CHAPTER- II

Impact of Industrialization on Human Resource in Iran

The term industrialization is open to alternative interpretations. Some authors have looked at it purely from a theoretical angle and have tried to examine the factors leading to growth of industrial output, whereas the others have looked at it from the standpoint of the ultimate objectives which industrialization is expected to achieve. In view of this basic difference in approach, the strategies suggested by them have differed in contents as well as emphasis. This is evident from the review of some of the definitions of industrialization.

According to David Colman and Fredrick Nixon (1980), industrialization signifies, “the development of manufacturing enterprises producing commonly accepted goods within the so-called modern manufacturing sector of the economy”.¹ Paul M. Sweezy (1949) has defined industrialization as “the establishment of new industries or building new means of production which absorbs newly accumulated capital without adding correspondingly to the output of consumer goods”.²

These definitions, however, limit the scope of industrialization to the establishment of new industries as primarily concerned with the production of capital or consumer goods. All of them exclude rural and small-scale industries from the scope of industrialization. These definitions appear to be too restricted in their scope especially in the context of developing economies which primarily aim at achieving the objective of self-reliance in both output and employment. Moreover, the definition of Sweezy also appears to be too narrow as it confines industrialization to capital goods industry only.

According to Pei Kang Chang (1949), industrialization is a process in which a series of strategical production functions take place. It involves those basic changes that accompany the mechanization of an enterprise, the building of new industry, the

opening of a new market and exploitation of a new territory. This is, in a way, a process of deepening as well as widening of capital.  

This definition overemphasizes the role of strategic innovations for achieving specific goals. Eugene Staley (1954) relates industrialization with high productivity which raises the average income of the society.  

According to Helen Hughes (1978) “the best single indicator of the maturity of industrialization seems to be the share of manufacturing in commodity production.”  

This definition takes into account the outcome of the process of industrialization. Actually, industrialization is a wide-ranging process. It implies not merely the development of certain industries, but also certain basic changes in the structure, technology and organization of economic activities. Therefore, an operational definition of industrialization in the present context would cover two major aspects, the first is the performance of the industrial sector and the second relates to environment required for industrial development. Since industrialization is an outcome of the progress made by different types of industrial units, we have to consider the value of industrial produce as a proxy to industrial development. In this way, what is being manufactured by the large, medium, small scale, rural and village industries is to be taken into account to work out the value of industrial product, showing performance of industrial sector for different districts (regions).  

Forms of industrialization vary from country to country.  

1. According to the amount of initiative taken by government or private enterprise, industrialization may be in public sector or private-initiated, and jointly initiated (as in mixed economy). It is not easy to classify industries on the basis of forms of ownership as a pattern. Because during the initial stage of industrialization, efforts of both government and private sector are involved. Some kinds of industrial and industrial servicing activities were undertaken since time immemorial.

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3 Chang, P.K., Agriculture and Industrialization: The Adjustments that Take Place as an Agricultural Country is Industrialized (Cambridge: Harvard University Press), 1949, p. 69.  
2. Industrialization can also be classified as revolutionary and evolutionary. The process of industrialization undergone in erstwhile Soviet Union is described as 'revolutionary' as distinguished from 'evolutionary' type in the United Kingdom. But these two terms cannot be taken as mutually exclusive; they are partially overlapping. The period of evolution of modern industry in England was called 'Industrial Revolution’, while the revolutionary process of industrialization adopted by the erstwhile U.S.S.R. was most evolutionary in character as it began with imported or copied technology. Process of industrialization started under governmental initiative is usually most momentous and phenomenal; thus it is termed revolutionary. In an evolutionary process, the main driving forces are the enterprising spirit and technology, changes in them occurs slowly and steadily.

Society progresses from the subsistence phase through a commercial phase, to an industrial phase, though in practice these phases are rarely distinct and never easily separable. Usually, they merge into the continuous process of economic growth while in developing countries; they may exist side by side. Further, the industrial phase involves three stages: 7

1. In the first stage, industry is concerned with the processing of primary products: milling grain, extracting oil, preparing skins, tanning leather, spinning vegetable fibres, preparing timber, smelting ores.

2. The second stage in the evolution of industry comprises the transformation of materials, making bread and confectionery, footwear, metal goods, cloth, furniture and paper.

3. The third stage consists of the manufacture of machines and other capital equipment to be used not for the direct satisfaction of any immediate want but in order to facilitate the future process of production.

The first stage is a function related to a country’s endowment in resources; the second stage may be based partly on processing primary produce and partly on the imported raw materials and hence may develop independent of the first. The development of the third stage represents a considerably higher degree of industrial development. The developing countries have first and second stage industries. More

7 Ibid., pp. 4-6.
advanced of the developing countries manufacture capital goods but do not possess the latest know-how and technology because of poor attention to Research and Development (R&D) mainly due to lack of financial resources.

Pace of Development of Industrialization

The speed of industrialization is generally very slow. The concept of speed is not clear and there is absence of a common and satisfactory measure. In general, the speed of industrialization in a country is determined by the following factors:

1. Speed depends upon the time or stage of technological development at which a country enters the process of industrialization.
2. Likely to be greater in cases where government takes the initiative in industrial development than otherwise.
3. The speed depends upon whether the process of industrialization starts with consumption goods production or capital-goods production.
4. The way in which capital is raised influences immensely the speed. If the right type of, and an adequate amount of, foreign capital is available to supplement internal resources, a country is likely to attain a higher speed of industrialization.
5. Other things being equal, rapid industrialization under contemporary conditions is likely to be easier in countries with a low ratio of population to land and low rate of natural increase therein than where there is combination of high population density and high rate of population growth. Countries of low population density are usually in a better position to benefit from an inflow of the appropriate factors like industrial capital and skilled labour from abroad.

Implications of Industrialization

A study of the consequences of industrial development is necessary to find out points of friction and to adjust the speed or direction of investment or adopt remedial measure to increase the effectiveness of the process in achieving its real object,
namely, to raise levels of living and increase human welfare. These effects of industrialization may be examined under these heads: ⁹

1. Internal structural changes: Industrialization leads to an increase in the number of persons engaged in secondary industry. It is most likely to occur during the initial phase of industrial development when even small absolute increase in factory employment results in more than proportionate gains. The rate of growth of factory employment is related not only to the expansion of industrial output, but also to the establishment of new industries. Although there may not be exact correlation between the rate of industrial development and the change in occupational distribution, there is a fairly general tendency for the relative importance of agricultural employment to decline and that of factory employment to increase.

The spread of wage-earning makes possible a gradual change from indirect taxation to direct taxation. Public investment has to be adjusted in magnitude and direction to the new distribution of population both by region and by activity. The changing structure of the economy may make it more difficult to synchronise the budget as a whole, and capital expenditure in particular, with the diversified pattern of private consumption and investment. Adjustments become necessary in other fields also; new legislations may be required to cope with new problems in the field of factory safety, public health, protection against unemployment, etc. Further, certain changes in the geographic pattern of activities accompany and flow from the process of industrialization.

2. Changes in the pattern of foreign trade: The growth of domestic industries in developing countries may lead to a reduction in import of the types of goods that the new industries produce. These changes may be offset by an increase in the import of capital equipment or of spare parts for maintenance plus varying proportions of raw materials and semi-finished goods and components which form the inputs of the new industries.

⁹ Ibid., pp. 6-8.
3. Social consequences: The soundness of an industrialization programme depends not only upon the selection of industries but also on the methods of a full recognition of the problem raised by social transition. The actual process of industrialization involves significant changes in the pattern of living and like all changes, these calls for a considerable social adjustment and adaptation.

Factors Related with Industrialization

Industrialization is generally characterized by an occupational shift from agriculture to industry.\(^\text{10}\) The pattern and scope of industrialization are shaped by several factors such as availability of raw material, transport and communication, skilled HIRs, financial resources, supply of entrepreneurial talent and a country’s economic and political stability. It is further influenced by international flows of labour, goods and capital, international trade and attitude of leading industrial nations and international organizations towards developing countries.\(^\text{11}\) The aforesaid factors not only determine the nature and scope of industrialization but also the strategies used and the order of likely priorities. For purposes of analytical clarity, they can be grouped into two broad categories – domestic and international.\(^\text{12}\) The role and importance of these factors concerning industrialization is discussed below:

I. Domestic Factors

1. Raw Materials: A country’s natural resources are its geographical location, its climate, vegetable and mineral wealth. These are important determinants of the feasibility and success of manufacturing industries. Differences in the availability of local resources give an edge to one country over the other in the matter of development of special industries. These factors often govern the selection and location of industries. Heavy industrial establishments are generally located in areas which are better equipped with cheap and adequate supplies of necessary raw materials. Although availability of local resources is

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essential for industrialization yet their shortages can be overcome. Imports help to cover the inadequacies of fuel and raw materials, but they lead to higher cost of transport and loading/unloading, making industrial units uneconomical.

2. Labour: Labour or HR plays an important role in industrialization, for it is both a key factor for production as well as an ultimate objective of providing employment and welfare. As consumers, they help in estimating the quantity of goods and services to be produced in the country.

The size composition, skills, experiences and qualifications of HR have a marked influence on industrial productivity and industrial development. Different industries require different types of labour. Some industries require semi-skilled labour e.g., jute and cotton industries. On the other hand, some highly capitalized industries like automobile making, electronics, chemicals, etc., require fewer but highly skilled labour capable of understanding and controlling the complicated basics of modern technology. Without skilled labour, these factories become the victims of frequent delays and breakdowns, excessive wastage of raw materials, under-utilization of plant capacity, low productivity and increased unit cost. In the long-run, success depends upon the efficiency and adaptability of the workers and their devotion to hard work and their spirit to make sacrifices to achieve the goals of the organisation to which they belong.

3. Capital: Capital is the mainstay of modern manufacturing and plays a vital role in increasing productivity. It is necessary for purchasing land and creating infrastructure, collecting raw materials and buying machinery. Further, it facilitates the introduction of new technology by modernizing various kinds of manufacturing processes.

A capital base is also required to maintain reserve stock of raw materials which may be scarce or in short supply. Likewise, capital is also

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needed to tide over situations when the off-take of production falls i.e., there may be slump in the market and the capital input may be blocked.

4. Market: Market plays an important role in the pursuit of the objective of industrialization. To succeed, industry must sell its products either at home or abroad. The inadequacy of local market creates no obstacle if some manufactured goods can enter the foreign market. Moreover, market determines the scale of production. The wider market offers great scope for the development of productive forces, development of capital and economic advancement. It may facilitate the use of various cost-reducing devices. On the other hand, a limited market leads to low level of production and conflict for an efficient scale of production, and internal competition often results in low efficiency and high prices. Most of the developing countries have limited domestic market at the outset for industrialization due to low purchasing power of the bulk of population.

5. Economic Infrastructure: The provision of economic infrastructure like transport and communication, power and water supply is an essential pre-condition for sustained industrial advancement. Modern industry cannot operate efficiently in the absence of adequate facilities of power, transport and communication, because internal specialization and division of labour become difficult. Both rail and road transport is necessary for the procurement of large quantities of raw materials from different places and for the distribution of finished products in different parts of the country. Transport and communication provide essential mobility of men, goods and ideas. Improved transport system reduces transit time, inventory capital and obsolescence costs. Thus, the development of infrastructure helps in providing better links to rural areas and promoting products directly.

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6. Entrepreneurial Talent: A body of experienced entrepreneurial talent is essential for converting the existing potential into concrete reality. The entrepreneur combines the factors of production, organization and manages undertaking to initiate and translate projects from paper to actuality. The organizational capacity and imagination, judgement and willingness to bear the risk by entrepreneurs, also influence industrial development significantly.

II. International Factors

1. International Flow of Capital: Foreign capital plays a profound role for achieving the objectives of speedy industrialization. Foreign capital can enter a country in the form of private capital and/or public capital. On the one hand, it finances the gap between internal accumulation and desired high level of investment, and supports the establishment of infrastructure necessary for erection of industrial superstructure. It provides foreign exchange for importing large quantities of equipments and materials necessary for establishing industrial units. Further, it accelerates the rate of capital formation and introduces latest production techniques and thereby adds to the productive capacity of the economy.

   It can also encourage indigenous entrepreneurs to invest in industrial field, either in partnership with foreign capital or in local ancillary industries established by foreign enterprises.

2. Technical Assistance: There are two common patterns of technical assistance in the industrial field one involves lending engineers, technicians and experts to developing countries, the other offers training facilities in more advanced countries to the government approved candidates on fellowships and scholarships made available by the United Nations and its specialized agencies. Most of the assistance schemes have been designed to increase productivity, improve methods and production techniques, raise quality and lower unit cost in the existing industries.

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3. International Organizations: The international industrial organizations like World Bank, International Finance Corporation, International Monetary Fund, International Development Association and Special United Nations Fund for Economic Development also play an important role in the industrial development. They provide direct financial and technical aid by facilitating the exchange of ideas, by disseminating knowledge gained by individual countries in the course of their industrialization programme and by associating themselves with collaborative advanced researches.

**Industrialization in Developing Countries**

By the end of the Second World War, industrialization had become an important element of the development strategy in most of the developing countries. The increasing emphasis was placed on industrial development during 1950s and 1960s. Industrialization in those countries was considered to be the only way of creating extensive employment opportunities generating rapidly, raising living standards, enhancing national prestige and alleviating balance of payments constraints. Moreover, industrialization was deemed to provide highly productive sophisticated intermediate inputs and capital goods, encouraging rapid changes in production methods and techniques.

Developing countries generally differ in their pace and pattern of industrialization not only because of variation in natural endowments and resource potentials but also because of the difference in their approach to industrialization. At present, only a few countries – Mexico, Brazil, Argentina, India, Iran and Egypt have been able to develop industries. Some countries have concentrated on consumer goods industries based on local raw materials. On the other hand, Yemen, Columbia, Laos, Nepal, Jordan, Afghanistan, etc., have only a few enterprises, especially the extracting and processing industries sub-sector. However, a few generalizations about the priorities may be made.

One of the striking features is that these countries have sought to industrialize within the framework of declared national planning. These countries

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cannot afford to waste their scarce resources in trial and error that took several decades in Western industrialized countries to bring the industrialization process to an impressive level of sophistication. So, the governments of these countries have accepted the responsibility of eliminating negative features and shortcomings of the market mechanism and ensuring the general economic conditions conducive to industrialization. Public Sector holds special importance and is taking care to serve the public and economic requirements by establishing central sector large-scale projects (in public sector) generally beyond the reach of the private sector. Besides extending the scope of their own business undertakings, the governments have also designed various development programmes and policies to encourage speedy industrialization in the private sector.

In advanced countries, industrialization proceeded from handicraft and light industries to heavy industries. But in developing countries, the order seems to have been reversed. Here heavy industries have been given priority and they are expected to serve as a means of industrialization. Large-scale industries can increase production, improve and modernize the methods of production and help in attaining the higher status in the world market. But small-scale industries are also established to meet the domestic demand of the growing population for manufactured goods and create additional employment opportunities. Hence, a constant and diverse combination of small-scale and large-scale units is one of the features of industrialization in these countries.

Until about the mid-1960s, in most of the developing countries, the primary aim of the industrialization was to secure maximum rise in national income. The strategy of import substituting industrialization was pursued to replace the imported manufactures by domestic production. Protective devices like tariffs and other quantitative restrictions on imports, and administrative controls over entry to industry, etc., were adopted to encourage private entrepreneurs and assist public enterprises during the period of infancy. This excessive protection, however, proved to be a brake to overall growth because it turned the terms of trade against agriculture and other

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non-manufacturing sectors raising the costs of inputs into these sectors. Moreover, it has unduly promoted development of metro and urban areas at the expense of the rural and backward areas and also accelerated rural-urban migration. As a result of this, the problems of balance of payments, growing unemployment, rising inflation and regional disparities were also aggravated.

