrepreneurs etc resulted in misdirection of resources, into economic ventures of short gestation period mainly outside manufacturing activity with little positive impact on output and employment generation. These developments had the impact of creating imbalances in the economy in respect of foreign trade and agricultural sectors. Increased governmental expenditure on non-development activities to a large extent generated forces of inflation ultimately by 1977. These forces were
INDUSTRIAL DEVELOPMENT DURING PLAN PERIODS

INVEST. (BILL. RIALS) & EMPLOY. (THOUS.)

PLAN PERIOD

INVESTMENT
EMPLOYMENT

I PLAN  II PLAN  III PLAN  IV PLAN  V PLAN  1984-85
reinforced by a declining rate of rise in oil revenue contrary to all expectations so that several projects were shelved. A scaling down of all sectoral activities and adoption of policy measures to restore equilibrium thus became inevitable. There were widespread strikes in many industries including oil industry that brought about a complete standstill in production and export activity. Soon the fever gripped banks, government departments and public and private sectors. These paralysing events of the latter half of 1978 and early 1979 resulted in a major sociopolitical revolution and overthrew the then ruler Mohammed Reza Shah.

Internally, Iran was characterised by uncertainties in respect of private ownership, absence of clearly defined set of rules governing an Islamic economic system and of planned development during this period. After the revolution, the new government took certain steps to get the economy going. But an aftermath of revolution was the hostage crisis, in a bid to solve which, the U.S. first of all severed trade ties with Iran but later, to force a solution, collectively with various other developed nations, put an embargo on oil imports from Iran. The resulting oil glut forced Iran to cut back production from the previous levels of 3.5 million barrels per day to 1.5 million barrels per day - a decline of about 57% over the 1979 figure. Inflation of the order of 25.5% over 1980 and of 30.5% over 1981 gripped the economy to reverse the trend towards an economic recovery (24).
The Iran - Iraq war which began in 1980 further intensified the economic crisis as Iraquis attacking Iran’s oil installations. By 1984-85, Iran had an enlarged budget deficit of 954 billion rial as against 170 billion rials as against 170 billion rials in 1976-77 (25).

To overcome the situation, the government raised taxes on several counts. But the tax yield was poor as imports had been cut and production of several commodities still had not picked up. Tax yield was also low as the efficiency of collecting taxes had been impaired. The question of cut back on government spending took the form of reduced developmental activities to a large extent.

Iranian currency that was overvalued during the period also added to her economic problems. An overvalued currency meant reduced imports and hence lower levels of economic activity. Non oil exports, particularly traditional items of exports were adversely affected making them less competitive in world markets. Profit seeking capitalists invested in stocking consumer products and scarce raw materials and in black marketing that held back all prospects of an industrial recovery.

1.5 Contribution to GDP:

Iran’s economic development during the plan period was exceptionally rapid. During these years, particularly after the III plan period, the gross domestic product (GDP) grew in
real terms by an average annual rate of around 9.3% ranking Iran as one of the fastest growing developing countries in the world. The role of oil sector in the growth performance of the Iranian economy is quite crucial. In simple terms, the oil sector provides the capital needed for the growth of the other sectors without receiving any substantial return flow of resources from either the modern or the indigenous sector. Share of oil income in total national income increased from 10.6% in 1959-60 to 19.5% in 1972-73; oil revenues in 1974 amounted for over 20 billion dollars (26). During this period, as the share of oil in total income increased, the real gross national product increased by an average rate of 11% a year. After 1973-74, this rate was exceptionally high because of spectacular rise in oil income (27). However, this rapid increase of GNP was not just a statistical result of oil revenues. In fact, the real non-oil GDP grew by an average annual rate of 10.8% over the years 1963-64 - 1977-78, which was 1.5% points higher than the annual rate of growth of GDP with oil, indicating a considerably broader base of development than is normally realized. Nonetheless, the dominance of the economy by the oil and the industrial sectors with agriculture and the traditional sector of the economy persistently lagging behind is undeniable (28). The past performance of the economy as visualised above cannot be complete without a glimpse at the sectoral performances. Table 1.6 shows the sectoral value added at constant 1972 prices of the plan period and also includes the ratio of each sector to GDP,
<table>
<thead>
<tr>
<th>Sectors</th>
<th>I Plan</th>
<th>II Plan</th>
<th>III Plan</th>
<th>IV Plan</th>
<th>V Plan</th>
<th>1984 - 85</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Amount</td>
<td>% Share</td>
<td>Amount</td>
<td>% Share</td>
<td>Amount</td>
<td>% Share</td>
</tr>
<tr>
<td></td>
<td>in GNP</td>
<td>in GNP</td>
<td>in GNP</td>
<td>in GNP</td>
<td>in GNP</td>
<td>in GNP</td>
</tr>
<tr>
<td>1. Oil sector</td>
<td>2.04</td>
<td>2%</td>
<td>45.1</td>
<td>10.7%</td>
<td>119.8</td>
<td>16.2%</td>
</tr>
<tr>
<td>2. Non-oil</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sectors</td>
<td>154.71</td>
<td>98%</td>
<td>372.0</td>
<td>-</td>
<td>620.2</td>
<td>-</td>
</tr>
<tr>
<td>a) Agriculture</td>
<td>n.a</td>
<td>-</td>
<td>136.5</td>
<td>32.8%</td>
<td>184.0</td>
<td>24.8%</td>
</tr>
<tr>
<td>b) Industry</td>
<td>n.a</td>
<td>-</td>
<td>79.0</td>
<td>18.9%</td>
<td>159.3</td>
<td>21.6%</td>
</tr>
<tr>
<td>c) Services</td>
<td>n.a</td>
<td>-</td>
<td>156.5</td>
<td>37.6%</td>
<td>276.9</td>
<td>37.4%</td>
</tr>
<tr>
<td>TOTAL GNP</td>
<td>156.75</td>
<td>100%</td>
<td>417.1</td>
<td>100%</td>
<td>740</td>
<td>100%</td>
</tr>
</tbody>
</table>

NOTE: For computing average rate of growth the II plan has been taken as base.

SOURCE: Reproduced from Bank Markazi Iran, Annual Report and Balance Sheet, various issues.
A cursory look at the table indicates that during the period under consideration, agriculture recorded the least average growth in comparison with other sectors. The share of this sector in total GDP has declined uniformly over the whole period from 26.9% at the end of second plan period to 13.1% in the year 1984-85. The relatively slower performance of agriculture was indicative of the still traditional production techniques, the limited absorptive capacity of agriculture, the water constraints in Iran itself and the generally low rates of growth of agriculture observed all over the world.

Industry, on the other hand, showed a remarkable rate of growth during this period particularly in the decades of 1960's and 1970's. Industry came to occupy a dominant place in the economy as a whole. This, of course, suggests that the internal recycling of oil revenues towards the productive sectors has tended to benefit industrialisation. Indeed, industrialisation has been and continues to be the focal point of Iran's development efforts.

As the oil revenues grew in quantum jumps, the development in industrial sector kept up its own tempo and was characterised by capital intensity to an increasing extent.

In regard to the services sector, there was a steady increase in percentage share of this sector to GDP until the year 1978. During post revolutionary period, this share
increased at a faster rate and reached 54.7%.

The oil sector, no doubt, has played a major role in the growth performance of the economy. Indeed, the growth in the value added of the oil and gas sector has been a main contributor to the growth of GDP as reflected in Table 1.6.

Thus, in II and III plans, the gains in the oil sector's contribution to GDP are appreciably slow; in fourth plan, these gains showed a distinct acceleration, which continued through the fifth plan (29). During 1978-1985, because of the economic upheavals of the country which resulted in reduction of oil production, this share declined dramatically.

