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The Economy

Iran

May 1973

NATIONAL INTELLIGENCE SURVEY

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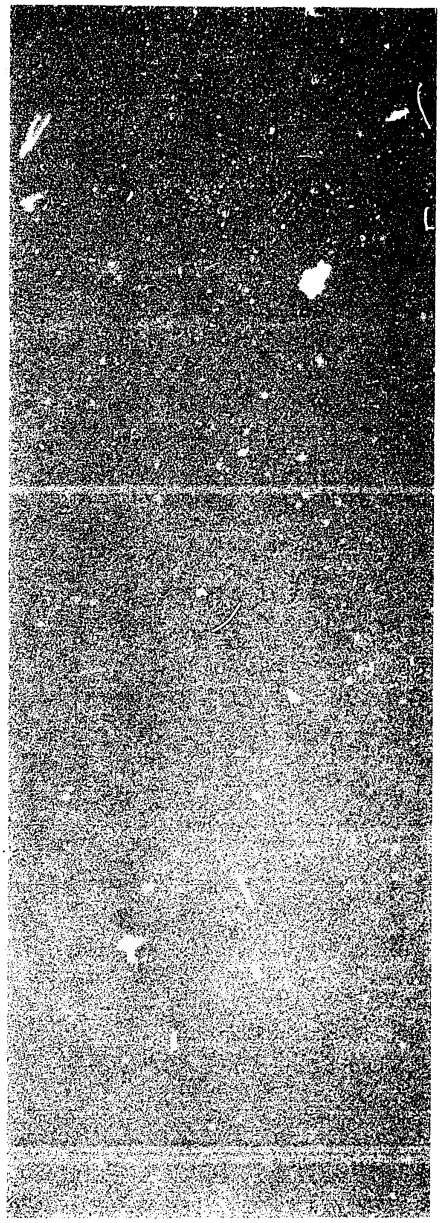

Iran

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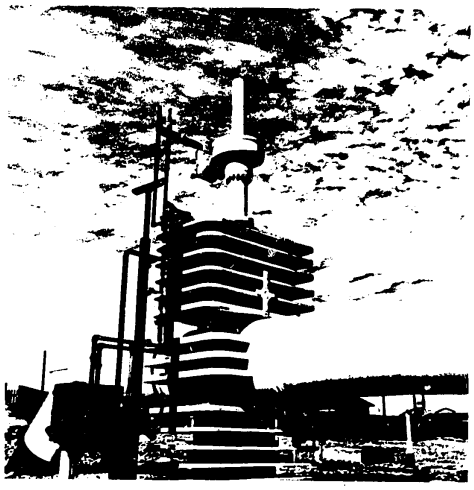
This General Survey supersedes the one dated November 1969, copies of which should be destroyed.

FIGURES



Control valve, Bid Boland gas refinery (U/OU)

Typical bazaar (U/OU)

The Economy

A. Introduction (U/OU)

Iran plays a key political and economic role in the Middle East. A country about one-fifth the size of the United States, Iran is located between the Caspian Sea and the Persian Gulf, bordering on Afghanistan, Pakistan, the U.S.S.R., Turkey, and Iraq. The country consists mainly of an interior area of desert plains, hills, plateaus, and mountains bounded by a rugged mountain rimland; small fertile areas fringe the Caspian Sea and the Persian Gulf. The 30.8 million people—over half of whom live in the countryside—are strongly individualistic with loyalties primarily to family. The small literate element of the population is concentrated in the urban areas. Ruling and guiding the destiny of Iran is the Shah, Mohammad Reza Pahlavi, who is bent on developing a cohesive, modern nation.

The momentum generated by the Shah's social, economic, and military programs has resulted in a rapid rate of economic development in comparison with that of neighboring Arab oil-producing states. Within Iran, however, the efforts toward industrialization and social reforms have led to striking disparities. Modern houses with beautiful gardens and swimming pools in parts of Tehran [1] contrasts with the one-room dwellings and mud huts that shelter the great majority of families elsewhere in Tehran and in other towns and villages. Modern industrial plants have been built to service the expanding needs of the economy; yet Iran still has hundreds of small handicraft establishments using methods that have changed little over the centuries. Age-old bazaars operate in large cities in the shadow of modern stores, shops, and service facilities.

Income distribution continues to accentuate the differences between rich and poor. The Shah, however, is making progress in solving these problems. Many rural dwellers have benefited at least a little from land reform and expanding social services. At the same time, thousands have flocked to the cities without sufficient education or job opportunities and have swelled the ranks of the unemployed and underemployed.

Iran's economic development is reflected in its expanding foreign trade and its more influential role in international affairs. Although it maintains strong economic ties with the United States and other Western countries, Iran also carries on a growing trade with the U.S.S.R. A sizable share of Iran's domestic resources and imports is allocated to the military sector in line with the Shah's concern with Iran's security and regional influence.

B. Economic appraisal (U/OU)

The importance of Iran in the world economy rests on its role as the fourth largest producer of crude petroleum—behind the United States, the U.S.S.R., and Saudi Arabia. Iran's political stability in the turbulent Middle East has been reflected by its willingness to fill gaps in the world oil supply created by war and by politically inspired cutbacks by other Middle East producers. Between 1961 and 1971, petroleum exports expanded at an average rate of 14.5% annually, as compared with 10.1% for the remainder of the Middle East. Iran's importance as a world petroleum supplier is assured for the near future; its reserves are estimated at about 10% of the world total, and production is expected to rise substantially. Similarly, natural gas

[1] For diacritics on place names see the list of names on the apron of the Summary Map in the Country Profile chapter, the map itself, and the maps in this text.

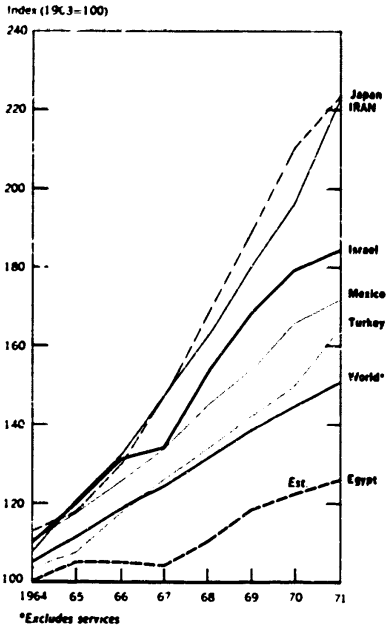


FIGURE 1. International comparisons of GNP growth, 1964-71 (U/OU)

reserves are the third largest in the world and provide opportunities for greatly expanded output. In addition to hydrocarbons, Iran has resources of copper, iron, and other metals, which are only now being tapped.

The Iranian economy has been growing more rapidly than that of any other country in the Middle East. Its gross national product (GNP) rose at a much faster rate than that of Egypt and Israel since 1963 (Figure 1), and in 1971 was more than twice that of either country. Following a period of financial retrenchment and economic slowdown in the early 1960's, Iran embarked on a development program which resulted in an average annual growth rate of real GNP of 11% from 1964/65 through 1971/72.[2] Among the Middle East countries, only Israel approaches this rate of growth, and its per capita GNP is, of course, far higher. Iran's phenomenal growth is attributed to large-scale public and private investment, supported by increasing amounts of foreign financial and technological assistance. The government has had a strong influence on the development pattern of the economy through public investment and through regulation of and incentives to private investment. The Shah's policy emphasized the development of industry (Figure 2), transportation, and education and the expansion of the military sector. Imports for development and defense have exceeded earnings from exports; and Iran continues to rely on inflows of foreign credit to achieve its growth and development objectives, despite recent large increases in earnings from oil.

Rapid growth has given rise to a number of economic problems. Educational levels remain low, and the country lacks sufficient managerial personnel and skilled workers for its expanding industries—a technical gap that has been filled largely by foreign advisers. The rapid development of industry has been accompanied by a number of hastily conceived and costly projects; measures de-

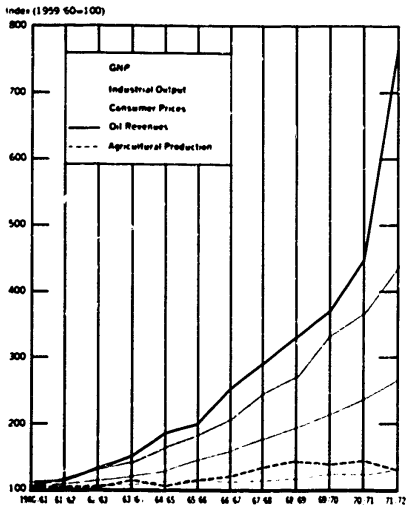


FIGURE 2. Selected economic indicators (U/OU)

[2] This method of indicating years is used throughout the text when the data are from Iranian sources. The Iranian calendar year runs from 21 March to 20 March. The fiscal year is the same as the calendar year.

signed to protect infant industries from foreign competition have sheltered inefficient operations and led to higher costs and prices. The emphasis on industry and neglect of agricultural production has resulted in a lag in farm output and higher food prices. The rate of inflation accelerated in recent years and now is running at about 7% annually. Although real income per capita has risen sharply since World War II, the distribution has become more uneven. The upper and middle income groups benefited most, while the status of lower income groups improved only slightly. Government planning shows an awareness of and determination to correct the socioeconomic disparity.

C. Structure of the economy (U/OU)

Agriculture provided about 16% of Iran's national output in 1971/72 (Figure 3) and employed about 37% of the labor force. Output consists largely of wheat, barley, rice, fruits, and meat (mutton and goat). but domestic production of food has in recent years been supplemented by imports. In contrast, petroleum provided 23% of GNP in 1971/72, supplied more than half of the budgetary revenues, and brought in 85% of Iran's foreign exchange earnings, but employed only 0.5% of the total labor force. Iranian industry, which has grown in size and sophistication, contributed almost 16%

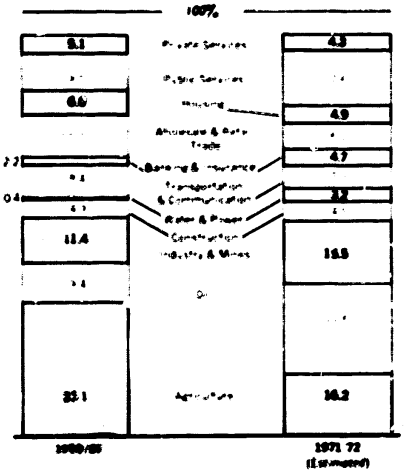


FIGURE 3. Distribution of GNP (U/OU)

of GNP. New basic industries, such as iron and steel and petrochemicals, and new assembly industries have expanded rapidly, but the traditional industries—textile manufacturing, brick production, etc.—employ the bulk of the industrial work force and probably still account for the major part of industrial value added.

The services sector has expanded at roughly the same rate as overall GNP, with the largest increase taking place in public administration and defense. Banking and insurance have grown at a faster pace than GNP, reflecting in part the shift from a barter to a money economy. Bazaars, the traditional centers of commerce and finance, still are found in almost all cities, towns, and villages, even though an increasing amount of retail trade is carried on in more modern shops and department stores. Growth in housing and transportation has lagged behind growth in GNP. Nevertheless, over the past decade modern roads, railroads, and air services have been provided, and the number and quality of homes have been improved. As the government increases its efforts to extend the benefits of economic growth to rural areas, growth in educational, medical, and other services will accelerate.

1. Agriculture, fisheries, and forestry

a. Agriculture

Agriculture accounts for about 37% of total employment and contributes directly to the livelihood of about half of the populace. Agriculture supplies some of Iran's small but growing nonoil exports and plays an important role as a supplier of raw materials to domestic industries, notably sugar and textiles. Finally, agriculture is a major customer for products of domestic industry, such as fertilizer, insecticides, tractors, and other farm implements. Forestry and fishing are of negligible importance in Iran's economy.

Agricultural output fails to meet domestic demands. Although there has been sizable domestic production, Iran imports significant quantities of vegetable oils and tea and, in recent years, wheat, as well as lesser quantities of sugar, milk products, rice, and wool. On the other hand, Iran exports cotton, fruits and nuts, skins, and caviar. Many of Iran's current agricultural exports face intense competition in world markets and are subject to wide variations in price. In any event, agricultural exports are not likely to grow as fast as other exports because of the increasing domestic need for agricultural products—the population is growing at

about 3% per year—and the low return on agricultural investment makes allocation of resources to other sectors of the economy a more desirable alternative.

Only about 14% of Iran's total land area of 402 million acres is agricultural land (Figures 4 and 5), compared with about 18% for Iraq, 22% for Afghanistan, and 34% for Turkey. Except for a narrow coastal plain along the Caspian Sea, the country is arid or semiarid. Agriculture is restricted to oasis-like patches near sources of water; these patches are often surrounded by mountains and vide expanses of wasteland. Rainfall sufficient for intensive farming is available only in the heavily populated "fertile crescent" of the north and west. In other areas, cultivation is dependent on limited irrigation or unreliable rainfall. The four agricultural zones established by the 1960 farm census (Figure 6) include: Zone 1, roughly corresponding to the Caspian Sea plain; Zone 2, the northern and central parts of the Zagros mountain range; Zone 3, southern and coastal areas; and Zone 4, the plateau. Most of the agricultural land is in the northern part of the country, which produces about 60% of the nation's wheat and barley, 70% of the cotton, 75% of the tobacco, 80% of the rice and dried fruits, 90% of the citrus, and 100% of the tea, jute, and kenaf (a jute-like plant cultivated for its fiber).

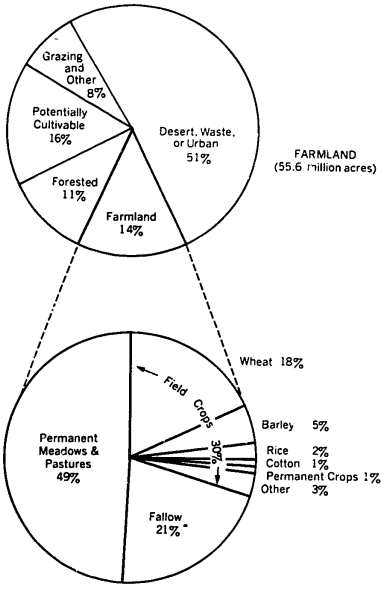


FIGURE 4. Estimated land utilization (U/OU)

Only about one-third of the agricultural land is under cultivation in any one year, the remainder being kept fallow to conserve moisture. Although, an additional 66 million acres are classified as potentially cultivable farmland, the possibilities for actually bringing this land under cultivation are limited, primarily because of the shortage of water. Thus, the government planned only a 2% increase (1.2 million acres) in cultivable land during the Fourth Development Plan (March 1968-March 1973).

