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INDUSTRIALIZATION IN IRAN 1900 - 1941

by

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CONTENTS

	page
List of Tables	i
1. Introduction	1 - 2
2. The Labour force prior to 1914	3 - 6
3. Traditional Activities 1900-1925	7 - 14
4. Pressure for Industrialization, 1922-1940	15 - 20
The big leap forward (1930-40)	20 - 33
The iron works	33 - 35
Conclusion	35 - 44
Annex A	45 - 52
Annex B	53 - 63
Bibliography	64 - 69

LIST OF TABLES

	page
1. The population of Iran and its urban-rural distribution	3
2. Changes, by branch of activity, in the structure of the active population in developing countries with market economies, 1900-1950	4
3. Employment in selected urban economic activities in Iran (circa 1910)	5
4. Number of factories and of their labour force in Tabriz (1922)	8
5. Large-scale factories in Iran and their labour force	9
6. Employment in Tehran in the traditional industrial sector (1925)	12
7. Number of Masters in the traditional industrial sector of Esfahan (1924)	12
8. Employment in selected urban economic activities in Iran, (1940)	27
9. Composition of the industrial labour force, 1940 military estimate	28
9a. Employment in Selected Urban Industrial activities (1940)	28
10. Growth of the labour force in modern industry per sector 1914-1939	29

I. Introduction

Iran in 1900 was a non-industrial country, i.e. less than ten per cent of its Gross Domestic Product (GDP) was formed by industry. In 1925, when Reza Shāh set Iran on a new course, this situation had not changed. In 1941 an industrial base had come into being, granted at high cost, but Iran was on the way to becoming an industrializing country, i.e. ten to 20 per cent of its GDP was formed by industry. Between 1925 and 1941 an economic policy had been developed and implemented which had made this possible. This policy was based "on four points: government assumption of the country's economic direction; reorganization of the factors of production; a balance between consumption of imported goods and national purchasing power; and expansion of the purchasing power. The industrial policy was envisaged as a system in which the government was a prime mover, rather than deliberate statism. Private enterprise was to be encouraged by import duty protection, industrial credits, and facilities for the importation of productive equipment."⁽¹⁾ The credit for this policy, which is given to either Reza Shāh or Teimūrtāsh his minister of Court, must be laid at the door of a group of reform-minded people, who were in favour of a strong centralizing government to bring security and self-reliance to Iran, and for which the group provided both the ideology and political backing as well as the personnel to execute and realize these ideas. The activities of these reformers had been a recurrent pattern in Iranian politics since the mid-nineteenth century. In the field of industrialization their purpose was to achieve national self-reliance and diversification; the means chosen to promote that objective was import-substitution. To meet the needs of the industrialization programme, the government of Iran had to create a social and technological infrastructure from scratch. Iran lacked an adequate transport system, while new financial institutions were needed to encourage entrepreneurial initiative. Roads were built, the trans-Iranian railway was constructed, a national bank was founded, soon followed by others, and schools at all levels were started, while technical and managerial needs were satisfied by sending students abroad to receive advanced training and experience.

High tariffs were introduced to protect the infant industries, which distorted the price-mechanism and the effectiveness of resource allocation. Consequently the unit costs of production were very high, but this was inevitable to create and sustain these industries. Although profitability and employment-generation did not receive much attention, the notions were not absent from the objectives of the new economic policy, and in fact a great many jobs were created. However, many of the industries could only survive because they were protected and enjoyed a quasi-monopolistic position. As a result of this, only specific groups within the country benefitted from the economic policy, which moreover inhibited the motivation of industrialists to export. Small private traders, artisans, industrial labour and peasants had to foot the bill for the high price which Iran had to pay for its industrialization programme. Although there was considerable waste, it is difficult to say whether the industrialization programme really could have been executed at lower cost. For there was also considerable pride within Iran that the country had made a leap forward under its own steam, without foreign capital. Reza Shāh and his supporters had in fact been able to realize almost all objectives formulated by Iran's nineteenth century reformers, and thus had fulfilled an age-old dream. The opponents and critics of Reza Shāh did not disagree with the objectives of his economic policy, but about the distribution of its effects. Although a failure from the point of view of the distribution of development benefits, the industrialization policy was successful in transforming Iranian society and its economy, and formed "the most interesting example in the Middle East of a state-directed effort at economic organization."⁽²⁾

NOTES

1. Grunwald and Ronall, 1960, 21
2. Ibid.,

II. The Labour Force Prior to 1914

During the period under study the population of Iran increased from 9.29 million in 1901 to 14.55 million in 1940. The urban share of the population hardly changed during this period, although urbanization slightly increased as is shown in Table 1.(1) This is also borne out by the estimated growth rates for this period which indicate that prior to 1934 there was

TABLE 1: THE POPULATION OF IRAN AND ITS URBAN-RURAL DISTRIBUTION (MILLIONS)

year	total	urban	%	rural	%
1901	9.92	2.08	21	7.84	79
1911	10.66	2.24	21	8.24	79
1921	11.47	2.41	21	9.06	79
1934	13.32	2.80	21	10.52	79
1940	14.55	3.20	22	11.35	78

no significant net rural/urban migration. After 1934, however, there is a change to be noted between urban and total growth rates, signifying a net rural-urban migration. An important factor for this development was probably the new economic policy of Reza Shāh, which resulted in an increase in manufacturing capacity and drew peasants to the urban areas.(2)

According to Bairoch (3), reasonably reliable data for the developing countries in general for the period from 1920 to 1950 indicate that the active population in the manufacturing sector dropped from 8.5 to 7.6 per cent, while the figure for the mid-nineteenth century was probably roughly about 10 per cent. These rough indications also hold for Iran. The rate of urbanization and population growth overall was slower than in Asian countries in general. However, although precise data are lacking there is the undeniable fact that the tertiary sector in Iran increased considerably after 1900 concomitant with a drop in the level of employment in the secondary sector.(4) Those data which are available for Iran are guestimates for the country as a whole,

TABLE 2 CHANGES, BY BRANCH OF ACTIVITY, IN THE STRUCTURE OF THE ACTIVE POPULATION IN DEVELOPING COUNTRIES WITH MARKET ECONOMIES, 1900-1950 (%)

Branch of activity	1900	1920	1930	1950
Agriculture	77.9	77.6	76.6	73.3
Mining)		0.4	0.4	0.6
Manufacturing)	9.8	8.5	8.5	7.6
Construction)		1.0	1.1	1.8
Commerce, banks)		5.4	5.4	5.8
Transport,)				
communications)	12.3	1.6	1.8	2.0
Services)		5.5	6.1	8.9
Total	100.0	100.0	100.0	100.0

whole, and do not provide a sectoral and/or geographical breakdown. The most detailed guestimate for 1910 is that by Abdullaev, who, using mainly Russian archival material, gives a sectoral breakdown of selected urban economic activities (see Table 3). The economically active male population over ten years of age was estimated to be 3.9 million around 1910, of which 3.5 million were engaged in agriculture. This means that the active workforce in the urban areas at that time amounted to at least 400,000. (5) This figure no doubt was higher owing to the fact that boys under ten were also employed in handicrafts, services, commerce and manufacturing. Moreover, quite a substantial number of women were engaged in all kinds of economic activities, especially in carpet and other weaving activities. Absent from Table 3 are the workers engaged in commerce, banks, transport and communication, while the figure for the services sector seems to be on the low side. We do not know how many of these workers were to be found in the urban areas of Iran, but their number must have been considerable. Data on unemployment are totally lacking, though it must have been fairly substantial.

TABLE 3: EMPLOYMENT IN SELECTED URBAN ECONOMIC ACTIVITIES
IN IRAN (circa 1910) (6)

Factories	850
Anglo-Persian Oil Company	2 460 (incl. 576 foreigners)
Mining	200
Railway employees	200
Railway workers (construction)	3 000
Road-workers (Resht-Enzeli)	300
Printers	300
Carpet-making	65 000
Metal-working crafts	20 000
Leather crafts	900
Other handicrafts	10 000
Fisheries (Caspian)	4 200 (incl. 2,000 Russians)
Pearl fisheries (Persian Gulf)	4 000
Porters and dockers	4 000
Wood cutters	300
Leather production	3 000
Servants	<u>5 000</u>
	125 500

What is clear from Table 3 is that the labour force engaged in 'modern industry' was very small. Only some 6,700 workers qualify as such. The largest share was represented by the railway workers (45 per cent), followed by workers in the oil industry (37 per cent), while factory workers only represent some 12 per cent of this group. The traditional industries were much more important than any other industrial activity of a non-rural nature. The small workshop in which less than ten workers were employed in making and repairing products without the use of power-driven machinery was the predominant type of industrial establishment in Iran and remained so until the 1950s.

NOTES

1. Bharier, 1971, 27, Table 2
2. Millspaugh, 1946, 31
3. Bairoch, 1976, 11, Table 3
4. Korby, 1977, 2-3, Fig 3; Bharier, 1971, 58
5. Ibid., 34
6. Abdullaev, 1968, 212. These data provided by Abdullaev have been corrected where the labour force in factories are concerned, since he also counted those labourers working in factories which had been abandoned by 1900. For further details see: Floor, 1980; Ferrier, 1982, I, 154, Table 4.1 for the revised data on APOC employment in Iran.

III. TRADITIONAL INDUSTRIAL ACTIVITIES 1900-1925

Small industrial establishments were the main feature of the Iranian manufacturing sector. These establishments were still pre-industrial in nature and steeped in tradition. They were organized as guilds and a kind of moral responsibility between Master and employees existed, the Master often not being much better off than his workers. These workshops were often a family business, and usually consisted of a Master assisted by one or more skilled labourers and apprentices (Table 6). Production was still along pre-industrial lines, i.e. specialization occurred in the product and not in the process as in modern industrial society. An artisan would often make all components of an article himself and assemble these into the final product. Moreover production and sale often took place in the same establishment.(1)

However, these traditional industrial establishments were not always small-scale as is often mistakenly assumed. It is true in most cases, but towards the end of the nineteenth century a great number of large factories were established in a great many Iranian cities. A very large carpet-making factory in Tabriz employed up to 1,500 workers in 1899. Most of these large factories were to be found in the carpet industry, but they also existed in other industrial sectors such as leather preparation, preparation of opium, preparation of henna, and in mining. "The larger the workshop the further was the division of labor. The workers received only wages, and controlled neither the raw material nor the finished product".(2) Although modelled after modern factories, these factories did not achieve, in most cases, a complete break with the cottage industries out of which they had emerged, for their level of mechanization was very low and they mainly used manual labour. These industries therefore represent an intermediate stage of industrialization. The case of Tabriz is in this respect rather typical for the other 'industrial' centres in Iran such as Tehran, Qazvin, and Resht. In addition to these factories there existed in Tabriz a great many small traditional workshops which employed a total of 22,942 persons. According to Soltanzadeh, the number of servants and unemployed labourers amounted to 30,000 persons in 1922. He did

TABLE 4 NUMBER OF FACTORIES AND OF THEIR LABOUR FORCE
IN TABRIZ (1922) (3)

Type of factory	number of employees	number of workers	average number of workers
carpet factories	175	2,625	15
spinning factory	1	150	150
weaving mill	2	100	100
weaving mill	10	100	10
weaving mill	20	100	5
weaving factory	30	180	6
pottery making	10	50	5
printing	8	120	15
lithography	7	35	5
tobacco processing	30	300	10
cigarette making	5	50	10
brick-making	5	30	6
powder-making	3	30	10
fruit-juice making	20	100	5
dyeing factories	40	200	5
soap-making	10	60	6
iron and gypsum	5	50	10
Total	281	4,400	16

not mention the number of government employees and other category workers such as those engaged in mining and transport.