1.6 Employment generation:

Employment and the allocation of the labour force between different sectors can also be crucial in the process of development. A more clearly defined manpower policy is indispensable for systematic and sustained economic growth. Table 1.7 provides a sectoral analysis of employment pattern of the economy.
### TABLE 1.7
(in 000 Persons)

DISTRIBUTION OF EMPLOYED PERSONNEL BY VARIOUS SECTORS OF ECONOMY SINCE PLANE PERIOD

<table>
<thead>
<tr>
<th>Sectors</th>
<th>I Plan</th>
<th>II Plan</th>
<th>III Plan</th>
<th>IV Plan</th>
<th>V Plan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Oil sector</td>
<td>63</td>
<td>-</td>
<td>44</td>
<td>-6.16</td>
<td>46</td>
</tr>
<tr>
<td>2. Non-oil Sector</td>
<td>5731</td>
<td>-</td>
<td>6275</td>
<td>-</td>
<td>6794</td>
</tr>
<tr>
<td>a. Agriculture</td>
<td>3325</td>
<td>-</td>
<td>3261</td>
<td>-0.27</td>
<td>3141</td>
</tr>
<tr>
<td>b. Industry</td>
<td>1176</td>
<td>-</td>
<td>1520</td>
<td>4.17</td>
<td>1891</td>
</tr>
<tr>
<td>c. Services</td>
<td>1230</td>
<td>-</td>
<td>1494</td>
<td>3.06</td>
<td>1762</td>
</tr>
<tr>
<td>Total</td>
<td>5794</td>
<td>6319</td>
<td>1.29</td>
<td>6840</td>
<td>1.28</td>
</tr>
</tbody>
</table>

**NOTE:** For computing average rate of growth, I plan is taken as base.

**SOURCE:**

According to this table, the total employment increased from 5794 thousands during the first plan period to 6319 thousands during II plan period and 6840 thousands in III plan whereas it was 9179 thousands in IV plan and 10560 thousand in V plan period.

Further, oil the sector, despite its glamour and magnitude, employed a very small portion of total labour force. Employment in the oil industry which was 63000 during I plan declined through II plan and continued with this trend in later years. In V development plan, the total labour force in this sector was only 50,000 persons. It engaged less than one percent of total manpower during the last plan. The decline in employment in oil sector is mostly due to its capital intensity.

Indeed, as employees of the oldest, most technically advanced, and largest industrial unit, the workforce of the oil industry forms the country's reservoir of skilled and technical manpower resources. A considerable number of these employees mainly the skilled workers, technicians, and engineers have received their training in the schools, universities and apprenticeship programmes set up and operated by the oil industry to meet the industry's manpower requirements. The benefits of these training programmes have not been limited exclusively to the oil industry, but rather have helped in the industrial expansion of the country as a whole. A number of skilled workers trained in these schools
such as welders, electricians, automechanics and engineers have subsequently left the oil industry to take position in other industrial units of the country where they have helped to meet the acute shortage of skilled manpower in the process of industrialisation (30).

On the other hand, there is the non-oil sector which consists of three different sectors viz., agriculture, industry and services. Looking at the distribution of workers in the three broad sectors of economic activity, it appears that during the five development plans carried out in Iran, the percent share of labour employed in the agricultural sector declined. At the end of the first plan, this sector engaged 57% of total labour force which decreased to 52% in II plan, 46% in III plan, 40% in IV plan and lastly to 34% in V plan period. Considering the low level of productivity in this sector, and its decreasing share in national income, the portion of the labour force active in this area is excessive, indicating the possible existence of a large pool of disguised unemployment. While employment climbed steeply in the fast growing industry and services sector, because they experienced substantial booms, agriculture was relatively slow moving, and losing workers to the cities. The proportion of employment in industry increased from 20 percent to more than 36 percent of the total labour force during the period from first plan to fifth plan. Small establishments employed two-thirds (31) of the manufacturing workforce and contributed just over one-third
of value added and gross output in manufacturing as at 1969.

Most of the industrial labour force was engaged in textile and clothing, food processing and footwear industry. Between 1956 and 1966 the pattern of employment in major industries remained more or less the same. Textile accounted for 60% of total labour force and food processing for 10% of it (32). In 1976, textile retained its leading position, accounting for 30% of all employed workers, followed by automobile industry (33) with 14.1%.

However, shortage of skill seemed to have been one of the obstacles to labour mobility and thus, to a more efficient use of resources in the country. The rate of unemployment, that was large, coupled with shortages in skilled labour in certain categories indicated inappropriate training and use of labour force.

1.7 Share Of Export

Iran, like any other major oil exporting economy witnessed a spectacular change in its foreign trade sector during the last three decades. The value of exports, oil and non-oil, thereof have been indicated in Table 1.8 below.
### TABLE 1.8

Share in total export since plan period (Million dollars)

<table>
<thead>
<tr>
<th>Sectors</th>
<th>I Plan</th>
<th>II Plan</th>
<th>III Plan</th>
<th>IV Plan</th>
<th>V Plan</th>
<th>1984/85</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Oil export</td>
<td>87.4</td>
<td>811.2</td>
<td>118.3</td>
<td>1806.8</td>
<td>140.5</td>
<td>3369.2</td>
</tr>
<tr>
<td></td>
<td>2. non-oil export</td>
<td>122.2</td>
<td>114.7</td>
<td>181.8</td>
<td>334.6</td>
<td>625.2</td>
</tr>
<tr>
<td>a. Industrial product</td>
<td>47.7</td>
<td>n.a</td>
<td>16.3</td>
<td>-4.7</td>
<td>61.7</td>
<td>1.54</td>
</tr>
<tr>
<td>b. Traditional product</td>
<td>62.3</td>
<td>n.a</td>
<td>158.5</td>
<td>11.02</td>
<td>256.4</td>
<td>16.39</td>
</tr>
<tr>
<td>c. Other</td>
<td>12.2</td>
<td>n.a</td>
<td>7.0</td>
<td>-3.04</td>
<td>16.5</td>
<td>1.85</td>
</tr>
<tr>
<td>Total</td>
<td>209.6</td>
<td>925.9</td>
<td>1988.6</td>
<td>3703.8</td>
<td>24125.2</td>
<td>1990.75</td>
</tr>
</tbody>
</table>

**NOTE:** For computing average rate of growth I plan period has been taken as base year.

**SOURCE:** Ministry of economic affairs & finance, customs administration, Iran's Foreign Trade Statistics (Annual)
The Table indicates a rise in total exports of the country during the period under consideration. At the end of the first plan period, the value of export hovered around 209 million dollars, reached a figure of $925 million in the II plan, $1988 million in the III plan; $3703 million in the IV plan; $24125 million in V plan and $19907 million in 1985.

Overshadowing, by far, all transactions in the external trade sector of the economy was the export of oil and oil products (34). Iran was the fourth largest exporter of oil in the world. Total oil exports increased from $87 million at the end of I plan to $23500 million at the end of V plan. However, oil export declined to $19546.4 in 1985 due to the war and also due to the world wide oil glut.

Oil has always been the only major determinant of exports, contributing almost 90 percent to Iran's foreign exchange earning.

