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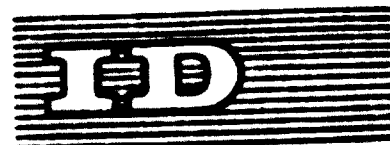
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INDUSTRIAL LOCATION POLICY IN MEXICO ✓

by
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STATISTICAL APPENDIX

I. GEOGRAPHICAL DISTRIBUTION OF MANUFACTURING ACTIVITIES

1. Past and Future Industrial Development

The modern industrial era in Mexico began in 1880, with railway building and the construction of metallurgical plants for the large-scale production of industrial metals or metal concentrates. Industrial development really began to gain momentum, however, at the time of the Second World War, when the volume of manufacturing output began to grow at an unprecedented rate and important changes were made in the structural composition of the manufacturing sector.

The increase in Mexican manufacturing output was stimulated during the war-years by increasing domestic earnings and by the lack of foreign competition both in and outside the country. Under these conditions, the volume of industrial output showed an impressive annual increase of 9.4 per cent between 1939 and 1945, a record rate which even exceeded the substantial rise of 8.1 per cent in real national income for the same period. The share of the processing industry in the gross national product thus went from 16.3 per cent in 1939 to 18 per cent in 1945.^{1/}

The post-war years, on the other hand, were notable for the high level of industrial investment achieved. As the result of massive sales of its manufactured goods abroad, Mexican industry emerged from the war with funds to finance its own expansion and proceeded to increase its capacity in line with an optimistic assessment of the prospective post-war market situation at home and abroad. The majority of industrial investment went into small new enterprises or towards backing and extending existing industries.^{2/}

^{1/} Mixed Committee: The economic development of Mexico and its capacity to absorb foreign capital, *Fondo de Cultura Económica, Mexico, 1953, p.224.*

^{2/} *Ibid, p.225.*

Between 1945 and 1950 the volume of manufacturing output grew at an average annual rate of 6 per cent, as against the 9.4 per cent achieved during the war years. This reduction in growth rate is explained by the fact that the cessation of armed conflict resulted in a revival of foreign competition for the domestic market and loss of the foreign market for Mexican-produced goods; in addition to all this there was a rise in domestic prices caused by high deficit public expenditure. The salient features of this five-year period are the emergence of a tendency to establish large factories, particularly for capital goods, and the beginning of active Government intervention in the form of industrial investment.^{3/}

Over the period 1951-1955, output in the manufacturing industry grew at about the same annual rate as national income; - the former at 4.8 per cent, the latter at 4.6 per cent. As a result, industry's share in the national product remained constant over this period, being in the region of 13.4 per cent.^{4/}

Over the period 1956-1960, development in the industrial sector was consolidated and the average annual increase in industrial production (7.4 per cent) was higher, than that of the national income in these five years (5.2 per cent). The contribution of industry to the gross national product was at times strikingly high, being more than 20 per cent in 1960.^{5/}

It should be emphasized that during the period 1951-1960 the general picture was one of fundamental change in the structure of the conversion industries: the index for industries producing iron and steel, petroleum and its derivatives, and textiles showed a downward trend, while the industries producing food stuffs, chemicals and chemical products, together with the engineering sector, contributed a greater share to the volume of industrial production.^{6/}

^{3/} Ibid, p.225 and 232.

^{4/} ECLA. El desequilibrio externo en el desarrollo económico latinoamericano. el caso de México. (The foreign deficit in the economic development of Latin America; the Mexican situation). - ECLA, Mexico, 1957, Vol. I. p.60.

^{5/} Héctor Vázquez Tercero. - Fomento Industrial en México (Industrial promotion in Mexico) - Centro de Estudios Económicos del Sector Privado A.C. - (Centre for Economic Studies of the Private Sector) - Mexico, 1966, p.22.

^{6/} Gonzalo Robles, El desarrollo industrial. México 50 años de Revolución - I. La Economía. Fondo de Cultura Económica, México, 1960, pp.202 and 203 (See also the table on page 201).

Productivity in the field of manufactured goods also underwent a change; whereas in 1950 the amount produced per employee was worth 5,971 pesos, in 1964 it was 18,023 pesos at 1950 prices, showing an annual growth rate of 8.9 per cent.^{7/}

Public and private investment in industry in the total gross investment of the country has played a larger part over recent years. In 1950 the percentage was 31.3 per cent; by 1964 it had increased to 41.9 per cent.

During the period 1939-1960, the volume of production in the conversion industries grew at an annual rate of 7.1 per cent, which represents a considerable achievement when compared not only with that in countries of similar economics, but also with the situation in the developed countries. It is far in excess of the annual rate of economic development in Mexico for the same period, which was 6 per cent. Industrialization has been the main force for progress in the growth of Mexico, as the manufacturing industries have grown more vigorously than the other sectors of the economy. To be exact the manufacturing industries, including petroleum and electrical energy, contributed 29.6 per cent of the gross domestic product in 1965, more than any other sector of the economy.^{8/} This rapid industrial growth was basically made possible by the active participation of private investors although the State also contributed to it, mainly by means of substantial investments in fields of particular importance to the nation, such as petroleum, fertilizers, iron and steel, chemical and pharmaceutical products, power generation and transmission, railways, airlines, and the manufacture of motor vehicles and railway carriages.

7/ El desarrollo Industrial de México (Industrial Development in Mexico), Centro Nacional de Productividad. - A paper prepared for the Latin American Symposium on Industrialization, Santiago de Chile, March 1966, pp.3 and 6.

8/ Banco de México, S.A., Annual Report for 1965, Mexico, 1966, p.15.

Mexican industry geared its development to the production of goods to satisfy domestic needs by import substitution. This substitution was relatively easy so long as it involved consumer and capital goods which could count on a growing and dependable home market, rigorously protected against imports; but now Mexico has greatly increased its capacity to replace intermediary or consumer and capital goods which are not only of complex fabrication but call for a much larger market than that offered at home.^{9/} The process of import substitution is posing increasing problems for rapid industrial expansion; the difficulties are due basically to the fact that the market is small, and can only expand if there is a rapid growth in the production machinery generating employment opportunities, earnings and effective demand.

The low demand on the home market derives from the fact that more than half of the population of Mexico lives in the country; there, uneven productivity brings limited returns reflected in low incomes and a standard of living practically at subsistence level. Quite apart from the acute social implications of this situation, economically speaking it makes for very low purchasing power and consequently a limited demand for industrial goods. This factor, coupled with others such as the acutely disproportionate income distribution, unemployment and under-employment, is the main reason for the fact that the domestic market, which, although expanding all the time, is still very small. The market thus hampers the industrialization process, constitutes a restrictive factor which, in turn, obstructs solution of the agrarian problem, since there is nothing to generate remunerative employment to absorb the excessive rural labour force.^{10/}

^{9/} ECLA, Hacia una dinámica del desarrollo latinoamericano (towards a dynamics of Latin American development), Mexico, 1963, p.9.

^{10/} David Márquez Ayala, La exportación factor de desarrollo (Export as a factor in development), Doctoral thesis, Escuela Nacional de Economía, Universidad Nacional Autónoma de México. Mexico, 1966, pp.10 and 11.

Within this general framework of past achievements and future problems connected with Mexico's industrialization, one crucial factor impeding progress towards new stages of development is the present inadequate location of Mexican industry which, as indicated below, is aggravating the imbalance between the various heterogeneous regions of the country. If this trend persists at the intensity revealed by the statistics it will make for low utilization of the national productive resources, thereby worsening the inequitable distribution of income already apparent throughout the country, to the detriment of expansion of the home market, and also delay solution of the basic problem of Mexico, namely the agricultural problem.

2. Present location of industry

The industrialization process in Mexico has by no means been co-ordinated throughout the various regions making up the nation as a whole. The inward growth of the Mexican economy has favoured industrial centralization since, in the establishment of industries the essential location factor has mostly been the market; and the only industries located close to the source of raw materials are those which process primary commodities, since the economic weight of such undertakings has not enabled them to be removed far from these places.