The predominance of the traditional type of industrial establishment was accentuated by the slow and modest rise of the development of modern, large-scale industry in Iran. The drive for the introduction of modern industry in Iran had begun in the 1850s. Apart from military reasons and the wish to become a modernized country, in the belief that Westernization was the panacea for Iran's troubles, the main incentive for the modernization of the industrial sector was import-substitution. Considerations of employment creation did not play a role, although Iran's native traditional industry was severely hit by the import of European goods.(4)

Bharier's statement (5) that modern, large-scale industry, defined as comprising factories with ten or more workers, did not exist in Iran around the turn of the century is wrong. In fact, notwithstanding the many obstacles modern industry had to overcome in Iran - cost of raw materials, energy, high transport rates, no protection against foreign competition, and non-economic factors - industrialization both prior to and after 1900 until World War I was considerable.(6) Between 1900 and 1914 some 30 modern large-scale factories were erected in Iran. Because there was a lack of integration in the economy as a

TABLE 5 LARGE-SCALE FACTORIES IN IRAN AND THEIR LABOUR FORCE (7)

type of factory	labour force
<u>1890-1900</u>	
Silk reeling factory/Aminožzārb	150
Silk reeling factory/Berekadeh	20
Match factory/Tehran	50
Paper mill/Tehran	60
Sugar mill/Kahrīzak	300
Glass & Porcelain/Tehran	20
Brick-making/Tehran	20
Oil-refineries/Gīlān (5 plants with 272 men)	54 (average)
<u>1900-1914</u>	
Yarn factory/Tabrīz	100
Brick factory/Ormiyeh	30
Olive-oil mill/Rūdbār	20
Cotton ginning (26 factories with 416 workers)	16 (average)
Timber mill/Resht	15
Timber mill/Tālesh	15
Tobacco factory/Mashhad	20
Brick factory/Tehran	20
Soap factory/Nezāfat	20
Brewery/Ormiyeh	15
Brewery/Tehran	10
Arsenal/Esfahān	15

whole, high-lighted by the absence of any industrialization policy of the Iranian government, this pre-1914 development was remarkable. There existed as ministry of Public Utilities (Favāyed-e ʿāmmeh) which was charged, inter alia, with the management of Iran's industrial affairs. However, its budget of 150 to 200,000 tomans per year did not even suffice to pay for the salaries of the ministry's staff, and apart from giving out mining leases it did not do much to stimulate industry.(8) The role of government was restricted to a fiscal one in the sense that it tried to get money out of existing industries. The attempt by Moẓaffaroddīn Shāh to stipulate that foreign investors who wanted to erect factories "to produce cotton, silk, etc"(9) had to acquire a permit from the government also must be seen in this light.

Nevertheless, this new measure was in a way an innovation because the usual procedure was to sell concessions to foreign or Iranian investors to stimulate the utilization of the country's natural resources. In exchange for the monopoly of production of a certain commodity or service, the government received badly-needed funds, while at the same time modern technology was introduced into the country. Examples of such 'successful' concessions are the D'Arcy oil concession, the Liazonov fisheries concession and the Indo-European Company's telegraph concession.(10) But not only foreigners obtained concessions. In 1898 an Iranian subject had obtained the concession for weaving-mills in Āzarbayejān; he sold his rights in 1908 to Āqā Qazvīnī, who then built a weaving factory in Tabrīz.(11) On May 21, 1910 the Majles permitted the import, free of duty, of certain machinery for the manufacture of tools and buttons to a Company which intended to undertake this production at Tabrīz.(12) Although there was a strong group within the Majles, the so-called Democrats, who were in favour of modernizing Iran - to which end the American mission under Morgan Shuster was invited to Iran - they were unable to implement these policies owing to the opposition from the conservative powers in Iran backed by Russia and Great Britain.(13) It is noteworthy to observe that, about a decade later, a similar group (in fact an offshoot of the Democrats) had similar objectives and was more successful in realizing them, as we will see later.

The politically unstable situation of Iran, reinforced by the invasion of the neutral country by the armies of Turkey, Russia and Great Britain during the period 1914-1918, put an end to the various attempts at industrialization. The Iranian economy suffered considerably during the war, as a result of which its imports had fallen dramatically in 1920-21 as compared with 1913-14, excluding oil and invisibles, viz. from 647 million grans to 482 million grans or a drop of about 30 per cent. Exports had suffered likewise (from 447 to 138 million grans). This situation led to a negative balance of trade and to the export of gold and silver, which the government was forced to prohibit. The reduced purchasing power of the population was also translated into fewer imports of both raw materials and manufactured goods⁽¹⁴⁾ as well as a reduction of employment in the urban areas.⁽¹⁵⁾

The war also had some positive consequences. For although hardly any of the earlier modern industries survived and the traditional industries were hit by a severe crisis "by sole exception there has sprung up in Persia, as a consequence of the temporary block of imports during the war, a leather-making industry, a boot-and-shoe making industry, and a button-making industry".⁽¹⁶⁾ These industries were not of a modern type however, but belonged to the traditional small-scale industries, using often pre-industrial methods and processes. Moreover, its products were not very satisfactory and its prices as high as its qualities were low. How important the traditional small-scale industries were in the 1920s is, for example, highlighted by the large number of small-scale workshops in Tehran in 1925. In 13,357 workshops, 13,260 Masters employed 18,524 workers, who produced a wide range of goods. A similar situation existed in other cities in Iran at that time such as in Esfahān where 9,555 Masters were engaged in various industrial activities. Unfortunately, the number of skilled workers and apprentices employed by these Masters is unknown. Whether these industries were protected by the high freight rates for imported goods as Bharier has suggested needs further research.⁽¹⁷⁾ According to the British commercial attaché, there were "virtually no indigenous industries to be protected or fostered against foreign competition"⁽¹⁸⁾ in the early 1920s at least. Moreover, when

transport rates were reduced considerably, due to the introduction of motor transport and metalled roads, there was nevertheless an increase of these traditional industries to be observed.(19)

TABLE 6: EMPLOYMENT IN TEHRAN IN THE TRADITIONAL INDUSTRIAL SECTOR (1925) (20)

type of activity	no. of shops	no. of Masters	no. of skilled workers	no. of apprentices
metal working	756	822	769	535
wood-working	574	500	506	310
building & ceramics	193	162	167	43
textile & leather	1 938	2 371	2 503	1 079
food & agro-industry	829	816	1 947	359
transport	504	434	643	164
services	507	477	1 097	248
trade	7 906	7 684	6 559	1 565
Total:	13 357	13 266	14 201	4 303

TABLE 7: NUMBER OF MASTERS IN THE TRADITIONAL INDUSTRIAL SECTOR OF ESFAHÂN (1924) (21)

metal-working	1 183
wood-working	220
building & ceramics	317
textile & leather	1 354
food & agro-industry	1 412
transport	370
services & trade	4 784
Total:	9 555

NOTES

1. On guilds see Floor, 1915, in press
2. Abdullaev, 1963, 117; partly translated by Issawi, 1971, 298
3. Ravasani, n.d 225; Chaqueri, 1972, vol.4: Avetis Mikailian (Sultanzade) Selected Writings, 66-122, esp. p.102

	no. of employers	no. of workers
1. small artisans: e.g. smiths, lock-smiths, bakeries, shoe- makers.	1 090	4 680
2. other small traders: dyers, saddlers, barbers, chandlers.	470	1 942
3. traders: vendors, merchants.	1 865	3 865
4. day-labourers: water-sellers, qanat-diggers, porters, masons.		5 325
5. government employees		530
6. other workers: drivers, gardeners.		2 000

4. Floor, 1980; Olmer, 1908; Radimsky, 1909
5. Bharier, 1971, 170
6. Ibid
7. Floor, 1980, Table 3, which also gives more details on the pre-1914 industrialization effort.
8. Moustoufi, n.d, vol.2, 372
9. Netherlands; Algemeen Rijksarchief, Legatie Perzie, bundel 22, nr.196
10. Bharier, 1971, 84
11. Administrator-General of The Finances of Persia, Ninth Quarterly Report, (Oct-Dec. 1924)
12. Public Record Office, London, Foreign Office (FO) 371/950, f.369 (transcripts of Crown-copyright records in the PRO appear by permission of Her Majesty's Stationery Office; Gielhammer, 1939, 228 for the concession to Rabi'zadeh and partners entailing certain privileges, which would be revoked if foreigners participated in the venture.)

13. Abrahamian, 1982, 104.
14. Temple, 1922, 5
15. Mānī, 1325/1946, 7; Matīndaftarī, 1304/1925; Abdullaev, 1968, 60
16. See note 22 supra
17. Bharier, 1971, 171
18. Temple, 1922, 5
19. Abdullaev, 1968, 60, gives a few examples of the considerable increase of the labour force employed by the traditional artisanal industries
20. Keihān, 1311/1932, vol.2, 327 f; these statistics were published earlier in: Tehran, 1310/1931, 72 f. the latter are more detailed and also provide data on the distribution of the guilds per city quarter. Bharier, 1971, 171, n.9 is wrong (also where the page number are concerned) to state that there were 5,000 industrial workshops, for the services and trade sector do not qualify as such. He is also wrong with regard to the number of handicrafts mentioned in the 1926 tax bill which is mentioned in the same note. The relevant bill enumerates 267 taxes, of which only 239 referred to guild taxes, the same mistake was made by Issawī, 285. Tables 6 and 7 have been aggregated by me. The original source gives the data per guild.
21. Janāb, 1303/1924, 77f.

IV. Pressure for Industrialization, 1922-1940

The coup d'état led by Reżā Khān and Zīyāoddīn inaugurated a new period in Iranian history. This period was characterized not only by the strengthening of central authority and increased security, but also by a growing dictatorship with the concomitant loss of political freedom of the Majles, when Reżā Khān proclaimed himself Shāh of Iran in 1925. The new government after the coup had great plans for Iran and, even after Zīyāoddīn had been dismissed from the government, the subsequent cabinets retained some of the development spirit which had characterized the Zīyāoddīn cabinet. (1) The cabinet led by Qavāmossaltāneh (1921) had a programme which, *inter alia* had as its objective: to start mines and mobilize other resources for the foundation of Companies and the training of workers and unemployed - to combat unemployment. (2) Although the government was not very successful in implementing this policy, the Majles in 1921 nevertheless made it compulsory for government employees and army personnel to wear only cloth made in Iran in an attempt to curtail the large share of textiles in Iran's imports and to encourage native industries in that field. Although this decision gave some impetus to the weaving industries, the yarns still had to be imported from abroad. In a similar attempt to encourage native industries, the government appropriated a sum of money to hold an exhibition of Iranian crafts and industries in Tehran in order to bolster its export and manufacturing capability. At the same time, to encourage the use of modern technology by Iranian craftsmen, permission was given to organize an exhibition of foreign machinery. These initiatives led to a rise in demand for spinning and weaving machinery, both hand and power-driven, as well as to the erection of modern large-scale factories or the starting-up of idle factories. (3)