The growth of oil revenues during the period upto 1973 was a result of a rapid rate of reserve depletion rather than higher oil prices. The rise in per barrel oil revenue during 1960-70 was meagre indeed, increasing from $0.80 in 1960 to $0.86 in 1970. Nevertheless, as a result of OPEC's actions, Iran's per barrel revenues increased (35) to $1.25 in 1971 and $1.36 in 1972. After 1973, one of the major factors which explained the phenomenal growth of oil exports was the quadrupling of oil prices (36) in the late 1973 and the early 1974.
On the other hand, Iran's non-oil exports have also increased in a similar pattern of growth as oil export. In other words, non-oil exports were able to keep pace with the growth of oil exports, although in absolute terms they still constituted a relatively small proportion of foreign exchange earning capacity (37). The value of non-oil export increased from $122.2 million at the end of I plan to $625 million in V plan period and decreased due to declining production in the economy after the revolution and the war. The non-oil exports consisted of traditional items like carpets, fruits, hides, skins and other agricultural products and new industrial products such as detergents, shoes, transport vehicles, chemical products, foodstuffs etc. The former continued to dominate non-oil exports of Iran. However, the relative share of these commodities in total non-oil exports were on the decline. The latter i.e. new industrial products, accounted for nearly 22 percent of the total value of non-oil export during V plan period. The share of manufactured products in the total value of non-oil exports grew from 18 percent in 1971/72 to 22 percent in 1977/78. This meant the eventual development of a comparative advantage on international markets for certain manufactured items.

1.8 Conclusion

The extent of industrialisation in Iran so far reviewed has been mostly in quantitative terms. Impressive as it
might appear, the performance of this sector was, in fact, suboptimal. Developments in this sector were subject to certain serious limitations, but for which we could attribute greater optimality to this sector. These limitations were themselves exogenous to this sector and were not inherent to it. Any judgement about the desirability of greater optimality or higher efficiency of performance must take into consideration these exogenous factors that limited the sector's progress.

These limiting factors first of all relate to time horizon. Even though the basic idea of industrialisation in Iran dates back to the latter half of the 1940s, it was not until 1962, when the country's third plan was formulated that priority was accorded to this sector. Hence a real beginning can be said to have been made to industrialize the country from the third plan onwards when for the first time emphasis was laid on to raising industrial production as an important goal. This emphasis on the secondary sector did continue through the fourth and fifth plans. But by 1976, i.e. three years after the completion of the fourth plan, Iran's economy was beginning to show signs of deceleration and stagnation. Whatever progress the industrial sector achieved was thus spread between 1962 and 1972 to a large extent. And this limited time horizon, it seems, could not have permitted an industrial contribution that was in any way higher than what was achieved.
Secondly, the question of time horizon apart, a serious limitation also appeared in the form of lack of direction to private sector initiative until 1968, i.e. the beginning of the fourth plan. The first two plans contained no reference to private sector participation while the third related to only certain forecasts for private initiative. This inadequacy resulted in the absence of concrete policies aimed at encouraging private sector participation in large scale industrial activities. Thirdly, coupled with this lack of involvement, the sector had to operate under a great degree of uncertainty. For, a more vigorous private entrepreneurial activity was frequently subject to uncertain demand prospects for goods and services. Beginning with oil nationalisation in 1951, when a foreign exchange shortage set in, the few domestic industries that existed at the time experienced increasing demand, as imports became dearer, till 1955-56; but then for three years till 1960 with reappearance of oil revenue, demand for domestic products declined. During the next three years at least, there was an industrial recession. Thereafter, the position improved till 1970. Fourthly, uncertainty crept in once more as the government, through a law enforced in 1971, stipulated that workers must have a share in industrial management. In the fifth place by 1973 itself, with the onset of oil boom, industrial sector was on the verge of an unprecedented expansion. But it was also because of the oil boom that, with enormous increases in governmental expenditure on non-productive activities, an explosive situation arose with high degree of inflation and
unstable conditions of greater magnitude, when the whole economy collapsed.

Thus, due both to the limited time horizon and lack of proper direction for private participation, which together constituted only a very narrow base for industrial sector, and throughout with uncertainties, Iran's industrial frontiers could not have been extended beyond the production of consumer goods, to a large extent heavy investments in infrastructure and capital intensive industries trickling down through public sector activity mainly.

The failure of the Big push strategy, attempted during the latter half of the 1970s with expectations of increasing oil revenues based on 1973 oil boom, which, of course, did not materialize, bears ample testimony to the suboptimal role that industries played in the modernization process. This also indicates a positive proof for our hypothesis that the economy was exclusively dependent on oil revenues for financing the development programmes. The failure of the strategy also indicates to what extent the country was yet unprepared to shoulder sudden bursts of industrial activity in that such bursts resulted in shortage of skilled labours, essential raw materials, ports, transport and communication facilities etc, all found inadequate at a later stage because in the early periods the industrial base that was developed was very weak.

The next chapter of this thesis is devoted to a more
detailed discussion of this aspect starting with the question of how oil resources that formed an important part of the revenue of government in Iran played a significant role in resource allocation as between different sectors under various plans and the several criteria adopted to achieve industrialisation and what major determinants operated to shape the country's policy of industrial development.
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CHAPTER TWO

A - Industrial Development During Plan Period

2.1 Introduction:

The most important task that any developing economy faces in initiating developmental process is mobilisation of resources. Resource mobilisation can be internal or external. Internally, resource mobilisation efforts manifest themselves in the form of tax revenue accruing to the government, non-tax revenue, internal borrowing, etc. Externally, is, outside the domestic economy itself, resources could flow into an economy through an excess of exports over imports or an inflow in the form of foreign borrowing or aid etc. Each one of these internal or external resources has its own obstacles. Recourse to one or the other under each category has its attendant political social and economic implications. It is very rare to come across an LDC that is fortunate enough to be in command of such internal and external resources to be able to mobilise them for smooth development. The successful mobilisation of resources is itself determined largely by a country's monetary and fiscal policies, trade policies and international relations, administrative structure etc, all of which ultimately depend on absence of imperfections within the economy. While the degree of imperfections determines to what extent mobilisation can be effective, it also to a greater extent, determines the success achieved in utilising
these resources. It is not of course our intention to attempt an elaborate discussion of how these imperfections are to be overcome. Rather, we must note that the way it is utilised or how resource allocation as between different uses takes place and how effective such utilisation would be is largely determined by various policies adopted by a developing economy. A country like Iran which has abundance of capital failed to generate forces that are conducive to development. The question of reviewing major policies adopted in the country in respect of various sectors to find the "why" of it is beyond the scope of this thesis even though such an examination would be more fruitful. For our immediate purpose, in this chapter, an examination of resource allocation pattern seems to be necessary to find out what priority was accorded to the industrial sector in various plans and to see what factors prompted the planners to accord top priority to industry under certain plans. The first part of this thesis comes to a close with this discussion. And even though the issue of effective utilisation of resources as depending on policy measures has been raised here, since it is contemplated to have a more intensive study of policy measures in respect of industrial sector, it is taken up in the second part i.e., part B of this thesis.

2.2 Evolution of Planning

Concerted effort at development planning began in 1946 when a fifty-man commission was set up to study the country's
resource and growth potential and to formulate a general
development programme. The Morrison Knudsen Company, a San
Francisco based consulting firm was commissioned by the
Iranian government to study the country's development
possibilities and to submit recommendations to the
government. These recommendations and those of the fifty-man
commission were further reviewed by a Supreme Planning Board,
and finally a skeleton plan with a total proposed expenditure
of rials 26.3 billion was prepared. In February 1949, the
parliament passed a Plan organisation Act establishing the
Plan Organisation for the task of implementing the First
Seven year plan.

2.2.1 Resource Allocation: First Plan (1949-56)

The First Seven year plan was supposed to start in 1949
but the financial hardship which gripped the economy made it
difficult for the government to obtain funds for the
implementation of the plan.