Other industrial location factors such as communications and transport, manpower, electricity, fuel and water, which predominate either singly or in combination, according to the various classes of industries, have played a secondary role as determining factors in the siting of Mexican industries.^{11/} In fact, to date, owing to government policy regarding industry and public investment, this combination of factors has been more favourable in certain regions, thereby aggravating the present inadequate distribution of manufacturing activities.

Since industry is oriented towards the home market, the bulk of the processing industries concentrate on articles for end consumption. It is thus not surprising that the majority of these establishments are to be found in the Central Region, in which most of the country's population is concentrated -- primarily in the

11/ Ernesto López Vela, Localización de la industria en México (Location of industry in Mexico) Mexico, 1963, pp.175 and 176.

metropolitan area of Mexico City and to secondary extent in the border states of the North, where in recent years the growth rate has been the highest in the country.

The following table shows the share of each of these regions in certain specific indices for 1960:

	Area (in units of 1,000 km ²)	Total population (millions of inhabitants)	Urban population* (millions of inhabitants)
Central Region	353	20,559	7,728
Northern Region	798	5,734	3,063
Other regions	816	9,710	1,605
Country as a whole	1,967	36,003	12,396

* Population in concentration of more than 10,000 inhabitants.

In 1960, the Central Region of Mexico, which is the most densely populated in the country and consists of the units of Jalisco, Colima, Aguascalientes, Guanajuato, Querétaro, Hidalgo, Michoacán, Tlaxcala, Morelos, Puebla, Veracruz, Mexico and the Federal District (see Map I), accounted for 57.1 per cent of the total national population and 69.5 per cent of the value of industrial output. In this portion of the country, urban development has been more intensive over recent years than in the rest of the country, and now accommodates 62.3 per cent of the total urban population.

The Northern Region, comprising the states of Tamaulipas, Nuevo León, Coahuila, Chihuahua, Sonora and Baja California, accounted during the same year for 23.3 per cent of the national manufacturing output and for 15.9 per cent of the total population. In other words, in 1960, 92.8 per cent of industrial activity was concentrated in nineteen of the thirty-two federative units forming the Republic, in which 73 per cent of the population of Mexico resides.

The extent of industrial centralization is even more evident if one considers that three of these units alone account for 58.9 per cent of the total value of manufacturing output.^{12/}

Notwithstanding the large part played by the Northern Region in national industrial production, the volume of industrial production is three times greater in the Central Region and one single state, the Federal District, accounts for one and a half times the value of manufacturing output of the Northern Region.

Throughout the rest of the units making up the country, industrial activity is scattered, development being characterized by small enterprises which are ceasing to be mere cottage industries and orienting their production towards supplying small local markets with products which do not call for very advanced techniques and processes. These territorial units, which cover 41.4 per cent of the area of the country and contain 27 per cent of its total population, are the site of 7.2 per cent of the manufacturing industry. Consequently, in just under one half of the country the industrial development process has not yet begun.

From Map I it can be seen that within the Northern and Central Regions, three areas have the greatest concentration of industrial production: the state of Nuevo León in the Northern Region, the state of Veracruz in the Central Region, and the area made up of the state of Mexico and the Federal District. In 1960, 65.7 per cent of the total value of national manufacturing output was concentrated in these three geographical areas.

The origin of the phenomenon of industrial centralization now prevailing in the country can be traced to historical, physical, political, administrative and economic factors which date from Colonial times and were aggravated in subsequent

^{12/} These units are: The Federal District, Mexico and Nuevo León.

decades by the railway policy of Porfirio Díaz and by the policies pursued with regard to roads and railway and electricity charges by the revolutionary governments.^{13/}

The territorial units best served by railways are to be found in the Central Region and in the north, where the main railway junctions of the country are also located. The structure of the railway network has influenced, and in many cases determined, the growth of industrial centres and, consequently, the location of manufacturing enterprises. The logical result of this is that in many parts of the country it is either impossible or very difficult to set up modern industries, owing partly to the scarcity or absence of railway communications, often combined with the dearth, backwardness or non-existence of other economic factors.

Furthermore, railway freight charges are so arranged as to encourage industry to move towards the Central Region, and in particular the Federal District. Thus, in the most categories, charges for the transport of raw materials, and particularly minerals, are low whereas those for finished products are high. As a result, the industrialist seeks to reduce the transport of finished products to a minimum, locating his plant close to the market, regardless of how far away the raw materials may be.^{14/} Lastly, electricity charges have also tended to favour the Central Region, where the average price of power per kilowatt hour is generally equal to or less than that in the other regions of the country; however it should be noted that an even more important factor in industrial location than variations in electricity charges has been the existence of a good power service, since power is scarce in

^{13/} The intensively centralist nature of the Colonial Government gave particular priority to the Valle de México. During the Díaz era, the expansion of mining activities and the railway boom, oriented the country towards the north and set the pattern of communications. Railways were built linking the capital to the mining areas and extending to the border with the United States, to which minerals were exported. The network of roads built in more recent times followed the geographical coverage of the railway network. Paul Lamartino Yates, El desarrollo regional de México (Regional development in Mexico), Banco de México, S.A., Mexico, 1961, pp.34 and 35.

^{14/} Ibid, p.171

Mexico and vital to industrial production. The Central Region has therefore always had a large concentration of electrical industries and has come in for considerable share of all the new installations built over recent years.^{15/}

In 1930, the Central Region accounted for 63.1 per cent of the total value of the small industrial output of the country at that time, and the Northern Region for 22.1 per cent. Twenty years later, accumulation in the Central Region had decreased in relative terms to 60 per cent and increased in the Northern Region to 27.7 per cent; however the Central Region retained its position as the most important centre of industry in Mexico (see Map II). From 1930 to 1950, the states leading in manufacturing output were: Chihuahua, Baja California and Nuevo León in the Northern Region, and Mexico, Veracruz and the Federal District in the Central Region (see Tables I and II). In 1930, pride of place was taken by the Federal District, followed by Veracruz, Nuevo León, Puebla, Coahuila and Guanajuato. In 1950 the three first states remained ahead, but were followed by Chihuahua, Coahuila and Mexico. By 1960, the most industrialized areas in order of importance were the Federal District, Mexico, Nuevo León, Veracruz, Coahuila and Jalisco. Of these six states, four are in the Central Region and two in the North.

The Table below shows the changes that have taken place in the ten most industrialized States over the last 30 years.

PERCENTAGE SHARE OF TEN TERRITORIAL UNITS IN
THE INDUSTRIAL PRODUCTION OF MEXICO

	1930	1940	1960
Federal District	27.7	28.6	39.7
Mexico	3.5	4.8	10.1
Nuevo León	7.7	6.5	9.2
Veracruz	10.0	12.7	6.8
Coahuila	5.6	5.3	4.3
Jalisco	3.7	3.9	4.3
Chihuahua	1.9	6.2	3.4
Tamaulipas	2.6	4.0	3.0
Guanajuato	4.3	2.0	2.6
Puebla	6.9	3.5	2.3

^{15/} Gustavo Romero Kolbeck and Victor L. Urquidi, La exención fiscal en el Distrito Federal como instrumento de atracción de industrias (Fiscal exemption in the Federal District as a means of attracting industry) Mexico, 1952, pp.

The central market has always been the largest in the country and has undergone a process of continual expansion, so that its power of absorbing manufactured goods has grown at an extremely high rate. This increase has been achieved as a result of three factors: (1) an increase in its population from 9.5 million in 1930 to 20.5 million in 1965; (2) an increase in generated incomes and (3) an increase in the share of such income spent on products of the manufacturing industry.^{16/} The attractive force of this combination of factors has been a prime consideration in the location of industry in the Central Region and particularly in the metropolitan area of Mexico City.^{17/}

3. Degree of Industrial Concentration

With a view to assessing the extent and major characteristics of industrial concentration in the various regions of the country, an analysis was made of the industrial branches located in the hundred largest industrial centres and the statistical data arranged by States and regions.^{18/}

In 1960 these manufacturing centres accounted for 86.4 per cent of the value of national industrial production and for 71.6 per cent of the total number of workers engaged in industrial activities. These statistics thus afford a fairly detailed picture of the degree of concentration of the various branches of industry.