To enable the government to implement its plan and attain its objectives, it was necessary to get a better grip on the economy, to improve its infrastructure and to rationalize its finances. To that end an American mission led by Millspaugh was retained, who was given far-reaching powers. (4) Amongst a great many things, he issued orders on November 29, 1923 to control the implementation of the government decree to wear only Iranian-made

cloth. (5) In that same year, Hājī Mo'īnottojjār Būshehrī reopened his silk spinning factory in Resht, which, although having been idle for about 20 years, was still in good running condition. (6) An Eṣfahānī merchant, 'Aṭāolmolk purchased machinery for a cotton-spinning weaving factory in Germany in that same year. However, by the end of 1923 he still had not been able to transport all the machines to Eṣfahān by the mountainous tracks from Hamadān. (7) The owner of a match factory in Tabrīz ordered new machines from Germany in 1923 to expand his production capacity. (8) The government itself was also discussing plans to undertake various industrial activities such as the start up of the Kahrīzak sugar mill. Millspaugh reported that "if the sugar factory resumes operation we are prepared to plant sugar beets on the public domains in order to supply the factory." (9) Furthermore, there were discussions about constructing railways and building a hydro-electric station for lighting and supplying power to Tehran and for working a tramway service to Tajrīsh. (10) In 1924 the Ministry of Public Utilities (Favāyed-e 'āmmeh) granted a concession for the period of ten years to build textile factories in the provinces of Astarābād, Shāhrūd, Bistām, and Damghān. (11) In that same year, the ministry also agreed to a proposal by a German entrepreneur to build spinning factories (silk and cotton) to weave cloth, and to build factories producing paper and beverages on the following conditions: the factories had to be built within one year after the agreement, while the number of foreigners working in the factories had to remain restricted. The import of machinery for the factories would be free of customs, while a tax holiday of three years was granted. After that period an income tax of 10 per cent on the net income would have to be paid. These activities are an indication of the need felt by both government and the Majles to attract industrial investors and to give Iran the beginnings of a modern industrial base. (12)

In 1925 a cotton-spinning and weaving mill was established in Eṣfahan, while an idle cotton and wool spinning mill in Tehran (Sanī'oddouleh) was started up again. (13) The owner of a cotton-spinning mill in Tabrīz also built a wool-spinning mill in his home town of Qazvīn. (14) Small-scale industrial activities in the field of shoes, saddlery, socks and other consumer goods were

developing rapidly as well.(15) To improve the quality of these small factories and crafts the government founded a Technical Institute (*madrseh-ye san'ati*) in 1924, where young technicians were trained by European experts.(16)

Several measures were taken to protect native industries and provide investors with incentives to start new industries. In 1925 a law was passed which exempted industrial and agricultural machinery and instruments and their component parts from import duties for a period of 10 years. The exemption was clearly biased towards large-scale industries since it did not apply to small-scale capital goods such as sewing and knitting machines.(17)

These new industries in many cases were in a shaky economic and financial position as was the modern Vatan factory, in Esfahān. This modern factory which turned out a good product, coarse cloth and blankets, could only survive with "strenuous Government support in the form of cash, contracts and decrees which aim at forcing officials to wear home-manufactured cloth."(18) Such government support was given because there were powerful interest groups within the government that wanted to modernize Iran and make it an industrial state "as if such a transformation necessarily implied progress" the British commercial attaché commented.(19)

These interest groups were formed, *inter alia*, by young, Western-educated, reform-minded people, who backed Reza Khān (later Reza Shāh). Apart from their education in Europe, the, traumatic experience of Iran's subservience to Britain and Russia and the near break-up of the country led these reformists to back a strong central government, preferably led by a strong man such as Reza Khān.(20) The various options for the economic development of Iran (which interest us here) were hotly debated in various clubs, such as the Economic Association (*Majma'-e eqtesād*), which was founded in Tehran in 1924.(21) Dāvar, later Minister of Justice, but in 1923 editor of the paper *Mard-e Āzād*, for instance led a party known as the Reformists which, *inter alia*, wanted to bring about 'an industrial and agricultural revolution with new machines' in Iran.(22) The ideas for these and other programmes were not only provided by their training in Europe, but also by the publication of various books, journals

such as Āyandeh, Irānshahr, and Farhangestān (23) and dissertations by Iranians.(24) Many elements of the economic policy pursued in the 1930s were to be found in these books and there is no doubt that they had a profound influence on the policy-makers. An important example of such a book, if only because it was written in Persian, was the study by Ahmād Maṭīnḍaftārī entitled 'The key of Iran's economic independence' (25), in which he argued for direct state control over the economy leading to development of infrastructure, and national industries which were to be protected against foreign imports, while exports of industrial products had to be promoted. To attract investors, especially foreign ones, he also advised tax holidays as one of the policies to be pursued.

But even more important than the various reformist-minded associations, economic or otherwise, though closely bound up with them, was the Revival Party led by Dāvar Teimūrtāsh and Tadayyon.(26) This party, an off-shoot of the 'Democrats', the main defenders of the Constitutional Movement, many of the veterans of which were members, was the main channel for these ideas. The party programme "called for separation of religion from politics, creation of a well-disciplined army and a well-administered bureaucracy, an end to economic capitulations, industrialization, replacement of foreign capital by indigenous capital, transformation of nomads into farmers, a progressive income tax, expansion of educational facilities for all, including women, careers open to talent, and replacement of minority languages throughout Iran by Persian."(27) Most of the party programme was executed during Reżā Shāh's reign. This is not surprising, since the party supported Reżā Khān's centralist policies actively and its leaders and many of its important members joined the government as ministers, high government officials or in other capacities.(28) It is due to these men that Iran was able to make a big step forward during the 1930s. It is true that they were unable to realize profound reforms and created an expensive government machinery and big disparities in income between urban and rural areas. However, they were able to change the face of Iran and laid the stepping-stone for the second leap forward made in the 1950s. There is no doubt that these steps were made at high cost and the same targets could

have been achieved more cheaply, but this can be ascribed to the enormous problems these people had to face, and for which they had to pay 'the costs of learning' as John Stuart Mill put it.

Whether as a result of this policy or not, in 1931 some 230 large and small-scale modern industrial factories and establishments existed in Iran, according to a list drawn up by the Iranian Department of Labour & Industry (Annex A). In this list no mention is made, however, of the number of workers, the installed horsepower, the invested capital or the date of erection. What is striking in this list is the large number of agro-industries, in particular the 34 cotton-ginning plants. Moreover, the list mentions 35 electric installations, which is striking indeed. For the British commercial attaché in 1928 had stated that "only the towns of Tehran, Bushire, Tabriz, Enzeli and Resht have electricity." (29) This discrepancy between the data - it is impossible that between 1928 and 1931 so much electricity-generating capacity had been imported and installed in Iran - can only be explained by either omission and lack of knowledge or, more likely, by the omission of the less important and small-scale establishments.

That this was probably the case is borne out by a statement from the British commercial report of 1930 that "no industrial development of any consequence has taken place" (30) in Iran. This observation does not tally with the list of industries drawn up by the Iranian government and may be explained by the fact that what looked modern and industrial to an Iranian was considered to be insignificant and not worth mentioning by a European.

Notwithstanding these results, the Iranian government was disappointed with the reaction of local private capital and the lack of entrepreneurship shown by Iranian capitalists in the field of modern industry. The tax holidays and subsidies provided for investors had been of no avail; the government therefore decided to take the initiative itself, if possible in co-operation with foreign investors. (31) In 1927 it had given the go-ahead for the construction of the Trans-Iranian Railway, while the building of a paper-mill was also being considered. In vain the government tried to interest foreign capital to invest in the water and power supply of Tehran. (32) The government also

wanted to build the national railway with Iranian-manufactured steel. It had therefore employed a German engineer to study the feasibility of the construction of smelting works at Semnān.(33) Because there was no suitable coal available in the Semnān area, the works would be dependent on the coke of the Shamshak mine near Tehran. The production of this mine would also be used to supply Tehran with a cheaper fuel, where coal cost £6 a ton in winter. Furthermore, the coal would be used for the railway itself, and it was intended that the economic rentability of the project would be favourable. On August 11, 1928 the Majles voted 200,000 tomans to operate the Shamshak mine. Coal was sold at half the cost of production but, when it became known the Direction of Mines of the Ministry of Public Works had misappropriated a considerable share of the mine's working capital, the government closed it down. The government was more fortunate in interesting a Czechoslovakian company in obtaining a concession for the construction of a sugar mill in Karaj, where trials were made with beets.(34) In order to speed up the economic development of the country, a series of measures were taken to increase the influence of the state on the economy.

The big leap forward (1930-40)

At the beginning of the Iranian year 1309 (March 1930), the government of Iran had decided to "develop new industries as a means of reducing imports and supporting the exchange."(35) Apart from these arguments, there was also the strong desire to make Iran into a self-reliant country that would be free from foreign interference and influence. To make this possible the government believed that Iranian society and economy had to be modernized. This change, it believed, had to be directed by the state through direct involvement in the economy and entrepreneurship and deliberate purposeful economic planning. The instrument chosen to implement this policy was that of import substitution, which implied interference with the allocative functions of the market and with international competition. On December 14, 1930, Reza Shāh opened the eighth session of the Majles with the statement that "We wish this Majles to be known in the history of the country as the 'Economic Parliament' (Majles-e

eqtešādī)."(36) This announcement inaugurated a period in which the government acted as the supreme organizer. This important step was taken by the government partly to countervail the effects of the Great Depression on the Iranian economy, and partly because the government had already been developing an economic policy aimed at improving its trade balance. To that end, the government had terminated the Capitulations of foreign states in 1928 in order to obtain full tariff and fiscal authority. The absence of this autonomy had handicapped, inter alia, industrialization attempts in Iran from its very beginnings in the 1850s. Although, as yet, no full autonomy was obtained (this was achieved in 1936) due to treaty obligations, the government of Iran nevertheless could give real protection to its economy for the first time since 1928. The fiscal autonomy coincided with the fall in export prices of Iranian products, which led to a deterioration of Iran's terms of trade and a deficit in the balance of payments. This development provided an urgent and necessary incentive for the government to find other sources of income and foreign exchange. Industrialization was one of the answers to that problem; the Foreign Trade Monopoly Law of 1931 was the government's policy instrument to achieve that end.(37)

The Iranian government realized that it lacked the necessary infrastructure to develop an industrial base. The transportation system was inimical to the development of trade, while other infrastructural activities (power supply for example) were unsatisfactory. The banking and financial institutions needed to be further developed to encourage and serve industrial initiatives. Trained supervisors, managers, engineers, and skilled personnel in general at all levels were totally lacking. Without such an infrastructure, Iran would not be able to develop an industry and we observe that the government mounted a large programme to fill this need.(38)

In June 1931, the Ministry of National Economy, which up till then had been charged with the promotion of industry, was split up into three Departments, one of which was the Department of Mines and Industries (Edāreh-ye šan'at va ma'āden).(39) The newly appointed chief, Farrokh, describes in his autobiography that the new Department did not even have offices when it started

to function and so he selected the *madrasedh-ye Kamālolmolk* for that purpose. For the Department of Mines he put in, charge engineer *Zāhedī* who had recently returned from France where he had received his training in mining. The new Department had no proper funds to work with and *Farrokh* therefore decided to start mining coal at *Shamshak*, *Gajareh* and *Lālūn* and to run the Department with the proceeds of the sale of coal. In this way the Department gradually started to its work. It had to start slowly, not only because of its few resources, but also because it was a new organization. For *Farrokh* had the old staff of the Ministry of National Economy transferred to other ministries and had attracted a totally new staff.(40)

The new Departments were charged with the implementation of the new economic policy. This policy was concentrated around the Foreign Trade Monopoly Law, which gave the Iranian government a firmer control on the imports and exports, control of transactions in foreign exchange and made it possible to establish an industry geared to an import-substitution, which otherwise could not have existed.(41)

The selection of the types of industry was in general well conceived where the supply of raw materials and the domestic market were concerned. The policy of import quotas and import prohibitions created a situation in which the Iranian industrialist was free of external competition and could charge high prices. The tariffs were used to protect the national industry as well as to collect revenue. The system of import quotas did not work very effectively, however. It prevented the government from having good control over the level of protection of the industry, while the resulting monopolistic structures with their high administrative costs and corruption led to inefficiency and loss of foreign exchange.(42)