The first plan, therefore, started by 1954 when with
fresh agreement in respect of oil production oil revenue
began to flow into the economy. It was partially executed
for a year between 1954-55 when the second plan was
formulated. The first plan as originally formulated, had a
total public sector outlay of 26 billion rials; but with
reduced oil revenue, actual expenditure came to 14.1 billion
rial(1). The first plan originally laid more or less equal
emphasis on the three sectors, namely, agriculture, industry
and infrastructure. But as it turned out finally, agriculture accounted for largest investment followed by industries and infrastructure development. Nothing much can be said about the first plan except that in the industrial sector certain new industrial units were established in the manufacturing of sugar, textiles, cement etc. From a structural viewpoint, we do not see much of change in the economy.

2.2.2 Second plan (1956-62)

The second plan that was launched in 1956, like its predecessor, emphasised agriculture and transport as shown in the following table.
Table - 2.1

Planned and Actual Public Expenditures, Second Plan 1956-62
(billion rials)

<table>
<thead>
<tr>
<th>Estimated Expenditure</th>
<th>%To Total</th>
<th>Actual Expenditure</th>
</tr>
</thead>
<tbody>
<tr>
<td>18.9</td>
<td>23.3</td>
<td>17.4</td>
</tr>
<tr>
<td>30.4</td>
<td>37.5</td>
<td>27.3</td>
</tr>
<tr>
<td>6.7</td>
<td>8.3</td>
<td>7.0</td>
</tr>
<tr>
<td>11.7</td>
<td>14.4</td>
<td>9.3</td>
</tr>
<tr>
<td>12.2</td>
<td>15.0</td>
<td>8.6</td>
</tr>
<tr>
<td>1.2</td>
<td>1.5</td>
<td>-</td>
</tr>
<tr>
<td>81.1</td>
<td>100.0</td>
<td>70.0</td>
</tr>
</tbody>
</table>
The Second plan was based on expected oil revenue as a result of the 1954 oil agreement with international companies, the promised aid from U.S. and from World Bank plus internal resources. The total outlay was 81.1 billion rials. But ultimately 86.3 percent of the original plan outlay was spent. Transport and communication accounted for the highest share of expenditure with 27.3 billion rials out of a total of about 70 billion rials followed by agriculture with an actual investment of 17.4 billion rials, and industry with 7.3 billion rials. In the agricultural sector, the major part of expenditure went into dam construction that increased water storage and electricity generation. In the industrial sector, increase in productive capacity was registered in textiles, cement and sugar industries.

The second plan also was a list of projects totally unrelated to each other. It lacked comprehensiveness in that it failed to reflect industrial integration. As for achievements, it was far below the expected levels. In fact, some of these weaknesses contributed to the recession that came about in Iran between 1960 and 62, a balance of payments problem and a severe inflation.

2.2.3 Third Plan (1963-67)

The Third plan marked the beginning of comprehensive planning. It was also in this plan that for the first time private sector was envisaged to play a role in development of Iran, though the plan contained only certain forecasts for
the sector. Several factors were responsible for revision of the third plan twice, once in 1964 and then in 1965. For one thing, the Shah had initiated in 1963 his six point socioeconomic reforms to benefit the peasants in rural areas and all sections of people with improvements in education, health, voting rights for women etc. But this was entirely outside the plan efforts though needing budgetary support that was never reflected in the plan. Further, the oil revenue began to flow faster. Thus, while the original public sector outlay was out at 139.7 billion rials actual expenditure was 204.6 billion rials. Private sector outlay was fixed at 135 billion rials.

The third plan laid emphasis on industrialisation. It realised that continued investment in agriculture and infrastructure was necessary for industrialisation; but it also aimed at increasing productive capacity in the industrial sector which, it treated, was crucial to the country's development. But in actual terms, agricultural sector received the greatest share followed by infrastructure and then industry as revealed by table.
<table>
<thead>
<tr>
<th>Sector</th>
<th>Original Plan</th>
<th>% of Total</th>
<th>1964 Reversion</th>
<th>% of Total</th>
<th>1965 Revision</th>
<th>% of Total</th>
<th>Actual</th>
<th>% of Actual to Original</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture &amp; irrigation</td>
<td>30.0</td>
<td>21.5</td>
<td>45.0</td>
<td>22.5</td>
<td>49.0</td>
<td>21.3</td>
<td>47.3</td>
<td>158</td>
</tr>
<tr>
<td>Industries &amp; mines</td>
<td>16.6</td>
<td>11.8</td>
<td>21.9</td>
<td>11.0</td>
<td>27.0</td>
<td>11.7</td>
<td>17.1</td>
<td>103</td>
</tr>
<tr>
<td>Electricity &amp; fuels</td>
<td>26.1</td>
<td>18.7</td>
<td>27.0</td>
<td>13.5</td>
<td>41.5</td>
<td>18.0</td>
<td>32.0</td>
<td>123</td>
</tr>
<tr>
<td>Communication &amp; tele-comm.</td>
<td>30.0</td>
<td>21.5</td>
<td>50.0</td>
<td>25.0</td>
<td>56.0</td>
<td>24.3</td>
<td>53.8</td>
<td>179</td>
</tr>
<tr>
<td>Education</td>
<td>13.5</td>
<td>9.7</td>
<td>17.9</td>
<td>9.0</td>
<td>17.4</td>
<td>7.6</td>
<td>17.5</td>
<td>130</td>
</tr>
<tr>
<td>Health</td>
<td>10.0</td>
<td>7.2</td>
<td>13.9</td>
<td>7.0</td>
<td>13.5</td>
<td>5.9</td>
<td>13.2</td>
<td>132</td>
</tr>
<tr>
<td>Labour &amp; manpower</td>
<td>6.2</td>
<td>4.4</td>
<td>8.0</td>
<td>4.0</td>
<td>3.6</td>
<td>1.6</td>
<td>2.8</td>
<td>45</td>
</tr>
<tr>
<td>Urban development</td>
<td>4.5</td>
<td>3.2</td>
<td>8.0</td>
<td>4.0</td>
<td>7.0</td>
<td>3.1</td>
<td>7.2</td>
<td>160</td>
</tr>
<tr>
<td>Other</td>
<td>2.8</td>
<td>2.0</td>
<td>8.3</td>
<td>4.0</td>
<td>15.0</td>
<td>6.5</td>
<td>13.7</td>
<td>489</td>
</tr>
<tr>
<td>Total Exped.</td>
<td>139.7</td>
<td>100.0</td>
<td>200.0</td>
<td>100.0</td>
<td>230.0</td>
<td>100.0</td>
<td>204.6</td>
<td>146</td>
</tr>
</tbody>
</table>

Source: Plan and Budget Organisation, Tehran.
The table shows that actual expenditure in the public sector surpassed the plan’s initial targets by 146 percent, having climbed from the initial total of 139.7 billion rials to a final total of 204.6 billion rials. The successive revisions were based on unanticipated increases in oil revenues and in the use of foreign loans. The net result was that most sectors spent more resources on investment than had been called for in the original plan, the greatest increases going to infrastructural, agricultural and urban development. The laggard sectors in the revised plans were in fact the industrial and manpower sectors, the former for the very reasons cited above, and the latter by virtue of the difficulties of investing in this area.

The most notable achievement of the third plan was that it expanded the capacity of the productive sectors: agriculture and industry. In addition, the emphasis of public sector expenditure in the direction of infrastructure not only kept pace with the advances in productive capacity but also allowed for additional expansions in output in the upcoming Fourth plan by having provided, early on, some excess capacity in such lumpy investment areas as roads, railways, ports, and power generation.