But by the end of 1970, the emphasis shifted towards other objectives such as of equitable distribution of income and national self-reliance.\textsuperscript{28} In pursuance of these objectives, a number of Asian, Mediterraranean and Latin American countries assigned their priority to the strategy of export promotion to utilize their resources efficiently and to overcome the consequences of excessive import substitution orientation. But overtly, export oriented strategy tended to neglect the growth of domestic market and created further distortions in the economy. To overcome these deficiencies, a more balanced approach has been adopted to avoid excessive export incentives on the one hand and excess protection on the other.\textsuperscript{29}

The adoption of capital-intensive production techniques in these countries has siphoned off their limited capital and energy resources and skilled manpower towards meeting the needs of mechanised, modern factories of urban areas.\textsuperscript{30} Such a growth process has strengthened a dualistic structure in the production system of these countries. In the absence of adequate technical manpower and sufficient financial resources, they had to depend largely on foreign assistance for executing their industrial programmes in the initial stages.

Thus, these countries have achieved a certain degree of self-sufficiency and a positive change in their economic structure. These countries have achieved a compound growth rate of 6.6 per cent between 1970-76 as against 3.4 per cent in developed countries.\textsuperscript{31} But the rapid growth of manufacturing has not been matched by an equally rapid growth of employment in manufacturing establishments due to capital intensive nature of new investment, and application of sophisticated, scientific and technological devices in the production process.\textsuperscript{32} However, the contribution of

\textsuperscript{29} Hughes, H., op. cit., p. 17.
\textsuperscript{32} Mehta, M. M., Industrialization and Employment with Special Reference to Asia and the Far East (Bombay: Popular Prakashan), 1976, pp. 8-9.
the industrial sector of the third world to the total industrial production at the global level is limited to a great extent.

Actually, the third world countries are facing numerous difficulties in bringing about speedier process of industrialization. Despite being rich in natural resources, many of them are suffering from infrastructural deficiencies.

Iran as a developing country, situated in the South West Asia among Middle East Countries, is the eleventh largest country in the world with an area of 1,648,195 square kilometres. However, due to its size and the fact that it spans between 25 and 40 degrees latitude, as well as endowed with the great mountain ranges, a variety of climate is found in Iran. The climatic variety in Iran ranges from sultry Caspian Sea region in the north, to arid desert climates in the central and southern regions, and cold in the west regions. Iran is bounded on the North by Turkmenistan, the Caspian Sea, Azerbaijan and Armenia, on the West by Turkey and Iraq, on the South by the Persian Gulf and Oman Sea, on the East by Pakistan and Afghanistan.

The population of Iran is around 66,622,704 (July 2002 estimated), with an annual population growth rate of approximately 0.77%. Distribution of population (age group-wise) is as under: 1) 0-14 years: 31.6 percent (male 10,753,218; female 10,273,015); 2) 15-64 years: 63.7 percent (male 21,383,542; female 21,096,307); and 65 years and over: 4.7 percent (male 1,633,016; female 1,483,606).

<table>
<thead>
<tr>
<th>Sex ratio*</th>
<th>Life expectancy at birth</th>
<th>Birth rate</th>
<th>Death rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>At birth</td>
<td>Under 15 years</td>
<td>15-64 years</td>
<td>65 years &amp; over</td>
</tr>
<tr>
<td>1.05</td>
<td>1.05</td>
<td>1.01</td>
<td>1.1</td>
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<table>
<thead>
<tr>
<th>Net migration rate</th>
<th>Infant mortality rate</th>
<th>Total fertility rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4.64 migrant(s) / 1,000 Pop.</td>
<td>28.07 deaths / 1,000 live births</td>
<td>2.01 children born / woman</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnic groups:</th>
<th>Religions:</th>
<th>Languages:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Persian</td>
<td>Shi’a Muslim</td>
<td>Persian &amp; Persian dialects</td>
</tr>
<tr>
<td>Azeri</td>
<td>Sunni Muslim</td>
<td>Trucks &amp; Trucks dialects</td>
</tr>
<tr>
<td>Gilaki &amp; Mazandarani</td>
<td>Other</td>
<td>Kurdish</td>
</tr>
<tr>
<td>Kurd</td>
<td>Literacy:</td>
<td>Luri</td>
</tr>
<tr>
<td>Arab</td>
<td>Male</td>
<td>Balochi</td>
</tr>
<tr>
<td>Lur</td>
<td>Female</td>
<td>Arabic</td>
</tr>
<tr>
<td>Baloch</td>
<td>Total Pop.</td>
<td>Turkish</td>
</tr>
<tr>
<td>Turkmen</td>
<td></td>
<td>1%</td>
</tr>
</tbody>
</table>

Source: Field Survey

* Male(s)/Female
Iran is one of the world’s largest oil rich countries and is OPEC’s second largest oil producer member and accounts for roughly 5 per cent of the global oil output. The country holds 9 per cent of world’s oil reserves and 15 per cent of its natural gas reserves.

Iran is now a lower middle-income country, with a GDP of $ 99 billion (Rials 540 tr.) and per capita GDP is $ 7400. GDP growth was estimated at 4.5 per cent in 2000, and 5 per cent in 2001.

Agriculture is the major economic sector in Iranian economy, with great potential for development. As such, agriculture is a key strategic policy planning thrust area for economic development. It contributes more than 20 per cent of GDP and generates one-third of the total employment. The main items comprising agricultural products are: wheat, rice, cotton, beet and cereals, other grains, sugar, fruits, nuts, dairy products, wool, caviar, etc., valued $ 27.4 billion in 2001 at current prices.

At present, the most important industrial activities of Iran are: oil and petrochemicals, textiles, carpets, food stuffs, iron, fruits, gas, automobile making, electric and electrical equipments, etc. The most important household, hand-made and traditional industries are engaged in carpet, Gilim, Jajim, Zilu, Inlaid work and Pottery. The sectoral break-up of the Iranian economy is depicted in Table No. 2.2 below:

<table>
<thead>
<tr>
<th>Sector</th>
<th>Share</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>20%</td>
</tr>
<tr>
<td>Industry</td>
<td>24%</td>
</tr>
<tr>
<td>Services</td>
<td>56%</td>
</tr>
</tbody>
</table>

Source: The World Factbook 2002

**Industrial Structure in Iran**

Before 1979, Iranian industry had undeveloped structure. This was because of low value addition of industrial production, low share in gross national product (GNP)

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of country, low investment in machines and equipments (shortage of capital) in industrial production, limited share of medium-industries in industrial production and also inability to compete in regional and international markets.\textsuperscript{34} The industry structure in Iran is described in separate section with suitable details.

I. Industry Structure before 1989-90: The highest share of industry in GNP achieved was 14.4% in 1984-85. This level was not achieved thereafter even with the beginning of the first economic, social and cultural development plan. Rather this share came down to 7.2% in the five years-plan reckoned on the price level of 1974-75. In this period, the share of industrial production in value addition, however, increased from 13.4% to 15.2%, respectively, in 1983-84 and 1984-85. It gradually reduced to 7.4% in 1988-89. The share of capital goods manufacture in total industrial production of the country increased from 4.85% to 45.3% from 1983-84 till 1986-87. It reached 49.3% in 1988-89 when the automobiles industry’s share decreased correspondingly. Also, the share of medium size industry in total value added production of the industry increased to 48.7% from 1983-84 till 1986-87. But it got fixed at the level of 47.5% in 1987-88 and 1988-89. One of the major characteristics of industry in Iran has been little connection between industrial production with the quantity of available internal resources including raw materials and the dependence of industry on imported industrial materials and machinery. Another characteristic is low share of non-oil exports which could not be raised beyond 10% in 1986-87. The third characteristic is very limited competitive capacity due to poor quality and thereby lack of market across borders. Yet other limitation is outmoded technology and lack of proper planning to introduce the latest/modern technology in order to produce quality goods to meet competition in foreign markets.

II. Industry Structure after 1989-90: Performance of industry during this period ushered in the enhancement in skills of workers, the number of workers increased but still dependence on external resources, raw materials and intermediate goods remained. However, there was improvement of technology and consequently quality improved and production increased. Industry became

\textsuperscript{34} Harati, A., Visage Industry (Tehran: Ministry of Industry), 1997-98. pp. 83.
assured of its place in Iranian economy. Future seemed encouraging. The private sector made investment in industry during this period in increased measure.

To evaluate the industry structure in Iran as regards its expansion and performance after 1989-90, it is appropriate to analyze its achievements during the two Plan periods of economic, social and cultural development:

a) First Five-Year Plan Economic, Social and Cultural Development (1989/90-1993/94). In this plan, private and public sectors have invested aggregate $15 billion in industry. About 50% was in the small and medium sector and the rest in the metal and petrochemical industries.35

Studies conducted by Central Bank of Iran shows that 55% of this investment was made by the public sector and the rest by the private sector. The quantum of investment in industries estimated by Ministry of Industries reached Rials 4000 billion ($4 billion) of which 65% was provided by private sector, and 35% by public sector and Banks. Also, expert studies of Central Bank of Iran shows that the value added production of industry sector had grown well during the years of the plan, both at fixed prices of 1982-83 and at flow (current) prices.

Table No. 2.3
Value Added Products of Industry Sector
During 1989/90-1993/94
(Billion Rials)

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Fixed price (1982-83)</td>
<td>1417.9</td>
<td>1643.8</td>
<td>1940.3</td>
<td>2002.4</td>
<td>2022.4</td>
</tr>
<tr>
<td>Flow Prices</td>
<td>2906.4</td>
<td>4413.9</td>
<td>6833.2</td>
<td>9218</td>
<td>12872.3</td>
</tr>
</tbody>
</table>


b) Second Five-Year Economic, Social and Cultural Development Plan (1995/96-1999/2000): As regards the total investment in industry sector (including mining) during 1995/96-1999/2000, it is observed that during this period Rials 1608.5 billion were actually invested in industry and mining, which exceeded the Plan estimate of Rials 1146.5.36 During the plan period, with lower level of foreign investment during 1997/98-1998/99 in the country due to foreign exchange restrictions, domestic investment was increased to

35 Ibid., p. 81.
36 Ibid., p. 85.
effect enhancement capacity utilization and completion of programmes which were incomplete. Also, the share of gross investment in industry and mining in the total investment in all sectors reached 13.4%, which was far in excess of the target of 8.2%.

Performance of industry and mining sector during 1995/96-1999/2000 shows that value added products of this sector increased by 4.9%, during this period. Target of growth in the overall economy in the Second Plan was fixed at 5.9%. However, this goal was not achieved. The forecast in this plan regarding share of value added products of industry and mining sector was fixed at 16.5% which was achieved.

Table No. 2.4

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Performance</th>
<th>Goal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value added of industry and mine section</td>
<td>4.9%</td>
<td>5.9%</td>
</tr>
<tr>
<td>Gross internal production</td>
<td>3.8%</td>
<td>5.1%</td>
</tr>
<tr>
<td>Share of value added of industry and mine section from whole</td>
<td>16.8%</td>
<td>16.5%</td>
</tr>
</tbody>
</table>

Source: Field Survey

Place of Industrialization in the Country’s Development Plans

I. A review of the place of industrialization in development plans before 1979

a) First Five-Year Development Plan (1948/49-1954/55): The foundation of the first plan was laid in 1948-49. Special attention was focused on those industries which already existed. Measures were also undertaken towards mobilization of human resources to bring about agricultural development along with rapid industrialization. A systematic budget was prepared for the first time in the country. The plan, however, ran into rough weather and the economy came to almost a grinding halt after the nationalization of oil in 1951. While the plan did achieve some success in terms of some road and rail constructions, minor irrigation works and the establishment of a few industrial undertakings, worthwhile headway could not be made for want of financial

resources. As a result, the plan was abandoned six months before it was due to end.

b) Second Five-Year Development Plan (1955/56-1962/63): This plan was launched in September 1955. A distinguishing characteristic of this plan was that its total outlay was Rials 81.1 billion; nearly 23.3 per cent was earmarked for agriculture and about 37.5 per cent for transport and communication infrastructure. An important point worth underlining with respect to this plan is that while it succeeded in implementing some of the programmes envisaged in it, it could not escape from some notable failures in certain key areas. The result was that only a modest average annual growth rate of 4.3 per cent could be achieved during this period.

c) Third Five-Year Development Plan (1963/64-1967/68): This plan was relatively much broader in scope; it can be considered as the first step in the direction of comprehensive planning. A strong emphasis was laid on industrialization in this Plan. A high rate of growth, coupled with relative price stability, was its highlight. The per capita Gross National Product (GNP) in 1968 stood at Rials 23,000 (i.e., $ 308). However, in view of severe revenue constraints to meet the various objectives spelt out in the plan frequent revisions had to be effected in the original plan.

d) Fourth Five-Year Development Plan (1968/69-1972/75): This plan was indeed a turning point in the history of the Iranian economy. Industrialization, development of agriculture and raising of farmers’ income through allied and subsidiary activities were the primary goals sought to be achieved through this plan. Unfortunately, owing to several constraints, the expenditure on agriculture fell sharply from 23.1 per cent in third plan to a mere 8.1 per cent in the fourth plan. This signifies the neglect of the agricultural sector by the regime, and that too soon after the over-ambitious but mis-conceived agricultural reforms had been introduced, which were later on partly reversed. The rate of migration to the cities increased. The net result was that the country was forced to import foodgrains. The growth target for the agricultural sector could not be realized, and, in net terms, the relative share of agriculture in GNP declined by 6.5 percentage points.
e) Fifth Five-Year Development Plan (1973/74-1977/78): This plan coincided with the steep rise in the price of oil in 1973. This placed enormous funds at the disposal of the government. Accordingly, relatively more ambitious targets were fixed. The annual growth rates envisaged in the fifth plan were 18 per cent for industry, 7 per cent for agriculture, and 22 per cent for per capita GNP. The development process accelerated. The plan could be distinguished from the earlier ones not only by the size of public investment, but also by the inclusion of private sector investment. Out of the total investment of $36.4 billion, about 62.94 per cent was from private sector. It is interesting to note that industry and agriculture were given an equal weightage. But by the end of 1976, the plan was more or less abandoned while preparation began for the next plan. This led to a new planning procedure which too was dropped like a hot potato. The year 1978 witnessed the Shah (then ruler of Iran) abandoning the very idea of the development plans. This is how the planned development met its tragic end in Iran during the tenure of Shah’s own regime in the pre-Islamic Revolution period.

II. A review of the place of industrialization in development plans after 1979.

a) First year of the development plan (Five-Year Plan 1983/84-1987/88): The first year of the development plan after 1979, was put in operation but due to the eruption of war between Iran and Iraq, it was not suitably implemented. The whole Five Year Plan went wrong.

b) First Five-Year Economic, Social and Cultural Development Plan (1989/90-1993/94). This plan was formulated in 1989-90 and was put into operation.

Table No. 2.5
The Rate of Gross Domestic Production and Value Addition of Main Economic Sectors during the Plan Years

<table>
<thead>
<tr>
<th>Section</th>
<th>Rate of gross internal production</th>
<th>Rate of value added</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>6.1 %</td>
<td>5.9 %</td>
</tr>
<tr>
<td>Oil</td>
<td>9.5 %</td>
<td>8.7 %</td>
</tr>
<tr>
<td>Mine &amp; Industry</td>
<td>15.0 %</td>
<td>8.3 %</td>
</tr>
<tr>
<td>Gas, Electricity &amp; Water</td>
<td>9.1 %</td>
<td>12.7 %</td>
</tr>
<tr>
<td>Building</td>
<td>14.5 %</td>
<td>5.2 %</td>
</tr>
<tr>
<td>Services</td>
<td>8.1 %</td>
<td>7.4 %</td>
</tr>
</tbody>
</table>

It is observed from Table No. 2.5 that mining and industry sector had achieved the highest rate of growth, still this sector could not achieve the target laid down in the plan.