Because of the inward-looking economic policy, an industrial structure came into being that increasingly reflected domestic consumption patterns. Export promotion did not figure high on the government's or industrialists' list of priorities. Apart from the fact that the domestic market still offered a great many opportunities, Iran would have had difficulty in selling its manufactured goods internationally because of the lack of quality and the protective measures taken by other countries at that

time. There is also the fact that the high tariffs distorted the price-mechanism. The resulting high unit cost of production only created problems for entrepreneurs who wished to sell in the international markets. The Iranian industrialist was handicapped in two ways; whether he had to import his raw materials or intermediate goods, or had to acquire them from domestic producers, in both cases his production costs were higher than for his competitors. In the first place he had to pay high import tariffs and transportation, in the second case the domestic supplier could charge high prices because of the protection he enjoyed. The export opportunities of the Iranian industry were therefore also hampered by the high level of protection.(43)

The per unit rates of return on the domestic market were, moreover, much higher than on the international market. Industrialists therefore preferred even to reduce their output to low levels rather than to turn to export markets. This attitude is also reflected in the rather substantial amount of unutilized industrial capacity and of unutilized labour.(44) Another obstacle to export promotion was the effect of tariffs on the country's exchange rates. Because of the tariffs, imports declined relatively and so also did the total amount of foreign exchange spent on imports. The national currency tended to become overvalued, which resulted in exporters receiving less domestic currency for the same volume of exports. With the passing of the foreign exchange law in 1932, a black market came into being.(45) "In consequence some merchants, finding (international) trade operations more and more difficult and unprofitable, began to turn their attention to developing industrial production within the country."(46)

As a result of the government's policy, a great many new factories were built in Iran over the next decade. As is clear from Annex B, the most important industries were sugar, cotton and woollen textiles, matches and cement factories. A number of smaller factories - chemicals, other textiles, soap, oil processing, glass works, hosiery, leather works, rice milling, tea processing, flour mills, beer and wines - were also erected in various parts of the country, mainly by private investors. Annex B shows that between 1934 and 1938 the industrialization wave was at its peak. The number of workers employed by these new

factories showed an increase of some 250 per cent above the previous employment offered by the industrial sector.(47)

In October 1934, the Department of Industries and Mines issued a notice that all future applicants for the installation of industrial plants must first obtain a licence from the Department (48) in order to prevent wasteful competition, which is an indication that by that time the government's policy was successful. For, although no ordered plan of industrial development existed, investors found it increasingly rewarding to jump on the industrial bandwagon. The government had spearheaded the industrial wave with the erection of the sugar mills but it was private enterprise and capital which provided the main thrust for development and capital.(49) Especially in the Eṣfahān area, the response had been very positive, for "nearly every section of the population of Eṣfahān and its districts has invested some, if not all of its savings."(50) Such widespread support and such a broad investment base were facilitated by the fact that shares were issued in small denominations of 1,000 riyals. The money invested had in most cases been in ready cash and was not the proceeds of sales of fixed assets such as land.(51)

In Āzarbayejān, the merchant class was more cautious in reacting to the government's policy, but by 1936 investors there were making up for lost time through a rapid development of new factories. "Even those who in face of diminished opportunities for investment in private trade, were disposed to hoard their capital, are now being persuaded by the success so far of certain pioneer factories, and their inability to convert funds into safer foreign currencies, to participate in industrial development.(52)

Since a proper public credit market did not exist in Iran, the government decided to stimulate private capital by making bank loans and trade credits available to industrialists. The National Bank, founded in 1927, played an important role in co-financing many industrial investments. To attract private investors, the bank charged very low rates of interest of only 5 to 6 per cent. This stood in contrast to the high rates of interest prevailing in the non-market sector of the economy which the National Bank failed to penetrate. The same also holds for the Agricultural Bank founded in 1933.(53) The distribution of

the benefits of economic development between urban and rural areas was in this way heavily in favour of the urban areas. Urban investments were clearly favoured over rural ones, a policy which contributed to the drift of workers from rural to urban areas, resulting in slums and unemployment. Moreover, within urban areas large-scale industry was preferred to small-scale industry and we observe that the traditional artisan industries did not receive much attention as a means to combat unemployment and poverty.(54)

From what we know about the rates of return or rather about the dividends paid by factories in Shīrāz and Eṣfahān to shareholders, these indeed looked very promising. The Fārs Manufacturing Company declared a dividend of 20 per cent in 1934, of 80 per cent in 1935, and of 66 per cent in 1936. The dividends were all paid in cash.(55) This was undoubtedly also due to the fact that the locally-produced cottons were very much in demand all over Iran. The British commercial attaché observed that "in order to cope with demand the factories which are actually in operation are working at full pressure."(56) Both import prohibitions for some goods as well as high prices for many others encouraged national entrepreneurs to produce these goods or their substitutes. In either case, of course, the consumer was presented with the bill for an article which in most cases was more expensive than those previously imported and of lower quality. This became especially true when new tariffs were introduced on May 22, 1936 which increased the level of duties on almost all imports.(57)

Notwithstanding the high profits for investors and the government control on permits to start new factories since 1934, it became clear in 1936 that the danger of overproduction loomed large. After 1938, the incentive to start new industries diminished due to the real fear of overproduction and governmental attempts to limit profits.(58) However, already in 1936 there were indications that investors believed that there were too many factories or too large a production capacity in some sectors, such as textile mills and tanneries. In Tabrīz the Khosrovī tannery was saved by army orders from its financial difficulties.(59) In Shīrāz the Dehqān brothers did not use their 1936 permit to erect a new weaving mill. In the same town

the Fārs Manufacturing Company cancelled orders for spinning machinery in 1938, although the factory building had already been constructed. Other textile mills cut down the number of shifts to lower their output.(60)

The diminished interest of private capital in investment in industry is also indicated by an increasing tendency towards financial participation by the National Bank (Bānk-e Mellī) and the Agricultural Bank in new ventures. Towards the end of the 1930s, we also observe that the government increasingly took the initiative again in starting a number of industrial establishments, owing to the reluctance of private capital to start new industries. This reluctance, which had always existed, increased after 1937 when opportunities to buy crown lands were opened up due to the government's need for money. This became an important outlet for private capital, the more so since new regulations drawn up by the Department of Industries in August 1936 also made it more difficult to start or organize a factory easily and freely.(61)

To show how modern and successful Iran had become in the field of industry, an exhibition of Iranian industrial and agricultural products was held in 1934 in Tehran. This exhibition was repeated in 1937 and in subsequent years. Similar provincial exhibitions were held in Mashhad, Tabrīz, Eṣfahān and other cities. According to the British commercial attaché, the exhibitions showed that the products were of good quality and that each year improvements were to be noted compared with the previous years.(62)

Although the issue of employment-generation was not an objective per se for Iranian industrialization policy, at that time no government excelled in that respect, the effect of the policy was a quite considerable increase in employment. The economically active male population over ten years of age in 1940 amounted to some 4.9 million, of which about 3.75 million were engaged in agriculture. The active male workforce in the urban areas therefore amounted to some 1.2 million at that time.(63) How many women were engaged in urban industrial activities at that time is not known, but their number probably would not have exceeded the figure of 80,000.

Abdullaev's estimate (64) of the size of the urban

industrial labour force (Table 8) is on the low side. He underestimated for example the sizeable labour force in small-scale industries.

TABLE 8: EMPLOYMENT IN SELECTED URBAN ECONOMIC ACTIVITIES
IN IRAN, 1940

oil industry	31 500
textile & hosiery industry	25 000
food industry	8 000
mining	3 000
fishing	3 000
chemical industry	2 000
military industry	1 500
matches & electricity	1 600
cotton-ginning & building materials	1 500
building materials workers	5 700
railroad workers	14 500
car transport workers	20 000
construction workers (roads/housing)	60 000
tanneries	3 000
various factories	4 000
carpet industry	60 000
shawls & other weaving	5 000
other urban crafts	10 000
	260 100

Another Russian (military) estimate puts the Iranian industrial labour force at 525,000, which is also too low, for it still falls short of the 1,2 million active male workforce and the considerable female workforce, the size of which is unknown. Moreover, this military estimate gives too high a number for the size of the labour force in the oil industry, as well as for the carpet industry, of which only 60,000 can be classified as urban.

TABLE 9: COMPOSITION OF THE INDUSTRIAL LABOUR FORCE IN IRAN
1940 (MILITARY) ESTIMATE (65)

rail-industry	60 000
textile industry	30 000
wool & rice cleaning	25 000
rail & road construction	55 000
carpet industry	180 000
fishing industry	15 000
dockers etc.	10 000
cottage industries	70 000
unemployed	30 000
	525 000

Unfortunately we lack sufficient information to form a complete picture of the composition of the urban labour force. The size of traditional crafts and trades, for example, is totally unknown, and probably would have amounted to some 250,000 by

TABLE 9a: EMPLOYMENT IN SELECTED URBAN INDUSTRIAL ACTIVITIES
(1940)

oil industry	31 500
textile industry	30 000
food industry	9 500
railways	14 500
transport/roads	20 000
construction	60 000
fisheries	15 000
dockers	10 000
mining	3 000
chemical/military/ tanneries/matches	9 500
carpet industry	60 000
	263 000
traditional crafts	250 000
	513 000

1940. The number of unemployed or that of other gainfully-employed is totally unknown as well. On the basis of the information presented, the best guestimate for selected urban industrial activities is given in Table 9a.

The differences which nevertheless exist with regard to the various industrial subsectors or even per factory are due to the fact that the data are as yet incomplete. Another variable factor is the date of observation; for example, the cement factory in Tehran had only 360 workers in 1936, but after its expansion in 1939 it boasted of 1,000 workers.(66) Similar examples can also be indicated for other factories. Finally, the fact whether one bases one's estimate on peak season or off-season labour demand, makes quite a difference for the size of the labour force, due to the existence of many agro-industries in Iran.

The oil industry constituted the most concentrated form of industry in Iran as far as both geography and ownership was concerned. It dominated the Khūzestān province as regards

TABLE 10: GROWTH OF THE LABOUR FORCE IN MODERN INDUSTRY PER SECTOR 1914-1939 (65)

sector	1914	1920-30	1939
oil industry (AIOC)	7-8 000	24-30 000	31 500
textile industry	1 000	1 000	24 500
electricity sector	100	200	600
cotton-ginning	416	800	1 500
coconstruction/road	3 300	-	60 000
mining	200	-	3 000
car transport	non-existent	12 000	20 000

industrial labour and the national budget as regards revenues in other areas also. The oil industry had an important impact. It was the only industry that provided training for Iranians in the field of crafts, technology and management. This experience did not remain restricted to the AIOC, for many Iranian staff members preferred to work elsewhere in Iran under more benign climatological conditions, taking their know-how and experience with

them.(68)

The textile industry was one of the old branches of industry - the first modern European-type factory being established in Iran in the 1850s.(69) Although since that time textiles continued to play an important role in the Iranian economy, this branch of industry was still dominated by cottage industrial production. Even the spectacular growth of new factories in the 1930s could not change this. Between 1931 and 1938, not less than 29 large-scale textile mills were erected in Iran, both by state and private capital. The textile town of Iran was Esfahān with eight mills (5,372 workers), followed by Yazd with two (1,074) and Kermān (696) and Shāhī (3,396) with one mill each.(70)

Related industries such as the hosiery, wool-cleaning and cotton-ginning industry also experienced great expansion of their production capacity and labour force. In the 1930s, a total of 32 smaller hosiery factories were established with a total labour force of 1,584 workers.(71) In the same period, 12 small wool-cleaning factories were erected with 225 workers. The cotton-ginning industry, which had already flourished at the beginning of the 20th century, was mainly concentrated in Khorāsān, the main producer of cotton. By 1931 there were already 26 factories in Iran with an average labour force of not less than 25 workers per plant.(72) By 1940 the number of cotton-ginning plants had become as high as 76 factories with a labour force of about 1,500 workers.(73)

After the failure of the sugar mill at Kahrīzāk at the end of the 19th century (74), the government of Iran in 1930 decided to retro-fit this plant.(75) The promising results led to the construction of seven other sugar-mills which during the sugar season employed an average of 400 workers per plant; and 50 workers during the off-season. The total labour force of this sub-sector therefore amounted to 3,200 workers.(76)

Other agro- and food industries such as rice-cleaning, distilleries, flour-mills, soap-works, vegetable-oil pressing, paper-mills and tea-mills also came into being during the 1930s and provided employment for some 5,500 workers.(77) The grain silos built by the government to maintain a reasonable level of food security provided another 1,112 jobs.(78)

A new phenomenon was the chemical industry, which employed

2,044 workers,(79) while the military industry offered jobs to 1,500 workers.(80) There were 11 big tanneries in Iran which offered, according to Abdullaev, 3,000 jobs.(81) However, in 1941 the four big Tabriz tanneries alone gave employment to 5,000 workers,(82) so Abdullaev must have relied on earlier data when this industry was still in its infancy. Six match factories employed 1,000 workers by 1940.(83)

Quite spectacular was the rise in employment in the transport sector, both in the railways and in car transport. Neither of the two had existed in Iran before 1914.(84) Between 1935 and 1940, the railways doubled their labour force from 3,900 to 14,500. The car transport sector, which at the end of the 1920s employed some 12,000 drivers and helpers for a car park of 8,600, had grown by 1939 to a size of 20,000 workers with a car park of 15,000.(85).