The private sector, despite its having been shaken by the 1960-62 recession, responded to the initiatives of the public sector with unanticipated vigor. A series of plants that significantly altered the Iranian Industrial landscape
came in streams at the beginning of the third plan—a B.F. Goodrich tire factory, automobile assembly plants (Fiat, Landover, Mercedes Benz, and Layland), and industries producing pharmaceuticals, bricks, pasteurized milk, rubber footwear, leather, detergents, radios, and oil heaters. Although many of these projects were conceived or begun during the period of the second plan, they nevertheless came to fruition during the years of the third plan. Private sector industrial activity was bolstered by Shah's White Revolution and aided by the state's ability to build the necessary infrastructure. The confidence fad upon itself. The Iran National Paykan assembly plant was opened in collaboration with the Rootes Corporation of the United Kingdom, diesel engine manufacturers at Tabriz began their operation with 'British Layland in 1965, another diesel plant was set up late with Benz of West Germany, Rambler opened a large automobile assembly plant in Tehran, and Dentz of West Germany began assembling buses. Among the many that came into production during the last half of the plan were sugar-beat processing plants at Nishabur, Kermanshah, Khoy and Isfahan; a glass factory in Qazvin; a nylon thread plant in Tehran; and a steel mill at Ahvaz.

In the public sector there were a few major industrial investments, notably the aluminium smelting plant at Arak, the Shahpur Chemical Company at Bandar Shahpur and some smaller petrochemicals in the Abaddon areas. Yet the public sector's main emphasis remained with the infrastructure.
Existing roads were improved and new ones constructed, the railway line extension to Karman was begun and port facilities were improved dramatically in order to permit the import of those investment goods necessary to support the nascent industrialization. Lastly, an Irano-Soviet steel project calling for an eventual annual output of 1.2 million matric tones was signed in 1965.

Judged by both the economic investment and enhanced economic activity, it would be easy to say that this plan was a success. But it must be realised that goals that conflicted with one another were set by the planners, priorities had changed between revisions that were carried out and revisions themselves forgetting to reflect implications for the private sector. Sectoral allocations had to be done by trial and error method due to inadequate data base. Sectoral targets were not fixed except for agriculture where the achievement was three percent as against the target of 4.1 percent. (2)

2.2.4 Fourth Plan (1968-72)

In terms of both formulation and implementation, the fourth plan was a great improvement over the earlier ones. It was comprehensive enough to include sectoral targets and overall objectives. In respect of industry, especially, the plan envisaged an increase rate of growth through enhanced industrial activity, decreasing the country's dependence in due course on foreign nations, achieved through export diversifications. It is important to mention that the Fourth
Plan formulation was never affected by any economic and political factors unlike the first plan that was affected by oil nationalization and the second and third facing uncertain economic conditions. It was in the fourth plan that industrialisation became the main theme at both its formulation and implementation stage. The process of industrialisation that was initiated in the third plan was now on to assume a significant role because the nation had invested lot of funds in building up of infrastructural facilities. Industrialization was to serve as the means to not only realise the long term goals but was to be the basis for export diversification. This was an outcome of the realisation that oil revenues would dwindle in future.

As Table 2.3 indicates the sector of industry and mines received the largest share of the total outlay. Infrastructure also accounted for a high share along with oil, gas and electricity. But agriculture received a very small share.
### Table 2.3
Planned and Actual Public Expenditure, Fourth Plan, 1968-72
(billion riads)

<table>
<thead>
<tr>
<th>Sector</th>
<th>Approved Credits (Revised version) Value</th>
<th>Share %</th>
<th>Actual Disbursement Value</th>
<th>Share %</th>
<th>Actual as % Approved credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>46.7</td>
<td>8.4</td>
<td>41.2</td>
<td>8.1</td>
<td>88.2</td>
</tr>
<tr>
<td>Industry &amp; Mines</td>
<td>115.6</td>
<td>20.8</td>
<td>113.1</td>
<td>22.3</td>
<td>97.8</td>
</tr>
<tr>
<td>Oil &amp; gas</td>
<td>61.7</td>
<td>11.1</td>
<td>57.3</td>
<td>11.3</td>
<td>92.9</td>
</tr>
<tr>
<td>Water</td>
<td>45.3</td>
<td>8.2</td>
<td>42.0</td>
<td>8.3</td>
<td>92.7</td>
</tr>
<tr>
<td>Electricity</td>
<td>42.2</td>
<td>7.6</td>
<td>37.7</td>
<td>7.5</td>
<td>89.3</td>
</tr>
<tr>
<td>Transport &amp; comm.</td>
<td>84.3</td>
<td>15.2</td>
<td>71.4</td>
<td>14.2</td>
<td>84.7</td>
</tr>
<tr>
<td>Telecommunication</td>
<td>46.5</td>
<td>8.4</td>
<td>38.7</td>
<td>7.6</td>
<td>83.2</td>
</tr>
<tr>
<td>Rural Development</td>
<td>10.3</td>
<td>1.9</td>
<td>9.8</td>
<td>1.9</td>
<td>95.1</td>
</tr>
<tr>
<td>Urban Development</td>
<td>9.1</td>
<td>1.6</td>
<td>8.3</td>
<td>1.6</td>
<td>91.2</td>
</tr>
<tr>
<td>Housing &amp; construction.</td>
<td>43.0</td>
<td>7.8</td>
<td>41.6</td>
<td>8.2</td>
<td>96.7</td>
</tr>
<tr>
<td>Education</td>
<td>19.0</td>
<td>3.4</td>
<td>17.7</td>
<td>3.5</td>
<td>93.2</td>
</tr>
<tr>
<td>Culture</td>
<td>1.5</td>
<td>0.3</td>
<td>1.4</td>
<td>0.3</td>
<td>93.3</td>
</tr>
<tr>
<td>Tourism</td>
<td>3.5</td>
<td>0.6</td>
<td>3.3</td>
<td>0.7</td>
<td>94.3</td>
</tr>
<tr>
<td>Health</td>
<td>15.7</td>
<td>2.8</td>
<td>14.2</td>
<td>2.8</td>
<td>90.4</td>
</tr>
<tr>
<td>Social welfare</td>
<td>5.7</td>
<td>1.0</td>
<td>5.1</td>
<td>1.0</td>
<td>89.5</td>
</tr>
<tr>
<td>Statistic &amp; research</td>
<td>1.8</td>
<td>0.3</td>
<td>1.7</td>
<td>0.3</td>
<td>94.4</td>
</tr>
<tr>
<td>Regional Developm.</td>
<td>2.6</td>
<td>0.6</td>
<td>2.3</td>
<td>0.4</td>
<td>88.5</td>
</tr>
<tr>
<td>Total</td>
<td>554.5</td>
<td>100.0</td>
<td>506.8</td>
<td>100.0</td>
<td>91.4</td>
</tr>
</tbody>
</table>

As in the third plan period, the most notable achievements of the fourth plan were in industrial and infrastructural development. The public sector continued its investments in iron and steel, petrochemicals, machine building and metal smelting. The Isfahan steel mill accounted for almost half of the investment allocations to the sector of industry and mines in the fourth Plan. The private sector also expanded its manufacturing activities rapidly, aided by the availability of credit through such specialized banks as the Industrial and Mining Development Bank of Iran and the Industrial Credit Bank. Infrastructure developments were also significant. Electric power production more than doubled from 4.5 billion to 12.0 billion kilowatts hour; the railway network expanded from 3,600 to 4,400 kilometers; the road network increased by 3,000 kilometers and port capacity reached 5.0 million metric tons per year by the beginning of the Fifth Plan. In total, these achievements highlight the fact that Iran was in the midst of a successful industrialization drive by the end of the fourth plan (3)

The fulfilment of overall growth rate of 9 percent per annum, rise in GNP by 11 percent per annum, the advent of a take off—all of these were the result of profound structural changes that took place in the industrial sector itself.