The average-growth of industry was 8.3 per cent and this resulted from non-oil exports, which crossed the figure of $4 billion. This amount (for exports) was too less than in the plan.

Expert studies listed the existence of several structural problems and lack of specific strategies of development which could be comprehensive, long term and continuous. Low rate of increase of per capita income, low capacity utilisation of industry, less exports of too many industrial products, and dependence on advanced countries afflicted the Iranian economy. Besides, there was absence of enabling legal and administrative support which affected the efficiency, and desired level and pace of industrial development.

Regarding policy of industrialization, this plan prescribed import substitution and formation of centralised agency for handling exports including oil exports.

c) Second Five-Year Economic, Social and Cultural Development Plan (1995/96-1999/2000). In this plan, many parameters were laid down to increase industrial production, maintaining favourable balance of trade, improving and developing of indigenous technology, more optimal use of resources and exploitation of potential of the country’s endowments. The objectives of the plan such as stabilization of industry sector, activating the industrial agencies and operating all enterprises on economic lines, lowering the rates of tariffs, encouraging more production and continuing to establish more new industries in the public and private sectors, privatization of non-strategic industry, liberalization of the controls, encouraging savings and investments and attracting foreign investments for transfer of advanced technology, balanced development of all regions to avoid any imbalance, were the most important ingredients intended to be achieved in this plan.\footnote{Hashemian, M., et al., Identifying Industrial Investment Priorities to Support Oil Export Proportional Advantage (Tehran: Busines Research and Studies Institution), 1999, p. 71.}
**Drawbacks of Iran’s Industrial Development**

One of the inhibiting factors has been the lack of management skills. The poor quality of management of industry sector in Iran can be divided in two parts, for proper understanding, as under.\(^\text{39}\)

1. Organization (Human Resources to lead the industrial system towards the goal). The personnel engaged in the government set-up have been lacking in the integrated and comprehensive view of industry. The staff component has remained continuously divided into different ministeries. Those in the Ministry of heavy industry were focused on all aspects of heavy industry only; similarly, those manning medium and small (cottage and tiny industry) Ministry, had interests of such industry in mind while formulating policy, planning and programmes. The comprehensive and integrated planning was not done. There have been occasions (and often so) when Central Bank of Iran did not approve the approach of Ministries in regard to policy thrust, strategic planning and extension of support to industrial enterprises and for setting up technical training institutes. The Ministries once decided to boast non-oil exports by providing marketing and consultancy, and necessary incentives but the Central Bank of Iran did not lend its policy support. Instead of working in tandem, different ministries pulled apart thus dissipating energy rather than generating synergy.

2. Quality of Management in Industry: The firms/units suffered from lack of scientific management. Management skills were deficient. Even the instructions and directives emanating from various Ministries and Government departments were not helpful to ease problems but to keep only the government’s interest in view. Problems of industry remained unresolved. On the basic of No. 44 of basic Act, the country’s economy was divided into three sectors viz. governmental, cooperative and private. Apart from this formal division, there were entrepreneurs who had sizable presence in the country. They were in unorganised sector producing traditional items but the other part had a powerful attendance in the economy of country and did not follow the laws of these three sectors.

\(^{39}\) Ibid., pp. 119-120.
Strengths and Weakness of Industrial Activities in Iran (1979-2000)

The industrial sector, at the beginning of 1978-79, was facing many basic problems. The most crucial problem of the sector was its dependence on imported raw materials and intermediate goods, making the items very susceptible to the fluctuations in the international and domestic markets.

In addition, other administrative bottlenecks such as lack of coordination in industrial planning, neglect of consideration for other sectors of the economy, and lack of development of those industries whose products served as raw materials for other industries and which used the raw material available within the country, were not resolved. These difficulties made the infrastructure of industrial sector quite vulnerable and incompatible.

One of the earliest tasks of the provisional Islamic Republic was the reactivation of the economy, stagnated by the general strikes. The general stagnation in industrial activity, and more generally the deterioration of industrial and industry-government relations in the industrial sector, was not only caused by the strikes leading up to the Revolution, but they had roots in the basic inadequate infrastructure of the sector which was the result of defective planning for industry over the years. Even after the manifold increase of the oil revenues in 1974-75, the huge financial resources from oil and other government revenues were not used to lay a sound foundation for industry and develop a national industry free from foreign dependence. Instead, oil revenues were wasted upon grandiose industrial projects, which increased the dependence upon foreign sources, and built up powerful monopolies and, in the process, destroyed the domestic industries of the country. This trend continued to the extent that the economy of Iran came virtually under the command of foreign monopolies, not only in technology and raw materials but also skilled personnel. In other words, industries in Iran were branches of the foreign, western, capitalist industries (Multinational or International Corporations). The dependence on them was so great that without the foreign specialists, the complex industrial sector (due to imported technology and know-how) was not able to function otherwise at optimum efficiency.

These basic problems, as well as the new difficulties created after the victory of the Revolution (such as financial bottlenecks, shortages of materials and problems
of management and short supply of skilled employees) brought the situation in the industrial sector to virtually crisis situation. The obvious result was the fall in production and the increase in inflation and unemployment. In turn, these factors crippled the economy and endangered the result of Revolution. Thus, eliminating the problems of industry became the foremost priority of the government.

In the beginning of 1979-80, a random sample of the industrial units was taken in order to obtain some information about the difficulties of this sector. According to this study, the industrial production showed a 28 per cent decline from the corresponding figure of the year before. Most of this decline was due to the fact that about two-thirds of the raw materials needed by the industrial sector was imported and the difficulty of obtaining these raw materials, as well as insufficient financial means for their payment were pointed out as the causes of the stagnation in industry. In the heavy industry sector, there was lack of skilled personnel acquainted with the advanced technology required for operating them. Thus, considering these problems and the drop in production (resulting from temporary work stoppage or slow-down in some factories), a short-term program was formulated to restart industries, supplied raw materials and the needed quantum of finance and thereby avoided further increase in unemployment. The banks were called upon to provide financial facilities for importing raw materials and to meet other financial needs of industry. Bank Markazi Iran (Central Bank of Iran) provided Rials 5 billion as direct finance through the chamber of Commerce, Industry and Mines of Iran to the industries. Another Rls. 80 billion credit was provided through the banking system. Of this latter amount, Bank Markazi Iran offered refinance to the extent of Rials 40 billion. However, by the end of 1979-80, only Rials 25 billion was availed by the various industries. The lower level of utilization of finance by the private sector indicated the lack of interest of this sector to invest in industry. In addition, Bank Markazi Iran allocated Rials 20 billion through the Ministry of Commerce for importing raw materials and spare parts needed by the nationalized industries. Of this amount, only Rials 5 billion was used, Bank Saderat also allocated Rls. 30 billion for

* This random sample covers the first three months of 1979-80. The sample included 153 units, from 51 fields of industry, or about 33.6 percent of total industrial units. The units chosen were understanding examples in their field among the large industrial establishments.
agriculture and small service industries which were not used up to the end of the year. It becomes obvious that just allocating credit facilities under conditions where there was little supervision on its end-use, was a very temporary and short-term solution. The problems of industrial sector were so basic that they required complete infrastructural and reorganizational solutions to eliminate them. Complete structural overhaul was the solution with motivational climate and bouquet of incentives.

Considering the minimal effect of the government’s policy on industry, rather the absence of any effect on the large industrial units, the government decided to nationalize these industries in order to organize effectively the basic industries of the country and make use of them for the benefit of the public. Under this program, the industrial sector of the country was divided into four categories on the basis of investment and product line, as follows:

1. Basic and Heavy Industries: In addition to the oil, gas, iron and steel, copper and similar industries that were publicly owned in the past, other important industries like aluminum, machine tools, ship building and automobile making were declared nationalized.

2. The share in major industries owned by persons who had billions of Rials worth of wealth and had exported substantial part thereof out of the country by various means, and had themselves left the country, was transferred to the government.

3. The Plants and Machinery and the industries that were sick, non-functional or bankrupt were taken over by the nationalized banks.

4. The industries which generally showed profits and whose owners were acceptable by Islamic standards with reasonable and just incomes, were allowed to as privately owned enterprises.

The reactivation programme of industry was aimed at removal of the financial bottlenecks of this sector. However, the fall in production continued in most industries and stagnation was visible in many establishments. This latter problem was due to the inadequate/deficient infrastructure of the major industries which, for their basic raw materials, technology and trained HR, depended completely on foreign suppliers. The industrial countries, whose vital short-term and long-term interests in
Iran were threatened, became reluctant to provide the raw materials and the professional HR needed in the Iranian industries. They practically withdrew.

HR problems became acute in 1979-80. On the one hand, the lack of skilled HR and on the other hand, the clash between the workers' councils with the government appointed councils for factories, caused a state of confusion, instability and ambiguity in production policy and management.

Although each of these various problems was a factor in the industrial crisis, yet the major single cause was identified as the lack of an overall policy for development of industry. The government not only was not able to compensate for the withdrawal of the private sector from investment and management in this chaotic situation, but also it added to the difficulties by imposing limitations on the activity of the industrial units.

Although there was a relative improvement in industrial activity during 1979-80, the industrial sector along with all the other sectors of the economy lapsed into state of stagnation in the year 1980-81. The inevitable political, economic and social effects of the revolution, the country’s economic boycott and the freezing of Iranian assets by the U.S.A., and the destructive impact of the imposed war were all factors contributing to the widespread recession in the economy. The foregoing problems served to intensify and aggravate the shortcomings of an already unsound industrial structure. Those shortcomings were first and foremost a direct result of the industrial sector’s high dependency on foreign sources of raw materials, spare parts and skilled HR. It was thus natural that with a reduced level of oil earnings, the level of industrial activities should come to an almost standstill.

In order to reactivate the industrial sector, enabling law for protection and expansion of Iranian industries was approved on July 1, 1979, and the “Nationalized Industries Organization” was created. As a result of this act, 464 productive and commercial units with a workforce of 177,000 persons came under the protection of the government. The difficulties faced by these industries (most of which were in critical condition and required government supervision) became more acute during

* Created on December 8, 1979.
1980-81 as the country was subjected to economic sanctions and other forms of pressure by foreign powers.

In the year 1981-82, many of the difficulties that were plaguing the Iranian industrial sector as a result of this sector’s high foreign economic dependency continued to persist. In addition, problems such as the country’s economic boycott and the continuation of the war imposed by Iraq contributed to the stagnation in industrial activities.

During the first half of 1981-82, other problems more specific to the industrial sector such as shortage of raw materials, spare parts and skilled labour caused the level of production to drop by 4.7 per cent compared to respective figure of the preceding year. During the second half of the year, however, despite the existence of the foregoing problems, industrial production increased, partly due to the strenuous efforts made by the government to reactivate the industrial units. The overall rate of production for the year 1981-82, therefore, increased and the production index of large manufacturing establishments climbed by 12 per cent compared to the year 1980-81.

As a result of the gradual improvement in the provision of the much needed foreign exchange to the industrial units, the country’s industrial production reached a relatively satisfactory level in 1983-84. This improved performance was also a result of increased industrial mobility and a better adaptability to the persisting problems and difficulties plaguing the industrial sector.

Although productive efficiency failed to reach the desired level in many of the manufacturing establishments, nevertheless the production of the large manufacturing establishments showed a noticeable increase of 24.3 per cent compared to the preceding year. It is to be mentioned, however, that due to the lack of competition in domestic market and because of the shortage of skilled labour, the manufacturers did not care to maintain the expected quality standards during the recent years. On the other hand, despite the efforts made to remove the difficulties faced by the industrial sector, the persisting dependence of this sector on foreign sources for its machinery, technical know-how and raw materials, had made domestic industrial activity condition upon the continuous availability of foreign exchange.
In the year under review, a considerable increase in the production of machinery and metal equipment and basic metals was the major reason behind the overall production increase, achieved through improved performance of the industrial sector, re-vamping of industrial organisation and its affiliated companies as well as the reorientation of government agencies. In addition, mention must be made of the government policy of protecting and promoting industrial units in order to enhance the country’s new productive capacity.

The rate of growth of the industrial production of the country decreased during the year 1984-85 due to foreign exchange problems, shortage of raw materials and in some cases difficulties in the power supply. The foregoing problems, which intensified during the second half of the year, were responsible for a drop in the rate of increase in the production index of the large manufacturing establishments from 21.8 per cent in the year 1983-84 to 7.9 per cent in the year under review.

During this year, government’s development expenditure on the industrial and mining sector showed a sharp reduction of 31.5 per cent and total government expenditure payments declined by 24.5 per cent over the preceding year. The credit facilities provided by the Industrial and Mining Bank decreased by some 7 per cent in this year. In addition to the amounts paid out as credit facilities, credit disbursement by this bank for joint ventures and other large projects rose by 20.2 per cent, but, on the whole, the total disbursements of the bank remained unchanged compared to the previous year. In the year under report, capital investment based on operation permits issued for the newly established industrial units increased by 11.7 per cent.

Various problems and difficulties encountered by the overall economy of the country in general, and the industrial sector in particular, intensified during the year 1985-86. These difficulties were mainly the result of aggravated foreign exchange restrictions which lowered the overall level of investment in the economy of the country. These factors were also responsible for a major reduction in the activities of the industrial sector. During the year under report, the value added products of the industrial sector and the index of per capita production of the large manufacturing establishments decreased by 2.2 per cent and 5.9 per cent, respectively, compared to the year 1984-85.
During this year, the volume of investment, based on operation permits issued for the newly established and other units going for expansion, increased by 14.8 per cent. At the same time, due to difficulties plaguing the Iranian economy, the trend of investments for the establishment of new industrial units and the expansion of the existing units, followed a more decelerating pattern.

In the year 1986-87, the declining trend of the industrial activity of the country, which had started in the previous year, continued at a faster pace and consequently the Iranian industries were extensively faced with low production.

During this year, concomitant with the decrease in the production index of industrial units, the number of employed persons and also the amount of wages which were paid to employees of the large manufacturing establishments decreased considerably as compared with the respective figures of the preceding year. The severe reduction in the industrial production activities during the year 1986-87 had mostly resulted from foreign exchange restrictions, electricity cuts and the damages caused to some of the industrial units located in war zones.

During the year under survey, the government, the banking system and the private sector increased their shares of investment in some of the industrial units under their ownership or management or as lenders. On the whole, the amount of capital invested by both the private and the public sectors in the industries of the country grew during the year under survey.

In the year 1987-88, the downward trend of industrial activities continued due to the existing difficulties confronting the industries in general, and shortage of raw materials required for the production of machinery and equipments, in particular. As a result of these difficulties, the value addition to the manufacturing sector was reduced by 9.7 per cent at constant prices. The amount of reduction in the cases of general and per capita production indices of the large manufacturing establishments was respectively 6.9 per cent and 7.1 per cent over the previous year at 1982-83 prices.

Study of the investment in manufacturing sector in this year shows that the amount of the government’s investment and also the total volume of investment based on the industrial permits increased to a considerable extent.
The amount of growth in the total investment based on establishment and operation permits issued for newly established and expanding units also increased by 55.2 per cent over the preceding year.

Despite considerable overall growth equal to 56.0 per cent in the volume of credit facilities extended by the Bank of Industry and Mine to borrowers, particularly in the manufacturing sector, the volume of investment and partnership of this bank registered more than 74 per cent reduction in this sector.

The stagnation prevailing over industrial activities which had started since the second half of the year 1985-86, was further intensified throughout the year 1988-89. Aggravation of foreign exchange constraints, difficulties related to the provision of raw materials and intermediate goods, shortage of electricity and existence of other production bottlenecks were all factors which resulted in decrease of the private sector’s tendency to invest in industrial projects. Moreover, the government also reduced its development expenditure to this sector by 19.1 per cent. On the whole, the value addition in this sector at constant prices was reduced by 3.9 per cent over the year 1987-88. Meanwhile, the government paid special attention to the expansion of mining activities, particularly in the case of coal, and increased its development expenditure by 69.2 per cent over the previous year.