^{16/} Gustavo Romero Kolbeck and Victor L. Urquidí, *Op. cit.*, pp.37 and 38.

^{17/} The metropolitan area of Mexico City proper has grown from 1.6 million inhabitants in 1940 to 6.4 million in 1965, an expansion unequalled by any other area in the Republic, including the Northern and Central Regions. The Water Board, Hydrological Commission of the Valle de México Basin, El desarrollo económico del Valle de México y la Zona Metropolitana Ciudad de México. (Economic development of Valle de México and the Metropolitan Zone of Mexico City), Mexico, July 1964, pp.II-25 and III-15.

^{18/} This assessment was necessary because the Industrial Census of 1960 did not concentrate the value of production of the various industrial groups at the State level. Information on the existing branches in each industrial centre was compiled from data supplied by the National Commission on Minimum Wages, based on confidential information obtained from the General Statistics Bureau, in accordance with census results.

Table IV shows these hundred centres arranged by **value** of industrial output and Table V indicates the industrial structure of the thirty main manufacturing centres.

The conclusions to be drawn from this investigation are that concentration in the Central Region is by no means general for all industries; in some, the proportion is very high, as in the case of electricity production for which 87.6 per cent of the output is localized in that region. Other sectors arranged in order of concentration are: transport equipment (85.9 per cent), cement and other building materials (83.2 per cent); chemicals and chemical products (83 per cent); metal products, electrical goods, machinery and equipment, (82.9 per cent); coal, petroleum and its derivatives (78.5 per cent); paper and pulp products (74.7 per cent); textiles, footwear and other articles of clothing (74.1 per cent).

Apart from the iron and steel industries, those processing non-metallic minerals and non-ferrous metals and the sawmills, which are located largely in the Northern Region, most branches of industry are in the Central Region. The vast concentration of the iron and steel industry in the Northern Region is due to the rich deposits of coking coal, which is used as a fuel, and to the proximity of iron-ore deposits.^{19/}

It should be pointed out, however, that the concentration of the various branches of industry in the manufacturing centres of the Central Region is not uniform, and that it is greatest in the Federal District unit, which is taken up almost entirely by Mexico City. Most of the value of production from the industrial sectors of the Central Region is to be found in this territorial unit (See Table VI). Thus, if manufacturing enterprises are divided into basic industries and other

^{19/} The carboniferous strata of Mexico are to be found in Coahuila, Nuevo León, Tamaulipas, Oaxaca and Puebla. The majority of national reserves lie in the Sabinas river basin in Coahuila, and have provided the basis for the metallurgical coke used in all blast furnaces in Mexico. On the other hand, the main iron-ore resources used at present in the iron and steel industry come from Cerro de Mercado in the State of Durango, adjoining the parts of the Northern Region where the steel industry is situated. Carlos Prieto, La industria siderúrgica. México, - 50 años de Revolución (The steel industry in Mexico - 50 years of Revolution), La Economía, Fondo de Cultura Económica, Mexico, 1960, pp.224 and 230.

processing industries,^{20/} the industrial concentration in the Federal District, measured in terms of production value, is as follows:

	Country as a whole (per cent)	Central Region (per cent)	Federal District (per cent)
Basic industries	100	61.8	36.1
Other Processing industries	100	69	46.2
Total of industries	100	65.9	41.9

These figures show that an appreciable portion of basic industry and most of the sectors classified as "other processing industries" are to be found in one territorial unit. The Federal District accounts for 80.1 per cent of the total electricity produced, for 68.3 per cent of the value of production of the cement and other construction-material industries, for 71.3 per cent of the value of production of the transport-equipment industry, for 58.4 per cent of the production value of the metal products, electrical goods, machinery and equipment industry, 56.6 per cent of production in the chemical industry, 45.9 per cent of paper and pulp production, 39.8 per cent of the value of goods produced in the textile and clothing industries and 35.6 per cent of the food and beverages industry.

^{20/} This classification is similar to that adopted in the various publications of the Nacional Financiera, S.A., the main financing body of the Mexican Government. The basic industries thus classified are: coal, petroleum and its derivatives; iron and steel; non-metallic minerals; cement and other building materials; non-ferrous metals and electric power (this includes only sales of electric current). The heading "other processing industries" includes: food products, beverages, etc; textiles, footwear and other articles of clothing (including hard-fibre textiles); paper and pulp products; chemicals and chemical products; metal products, electrical goods, machinery and equipment; transport equipment; saw-mills and other industries.

As regards the industrial labour force, the Federal District also absorbs a large portion of the total employed in the 100 manufacturing centres of the nation. In 1960, 66.6 per cent of the country's industrial labour force was concentrated in the Central Region and 40 per cent in the Federal District, as indicated in the following Table: (See also Table VII)

	Country as a whole (per cent)	Central Region (per cent)	Federal District (per cent)
Basic industries	100	60.9	34.6
Other processing industries	100	70.9	44.1
Total of industries	100	66.6	40.0

In this connexion, it is instructive to note the relative share of the various industrial groups in the section under examination in the total value of national manufacturing production for the decade 1950-1960; this analysis has to be made in order to demonstrate not only that there is a marked concentration of certain categories of industry in the Central Region and the Federal District but that the most dynamic sectors have managed to gain a foothold in those places, thereby undesirably constituting a contributive factor to the intensification of already rapid process of industrial concentration.

	1950 (per cent)	1960 (per cent)
<u>Basic industries</u>	<u>43.91</u>	<u>27.82</u>
1. Coal, petroleum and its derivatives	8.76	4.54
2. Iron and steel	8.04	4.47
3. Non-metallic minerals	0.16	0.84
4. Cement and other building materials	10.63	8.53
5. Non-ferrous metals	9.41	6.00
6. Power production	6.91	3.44
<u>Other manufacturing industries</u>	<u>56.08</u>	<u>72.18</u>
7. Food products, beverages, etc.	19.14	23.71
8. Textiles, footwear and other clothing	14.06	11.40
9. Paper and pulp products	1.76	3.05
10. Chemicals and chemical products	6.82	9.65
11. Metal products, electrical goods, machinery and equipment	4.96	6.97
12. Transport equipment	2.05	3.72
13. Saw-mills	1.30	0.50
14. Others	6.00	13.18