All these industrial activities required power, which was provided by diesel-engines. Nevertheless, electricity also played an increasing role and 40 electricity plants employed 600 workers at the end of the 1930s.(86) Quite spectacular was the development of the railways, roads, factories and houses. From a mere 3,300 prior to 1914 this sector grew into one of the biggest employers of Iranian labour by 1939 with 60,000 jobs.(87)

Nevertheless, small-scale industries, and especially the carpet industry, continued to be the biggest source of employment. With the growth of industry, the importance of this sector appears to have diminished in some cities, where workers preferred the higher wages in industry. In the rural areas, however, carpet weaving continued to play a dominant role until recent times. If we assume that four persons(89) were working per loom, the figure of 180,000 given by the Russian military estimate is still too low, the more so if we include the designers, master weavers and other ancillary operatives. An American estimate puts the number of the labour force in the carpet industry in 1940 at 250,000.(90)

In view of the fact that more than 50 per cent of the imports of Iran consisted of sugar, textiles, tea, and cement, it is not surprising that the thrust of the country's industrial development was in those areas. Why the government concentrated, for example, on the sugar industry, while private capital mainly

TABLE 11: NUMBER OF LOOMS IN THE CARPET INDUSTRY (URBAN AND RURAL) 1940 (88)

town/area	Total number of looms	town
Qam	1 000	1 000
Tabriz	1 000	1 000
Heriz	2 250	-
Hamadan	30 000	-
Malayer	2 500	100
Bijsar	1 000	-
Arak	10 000	1 500
Mashhad	3 000	2 000
Birjand	1 000	-
Kermān	3 950	1 745
Yazd	30	30
Esfahan	2 500	2 000
Kāshān	12 000	4 000
	70 230	13 275

invested in textiles is difficult to tell. It may have to do with the fact that the government had already owned a sugar-mill since 1891, while private investors already had experience with textile production. At all events, the government played an important role in the development of industry and allocated 20.9 per cent of its general budget to industry in 1941.(91) This was in line with the increased participation of the state in the economy in general shown by Table 12.

TABLE 12 BUDGET ALLOCATION PER SECTION (million riyals) (92)

	1309(1930)	%	1317(1938)	%	1320(1941)	%
national economy	78	19	702	46	1725	54
defence	124	31	354	23	124	16
administration	201	50	471	31	963	30

The state also represented about one-third of all investments in industry by 1941, which at that time was estimated to amount to some \$260 million, over half of which had been invested by private capital.(93)

Table 13 shows that the number of registered companies increased from 93 in 1931 to 1,735 in 1940, while the corresponding numbers for industrial companies are 38 in 1931 and 460 in 1940. Although the number of industrial companies in Tehran was larger than those in the provinces (251 against 209), the level of investment per company was higher in the provinces. From annex B it is clear that light industries prevailed in Iran and that agro-industries prevailed in the provinces, due to the need to be near the source of raw materials.(95) Market dependent industries were mainly concentrated in and around Tehran.

Although light industries prevailed, the government wanted to develop a heavy industry as well in connection with the construction of the trans-Iranian railway.

The iron works

In 1927, plans had already been drawn up for a scheme to establish smelting works in the north to produce rails locally in connection with the go-ahead given by the Majles to start the construction of a railway between Khor Mūsā and Moḥammareh. Out of the railway budget, 4.5 million tomans were earmarked for this purpose and a German expert was engaged to make a feasibility study. Suitable iron had been found near Semnān, but no coal. The works would be dependent on the Shamshak coal mine, which was about 100 miles away, a special railway would have to be built between the mine and the works and, moreover, it was feared that the ore deposits at Semnān would be exhausted in 15 years, if the works were to operate at full capacity, so the project fell through at the end of 1928. In the beginning of that year, bids had actually been invited, despite the fact that the feasibility study had estimated the costs to be twice the amount which the Majles had earmarked, while Krupp even estimated the costs at 13 millions tomans.(96)

Although the government shelved the project for the moment,

TABLE 13: IRAN GENERAL AND INDUSTRIAL COMPANIES REGISTERED
(capital in thousand rials)* (94)

	Teheran		Provinces	
	No.	Capital	No.	Capital
1931/32	63	116 994	30	26 015
thereof industry	24	30 405	14	17 441
1935/36	377	570 296	504	275 763
thereof industry	151	92 100	111	135 634
1939/40	685	109 194	1 060	772 790
thereof industry	251	204 985	209	322 112
1944/45	1 101	2 347 883	1 194	1 507 449
thereof industry	378	725 442	257	779 891

* The rates of exchange were: 1932, 1 dollar=29.60 rials;
1936, 16.86 rials; 1940, 18.34; 1945, 32.50

	Total		Average Capital		
	No.	Capital	Teheran	Provinces	Country
	93	143 009	1 857	867	1 537
	38	47 846	1 267	1 246	1 258
	881	846 059	1 512	547	960
	262	227 734	610	1 222	869
	1 735	1 863 984	1 593	736	1 080
	460	527 097	817	1 541	1 146
	2 195	3 855 331	2 346	1 263	1 756
	635	1 505 334	1 919	3 035	2 370

it did not forget about it. In 1938 an agreement was reached, after much study and preparation, between Iran and a German consortium for the construction of two blast-furnaces with a daily production of 150 tons, a steel factory, a rolling-mill, a wire-drawing mill, a foundry, a wrought ironworks, a coke crusher, a power plant and the usual ancillary industries such as a lime plant, ammonia and benzol plant and a tar distillation plant. The works had to be completed in three and a half years' time and would employ 1,200 workers when working at full capacity. The original site was planned to be south of Tehran near the cement works, but Karaj was chosen instead, because of its more suitable water supply. A disadvantage, however, was that coal supplies for the power plant and the blast furnaces had to be transported from Shamsak and Zīrāb at about 35 miles distance.(97) In 1939 Reza Shāh laid the first foundation stone (98) and, although work proceeded as planned, the works were still unfinished in 1941 when the Allies invaded Iran. This meant of course, that the whole project was jeopardized, for all relations with Germany were cut, which led to the demise of the project.(99)

Another area of activities which also received increasing attention was the power sector, the development of which was needed to energize the various industrial products.(100)

Conclusion

One cannot but be impressed by the progress made in Iran during one decade, the period between 1930 and 1941. A country which hardly possessed any industry had realized a \$260 million industrial programme by 1941 and a similar amount had been invested in its railways. It is true that the gap with countries like Egypt and Turkey had not been closed, but a big leap forward had been made.(101) Although the cost for this big leap had been high, both in economic and social terms, it is difficult to see how Iran could have made such progress at a lower price. The burden of this price had to be borne by the mass of the population, a burden which could not be off-set by the great number of new jobs that had been created.(102) Although the

majority of the population did not share the benefits of development, which gave rise to criticism from the ranks of the intelligentsia (103), nevertheless, there was, at the same time, pride in the fact that Iran had achieved that much progress under its own steam without foreign capital.(104) Although Reza Shāh's regime stands out as the epitome of all that is bad in the works of later and present-day critics, he had, ironically, been able to realize many social-economic objectives of 19th-century reformers as well as those formulated by the Democrats in the first two decades of the 20th century.

NOTES

1. See, on these and subsequent events, Abrahamian, 1982, 118 f.
2. Bahār, 1357/1978, 123
3. Hadow, 1923, 9; Gielhammer, 1939, 229 (29 Dey? 1301/ January 19, 1923)
4. Millspaugh, 1973
5. Administrator-General of the Finances of Persia, 1924
6. FO 371/9026, Resht Diary, June 23, 1923, f. 124
7. FO 416/112, Annual Report 1923, f. 92 (p.44)
8. Ibid
9. Administrator-General of the Finances of Persia, 1923
10. Ibid; FO 416/112, Annual Report 1923, f. 92
11. Administrator-General of the Finances of Persia, 1924
12. Ibid; see also Gielhammer, 1939a, 229 for other activities
13. Lingeman, 1928, 24
14. Ibid
15. Ibid
16. Pārs Agency, 18-21, which provides details and pictures of the technical school; Hadow, 1923, 41 "A technical school recently opened...the need for technical education is paramount, as there are today in Persia no surveyors, road engineers, architects, agricultural experts, mechanical engineers able to assist in the reorganisation of their country."
17. Bharier, 1971, 174 n.19

18. Lingeman, 1928, 24; Wilber, 1975, 134, "On April 24 1930, anniversary of the coronation, the Shah received the diplomatic corps in a uniform. . . that was obviously made of locally-woven material, in accordance with his recent order that all government officials must wear clothes of domestic cloth. His senior officials were similarly attired. Reza Shah spoke cordially to the owner of the textile mill at Esfahan, remarking that his mill was the source of the uniforms."
19. Lingeman, 1928, 28
20. Abrahamian, 1982, 122 f.
21. Matīn-Daftārī, 1304/1925, 30
22. FO 371/9024, f. 160-63 has the text of the party's programme. The Foreign Office commented "in the past similar so-called political parties issued these sorts of programme, quite meaningless in a country like Persia."
23. Abrahamian, 1982, 123
24. For example: Safīnīyā 1307/1928; Fateh, 1926; Naficy, 1924; Ghadīmy, 1923; Ehtechami, 1930; Hechmat as Saltana, 1920; a very early Mosaddeqossaltaneh, 1332Q/1913; and Jamāl-zādeh, 1335Q/1916
25. Matīn-dāftārī, 1304/1925; the subtitle of this book (in French) made the purpose of the writing of the book clear "ad usum des capitalistes étrangers désirant placer leurs capitaux aux entreprises rénumératrices."
26. Abrahamian, 1982, 122 f; Bahar, 1357/1978, 123 with a slightly different view
27. Abrahamian, 1982, 123
28. Teimūrtāsh, Dāvar, Tadayyon, Taqīzādeh, Mostoufiolmamālek, Forūghī, for example all became ministers
29. Lingeman, 1928, 24
30. Even in the 1930s this mentality prevailed, for although six factories existed in Shīrāz the British Consul nevertheless reported "there are only four big factories," FO 371/40222, f.75