During the year under survey, following the acceptance of the U.N. Resolution No. 598 for restoration of peace in Iran, the government adopted and pursued new policies such as reconstruction of war-ravaged production lines, completion of semi-finished projects and utilization of additional production capacities. In order to implement these policies, the government allocated high percentage of its investments to this sector to repair and renovate the damaged establishments.

During 1989-90 and with the establishment of peace, favourable ground was paved in the area of manufacturing activities. In order to promote and facilitate industrial production, the government adopted new policies to remove production bottlenecks; and allocation of more foreign exchange was made to raise industrial investment. As a consequence of these measures, the downward trend of industrial production which had started in 1985-86, started looking up and enjoyed noticeable growth of 8 per cent in 1989-90.
During 1990-91, due to the implementation of favourable foreign exchange policies, the allocation of the major portion of foreign exchange was made to cater to the needs of the manufacturing sector, and also for the further utilization of additional productive capacities, and thereby the manufacturing activities achieved considerable growth. Hence, the value addition in the manufacturing sector grew by 15.9 per cent (at constant 1982-83 prices) over 1989-90. Meanwhile, general indices of production, per employee production and employment of the large manufacturing establishments rose by 29 per cent, 27.5 per cent and 3.1 per cent, respectively.

Completion of semi-finished projects and reconstruction of the damaged establishments formed the most important policy plank of the government within the framework of the first development plan. In implementation of the mentioned policies, the government investment and outstanding credit facilities extended by banks to the non-public sector went up by 56.6 per cent and 51.9 per cent over the year before.

Implementation of the new economic policies paved the way for further expansion of the private sector’s productive activities. The investment, in the existing establishments, and in other units for which operation permits were issued for starting new industrial units, increased by respectively, 106.2 per cent and 133.4 per cent over a year earlier.

Adoption of export promotion policies and provision of the credit/assistance for the domestic factories, in the year under review, accelerated the completion of scientific exploration projects for the exploration and utilization of mines. Therefore, with 92 per cent growth in the government investment in mining activities, the value addition of the mining sector grew by 14.1 per cent over the year before.

In the year 1991-92, the government policies for the manufacturing activities included mainly the completion of semi-finished projects specially the large steel mills, removal of controls and pricing of industrial products while foreign exchange was made available at floating rate for the import of raw materials and related inputs. The support policies were followed in the form of financing the needs of manufacturing units in both domestic currency and foreign exchange for further utilization of newly established and existing capacities. Implementation of the
mentioned policies increased the industrial production, so that the value addition of
this sector rose by 20.6 per cent over 1990-91.

Although the government’s investment in manufacturing sector was not
significant in 1991-92, the volume of its investment in mining sector grew noticeably
by 81.9 per cent, mainly due to provision of raw materials required by industrial units
for manufacturing for exports.

The financial needs of the manufacturing and mining sectors increased, owing
to the new foreign exchange policies and allocation of foreign exchange at
competitive rates to the industries. The banking system also expanded its facilities to
finance the economic sectors, including manufacturing sector. Therefore, the
disbursements of credit (and outstanding) extended by banks to non-public sector for
manufacturing and mining increased by 66.2 per cent. Implementation of economic
liberalization policies was accompanied with privatization policies in manufacturing
sector. The equity of 62 industrial units owned by government was disinvested to
privatize them.

During 1992-93, in line with the implementation of economic reforms, certain
measures were taken during this year as follows; streamlining the issue of industrial
permits, emphasis on the policy making role of industrial ministries, privatization of
the industries owned or managed by the government, promotion of exports through
subsidized loans, participation in international industrial and trade fairs, the relaxation
of the customs regulations, and extending further banking facilities.

Following the exchange rate stabilization and regulation, the volumes of credit
facilities, extended by banks and those allocated from the budget to finance the
required industries, increased. On the whole, the volume of investment in the
industrial sector enjoyed a slight growth. Most of these investments were allocated for
implementation of various projects. As a result of the operation of new industrial
units, the value added products of the industrial sector enjoyed a growth of 3.2 per
cent at constant prices, as compared with the production a year before. The total
industrial exports grew by 46.7 per cent as compared with the previous year’s exports.

Despite the negligible growth of one per cent in the value addition of
manufacturing sector, compared to the previous year, and reduction in industrial
production, various grades of iron, steel, copper and metal bars valued at $ 706 million were exported during 1993-94.

With the implementation of the policy of transferring state-owned industries to private sector and the gradual operationalization of the public industrial projects and also decline in the executive role of the government in economic affairs, government investment in industry fell by 10.2 per cent. In this year, the government expanded its research programme as a matter of its policy and thereby increased the volume of investment accordingly.

Due to the policy of self-sufficiency and utilization of domestic resources, especially the rich mineral resources, the export of minerals was promoted and to provide the mineral raw materials required by industries, the government raised the volume of investment in mining sector by 18.6 per cent. So, the value addition in the mining sector grew by 6.4 per cent (at constant 1982-93 prices) compared with 1992-93 production. There was an average annual growth of 6.3 per cent during the first Five-Year Plan.

During 1994-95, with the implementation of various industrial projects, price liberalization of more commodities, the policy thrust on industrial export promotion, financing the industry sector through the banking system and the governmental developmental budget, the manufacturing and mining sector got a relatively mild growth. The value added in the manufacturing and mining sectors at constant 1982-83 prices grew by 3.4 and 4.2 per cent, respectively, compared to the previous year, which was mainly due to the increase in petrochemical and metal products.

During the year under review, as a result of following new economic policies, both the number of operation permits (licenses) and volume of investments grew noticeably by 166.9 and 71.2 per cent, respectively. A total of 114 semi-finished industrial projects were completed in 1994-95. As new petrochemical projects (Arak and Bandar Imam Khomeini) were brought into operation, and metal industries were expanded, the production of certain commodities both in the light and heavy industries grew remarkably; and the needs of industries for the import of raw materials declined.

During 1994-95, with the relatively favourable conditions created for the non-oil exports and the improvement in the procurement of raw materials for industries,
the exports of industrial products, such as gas hydrocarbons, cast-iron, iron, steel and chemicals contributed largely to the industrial non-oil exports.

During 1994-95, two ministries i.e. “Ministry of Industry” and “Ministry of Heavy Industries” were merged with the aim of merging parallel organizations with similar activities, and expanding the supervisory role of the government.

Industrial sector enjoyed relative briskness in 1995-96 in spite of the existence of some impediments. The government provided support to the sector in the form of partial provision of financial resources, fixing of the exchange rate and liberalization of prices. The concurrence of such supports with the utilization of newly established large-scale manufacturing projects helped the promotion of the development of the sector. The preliminary estimate of the value addition of the manufacturing and mining sectors indicates a rise in the annual rate of growth from 3.4 per cent in 1994-95 to 5.8 per cent in 1995-96. The total value addition of the sector amounted to Rials 2,264.8 billion.

During 1995-96, non-oil exports declined due to the difficulties in marketing of the products, the controls imposed by the foreign markets and changes in the foreign exchange regulations relating to the repatriation of export proceeds. Despite this general trend, the export of petrochemical products and clothing increased due to the existence of comparative advantages for these industries.

Government investment in the industrial and mining sectors rose by 13.9 per cent in this year, and value amounted to Rials 334.5 billion. Of this amount, 53.3 per cent belonged to industry, and the remainder to mining sector. Most of the government investment in the industrial sector was allocated to the establishment and development of metal and metal smelting industries and chemical and petrochemical industries.

On the financial side, the banking system, and specially the commercial banks, continued to fulfill a good amount of financial needs of the industries. Despite this, in order to meet the financial needs of the industries, it was essential to proceed with the privatization. Along this line, a total of 432.1 million shares of the public sector establishments, amounting in face value to RIs 1,881 billion, were sold / transferred to the non-public sector.
During 1996-97, on the basis of the preliminary estimates, the value addition of the manufacturing and mining sectors at 1982-83 constant prices grew by 5.2 per cent and 5.3 per cent, respectively, compared to the previous year and reached Rials 2,294 billion and Rials 88.7 billion, respectively. The pursuance of policies related to the manufacturing and mining sectors in the second FYDP, the provision of government’s technical and financial support in the framework of the plan and the general budget, putting into operation a considerable number of industrial units (complementary to the production cycle) were amongst the major factors contributing to the production growth in most of the industrial and mining units. On the other hand, some technical and managerial inefficiency impeded the growth in a number of production units.

In this year, the government expenditure out of the development outlay to the manufacturing and mining sectors, with a 63.4 per cent rise, reached Rials 546.5 billion, 70.6 per cent of which was allocated to the manufacturing, and the remaining to the mining sector.

The banking system increased the volume of credit facilities in order to support investment in industrial and mining activities, and participate in the completion of projects with priority, and encourage the private sector investment in this sector. Thus, the outstanding credit extended to the non-public sector in industrial activities grew by 35.8 per cent at the end of 1996-97 compared to the previous year.

The manufacturing and mining sectors witnessed an upturn in 1997-98. According to the estimates derived from manufacturing industry surveys, the value addition of this sector grew by 8 per cent over the previous year and reached Rials 2,601.3 billion. Better supply of raw materials and intermediate goods required by the productive manufacturing units and the coming on stream of a number of new industrial units in different fields were among the factors contributing to the growth of industrial products during the period under study. The rise in the production of large manufacturing establishments had an important role in the growth of the value-addition of this sector.

During the period under report, production of petrochemicals, which are of great importance as raw materials and intermediate goods required by various industries, grew by 7.4 per cent over the previous year and reached quantity level of
10.8 million tons. Production of steel and cement grew by 2.8 and 8.3 per cent and amounted in volume to 6.1 and 19.5 million tons, respectively.

Export of industrial products comprised 54.9 per cent of non-oil exports in 1997-98 and amounted to $ 1.6 million, registering an 11.8 per cent growth over the previous year. The noticeable growth was in the value of exports of cast iron, iron, steel, gas hydrocarbons, soap and detergents, which contributed to the growth of exports of industrial products.

Despite the reduction in the government development expenditure in manufacturing and mining sectors by 33 per cent, compared to the previous year, credit extension of the banking system to non-public sector for the provision of liquidity increased by 7.9 per cent over the previous year.

In this year, the private sector’s tendency for participation and investment in industrial activities was noticeable. Thus, establishment permits issued by the Ministry of Industry grew by 10.6 per cent in number and 9.1 per cent in the amount of projected investment. Investment based on the operation permits also showed a slight growth.

Industry and mining sectors showed a relatively positive performance in 1998-99. According to the preliminary figures, the value addition of the manufacturing and mining sectors at constant prices grew by 4.9 and 4.0 per cent, respectively, as compared with the previous year, and increased to Rials 2,633.3 billion and Rials 94.6 billion, respectively. The production index of large manufacturing establishments also went up compared with the previous year.

Despite foreign exchange shortages in 1998-99, adoption of new foreign exchange policies such as granting permit to the manufacturing units for the utilization of foreign exchange at import certificate rate, increase in government investment and also the approval of the authority for the Economic Revitalization Plan, together with the approval under the new Mining Act, resulted in a boom in the activities of the manufacturing and mining sectors.

In this year, the banking system supported the manufacturing and mining sectors through extending more credit facilities and participating in project financing. Thus, according to the preliminary figures, the outstanding balance of facilities
extended by banks to non-public sector for manufacturing and mining, with a 24.3 per cent growth, reached Rials 23,773.7 billion.

The figure released by the Ministry of Industry indicates a 32.4 per cent reduction in the number of permits issued for the new industrial units and for the expansion of the existing units. In spite of decline in the number of permits, investment on the basis of establishment permits and operational permits of new industrial units, which are considered as indices for private sector investment, grew respectively by 6.7 and 9.4 per cent over the previous year.

Despite the weak competitiveness and price decline of most of the industrial products in international markets, the implementation of new foreign exchange policies accounted for the marginal increase in industrial exports. Thus, the value of exports of industrial products grew by 0.5 per cent only as compared with the previous year. In this year, a total of 1,202.7 million shares, valued at Rials 3,116.7 billion were transacted, showing 116.2 and 54.5 per cent growth, respectively, compared with the previous year. The Individual Development and Renovation Organization sold 109.6 million shares in Tehran Stock Exchange (TSE) valued at Rials 575.8 billion, showing more than 500 per cent growth in number and value of shares as compared with the previous year.

The manufacturing and mining sectors enjoyed a relative boom in 1999-2000 and the value addition in these sectors at constant 1982-83 prices grew by 2.5 and 5 per cent, respectively, compared with the previous year. The production of large manufacturing establishments, which constituted a significant part of the value addition in industrial sector, increased by 8.6 per cent.

In this year, the outstanding credit extended by banks to non-public sector in the manufacturing and mining activities grew by 29.9 per cent. Moreover, increase in government expenditure for implementation of national projects showed 50 per cent growth, compared to the performance of the year before.

On the basis of the data released by the Ministry of Industry, as many as 2,295 new industrial units with Rials 55 billion investment were established in 1999-2000, generating employment opportunities for 44.8 thousand persons. On the production side, data for selected industrial products indicates that production of 71 out of 100 selected products increased. In this period, the production of raw steel (including slab
and bar) grew by 11.9 per cent and reached 6.3 million tons. The production of steel products also witnessed a significant rise of 17.4 per cent compared with the previous year, and the volume reached 5.3 million tons. Despite the halt in some production lines due to repairs, about 11 million tons of petrochemical products were produced by manufacturing complexes affiliated to National Petrochemical Industries Corporation.

In order to promote non-oil exports, attempts were made by the economic policy makers to eliminate red tapes and finance foreign exchange needs of industrial units. These policies caused the value of non-oil exports to increase by 11.6 per cent, compared to the previous year. The composition of non-oil exports shows that the share of exports of “industrial products” and “metallic and mineral ores” increased in the total value of non-oil exports.

In this year, in line with the privatization of state-owned enterprises, “National Iranian Industries Organization” and “Industrial Development and Renovation Organization” offered 165,627.1 thousand shares valued at Rials 1,740.8 billion on the TSE, which constituted 84.5 and 95.6 per cent of total number and value of shares offered by the public organizations and corporations.40

Trends of Industrial Activities and their Effects on Production (1979-2000)

During 1978-79 due to the rapidly spreading strikes in Iran, and work slowdowns, a drastic decrease occurred in the volume of imported raw material and intermediate goods. This together with general workers’ strikes coupled with unpredictability of the economic future and the flight of many industrialists abroad, all resulted in a quick deterioration and a complete workers’ stoppage in industrial establishments, one after the other.

As a result of strikes and mass demonstrations, the industrial sector faced a serious recession. The overall production index of large manufacturing establishments dropped by 15.7 per cent in 1978-79 over the preceding year. An analysis of the overall index for different branches of industry shows that the decrease in the output of assembly plants and foreign dependent industries (for resources) was sharper than that of the other manufactures. Also, the index for production of industrial machinery

dropped by 41 per cent, that of engine and turbine plants by 36 per cent, and basic chemicals by 35 per cent.

During 1979-80, the government initiative in reducing the financial and raw material shortages of industrial units was not able to off-set the stagnation in production. The reason for this was the decline in private sector investment and the ambiguity of the policies of the government in respect of industry and visa-a-vis insecure status of ownership* coupled with the difficulty of obtaining raw and intermediate materials and personnel problems. During 1979-80, industrial production showed a meagre 1.6 per cent increase. This increase was mostly due to the increase in production of non-ferrous mine products (excluding oil and coal) by 14.6 per cent, textile, clothing and leatherwear by 12.1 per cent and wood and wooden products by 7.4 per cent.

During 1980-81, the level of production of large manufacturing establishments dropped by 6.2 per cent compared with the respective figure of the previous year. The decline in production was mainly due to the drop in production of cotton ginning industry (50 per cent), paper, cardboard and related products (29 per cent), and basic metals (23 per cent).