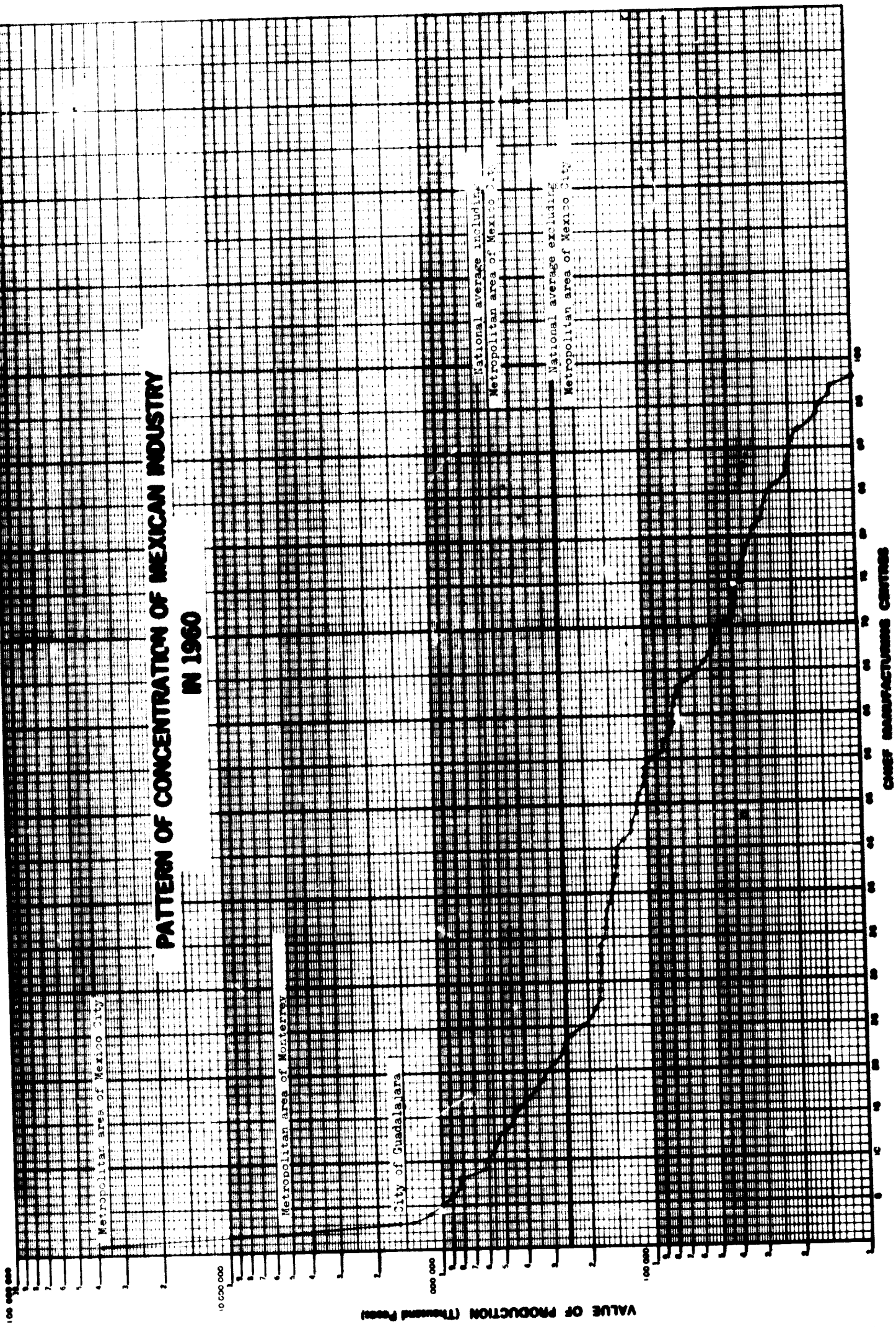
This survey shows that the most dynamic industries at the national level have tended to gravitate to the Central Region close to the market. This is especially true of the processing plants for food and beverages, paper and pulp products, chemicals and chemical products, metal and electrical goods, machinery and equipment and transport goods. Thus, as the process of industrial integration accelerates in the years to come, industrial concentration will be still further encouraged in these regions, to the detriment of the balanced industrialization of Mexico and to homogeneous regional development.

From another point of view, an analysis of the data compiled at the hundred major industrial centres in the country reveals a number of other factors which should be given attention. The value of industrial production in the metropolitan area of Mexico City is 1.2 times greater than that in the remaining 99 industrial cities of the country, despite the fact that they contain 1.8 times more population; moreover, this vast industrial centre has a volume of industrial output 5.4 times greater than the metropolitan area of the city of Monterrey, the second manufacturing centre in Mexico. On the other hand, the value of industrial production in this second largest manufacturing city is 3.6 times that of Guadalajara, the third industrial centre of the Republic. The value of industrial production follows very similar patterns in the case of the fourth to eighth manufacturing centres and also of the ninth to the thirteenth. Radiating from this centre there is a large number of small manufacturing nuclei scattered widely over the country, but also tending towards greater concentration within the Northern and Central Regions.

The present pattern of industrial development in Mexico, viewed in terms of analytical geometry, could be most closely likened to an equilateral hyperbola, whose asymptotes are the co-ordinate axes represented by the value of industrial production and the number of main manufacturing centres. The graph on the following page shows this pattern, which clearly illustrates the degree of concentration in Mexican industry.

Finally, the characteristic feature of the industrial centres of Mexico, except for the metropolitan areas of Mexico City and Monterrey, is that they are nuclei dependent on a number of industrial branches, generally one or two (See Table III, which illustrates the industrial structure of the thirty main manufacturing centres). Thus, for example, in Guadalajara, the third-ranking industrial city of Mexico, more than 40 per cent of the value of production generated is represented by food and beverages; in Minatitlán, the fourth industrial city, the processing of petroleum and derivatives accounts for 94 per cent of the total value; in Chihuahua, non-ferrous metals contribute 55 per cent to the total value; in Puebla, food products and textiles represent 83 per cent of the total value produced; in Salamanca, the manufacture of petroleum and derivatives accounts for 93 per cent of the total value; in Monclova, the iron and steel industry represents 87 per cent of the value produced; in Toluca, food products and the processing of chemicals and chemical products accounts for more than 65 per cent of the total value.

PATTERN OF CONCENTRATION OF MEXICAN INDUSTRY IN 1960



VALUE OF PRODUCTION (Thousand Pesos)

CHIEF MANUFACTURING CENTRES

Of the 30 main manufacturing cities of the country, therefore, only the metropolitan area of Mexico City has all fourteen of the industrial sectors or branches thus classified; two of the cities have 13 sectors; one has 12 industrial sectors; two have 11 sectors; five have 10 sectors; six have 9 sectors; five centres have 8 sectors; three have 7 sectors; four have 6 industrial sectors and one manufacturing city has only 5 industrial sectors.

One result of this situation is that the manufacturing centres are highly sensitive to variations in the industrial activity taking place within them, to the detriment of the economic development of each industrial city; it also results in extremely limited opportunities for accelerating the process of industrial integration, since most manufacturing production in the various branches of industry tends to be concentrated in a few cities.

4. Locational sensitivity of industries

In order to determine the extent to which various industries are tied to a given production locality, or the degree to which they are mobile and how far they can be moved, an industrial location coefficient has been calculated.^{21/}

For this the following methodological criteria have been evolved:

- * The manufacturing activity of the country is divided into basic industries and other processing industries, in accordance with the criterion applied in previous paragraphs.
- * The population engaged in industry is grouped by territorial units, according to branch of industry, giving also the percentage share of each population in the total number of personnel employed in industry as a whole. The number of workers per territorial unit is calculated on the basis of the 100 main manufacturing centres.

^{21/} This coefficient has been determined using the process elaborated by Gustavo Romero Kolbeck and Victor L. Urquidí in "La exención Fiscal en el Distrito Federal como instrumento de atracción de industrias" (Tax exemption in the Federal District as a means of attracting industry), based on Sargent Florence, "Investment, location and size of plant", Cambridge, 1948, Chap. IV.

- * The number of personnel employed per territorial unit is determined by adding up the number employed in each branch of industry. In this way the number of workers employed in the nation as a whole and their percentage distribution in each unit is obtained.
- * The foregoing data was used to determine the divergence, in the percentages for each state of workers in each branch of industry, from the percentages for the total number of enterprises.
- * The coefficient of industrial location represents the sum of the divergencies - positive or negative - divided by 100.

Where the coefficient approximates to unity, it may be said that there are strong locational factors inducing a particular industry to concentrate in certain territorial areas, and when the coefficient decreases it means that location is more uniform, the relative advantages of operating in any particular locality are slight and the enterprises involved can develop just as profitably in different places and they thus follow the general pattern of location existing in the country (See Table VIII).

Careful examination of the previous table shows accentuated concentration in the following branches of industry: coal, petroleum and derivatives; iron and steel; non-metallic minerals, non-ferrous metals and saw-mills. As a rule, the decisive locational factor in these branches has been the proximity of raw materials. There is a more even geographical distribution in the following branches: cement and other building materials; the generation of electric energy; food, beverages and similar products; textiles, footwear and other garments; paper, cellulose and paper products; chemicals and chemical products; metal and electrical goods, machinery and equipment and transport equipment.