At present, only about one-fourth of the agricultural land is irrigated. Except in the case of the small fertile area on the Caspian and in the northwest, most crops must be irrigated. Nearly all of the rice, tree, and vine crops rely on irrigation, as does most of the cotton, sugar beets, and vegetables. An estimated one-half to two-thirds of irrigation is by surface water, mainly from rivers; the remainder comes from wells and *ghanats*, the ancient Persian system of underground water channels (Figure 7). These channels consist of gently sloping tunnels leading from a mother well that taps the water-bearing layer at the base of a mountain to lower-lying cropland. Some *ghanats* are as long as 25 miles. Although they are still used extensively, they are giving way to other forms of irrigation. They are wasteful, as the water flows continuously, and they are susceptible to floods and droughts and are costly to maintain. About 7,000 *ghanats* were in use in 1970, compared with 20,000 in the 1950's, and the government has not allocated any funds for new construction or renovation of *ghanats*.

In order that existing surface water can be used more effectively, 12 dams have been completed and another five are in the construction or planning stage. Several large dams—the Shahbanu Farah Dam on the Safid Rud north of Tehran (Figure 8), the Aras Dam in Azarbaijan-e Gharbi Province, the Shah Abbas Kabir Dam in Esfahan Province, the Mohammad Reza Shah Dam in Khuzestan, and the Shahnaz Dam in Hamadan—store water for a total

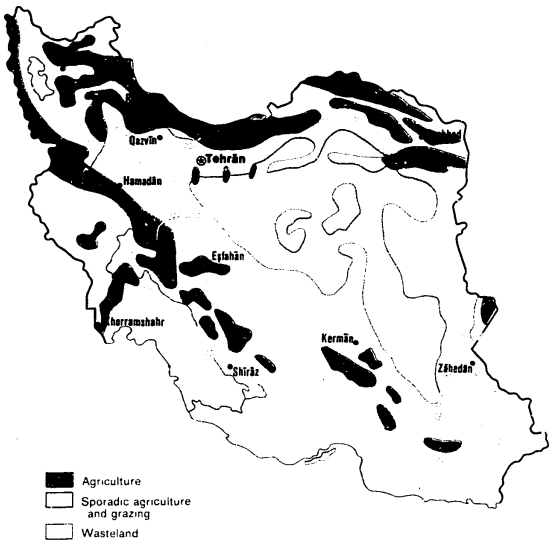


FIGURE 5. Agricultural land distribution (U/OU)

of about 1.4 million acres and provide electric power for rural development. The most extensive dam-related agricultural project is underway in Khuzestan, which contains the important Dez, Karun, and three other rivers as well as the three major cities, Ahvaz, Abadan, and Khorramshahr. The development of this region is comparable to the TVA project in the United States. Storage dams for irrigation projects on all five rivers are designed to bring 2.5 million acres of land under irrigation. The largest single project is the multipurpose Reza Shah Kabir Dam on the Karun river, started in August 1970 and expected to be completed within 5 years at a cost of $107 million. This dam alone will store sufficient water to irrigate 400,000 acres of farmland. Irrigation projects completed or nearing completion under the Fourth Development Plan (ending March 1973) will account for 80% of the anticipated increase in arable land; the remainder will come from dry farming.

Apart from the effects of increased irrigation, only minor improvements have been made in overall agricultural productivity. Farm practices in general have remained primitive. Little attention has been given to soil preparation, leveling, and planting, and inadequate use has been made of improved seeds, fertilizer, and insecticides. The use of machinery in agriculture has increased considerably during the Fourth Plan. Its impact has been felt largely in the farm cooperatives and agrobusinesses (integrated producers and processors of farm commodities). The average farmer, who works a small plot of 2.5 to 12.5 acres, uses primitive techniques and gets low yields.

Government data on agricultural output imply an annual growth rate in output of about 3.7% during the 1960's. The actual rate was probably about 3%, a record that many developing countries would envy but short of the 4.4% goal set for the Fourth Plan.

(1) *Land reform* — The Shah's land reform program has been the most important development in Iranian agriculture in centuries. Launched in 1951 with the distribution of the Shah's own landholdings, the program was strongly motivated by political considerations—the Shah's desire to broaden the base of his support from a small elite to a large class of farmers. The program has had a sweeping effect on Iran's system of land tenure and farming in general.

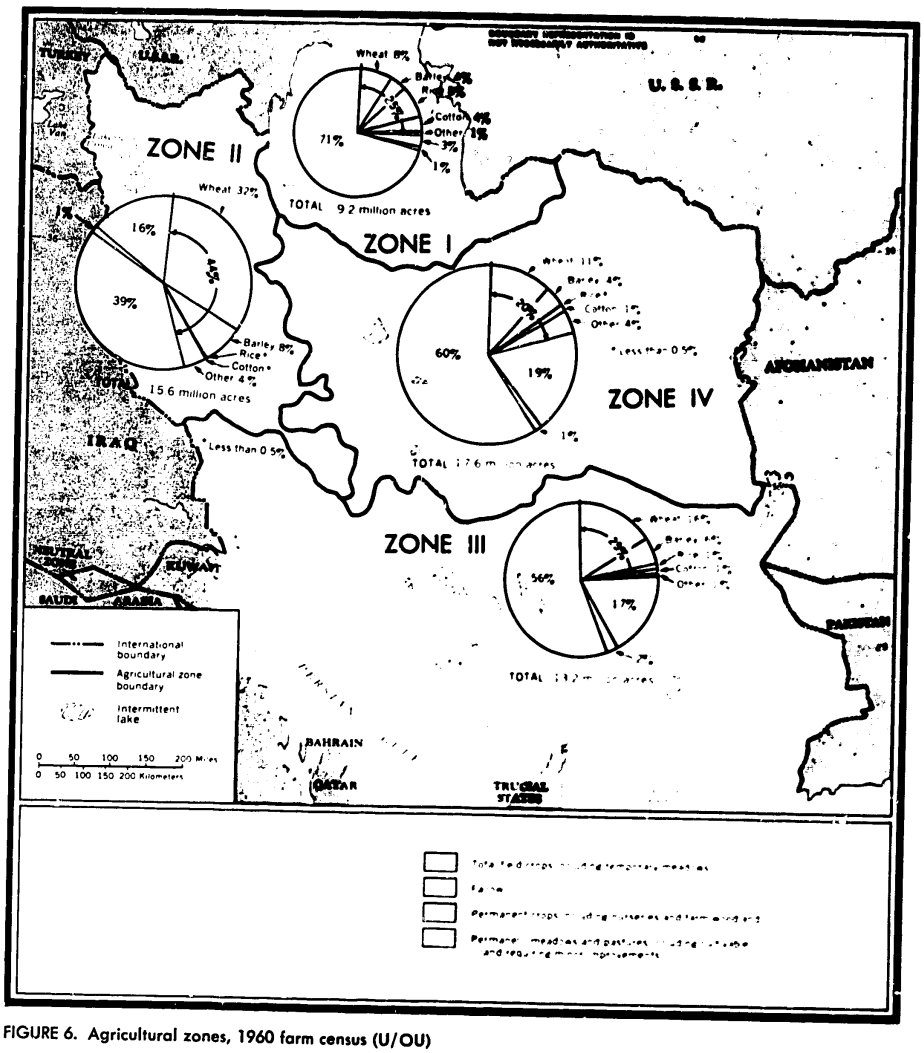


FIGURE 6. Agricultural zones, 1960 farm census (U/OU)

Before the land reform, well over half of the agricultural land was owned by only 1% of the people, most of whom were absentee landlords; small holders or peasants owned only 10% of the land. Under the landlord-tenant system, farmers handed over 80% of their crops, gave their labor free during the off-season, and frequently paid "taxes" in kind and made "gifts" to the landlord. Lack of education, health, welfare, and other government services kept the bulk of the population in a state of quasi-feudal dependence on the landlord and subject to the exactions of money-

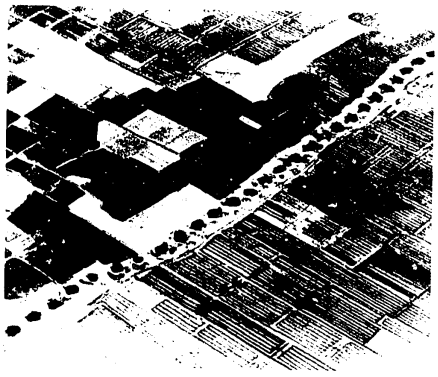


FIGURE 7. *Ghanat* system of irrigation. These channels, used in Iran for centuries, run underground to prevent the evaporation of water. The points at which water is released along the channels resemble small craters. (U/OU)

lenders and middlemen for financing and marketing crops.

The redistribution of the Shah's land in 1951 and the subsequent Land Reform Law of 1961-63 were designed to correct economic injustice in the countryside and to bring Iran's illiterate rural majority into the mainstream of national life. The program was aimed at all of Iran's 50,000 villages and was intended to redistribute both land and income. Land reform, one of the nine goals of the White Revolution, was accomplished in three phases, the final phase ending in 1971. Under the first phase, begun in 1962, the government purchased 14,834 villages and redistributed the land among the peasants on the condition that they accept membership in multipurpose agricultural cooperatives. Peasants were to pay for the land over a 15-year period at a price based on the land's cost to the government plus 10%. Although statistics differ widely, an estimated 600,000 tenant farmers became landowners during the first phase, which ended in October 1963. The second phase, begun in February 1965, abolished sharecropping and required farm operators to pay laborers in cash rather than in kind. In addition, it limited land ownership to a maximum of 30 to 200 hectares (74 to 494 acres), depending upon the location and productivity of the land. For land in excess of the established ceilings, landlords had the option of selling, dividing, or leasing land to farmers, or forming joint stock companies. More than 90% chose to lease and some 1.1 million peasants thereby became tenant farmers, setting the stage for the third phase.

Under the "Law for Distribution and Sale of Leased Property to Lessee Farmers," passed in December 1968, the government undertook the third phase of the land reform program, which sought to stimulate agricultural growth through higher productivity and the gradual replacement of subsistence farmers with new, market-oriented agricultural enterprises. A 20-point program was developed which embraced practically all of the things needed for agricultural improvement. An

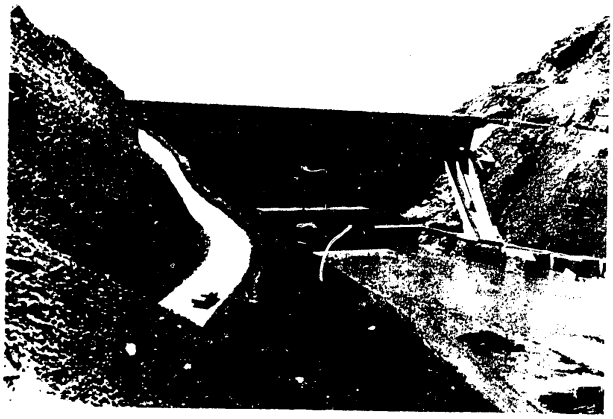


FIGURE 8. The Shanbanu Farah dam, a buttressed structure across the Safid Rud in Gilan Province (U/OU)

attack on excessive fragmentation of holdings called for the encouragement of "agrobusinesses" (large private farms styled on those in California, which process and distribute the products grown) and the development of joint stock farming corporations (cooperatives in which members contribute land and equipment in exchange for shares, work on salaries, and receive corporation profits according to their shares). The third phase also called for improvements in the more common form of agricultural cooperative. The number of farm cooperatives had increased from 711 in 1960 to 8,865 at the end of 1968, but their function was confined largely to lending. Hampered by shortages of funds, the cooperatives generally have not been able to fulfill the farmer's credit needs. Many farmers have been forced to pay the usurious rates of private moneylenders and to sell their products through exploitative middlemen. The Agricultural Bank, which makes larger loans, caters to the bigger, more modern farms.

Another major objective of the third phase of land reform was to stabilize agricultural prices and to improve marketing and storage. To date, however, little has been accomplished. The government's price policy has been oriented toward controlling farm prices for the benefit of urban consumers, while marketing improvements have been limited chiefly to the construction of roads.

In summary, land reform to date has been primarily a social and political success, although some tangible economic gains also have resulted. Those who cultivate the land now retain a much larger share of production; productivity has risen; and the new owners have diversified their product-mix by producing fruits, vegetables, and other products formerly forbidden or restricted by landlords. Land reform, however, has been of little benefit to the large number of farm workers who are not farm operators, including large numbers of nomadic livestock herders. The new landowners, moreover, are still confronted with credit difficulties despite the increased numbers of cooperatives.

Land reform has given impetus to other economic changes which in the long run may have important benefits. For example, to help finance the land reform, the government sold some of its sugar refineries, oil mills, and canning plants to former landowners as compensation for confiscated land, thus broadening the base of Iran's industrial ownership.

(2) *Government policy* — The current policies toward agriculture, outlined by the Fourth Development Plan, are intended to carry forward the aims of the land reform and other measures of the White Revolution. The plan calls for Iran to produce sufficient food and raw materials to meet expanding domestic needs and to increase rural incomes. Higher farm incomes are to be generated in part through the implementation of the last phase of the land reform. Plan goals are to: 1) raise farm production by an average of at least 5% per year; 2) increase farm productivity through improved technology; 3) create rural employment opportunities in new cottage industries; 4) conserve, develop, and better exploit natural resources; and 5) establish more cooperatives and promote self-help activities.

Before the start of the Fourth Development Plan in 1968, a large share of the government's investment in agriculture had been directed toward infrastructure, land reform, and other activities that had little immediate effect on productivity. Present policy gives more emphasis to quick-yielding investments. Priorities have been set to expand production of commodities such as wheat, rice, oilseeds, sugar beets, tea, and cotton. The two policies of attracting foreign capital and technology to agriculture and of leaving the processing industry to private initiative should give considerable impetus to the commercialization of Iranian agriculture.

(3) *Principal crops* — The most important crops grown in Iran are wheat, barley, and rice. About 80% of the land used for crops in any one year is sown in grain—over half in wheat but including also barley and rice (Figure 9). The principal noncereal crops are sugar beets, cotton, dates, raisins, oilseeds, tea, and tobacco.

Wheat is by far the most important crop. It is grown on practically every farm, accounts for roughly one-third of farm income, and plays the most prominent role in the average Iranian's diet (about half of caloric intake). Production of wheat expanded substantially in the crop years 1961/62-1968/69 (Figure 10) because of increased acreage, higher yields, and favorable weather. Drought and other adverse weather factors sharply reduced Iran's wheat output in the subsequent 3 years.[3] Output

[3] Wheat is highly susceptible to weather conditions because almost two-thirds of it is grown on nonirrigated land.