2.2.5 Fifth Plan (1973-77):

The Fifth Plan began in March 1973. Its emphasis was on
industry and infrastructure. Even though the original outlay was up by 170 percent compared to fourth plan, the plan as revised in 1974 in the context of quadrapling of oil revenue at the end of 1973 proved to be very ambitious with 70 billion dollars as its total outlay, a doubling of the original fifth plan total allocation. The revised fifth plan of 1974 was prepared hastily with a high degree of optimism over future oil revenue flows. In an overall sense, the revised plan accorded highest priority to social services, as seen in the following table.
## Table 2.4
**Fifth Plan: Fixed Capital Formation, Projected and Actual Disbursement**
(billion rials)

<table>
<thead>
<tr>
<th></th>
<th>Projected</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>public sector</td>
<td>private sector</td>
</tr>
<tr>
<td></td>
<td>1973/4 - 1975/6</td>
<td></td>
</tr>
<tr>
<td><strong>Public Affairs</strong></td>
<td>380.6</td>
<td>-</td>
</tr>
<tr>
<td><strong>Social Affairs</strong></td>
<td>591.5</td>
<td>694.9</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td>126.8</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Culture &amp; arts</strong></td>
<td>9.1</td>
<td>1.0</td>
</tr>
<tr>
<td><strong>Health</strong></td>
<td>42.0</td>
<td>3.7</td>
</tr>
<tr>
<td><strong>Urban Development</strong></td>
<td>73.5</td>
<td>-</td>
</tr>
<tr>
<td><strong>Rural Development</strong></td>
<td>60.0</td>
<td>-</td>
</tr>
<tr>
<td><strong>Housing</strong></td>
<td>240.0</td>
<td>685.0</td>
</tr>
<tr>
<td><strong>Environment</strong></td>
<td>6.1</td>
<td>-</td>
</tr>
<tr>
<td><strong>Regional Development</strong></td>
<td>10.0</td>
<td>-</td>
</tr>
<tr>
<td><strong>Social welfare</strong></td>
<td>9.0</td>
<td>-</td>
</tr>
<tr>
<td><strong>Physical education</strong></td>
<td>15.0</td>
<td>0.4</td>
</tr>
<tr>
<td><strong>Economic Affairs</strong></td>
<td>2146.5</td>
<td>885.4</td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td>176.9</td>
<td>132.4</td>
</tr>
<tr>
<td><strong>Water Resources</strong></td>
<td>162.2</td>
<td>4.0</td>
</tr>
<tr>
<td><strong>Electricity</strong></td>
<td>310.5</td>
<td>-</td>
</tr>
<tr>
<td><strong>Manufacturing</strong></td>
<td>277.1</td>
<td>503.0</td>
</tr>
<tr>
<td><strong>Oil</strong></td>
<td>536.0</td>
<td>78.8</td>
</tr>
<tr>
<td><strong>Gas</strong></td>
<td>120.0</td>
<td>47.5</td>
</tr>
<tr>
<td><strong>Mining</strong></td>
<td>61.8</td>
<td>4.5</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td>402.2</td>
<td>90.0</td>
</tr>
<tr>
<td><strong>Post &amp; Telecommunication</strong></td>
<td>91.3</td>
<td>-</td>
</tr>
<tr>
<td><strong>Tourism</strong></td>
<td>8.5</td>
<td>16.2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3118.6</td>
<td>1580.3</td>
</tr>
</tbody>
</table>

Source: 1) Plan and Budget Organisation, 5th National Development Plan 1973-1975 revised; 2) Bank Markazi Iran, Annual Reports.
In the economic sector itself industry was assigned top priority. In particular, oil, gas and petrochemicals sector were singled out. Infrastructure development followed next, particularly with emphasis on development of roads, ports and communication. In fact, in almost every sector, total investment was doubled.

As it turned out, in the process, planning in the context of buoyancy of the economy with rising oil revenue, was reduced to a mere exercise in disbursement of funds for expenditure by various ministries. Within the framework of the fifth plan, government budget for 1974 was tripped over that of the previous year out of which only 28 percent went into fixed capital formation whereas 72 percent including 14 percent for payments of all kinds, went into current expenditure(5). Such a sudden and massive injection of money into the economy in the form of current, nondevelopmental expenditure resulted in unprecedented inflation. In the initial stages, this encouraged producers to increase their production while imports supplemented domestic production in an attempt to balance demand and supply. Demand for raw materials and intermediate goods rose continuously, available capacity having been used to the maximum extent. However, due to the shortage of skilled manpower and infrastructure bottlenecks, shortages arose as supply failed to keep pace with demand. Then inflationary forces were reinforced and continued their uptrend unabated. Many of the development projects were either not taken up or were not completed. The
plan had to be finally abandoned by 1976.

One point that emerges from the foregoing examination of planning exercise in terms of pattern of allocation is that development efforts in general depended heavily on oil revenue and more significantly fluctuations in oil revenues were reflected in the level of economic activities. In fact, the economy began to grow so much sensitive to changes in oil revenues that there were sudden outbursts of economic activity at times when oil revenue expanded while at others, the economy retracted abruptly with receding oil revenues. In particular, industrial sector that was to serve as an engine of growth was severely handicapped from the beginning on account of frequent shortfalls in oil revenues. A detailed examination of this aspect is carried out in the following pages.

2.3 Oil revenue - The Paradoxical Development Resource

In this regard under the first plan we noticed that it was inevitable that equal sectoral allocations gave place to severe curtailment of allocation in the industrial sector as a result of oil nationalisation in 1951. Again by 1954-55 with new oil agreements, industrial activity picked up following rise in internal demand that was met by import of raw material and machinery made possible by easy flow of foreign exchange. Even earlier on industrial sector was buoyant by 1952 itself, but this was more because of the thinning of oil revenue flow due to nationalisation and
consequent rise in prices of imported goods compared to domestic industrial products. Domestic industrial activity was disrupted between 1956 and 1960 as revenue flow eased and import prices once again plummeted the doubt the second plan was to draw 70% of its total outlay from oil revenues as against 37% in the case of first plan. But the plan itself laid emphasis on agricultural sector and infrastructure building, industry occupying only third place and it was set to start during recessionary period. Finally, private sector itself did not find a place in the planning process until the launching of the third plan and till then the sector operated in total oblivion most of the time braving itself against fluctuating oil revenues and hence fluctuating demand.

The morale of this sector was further undermined during both the third and fifth plans even though both accorded top priority to industrial sector as in these periods uncertainties further grew up. It was only under the fourth plan that the sector was not only accorded top priority but it retained its top position all through as the fourth plan period did not witness any kind of economic upheavals that occurred during the earlier plans. Though the third plan could have set a base for industrial activity in subsequent periods with infrastructure development taking strides between 1962-68, the plan was subject to revisions which actually reduced outlay on industries. The fourth plan was for all practical purposes, as industrial sector plan as virtually in almost every conceivable sphere, the sector
recorded substantial amount of development. This may have to be attributed, in the final analysis more to favourable circumstances between 1968 and 72 than due to carefully drawn up policy measures. Ultimately, the turbulent upsurge of this sector that began in 1973 which was expected to continue well into the fifth plan was reversed because of runaway inflation and severe shortages due to excess demand over supply.

Thus oil revenue and industrial activity seem to have exhibited both direct and inverse kind of relationship. Industrial activity was reduced after 1955 with rising oil revenues; between 1962 and 72, when oil revenues gradually rose, industrial activity showed an uptrend too. The years after 1973, like those after 1955, witnessed inverse relationship. While in the period of direct relationship, we see a positive impact on the industrial sector from oil revenues, it was negative during the time we see an inverse relationship. The 1973 oil boom however, had a totally disastrous effect as far as the sector was concerned. Thus domestic industries had only a small share in internal market after 1954. With easy flow of oil revenue spread over the period 1962-72, domestic industries were capable of claiming a larger share in domestic market. But once again in 1973, industrial sector failed to meet internal demand, notwithstanding rising oil revenues because internal liquidity position went out of control and internal demand and supply situation was at its worst.
Thus, it appeared that the industrial sector was not only sensitive to fluctuating oil revenues, but developed certain structural weaknesses as government allowed the misfortunes of oil industry to percolate into it.