The geographical situation in each branch of industry is as follows:

- * Branches in which important locational factors hamper mobility

Coal, petroleum and derivatives

The most important areas are Tamaulipas, Veracruz, the Federal District, Guanojuato and Coahuila. The location of these industries is determined by the accessibility of raw materials and, in the case of petroleum and its derivatives, by the proximity of the refineries to the market, to ensure better supply and

distribution of the products. Most of the refining capacity is situated in the Federal District, which is supplied with petroleum and derivatives by means of various pipe lines for oil, gas and other products coming from the production areas of Tamaulipas, Veracruz and Tabasco.

Iron and steel

The industrial centres engaged in the iron and steel industry are located in Nuevo León, the Federal District and Coahuila, Mexico and Chihuahua (see note 19).

Non-metallic minerals

The chief territorial units in which this industry is concentrated are San Luis Potosí, Nuevo León, Coahuila, Sonora and the Federal District. In almost all cases, except that of the Federal District, the location of the enterprises depends on the proximity of raw materials. In the Federal District, proximity to the market of the Central Region has been the decisive factor in the establishment of a large number of such enterprises.

Non-ferrous metals

The coefficient shows that there is a high degree of concentration in Hidalgo, Mexico, Chihuahua, San Luis Potosí, Guanajuato, Coahuila and Durango. The proximity of raw materials has been the most important factor in the location of these enterprises.

Saw-mills

These are located mainly in Durango, Chihuahua and Campeche and, to a lesser extent in Guerrero, San Luis Potosí, Oaxaca and Michoacán. Their location is largely determined by the accessibility of raw materials.

- Industrial branches with a more even distribution throughout the Republic^{22/}

Generally speaking, the location of these industries has been dictated by the market - one of the factors whose influence on the location of Mexican industries has been most noticeable.

^{22/} In each branch of industry, only the areas with positive deviation will be quoted. This does not mean that industries do not exist in other territorial units.

Food, beverages and similar products

The location of these industries is conditioned principally by the market; consequently most enterprises are located in the Federal District, Nuevo León, Jalisco, Baja California, Mexico, Veracruz, Coahuila and Guanajuato, - all quite highly urbanized areas whose populations have incomes higher than the national average.

Textiles, footwear and other garments

This branch plays a very important role in the nation's economic development; it provides employment for more than 250,000 persons and absorbs a large quantity of raw materials. The production plants are located mainly in the Federal District, Veracruz, Yucatán, Aguascalientes, Puebla, Guanajuato, Jalisco and Querétaro, and are oriented towards satisfying the needs of both the central market and of the rest of the country.^{23/}

Cement and other building materials

This is one of the most important and rapidly growing industries in the country. Most of the production in terms of value comes from plants located in the Federal District, Nuevo León, Mexico, Hidalgo, Chihuahua and Jalisco. Location is determined basically by proximity to the market (urban concentrations).

Paper, cellulose and paper products

The areas in which the industry is chiefly located are the Federal District, Mexico, Chihuahua, Jalisco and Veracruz; 70 per cent of the plants are located in the first two areas. Proximity to markets has been the criterion for the location of paper mills; in the case of the cellulose plants, proximity to raw materials has been the predominating factor.^{24/}

^{23/} A very singular phenomenon is to be noted in the case of cotton textiles. Almost all of the cotton in the country is produced in the Northern Region, but most of the textile mills have been established in the Central Region. This discrepancy is explained by the fact that the pattern of cotton cultivation changed, while the industry continued to develop in its traditional location. In the middle of the last century, cotton cultivation was concentrated mainly in the centre and the south, where the textile industry was also located; afterwards the new cotton plantations, which are now of such importance, were opened up in the north, without a corresponding change in the textile industry. Ernesto López Malo, Op. cit. p.106.

^{24/} In 1964, there were 39 enterprises in the paper and cellulose industry, of which 23 were producing paper and similar products, 9 paper and cellulose and 7 only cellulose.

Chemicals and Chemical products

Most of the enterprises are located in the Federal District, Mexico, Nuevo León, Jalisco, Michoacán, and Veracruz. Except for the petrochemical plants, which have been established near sources of raw materials, the industries in this important branch have been located near their markets.

Metal and electrical goods, machinery and equipment

The industries in this industrial group are located mainly in the Federal District, Mexico, Nuevo León, Jalisco and Coahuila, although actually about 80 per cent of the total value of annual production in this branch is concentrated in the first two territorial units.

Transport equipment

As in the previous branch, most plants are concentrated in the Federal District, Mexico and Nuevo León. The automobile enterprises in particular are concentrated in the first two areas; even the new plants that have been set up recently to avoid large-scale importation of these products tend to have been located in these places.

II. PROBLEMS ARISING OUT OF THE PRESENT DISTRIBUTION OF MEXICAN INDUSTRY

1. The effects of industrial concentration on rural migration and urban development

It may be generally stated that the process of industrialisation in Mexico has led to excessive urban development caused largely by the accelerated migration of the population of the rural sector to the towns. To illustrate this phenomenon, consideration will be given below to the industrial development of the various regions, their urbanisation and changes in occupational structure.

(a) Industrial development of the various regions

The following table shows the development of industrial production in each region during the decade 1950-1960:

Regions	<u>1950</u>		<u>1960</u>	
	Industrial production (Million pesos)	%	Industrial production* (Million pesos)	%
North	6,729	27.7	8,253	23.3
Central	13,598	60.0	24,594	69.6
Others	2,800	12.3	2,512	7.1

*At 1950 prices

This information gives some idea of the growing industrial concentration in the Northern and Central Regions, a phenomenon dealt with at length in Chapter I, as well as of the relative share contributed by the other regions to industrial production. However, the situation in these other parts of the country is alarming since, in 1960, not only did they have a smaller share in total national production but, at 1950 prices, the value of their manufacturing production had diminished. Furthermore, if a comparison is made by analysing industrial production per worker, the productivity of the Northern Region is twice as great as that of the other zones, excluding the Central Region; productivity in the latter

part of the country is 1.5 times greater than in the other regions. In other words, industrial growth in all parts of the country except the Northern and Central Regions, has lagged behind population growth and is relatively stagnant in comparison with that of those two regions. The pattern of geographical distribution of industry in 1960 has undoubtedly led to a steadily increasing gap with respect to the development of the various regions, thus making it more difficult for the poorer parts of the country to emerge from centuries of neglect and rise to higher levels of economic development, for the benefit of the general growth of Mexico.

(b) Urbanization

Industrialization is an important element in the urban-rural relationship, since industrial development is initially almost always associated with intense urban growth, which drains the population from the rural areas.

During the period 1940-1960, the industrial development of Mexico was characterized by a rapid growth of the urban population, accelerated by a high rate of demographic growth: 3 per cent a year, one of the highest in the world. The following table clearly shows the intensity of this phenomenon:

CHANGES IN THE RURAL AND URBAN POPULATIONS
1940-1960
(Percentages)

Population	1940	1950	1960
Rural	64.9	57.4	49.3
Urban	35.1	42.6	50.7

In the period covered by this table the rural population grew in absolute terms, but if the rural and the urban population are compared in terms of percentages, it will be seen that the latter considerably exceeds the former.

In 1940, two thirds of the total population of the country was living in localities with less than 2,500 inhabitants, whereas in 1960 more than half of the population was living in larger centres; the figure will probably be of the order of 53 per cent in 1970 and 63.3 per cent in 1980.^{1/}

^{1/} Gustavo Cabrera and Raúl Benites. La población futura de México, 1960-1980, (The Future Population of Mexico, 1960-1980). Bank of Mexico, Industrial Research Department, 1965.

The growth rate of the rural population remained more or less constant throughout the period 1940-1960 (1.5 per cent a year on the average) while that of the urban population rose steadily (4.8 per cent a year in the decade 1940-1950 and 4.9 per cent a year in the decade 1950-1960). This phenomenon is the result of internal migratory movements which have brought about substantial changes in the rural-urban structure.