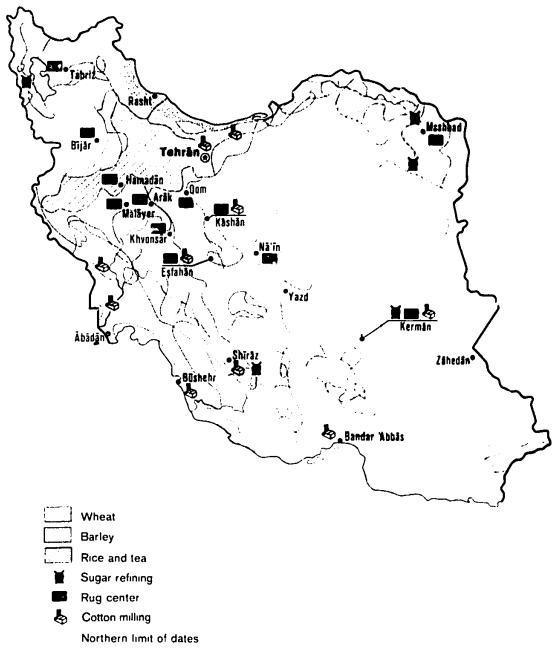


FIGURE 9. Agriculture and light industry (U/OU)

FIGURE 10. Production of major crops (U/OU)
(Thousands of metric tons)

COMMODITY	1961/62–1965/66 AVERAGE	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72	HARVEST SEASON
Wheat	2,801	3,190	4,000	4,400	3,900	3,800	3,000	May–Sept.
Rice (paddy)	766	875	954	1,000	1,046	1,138	1,046	Aug.–Nov.
Barley	980	1,000	1,000	1,160	1,200	1,200	800	Apr.–Aug.
Tobacco	16	20	22	20	17	18	18	Aug.–Sept.
Cotton	117	115	118	160	155	150	130	Aug.–Oct.
Cottonseed	258	230	233	305	314	305	288	Aug.–Dec.
Tea	10	15	18	18	19	19	19	...
Sugar, raw	189	357	424	478	540	566	580	Sept.–Nov. (sugar beets).
Raisins	50	63	45	60	35	60	50	June–Sept.
Dates	302	290	280	280	290	310	280	Sept.–Oct.
Apricots, dried	9	3	7	9	4	12	4	...

of wheat in 1971/72 of 3 million tons was the same as in 1963/64. A net exporter of wheat in 1967/68-1968/69, Iran became a substantial importer in 1970/71-1971/72. Despite improved weather in 1972/73, Iran's wheat output of about 4 million tons will fall short of needs by about 500,000 tons, which will be imported. The United States and Australia have been the leading suppliers of wheat to Iran.

Barley, which has roughly the same geographic distribution as wheat, is less important to Iran's food supply and is less affected by adverse weather conditions. Output increased at the rate of about 3.0% yearly in 1962/63-1970/71. Although barley normally has been exported, the decline in output in 1971/72 made Iran a net importer. Only about 15% of the barley is consumed by humans; the remainder is used principally as animal feed.

Rice is an important and rapidly expanding food crop. It is the principal item of food in the Caspian coastal region (Figure 11) and is important in the diet of well-to-do Iranians. Output has risen sharply since World War II and in 1971/72 was estimated to be 1.0 million tons (paddy). Increases in rice output have stemmed largely from improved yields, brought about by the introduction of new strains of rice and improved cultivation practices. Despite the increases in output, Iran remains a net importer of rice. Imports in recent years have amounted to roughly 10% of consumption.

FIGURE 11. Rice paddies in northern Iran (U/OU)

Cotton is the most important cash crop and accounts for roughly one-fifth of nonpetroleum exports by value. Production and exports fluctuate in response to weather conditions, insect infestation, and world prices. For example, in 1966/67 the cotton crop fell sharply because of bollworm infestation, and export earnings were further reduced by a decline in world prices for cotton. In 1971/72, farmers responded to high world prices by increasing cotton acreage by 12.5%, to 890,000 acres, but dry weather cut yields sharply, and total output was only 130,000 tons, compared with 150,000 tons in 1970/71. Yields of Iranian cotton in the past tended to be low because farm practices have been generally inferior and because about half of the crop was grown in nonirrigated areas. This situation is changing, however, and improved yields are being realized with the introduction of new varieties of disease-resistant and early maturing cotton varieties, and the diversion of irrigated lands to cotton.

Sugar and fruits—apricots, dates, raisins, and citrus—are crops that have expanded rapidly in recent years and that have good potential for further expansion. Sugar output has risen steadily to an estimated 580,000 tons in 1971/72. Output, however, continues to lag behind consumption, which was about 620,000 tons in 1971/72. Fruits and nuts are well suited for growth in Iran. These crops rank second, by value, in agricultural exports. Because a large number of trees have been planted since the start of land reform, output and export of fruits and nuts should continue to expand fairly rapidly.

(4) *Opium* — Iran is one of three major world producers of licit opium, the other two being India and the U.S.S.R. (Turkey also was a major producer prior to the government ban on opium production in 1972.) Cultivation of opium poppies in Iran dates back hundreds of years, and the country was a leading world producer and exporter of opium when the Shah imposed a ban on output in 1955. The ban remained in effect for 14 years. During this period the Iranian Government was frustrated by its inability to prevent imports of illicit narcotics from neighboring countries; its attendant loss of foreign exchange; and its still large population of addicts. Early in 1969, the Shah reinstituted legal production of opium to supply the needs of addicts who registered with the government. At the same time, Iran announced

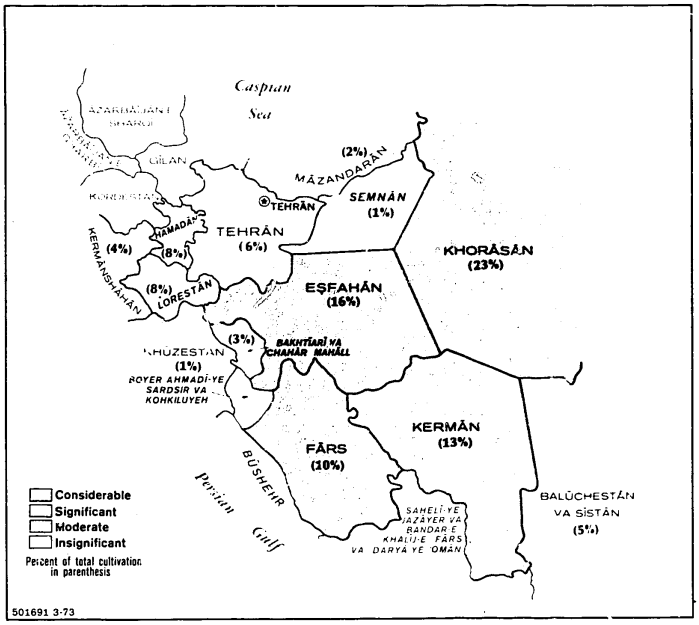


FIGURE 12. Opium poppy cultivation by administrative area (C)

that it would again stop production when cultivation had been eliminated in the neighboring countries—Turkey, Afghanistan, and Pakistan.

Cultivation of opium poppies has been expanded from 2,538 acres in 1969 to an estimated 60,000 acres in 1972 and extends to almost every province (Figure 12). Since the resumption of production, output has risen rapidly, as follows (in metric tons of processed opium):

1969	8
1970	78
1971	156 (*est.*)
1972	217 (*est.*)

Average yields of harvested opium have increased from 8.8 pounds per acre in 1969 to more than 13 pounds in 1970/72. The 9%-12% morphine content of Iranian opium compares favorably with the content of Indian opium.

Opium is cultivated by licensed farm cooperatives, private farm corporations, and individual farmers. Poppies are normally planted in the fall and in March and are harvested as one crop in May and June. Growers are required to sell their total crop to the government, which provides on-site inspections during the harvesting period and transports the opium gum under guard to government warehouses. Diversion to illegal channels also is limited by self-policing among members of cooperatives, since violations by one member would result in the destruction of all poppy fields in the cooperative. To date, the government has reported detecting and destroying only about 2½ acres of illicitly cultivated poppies each year.

High earnings from legal poppy cultivation tend to deter farmers from illicit activities. The government pays farmers an average of about $65 per kilogram for opium gum, considerably higher than the illicit price at the border, but less than in

Tehran and other places in the interior. From the cultivation of 2½ acres of poppies, a farmer can gross about $975 per year, considerably more than the average farmer earns.

Domestic production accommodates the needs of Iran's registered narcotics users—estimated at 105,000 in mid-1972. However, the more numerous nonregistered opium and heroin users demand large illegal imports of as much as 195 tons a year. Because of the expansion of the government program of registering narcotics users and the imposition of tighter controls on the Turkish border, illicit imports have been declining. Most illicit traffic now enters from Afghanistan; small amounts also enter from Pakistan and possibly from other countries via the Persian Gulf. Foreign exchange losses to Iran from the illicit opium trade may amount to about $8 million annually, assuming payments of about $40,000 per ton.

Illicit traffic continues despite the severe penalties meted out to offenders. Under the 1969 law, the death penalty is possible for the possession of more than 2 kilograms of opium or 10 grams of heroin, morphine, or cocaine. By 1972, Iran had executed a total of 133 offenders, many of whom are believed to have been Afghans.

(5) *Livestock* — Livestock and livestock products account for roughly one-third of total agricultural output and involve about one-tenth of the working population. In addition to being an important source of food, livestock provide raw materials for local processing industries, including the world-renowned wool carpet industry. Farm animals also provide power and transport for the farmer.

The livestock inventory (Figure 13) has shown little increase over the years. One reason is that about 80% of the livestock are in migratory flocks which graze on badly depleted rangeland; they suffer from food shortages, disease, and poor breeding, and are highly susceptible to drought or cold. In a bad year, such as 1961 or 1963, large numbers of animals die of starvation or cold or are slaughtered for food. The annual migrations also take their toll of animals.

Output of meat and dairy products has risen, but well below the rate needed to meet Iran's expanding food needs. The country is chronically short of meat, and, as in 1972, shortages are reflected in rising prices. Mutton and goat are the most important meats produced. Government loans are used to spur animal husbandry and the growth of feed grains. Although meat is the major food product of animal origin consumed, dairy products are the most important in terms of value of output. Because of the shortage of refrigeration, more than half of the dairy products consumed in Iran are in the form of cheese or yogurt. Output of meat and dairy products will likely continue to fall short of demand in the foreseeable future.

FIGURE 13. Livestock population (U/OU)
(Thousands of head)

	1961/62	1970/71 (ESTIMATED)
Sheep	32,000	30,000
Goats	12,500	13,000
Cows	6,000	6,000
Donkeys	2,000	2,100
Camels	500	400
Horses and mules	600	600
Water buffalo	200	255
Pigs	55	50
Poultry	24,000	35,000

b. Fisheries

Although Iran borders on the Caspian Sea, the Persian Gulf, and the Oman Gulf, fishing is of minor economic importance. The fish catch, estimated at about 22,000 metric tons annually, is only a fraction of 1% of GNP and is insignificant in terms of food intake. In the waters of the Caspian and its tributaries, there are some 85 species of fish, the most important of which is the famous caviar-bearing sturgeon (Figure 14). Iranian output and exports of caviar increased by an average of 3% yearly during the 1960's, amounting to some 200 tons in 1970/71. Exports of caviar, valued at about $5 million or 1.4% of nonpetroleum exports in 1971/72, were principally to the U.S.S.R. and the United States. The government-owned Iran Fisheries Company, formed in 1953 when the Irano-Soviet Fishing Company was nationalized, controls the catching, processing, and marketing of sturgeon and caviar. The company has also undertaken fish breeding operations (Figure 15) in an effort to counteract a decline in sturgeon population caused by the construction of hydroelectric powerplants on the Volga River—the main spawning ground—and by pollution of Caspian waters.

FIGURE 14. Sturgeon fishing on the Caspian. These seiners stake the nets a few miles offshore to trap fish heading upstream to spawn. (U/OU)

The Persian Gulf and the Oman Gulf contain abundant supplies of shrimp and some 150 edible species of fish. In addition to shrimp, commercially important products include tuna, Spanish mackerel, and sardines. Annual shrimp catches are usually between 4,000 and 5,000 tons, and exports of frozen shrimp have become important to the areas of the gulfs. The potential for the Persian Gulf fishing industry appears good; a survey by Japanese experts estimated that it could earn $200 million per year for Iran. Fishing operations in the Persian Gulf and the Oman Gulf are controlled by the government's Southern Fisheries Company, which operates 15 trawlers and one shrimp freezing ship as well as cold storage areas in Bandar Abbas and Khorramshahr and some 10 refrigerated trucks. Two foreign companies operate in the gulfs under concession from Iran: Gulf Fisheries of Kuwait and British Ross Persian Gulf Seafood Company.

c. Forestry

Although the forest area comprises about 11% (45 million acres) of Iran's land, it is of minor economic significance. Only about 9 million acres

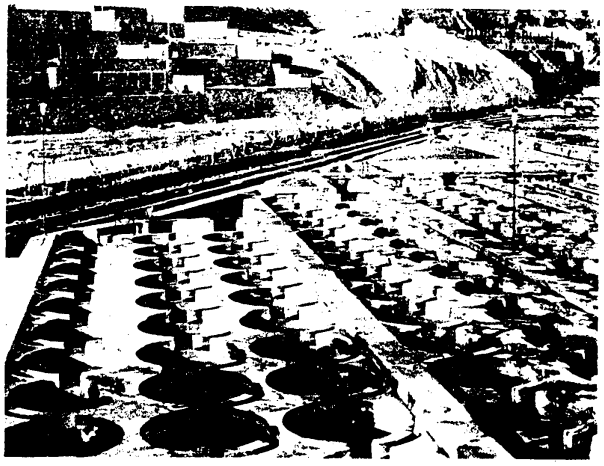


FIGURE 15. Ten million fish can be bred annually in fish farms such as this one south of Rasht, which is operated by the Iran Fisheries Company (U/OU)

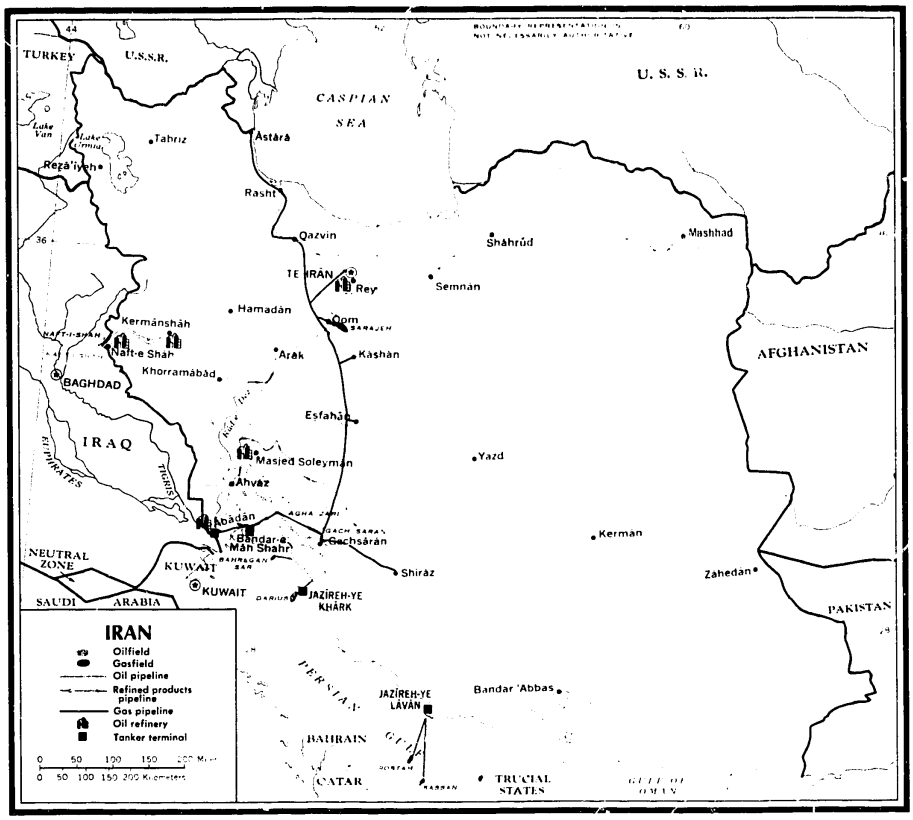


FIGURE 16. Iran's oil and gasfields and pipelines (U/OU)

are worked commercially; these are mainly in the Caspian area. All other forested areas produce only fuelwood and lumber for local use in construction and as railroad ties. Iran is self-sufficient in fuelwood and in primary industrial wood products, but is a net importer of processed wood products.