During 1981-82, the trend of the production index of the large manufacturing establishments improved and reached the figure of 136.2 with a 12.1 per cent increase over the preceding year. This increase was mainly due to a rise in the level of production of machinery and metal products (26 per cent), textiles, clothing and leather (20 per cent), and non-metal mining products exclusive of oil and coal (12 per cent). The foregoing industries, with relatively high weights in total production, led to a combined increase of 88 per cent in the general production index. During the year under study, there was a decline in production to the tune of 13 per cent compared to the year before.

During 1982-83, the production index of the large manufacturing establishments reached 157.6 with a 14.6 per cent increase over the preceding year. This increase was mainly due to a rise in the production index of basic metals (62.1

* According to the Constitution of the Islamic Republic of Iran, There are Three Main Economic Sectors Consisting of Public, Private and Cooperative Sectors.
per cent), wooden and wood products (34.5 per cent), and paper, cardboard and their derivatives (34.6 per cent).

During 1983-84, the production index of the large manufacturing establishments reached 195.2, showing a 24.3 per cent increase compared to the preceding year. This increase was largely due to rise in the production index of machinery and metal equipment (37.6 per cent), textiles, clothing and leather (25 per cent), chemicals (24.1 per cent), and basic metals (31.7 per cent).

During 1984-85, the production index of the large manufacturing establishments reached 131.4, showing an increase of 7.9 per cent compared to the preceding year. The production of machinery and metal equipment, which rose by 11 per cent, had the largest share in the growth of the production index. Also, there were increases of 13.5 per cent in the production of basic metals, 13.1 per cent in the production of paper, cardboard and paper products, and 9.2 per cent in the production of chemicals. The production of “textiles, clothing and leather” and “food, beverages and tobacco” which together comprised an important share of the total production, increased by 4 per cent and 4.9 per cent, respectively.

During 1985-86 the production index of the large manufacturing establishments reached 126.8, showing a decrease of 3.4 per cent compared to the preceding year. Considering the relative weights of each industry in the base year (1982-83 = 100), this decrease was mostly due to the reduction of production index of “machinery and metal equipment” by 11.9 per cent and “chemicals” by 4.5 per cent. The production index for “textiles, clothing and leather” with relative weight of 27 per cent and “non-metal mining products (except oil and coal)” with a relative weight of 12 per cent, increased by 1.4 per cent and 1.1 per cent, respectively, compared to the relative figures of the previous year. Also, the production index of “food, beverages and tobacco” with a relative weight of 14 per cent showed a growth of 5.8 per cent.

During 1986-87, the amount of production of all groups of industries was lowered, and the general production index for the large manufacturing establishments reached 100.6 (1982-83=100) which showed a decrease of 20.7 per cent as compared with the preceding year. The reduction in the general production index, considering the relative importance of industries in the base year (1982-83), mainly resulted from the decrease in production index of “machinery and metallic equipments and
products, equal to 37.3 per cent, “textiles, clothing and leather” 16 per cent and “chemicals” 15 per cent, which had 25.36 per cent, 26.83 per cent and 12.23 per cent shares in the total production, respectively.

According to the relative data, changes in the production of all commodities by the type of consumption indicate that the amount of decrease in production for capital goods had been greater than the same variable for non-capital goods. The amount of production decreased by 47.8 per cent for capital goods during 1986-87.

The production index for all industrial units under “machinery and metallic equipments and products” in 1986-87, as compared with the preceding year, had decreased between 15 to 64.5 per cent. Other groups of industries such as “chemicals, textiles, clothing and leather”, “basic metals” and “paper, cardboard and related products” were in a similar position compared to that of “machinery and metallic equipments and products”. The activities of these industries, with a total share of 47 per cent in industrial production, registered a decrease equal to 15 to 30 per cent. The production index for “non-metallic minerals” (except oil and coal) in industries which are not dependent on foreign exchange with a high share of 12.36 per cent therein, registered about 7 per cent reduction.

In 1987-88, the general index of production for the large manufacturing establishments had a decline of 6.4 per cent over the year before and reached 94.2 (1982-83 = 100). Considering the relative importance of the industries in the base year, the mentioned reduction was due mainly to production decrease in “machinery and metallic equipments and products” by 14.4 percent, “textiles, clothing and leather” by 6.8 per cent, “basic metals” by 21.4 per cent and “food, beverages and tobacco” by 8.5 per cent. Also, the production index of “non-metallic minerals (except oil and coal)” and “chemicals” increased by 6.3 per cent and 4.5 per cent over the preceding year which caused to halt further reduction of the general index of production.

In the year 1988-89, the general index of production for the large manufacturing establishments had 7.2 per cent reduction over the preceding year and shrank to 87.4 (1982-83 =100). Reduction of the mentioned index resulted from decline of the production index in all groups and industries which were surveyed by the Central Bank, except in the cases of “paper, cardboard and related products” and
“basic metals” industries. The production index of these two industries, respectively, grew by 13.5 per cent and 3.8 per cent. The highest amount of reduction was respectively shared by “chemicals” with 13.9 per cent, “textiles, clothing and leather” with 11 per cent and “Machinery and metallic equipments and products” with 7.1 per cent.

Following implementation of new economic policy in 1989-90 and removal of some bottlenecks restraining industrial activities, general production index of large manufacturing establishments reached 91 (1982-83=100), showing 5 per cent growth over the previous year. In this period, production level improved and grew in most industries. Industrial production growth based on the relative weight of industries was achieved mostly through increase in “chemical” industries by 22 per cent and “non-minerals” (except oil and coal) by 10 per cent.

During 1990-91, general indices of production and per employee production of the large manufacturing establishments with respective growth of 29 per cent and 27.5 per cent over the previous year, reached 118.4 and 105.1. The highest growth in production was in “basic metals” and “fabricated metal products, machinery and equipments” industries by 63.1 per cent and 57.1 per cent, respectively.

In 1991-92, a sum of $ 8 billion government allocation and a considerable amount of bank credit were provided to the manufacturing sector, which helped in raising general indices of production and per employee production of the large manufacturing establishments by 19.1 per cent and 13.5 per cent over 1990-91, making the respective figures as 141.4 and 119.6. The highest growth in production was recorded by “fabricated metal products machinery and equipments” industries by 45.8 per cent, “basic metal” by 25.7 per cent; production of some goods in the sub group of “fabricated metal products, machinery and equipments” doubled and, in some cases, increased ten times.

During 1992-93, the production index of the large manufacturing establishments with a growth rate of 1.3 per cent, reached 143.2. The highest growth of the industrial products came from “wood and wooden products” and “mineral and non-mineral products” industries (excluding oil and coal).

The production index of the large manufacturing establishments in 1993-94, with 9.7 per cent reduction in all industrial groups, reached 129.3. This reduction was
mainly related to the heavy industries such as “machinery and metallic equipments and products”, “wood and wooden products” and “basic metals”.

Despite the difficulties in industry sector, the production of certain industrial products grew noticeably in 1994-95. On the basis of the preliminary figures, the general index of production in the large manufacturing establishments grew by 3.7 per cent compared to the previous year and reached 123.6. The highest growth of the production index was attributed to basic metals industries (such as steel and aluminium by 12.6 per cent and petrochemical products by 8.4 per cent. During this year, the production index in non-metal and minerals (except oil and coal), wood and wooden products, textiles, leather and clothing declined between 3.8 to 0.1 per cent.

Data related to the production of selected industrial products released by Ministry of Industry indicated that the production of 68 products had achieved growth of 1 to 251.2 per cent. The production of vacuum cleaner grew by 251.2 per cent, meat grinder 227.1 per cent, ceiling fan 209.4 per cent, lathe machines 102.2 per cent, aluminium radiators 104 per cent, and copper rods and cables 98 per cent. The growth of the production of the mentioned products was the highest amongst others. The production of metal products, such as steel, grew by 20.5 per cent, compared to the previous years and the volume amounted to 4.7 million tons. The production of copper (anode and cathode) and cathode zinc sheets also grew by 34 and 232.1 per cent, respectively. Petrochemical products, which provide a large part of raw materials required by the domestic industries, grew by 38.9 per cent and increased from 5.4 million tons in 1993-94 to 7.5 million tons in 1994-95.

Table No. 2.6
The Production Index in the Large Manufacturing Establishments in 1994-95

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1993-94</th>
<th>1994-95</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food, beverages and tobacco</td>
<td>124.8</td>
<td>125.5</td>
<td>-1.9</td>
</tr>
<tr>
<td>Textiles, clothing and leather</td>
<td>108.7</td>
<td>108.6</td>
<td>-4.1</td>
</tr>
<tr>
<td>Wood and wooden products</td>
<td>92.2</td>
<td>91.9</td>
<td>-4.4</td>
</tr>
<tr>
<td>Paper, cardboard and related products</td>
<td>104.5</td>
<td>107.0</td>
<td>-2.0</td>
</tr>
<tr>
<td>Chemical products</td>
<td>117.1</td>
<td>126.9</td>
<td>5.4</td>
</tr>
<tr>
<td>Non-metal minerals</td>
<td>115.4</td>
<td>111.0</td>
<td>6.5</td>
</tr>
<tr>
<td>Basic metals</td>
<td>140.4</td>
<td>158.1</td>
<td>14.8</td>
</tr>
<tr>
<td>Metallic products machineries</td>
<td>115.8</td>
<td>116.8</td>
<td>-19.4</td>
</tr>
<tr>
<td>General Index</td>
<td>119.2</td>
<td>123.6</td>
<td>-3.1</td>
</tr>
</tbody>
</table>

Source: Adapted from Economic Report and Balance Sheet 1994-95, Central Bank of Iran.
According to the estimates for the production index of large manufacturing establishments in 1995-96, all industries except “textiles, clothing and leather” and “wood and wooden products” industries demonstrated a growth. The highest growth was attributed to “petrochemicals”, “foods, beverages and tobacco” and “paper, cardboard and related products” with respective rates of growth of 22.5 per cent, 19.5 per cent and 17.1 per cent. The output of most industrial products rose in 1995-96. Road construction machinery (272 per cent), combines (76 per cent), buses (66 per cent), chinaware and ceramics (54 per cent), automobiles (51 per cent), and machinery and equipment (50 per cent) recorded the highest growth. Production of “edible oils” and “detergents” rose by 14 per cent each. The highest reduction was on account of the production of mini-buses (70 per cent), black and white television sets (68 per cent), vehicle springs (bar) (56 per cent), and gearboxes (54 per cent).

Table No. 2.7
The Production Index of the Large Manufacturing Establishments in 1995-96

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1994-95</th>
<th>1995-96</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food, beverages and tobacco</td>
<td>133.5</td>
<td>159.5</td>
<td>7.0</td>
</tr>
<tr>
<td>Textiles, clothing and leather</td>
<td>113.4</td>
<td>109.3</td>
<td>4.3</td>
</tr>
<tr>
<td>Wood and wooden products</td>
<td>91.9</td>
<td>91.5</td>
<td>0.3</td>
</tr>
<tr>
<td>Paper, cardboard and related products</td>
<td>107.0</td>
<td>125.3</td>
<td>2.4</td>
</tr>
<tr>
<td>Chemical products</td>
<td>151.7</td>
<td>185.9</td>
<td>29.5</td>
</tr>
<tr>
<td>Non-metal minerals</td>
<td>121.4</td>
<td>135.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Basic metals</td>
<td>158.1</td>
<td>158.8</td>
<td>12.6</td>
</tr>
<tr>
<td>Metallic Products machineries</td>
<td>109.7</td>
<td>112.0</td>
<td>-5.3</td>
</tr>
<tr>
<td>General Index</td>
<td>128.0</td>
<td>136.3</td>
<td>7.4</td>
</tr>
</tbody>
</table>


According to the estimates, the general index of the large manufacturing establishments (1990-91=100) reached 145.1 in 1996-97, showing a 5.1 per cent growth compared with the year before. The performance of the metal melting industry indicates that the production of steel, with a growth of 36.5 per cent compared to the previous year, reached production volume of 5.8 million tons. The production of petrochemical products amounted to 10.3 million tons, registering a growth of 18 per cent. Furthermore, the production of cement, vegetable oils and various kinds of vehicles grew by 1.8 per cent, 2.2 per cent, and 24.7 per cent, respectively. A survey
of the performance of the industrial units under the Ministry of Industry indicates that about 80 per cent of the industrial products exhibited a positive growth.

Table No. 2.8
The General Index in the Large Manufacturing Establishments in 1996-97

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1995-96</th>
<th>1996-97</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1995-96</td>
</tr>
<tr>
<td>General Index</td>
<td>138.1</td>
<td>145.1</td>
<td>6.7</td>
</tr>
</tbody>
</table>


During 1997-98, the production index of large manufacturing establishments rose by 10.5 per cent over the previous year and reached 174. The survey of the changes in the amount of production in large manufacturing establishments indicates that the production in all industrial fields except “paper, cardboard and their products” industry went up. The production growth in industrial units producing “machinery and metal products and equipment” and “basic metals” was noticeable, owing mostly to the working of new industrial units. Survey of the performance of the Ministry of Industry in 1997-98 shows a positive growth in more than 69 per cent of the selected products manufactured in industry sector. According to data related to the production of petrochemical complexes, 1838 thousand tons of various types of fertilizers and insecticides were produced in this year, registering a 4 per cent growth over the previous year.

During 1998-99, the production index of large manufacturing establishments, contribute the major portion of GDP in industry sector, with 1.2 per cent growth, compared with the corresponding figure of the previous year, increased to 179.4. The figures released by the Ministry of Industry indicate that among 108 selected products, about 60 per cent recorded growth. Production of various kinds of automobiles had a remarkable rise in this year. Moreover, production of some basic goods such as vegetable oils, detergents, sugar and cement grew by 23.5, 20.1, 9.9, and 4.0 per cent, respectively. A total of 11.1 million tons of petrochemical products was produced by the complex affiliated to the “National Petrochemical Industries Company” showing 3.0 per cent rise as compared with the previous year. It is noteworthy that about 84.1 per cent of the nominal capacities of these complexes were utilized in this year.
In 1999-2000, the production index of large manufacturing establishments grew by 8.6 per cent compared to the previous year and reached 109.9. The production index of 15 groups out of 20 main groups showed growth. The highest growth of this index was from “tobacco and cigarettes”, “other transportation vehicles”, “clothing and dressing of furskins” with 23.6, 21.1 and 18.4 per cent, growth, respectively. On the contrary, the production index for “leather and leather products” and “medical and optical tools, and clocks” industries with 27.8 and 8.5 per cent decrease, respectively, were faced with the highest reduction.

The data released by the Ministry of Industry shows that out of 100 selected industrial products, the production of 71 products showed growth. The highest growth of production came from manufacturing of various gear boxes (136.8 per cent), various minibuses (83.8 per cent), auto shock absorber (63.7 per cent), buses (60.7 per cent) and cement and chalk (53.9 per cent). Moreover, the production of 29 types of goods which faced reduction in the corresponding period of the previous year, showed increase in this period. The production of certain products was reduced during this year, due to insufficient demand. The highest reduction related to production of various trucks and lorries (45.1 per cent), four wheel drive cars (30.9. per cent), writing pens (23.1 per cent), various wagons (21.2 per cent), steel radiators (18.3 per cent), and syringes (16.7 per cent).

In the year under study, in addition to the increase in production of raw steel (slab and bar) and steel products, production of aluminium increased by 6.1 per cent, compared to the previous year. This was mainly due to increase in demand, which was in turn due to relative boom in construction activities and increase in export of these products.