31. FO 416/113, Annual Report 1928, f.58(p.40) "the Government has at least learnt to appreciate the rashness of its erst-while plans to industrialize Persia at all costs. It has realised that the State subsidies granted to the weaving factory in Esfahan and the match factory in Tabriz have been of no avail, and decided that it would be well advised to use its influence and apply its resources to the development of projects better calculated to succeed."
32. Lingeman, 1930, 32; ibid, 1928, 28-29
33. The Persian text of the expert's (Martin) report has been published by Keihān, 1311/1932, vol.3, 253-256
34. FO 416/113, Annual Report 1928, f. 58
35. Lingeman, 1930, 32; Wilber, 1975, 190, "As far as the textile mills are concerned, I know that we should make cloth in our own country and avoid imports and I have told this to many people, but as no one came forward I had to do it" Reza Shah declared later.
36. Pārs Agency (a), 55 which reproduced the text of the speech.
37. For a more detailed discussion see Māzandarānī, 1316/1937 and Djazaeri, 1938
38. Bharier, 1971; Issawi, 1971, 373-386
39. Wilber, 1975, 143; Bharier, 1971, 174, n.19, the organisation was as follows: 1900-21 Ministry of Commerce and Public Utilities, 1922-29 Ministry of Public Utilities, 1929-31 Ministry of Economy, 1932-37 Directorate General of Commerce, Agriculture and Industry, 1937-39 Ministry of Industry and Mines, 1939-41 Ministry of Arts and Crafts. For slightly different details see Pārs Agency (c), (e) and (f). According to Farrokh, 1347/1968, 309, 320 (he was the first DG of Commerce, Agriculture and Industry) although the name and tasks of the Ministry (or DG) change, this was not so much due to internal defining of boundaries, but to direct personal interference by Reẓā Shāh. He also mentioned other cases of the Shāh's personal intervention in industrial matters. For example when Reẓā Shāh saw timber machinery lying idle on the quay of Bandar-e Shāh and heard that it was not used he ordered the Department of Industry to buy the machinery and use it

Within the year, Farrokh adds, the new plant produced timber.

40. Farrokh, 1347/1968, 298
41. Simmonds, 1935, 28-29
42. FO 371/20050, Economic Conditions in Esfahan, f.13; FO 371/20835, Economic Conditions in Fars, f.22; Bharier, 1971, 87; Simmonds, 1935, 23-24
43. For some examples see FO 371/20050, f.132
44. When there was fear of overproduction industrialists would decrease the number of shifts and lay-off part of their labour force, see for example FO 371/20835, f.21-23; Aderholt, 1938, 87-88
45. Bharier, 1971, 123
46. Simmonds, 1935, 53; When visiting the industrial exhibition in Shirāz in 1937, Reẓā Shāh said: "No more spinning mills are needed. You should not all pursue the same lines of endeavour. It is perfectly proper if the yarn produced by the spinning mills is turned into cloth to meet our internal requirements, but it would be detrimental to the country if the number of spinning mills was increased," Wilber, 1975, 179
47. Bharier, 1971, 172
48. Simmonds, 1935, 29
49. See below p. Table 13
50. FO 371/20050, Report on Economic Conditions of Esfahan in October 1936, f. 128
51. Ibid., for a list of the principal investors see Ibid., f.137-143
52. FO 371/20830, A Memorandum on Economic Affairs in Azabaijan, (Tabriz, December 31, 1936), f. 179; In the South investors continued to show considerable lack of enthusiasm, although "Governors continue to exhort people to form Companies or subscribe to those in the North, but beyond this nothing is done", FO 371/20050, Annual Commercial Report for Khorramshahr and Abadan ending March 20, 1936 f.72; nevertheless in 1935 a cotton spinning and weaving mill was started in Ahvaz, Ibid., f. 71 which had to operate under disadvantageous conditions and therefore did not do much to provide capitalists with the incentive

to invest in industry, see e.g. FO 416/95, f.75. When Reza Shāh visited the mill at Ahvāz in 1937, the owner asked the Shāh for cheaper cotton, for the mill worked at considerable disadvantage because the cotton had to be imported largely from the North, while the finished yarn had to be sent north for sale. Cost of transport made the Ahvāz mill's product very expensive. The Shāh replied that the supply of local-grown cotton would soon be sufficient and he added "you should import weaving plant in order to avoid the necessity of sending the yarn north". The Ahvāz plant was not the only mill having difficulties with the supply of cotton, see also FO 371/20050, f.74

53. Soheily, 1950, 40
54. Simmonds, 1935, 23; FO 371/2900 (Kermanshah 1938) f.114-15; Ibid., (Khorramshahr), f.151; FO 371/20048 (Mashhad), f.175-77
55. FO 371/20835, f.22, "this is not surprising, since the price they formerly got for their yarn was three times the cost of Japanese yarn of the same quality c.i.f. Bushire;" FO 371/20052, f.214; FO 371/20834, f.180; Gielhammer, 1939, 229 mentions profits of 40 to 50%; on p.263 he mentions average profits for 80% of the textile industry between 1934-1937 of 20, 36, 34 and 21 per cent. According to the Government, dividends paid by industrial companies averaged 22.3% between 1931 and 1937, see Banque Mellié Iran 1939a in particular p.812 and Table 4
56. FO 371/20050, f. 130 (Esfahan, 1936)
57. Gray, 1937, 7
58. Bharier, 1971, 174; Adherolt, 1938, 88 mentions an increase of the working hours per number of spindles from 24,699 hours in 1313/1923 to 59,404 hours in 1315/1936
59. FO 371/20835 Memorandum, f. 180
60. FO 371/20835, Report on Shiraz, f. 21-22
61. Simmonds, 1935, 31; Avery, 1965, 309, 313, 325
62. Simmonds, 1935, 22; FO 371/18995, f.129; Pārs Agency (f) 141 (part two) which has a picture of the stand of the Khollar wine factory in Shīrāz; Ettela'āt newspaper, 1329/1950, 126, 134
63. Bharier, 1971, 34

64. Abdullaev, 1968, 84
65. Mahrads, 1978, 207
66. FO 371/20839, Intelligence Summary nr 28, October 23, 1937, f.30; the cement factory was also shown on Iranian stamps issued in 1935
67. Abdullaev, 1968, 87. His data for 1930 need correction, however. See e.g. Ferrier, 1982, 401, Table 10.4 According to the newspaper Setāreh-ye Sorkh (published in Germany), nr. 7, April 8, 1930, Chaqueri, 1979, 290 the labour force in 1930 was composed of the following selected groups:

oil-industry	30 000
fisheries (seasonal)	3 000
textile industry	2 000
carpet factories	100 000
dockers/ports North & South Iran	2 000
rail and road construction	15 000
drivers & assistants	15 000
tobacco, tannery, chemical	
(dyeing) industry	4 400
printers	1 000
servants & government officials	<u>15 000</u>
	188 000

Although this figure is too low, the data for the individual sectors of economic activities are good estimates. The labour force for the sector 'servants and government officials' is higher, however, for in Tehran alone 23,261 government officials were employed in 1928, see Tehran 1310/1931, 72

68. Bharier, 1971, 150-69
69. See Floor, 1980; Issawi, 1971, chapter Industry
70. Abdullaev, 1968, 79; according to Mahrads, 1978, 234 there were 37 textile mills in 1940; according to Korby there were 41 textile mills in 1941, Korby, 1977, 60
71. Abdullaev, 1968, 79
72. Ibid., 79-80
73. Ibid., 80; Mahrads, 1977, 224
74. Issawi, 1971, 307

75. Sālnāme 1314(1935), 149
76. Abdullaev, 1968, 80; see also annex B
77. Abdullaev, 1968, 81
78. Ibid., Mahrāz, 1978, 224
79. Abdullaev, 1968, 81
80. Ibid.
81. Ibid., 83
82. FO 371/27249 (October 2, 1941), f. ; according to Abdullaev, 1968, 83 only some 600 men were working in the tannery factories in Tabriz
83. Ibid., 82
84. This statement is not completely true. There were two small railways in Iran, one from Tehran to Shāh 'Abdol'azīm (nine miles) and another between Mahmūdābād and Amol, William J. Olson, "The Mazandaran Development Project and Haji Mohammad Hasan," in: Kedourie & Haim, 1981, 38-55; Millspaugh, 1973, 277
85. Abdullaev, 1968, 78
86. Ibid., 76
87. Ibid., 83
88. based on Edwards, 1949,
89. Ibid., 99, "Weaving is organised in the factories as follows: each loom has its ostad or head-weaver, who is expected to bring her own nakcheh nevis (lit. design writer) and shagirds or apprentices. . . A good ostad with her nakcheh nevis and two shagirds tie about 25,000 knots a day"
90. Ladjevardi, 1981, 99 quoting R.Hare, December 12, 1935 (891.655/30) US National Archives
91. Soheily, 1950, 49
92. Ibid., 48-49 It was only in April 1937 that the Council of Ministers decided to constitute an "Economic Council for the solution of the economic problems of the empire". In this council three non-official persons versed in economic affairs were included, FO 416/95, Seymour to Eden, April 24, 1937, f.72 (see also Journal du Téhéran of April 16, 1937 annexed to Ibid.).
93. Issawi, 1971, 379

94. Grundwald and Ronall, 1960, 213, Table: see also Soheily, 1950, 43
95. Many industries were also established because of the desire to bring industry and progress into the provinces. Apart from the case of Ahvāz, mentioned above in note 80, there was, for example, the factory in Yazd where there was no cotton at all to spin or weave "elle ne doit son activité dans cette branche qu'à la force de l'atavisme et à l'esprit d'entreprise de ses habitants." Alami, 1939, 121; this attitude led the British embassy to make the following comment: "When the Shah orders a railway, a harbour or factory, one has the feeling that he does so, not because the estimates of the experts show that it will be profitable, but simply because he feels that every respected country had a railway &c., and because it gives him an inferiority complex not to possess one also," FO 416/94, Butler to Eden, June 26, 1936, f.97
96. FO 416/113, Annual Report 1928, f.58
97. Gielhammer, 1940b, 122
98. Farrokh, 1347/1968, 416-18, 423-26 (picture on p.425), 434-44
99. Bharier, 1971, 176, note 22
100. See for further details Banque Mellié Iran, 1939b
101. See Issawi, 1971, 379
102. "The condition of the labouring class has (and this is becoming rapidly more evident) deteriorated under crushing taxation on every necessity of life" FO 371/20048, f.177 (report by Daly on the situation in Eastern Persia); and Floor, (forthcoming)
103. "A rising generation of young men who feel that these changes ought to bring them prosperity, but that they are not doing so, and therefore something is wrong," FO 371/20048, Butler to Eden, July 10, 1939, f.175; see also Abrahamian, 1982, 136 f. on this subject in general
104. "Complaints are heard against the government from time to time. These are the inevitable result of measures to secure increased revenue for the need of the fighting services and of the civil administration. The merchant class in general is dissatisfied with the restrictions on

trade and the interventions of Government as a trader. But as individuals many recognise that they are paying in taxation no more than before and that they are now living under more favourable conditions of security. And all educated classes realize with pride that the work of progress has been carried out without binding the country with foreign loans." FO 371/20048, Hoyland to Butler, Shiraz, April 15, 1936, f.136

ANNEX A.