2. Fuels and power

a. Petroleum

Rich petroleum resources (Figure 16) have placed Iran in the forefront of world oil exporters and have played a vital role in national economic development. Output in 1971 was about 1.7 billion barrels, or roughly 10% of world output, making Iran the second-largest Middle East producer (Figure 17). During the 1960's, Iran's production grew at an average annual rate of almost 14%—considerably faster than the 8% for the world as a whole and the 10% for the Middle East.

Iran's petroleum output is expected to increase sharply and could amount to 9.0 million barrels per day by 1980. At present rates of extraction, Iran's reserves—estimated at 65 billion barrels—would last about 40 years; however, if growth in extraction were to continue at recent rates, the reserves would last only 21 years. These reserves are the third largest in the Middle East (following those of Saudi Arabia and Kuwait), and they constitute about 10% of the estimated world total.

The share of GNP accounted for by the petroleum industry increased from 9.4% in 1959/60 to about 17% in 1969/70. In 1971/72 the petroleum industry became the leading productive sector (apart from services) accounting for about 23% of GNP. Exports of petroleum and petroleum products supply about 85% of Iran's foreign exchange earnings and about 60% of its budgetary revenues. Revenues from the petroleum sector have risen as follows:

IRANIAN YEAR	MILLIONS OF U.S. DOLLARS
1959/60	335
1960/61	359
1961/62	392
1962/63	437
1963/64	471
1964/65	556
1965/66	607
1966/67	716
1967/68	857
1968/69	958
1969/70	1,183
1970/71	1,290
1971/72	2,231 (preliminary)

Iran's oil and gas fueled the eternal fires of the Zoroastrians, but it was not until the late 19th century that serious attention was paid to commercial exploitation of these resources. Iran has maintained continuous commercial production of oil since 1912 and is the oldest producer in the Middle East. The bulk of commercial output up to 1951 was produced by the Anglo-Iranian Oil Company (now British Petroleum Company), which operated in an area of 65 million acres in southwest Iran under a concession agreement concluded in 1933. After several years of unsuccessful negotiations on revision of the 1933 agreements, Iran nationalized the petroleum industry in 1951 and formed the National Iranian Oil Company (NIOC) with sole proprietary rights over the country's hydrocarbon reserves. Anglo-Iranian Oil Company ceased operations and production fell to a low level during 1952-54.

In October 1954, the government signed an agreement with a consortium of international oil companies (Figure 18) to exploit Iran's resources. Since then the consortium has produced roughly 90% of Iran's petroleum. The 1954 agreement was for 25 years with provision for three 5-year extensions, and gave exclusive rights to exploration, drilling, refining, and transportation in an area covering 100,000 square miles (reduced in 1966 to 75,000 square miles) adjoining the Persian Gulf. Outside the consortium area, oil operations covering some 27 districts are handled by NIOC, which has encouraged the development of 50/50 partnership arrangements with foreign companies. As of 1972, 10 foreign companies were in partnership with NIOC and two were operating under contract to NIOC. Only four partners—SIRIP (Irano-Italian Petroleum Company), LAPCO (Lavan Petroleum Company), IMINOCO (Iranian Marine National Oil Company), and AMOCO (Amoco Iran Oil Company, formerly Iran Pan-American Oil Company—IPAC)—have been successful in find-

FIGURE 17. Crude oil production (U/OU)
(Millions of barrels)

	CONSORTIUM	NIOC	OTHER COMPANIES	TOTAL	IN PERCENT OF: World output	IN PERCENT OF: Middle East output
1960	382.2	2.5	*na*	384.7	*4.8*	*20*
1961	427.5	5.3	1.3	434.1	*5.1*	*21*
1962	474.9	4.5	2.4	481.8	*5.2*	*22*
1963	527.2	5.4	5.5	538.1	*5.4*	*22*
1964	605.8	2.5	10.2	618.5	*5.8*	*22*
1965	659.9	2.8	25.6	688.3	*6.0*	*23*
1966	736.2	3.1	32.0	771.3	*6.1*	*23*
1967	900.3	3.3	44.1	947.6	*7.0*	*26*
1968	987.0	3.3	46.7	1,037.0	*7.1*	*25*
1969	1,131.9	3.3	96.7	1,231.9	*7.7*	*27*
1970	1,276.1	3.6	117.9	1,397.6	*8.0*	*28*
1971	1,512.5	4.4	138.4	1,655.3	*9.4*	*28*

na Data not available.

ing and producing commercial quantities of petroleum, principally from offshore fields. Output by the NIOC and the four joint companies has risen sharply and in the next several years will make up a greater proportion of Iran's total output.

Iran's financial arrangements with foreign oil companies have been negotiated astutely by the Shah and his representatives, resulting in increasingly favorable returns to Iran. The initial 1954 agreement with the consortium, as amended in 1964, guaranteed Iran 56.25% of the profits from operations as taxes and royalties, based on an artificial "posted price" for crude petroleum exports. Since most sales were made at prices substantially below posted prices, Iran's share of actual profits under the 1964 agreement came close to 70% of the total. Posted prices remained practically unchanged between 1964 and 1970, but minor adjustments were made in the agreement whereby government revenues were increased by about 5%.

Two agreements in 1970 and 1971 fundamentally altered the financial arrangements between the Iranian Government and the consortium. On 14 November 1970 the income tax on the consortium's net profits was raised from 50% to 55%, and the posted price for Iranian heavy crude oil (accounting for about 45% of consortium revenue) was increased by 5.5%, resulting in a 12% overall increase in government revenues per barrel of oil. In February 1971 Iran led other Persian Gulf members of OPEC (Organization of Petroleum Exporting Countries) in a lucrative and far-reaching (1971/75) settlement with the international oil companies of the region. As it applied to Iran, the agreement affirmed the tax-rate increase of November 1970, provided an immediate increase of 21% in the posted price on which taxes are based, and stipulated annual increases in the posted price of 2.5% during 1971/75 to offset worldwide inflation. An additional 5 cents per barrel was provided for on 1 June 1971 and on the first of each year during 1973/75. The February 1971 agreement raised Iran's revenue per barrel of exported petroleum by an average of 9.5% yearly during 1971/75.

Iran, together with other Persian Gulf members of OPEC, on 20 January 1972 negotiated further

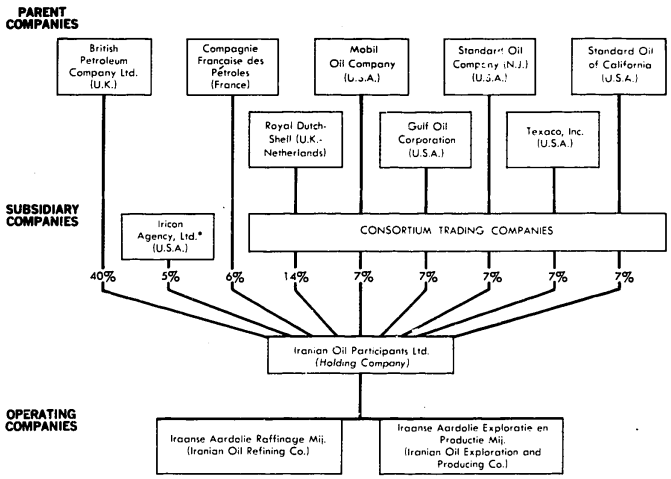


FIGURE 18. Oil companies operating in the consortium (U/OU)

increases in petroleum revenues to offset the higher costs of imports caused by August 1971 changes in world currencies. Iran demanded and received an adjustment to compensate for the increased costs of imports from countries that revalued their currencies against the dollar—notably Japan and most Western European nations. The 1971 and 1972 agreements, coupled with anticipated increases in petroleum exports, are expected to yield an estimated $14 billion in revenues during 1971/72 through 1975/76—triple those received by Iran during the preceding 5 years. Discussions with the consortium for further increases in revenues were underway in early 1973.

The scope of NIOC's activities is increasing and probably will include the sale of refined products on the international market. Previously, NIOC exported only crude petroleum in limited quantities from its 50% entitlements in joint-venture offshore fields (about 220,000 barrels daily) and from its barter-oil arrangement with the consortium (about 43,000 barrels daily). Internationalization of NIOC's efforts also has included a 13% participation in a refinery in India (Madras), which became operational in July 1969, and a 17.5% share in a South African refinery that is under construction. These refineries and others currently considered for expansion or construction in Belgium, Yugoslavia and Spain will provide outlets for NIOC exports. In March 1972, NIOC announced that it was taking steps to develop a sizable tanker fleet, including supertankers, for direct transport of oil and petrochemical products to world markets. NIOC has also undertaken with British Petroleum a joint venture for oil exploitation in the North Sea.

The bulk of Iran's petroleum output is exported, principally in crude form. Exports of crude petroleum increased by an average of 14.5% annually since 1960 and reached 4.3 million barrels per day in 1971, making Iran the world's second ranking exporter. Japan and Western Europe together accounted for about three-fourths of Iran's petroleum exports in 1970 (Figure 19). Iran is Japan's leading supplier of petroleum, a reflection of the magnitude of Japanese energy requirements, but more particularly of the utility of blending Iranian medium sulfur crudes with crudes from other countries to produce a grade satisfactory for Japanese industries. Prospects are good for continued expansion in sales to Japan and to Western Europe as the latter's supplies from Libya decline and as delivery from expanded port facilities at Kharg Island via supertankers becomes available.

Exports of refined products have risen, and domestic refining capacity is being expanded to meet both domestic and export demands. Iran has six refineries (Figure 20) with a total capacity of about 673,000 barrels per day, as shown below:

Abadan	460,000
Tehran	100,000
Masjed Soleyman	78,000
Kermanshah (2 refineries)	15,000
	15,000
Naft-e Shah	5,300

Domestic consumption has risen an average of 12% per year and currently amounts to about 360,000 barrels daily. Export demand, supplied largely by the Abadan refinery, has also risen. Iran, therefore, is doubling the capacity of the Tehran refinery, erecting several new refineries, planning additional ones. A 40,000-barrel-per-day refinery is to be completed in February 1973 at Shiraz, and contracts have been signed for a 20,000-barrel-per-day plant on Jazireh-ye Lavan (Lavan Island). Probably the most significant addition to Iran's refining capacity, however, will be the facility which

FIGURE 19. Direction of petroleum exports (U/OU)
(Percent of total)

	1960	1965	1966	1967	1968	1969	1970
Western Europe	47.0	50.2	42.2	41.0	30.4	25.2	24.9
Japan	3.0	22.1	31.1	37.4	42.1	46.9	49.7
Asia (excluding Japan)	15.0	8.2	9.3	9.2	14.2	13.4	11.9
Africa	17.0	8.6	6.8	6.6	7.9	10.9	9.9
North America	8.0	8.7	7.5	3.6	3.8	3.0	2.8
South America	0.0	0.4	0.6	0.5	0.0	0.0	0.1
Australia	5.0	1.8	2.5	1.7	1.6	0.6	0.6
Other regions	5.0	0.0	0.0	0.0	0.0	0.0	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0

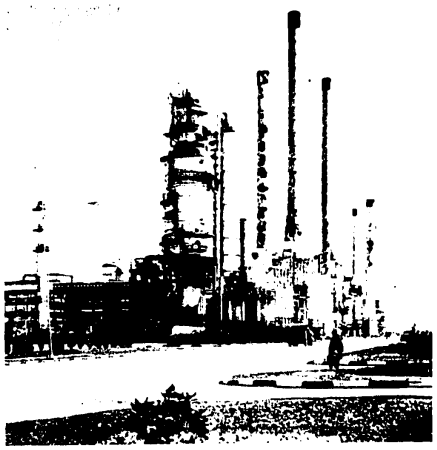


FIGURE 20. The Tehran oil refinery (U/OU)

the consortium will build at Kharg Island, the capacity of which may reach 300,000 to 360,000 barrels per day.

b. Natural gas

Iran ranks third in the world in gas reserves, following the U.S.S.R. and the United States. The volume of its reserves is conservatively estimated at 200 trillion cubic feet. The major gasfields are the Khangiran field at Sarakhs in northeast Iran, with 18 trillion cubic feet, and Pazanan field in the consortium area, with 50 trillion cubic feet. Output of natural gas, largely in conjunction with the production of crude petroleum, totaled about 1,245 billion cubic feet in 1971, increasing an average rate of about 16% yearly since 1965. Although most of the gas continues to be flared, recovery and consumption have been rising and accounted for an estimated 40% of output in 1971, compared with less than 10% 3 years before. Gas has supplied an increasing share of Iran's rising energy requirements, accounting for about 14% of the total in 1969 and replacing to some extent petroleum products, which have a higher export value. Petroleum and gas together provide about 87% of domestic energy. It has been estimated that Iran's domestic consumption of gas will total some 212 billion cubic feet by 1980.