Table No. 2.9
The Production of Selected Metals in 1999-2000

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Slab and bar</td>
<td>5608.0</td>
<td>6276.9</td>
<td>-7.4</td>
<td>11.9</td>
</tr>
<tr>
<td>Steel products</td>
<td>4480.8</td>
<td>5260.9</td>
<td>-18.4</td>
<td>17.4</td>
</tr>
<tr>
<td>Melted (reduced)</td>
<td>106.7</td>
<td>113.2</td>
<td>18.8</td>
<td>6.1</td>
</tr>
<tr>
<td>Aluminum casting</td>
<td>110.4</td>
<td>116.9</td>
<td>21.2</td>
<td>5.9</td>
</tr>
<tr>
<td>Total extraction</td>
<td>26533.0</td>
<td>26123.6</td>
<td>-2.1</td>
<td>-1.5</td>
</tr>
</tbody>
</table>

In 1999-2000, the production of petrochemical industries declined by 1.2 per cent, due to technical difficulties. The capacity utilization ratio of petrochemical units, with 8 percentage point reduction, reached 77.4 per cent. Bandar Imam Petrochemical Complexes (with a share of 39.9 per cent), Razi (16.6 per cent) and Shiraz (14.9 per cent) had significant shares, out of total output of National Petrochemical Industries Corporation.

In this period, the domestic sales of National Petrochemical Industries Corporation amounted to 3801 thousand tons, the highest sales were attributed to Bandar Imam and Shiraz Petrochemical Complexes, each with a share of 23.1 per cent, and Razi with 17.9 per cent. The total exports of this corporation reached 2884 thousand tons, major share related to Bandar Imam Complex with 1889 thousand tons.


During 1978-79, the per cent change of employment was 1.4, on the other hand, the rate of increase of the employment registered 1.4 per cent increase.

These were the meager increase in production and a slight rise of 4 per cent in employment in the year 1979-80. This increase was due to the rise of employment in the following sectors; in agricultural machinery by 22.8 per cent, cement by 18.4 per cent, pasturized dairy products by 12.3 per cent and machine made carpets by 12.2 per cent.

During 1980-81, the rate of increase of the employment index slowed and registered only 3.5 per cent increase. During 1981-82, the rate of growth in the employment index slowed and registered only 2.8 per cent increase compared with 3.5 per cent increase in 1980-81. During 1982-83, the employment index of the large manufacturing establishments registered an increase of 5.3 per cent, as compared to the preceding year. During 1983-84, the employment index of the large manufacturing establishments registered an increase of 7.3 per cent.

During 1984-85, the employment index of the large manufacturing establishments rose by 6.1 per cent. The labour force employed by industries such as basic metals, clothing, leather and chemicals increased by 14.3 per cent, 4.8 per cent

41 Ibid.
and 6.9 per cent, respectively, compared with the preceding year. During this year, machinery and metal equipments group with 8.1 per cent increase had the largest share in the growth of the employment index for the large manufacturing establishments.

During 1985-86, the employment index of large manufacturing establishments reached 118.4 (1982-83=100) showing an increase of 2.7 per cent, which was attained because of growth in such industries as “basic metals”, “wood and wooden products”, “chemicals”, “minerals (except oil and coal)” which is increased by 4.8, 4.3, 3.3 and 3 per cent, respectively, compared with the relative figures of the previous year.

During 1986-87, the employment index of the large manufacturing establishments which followed an upward trend during the years 1982-83 to 1985-86, kept a downward trend. This reduction resulted from decrease in the employment index in all groups of industries, except “wood and wooden products”. According to the available data, general index of employment for the large manufacturing establishments reached 114 in the year 1986-87, and showed 3.8 per cent reduction compared with the previous year. This reduction was mostly related to industries grouped as “machinery and metallic equipments and products” with 8.9 per cent, “basic metals” with 4.9 per cent and “paper, cardboard and related products” with 4.3 per cent.

The survey covering employment statistics of industrial units under sub-group of “machinery and metallic equipments and products” indicates that the level of employment in all the units of this sub-group had registered reduction amounting from 1.6 per cent to 20 per cent during the period under study. Out of the total employees of the large manufacturing establishments, 28.8 per cent were employed in “textiles, clothing and Leather”, 24.6 per cent in “machinery and metallic equipments and products”, 11.4 percent in “non-metallic minerals (except oil and coal)”. 11 per cent in “chemicals”, 10.6 percent in “food, beverages and tobacco”. 9.7 per cent in “basic metals”, and the rest worked for other groups, during the year 1986-87.

During the year 1987-88, the general index of employment of the large manufacturing establishments with 2.8 per cent reduction over the previous year was 110.8. During this period, only the employment level of “wood and wooden products’ group showed a rise equal to 4 per cent. The greatest amount of reduction in the
number of employees of industries was registered in “machinery and metallic equipments and products” by 7 per cent and “paper, cardboard and related products” by 5.7 per cent.

In the year 1988-89, the general index of employment for the large manufacturing establishments registered a slight growth equal to 0.2 per cent and the index reached 111. The survey covering the employment index according to industrial groups indicates that this index registered less than one per cent reduction in four groups of industries and remained almost at the same level as in the previous year. The level of employment in industries such as “basic metals”, “chemicals”, and “food, beverages and tobacco” showed growth of 4 per cent, 1.5 per cent and 1.2 per cent over the preceding year, respectively. Therefore, the slight increase of the general index of employment for the large manufacturing establishments resulted from the growth of employment in the three groups of industries.

During 1989-90, employment index of the large manufacturing establishments faced slight increase of 0.1 per cent and reached 111.2 (1982-83=100). The mentioned growth chiefly resulted from increase in the number of employees in “basic metals” industries by 5.6 per cent.

Along with relative briskness of industrial activities, employment index of the large manufacturing establishments grew by 3.1 per cent and reached 114.7 in the year 1990-91.

During 1991-92, steady growth of industrial activities brought about job opportunities mainly in new industrial units, so that employment index of the large manufacturing establishments rose by 5.3 per cent and reached 120.8.

During 1992-93, the employment index of the large manufacturing establishments decreased by 0.4 per cent relative to the year before and was 120.3. The greatest decrease in employment was in “basic metal” industries (6.5 per cent). More than 52 per cent (484.5 thousand persons) of the total employees of the large manufacturing establishments were active in “textiles, clothing and leather products” and “fabricated metal products, machinery and equipments” industries.

In order to meet the financial pressures during 1993-94, the industrialists rationalised their labour force. Thus the general index of employment of the large manufacturing establishments fell by 4.8 per cent as compared with 1992-93. The
labour-force rationalization/adjustment was mainly implemented in the units which were more foreign exchange dependent, and at the unskilled workers’ level.

During 1996-97, the employment index of the large manufacturing establishments registered only 1.9 per cent increase and reached 108.1 in this period. During 1997-98, the employment index of these establishments grew by 2 per cent, due to the utilization of a large number of industrial projects. In this year, the rise in employment in the said establishments (6.4 and 2.8 per cent) was more than in other establishments, compared to the previous year. During 1998-99, the employment index of the large manufacturing establishments registered only a 1.7 per cent increase and reached 100.5.

In 1999-2000, the general employment index for large manufacturing establishments declined by 1.2 per cent as compared to the previous year.\textsuperscript{42}

\textbf{Trends of Industrial Activities and their Effects on Wage and Salary (1979-2000)}

During 1978-79, in order to settle labour disputes and to encourage the workers to continue with their jobs, the government approved a sizeable increase in wages. Consequently, productivity decreased by 18 per cent and wages rose by 24 per cent resulting in a sharp increase in production costs.

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1977-78</th>
<th>1978-79</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees</td>
<td>209.8</td>
<td>260.2</td>
<td>25.0</td>
</tr>
</tbody>
</table>


The minimum wage level was raised during 1979-80. Accordingly, the wage, salary and fringe benefits paid to workers and employees in large manufacturing establishments increased by 60.1 per cent in 1979-80, whereas these had increased by 27.2 per cent in 1978-79. The per capita increase in total compensation paid to employees showed an increase of 54 per cent. Most of this increase was due to the rise in payments to workers in the non-clothings textile industry by 105.1 per cent; machine made, leather shoes by 103.2 per cent, cement by 97.9 per cent; rubber

\textsuperscript{42} Ibid.
products by 97.7 per cent, and agricultural machines industry by 97 per cent. Whereas
the rate of increase of production in the large manufacturing establishments was less
than the rate of increase of employment in these units. Therefore, the per capita
production showed a 5.9 per cent decline over the respective figure for 1978-79.
Table No. 2.11 shows the index for compensation paid to employees, per capital
compensation paid to employees, and per capita production in 1979-80.

Table No. 2.11
The Index for Compensation Paid to Employees, Per Capita Compensation
Paid to Employees, and Per Capita Production in 1979-80

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1978-79</th>
<th>1979-80</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1978-79</td>
</tr>
<tr>
<td>Compensation paid to workers Index</td>
<td>319.8</td>
<td>512.0</td>
<td>27.2</td>
</tr>
<tr>
<td>Per capita compensation paid to workers</td>
<td>257.2</td>
<td>396.1</td>
<td>23.3</td>
</tr>
<tr>
<td>Per capita production</td>
<td>102.9</td>
<td>96.8</td>
<td>-17.8</td>
</tr>
</tbody>
</table>


During 1980-81, the index for compensation paid to employees increased by
only 17.8 per cent. The per capita compensation of the employees of the industrial
establishments increased by 14.6 per cent over the respective figure of preceding year.
Per capita production in 1980-81 declined by 10.5 per cent over 1979-80. This
increase was due to the raise of 17.9 per cent in the average monthly wages of
workers and 4.4 per cent increase in the average monthly earnings of the salaried
staff.

Table No. 2.12
The Index for Compensation Paid to Workers, Per Capita Compensation
Paid to Employees, and Per Capita Production in 1980-81

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1979-80</th>
<th>1980-81</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>1979-80</td>
</tr>
<tr>
<td>Compensation paid to employees</td>
<td>526.7</td>
<td>620.3</td>
<td>61.7</td>
</tr>
<tr>
<td>Per capita compensation paid to employees</td>
<td>397.4</td>
<td>455.3</td>
<td>53.0</td>
</tr>
<tr>
<td>Per employee production</td>
<td>92.7</td>
<td>83.0</td>
<td>-7.9</td>
</tr>
</tbody>
</table>


During 1981-82, the index of compensation paid to employees increased by
9.2 per cent, compared with the proceeding year. At the same time, the per capita
compensation of the employees rose by 6.1 per cent. Finally, the average productivity
per employee index showed an increase of 8 per cent during this year.
Table No. 2.13
The Index for Compensation and Per Capita Compensation Paid to Employees in 1981-82

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1980-81</th>
<th>1981-82</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees</td>
<td>620.3</td>
<td>682.1</td>
<td>17.8</td>
</tr>
<tr>
<td>Per capita compensation paid to employees*</td>
<td>455.3</td>
<td>484.3</td>
<td>14.6</td>
</tr>
</tbody>
</table>


During 1982-83, the employee’s compensation index, increasing by 11.6 per cent reached 762.6 (1974-75=100). The per capita compensations rose by 5.9 per cent which was due to a 7.2 per cent increase in the wages paid to employees and a 0.8 per cent increase in the salaries of staff members.

Table No. 2.14
The Index for Compensation and Per Capita Compensation Paid to Employees in 1982-83

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1981-82</th>
<th>1982-83</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees</td>
<td>682.1</td>
<td>762.6</td>
<td>9.2</td>
</tr>
<tr>
<td>Per capita compensation paid to employees*</td>
<td>511.7</td>
<td>553.4</td>
<td>6.1</td>
</tr>
</tbody>
</table>


During 1983-84, the employment index of the large manufacturing establishments registered an increase of 7.3 per cent, while the employees’ compensation index reached 880.5 (1974-75=100), showing a rise of 15.8 per cent compared to the year 1982-83. In the same period, the per capita compensation of the employees rose by 7.9 per cent, which was due to a 7.8 per cent increase in the wages paid to workers and a 7.7 per cent increase in the salaries of staff members. There was also an increase of 16.9 per cent in production per employee for the same period.

Table No. 2.15
The Index for Compensation and Per Capita Compensation Paid to Employees in 1983-84

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1982-83</th>
<th>1983-84</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees</td>
<td>762.6</td>
<td>880.5</td>
<td>11.6</td>
</tr>
<tr>
<td>Per capita compensation paid to employees*</td>
<td>511.7</td>
<td>553.4</td>
<td>5.9</td>
</tr>
</tbody>
</table>


Excludes Sugar Industry and Slaughter Houses
During 1984-85, the employees’ compensation index for the large manufacturing establishments registered an increase of 13.3 per cent over the previous year, and reached 132.8 (1982-83=100). Per capita compensation paid to employees increased by 7.9% over previous year.

Table No. 2.16
The Index for Compensation and Per Capita Compensation Paid to Employees in 1984-85

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1983-84</th>
<th>1984-85</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees</td>
<td>117.2</td>
<td>132.8</td>
<td>15.8</td>
</tr>
<tr>
<td>Per capita compensation paid to employees</td>
<td>108.1</td>
<td>115.6</td>
<td>7.9</td>
</tr>
</tbody>
</table>


During 1985-86, the employees’ compensation index for the large manufacturing establishments reached 149 (1982-83=100), showing an increase of 11.9 per cent compared to the relative figures of the previous year. The growth of this index was due to industry wide increase of compensation index. Per capita compensation paid to employees increased by 9.1 per cent over the previous year. Table No. 2.17 shows the index for compensation and per capita compensation paid to employees in 1985-86.

Table No. 2.17
The Index for Compensation and Per Capita Compensation Paid to Employees in 1985-86

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1984-85</th>
<th>1985-86</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees</td>
<td>132.8</td>
<td>149.0</td>
<td>13.3</td>
</tr>
<tr>
<td>Per capita compensation paid to employees</td>
<td>115.6</td>
<td>126.0</td>
<td>6.9</td>
</tr>
</tbody>
</table>


During 1986-87, the employees’ compensation index of the large manufacturing establishments, affected by the decrease in production and employment indices, showed an unprecedented reduction. As a result, this index, with 3.4 per cent reduction, settled at 144 (1982-83=100) in the year 1986-87.

The decrease in the employees’ compensation index relating to employees of the large manufacturing establishments mainly resulted from the decreases in

* Includes Employees and Staff Members
industries connected with “machinery and metallic equipments and products” (10.7 per cent), “Paper, cardboard and related products” (6.5 per cent) and “basic metals” (3.1 per cent) and to negligible extent in foreign exchange based industries. Another important factor behind the mentioned decrease was the reduction in the level of employment and consequently, reduction or withdrawal of payment of some of the compensation items to employees.

According to the available data, index of per employee compensation for the year 1986-87 shows increase of mere 0.6 per cent, as compared to the previous year.

Table No. 2.18
The Index for Compensation and Per Capita Compensation Paid to Employees in 1986-87

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1985-86</th>
<th>1986-87</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees</td>
<td>149.0</td>
<td>144.0</td>
<td>11.9 -3.4</td>
</tr>
<tr>
<td>Per capita compensation paid to employees*</td>
<td>126.0</td>
<td>126.8</td>
<td>9.1 0.6</td>
</tr>
</tbody>
</table>


During 1987-88, the index of compensation paid to the employees of the large manufacturing establishments increased by 8.3 per cent and reached 155.9 as compared to the year 1986-87. The rise in this index was mainly related to the employees of industries such as “paper, cardboard and related products” by 12 per cent, “non-metallic minerals (except oil and coal)” by 10.4 per cent. Per capita increase in compensation paid to employees was 11.3 per cent over the previous year. Table No. 2.19 shows the index for compensation and per capita compensation paid to employees in 1987-88

Table No. 2.19
The Index for Compensation and Per Capita Compensation Paid to Employees in 1987-88

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1986-87</th>
<th>1987-88</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees</td>
<td>144.0</td>
<td>155.9</td>
<td>-3.4 8.3</td>
</tr>
<tr>
<td>Per capita compensation paid to employees*</td>
<td>126.8</td>
<td>141.4</td>
<td>0.6 11.3</td>
</tr>
</tbody>
</table>


* Excludes the Sugar Industry and Slaughter Houses.
** Includes Employees and Staff.
*** Excludes Sugar Industry and Slaughter Houses.
During 1988-89, the index of compensation paid to the employees of the large manufacturing establishments increased by 14.5 per cent over the year 1987-88 and reached 178.5 (1982-83=100). This growth was registered for all groups of industries, but industrial groups such as “chemicals” and “basic metals” had the highest share of growth, respectively, of 21.2 per cent and 17.3 per cent. Despite noticeable growth of per-employee compensation paid to employees of the large manufacturing establishments in the year 1988-89 viz. 14.2 % increase over the previous year, as a result of faster increase of the general trend of the prices, real per-employee compensation paid to employees of industries was reduced by 11.5 per cent as compared to the preceding year.