List of existing factories in Iran (1311/1932)

Location	Type	Owner/Founder
Tehran	Spinning Mill	Sanī'oddouleh
	Leather/tannery Bāghshāh	Amīr Monazzam
	Gun-powder Parchīn	State
	Gun-powder Shemrān	State
	Arsenal	State
	Mint	State
	Electricity	Hājj Hosein Āqā Mahdavi
	Majles Printing Office	State
	Soap making	Hājj Rabī' Āqā
	Soap making	Gholām Reżā Dārūgar
	Soap making	Delī Company
	Shoe making	Rāghibiyān, Kāzerunī
	Paint	State
	Brick kiln	Sheibānī
	Repair plant	Tramway and Railway Company
	Car repair plant	State
	Glass making	Hājj Mehdī Zājājī
	Glass making (Chāleh Hīṣār)	Hājj Moḥ. 'Alī 'Arab
	Cloth making (hand)	MohtashemasSaltāneh
	Cloth making (hand)	Āqā Moḥ. Kāshī
	Hosiery	Qods Jorābbāfi Company
	Hosiery	Meshkwat Jūrābchī
	Hosiery	Mīrzā 'Alī Akbar Omīdvār
	Hosiery	Mīrzā Moḥ. Soheilī
	Wheat & chalk mill	Karīmkhān Amīr Khosrovī
	Lime pounding	Mīrzā 'Abdollāh Neẓāmī
	Steam mill	Esmā'īl Khān
		Moḥ. Āqā Khorram
		Mīrzā 'Alī Khān
	Tannery	Mr. Kentjens
	Tannery	Arbāb Sharyār Jamshīdī
	Sugar mill Kahrīzak	State

Tabriz	Match factory	Hājj Moḥ. Raḥīm + Hājj Moḥ. Bāqer Khoḡī
	Twining	Hājj Yūsef Āqā Qazvīnī Hājj Reḡā Tobī
	Cloth making	Kerbelāī Ḥosein Āqā Tabrizī
	Wool spinning	Hājj Taqī Jūrābchī
	Wool carding & steam mill	ʿAbdollahzādeh
	idem	Mashhadī ʿAlī Āqā Jūrābchī
	Tannery 'Iran'	Ramazānī va Qolipūr
	Wool spinning	Hājj ʿAlī Moḥ. + Hājj Moḥ. Bāqer
	Steam mill	Hājj Ḥosein Ghājī
	Wool spinning	Hājj ʿAbbāsḡolī Hanīfazādeh
	Glass making	Shāfrāru
	Hosiery	Mīrzā ʿAbdorrahīm + Raḥīm Āqā
	Hosiery 'Shams'	ʿAlī Āqā Māshīnchī Shams & Bros.
	Cigarette paper	Hājj ʿAlī Asghar
	Soap & Cigarette "Mir"	Shāhgeldiyān c.s.
	Almond oil press	Jebriḡ Sahākiyān Salmāsī
	Electricity	Company (private)
Ardabil	Electricity	Private Company
Yazd	Wool weaving	Ostād Gholām Ṣanʿatī
	Hosiery/Clothes making	Akhvān Gorjī
	Hosiery/Rice Mill	Hājj ʿAbolqāsem Gorjī & Rasūlī

Shīrāz	Paint	State
	Carpentry plant	State
	Smithery	State
	Electricity	Private Company
Esfahān	Spinning & weaving mill	Hājī Moḥ. Ḥosein Kāzerūnī
	Electricity	Mīrzā Faẓlollāh Khān Dehdashtī
	Tobacco & cigarette mill	Mīrzā Ḥasan Khaṭeibī
	Cigarette factory	Āqā Moḥ. Qāsem Rāstī
	Cigarette factory	Khājīk
	Cigarette factory	Sayyed Moḥ. Javād Kasāī
	Cigarette factory	Shams Comp.
Qazvīn	Motor mill	Ṭāsevānderyūnī Yunānī
	Electricity/iron plant	Hājī Raḥīm Āqā Qazvīnī
	Yarn and hosiery, soap	E'temād Comp, Kūros
	Oil press	Ghaḥfārī Bros.
	Wool washing & weaving	(not specified)
Bandar Lengeh	Steam flour mill	Hājī 'Abbās'alī Moqīm Lengeh
	Water lifting (wind)	Hājī Moḥ. Rashīd Fekrī
	Lemonade and soda	Hājī Moḥ. 'Abdollāh Bolūki
	Steam flour mill	Ostād Moḥ. Kāzerūnī
	Water lifting (steam)	Āqā Sayyed Moḥ. Kāmel
	Lemonade and soda	Sīnā Āzarī

Nāserī	Electricity	Mīrzā Hosein Khān
		Movaqqar
	Oil-press & soap making	Hājj Āqā Mashallāh
		Dezfūlī
Bandar ‘Abbās	Ice-making, 5 plants	various persons
	Steam mills, 12	various persons
	Electricity & ice plant	Hājj Sheikh Aḥmad
		Gallehdārī
Jāsk	Electricity	Telegraph office
	Electricity	Wireless
Mohammareh		
	Electricity	Hājj Jāsem Boḥrānī
	Ice making	David Mark & Āqā
		Asadolāh Badī
	Ice making	Hājj Jāsem Boḥrānī
	Motor mill	David Mark
	Motor mill	‘Abūd Mollā Aḥmad &
		Hājjī Sa’d Me’mār
	Motor mill	Hājj Jāsem Boḥrānī
	Motor mill	Mīrzā Jalāl Movaqqar
Būshehr	Wheat mill	Āqā Ḥasan
	Wheat mill	Hosein & Ḥabīb Dehdashtī
	Wheat mill	Seyyed ‘Alī
	Wheat mill	Hājj Gholāmreżā
	Wheat mill	Kerbeā’ī ‘Alī
	Wheat mill	Kerbeā’ī Abolkhabbāz
	Wheat mill	Kerbeā’ī Aḥmad
	Wheat mill	Seyyed Kāzem Dehdashtī
	Electricity & ice making	Private company
	Ice making	Hāggī Mekzād

Ābādān	Steam mill Steam mill Steam mill Electricity Ice making	Hājī Hasan Hājī Abūl Hājī Moṣṭafā Mīrzā Hosein Movaqqar Ostād Dā'ūd & Badī'
Dezfūl	Rice cleaning	Sayyed Moḥ. Khān Veṣāl & Co.
Fallāhīyeh	Steam mill	Hājī Masjed
Hendījān	Steam mill	Kerbelā'ī Māndanī & Hājī Ra'īsottojjār Deilamī
Neishapūr	Electricity Electricity Cotton ginning Cotton ginning Cotton ginning Cotton ginning	Malek Qāsem Mīrzā'ī Municipality Hājī 'Abdollāh Bros. Hambārsom & Co. 'Aliyof Haqq Nazariyān
Turbat	Electricity & Cotton ginning	Āqā-ye Farshī
Qochān	Alcohol Electricity	Hasan Āqā Kāshāneskī & Co. Municipality & M. Hārtavanīyān
Mashhad	Electricity Cigarette making	Shrine Kūzeh konānī

Resht	Soap making	ʿAlī bandeh Qolipūr
	Soap making	Ebrāhīm Ghaḥfārzādeh & Co.
	Rice cleaning	Mashhadī Moḥ. Hosein Mīkhchī
	Ice making	Hājj Rostam Bādkubehī & Hamzavī
	Ice making	Yūsef Gūshfīl
	Ice making	Mr. Dār Kūpīkes
	Lemonade making	Hasan Āqā & Co.
	Silk weaving	Russian
	Silk weaving	Hājj Moʿenottojjār & Russians
	Electricity	Moʿenolmamālek & Co.
Lāhījān	Hosiery	Hosein Āqā Esteqāmat
	Hosiery	ʿAbbās Jūrābchī & Moḥ. Ebrāhīm Šanʿat
	Electricity	Arbāb Keikhosrou
	Rice cleaning	Darākūb Bīlīrīs
	Rice drying, 9 plants	various persons
	Tea factory	State
Pahlavī	Tea factory, 5 plants	various persons
	Wheat mill	Abīshomī Comp.
	Timber	Tāḡāʿos & Co.
	Ice making	idem
Lengerūd	Electricity	(not specified)
	Cotton dryers, 8 plants	various persons
Solṭānābād		
	Electricity	Seḥāmassolṭān Bayāt & Co.
	Paint, dying, soap making	Tāvtānjān

Bandar Jaz	Timber	Sīmōn
	Cotton cleaning & electricity	ʿAbdollāh Qāsemyān
	Cotton cleaning/soap making /cotton seed press/timber	Kerbelāʾī Moh. Hosein Akhvīn
	Cotton cleaning	Russian State
Shāhrūd	Electricity (for cinema, mill and lemonade making)	Hājī ʿAlī Akbar Ṣadīq & Co.
	Cotton cleaning	Messrs. Ikhyānī
	Cotton ginning in Jājorm district	idem
Luristān	Electricity	Hājī ʿAbdolkarīm Amīnī Seyyed Mojtabī
	Electricity	Soltān Hesāmoddīn Rāghebiyān
Astarābād	Electricity	Bāgrād Mārtāniyāns
	Cotton ginning (water)	Hājī Seyyed Kāzēm Hoseinī
Kord Mahalleh	Cotton ginning (water)	
	14 small plants	n.n.
Gemesh Teppeh		
	Motor mills, 4 plants	n.n.
Ashraf	Cotton ginning	Rostamkalāʾī Bros.
Hamadān	Electricity	Hājī Nāserolmamālek Sharīfī & Co
	Match factory	Hājī Ḥasan Partavī/Idle/
Kāshān	Electricity	Keikhosrou Jampūr Parsī & Co.
	Cotton ginning	Hājī Taqī ʿAqā-ye Taqavī

Qom	Electricity 'Astaneh' Cotton ginning Electricity 'Bozorg'	Shrine Russian Cotton Company State for the shrine
Ālīābād	Silk factory	Qannād & Municipality
Sārī	Electricity	Qannād & Municipality
Bābol	Cotton ginning Barfurush 6 plants Electricity Oil pressing & soap making Electricity	various persons/ 1 idle the rest operate during 4 months per year Qannād & Municipality Qannād & Mīrzā Gholām Hosein Chītsāzī & Co. Qannād Comp. & Municipality
Mashadesar	Electricity Cotton ginning	Fisheries Comp. Mr. Qannād

SOURCE: Keihān, 1311/1932, vol.2, 301-08; Pārs Agency, (b)
162-67

ANNEX B

List of factories in 1940

TABRIZ

Name/ owner	type of factory	date of erection	no. of workers	source
Khosrovī*	leather tannery	before 1931		FO 371/20830
Omīd	do	do	5,000	do; FO 371/27249
Īrān	do	do		do
Vahābzādeh Bros.	do	1936		Pārs Agency (e), 217
Vahābzādeh Bros.	skin pickling	before 1931		do
Khoyī*	match	before 1931		do
Qazvīnī	cotton spinning	do	400	do
Khoyī				do; Mahrad,
Calcuttachi	do	do		1978, 258
do*	wool spinning	do		do
do*	wool weaving	1936		do
Qazvīnī	wool spinning & weaving	1936		do
Jorābchī	do	before 1931	300	do; Mahrad, 1978, 258
do	wool carding	do		do
Sahākiyān	do	do	183	do; Abdullaev, 1968, 97
Khoyī				do
Calcuttachi	do	do		do
Bāvāriyā	beer brewery	do		do
Sahākiyān	do	do	90	do; Abdullaev, 1968, 79
do	box making	after 1931		do
do	flour mill	before 1931		do
Rafī*	do	after 1931		do

List of factories in 1940
TABRIZ/contd.

Name /owner	type of factory	date of erection	no. of workers	source
Sahākiyān	soap making	before 1931		do
Mīr	do	do		do
Rashīdī	do	do		do
Yūsefī	do	do		do
Eqdām	do	do		do
Mīnū	do	1936		Pārs Agency (e), 216
private	7 Hosiery	?	670	Abdullaev, 1968, 79
private	glass making	* 1934		FO 371/18995. 1,129
private	saw-mill	?		Mahrad, 1978 225
state	grain silo	after 1936		Ibid., 224
private	rice-mill	idem	50	Ibid., 258
private	cotton-ginning (8)	?		Ibid
private	knitted goods	?	70	Ibid
	oil-mill	?	8	Ibid
private	tricotage (4)	1936		Pārs Agency (e), 216

*means extended or modernised under the impulse of the new economic policy.