The National Iranian Gas Company (NIGC), a wholly-owned subsidiary of NIOC, is in charge of the distribution and sale of natural and refinery gas in Iran. NIGC, formed in 1966, operates a number of gas pipelines and is responsible for the Iranian Gas Trunkline (IGAT), which began operations in 1970 and is still being expanded by NIOC. The major IGAT element is a 687-mile line, extending from the southern oilfields to the U.S.S.R. border, the first stage of which was completed in 1971. The second stage will include construction of a booster station, more compressor stations, and another gathering line. In 1971, the line delivered about 198.5 billion cubic meters of gas valued at $37 million to the U.S.S.R., in payment for the economic and military credits that Iran has received from the U.S.S.R. These credits include $77 million to finance part of the foreign exchange cost of building the trunkline to the Soviet border. Under the agreement with the U.S.S.R., Iran will expand deliveries to 353.2 billion cubic feet annually by 1974 and provide a total of about 5,000 billion cubic feet of gas by 1985. The IGAT pipeline, scheduled for completion in 1974, will have spur lines to major cities including Shiraz, Esfahan, Kashan, Qom, Tehran, and Qazvin. Petrochemical projects at Khark (Kharg) Island, Abadan, Bandar-e Shahpur, and Shiraz use natural gas as a major input; gas is also used as a fuel at the steel plant in Esfahan. In addition to the existing supplies of gas, NIOC has discovered gas fields in the Sarajeh area, near Kermanshah, and near Mashhad.

Production of liquefied natural gas (LNG) is undergoing expansion to accommodate the export demand, largely by Japan. In 1971, large scale output of LNG was confined to the consortium-operated Abadan refinery (which delivered 184 barrels per day of LNG to the NIOC and associated companies) and to the consortium's four NGL (natural gas liquids) plants in the fields at Agha Jari and Marun. In late 1972, new plants at Kharg Island, Bushehr, and Qeshm, involving a total investment of some $3 billion, were under active consideration, with foreign firms to hold a 50% interest. The Kharg Island and Qeshm projects are intended to supply Japan, and the Bushehr project has a large American shareholding and will send most of its production to the United States.

c. Electric power

Production of electricity has increased by about 18% annually since 1964 and generally is adequate to meet present requirements. Total installed capacity in 1971 was 2.8 million kilowatts (kw.), and

annual production was an estimated 8.3 billion kilowatt-hours (kw.-hr.), slightly less than 34% of capacity. More than 70% of national capacity is in thermal plants using petroleum and natural gas as fuel; hydroelectric plants account for the remainder.

The Tehran area uses 43% of the annual production; another 24% is used by the Abadan-Ahvaz area, and Esfahan, Shiraz, Tabriz, and Mashhad consume approximately 13% of the national total. Scattered towns and villages consume the remaining 20%.

Industry accounts for about 65% of national consumption, principally in petroleum refining, and in textile, cement, and sugar production. Households consume about 15% of available electricity, and commercial use, public services, and agriculture account for the remainder. The per capita consumption in early 1971 was 250 kw.-hr.

The country's largest thermal power generating stations are in Tehran and in the Abadan-Ahvaz area. These include the 312,000-kw. Shahriar and the 247,000-kw. Farahabad plants in Tehran and the 152,000-kw. Abadan powerplant. Other principal thermal stations are the 75,000-kw. Tarasht (Alsthom) powerplant in Tehran, the 47,000-kw. Shahabad station in Esfahan, the 42,000-kw. powerplant in Tabriz, and the 30,000-kw. plant in Mashhad. The largest hydroelectric powerplant is the 520,000-kw. Dez station, north of Ahvaz. Three smaller hydroelectric plants are located in the vicinity of Tehran: the 84,000-kw. Karaj plant, the 70,000-kw. Manjil plant, and the 22,000-kw. Leyta plant. A 1,000,000-kw. hydroelectric station (the Reza Shah Kabir) is under construction in Khuzestan. Generating plants in the rest of the country consist of a number of gas turbines (8,000 to 17,000 kw.) and several hundred diesel and small steam units. The aggregate capacity of these small stations is about 30% of the national total.

Electricity is transmitted by an extensive interconnected 230-kilovolt (kv.) system to two principal areas. One part of the system consists of almost 300 miles (about 480 kilometers) of 230-kv. transmission lines supplying Abadan, Ahvaz, and the nearby petroleum fields from the Dez hydroelectric station. The other part of the system is in the north and consists of about 454 miles (732 kilometers) of 230-kv. lines which connect the Manjil, Karaj, and Leyta hydroelectric powerplants with the thermal generating installations in Tehran. Both systems have lines transmitting 230, 132, 66, and 33 kilovolts and are interconnected by about 432 miles (696 kilometers) of 230-kv. lines. Lines 63 kilovolts and above total almost 3,000 miles (4,707 kilometers).

The electric power industry evolved during the 1960's from small municipally or privately owned power companies and generating plants associated with industries. In 1965, the electric power industry was nationalized, and by 1967 most of the country's installed generating capacity—except captive industrial generating facilities—was under the jurisdiction of the Ministry of Water and Power. Ten regional electric companies were established to generate and distribute electric power throughout the country. In 1969, the Iranian Electric Power Generation and Transmission Company (TAVANIR) was established; it assumed ownership and operation of all major generating stations and transmission facilities (132 kv. and higher). TAVANIR sell bulk power and energy to large industrial installations (5,000 kw. or more) and to the 10 regional electric companies for resale through their respective distribution systems. These companies distribute power at 11, 20, 33, and 66 kv., as well as 220/380 volts.

Generating equipment and transmission facilities were imported, while powerplants and transmission lines were built by both foreign and local contractors. Skilled manpower is scarce, and engineers and technical advisers are mostly foreigners.

Demand for electric power is expected to reach 12 billion kw.-hr. by the end of the Fourth Plan (March 1973). Per capita consumption is expected to rise to about 400 kw.-hr.—60% more than in early 1971. Iran is attempting to cope with this expanding power demand by making more effective use of existing facilities and by installing additional capacity. Electric power capacity at the end of the Fourth Plan is expected to amount to 3.1 million kw. Several large powerplants are being built for companies affiliated with the Ministry of Water and Power in Tehran, Gilan, Khuzestan, Khorasan, Esfahan, Fars, and Kerman with an additional capacity of 1,270,000 kw. In addition to these, 82 smaller towns not connected to the national power grid will be equipped with diesel generator sets. Expansion of the transmission network will add a large number of towns and villages to the national grid.

d. Solid fuels

Solid fuels—coal, charcoal, wood, and animal dung—form a small and declining share of Iran's fuel consumption. In 1969, they accounted for only

7% of total fuel consumption as opposed to 19% in 1960. The decline in their importance stems from the demand for more efficient fuels—petroleum and natural gas—by Iran's expanding modern industry and urban centers. Among the solid fuels, only coal is expected to increase in demand through the mid-1970's, mainly because of the newly completed steel mill's requirements for coking coal.

Iran's output of coal increased slightly during the 1960's to about 323,000 tons in 1970/71. The principal consumers of coal have been the textile plants, foundries, brick and other kilns, rural public baths, and households that use coal for cooking and heating. Although precise data are not available, production rose considerably in 1971/72 in part because of demand for coking coal for Iran's new steel mill at Esfahan. The first stage of the mill became operational in 1972 and will consume about 600,000 tons of coal annually. The potential for expanded output of coal is substantial. Deposits in the Kerman area and in the Elburz mountains are estimated at over 100 million tons. Deposits also have been found in Khorasan and in the Azarbaijan provinces.

Charcoal, wood and animal dung are of lesser importance as solid fuels in Iran, but production statistics are not available. Most of the fuelwood cut is converted into charcoal, usually in small, primitive facilities.

3. Metals and minerals

Geological investigations and discoveries to date suggest that Iran has a great potential for mineral production, besides the hydrocarbons. Although only 1% of the area has been surveyed, sizable deposits of copper have been found in the Kerman area, iron ore at Shamsabad and Bafq, chromite in southwest Iran, and lead-zinc ores and sulfur along the Persian Gulf at several inland sites (Figure 21). Other identified deposits include bauxite, tungsten, manganese, nickel, cobalt, antimony, tin, uranium, and kaolin. Building materials, such as chalk, marble, sand, and granite, are abundant throughout the country. The government retains ownership of all mineral resources except those used in building construction, which belong to individual property owners. Mining operations and concessions are governed by the Mining Law of 1958. According to

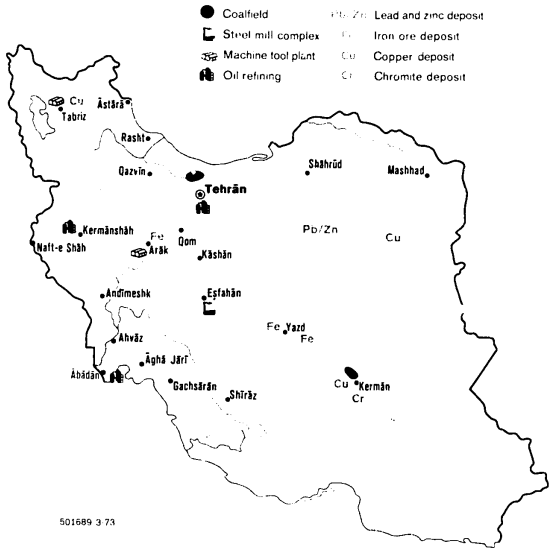


FIGURE 21. Mining (nonoil) and heavy industry (U/OU)

FIGURE 22. Production of major metals and minerals (U/OU)
(Metric tons)

COMMODITY	1962/63	1963/64	1964/65	1965/66	1966/67	1967/68	1968/69	1969/70	1970/71
Metals:									
Chromium ore (Cr_2O_3 content)	49,900	38,400	47,000	61,900	67,500	72,000	113,300	135,800	145,100
Copper ore (Cu content)	5,000	5,200	8,800	9,600	11,000	12,000	12,000	12,000	*na*
Iron ore (Fe content)	2,000	0	1,000	1,000	1,000	1,000	1,000	2,000	2,000
Lead ore (Pb content)	10,000	10,000	10,600	11,700	14,700	14,800	15,000	24,000	23,000
Manganese ore (Mn content)	2,100	5,900	12,200	13,900	15,600	16,000	10,500	8,800	8,400
Zinc (Zn content)	7,500	10,000	15,000	15,000	17,000	24,000	25,000	22,500	*na*
Nonmetals:									
Salt	266,000	216,000	239,000	240,000	245,000	249,000	324,000	347,000	368,000
Sulfur	15,000	20,000	20,000	20,000	25,000	25,000	*na*	36,000	*na*

na Data not available.

the mining census of 1963, there were 1,024 mines employing a total of over 15,000 workers; the number of mines and miners has increased considerably since 1963, but precise data are not available.

Exploitation of Iran's mineral resources other than hydrocarbons has been concentrated on lead and zinc ores, chromite, and raw materials for construction (Figure 22). Income from mining activities has been reported at less than 1% of GNP, but it is rising. Production of lead and zinc ores increased sharply between 1962/63 and 1970/71, mainly from the large deposits in the Kavir desert. Output of chromium ore doubled between 1967/68 and 1970/71, when it totaled about 145,000 tons (chromium oxide content) or roughly 5% of world output. Exports of mineral ores—principally lead, chromite, and zinc—have increased but only amounted to about $20 million, or 7% of total nonpetroleum exports in 1971/72.

Output and exports of metals and minerals other than hydrocarbons should increase appreciably in the near future, largely as an outgrowth of developments underway in the iron and copper industries. Recent discoveries of iron ore have increased known reserves to several hundred million tons and have coincided with the increased demand for ore by Iran's expanding steel industry. The Chogard mine in the Bafq area alone is reported to have sufficient deposits to supply for 25 to 50 years the ore needs of the Aryemahr steel mill located about 40 miles southwest of Esfahan. Construction of the mill was started in 1958 with equipment and technical assistance provided by the U.S.S.R. under a $286 million 12-year credit repayable in natural gas. Although the plant is not as technically advanced as some Western plants, the Iranians plan to expand its capacity from 600,000 tons of pig iron in 1972 to 1.9 million tons by 1975, which would satisfy all but an estimated 100,000 tons of Iran's requirements. Provisions have been made to produce steel beams, angles, channels, and profiles which Iran currently imports. In 1972, Iran was considering the construction of a second, more modern steel mill, and offers of assistance from West Germany and others were under review.

The most interesting development in the mining industry is the planned exploitation of the large copper deposits at Sar Cheshmeh in the Kerman area of southeastern Iran, estimated to contain 300 million tons of ore averaging 1.2% copper. By mid-1972, the government had completed surveys and had contracted with the Anaconda Company of the United States for technical services. The government-owned Sar Cheshmeh Copper Mining Company estimates that investment in copper exploitation will be over $400 million, and production will amount to about 160,000 tons annually during the first 7 years of operation, scheduled to begin in 1974. Iran already has made an advance sale of 80,000 tons of copper to Belgium and West Germany and expects that the total value of exports of Sar Cheshmeh copper could amount to $160 million annually, at 1972 prices. Other huge copper deposits include the Chahar mines southwest of Kerman, estimated to have over 3 million tons of copper, and the Qaleh Zari mines, with more than 3.5 million tons, and others in the Khorasan region.

4. Manufacturing and construction

Manufacturing is one of the most dynamic sectors of the Iranian economy. In the 1960's, the value added by manufacturing rose at a greater rate than GNP as a whole and almost as fast as that of the petroleum industry, accounting for about 15% of GNP in 1971/72. One of the Shah's major objectives is to build up manufacturing to reduce the economy's dependence on oil.

Industries developed since the 1930's include petrochemicals, cotton and woolen textiles, flour milling, sugar (Figure 23), building materials, tires and tubes, matches, fruit processing, soap, light engineering, metal fabrication, and tobacco. In addition, Iranian plants assemble automobiles, trucks, buses, radios, television receivers, refrigerators, and stoves. Production of selected manufactured items is shown in Figure 24. Side by side with its new industries, Iran has age-old cottage industries producing textiles, carpets, bricks, terra cotta, and silver objects. These cottage industries (Figure 25), manned by skilled artisans, still account for the major part of the industrial manpower and probably contribute a significant share of value added in manufacturing.