Table No. 2.20
The Index for Compensation and Per Capita Compensation Paid to Employees in 1988-89

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1987-88</th>
<th>1988-89</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees</td>
<td>155.9</td>
<td>178.5</td>
<td>14.5</td>
</tr>
<tr>
<td>Per capita compensation paid to employees</td>
<td>141.1</td>
<td>161.1</td>
<td>14.2</td>
</tr>
</tbody>
</table>


During 1989-90, Employees’ compensation index of the large manufacturing establishments rose by 11.0 per cent. And per capita compensation increased by 10.6 per cent (Table No. 2.21 below):

Table No. 2.21
The Index for Compensation and Per Capita Compensation Paid to Employees in 1989-90

<table>
<thead>
<tr>
<th>Statement</th>
<th>1988-89</th>
<th>1989-90</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees*</td>
<td>178.5</td>
<td>198.3</td>
<td>11.0</td>
</tr>
<tr>
<td>Per capita compensation paid to employees*</td>
<td>161.1</td>
<td>178.2</td>
<td>10.6</td>
</tr>
</tbody>
</table>


During 1990-91, employees’ compensation index increased by 22.6 per cent by adding items of expenditure to ensure the employees’ welfare and per capita compensation paid to employees increased by 18.8 per cent (Table No. 2.22 below):

Table No. 2.22
The Index for Compensation and Per Capita Compensation Paid to Employees in 1990-91

<table>
<thead>
<tr>
<th>Statement</th>
<th>Percentage change</th>
</tr>
</thead>
</table>

* Excluding Sugar Industries and Slaughter Houses.
Table No. 2.22
The Index for Compensation and Per Capita Compensation
Paid to Employees in 1990-91

(1982-83=100)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1989-90</th>
<th>1990-91</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees*</td>
<td>198.3</td>
<td>244.8</td>
<td>11.0  22.6</td>
</tr>
<tr>
<td>Per capita compensation paid to employees*</td>
<td>178.2</td>
<td>213.5</td>
<td>10.6  18.8</td>
</tr>
</tbody>
</table>


During 1991-92, with increase in the wages of employees and other cash and kind payments, the general and per employee compensation indices went up by 48.7 and 41 per cent, respectively, over the previous year. On the whole, employees’ compensation constituted 17 per cent of the current value of output of the large manufacturing establishments with slight decrease over the year earlier.

Table No. 2.23
The Index for Compensation and Per Capita Compensation
Paid to Employees in 1991-92

(1982-83=100)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1990-91</th>
<th>1991-92</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees*</td>
<td>244.8</td>
<td>365.0</td>
<td>22.6  48.7</td>
</tr>
<tr>
<td>Per capita compensation paid to employees*</td>
<td>214.2</td>
<td>302.1</td>
<td>18.8  41.0</td>
</tr>
</tbody>
</table>


During 1992-93, the compensation index of the large manufacturing establishments rose by 30 per cent as compared with the year before and reached 475. The range of mentioned growth rate was between 22.3 and 42.5 per cent for various industrial fields. Thus, the per head growth rate of the compensation index, adjusted to the consumer price index, amounted to 7.3 per cent. Per capita compensation rose by 30.5 per cent over the previous year. Table No. 2.24 shows the index for compensation and per capita compensation paid to employees in 1992-93.

* Exclude Sugar Industries and Slaughter Houses
Table No. 2.24
The Index for Compensation and Per Capita Compensation Paid to Employees in 1992-93
(1982-83=100)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees</td>
<td>365.0</td>
<td>475.0</td>
<td>48.7</td>
</tr>
<tr>
<td>Per capita compensation paid to employees</td>
<td>302.1</td>
<td>394.9</td>
<td>41.0</td>
</tr>
</tbody>
</table>


During 1993-94, the employees’ compensation index of the large manufacturing establishments went up by 25.4 per cent. Thus, considering the rise of consumer price index, the growth rate of the real per employee compensation was 7.3 per cent over the previous year.

Table No. 2.25
The Index for Compensation and Per Capita Compensation Paid to Employees in 1993-94
(1982-83=100)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1992-93</th>
<th>1993-94</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compensation paid to employees</td>
<td>475.0</td>
<td>597.8</td>
<td>30.0</td>
</tr>
<tr>
<td>Per capita compensation paid to employees before adjustment of price index</td>
<td>396.9</td>
<td>523.4</td>
<td>31.2</td>
</tr>
<tr>
<td>Per capita compensation paid to employees after adjustment</td>
<td>77.0</td>
<td>82.6</td>
<td>7.4</td>
</tr>
</tbody>
</table>


During 1995-96, the wage and fringe benefits index of the large manufacturing establishments reached 428.1 (1990-91=100), and the per capita index of wage and fringe benefits before adjustment of price index reached 403.6, and after adjustment of price index reached 108.4.

During 1996-97, the wage and fringe benefits index of the large manufacturing establishments went up by 36.4 per cent compared with the year before and reached 583.9 (1990-91=100). The per capita index of wage and fringe benefits for the employees of large manufacturing establishments, before adjusting for the consumer price index, rose by 32.7 per cent over the previous year’s, and after adjustment, it was 7.7 per cent over the previous year. Table No. 2.26 shows the index for wage and fringe benefits, per capita wage and fringe benefits before and after adjustment of price index in 1996-97.
Table No. 2.26
The Index for Wage and Fringe Benefits, Per Capita Wage and Fringe Benefits Before and After Adjustment of Price Index in 1996-97

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1995-96</th>
<th>1996-97</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage and fringe benefits</td>
<td>428.1</td>
<td>583.9</td>
<td>- 36.4</td>
</tr>
<tr>
<td>Per capita wage and fringe benefits before adjustment</td>
<td>403.6</td>
<td>540.1</td>
<td>- 32.7</td>
</tr>
<tr>
<td>Per capita wage and fringe benefits after adjustment</td>
<td>108.4</td>
<td>117.7</td>
<td>- 7.7</td>
</tr>
</tbody>
</table>

Source: Adapted from Economic Report and Balance Sheet 1996-97, Central Bank of Iran.

During 1997-98, the wage and fringe benefits index of the large manufacturing establishments went up by 30.1 per cent compared with the year before and reached 759.8 (1990-91 = 100). The per capita index of wage and fringe benefits for the employees of large manufacturing establishments, before adjusting for consumer price index, rose by 28.7 per cent over the previous year’s, and after adjustment, it was 9.7 per cent over the previous year’s. Table No. 2.27 shows the index for wage and fringe benefits, per capita wage and fringe benefits before and after adjustment for price index in 1997-98.

Table No. 2.27
The Index for Wage and Fringe Benefits, Per Capita Wage and Fringe Benefits Before and After Adjustment for Price Index in 1997-98

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1996-97</th>
<th>1997-98</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage and fringe benefits</td>
<td>583.9</td>
<td>759.8</td>
<td>36.4 30.1</td>
</tr>
<tr>
<td>Per capita wage and fringe benefits before adjustment</td>
<td>540.1</td>
<td>688.8</td>
<td>32.7 28.7</td>
</tr>
<tr>
<td>Per capita wage and fringe benefits after adjustment</td>
<td>117.7</td>
<td>128.0</td>
<td>7.7 9.7</td>
</tr>
</tbody>
</table>

Source: Adapted from Economic Report and Balance Sheet 1997-98, Central Bank of Iran.

During 1998-99, the general index of wage and fringe benefits of large manufacturing establishments by 23.7 per cent. Per capita wage and fringe benefits index before and after adjustment of price index rose by 21.6 per cent and 2.9 per cent respectively, over the previous year (1997-98). Table No. 2.28 shows the position.
Table No. 2.28
The Index for Wage and Fringe Benefits, Per Capita
Wage and Fringe Benefits in 1998-99
(1997-98=100)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1997-98</th>
<th>1998-99</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage and fringe benefits</td>
<td>100</td>
<td>123.7</td>
<td>-</td>
</tr>
<tr>
<td>Per capita wage and fringe benefits before adjustment</td>
<td>100</td>
<td>121.6</td>
<td>-</td>
</tr>
<tr>
<td>Per capita wage and fringe benefits after adjustment</td>
<td>100</td>
<td>102.9</td>
<td>-</td>
</tr>
</tbody>
</table>


During 1999-2000, the general index of wage and fringe benefits of large manufacturing establishments went up by 24.6 per cent and per capita showed 26.1 per cent and 5.1 per cent increase before adjustment and after adjustment of price index, respectively, over 1998-99. Table No. 2.29 shows the index for wage and fringe benefits, per capita wage and fringe benefits in 1999-2000.

Table No. 2.29
The Index for Wage and Fringe Benefits, Per Capita
Wage and Fringe Benefits in 1999-2000
(1997-98=100)

<table>
<thead>
<tr>
<th>Particulars</th>
<th>1998-99</th>
<th>1999-00</th>
<th>Percentage change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wage and fringe benefits</td>
<td>123.7</td>
<td>154.1</td>
<td>23.7</td>
</tr>
<tr>
<td>Per capita wage and fringe benefits before adjustment</td>
<td>121.6</td>
<td>153.3</td>
<td>21.6</td>
</tr>
<tr>
<td>Per capita wage and fringe benefits after adjustment</td>
<td>102.9</td>
<td>108.1</td>
<td>2.9</td>
</tr>
</tbody>
</table>

Source: Adapted from Economic Report and Balance Sheet 1999-2000, Central Bank of Iran.

Classification and Expansion of Industry in Iran

Apart from the forgoing economic, political and cultural factors, many social, historical, and administrative factors also affected the dispersion of industry in Iran. The first conscious attempts for dispersion and expansion were made during 1921-22 for industrialization of the country. 1930-31 saw conscious focus on the establishment of weaving factories and other facilities for the production of basic consumer goods in Tehran and Isfahan cities besides areas near the Caspian Sea. These initiatives were acknowledged as most significant steps towards industrialization of Iran. For accelerating this process and its dispersion into all climatic zones, suitable
Development Plans were made. This systematic approach brought about import substitution to great extent and resulted in the industrial development in all regions and districts of the country. Care was taken to establish only those industries in different districts/areas which were facilitated by locally available raw material, skilled manpower and other resources including relevant infrastructure.

Despite the geographical distribution of various industries, Tehran and its suburbs became the hub of Iran’s industry with approximately 40 per cent of large and middle industry units. Tehran still continues to be the most important industrial centre of Iran. The main industrial activities are centralized in this city. The most important industries here are: food production, cloth, furniture and other wooden articles, paper production, oil refining materials, automobiles and spares, etc.

Other important states (provinces) of country for industrial activities are Isphahan, Khorasan, and East Azarbaiejan where some of the heavy industries are located such as, chemical and petrochemical factories, iron and steel, metal wares, automobile parts and tools and montage of motor vehicles. Only less than 5 per cent of each one of these industries is located in other parts of the country.

Among those locations/centers are Kerman for cooper production; Zanjani for metal wares; Mazandaran for food processing and wooden articles and Khosestan for paper and steel production. Except Tehran and Isphahan, which are considered as important state centres, Ahavaz has iron and steel industries; Tabriz has heavy engineering industries; Arak has machine making; Imam Harbour and Abadan have refining and petrochemical industry; and Mashad is considered as important industrial centers where all types of units are set up.44

The Main Industries Established in Iran

The main industries in Iran are as follows:
1. Food, medicinal and hygienic industries;
2. Clothes and weaving industries;
3. Selolozed and chemical and petrochemical industries;
4. Mineral and non-metal industries;
5. Metal industries;

44 Hashemian, M., et. al., op. cit., p. 95.
6. Moulding, machinery making and equipment industries;
7. Electrical and electronic industries;
8. Handicraft industries, and
9. Automobile making industries (including components and parts).

As automobile making industry is the subject of the present study, as a sign of modernity and standard measure of available technology, and consumerism, this industry is explained below for proper and comprehensive view of its status in Iran.

World Automobile Manufacturing Outlook

The current outlook for the world automobile industry is somewhat mixed. Globalization of the industry has resulted in a rationalization of the supplier base. This will accelerate as e-commerce based supplier networks such as the one established by Ford, General Motors and Daimler-Chrysler gathering momentum. Renault and Nissan have also joined ‘Covisin’ now. This will lead to suppliers providing components to factories in all parts of the world thus creating cost savings for both themselves and manufacturers. The advent of the 3 or 5 day car is close and the dawn of mass customization led by the needs of the consumer is just round the corner.

The future role of motor manufacturers (MMs) may also change, as assembly will become increasingly focused in the Tier 1 sector. MMs will be concentrating on the development of brand profile, driving sales volumes and possibly the final assembly. Such arrangements will require very close working relations between MMs and Tier 1 suppliers, which in turn will require global agreements. Common ownership may be one way of achieving this goal, but recent trends suggest that the need for suppliers to service a number of MMs may prohibit this. Hence Delphi Automobile has now been spun off from GM and Ford has disposed of its Visteon subsidiary.

Globalization and Automobile making Industry: Recent years have seen a proliferation of mergers and acquisitions in the global automobile industry and it is anticipated that within a decade there will only be six major manufacturing groups remaining in existence: two based in the U.S., two based in Europe and two based in the Far East (Japan). Over the last a few years, there has been an increasing trend towards the globalization of the world’s automobile industry. Apart from market
share, industry leaders – surveyed earlier this year – felt that cost reduction and synergies were the other main reasons for globalization.

The profitability of the major global manufactures is still relatively marginal, driven by production over-capacity in established markets. One of the perceived benefits from alliances and mergers among the global manufacturers is sharing of product development costs and the subsequent reduction in the marketing time of such models. This process is also assisted by the reduction in the number of basic floor plans used in the development of new models. Upwards of 75 per cent of the parts used in different vehicles can be common components. This clearly induces bee fits in scale of production and purchase from suppliers. Such moves are essential for the improvement of basic profitability of manufacturers. With competition so intense, MMs seek “world prices” for everything they buy. They search the globe for the best price and are generally willing to purchase items from suppliers regardless of where they are headquartered.