ZANJAN

Sa'adat	match	after 1932	-	FO 371/20830 1,206. Abdullaev, 1978, 82
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MIYĀNDĀB

State	sugar-mill	1936	-	Zāhedī, 1325/1947, 44; FO 371/20830 f.206
Lakvānī	flour-mill	after 1932	-	do

MARĀGHEH

Budāghiyān	fruit-cleaning	before 1931	-	FO 371/20830, f.206; Mahrad, 1978, 258
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REZĀYEH

unknown	hemp-mill	1936	-	FO 371/20830, f.206
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MASHAD

private	leather tannery	1936	-	Mahrad, 1978, 309
state Āb-e-Kūh	sugar mill	1936	-	do
Khosrovī	cotton spinning	1936	900	do. FO 371/27249, f.375
private	flour-mill (3)	?	-	Mahrad, 1978, 309
private	oil-press	-	-	do
private	papyrus-mill	-	-	do
private	cotton-weaving	-	-	do
private	wool spinning	1932	-	do; Gielhammer, 1939c, 292
private	candy	-	-	do
private	chocolate	-	-	do
private	furniture	-	-	do
private	fruit-canning	-	-	do
private	alcohol	-	-	do
private	cotton-ginning	-	-	do
private	saw-mill	-	-	Ibid., 226
state	grain silo	-	-	Ibid., 224

List of factories in 1940/contd.

SEMĀNĀN

Name/ owner	type of factory	date of erection	no. of workers	source
private	cotton-spinning	1932		Zāhedī, 1325/1947 33; Gielhammer, 1939a, 231; Pārs Agency (e), 213

VARIOUS

Kermānshāh/ state	oil-refinery	1935	259	FO 371/20052, f.213; Korby, 1977,60;
Kermānshāh/ state	sugar-mill	1935	700	Zāhedī, 1325/1947, 44; FO 371/44222, f.700
Kermānshāh/ state	grain silo	-	-	Mahrad, 1978,224
Kermānshāh/ private	tricotage (several)	-	-	Pārs Agency,(e), 216
Hamadān/ Yānegānī	leather tannery			FO 371/21900 Mahrad, 1978, 225
Hamadān/ private	match			ibid.
Hamadān/ Hakīm	yarn spinning	-	10	Gielhammer, 1939c,294
Ahvāz/ private	cotton spinning & weaving	1935	700	FO 371/20050, f.2; Gielhammer, 1939b, 259
Ahvāz/state	grain silo	-	-	Mahrad, 1978, 224

List of factories in 1940/contd.

VARIOUS

Name/ owner	type of factory	date of erection	no. of workers	source
Būshehr/ private Etmādīyeh	cotton spinning & weaving	1936	1,026	FO 317/40222 f.41
Qom/private	cotton spinning	1936	-	Pārs Agency,(e) 214; Gielhammer, 1939b, 262
Perskhlokom	cotton cleaning	1925	1,500	FO 416/78 Intelligence Summary nr.30, 13
Bandar ‘Abbās/Khonjī	cotton spinning	1935	-	Pārs Agency,(e) 213; Gielhammer, 1939b, 262

KERMĀN

private	cotton spinning	1937	696	Gielhammer, 1939b, 262; Abdullaev, 1968, 97
private	wool carding (3)	-	32	Ibid., FO 371/ 20040, f.186

YAZD

private/ Eqbāl	cotton spinning	1939	1,074	Abdullaev, 1968, 79; FO 371/18995; Gielhammer, 1939b, 259; Pārs Agency, (e), 213
private/ Herātī	wool spinning	1935	250	Gielhammer, 1939b, 259; Pārs Agency, (e), 219

List of factories in 1940/contd.
YAZD/contd.

Name owner	type of factory	date of erection	no. of workers	source
private/ Darekhshān	wool spinning	1933	-	Pārs Agency,(e), 215
private	tricotage (several)	-	-	Pārs Agency,(e), 216
<u>KASHAN</u>				
private	wool carding	1934	10	Abdullaev, 1968, 79; Pārs Agency, (e), 215
private	yarn spinning	-	-	Ibid. 213; Gielhammer, 1939b, 262
<u>QAZVIN</u>				
private	cotton spinning & weaving	1935	400	Mahrad, 1978, 282, according to Golrīz, 1326/1947
private	wool spinning	1935	400	Mahrad, 1978, 282, according to Golrīz, 1326/1947, 702 there were 320 workers.
private	flour mill (3)	1932/34	-	Mahrad, 1978, 282, Golrīz, 1326/1947, 705
private	woolcarding	1939	-	Golrīz, 1326/1947, 707
private	distillery	1933	35	Ibid., 708
private	cotton ginning	1935	30	Ibid., 713
private	leather tannery	1939	80	Ibid., 713-14
private	oil-mill	1936	32	Mahrad, 1978, 282
private	soap-works	1937	-	Golrīz, 1326/1947,714

List of factories in 1940/contd.
QAZVIN/contd.

Name /owner	type of factory	date of erection	no. of workers	source
private	carpet weaving	1939	122	Ibid., 714
private/ Qorūghlī	wool spinning & weaving	1929	200	Gielhammer, 1939c, 292
<u>ESFAHĀN</u>				
Vatan/private	cotton spinning	1923	2 400	FO 371/20050, f.137
Risāf/private	do	1934	1 100	Ibid.,
Zāyandeh rūd	do	1935	1 400	Ibid.,
'Alāolmolk	do		400	Ibid.,
Maktab	do	1935	-	Ibid.,
Chīt	do	1935	-	Ibid.,
Shāh Reżā	do	1935	-	Ibid.,
Risandegī	do	1935	-	Ibid.,
Pashm	wool spinning	1935	-	Ibid.,
Šana'eh-ye pashm	do	1935	1 000	Ibid.,
Kāghaz-e īrān	paper mill	1935	80	Ibid; Abdullaev 1968, 85
private	paper mill		70	Abdullaev, 1968, 85
Etteḥād-e Shāh Reżā	cotton spinning	1935	-	FO 371/20050, f.137
Katvā?	do	1935	-	Ibid.,
private	match	-	-	Abdullaev, 1968, 82
private	hosiery	-	89	Ibid., 79
state	grain silo	-	-	Mahrad, 1978, 224
private	boot factory	193?	-	FO 371/20050, f.128
private (?)	weaving factory	1940	-	Sohelly, 1950, 83
private (?)	spinning factory	1938	-	Kia, 1939, 142 see also Gielhammer, 1939a, 230; 1939b, 259; 1939c, 292; Pārs Agency(a), 213-4.

List of factories 1940/contd.

MĀZANDARĀN & GILĀN

RESHT

Name /owner	type of factory	date of erection	no. of workers	source
private	hosiery (3)	-	54	Mahrad, 1978, 224; Abdullaev, 1968, 79; Pārs Agency (e), 216, 219
state	jute	1933	500	Zāhedī, 1325/1947, 40; Mahrad, 1978, 224; Gielhammer, 1939c, 295
private	flour mill	-	-	Mahrad, 1978, 224
private	brewery	-	-	ibid.,
private	saw mill	-	-	Abdullaev, 1968, 82
private	glass works	-	-	Mahrad, 1978, 225
private(?)	silk-reeling (several)	-	-	Gupta, 1947, 74; Kia, 1939, 143

ENZELI

private	saw mill	-	-	Mahrad, 1978, 225
state	ship yard	1938	-	Gupta, 1947, 76

BĀBOL

private	leather tannery	-	-	Mahrad, 1978, 225; Abdullaev, 1968, 83 says it is in Barforush
private	glass works	-	-	Mahrad, 1978, 225
private	weaving	-	150	ibid., 295
private	oil mill	1935	20	ibid., Pārs Agency(e), 218
private	soap works	-	-	Pārs Agency(d), 152

List of factories in 1940/contd.

SHAHI

state	cotton spinning	1932	900	Mahrad, 1978, 295; according to Abdullaev, 1968, 79, the workers numbered 3396
private	fruit canning	-	146	Abdullaev, 1968, 81;
state	sugar mill	1933	1 000	Pars Agency(e), 211; Gupta, 1947, 73
state	jute-mill	-	-	Gupta, 1947, 74

VARIOUS

Ashraf/state	cotton spinning	1935	1 000	Mahrad, 1978, 295;
Bandar-e Khaz	oil mill	-	55	Ibid, 295
Bandar-e Khaz	rice mill	-	25	Ibid.,
Chalus	silk weaving	1935	-	Pars Agency(d), 150
Shahrud	match	-	-	Abdullaev, 1968, 82
unknown	rice-cleaning (16)	-	-	Mahrad, 1978, 225, 295
unknown	tea-mills (9)	-	450	Abdullaev, 1968, 82
Shirgah/state	saw-mill	1934	-	Ibid., Pars Agency, (e), 212

TEHRAN

private	hosiery (17)	-	771	Mahrad, 1978, 224; Abdullaev, 1968, 79
private	flour mills	-	-	Mahrad, 1978, 224
state	grain silo	-	-	Mahrad, 1978, 224
private	tobacco	1937	1 750	Ibid, 225; Abdullaev, 1968, 81; FO 371/20833, f.23
private	brewery	1934	-	Mahrad, 1978, 225; FO 371/18995, f.128
private	leather/tannery (4)	-	-	Mahrad, 1978, 225

List of factories in 1940/contd.
TEHRAN contd.

Name/ owner	type of factory	date of erection	no. of workers	source
private	match	-	-	Ibid; Abdullaev, 1968, 82
state/Shāh Abdolazīm	cement	1934	1 000	Ibid; Mahrad, 1978, 225 FO 371/20833
?	glass-works	1939	520	Mahrad, 1978, 225; Abdullaev, 1968, 82
state	silicate	-	-	Mahrad, 1978, 225
private	saw-mill (3)	-	-	Ibid.
state(Rey)	glycerine & soap	1940	450	Abdullaev, 1968, 81
state	soda	-	1 024	Ibid.
Karaj	chemical	-	500	Ibid.
state	amonia	1936	200	Ibid.
state	salt	-	80	Ibid.
state	vaccine	-	40	Ibid.
state	electrolite	-	200	Ibid.
state/Vasak	gas-masks	1940	400	Ibid.
state	powder	-	500	Ibid.
state/Karaj	sugar mill	1932		Pārs Agency, (e), 149
state/Kahrīzāk	sugar-mill	1931		Ibid.
state/Varemin	sugar-mill	1934		Zāhedī, 1325/1947, 46
Sanī'addouleh	cotton spinning	1904	-	Gielhammer, 1939a, 230
Jorābchī	yarn spinning	1936	-	Pārs Agency, (e), 214
Private/ Qorūghīf	yarn spinning	1933	-	Ibid; Gielhammer, 1939c, 252
Private/ Dārūgar	soap works	-	-	Pārs Agency, (e), 216
Private/ Meshkat	cotton spinning	1936	-	Gielhammer, 1939c, 262

List of factories 1940/contd.
SHIRĀZ

Name/ owner	type of factory	date of erection	no. of workers	source
Stock Comp.	cotton spinning & weaving	1929	630	FO 371/40222
Stock Comp. Fārs	do	1934	630	do., FO 371/ 20855 & 20834 states 3 shifts of 200
state/ Mervdasht	sugar mill	1935	200 perm. 800 seas.	FO 371/40222
Dehqān Bros.	cotton spinning	1939	180	FO 371/20835 f.22 in 1 shift
Khollar comp.	spirit & wine making	-	-	FO 371/20835 f.23; Mahrad, 1978, 224 See also Pārs
state	grain silo	-	-	Agency, (e), 213; Gielhammer, 1939b, 258, 262

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