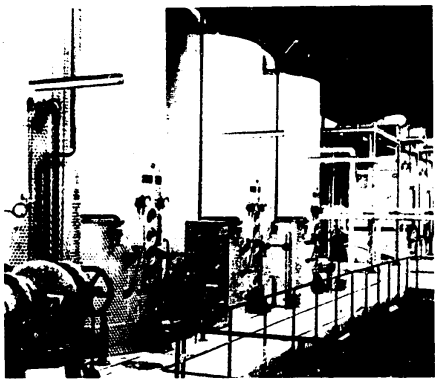


FIGURE 23. A sugar refinery in Shiraz (U/OU)

Until the early 1960's the government led in industrial investment because few private investors were willing to risk large investments in Iran. The government bought factories from the U.S.S.R. and Eastern Europe in exchange for petroleum and gas. Public investment in industry plays an extremely large role in basic industry and in the hydrocarbons, but foreign investors have been enticed into Iran by the expanding demands of an emerging modern sector and by investment incentives provided by the government. New factories have been built mainly in the industrial centers of Tehran, Ahvaz, Esfahan, Tabriz, and the Caspian Sea areas.

Private investment in Iran has concentrated on assembly-type operations and the production of consumer goods for a number of reasons: the capital costs were relatively low, the government gave preferential treatment to major imported inputs, and a market was assured by heavy protective tariffs on imports of competitive finished goods. High profits have been made by new factories—30% reportedly is a normal pretax profit rate, and a 5-year tax holiday is not uncommon.

FIGURE 24. Production of selected manufactured items (U/OU)

ITEM	UNITS	1965/66	1966/67	1967/68	1968/69	1969/70	1970/71
Passenger cars	1,000 units	2.2	2.5	8.6	20.3	28.3	30.0
Commercial vehicles	1,000 units	6.3	6.4	7.5	9.4	9.3	14.4
Tires	1,000 units	252	285	320	900	1,150	1,219
Sugar	1,000 tons	242	356	457	458	540	560
Cotton yarn	1,000 tons	44.2	50.7	51.0	68.0	70.1	71.5
Tobacco products	Millions of units	9,669	10,122	10,632	11,144	12,104	11,898
Radios and phonographs	1,000 units	92	106	130	134	166	174
Fertilizers (nitrogenous)	1,000 tons	15.8	25.0	25.4	23.0	26.1	28.2
Televisions	1,000 units	7	9	29	57.0	75.8	125.2
Refrigerators	1,000 units	*na*	*na*	*na*	143.3	166.8	177.9
Cement	1,000 tons	1,417	1,538	1,517	2,000	2,342	2,577
Polyvinyl chloride	1,000 tons	0	0	0	0	0	11.3
Caustic soda	1,000 tons	0	0	0	0	0	15.9
Paper*	1,000 tons	0	0	0	0	0	9.3

*Operations began in 1971.

FIGURE 25. Stamping *galam-kars* (sheets or covers made of cotton with colored patterns) in Esfahan (U/OU)

Government policy now encourages development of industry that will deepen the industrial process, use domestic resources, and create additional exports. According to the broad licensing criteria, applications by new firms must show that the import content of their proposed products will be no more than 35% of the product's value or that the domestic value added will be at least 35% of the product's total value. A new firm may be obliged to commit a fixed portion of its output to export markets. These regulations apparently are sufficiently flexible and profit expectancies are still large enough to ensure continued investment in manufacturing in Iran.

The government's efforts to broaden the industrial base of the country have apparently met with some success. In 1967/68 the output of finished goods accounted for 65% of total industrial output, comprising 46% nondurable consumer goods, 18% durable consumer goods, and only 1% identified as capital goods (Figure 26). The remaining 35% consisted of intermediate goods for further use in industry or construction. Although the production of capital goods rose much more rapidly than that of any other branch of industry, the sector was still comparatively small in 1971/72.

Because of the heavy investments associated with large, resource-based industries, the government has played a major role in the development of those industries. In addition to the steel mill, the government has invested over $300 million in four major petrochemical plants, about $170 million in two machine factories, $83 million in a tractor plant, and $50 million in an aluminum plant. Foreign loans and supplier credits also were used for these projects.

In an effort to promote regional development and alleviate problems of urban congestion, the government has practically stopped issuing investment permits for the Tehran and Esfahan areas. The private sector is encouraged to invest in satellite plants around the basic industries, e.g., steel, aluminum, petrochemicals.

The government has taken steps to solve the problems of a shortage of development capital and of technical and management personnel. Funds have been increased for the government-owned Industrial Credit Bank of Iran (ICBI) and the quasi-official Industrial and Mining Development Bank of Iran (IMDBI). Nonetheless, smaller firms still find it difficult to obtain medium- and long-term loans and working capital. The Ministry of Economy has initiated a training program for managers and technicians, conducted on the job and in schools. The shortage of highly skilled workers persists, however, and hampers Iran's industrial expansion.

FIGURE 26. Index of industrial production by commodity groups (U/OU)
(1967/68=100)

	WEIGHTS	1968/69	1969/70	1970/71
Nondurable consumer goods	46	118	130	149
Durable consumer goods	18	122	136	151
Nonconstruction intermediary goods	24	102	108	113
Intermediary goods for construction	11	107	141	139
Capital goods	1	144	153	250
Total index	100	114	127	141

The construction sector has contributed to and benefited from Iran's rapid economic development. In the 7 years ended in 1971/72, value added in the construction sector at constant prices grew by an average of 10% yearly and accounted for somewhat over 4% of GNP. Public construction—about 63% of the total—has grown faster than private construction because of the expanding government programs for building housing, roads, airfields, telecommunications, hospitals, and schools.

Iran produces an increasing share of its construction materials. Imports of building materials in 1970/71 were valued at $145.8 million, down 5% from the previous year. Imports of cement, however, continue to grow despite an 82% increase in domestic output between 1965/66 and 1970/71. In 1971/72, Iran's cement imports roughly doubled in value to an estimated $15.4 million.

5. Domestic trade

Domestic trade is growing rapidly under the stimulus of an increasing population, expanding purchasing power, and rising demands of the modern urban sector. In the 2 years ending in 1970/71, wholesale and retail sales (adjusted for price increases) rose by about 9% annually, or roughly the same rate as GNP. Value added by trade, however, increased at a slower rate, and it declined as a share of GNP to almost 7% in 1970/71. The decline in the ratio of value added to value of sales during the period in part reflects the appearance of more efficient and more competitive enterprises in the trade field. In 1966, there were an estimated 6,000 wholesale and 79,000 retail establishments; the numbers have grown considerably since then. Registered commercial companies increased in number from 5,800 in 1960 to 14,700 in 1970.

Despite some modernizing, the basic structure of retail trade remains primitive by Western standards. The majority of retail establishments are small, privately owned, and usually operated by the owner. Large numbers of street vendors (Figure 27) and itinerant peddlers are found in all urban areas, and the traditional bazaar remains an important part of the urban scene. Although the number of large retail businesses catering to the modern urban sector is increasing, notably in Tehran, only 3.2% of the retail businesses in 1966 were owned by joint stock companies.

Wholesale trade practices are similar to those in the West. The principal centers of wholesale distribution are Tehran and the large provincial capitals. An estimated 63% of the goods in domestic trade are produced or assembled in Iran. In Tehran, however, imported goods comprise over half of all merchandise sold.

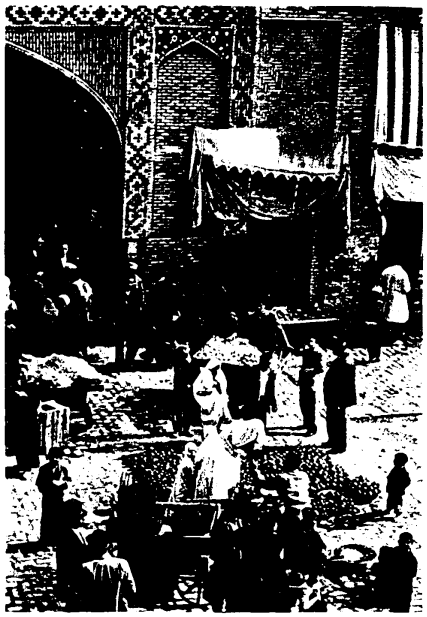


FIGURE 27. Fruitsellers at the entrance to the bazaar in Esfahan (U/OU)

Most wholesale and retail business is conducted on a cash basis, but credit sales are increasing, despite the high interest rates, which range from 7% on 3-month credit to 29% on 12-month credit. Installment buying is finding acceptance, particularly in the urban areas. According to one survey, the volume of durable goods purchased on installment increased by 20% in 1969/70.

The government is active in domestic trade through regulation of imports and attempts to influence prices as well as through government-directed trading organizations. The government also operates outlets for goods produced in its handicraft shops and has stimulated the development of sales cooperatives. Under the 1962 revision of the Commercial Code, the government regulates the operation of businesses, commission agents, and brokers.

D. Economic policy and development (C)

1. Policy

a. Role of government

The government exerts considerable influence on economic activity in general and economic policy in particular. The Shah has the final word in the determination of economic, as well as all other national policies. In the two decades following 1941, when the Shah mounted the throne, foreign governments, foreign oil companies, and strong political groups within Iran severely circumscribed the Shah's capacity to act. Now, however, the Shah confidently outlines policies, with massive petroleum resources under government ownership and the economy surging ahead. A host of government organizations advise the Shah and implement his decisions; among the more important ones are the Plan and Budget Organization, the Ministry of Economy, the Ministry of Finance, and operating units such as the National Iranian Oil Company. The Shah also elicits economic advice from private individuals and international groups, such as the United Nations and the International Bank for Reconstruction and Development (IBRD or World Bank).

The Shah's economic objectives are to modernize and develop the Iranian economy to a point where it is capable of sustained growth and of providing a standard of living equal to that of Western nations. Land reform, education, and improvement of mass communications are basic to the Shah's program. With the same aims, the Shah is encouraging foreign participation in industrial development through tax concessions, import protection, and profit repatriation guarantees.

Broad coordinated fiscal and monetary policy generally has been lacking, except for the series of stringent fiscal and monetary controls imposed in the late 1950's to combat severe inflation. Although still strongly attached to the goals of price stability, the government's moves to control prices are largely through import and monetary policies and direct controls rather than fiscal restraint.

b. Fiscal policy

Government fiscal operations have had an increasing impact on the Iranian economy. During the 5 years ending March 1971, government expenditures increased from about 21% to an estimated 29% of GNP at current prices, and public sector investment expenditures increased from 42% to over 50% of total investments. The strongly expansionary budget was accompanied by increasingly large deficits financed mainly by the domestic banking system and by large-scale external borrowing.

Despite major improvements in budgetary procedures and presentation of financial accounts in recent years, comprehensive data on public sector financing are not available. In particular, information is inadequate concerning the operations of municipalities, government enterprises, and independent agencies. The discussion of the budget, therefore, is limited to the two major public sector budgets, the budget of the Treasury General (the ordinary budget) and of the Plan Organization (development budget). These are combined in the government budget figures shown in Figure 28.

Government revenue increased at an average annual rate of 13% during the 5 years ending March 1971. About half derived from the petroleum industry. Government revenue from sources other than oil increased at an average annual rate of about 16% during those 5 years. As a percentage of GNP, nonoil revenues increased from about 9% in 1965/66 to about 11% in 1970/71, the increase reflecting growth in the economy, improvements in tax administration, and new revenue measures. Because receipts from petroleum are so large, the level of other taxation is still relatively low in Iran. Indirect taxes accounted for over half of nonoil revenue in 1970/71, with customs duties being the most important. The growth in customs revenues, however, has lagged behind the growth in imports because an increasing share of imports is duty free. Other important sources of indirect taxes include the central bank's foreign exchange operations and taxes on locally marketed fuel and petroleum products. Revenues from government monopolies and other agencies have increased slowly but have declined as a percentage of the total.

Revenue from direct taxes accounted for less than 3% of GNP and only about 12% of total revenue in 1966/67. The new income tax law that went into effect the following year, together with improvements in tax assessments and collections, nearly doubled direct tax revenues in the 3 years ending March 1971. Despite the tax exemptions on small landholding and the generally weak agricultural income tax, revenues from personal income taxes have risen more rapidly than those on corpora-

FIGURE 28. Government finance (U/OU)
(Billions of Iranian rials)

	1965/66	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72 (DRAFT BUDGET)
Revenue	91.3	99.2	107.3	127.4	143.0	171.4	241.8
Oil	50.0	47.4	54.0	61.8	70.1	83.8	137.6
Nonoil	41.3	51.8	53.3	65.6	72.9	87.6	104.2
Direct taxes	10.7	11.9	14.0	17.5	21.1	26.5	*na*
Indirect taxes	20.2	26.2	28.2	35.1	38.6	44.8	*na*
Other	10.4	13.7	11.1	13.0	13.2	16.3	*na*
Current expenditures (−)	61.7	70.5	82.1	98.8	114.4	134.4	168.9
Surplus on current operations	29.6	28.7	25.2	28.6	28.6	37.0	72.9
Investment expenditure (−)	37.0	37.9	54.0	70.1	83.0	97.9	136.0
Overall deficit	7.4	9.2	28.8	41.5	54.4	60.9	63.1
Financing of deficit:							
Net utilization of foreign loans	0.1	2.5	8.6	22.5	21.2	19.3	44.9
Net utilization of consortium advances	0.0	0.0	0.0	0.0	6.3	1.7	
Net utilization of banking system	6.1	5.5	12.8	11.1	17.4	33.6	18.2
Net utilization of sale of Treasury bills and bonds	2.0	5.4	7.4	7.7	8.0	5.0	*na*
Net utilization of other sources	−0.8	−4.2	0.0	0.2	1.5	1.3	*na*

na Data not available.

tions. Receipts from government services have increased slowly and form a minor share of total government revenue.

Government expenditures rose an average of 19% yearly during the 5 years ending March 1971 (Figure 29). Current expenditures formed the largest share of government spending, about 58% in 1970/71. The major factor behind the increase in current spending has been the expanded military buildup. Defense expenditures rose by an average of 22% annually in the 5-year period—considerably faster than any other major sector—and accounted for 47% of total current expenditures in 1970/71. In addition to purchases of military equipment, the Shah has increased the size of his military forces and raised the pay of military personnel. Spending on social and economic services (health, education, etc.) increased by an average of 13% yearly but fell from more than 40% of total current expenditures in 1965/66 to roughly 33% of the total in 1970/71. Administrative and other current expenditures increased by an average of 16% yearly as

FIGURE 29. Government expenditures (U/OU)
(Billions of Iranian rials)

	1965/66	1966/67	1967/68	1968/69	1969/70	1970/71 (ESTIMATED)	1971/72 (DRAFT BUDGET)	1965/66 to 1970/71 AVERAGE ANNUAL INCREASE (PERCENT)
Current expenditure:								
Defense and security	24.0	27.2	35.7	43.4	51.5	62.8	82.3	*21.2*
Social and economic services	24.6	28.3	31.2	35.7	40.7	44.7	49.7	*12.7*
Other	13.1	15.0	15.2	19.7	22.2	26.9	36.9	*15.5*
Total	61.7	70.5	82.1	98.8	114.4	134.4	168.9	*16.8*
Investment expenditure	37.0	37.9	54.0	70.1	83.0	97.9	136.0	*21.5*
Total expenditure	98.7	108.4	136.1	168.9	197.4	232.3	304.9	*18.7*

the result of the creation of new ministries, the upgrading of positions and salaries of civil servants, and the rise of interest payments on the external public debt.