The tables on pages 24 and 25 were drawn up in order to determine the degree of urbanisation caused by migration in the various geographical areas. They show that there has been a great increase in the urban population throughout the country in recent years; however, the peculiarities of each region should be emphasized. In 1960, the Northern and Central Regions, which had the greatest relative degree of industrial development, were also the most intensively urbanized in the whole country; furthermore, the urban population exceeded the rural population in these regions. In the other regions of the country the rural population is greater than the urban population; it is also a feature of the latter regions that the urban population has a smaller rate of growth than the rural population.

**PERCENTAGE DISTRIBUTION OF THE URBAN AND RURAL POPULATION BY REGIONS
1940-1960**

<u>Regions</u>	1940		1950		1960	
	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>	<u>Urban</u>	<u>Rural</u>
North	42.5	57.5	52.1	47.9	63.8	36.2
Central	40.1	59.9	47.7	52.3	55.9	44.1
Others	22.4	77.6	27.6	72.4	32.0	68.0

Source: Population censuses, Ministry of Industry and Commerce, General Directorate of Statistics, Mexico.

ANNUAL RATES OF POPULATION GROWTH BY REGIONS
1940-1960

Regions	1940 - 1950			1950 - 1960		
	<u>Total population</u>	<u>Urban population</u>	<u>Rural population</u>	<u>Total population</u>	<u>Urban population</u>	<u>Rural population</u>
North	3.7	5.8	1.8	3.9	6.1	1.1
Central	2.7	4.5	1.4	3.2	4.8	1.5
Others	2.3	4.5	1.6	2.4	3.9	1.8

Source: Population censuses, Ministry of Industry and Commerce, General Directorate of Statistics, Mexico.

Urbanisation is largely a consequence of very considerable internal migration from the less industrialized states to those with a greater degree of industrial development, as is illustrated by the table on page 27. In this connexion, a recent study showed that the Federal District, the most highly industrialized area in the country, absorbed about 48 per cent of the migrants from other areas in the period 1950-1960; the States of Baja California, Chihuahua, Mexico and Nuevo León, areas of growing industrial development, absorbed 33 per cent of these migrants.^{2/} Furthermore, a study of the inter-census migratory balances for the period 1950-1980, given in the table below, will show positive balances in the Northern and Central Regions, which have the greatest growth in manufacturing.

**INTER-CENSUS MIGRATORY BALANCES BY REGIONS
1950-1980**

(Thousands of inhabitants)

Regions	<u>1950-1960</u>	<u>1960-1970</u>	<u>1970-1980</u>
North	174.0	523.1	868.7
Central	104.3	228.4	180.9
Others	-278.3	-751.5	-1,049.6

Source: See footnote ^{1/}

It is precisely these regions that contain the most important industrial cities, to which the population from the regions with lower development in manufacturing migrates. Urbanisation has generally grown more rapidly than industrialisation, and has nearly always been associated with this process; however, there are cases of very dynamic urbanisation without industrialization. This phenomenon can be better illustrated by studying the occupational structure of the various regions.

(c) Occupational structure

The following results, which show the changes occurring in the decade 1950-1960, are obtained by arranging the available information on occupational distribution in terms of agricultural and non-agricultural employment in the various regions of Mexico.

^{2/} Ibid, p.12.

INTERNAL IN-MIGRATION BY REGIONS (PROPORTION OF IN-MIGRANTS*)

Regions	1950 %	1950 Born in the region	1960 %	1960 Born in the region
North	27.6	2,899,207	33.1	* 4,102,539
Central	17.0	12,400,999	19.8	16,593,377
Others	5.6	7,001,088	6.4	8,803,656
National total:	14.8	22,291,194	17.6	29,499,572

* Ratio of in-migrants to the number born in the region

BREAKDOWN OF INTERNAL IN-MIGRATION BY REGIONS

Regions	1950 (In-migrants)	1950 %	1960 (In-migrants)	1960 %
North	801,518	24.2	1,358,314	26.1
Central	2,112,491	63.9	3,278,997	63.1
Others	391,708	11.9	562,778	10.8
National Total	3,305,717	100.0	5,200,089	100.0

Source: Population censuses 1950-1960, Ministry of Industry and Commerce, General Directorate of Statistics, Mexico.

OCCUPATIONAL STRUCTURE BY REGIONS IN 1950-1960

(Percentages)

Region	Agricultural		Non-Agricultural	
	1950	1960	1950	1960
North	49.9	45.0	50.1	55.0
Central	53.0	47.4	47.0	52.6
Others	73.6	74.4	26.4	25.6

From these data it can easily be seen that the most industrialized regions are those in which a higher proportion of the labour force is employed in non-agricultural activities and, similarly, those in which there has been a more marked trend towards an acceleration of this phenomenon; on the other hand, in the rest of the country there has been a percentage increase in the agricultural labour force in parts of the territory in which the ratio of the agricultural to the non-agricultural labour force was already very high.

At the national level it can be seen that the relative share of the agricultural labour force in the total economically active population tends to decrease, owing to industrialisation and urban development, since the decrease of the population in the rural zones and its increase in the urban zones has led to an increase in non-agricultural and a relative decrease in agricultural activity. The national agricultural labour force represented 58.3 per cent of the total in 1950 and 54.2 per cent in 1960.^{3/}

For the country as a whole, the tertiary sector, consisting of the population employed in transport commerce and services, has tended to increase its relative share in total employment more than the secondary sector, which comprises the processing and construction industries.^{4/} This situation indicates that the industrial development achieved has not been able to absorb the growing quantity of labour available, so that the decrease in agricultural employment benefits the tertiary sector, including services. The above becomes clearer with the help of a regional breakdown:

- ^{3/} Fernando H. Cardoso and José Luis Reyna. Industrialización. Estructura Ocupacional y Estratificación Social en América Latina (Industrialization, Occupational Structure and Social Stratification in Latin America), a paper prepared for publication in a University of Pittsburgh collection, ECLA, 1966, p.14.
- ^{4/} The tertiary sector absorbed 25.8 per cent of the total labour force in 1950 and 26.8 per cent in 1960; in the same years the secondary sector accounted for 15.9 and 19 per cent, respectively.

OCCUPATIONAL STRUCTURE BY REGION
(Percentages)

<u>Regions</u>	<u>Primary</u>		<u>Secondary</u>		<u>Tertiary</u>	
	<u>1950</u>	<u>1960</u>	<u>1950</u>	<u>1960</u>	<u>1950</u>	<u>1960</u>
Ncrth	49.9	45.0	18.8	22.2	31.3	32.8
Central	53.0	47.4	17.9	22.3	29.1	30.3
Others	73.6	74.4	10.6	9.9	15.8	15.7

From an examination of this table it can be deduced that in all regions the tertiary sector predominates over the secondary sector, especially in districts with the greatest urban agglomeration. There is no doubt that the secondary sector has been greatly stimulated and has become the most dynamic sector of the Mexican economy; nevertheless, it has not been able to absorb a large part of the available agricultural labour, which for the present is being taken on by the tertiary sector.

The reason why a large proportion of employment should be in the tertiary sector is that this sector includes the branches of the economy that supplement the industrial urban economy; hence it is of greater importance in the Northern and Central Regions, which have the highest relative industrial development. On the other hand, the growth of the tertiary sector to some extent reflects the formation of modern urban industrial strata in the social structure. The difficulty of analysing the precise implications of this process springs from the relative lack of knowledge of the marginal sectors in the tertiary sector, consisting of unemployed persons, under-employed persons and the like.^{5/}

^{5/} Fernando H. Cardoso and José Luis Rayna, op. cit, p.8.

The data presented below give an idea of the composition of the tertiary in terms of occupational structure.

BREAKDOWN OF THE ECONOMICALLY ACTIVE
POPULATION IN THE TERTIARY SECTOR BY REGION
1950-1960
(Percentages)

<u>Tertiary Sector</u>	R E G I O N S					
	Northern		Central		Others	
	<u>1950</u>	<u>1960</u>	<u>1950</u>	<u>1960</u>	<u>1950</u>	<u>1960</u>
Commerce	9.8	11.4	9.3	10.6	5.3	5.9
Transport	3.6	4.3	2.7	3.4	1.6	2.0
Services	11.5	15.5	12.4	15.6	6.4	7.6
Others	6.4	1.6	4.7	0.7	2.5	0.2
Totals:	31.3	32.8	29.1	30.3	15.8	15.7

Source: Population censuses 1950-1960, Ministry of Industry and Commerce, General Directorate of Statistics, Mexico.