The manner in which deficiencies in the industrial sector surfaced over the years have so far been treated in terms of a narrow perspective, that is fluctuating oil revenues. But a more deepseated cause of these structural weaknesses is to be found in the peculiarities of oil producing countries such as high dependence on oil revenues for developmental finance, a narrow export base etc. We would hence examine in the next part of this chapter such peculiar features in order to have an insight into the disadvantages with which oil producing countries suffer, disadvantages which are seemingly masked by advantages of easy flow of and easier access to oil revenues.

B- STRATEGIES OF INDUSTRIAL DEVELOPMENT:

2.4-Peculiarities of oil-based Economies

Oil producing countries in general are characterised by certain features. These features are both economic and non-economic. But we may briefly mention only the major economic characteristics. By far, the most important feature of these countries is that they have a very narrow export base with a single commodity that is oil which earns foreign exchange required by them. Even though it is narrow in terms of a small number of export items dominated by oil, the export
sector accounts for over seventy-five percent of government receipts in these countries. Secondly, these oil producing nations, unlike other developing economies, are placed in a very advantageous position in that world demand for crude oil is still very high which has enabled them to earn huge foreign exchange and thus possess an enlarged capital base which is the most important precondition for successful development. Thirdly, in the face of continuously rising world demand for oil, they are able to improve the terms of trade in their favour and consequently mobilise higher volume of capital with which to carry out their developmental activities. In fact, in many of these countries, oil revenue accounts for 50 percent to 75 percent of funds needed for financing development. And, fourthly, notwithstanding this most favourable factor, because of the very narrow export base, sometimes the economies of these oil producing nations are vulnerable to fluctuating international oil prices this high dependence on oil export sometimes being of great disadvantage and occasionally even being disastrous. An economic fallout of this high dependence on a single export item is that many of these economies are exposed to a certain degree of instability due to international price movements. Iran, being an oil producing country, exhibits all these characteristics. These peculiarities, her narrow base, high dependence on oil export as a source of development finance, and her vulnerability to international price fluctuations, especially the oil price fluctuations, have been clearly
reflected in the course of economic development in the last three decades. In fact, these peculiar features have, in far greater measure, proved to be greatly detrimental to Iran's development in the final analysis than providing a strong base for it. That in the course of her planning efforts for about three decades, Iran's economic framework showed signs of instability would be clear when we analyse policies and strategies adopted by her in respect of industrialization that became a central feature of her planning in the third, fourth and fifth plans. This is because as already seen, an examination of resource mobilisation for development in Iran and how they were allocated under various plans which has proved beyond doubt the predominance of oil revenue and the risks attendant with high dependence on oil revenue, both of them necessitating several revisions of plans and shifts of emphasis in policy instruments.

2.5- Need for Industrialisation in oil-based economy:

Because oil revenues are exhaustible it becomes necessary that the oil based countries develop their industrial sector. A wholesale transformation of their economy from primary production to modern industrial production is of immediate concern to planners in them. In this connection, in view of the fact that their only resource - oil is non renewable and majority of these countries would run out of oil within a short span of time, they have tried to diversify their economy to attain self reliance in order to reduce the overwhelming dependence on production and
export of oil.

These economies have realised that self reliance in the near future before the oil resources exhaust can come about via industrialisation that can also promote greater output, generate employment and reduce their dependence on imports from other countries.

2.6-Strategies of Industrial Development

Two important ingredients of the process of industrialisation in an LDC are:

1) That with industrialisation, precious foreign exchange will be available for securing the required development imports (capital items) and maintenance imports (intermediate goods).

2) In later years, industrialisation helps reduce the country's dependence on foreign countries. Industrial sector hence is looked upon as a means to carry out both outward looking and inward looking policies. The first one aims at increasing the country's share in world market while the second one does so in respect of development of internal market. Reduced dependence at a later stage however can be possible only when initially a country can earn more and more of foreign exchange. Thus, success in carrying out inward looking policy is contingent upon success achieved through outward looking policies. It is hence imperative that a country has to strive to realise both these goals.
simultaneously. A country can do so only when its industrial sector can produce goods acceptable in the world market, which itself depends on the existence of an entrepreneurial class. Also industrial development must ensure capital availability for establishment, modernisation and diversification of industries; and the sector must be able to generate employment both internally and outside so that the tempo of industrial activity is sustained through continued demand for its products.

Iran seemed to have set out very well in that planners there realised not only the significance of import substitution industries but also envisaged replacement of oil industry with other exports as oil revenues were expected to taper off in thirty or so years. Ten years later in 1970, however, it appeared that Iran had not only failed to embark upon export development as a replacement to oil sector but also had not effectively implemented the ISI strategy. It appears, therefore, that both these aims had only theoretical respectability and limited practical applicability. It is of course true that both exports and imports have indicated a favourable trend between 1963 and 1978. Thus, exports, of non oil products went up from $137 million in 1963 to $440 million in 1972 and to $520 million in 1978. But as a share of total exports, non oil exports declined from 23 percent in 1963 to 15 percent in 1972 and further to just 2% by 1978. Of this 2% non oil exports in 1978, agriculture accounted for half traditional products (handicraft and machine-made)
accounted for 28 percent industries made up for just 22 percent. In respect of imports, even though the position was favourable in all the three years under consideration, by 1978 Iran was still importing not only machinery, vehicles locomotive, etc, worth 33 percent of total imports but also steel, chemicals etc, worth 29 percent out of total import bill of $ 18400 million, food imports constituting 12 percent of total imports (6). In the final analysis therefore, industrialization process failed to reduce the nation's dependence heavily on import of food, consumer durables, capital equipment, industrial raw materials, western technology etc, even in the 1970's and contributed very little to her non oil exports. It reflected very little effort in the direction of evolving a replacement to oil exports or achieving greater degree of self reliance with gradual reduction in dependence on outside supplies. Achievement of the two final goals of industrialisation set in terms of ISI and export replacement depend on various strategies successfully adopted in different fields. The more important ones are discussed below.

2.6.1 - Entrepreneurship:

Entrepreneurship is one of the factors of production. It is the most important determinant of development. Its role is indispensable to economic growth. According to Schumpeter (7) entrepreneurs have the will to conquer, to prove oneself superior to others, to succeed for the sake of success
itself. The financial result is a secondary consideration mainly as an index of success and as a symptom of victory. They are the risk takers and innovators. Their special characteristic is an intuitional capacity to see things in a way which afterwards proves correct.

Their innermost motive is to achieve; and while to responding to this need, they promote economic development and modernisation. They introduce innovations in many directions with which comes the advancement of technology and organisation. In this process, they encourage the financial institutions to expand their operations. They assume responsibility for advancing the economy once the public sector has provided the infrastructure.

The efficiency of an entrepreneur depends on availability of many factors such as facilities for supplies, services, transportation and communication and on a host of economic legal and other social institutions.

In any country, the successful emergence of an entrepreneurial class depends on fulfilment of two conditions. These are:

1) stable conditions in the economy
2) existence of social overhead capital. With these two, an entrepreneur is able to induct the other three idle factors of production into economic activity and give them the required momentum.
Where these conditions are not fulfilled, the government is required to draw up certain plans in respect of various sectors in the economy. In Iran, there was only a potential fulfilment of these conditions and hence development of an entrepreneurial class ran into rough weather. A detailed examination of this aspect is necessary and has been carried out elsewhere in the thesis.