Although investment expenditures have increased considerably, notably in the 3 years ending March 1969, they generally have fallen short of the budget plan. In the 2 years ending March 1971, the rate of growth of investment expenditure slowed down because of budgetary difficulties and the closer scrutiny of investment projects, especially those financed by foreign loans. In addition, many of the large projects started in earlier periods neared completion in 1970/71. The distribution of public development expenditures by main economic sectors for the Third and Fourth Development Plans is shown in Figure 30.

During the Fourth Plan (1968-73), investment priorities were shifted slightly in the direction of industry and mining, and less emphasis was given to social infrastructure, housing, and construction. Special priority was placed on the expansion of capacity in basic industries—iron and steel, aluminum, and petrochemicals—for which foundations were laid during the Third Plan. The private sector was to provide most of the investment for consumer goods industries. Agricultural investment was to promote expansion in the number of cooperatives, assist in developing agroindustry, and finance investment in production of fertilizer, insecticides, and other related inputs. The share of investment going into transportation and communication was to decline slightly from that of the Third Plan, when large projects were initiated in telecommunications and road building.

The Fifth Development Plan (March 1973-March 1978), according to preliminary reports, calls for the GNP to increase by 11.4% annually, or at roughly the rate maintained since the mid-1960's. Investments of $32.5 billion are to be more than double those in the Fourth Development Plan, with the government providing 62% of the total. The largest share of investment is to go to social welfare—a marked departure from previous spending. The second largest share is to go to agriculture, where emphasis is being placed on expanding the supply of credits and technological services.

Since 1965/66, surpluses on current government operations have not been sufficient to cover the heavy investments made by the government; overall deficits rose over 700% to about 61 million rials in 1970/71. The major portion of the deficit was financed by domestic borrowing, largely through the banking system. During the 6 years ending in March 1971, net utilization of foreign loans amounted to about 74 billion rials (roughly US$1 billion) and financed about 37% of the cumulative deficit during the period.

c. Banking and monetary policy

The central bank in Iran is the Bank Markazi; it issues currency, serves as the government bank, and regulates the activities of the commercial banks. In addition to the central bank, and some 20 commercial banks, Iran has five specialized credit institutions—the Industrial and Mining Development

FIGURE 30. Government developmental expenditures, Third and Fourth Development Plans (U/OU)

SECTOR	THIRD PLAN SEPTEMBER 1963-MARCH 1968		FOURTH PLAN MARCH 1968-MARCH 1973	
	Billion Iranian rials	Percentage	Billion Iranian rials	Percentage
Agriculture and irrigation	49.0	*21.3*	113.5	*21.9*
Industry and mining	28.6	*12.4*	99.0	*19.1*
Fuels and power	36.5	*15.9*	89.3	*17.2*
Transportation and communications	59.5	*25.9*	113.3	*21.9*
Construction and housing	12.4	*5.4*	23.0	*4.4*
Education and health	31.6	*13.7*	48.8	*9.4*
Other	12.4	*5.4*	31.1	*6.0*
Total	230.0	*100.0*	518.0	**100.0*

*Column does not add because of rounding.

Bank of Iran (IMDBI), the Industrial Credit Bank of Iran, the Agricultural Cooperative Bank, the Mortgage Bank, and the Agricultural Development Fund of Iran (ADFI). All but the IMDBI and ADFI are government owned. The IMDBI, established in 1959 with government assistance and foreign participation, lends primarily to larger industrial enterprises. The ADFI, established in 1968, supports the development of commercial agriculture. Both institutions receive technical and financial asistance from the IBRD. Credit to the public sector by the specialized banks nearly doubled between March 1967 and December 1971.

Lending by commercial banks is generally oriented toward the traditional role of financing domestic and foreign trade. Small- and medium-sized industries and farmers generally suffer from a shortage of working capital and inadequate access to bank credit. Efforts to broaden the capital market in Iran have met with only limited success. The Tehran Stock Exchange has not figured prominently in the sale of industrial securities but rather has engaged primarily in selling national and local government bonds. This situation should change; according to a government announcement in September 1972, 86 major enterprises have agreed to sell up to 49% of their shares to the public as part of a program of increased worker ownership in industry.

Insurance plays only a minor part in the development of capital, and most people prefer to save in commercial banks rather than through insurance. Total insurance receipts in Iran equal less than 1% of national income, compared to 10% in the United Kingdom.

Sales and purchases of foreign exchange are controlled by the central bank, which authorizes certain commercial banks to sell to their customers. The basic unit of currency—the rial—is bought at the rate of 75.75 rials per U.S. dollar and sold at 76.50 rials to the dollar. The rial is composed of 100 dinars; 10 rials equal one toman. Changes in the money supply are indicated in Figure 31.

2. Manpower

During the 5 years ending March 1971, the labor force of Iran expanded from about 7.4 million to about 8.3 million, or about 28% of the population. The growth rate of about 2.3% annually is approximately the same as in the preceding decade that was recorded in the census of 1966, the last comprehensive survey of the labor force.[4] Many of the characteristics and trends observed in the 1966 census, moreover, are believed to be still representative of the labor force. In 1966, the population at large was preponderantly youthful—the median age was about 17 (Figure 32). Roughly two-thirds of the labor force was under 35 years and almost 40% was under 25 years. Males dominate the labor force, accounting for about 88% of the total, but the average annual increase in the female component of the labor force was 6% during 1957-66 compared with slightly over 2% for males. This development reflects social changes brought on by

[4] The labor force in Iran is defined as persons aged 10 years or older employed any time during the 7 days preceding the 1966 census, unemployed persons in the same age group who were actively seeking work, and persons with occupations who were seasonally unemployed at the time of the census. The term "economically active population" is used synonymously with "labor force."

FIGURE 31. Money supply (U/OU)
(Billions of Iranian rials)

	TOTAL	PERCENTAGE CHANGE FROM PREVIOUS YEAR	CURRENCY	DEMAND DEPOSITS	QUASI-MONEY*
1964/65	92.3	*18.4*	24.0	29.8	38.5
1965/66	105.5	*14.3*	25.4	34.9	45.2
1966/67	120.7	*14.4*	27.4	39.4	53.9
1967/68	144.2	*19.5*	30.8	46.3	67.2
1968/69	175.2	*21.5*	34.1	53.8	87.4
1969/70	201.5	*15.0*	37.2	53.3	111.0
1970/71	229.9	*14.1*	41.0	56.5	132.4
1971/72	290.1	*26.2*	49.6	67.5	173.0

NOTE—Figures may not add to totals because of rounding.
*Time and savings deposits.

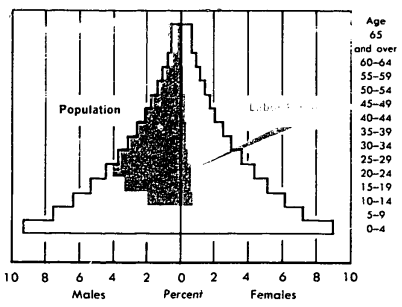


FIGURE 32. Estimated labor force by age and sex, 1972 (U/OU)

the Shah's efforts to give women a broader role in society and by the shift in population from rural to urban areas where customs are observed less rigidly. It is not uncommon, for instance, to find women occupying positions in Tehran traditionally held by men (Figure 33).

Changes in the sectoral composition of Iran's labor force were pronounced during the 5-year period ending in March 1971 (Figure 34). Agricultural employment declined from about 42% of the labor force in 1966/67 to about 37% in 1970/71, due in large part to the elimination of redundant workers in that sector; this elimination of excess workers had the desirable effect of raising per capita productivity of the remaining workers in agriculture by an average of 6.3% annually during the 5-year period. In the industrial sector, on the other hand, employment rose from 24% of the total labor force to 27% of the total during the 5-year period, and the influx of new, inexperienced workers into the industrial sector had an adverse effect on productivity, causing it to lag somewhat behind the overall economy in terms of total output. Employment in the large petroleum sector actually declined slightly during the 5-year period ending in March 1971, while crude petroleum output rose nearly 75% between 1967 and 1971, indicating a substantial improvement in labor productivity. The petroleum companies have thus far successfully resisted government pressure to increase their work force. The services sector, which includes the armed forces and the heavily staffed civil service, has attracted many of the jobseekers from rural areas and others who lack the necessary skills and experience for employment in industry and construction; employment in the services sector rose from 22.6% of the total labor force in 1966/67 to 25% of the total in 1970/71. Productivity gains in the services have been typically low in comparison with those in industry and agriculture.

FIGURE 33. A motorcycle policewoman. In Tehran women are entering occupations traditionally held by men. (U/OU)

FIGURE 34. Labor force by sector of the economy (U/OU)
(In thousands)

	1966/67	1967/68	1968/69	1969/70	1970/71
Agriculture	3,168	3,141	3,113	3,085	3,057
Industry and construction	1,813	1,891	1,991	2,036	2,222
Petroleum	44	46	42	42	43
Services	1,706	1,762	1,819	1,886	2,058
Unemployment*	818	874	933	996	890
Total	7,549	7,714	7,898	8,045	8,270

NOTE—Statistics are based on a survey conducted by the Iranian Government.
*Includes some seasonal unemployment.

Expansion of Iran's labor force has been accompanied by a rise in overall unemployment and an exacerbation of the underemployment problem in some areas. Although the rate of unemployment (percentage of those actively seeking employment to the labor force) is claimed by the government to be only about 4%, some official data allude to much higher rates, and the actual rate is believed to be about 9%. Evidence indicates that unemployment is rising. Urban unemployment, although considerably below the rates in many Middle Eastern and North African countries, is being pressured upward by the influx of unskilled rural workers, and has been estimated as high as 12%.

Underemployment is also apparently growing in the urban areas. Part of the rapid growth of employment in the services sector probably reflects this development. Moreover, central and municipal governments are heavily overstaffed, with many of the government positions being little more than sinecures. According to some accounts, roughly one-fifth of the labor force is either unemployed or underemployed.

Pressures of unemployment and underemployment will probably intensify during the Fifth Development Plan (1973-78); the government estimates a need for 1.5 million new jobs—50% more than in the previous 5-year plan, whose employment goals were in fact not met. Industry offers the best prospects for creating new jobs. Although the government is broadening educational programs and reforming technical and vocational training, it candidly admits to an acute shortage of technicians and points out that the institutes of higher learning do not have the capacity to meet the demand for engineers, particularly electrical and mechanical engineers. The modernization of industry, however, will reduce the demand for labor in relation to capital. Similarly, in agriculture the more productive lines of development favor the expansion of the capital-intensive agroindustries.

The government, under the Shah's direction, has followed a fairly progressive labor policy. The Labor Law of 1959, which covers most urban workers, established a normal work week of 48 hours in six 8-hour days and provided for a series of job safety, vocational training, social welfare, and related measures which are enforced by the Ministry of Labor and Social Services. A Social Insurance Law provides medical, hospital, and retirement benefits. Although not well enforced, the government has set a minimum-age restriction, which has tended to reduce the employment of children. Women were accorded the legal right of equal pay for equal work with men, and restrictions were placed on night-time employment of women and persons under 18. The government has decreed a large number of paid holidays and has enacted minimum wage laws.

E. International economic relations

1. Balance of payments (U/OU)

Statistics on Iran's balance of payments, shown in Figure 35, provide an insight into the dynamics of Iran's foreign economic relationships. Foreign exchange receipts in 1971/72 alone exceeded total payments in the preceding 6 years. Since the onset of rapid economic expansion in 1965/66, Iran has relied heavily on imports. Prior to 1971/72, Iran's large and expanding trade deficits were financed largely by foreign loans. The sustained increase in imports (19.6% yearly on the average) was supported by oil receipts and, to a smaller extent, nonoil exports. Largely as a result of the lucrative petroleum settlement reached in early 1971, Iran's oil revenues jumped 73% and covered 96% of Iran's imports in 1971/72. This development changed Iran's characteristic trade deficit into a surplus and was primarily responsible for producing an inward flow in the monetary account. The expansion of foreign credits—from $80 million in 1965/66 to $700 million in 1971/72—reflects the growing and widespread confidence in Iran's development potential and in the Shah and his policies.

2. Trade (S)

a. Policy

Foreign trade policy is formulated annually by the Ministry of Economy and approved by the Council of Ministers. Guidelines and regulations for the implementation of this policy are then issued as "General Export/Import Regulations." The broad objectives of Iranian foreign trade policy are the development and protection of domestic industry, maintenance of a balance-of-payments equilibrium, and promotion of exports.

Import policy favors the purchase of capital goods and intermediates for developing import-substitution industries. Most of these imports are exempt

FIGURE 35. Balance of payments (U/OU)
(In millions of U.S. dollars)

	1965/66	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72 PRELIMINARY
A. Receipts from the petroleum sector	641	725	857	958	1,183	1,290	2,231
B. Other goods and services (net)	−723	−864	−1,069	−1,438	−1,652	−1,943	−2,131
Exports	132	144	198	208	231	259	364
Imports	−792	−953	−1,207	−1,529	−1,729	−1,987	−2,317
Private sector	(−574)	(−678)	(−758)	(−870)	(−973)	(−1,043)	(−1,223)
Public sector	(−218)	(−275)	(−449)	(−659)	(−756)	(−944)	(−1,094)
Services (net)	−63	−55	−60	−117	−154	−215	−178
Of which:							
Government interest payments	(−16)	(−15)	(−24)	(−45)	(−70)	(−97)	(−110)
C. Total A+B	−82	−139	−212	−480	−469	−653	100
D. Nonmonetary capital	27	121	214	384	398	413	410
Official loans and credits (net)	26	106	202	372	382	375	374
Drawings	(80)	(147)	(257)	(475)	(537)	(624)	(700)
Repayments	(−54)	(−41)	(−55)	(−103)	(−155)	(−249)	(−326)
Private and other capital	1	15	12	12	16	38	36
E. Errors and omissions	3	−6	−5	−4	0	0	−25
F. SDR allocations	0	0	0	0	21	20	20
G. Monetary movements (increase −)	52	24	3	100	50	220	−505

by law or practice from the advance deposit requirements, which call for the deposit of local currency in the central bank prior to the issue of an import license. Selective application of import taxes also favors the importation of goods deemed essential for Iran's development. Imports of capital goods, raw materials, and machinery parts for certain protected industries are either exempt from tariffs or subject to reduced import taxes in the form of tariffs and commercial benefit taxes (CBT's). Protection for local industry includes advance deposit requirements on imports or, more notably, a list of "unauthorized" imports.