In all cases, services increased more markedly than the other components of the tertiary sector; it includes a large proportion of the population with very low levels of income and persons working for a lower number of days than normal, a situation that indicates the degree of unemployment and concealed unemployment.

Urbanization has created a social stratum consisting of non-manual workers, mainly in commerce and services; the more industrialized the region, the greater the importance of this section of the working population and the lower the number of manual workers. The table on page 31 gives a breakdown of the manual and non-manual sections of the employed population in the various regions of Mexico and shows that the ratio of non-manual to manual workers is considerably higher in the Northern and Central Regions than in the rest of the country.

This circumstance leads one to conclude that industrialization in Mexico has been accompanied by considerable urban growth even if industrial development has not always been the direct cause of this notable increase. On the other hand, it is beyond doubt that the pattern of geographical distribution of manufacturing activity in 1960 has accentuated regional differences and may constitute a serious obstacle to the economic development of Mexico.

**THE RATIO BETWEEN THE NON-MANUAL AND MANUAL
ECONOMICALLY ACTIVE POPULATION**

1950 - 1960

	Northern Region		Central Region		Other Regions	
	<u>1950</u>	<u>1960</u>	<u>1950</u>	<u>1960</u>	<u>1950</u>	<u>1960</u>
Non-Manual	231,909	424,988	847,677	1,448,903	223,118	347,268
%	19.4	23.9	17.3	22.2	9.6	11.5
Manual	959,967	1,355,577	3,907,596	5,082,369	2,097,309	2,672,911
%	80.6	76.1	82.2	77.8	90.4	88.5
Totals:	1,191,876	1,780,565	4,755,473	6,531,272	2,320,427	3,020,179
%	100.0	100.0	100.0	100.0	100.0	100.0
<u>% Non-manual</u>	24.2	31.4	21.7	28.5	10.6	13.0
Manual						

The non-manual category includes professionals and technicians in all branches of activity; management personnel except in agriculture, animal husbandry, forestry, hunting and fishing; office workers in all branches of activity and sales personnel in all branches of activity.

The manual category includes persons employed in agriculture, animal husbandry, forestry, hunting and fishing; it includes workers, artisans and day-labourers directly and indirectly employed in the production of goods and services and paid personal service workers in homes, institutions and enterprises providing personal, recreational or social services.

Sources: Population censuses 1950-1960, Ministry of Industry and Commerce, General Directorate of Statistics, Mexico.

2. The effects of industrial concentration in the various regions of the country

Consideration has been given above to the effects of the existing pattern of geographical distribution of manufacturing activity on rural migration and urban development. We shall now see how this pattern is doing intense harm to the rest of the country and even causing imbalances in the regions where manufacturing activity is concentrated.

The analysis will be confined to three indicators considered as the most representative; the level of income, with the aim of identifying the largest concentrations of income, from work and capital; regional public investment; and the capital invested by private enterprise in the various zones of the country.

(a) The level of income^{6/}

The first essential is to determine what is the present average income, where it comes from - whether from work or capital, pensions or aid - and to determine the causes of saving and dissaving. There is a basic premise to start from. Industry centralized in the cities generates far higher incomes and living levels than agriculture; the imbalance is also demographic. Industrial development feeds on urban concentrations and, in its turn, fosters the growth of the latter; the countryside constantly loses population to the towns, which attract migrants not only because of the better employment and higher levels of living they can offer, but also because of their abundance of services, their opportunities for socio-economic mobility, the pattern of their political life and the opportunity they afford for participation in many other forms of social life.^{7/}

6/ Progress in industrialization constitutes one of the most significant structural changes in production bringing economic development in its wake. However, per capita income is not the only variable associated with structural differences between countries, although it is without doubt the most important one. In other words, although industrialization is a requirement for development and although income growth is always accompanied - at least in the long run - by a more rapid expansion of industrial production, various circumstances influence the degree to which this requirement applies and the extent of the industrialization process. Hector Soza Valderrama, Planificación del desarrollo industrial (Industrial Development Planning), Latin American Institute for Economic and Social Planning, Siglo XXI Editores, S.A., Mexico, 1966 p.9.

7/ Angel Palerm, Observaciones sobre planificación regional, Experiencias de Israel y la India en planificación regional. (Comments on Regional Planning; the Experience of Israel and India in Regional Planning), General Secretariat of the OAS, Department of Social Affairs, Washington, August 1965 p.7.

However, let us study the factors that have brought about and may bring about industrial centralization in the light of the indicators considered.

In this section we shall examine the monthly income of families and per capita income, as well as the sources of such income.

MONTHLY INCOME OF FAMILIES AND PER

INCOME IN 1964-1965

Regions	Total families (thousands)	Total persons (thousands)	Total income of family members (Million pesos)	Monthly per capita income (pesos)
Northern	1,223	6,689	1,435	214
Central	4,321	23,168	5,305	229
Others	2,022	10,548	1,410	133
Totals:	<u>7,566</u>	<u>40,405</u>	<u>8,152</u>	<u>201</u>

Source: La Población Económicamente Activa de México (The Economically Active Population of Mexico), Ministry of Industry and Commerce, General Directorate of Sampling.

The above figures show that per capita income is greater in the more industrialized regions and that the lower levels of income are found in the regions where industrial development is in its early stages. Accordingly, 47 per cent of the families in Mexico live in regions in which only 28 per cent of the total income is generated. The differences noted become clearer if we examine the origin of family income. Thus, income derived from capital and work in the Central Region is 28 per cent greater than that in the Northern Region and 57 per cent higher than in the rest of the country; the low incomes from capital and work in geographical areas with less industrial development are due to the fact that most of the families engage in agricultural work on relatively unproductive land and, obviously, also to the lack of active manufacturing.

In conclusion, the distribution of income is generally related to the level of industrialization achieved; consequently, as national industry is distributed at present, a large portion of the country has benefited only marginally from the development of manufacturing.

(b) The level of public investment

There has also been a process of concentration in public investment, and this is one of the factors that have led to the establishment of industry in certain regions. The table on page 35 indicates the geographical breakdown of public investment by region.

It is clear from this breakdown that the Central Region, which has the greatest relative industrial development, absorbs a very considerable proportion of total public investment - a situation that is doubtless the consequence of urbanization and the growth in manufacturing achieved by this part of the country. The Northern and Central Regions absorb almost 80 per cent of the total investment in industrial promotion (the generation of electric energy and industries in which the State has a share) and more than 85 per cent of social welfare activities. Accordingly, the State has been obliged to continue to channel resources in this way since industrial growth itself has created urgent needs for public and social welfare services, owing to the constant growth of the population.

On the other hand, the rest of the country has absorbed a greater amount of investment in works for the promotion of agriculture and animal husbandry - especially irrigation - and these projects have tended to fix the population in the rural areas. This situation, together with the fact that active industrialization is not being promoted, has prevented the rate of growth in these parts of the country from keeping up with that of the country as a whole.^{8/}

(c) Private industrial investment

Lastly we shall examine private industrial investment in the various regions; this makes it easier to illustrate the degree of concentration of private investment in the most highly industrialized regions, which deprives the rest of the country from the beneficial effects of industrial development.

^{8/} In this connexion it may be of interest to note one example. The State of Sinaloa, which is not in the Northern or Central Regions, was the scene of a large part of the irrigation works carried out by Mexico in the period 1959-1965; nevertheless, the level of income and the gross product of that state is still far below those in the rest of the country.