Impact of New Technology and E-commerce on Automobile Making Industry:
The relationship between the manufacturer and the customer will become more direct as the role of the dealer changes in the future. One of the major contact points through which this relationship will be managed is the Internet. This will enable the manufacturer to maintain and develop a customer relationship profile by registration on a webpage. Maintenance of this database will allow manufacturers to establish a similar relationship with the customer like the one currently enjoyed by the dealer. The relationship is already being established via the Internet and through use of other media such as direct mail and call centre. In addition, e-commerce is having an impact on the operational aspects of the manufacturers’ businesses already. Vehicle ordering is increasingly conducted on a ‘build to order’ basis, since the use of e-commerce can remove the uncertainties within the current process. This can eliminate major stockholding costs for both the manufacturer and the distribution medium (currently the dealer network) in use. Component sourcing is yet another area where the Internet brings potential benefits. Major MMs are already establishing networks for the supply of components, and are forecasting major savings as a result. Such savings are made from the interchange of information relating to Ford, GM, Daimler-Chrysler, Renault and Nissan, which have joined forces to create a network of suppliers linked by the
Changes in Production Process: The advent of the three-or-five-day car is round the corner. Where it used to take 10 working days to assemble a car, the MMs want to respond to specific vehicle orders within five or even three days. This requires massive changes in the way that the MMs and suppliers approach the entire process of ordering supplies, producing and delivering parts. MMs are working with their supply chain to reduce costs working with Tier 1 suppliers on an “open book” basis in many cases. That is deciding first what a reasonable margin is for a certain piece, building the price from the direct and indirect costs. MMs then expect annual price reductions from 3 per cent to 5 per cent per year, every year for the duration of the contract. These price cuts must come from continuous improvements in operating methods. As the number of suppliers serving, MMs directly declines, fewer firms supply an increasing percentage of the vehicle. The high value of these Tier 1 delivery systems and the need to sequence the delivery of the parts to the vehicle assembly line in the proper order is leading to the formation of supplier villages around vehicle assembly plants. In a supplier village, key Tier 1 suppliers are located close to the vehicle plant. This reduces costs in shipping and allows just-in-time production, reducing inventory-carrying costs and facilitating shorter build-to-order times. It also facilitates communication between the supplier and the MM and allows both to adjust their production levels according to what either party needs or available. To reward the Tier 1 suppliers for their continuous cost cutting and investments in product and systems development, the MMs are awarding “Life of Platform” or long-term contracts. For as long as the supplier meets price, quality and delivery time, the MMs will guarantee doing business with the supplier for a set component or system over the life span of a particular vehicle platform.

**World Automobile Making Industry Trends**

Flexibility: A growing trend of team manufacturing has transformed traditional roles in the auto-industry, with employees interacting with counterparts at every level, from engineers to computer technicians to the line workers. Another innovation is “just-in-time” manufacturing, whereby parts are delivered the day they
are needed on the assembly line, saving inventory expenses and letting manufacturers change direction more quickly. Even more flexibility is on the horizon in the form of rapid prototyping, in which computers generate solid, three-dimensional models of products.

Technological Evolution: Technology is rapidly changing the way many companies operate. For example, using innovative computer programs, designers can transform their visions into realistic production plans without the need for mechanical or electrical engineers. The result is a blurring of the line between design and manufacturing. At the same time, techniques like “just-in-time” manufacturing can’t work without reliable data tracking systems and ironclad communications between manufacturer and supplier, which are increasingly based on the Internet. The Internet is also being used to support on-demand manufacturing. The ultimate manifestation of integrated manufacturing and information could be so-called mass customization. Ford, for example, is considering adding bespoke spoiler and other special items to its standard mass-produced range of cars.

Multinational Manufacturing: Auto manufacturing companies are going multinational in a big way. U.S. companies not only operate plants in other countries, but in many cases own foreign corporations or are owned by them. Many forces drive this trend. Companies are seeking joint ventures and acquisitions abroad to shield themselves from the uncertainty of currency fluctuations (such as occurred during the 1998 financial crisis in Asia). They’re joining forces through mergers and acquisitions. For example: Daimler-Benz and Chrysler merged in 1998; General Motors (GM) owns Saab; Ford owns Jaguar and Volvo; Daimler-Chrysler owns a controlling interest in Mitsubishi Motors; Dow Chemical bought Union Carbide; International Paper purchased Champion International; New Holland bought Case Corporation and became CNH global; and so on. They are expanding international operations to meet a growing demand for infrastructure projects in developing regions, such as Latin America. Finally, to cut costs and avoid over-reliance on the U.S. Market, manufacturers have taken to shutting down domestic factories and mills and are shifting their attention to international markets. It’s easier than ever before to do this, as new technologies and regulations aid easiness of capital transfer across international boundaries, often within the blink of an electronic eye.
Motor Vehicles: The leaders in this segment are the Big Three auto manufacturers. There are also foreign manufacturers producing autos in the U.S., including Nissan, Honda, Toyota, and BMW. Finally, there are makers of utility vehicles such as cargo vehicles, trucks, and buses; for example, Freightliners (owned by Daimler Chrysler) and Navistar. For the most part, these companies are located in the Midwest, with the American automakers located primarily near Detroit. This is a big industry segment GM alone employs more than 350,000 people – and it makes up a big chunk of the auto manufacturing industry on the whole.

The World’s Automobile Making Industry

North America: With a production level of almost 15 million cars and trucks, North America represents nearly 25 per cent of the world’s total auto production. Traditionally, the Big three (Daimler-Chrysler, Ford, and GM) dominated the business, but others, especially the Japanese have penetrated the American market as well.

Western Europe: Western Europe is the strongest automobile manufacturing area besides the U.S. In 1999, more than 16.5m cars and trucks were manufactured, which is about 29 per cent of the world car production. Main producers are France, Spain, UK and Italy, with Germany leading the pack.

Eastern Europe: The potentials in Eastern Europe as still good and forecasts vary from a more than 100 per cent market growth to less than 20 per cent. Biggest growth market is Hungary, with 143,000 cars sold in 2002, up from 74,000 in 1994. The highest volume of trade is currently in Russia with over 1 million cars sold in 2002, followed by Poland with 700,000.

Asia Pacific: The Asia pacific region mainly comprises of Japan, Australia, Korea, Malaysia, the Philippines, India, Indonesia, Burma, New Zealand, China, Taiwan, Singapore, Thailand, Hong Kong and Vietnam. The total car sales amounted to more than 13 million units in 1997. Yearly growth rates are estimated at more than 20 per cent. Since the South Asia crisis, however, investments in these emerging markets are made with great caution.

Central & South America: Central & South America is divided into two important regions of Brazil and Argentina. There are no essential national
manufacturers in these regions, but the development of these markets is extremely important. Of special interest is the development of the South American conglomerate including Brazil, Argentina, Uruguay and Paraguay, the so-called ‘Mercosur’. Three million cars were manufactured in this area in 2000, which places this market in the world’s top five markets.

**The Region’s Automobile Making Industry**

Turkey: Iran and Turkey are the biggest auto manufacturers in the Middle East. Iran, unlike Turkey, is able to design parts but remains weak in investments. Turkey’s auto industry is in the hands of giant foreign auto manufacturers such as Renault, which have been making use of Turkey’s assembly capabilities while importing more than 80 per cent of their components.

United Arab Emirates: UAE’s 10 billion dirham ($ 2.75 billion) automobile industry is expected to achieve unprecedented growth in the coming years, taking into consideration the rapid increase in economic activities in the country over the last a few years. UAE is a lucrative market for the car industry and the coming international automobile show provides an excellent opportunity for car companies to successfully tap this potential. UAE automobile market has grown by more than 5 per cent per annum and is expected to perform even better in the coming years.

India: There is a major shake-up taking place in the ever-changing dynamics of the Indian automobile industry. New leaders are emerging, forcing the old stalwarts to don their thinking caps to try to stay ahead in the race once again. For some, the issue is not staying ahead in the race – it is stay in the race. The passenger car market in the country is undergoing transformation, and competition is expected to be intense. The most dramatic growth of over 9 per cent has come from B segment cars. Against sales of 166,093 between January and July 2001, the number has climbed to an impressive 181,517 units in 2001-2002. The C segment has grown by over 4 per cent, helped by strong performances of Hyundai Accent, Ford Ikon and Ambassador.

South Africa: 2001 represented a relatively good year for the South African auto industry with new vehicle sales rising for the second year in succession. Aggregate new vehicle sales rose to 366,907 units, an improvement of 7.06 per cent over the 341,082 units sold in 2000. Industry vehicle exports during 2001 performed

Pakistan: Afghanistan’s Eastern neighbor, Pakistan, has been hit harder than most countries by the US military presence in the region. However, the strengthening automobile industry has defied the dreary scheme of things. Last year, it emerged from nearly a decade of stagnation posting a growth of over 20 per cent, the highest out of all manufacturing sectors in the country. Domestic demand has skyrocketed by 50 per cent this year, but due to the limited market size, production volumes have been low. Still, there are clear indications that the industry has finally come of age, manufacturing cars of eight international brands in a whole range of models, with quality and endurance all approved by the original manufacturers. This, together with competitive pricing, has fostered exports. In 2000-2001, auto parts exports have already more than doubled to $25 million from $12 million in 1999-00. This year, $35 million worth of forex is expected to flow in under this lead.

Malaysia: The auto industry in Malaysia is closely linked to the history of Perusahaan Otomobil Nasional Bhd (PROTON). Proton was incorporated on 7 May 1983 to manufacture, assemble and sell motor vehicles and related products, including accessories, spare parts and other components. The development of the local motor vehicle industry has had useful economic functions such as generation of employment and has helped the establishment of supportive industries. It has spawned a number of companies solely dedicated to making specialized accessories such as sports rims and tints in scores of workshops. Presently, Malaysia has become one of the region’s largest auto markets and holds a dominant position in vehicle sales among Association of Southeast Asian Nations (ASEAN) countries.

The South-East Asian financial crisis, which erupted in mid - 1997, brought the automobile market in Malaysia to a near stand still. Car sales fell by 64 per cent in the first half of 1998 compared to the corresponding period the previous year. Four out of nine assembly plants were shut down temporarily and some 3,700 staff – equivalent to 38 per cent of their workforce – was laid off. Proton’s distributor announced that it had made a loss of RM 7.25 million in the first six months of 1998 against a profit of RM 199.18 million made in the same period in 1997. Proton reported a 41% drop in its net earnings to RM 440.57 million. The South-East Asian

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crisis revealed the weaknesses of the Malaysian auto market. Fortunately, since 1999, the demand for motor vehicles has grown following relaxation of hire purchase regulations and also on account of low interest rates and intensive promotion by car dealers.

Iran’s Auto Industry: The Auto industry is a key priority sector for Iran. It used to receive considerable preferential treatment in capital allocation and foreign exchange, but these have been gradually withdrawn. By 2001, all manufacturing units ought to have become self-sufficient with regard to foreign exchange requirements. Not being immune from general economic woes of the country, the auto industry also has far lower propensity to react to any general downturn in the economy than most other sectors. Between 1994 and 1998, the auto industry grew by about 30 per cent, five times that of other national industries and eight times the rate of growth of the economy while generating close to 235,000 jobs. The domestic demand and export potential are considerable but there are too many local manufacturers. Privatization and rationalization is on the cards but outmoded regulations and bureaucracy slow down the process. The authorities are eager to promote local production and variety via joint ventures hence imports remain tightly controlled. Problems persist in local manufacturing output and aspects of the centralized economy can lead to tortuous decision-making process. Notwithstanding this, the market can be lucrative for those determined to stay the course.

Iran’s domestic auto industry has been active for over 40 years and is largely controlled by the government. However, according to clause 37 of the national budget, the government is to transfer ownership to the private sector during the current Third FYDP. The best one can hope for, however, is partial privatization; what has been attained by some of the larger manufacturers such as Iran Khodro, which is still 45 per cent owned by Iran’s Development and Renovation Organization (IDRO) demonstrates amply the benefit of privatization.

The automotive sector is viewed as a strategic industry by the authorities, not because it is a major employer, providing work for 400,000 in 1998; it accounts for 2.5 per cent of GNP and 18 per cent of the total value added goods produced in the country. Some 246,000 vehicles were manufactured in 1999 and total sales approached 10,000 billion Rials (over $1 billion), saving the country $4.5 billion in
hard currency. It receives high priority in the allocation of domestic capital (for investment) and foreign exchange (for purchase of raw material), although preferential rates have been abandoned. The authorities are also keen to promote a greater role for the private sector, both in vehicle and component production. The quality of parts and finished vehicles remains a serious and sensitive issue in Iran. Despite quoting International Organization for Standardization (ISO) 9000/2 standards regularly, manufacturers consistently fail to meet acceptable quality standards. Those involved are usually very sensitive about such issues and questions, when aired, have to broach delicately.45

**Spare Parts Manufacturing Outlook in Iran**

Around half a century ago, that is in 1957, auto industry in Iran was born, when an assembly line was set up in Tehran to manufacture jeep vehicles. During 1960’s, a large-scale movement began in Iran to assemble various types of cars, buses, and trucks. Companies setting up facilities included Fiat, Iran National, Moratab industrial mfg., Iran Kaveh, Zamyad, Mazda, General Motors, American Motors etc., many of which still operate with the same names, and some manufacturing the same brands over time. For ten years, between 1979 and 1989, the industry went into hibernation, and during this period, diverse ideas came into the minds of decision-makers, all facing this challenge whether auto manufacturing should be supported or scrapped. In other words, serious question was raised during this time whether car production should be limited to a single model or opened up to various models or else, by stopping work on auto making, concentration be made on other sectors such as agriculture and other industrial fields, with vehicles being only imported from abroad. Lack of a conclusive answer to this question forced the respective officials to agree to resumption of Peykan production line, especially considering the large amount of investment already made by Iran National, and other factors such as domestic demand, then political developments, and finally issues surrounding supply of Peykan parts. Consequently, Iran National survived under the new name of “Iran Khodro” and, once again, Peykan began to roll out large numbers from its production line. Early in 1992, the Iranian parliament ratified the Five - Year

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45 Adapted from Iran International Magazine, No. 23, May 2003.
National Vehicle Act, and it became the basis for a calculated and determined move towards achieving a national auto industry policy. This event helped clarify the legal roadmap of the industry. A direct result was a Rials 1,100 billion investment, made between 1994 and 1998 on auto-part manufacturing other than investment made by the vehicle manufacturers themselves. It should be noted that since 1982, over 2,300 licenses have been issued by the Iranian Ministry of Industry and Heavy Industries to set up auto-part factories, and currently, up to 400 factories with over 230,000 employees manufacture parts for the Iranian auto industry. While in 1992, less than 40,000 vehicles were manufactured in Iran, this figure increased to 290,000 in the last nine months of 2001, which reached over 360,000 by mid-March 2002. It shows a 25 per cent increase comparing to the previous year. During the last seven years, the average growth of vehicle production in Iran was around 27 per cent.

According to the Iranian Auto Part Manufacturers Association (IAPMA), all of them achieved the level by utilizing domestic investments (without any government help), and over 85 per cent of which were in private sector. National pride and audacity of the scholars and young men and women involved, with the help of contracts with the foreign auto makers, made that happen. The risk taken by the investors who utilized every possible resource, to not only boost indigenous auto industry development, but also to create many jobs, economic growth, achieve foreign currency savings, and improve management and technological capacity, brought success in both software and hardware.

Nevertheless, several bold steps were also taken by our auto industry, which include creating new companies with government support and infrastructural strategies to encourage young educated generation to change its working mind-set and to get involved to do big jobs at small workshops. However, the productive measures and programs were not long lasting, and only lasted the first FYDP (1995/96-1999/2000). The changes in management levels led to alteration in the perceived objectives and fundamental domestic-oriented policies. A powerful organization which was the real supporter of the indigenous parts manufacturers, and could provide strong infrastructure for the auto-part industry in Iran, by continuing manufacturing contracts with financial, technical and information support, and improve the products in both quality and quantity to help Iranian companies to enter international markets.
with internationally acceptable and affordable products, was suddenly forced to move in a single direction, instead of moving along a two-way path which could increase productivity and decrease foreign part imports within specified time, and an organization that had gathered together a talented engineering design staff to become an internationally credible engineering entity, was reduced into a foreign parts dealer house.

Luckily, the infrastructural effects of the educational and financial support, as well as up-gradation made in the organizations, capabilities, and management systems helped Iranian auto-part manufacturers to cope with the recurrent situation and to remain competitive in the international market. They know now how to enter this market, and how to manufacture parts with exportability in mind.

The other influential factor in development of the auto-parts manufacturing industry, as we are witness to its quantitative and qualitative expansion, was the creation of the IAPMA. Therefore, considering the importance and authority the association enjoys in the industry with significant export potentials, IAPMA will do well.\textsuperscript{46}

\textsuperscript{46} Adapted from Interview of the Iranian Auto Part Manufactures Association with Dr. Mohammad Bagher Rejal, 27.05.2002.