Balance-of-payments difficulties have brought about occasional unsuccessful efforts to restrain imports. On the other hand, the government also has used import control measures to increase imports in order to combat unreasonably high prices of domestic products. In the last several years, for example, the government made extensive purchases of wheat and other grains to restrain rising food costs—and popular discontent—resulting from crop setbacks. The Export/Import Regulations for 1972/73 also liberalize imports of other foodstuffs, such as butter, dried milk, and eggs. Finally, the threat of liberalizing import restrictions on tires and other locally produced industrial goods has been used by the government to force a reduction of domestic prices.

Although export promotion has been a cornerstone of Iran's trade policy, the government only recently has taken concrete steps to implement this policy. In 1969 the Export Promotion Center was expanded and reorganized. In addition to providing market information and technical assistance to exporters, the center administers the government export incentives, which include exemption of foreign sales (except carpets) from profits tax, low central bank credit to finance production of export commodities, rebate of taxes and duties on imports used for producing export commodities, and licensing and shipping services. Tariff refund

measures have been particularly beneficial to manufacturers of glassware, refrigerators, and automobiles.

b. Trade levels and patterns

Iran's significant economic expansion since the mid-1960's was accompanied by a rapid expansion in the volume and direction of foreign trade. Between 1965/66 and 1971/72, total trade, excluding petroleum, increased in value from about $0.9 billion to about $2.7 billion. This trade was marked by large and increasing excesses of imports over exports. Even with the addition of petroleum receipts, Iran's trade deficit mounted steadily through 1970/71. Imports exceeded nonpetroleum exports in 1971/72, but the large petroleum receipts in that year resulted in an excess of total exports over imports.

The rapid growth in imports has resulted largely from the Shah's forceful measures for economic expansion and military modernization. As indicated by Figure 36, the bulk of the increase in imports during the period was in capital and intermediate goods. Machinery, industrial raw materials, and related items accounted for close to 71% of total commodity imports in 1971/72, whereas foodstuffs and other consumer goods made up less than 10%. The rise in imports of machinery, component parts, and raw materials has been in line with Iran's rapid industrial growth, much of which has taken the form of simple processing and assembly-type operations. The import content of finished products is more than 80% for such industries as motor vehicles, tires, pharmaceuticals, and synthetic fibers.

A sizable share of Iran's imports consists of defense items, few of which are produced domestically. Iran does not list military items in its trade statistics, but defense materials clearly have been a factor in the sharp rise in public sector imports. In addition to defense items, the public sector has been responsible for a large share of Iran's capital and industrial goods imports. Government imports for economic development purposes represented close to one-fifth of Iran's total imports during 1971/72. Private sector imports have not increased as fast as public sector imports, but nevertheless they more than doubled between 1965/66 and 1971/72. Imports will continue to increase if Iran maintains its rate of economic expansion and if its petroleum and other foreign exchange earnings continue to rise. By 1975/76, imports are expected to reach at least $4 billion annually (in 1971 prices).

Iran relies heavily on Western suppliers. In 1965/66 the United States, West Germany, and the United Kingdom, which have strong investment ties with Iran, accounted for half of the imports, but in 1971/72 the proportion fell to 43% (Figure 37). According to Iran's customs data, which exclude defense and defense-related imports, West Germany was Iran's principal supplier in

FIGURE 36. Imports and import payments (S)
(In millions of U.S. dollars)

	1965/66	1966/67	1967/68	1968/69	1969/70	1970/71	1971/72 (PRELIMINARY)
Imports:							
Consumer goods	157	145	150	156	168	217	227
Intermediate goods	518	558	711	857	988	1,069	1,164
Capital goods	223	261	329	376	387	391	481
Subtotal	898	964	1,190	1,389	1,543	1,677	1,872
Balance of payments adjustments	37	53	87	127	197	246	445
Total	935	1,017	1,277	1,516	1,740	1,923	2,317
Import payments:							
Private sector	574	677	756	868	967	1,037	1,166
Public sector	217	275	449	659	756	944	1,148
Nonmonetary gold	1	1	2	2	6	6	3
Total	792	953	1,207	1,529	1,729	1,987	2,317

NOTE—As Iran does not list military items in its trade statistics, identified imports normally are less than the total value of imports. The "balance of payments adjustments" are believed to include at least a part of the military imports.

FIGURE 37. Geographic distribution of imports (U/OU) (1965/66 and 1971/72)

COUNTRY	1965/66		1971/72 (PRELIMINARY)	
	Million US$	Percent	Million US$	Percent
Federal Republic of Germany	181	20.15	372	19.87
France	45	5.01	81	4.33
Italy	41	4.57	87	4.65
Netherlands	27	3.01	42	2.24
Belgium	22	2.45	38	2.03
United States	170	18.93	242	12.93
United Kingdom	115	12.81	204	10.90
Japan	72	8.02	255	13.62
U.S.S.R.	17	1.89	159	8.49
Czechoslovakia	7	0.78	26	1.39
Romania	1	0.11	40	2.14
Switzerland	19	2.12	28	1.50
Other	181	20.15	298	15.91
Total	898	100.00	1,872	100.00

NOTE—Data are based on customs statistics, which differ from those contained in Iran's balance of payments.

1971/72, but if defense items are included, the United States was the largest supplier, accounting for an estimated one-fifth of the total in 1971/72. Probably the most significant development in Iran's imports in recent years has been the increase in imports from Japan and the U.S.S.R. Japanese suppliers have successfully promoted sales of industrial items, part of which go to joint ventures undertaken by Japanese firms in Iran. In 1971/72, Japan supplied about 14% of Iran's imports as contrasted with only 8% in 1965/66. Soviet deliveries to Iran rose by about 835% during the 6-year period, largely reflecting shipments under credits for the Esfahan steel mill and other Soviet projects. Imports from Romania also rose under the stimulus of credits tied to specific projects. The Communist countries together supplied about 13% of Iran's imports in 1971/72, up sharply from the 4% in 1965/66.

Although small in relation to oil earnings, Iran's nonoil exports have expanded in recent years. Following a period of relatively slow growth, nonoil exports increased an average of 13% in the 3 years ending March 1971, and in 1971/72 they increased by about 28%. Expansion of nontraditional exports (Figure 38) reflects the development of the industrial sector and the recent export-promotion programs. Although still small in value, a wide range of consumer durables, such as refrigerators, household utensils, tires, and vehicles, and some intermediate goods, such as cement and chemicals, are now exported. The bulk of exports in recent years has been to the U.S.S.R. and other bilateral payments partners, but in 1971/72 much of the increase in exports went to Western Europe, the United States, and other convertible currency countries. Increased sales to Western Europe probably reflected in part the August 1971 European currency revaluations which made purchases of Iranian goods more attractive. In 1971/72 West Germany was the second most important importer of Iranian goods after the U.S.S.R., and the United States was third (Figure 39).

In pursuit of its foreign trade objectives, Iran has developed relationships with several international trade organizations and has maintained membership in the International Bank for Reconstruction and Development and the International Monetary Fund. It has a long-standing trade agreement with the European Economic Community (EEC), which has given it tariff preference and has set a quota for Iranian exports of carpets, dried raisins and apricots, and caviar. Iran, however, does not accord tariff preferences to the EEC. Although such preferences have assisted in the expansion of Iranian exports to the EEC, the volume is small—about $89 million in 1971/72, or one-seventh of Iran's imports from the EEC. Iranian membership in the Regional Cooperation for Development (RCD) with Turkey and Pakistan dates back to

FIGURE 38. Commodity composition of nonoil exports (U/OU)
(In millions of U.S. dollars)

	1967/68	1968/69	1969/70	1970/71	1971/72*
Traditional exports:					
Carpets	50	60	59	54	72
Raw cotton	38	43	50	57	66
Fruits and nuts	21	28	37	42	37
Hides and leather products	12	14	17	14	17
Mineral ores	7	7	12	20	16
Caviar	4	5	6	5	5
Live animals and products	5	2	4	4	5
Other agricultural products	9	9	10	10	12
Total	146	168	195	206	230
Nontraditional exports:					
Textiles and knitwear articles	3	4	7	10	22
Vegetable oil	4	5	4	3	6
Soap and detergents	1	4	5	8	14
Shoes	2	3	4	6	8
Total	10	16	20	27	50
Unclassified	26	33	30	45	76
Of which:					
Wheat and wheat flour	(6)	(11)	(0)	(0)	(0)
Total exports	182	217	245	278	356

NOTE—Data are based on customs statistics, which differ from those contained in Iran's balance of payments.

*Provisional figures.

**FIGURE 39. Geographic distribution of nonoil exports (U/OU)
(1965/66 and 1971/72)**

	1965/66		1971/72*	
COUNTRY	Million US$	Percent	Million US$	Percent
Federal Republic of Germany	26	*14.36*	59	*16.57*
France	8	*4.42*	12	*3.37*
Italy	6	*3.32*	9	*2.53*
Netherlands	5	*2.76*	4	*1.12*
Belgium	4	*2.21*	5	*1.40*
United States	20	*11.05*	33	*9.27*
United Kingdom	15	*8.29*	10	*2.81*
Japan	4	*2.21*	20	*5.62*
U.S.S.R.	17	*9.39*	67	*18.82*
Czechoslovakia	9	*4.97*	14	*3.93*
Romania	3	*1.66*	10	*2.81*
Switzerland	6	*3.32*	9	*2.53*
Other	58	*32.04*	104	*29.22*
Total	181	*100.00*	356	*100.00*

NOTE—Data are based on customs statistics, which differ from these contained in Iran's balance of payments.

*Provisional figures.

1964, but it has never accounted for a significant amount of Iran's total trade. Moreover, prospects for expanded trade within the RCD were dimmed by the Pakistan conflict in 1972 and Turkey's growing orientation toward the EEC.

The outlook is good for Iran's increasing trade with the U.S.S.R. and other bilateral payments partners, which include Czechoslovakia, Hungary, Poland, and Romania. In addition to conserving foreign exchange on imports, these bilateral agreements offer outlets for Iranian products which could not compete in Western markets, such as cotton, fruits, knitted articles, footwear, soap, and detergents. Since 1970, the National Iranian Oil Company has exported natural gas to the U.S.S.R. Despite the increase in exports, Iran's balance-of-trade vis-a-vis the bilateral trading area was in deficit at the end of 1971/72, largely because of heavy imports of capital goods from the U.S.S.R.

3. Foreign investment, credit, and debt (S)

Foreign investors have been drawn to Iran in recent years by the lure of high profits and comparative security. Capital inflows as shown in the balance of payments tripled during the 4 years ending March 72. A large number of foreign establishments are located in the business sectors of Tehran and other major cities, and an increasing number of joint ventures with Iranian firms have been formed recently. Although total foreign investment in Iran is not known precisely, it possibly approaches $1.5 billion. The United States leads with investments in the petroleum industry, estimated at about $500 million, and other investments in manufacturing and services, including banking. United Kingdom and West German firms also have sizable investments in Iranian industry. In recent years Japanese investments have risen considerably; although valued at only $4.1 million in early 1972, Japanese investment commitments could easily boost this figure to over $600 million during the next few years. Japanese consortiums show a keen interest in investing in Iran's developing petrochemical and minerals sectors.

Even more important than direct investments are the large foreign credits that governments, consortiums, and international institutions have provided to Iran. During 1946-71, the United States provided the bulk of such assistance, almost $2.6 billion in governmental loans and credits, including some $600 million extended under the U.S.A.I.D. program (which was terminated in December 1967) and almost $2 billion in other types of loans and grants. Of total U.S. assistance during 1946-71, roughly 56% was military ($1,457 million) and 44% economic ($1,131 million). Other large developmental credits have come from West Germany, France, the United Kingdom, Italy, and, more recently, Japan. Another major source of public sector credit has been the World Bank, which loaned Iran $610 million for development in 1957-71, about 25% for industrial projects and about 27% for road construction. The World Bank is considering additional loans of about $200 million to Iran during the Fifth Development Plan (1973-78).

A third major source of foreign credit has been the Communist countries, particularly the U.S.S.R. Between February 1958 and December 1971, economic credits extended to Iran by Communist countries amounted to $1,029 million, with over half ($601 million) coming from the U.S.S.R., most of it since 1965. The major Soviet commitment was a $289 million credit in 1966, which provided foreign exchange costs for the Esfahan steel mill and assistance in constructing the Arak machine plant and the gas pipeline to the U.S.S.R.; the agreement calls for repayment in natural gas. In addition to economic credits, the U.S.S.R. extended credits of about $325 million during 1967-71 for military equipment, notably vehicles, artillery, and other defense items.

Iran's recourse to foreign borrowing has resulted in debts of approximately $2.8 billion and mounting debt service payments which represent a substantial claim on resources. At the end of 1971/72, external public debt, excluding that of the Ministry of War, stood at $2.2 billion. The Ministry of War had an outstanding debt of about $450 million in March 1971 and possibly as much as $625 million at the end of 1971/72. Iran's foreign debt in 1971/72 amounted to about 23% of its GNP, which is considerable by most standards of comparison but still well below that in some neighboring countries. In Israel, for instance, the foreign debt represents about 53% of GNP, while in Egypt it is about 66%. Service payments on Iran's foreign debt have increased sharply over the past 4 years, partly because of the government's heavy recourse to short- and

medium-term borrowing. (At least half of the debt is scheduled for repayment within 10 years or less.) Repayments represented about one-fifth of Iran's foreign exchange earnings in 1971/72, compared with less than 10% in 1965/66. Because of the increase in oil and other earnings, the debt service ratio undoubtedly will decline but will still be a burden.

Glossary (u/ou)

Abbreviation	English
ADFI	Agricultural Development Fund of Iran
ICBI	Industrial Credit Bank of Iran
IGAT	Iranian Gas Trunkline
IMDBI	Industrial and Mining Development Bank of Iran
IMINOCO	Iranian Marine National Oil Company
LAPCO	Lavan Petroleum Company
NIGC	National Iranian Gas Company
NIOC	National Iranian Oil Company
RCD	Regional Cooperation for Development
SIRIP	Irano-Italian Petroleum Company
TAVANIR	Iranian Electric Power Generation and Transmission Company