2.6.2 Capital:

Capital is the core of development process without which no progress can be initiated. Many economists have assigned first place to capital. That is because a higher growth rate is contingent upon greater degree of capital investment. The rate of growth of an economy is a function of the capital/output ratio and the rate of growth of population.

Capital brings development both directly and indirectly. Directly when investment which is needed for the production of goods and services for market takes place or when improvement occurs in land, inventories, plant and equipment or in other forms of social capital which directly improves the well-being of the nation. Indirectly, capital may promote growth through economic overhead capital which consists of public utilities such as transport (i.e. roads, ports, railroad), electricity and gas production capacity, pipelines, transmission lines, communication network, fire and police protection, education, public health, etc.
Capital formation leads to more output, which provides partly a surplus for further investment and further increase in output. While capital is usefully employed it confers benefits to the economy. But when a high order of capital formation is not accompanied by its rational allocation in the most desirable spheres, capital may fail to promote development or even endanger the process. A situation of this sort arose in Iran in the course of her development over the past three decades. As will be detailed later, irrational use of capital pushed the economy close to retrogression.

Iran is not one of those countries where inadequate capital formation was an obstacle to economic development. In fact due to its oil and gas endowments, the economy sometimes grew rapidly.

Industrial development which was accorded priority in the country was financed mainly by revenues derived from oil-capital resources. It will be useful to know how failure to evolve suitable investment criteria resulted in uneconomic use of resources.

2.6.3 Manpower

One of the most rational ways in which capital can be used is to invest it in the development of manpower. Training and skill formation are inseparable parts of an
industrialisation programme. Use of capital supplemented by skilled labour force would increase the pace of modernisation. Where rising levels of capital investment are unaccompanied by adequate skill formation, production would ultimately decline and the economy tends to move towards greater degree of unemployment. One would find a very plausible explanation of the downtrend in Iran after 1976 in its failure to evolve strategy for manpower development while there was a continuous rise in levels of investment with incessant flow of revenue.

2.6.4 - Market

The ultimate success of industrialisation which promotes higher levels of production depends on the size of market for various goods that are produced. In order that market for a country's products is big, both internal and external, it is necessary that measures are adopted in the direction of reducing costs of production while at the same time improvements are effected in the quality of what is produced internally. It sounds paradoxical, but as we shall see later, Iran is experienced enhanced levels of production accompanied at times by unsold stocks of goods because domestic products faced stiff competition from imports while in respect of world market, no efforts were made to diversify exports or to fulfil quality stipulations.

While these four areas are to be examined in detail from the angle of strategies adopted therein, we mention below briefly others which are equally important.
2.6.5-Technology

One more factor that plays a significant role in the industrialization process of a country is the technological base of its economy. In order to achieve socioeconomic progress, it is important that appropriate technology should be applied consistently. An appropriate technology requires not only instrumentalities of technology and pure science, but also a social and psychosocial structure.

In developing countries, since there is very little technological capability, transfer of technology from advanced societies seems to be ultimate solution. In this regard, the government has laid emphasis on the transfer of technology in order to speed up modernization movement. The frontal attempt at application of modern know-how has in the past been supplemented by partnership with foreign private. In the past decades, more concerted and cohesive effort to tackle the question of technology manifested in the following.

1) Introducing advanced technical subjects in vocational schools and universities.

2) Establishing contact with technical and scientific organisations of international repute.

3) Sending many students and researchers to institutions of higher education abroad in its various branches of science and technology, and
4) Taking advantage of the country's industrialization as a training ground(9).

To a large Extent the nation took to capital intensive technology which contributed to a certain degree of unemployment and emergence economic and social dualism.

2.6.7 Transportation:

Transport sector plays an important role in the process of industrial and economic development of a country. Firstly, transportation facilitates the development of the industrial, agricultural and mining sectors and secondly, it fosters an equitable distribution of government services provided it is well dispersed. Inadequate transportation is the great obstacle for the process of industrialization.

In Iran, in most of the development programmes much attention was paid to development of means of transport and communication, without which flow of goods and services would have been impeded. Goods roads and railways are vital in the disposal of agricultural and industrial surpluses from villages to collecting centres and from there to the town for local consumption or to the ports for export purposes, etc. In the first three plans, emphasis was given to improve the infrastructure of the country, namely transportation, communication, electricity, power etc. As imports of the country increased during 1970's, demand for transport services increased dramatically. As a result the
transportation sector was one of the major recipients under the revised fifth plan (10). Huge investments not withstanding when at times the economy reached peaks of activity infrastructural bottle necks tended to undermined disposal of goods and created shortages.

2.6.8-Banking:

The cornerstone of any modernization movement is a sound financial system and one that can supplement other systems in the direction of that movement. Financial institutions and banks play a vital role in an economy. They facilitate the process of industrialization by channeling savings to investment.

Such institutions played only a limited role in the country's industrialisation process. Benefits mostly accrued to a few influential entrepreneurs. To a large extent, small entrepreneurs depended on noninstitutional source of finance for their fixed and working capital requirements.

2.6.9 - Incentives

Incentives and exemptions can play a supplemental role to major strategies of industrial development. They play thus a promotional role in the development of a sector.

Even though in theory, incentives were extended to the country's entrepreneurs in a number of ways such as high degree of protection, tax rebate or exemption, compulsory
deposition on import orders etc, in practice, as was the case with banking benefits were available only to the most influential ones.

The list can extend with many more areas, where concrete steps are needed to promote industrialisation. But more importantly, our task is to examine in greater detail the most important ones from our present list which include the first four.

2.7 Conclusion

We are now able to sum up our observations in respect of industrialization in Iran as follows. There is no doubt that the country set before itself the task of industrial development as far back as 1946 and did so by welcoming private initiative, government confining its activities to fields where private capital was shy. But, in practical terms, a more unified approach to industrial development was conspicuous by its absence. For, by 1963, the government owned industrial units were too inefficient to continue under its management any further; and hence government offered to make them over to private individuals instead of finding a more positive solution to inefficiency. As for the private sector itself, the favourable policy pronouncements and policy instruments such as tax holidays, rebate etc were used by a few almost entirely to operate short gestation projects with only occasional investments in a few large industries. This was mainly because of unfavourable economic environment.
Private sector had to frequently face uncertainties right from oil nationalisation in 1951 through recession for three years beginning with 1960 and the 1972 legislation which stipulated that industrial labour have a share in management of industries to finally the oil boom of 1973. Several times, when the economy seemed to be under no strain, industrial activities increased but only to be thwarted by subsequent decline in demand in the face of competition from imports. A vital element in the process of industrial development that should have not been ignored was the raising tariff walls especially in respect of consumer goods. Also, there were other missing links such as there being no explicit clauses governing the role of public and private sector, traditional sector and that of small industries. And there was no regulatory mechanism to check regional concentration of industries or to exercise control over inflow and outflow of foreign capital, foreign exchange and a host of other components of industrial development. Again, industrial development was envisaged in isolation with least regard for complementarity between it and the primary sector.

In short, the development of this sector in Iran was characterised by pseudo modernist tendencies; lumpy public sector investments were made in a few prestigious national industries, which otherwise could have been more evenly spread among several industries with greater degree of discretion while private sector investment largely went in for consumer product manufacture. Thus, Iran seemed more to
have misdirected her capital because the result was development of "commercial" as against "industrial" activities than to have employed it to implement policy strategies based on a sound programme of industrialisation conceptualising the necessary policies and concretising the basic policy instruments. We therefore propose to examine in greater detail deficiencies in Iran's industrial development strategies in the next part confining ourselves to the four basic strategies mentioned earlier namely entrepreneurship, capital, manpower and market.
Notes and References


3. Ibid, P.34


88