PERCENTAGE BREAKDOWN OF FEDERAL PUBLIC INVESTMENT IN 1959-1965, BY REGION
(Percentages)

Regions	Promotion of agriculture and animal husbandry ^{a/}	Transport and communications ^{b/}	Administration, defence and services ^{c/}	Industrial promotion ^{d/}	Social welfare programs ^{e/}	Total investment
Northern	20.7	27.2	10.7	31.1	11.6	23.6
Central	24.6	41.6	81.8	47.3	76.9	51.7
Others	54.7	31.2	7.5	21.6	11.5	24.7
National total:	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

- ^{a/} Agriculture, animal husbandry, forestry, hunting and fishing.
- ^{b/} Roads, railways, maritime and air transport and telecommunications.
- ^{c/} Defence, Public buildings, administration and services.
- ^{d/} Fuels, chemicals, fertilisers, iron and steel, mining, food and beverages, paper, wood, publishing and other industries.
- ^{e/} Public services, hospitals and welfare centres, education and research, housing and community development.

Sources: Investment in Public Federal 1925-1965 (Federal Public Investment, 1925-1965)
Presidential Secretariat, Directorate of Public Investments.

PRIVATE INVESTMENT IN THE EXTRACTIVE AND MANUFACTURING INDUSTRIES
(Percentages)

Regions	1945 %	1960 %
Northern	27.4	26.4
Central	60.4	65.2
Others	12.2	8.4

Private entrepreneurs have been prompted to direct their investment to certain regions by many factors, such as the concentration of population, the advantage of external savings, the growing centralization of the public administration and the national banking system, the availability of skilled labour, etc.

To sum up, although the country's present industrial structure has been an indispensable means of stimulating economic growth, it has caused marked regional imbalances, since investment has not been directed towards developing the zones that are relatively more backward in the economic sense and whose population has a low level of living, so that the gap between the rich and poor regions of Mexico has been widened.

Moreover, the pattern of geographical location of industrial production is creating difficulties with regard to the supply of urban public services, while the bias in the orientation of public investment is leading to competition between enterprises for the acquisition of services. This bias is conducive to a restriction of the domestic market, as a consequence of the unequal distribution of income, and to an increase in prices owing to the constant rise in production costs.

A wider dispersion of industrial activity would stimulate employment; furthermore, higher levels of income and new markets would be created, thus eliminating or appreciably reducing migration from the poorer to the rich regions.

III. GOVERNMENT POLICY WITH REGARD TO INDUSTRIAL LOCATION

1. General industrial policy

It is beyond doubt, even for the most exacting critic, that various practical measures - both in the public and private sectors - are being taken to accelerate the development of the national industry. These measures range from import controls of the protectionist type and the introduction of special fiscal incentives to the establishment of special financial agencies.

In the developing countries, the general objectives of industrial policy are to be viewed in terms of the growth and distribution of income, to ensure a rapid and continuous rise in the level of living, particularly that of the broad underprivileged masses of the population. As far as the geographical distribution of industry is concerned, industrial policy is concerned with the location of manufacturing activity, attraction to localities that are most suitable from the industrial or integrational viewpoint, and with the formation of dynamic poles or centres of development at the regional level.✓

However, the somewhat unfavourable industrial development situation that has come about in Mexico and the implicit limitations for the country make it clear that there has so far been no general industrial policy, much less a policy with regard to the geographical distribution of manufacturing activity. The basic cause of this situation has been the lack of a national development plan to promote the harmonious and integrated growth of the country.

To remedy this situation, an Inter-Ministerial Commission was established at the beginning of 1962; it consists of representatives of the Presidential Secretariat and the Ministry of Finance and Public Credit, and its task is to formulate short and long-term national plans for the economic and social development of the country. In the middle of 1966, this Commission enunciated the following guide-lines and national objectives for the period 1966-1970.✓

✓ Héctor Sosa Valderrama, Planificación del desarrollo industrial (Industrial Development Planning). Texts of the Latin American Institute for Economic and Social Planning, Siglo XXI Editores, S.A. Mexico, 1966, pp.226 and 227.

2/ According to a government report by the President of the Republic, Mr. Gustavo Díaz Ordás, submitted to the Congress of the Union on 1 September 1966.

- * To achieve an average economic growth of at least 6 per cent a year;
- * To give priority to the agricultural and animal husbandry sector so as to accelerate its development and strengthen the domestic market;
- * To stimulate industrialization and to improve the productive efficiency of industry;
- * To attenuate and correct imbalances in development, both between regions and between various branches of activity;
- * To distribute the national income more equitably;
- * To improve education, housing, health and welfare conditions, and social security and social welfare in general;
- * To encourage domestic savings;
- * To maintain a stable exchange rate and to combat inflationary pressure.

In order to achieve balanced growth throughout the country, the Commission also initiated regional planning, incorporating this type of programme into general development plans.

However, in spite of these considerable advances, a general policy for industrial location has still not been formulated. When regional development plans are available, the Commission will probably define, by territories, the geographical distribution of industry in which the State participates and prescribe measures to promote the growth of private industry in regions of lower relative economic development, where it is desirable to stimulate this type of activity.

In any case, in recent years the Government has intervened indirectly in the territorial distribution of industry by means of various economic policy measures that have improved the development of certain zones of the country. In this chapter we shall examine the main measures that have influenced the geographical distribution of industry; it must be stressed that as a rule existing industrial legislation and financial and public expenditure policies have, unintentionally, tended to favour the Northern and Central Regions of Mexico, and particularly the metropolitan areas of Mexico City and Monterrey.

Public action with regard to the geographical distribution of industry has been both direct and indirect; in the first case, government intervention has been very modest and of limited scope; in the second case, the economic policy adopted by the Government has promoted the industrial development of certain specific regions of the country.

Private enterprise and the Governments of the various States that make up the country have intervened increasingly in the promotion of industrial development through measures designed to attract industry to certain specific zones.

We shall examine below the main policies followed by both the public and the private sector to influence the location of industry, assessing the impact of these measures as far as possible.

2. Direct measures to influence the geographical distribution of industry

Federal public sector

- * The establishment of new industrial towns.

At the beginning of 1952, the Federal Government, through the Ministry of Finance and Public Credit, the Bank of Mexico and the National Finance Corporation, made an effort to encourage the decentralisation of industry from the metropolitan area of Mexico City by promoting the construction of an industrial town, the Ciudad Bernardino de Sahagún, 104 kilometres from the capital in the State of Hidalgo.

To start with, two joint state and private enterprises were set up in this town: one making railway rolling stock and the other motor vehicles; these were later supplemented by another similar joint enterprise producing textile machinery. A state enterprise was organised to construct the town, with authority to erect the industrial buildings and set up the necessary public services, but without authority to initiate measures to attract new manufacturing enterprises.

The town was located in an arid zone, from which there had been a large-scale exodus of the rural population; the area had no natural resources and was extremely impoverished when the mining industry, the basis of its economy, died out. The efforts of the Government were aimed not only at promoting a better geographical distribution of industry but also at assisting the economic and social development of the region.

As the site lacked the amenities to make it inhabitable, it was necessary to construct housing, to install a water supply, lighting and drainage, and to set up hospitals, shops, schools and playing fields. The total area of the town was 1,140 hectares, of which 384 were intended for the urban zone proper and the rest for the industries established. In 1960 the town had a population of 7,000.

In 1960 López Halo estimated that the capital investment exceeded 1,000 million pesos and noted that funds were still being allotted for expansion, development and maintenance.^{3/}

The objective of providing employment for the population of the area has been achieved at the cost of a high capital investment; however, no appreciable development could be achieved in other activities, as the rate of growth in manufacturing has not been stimulated sufficiently to accelerate urbanisation and substantially expand the narrow local market. The products of the enterprises have a specialised market and almost all of the essentials for the life of the town come from the Federal District.

According to Yates, it thus seems that the choice of the site was not entirely suitable and that the large-scale capital investment was consequently not justified since other localities might have offered a more favourable environment for industry; some of these already have buildings and could serve as bases for the establishment of a new industrial complex. The use of these localities with their existing services would eliminate the need to invest large sums in the infrastructure, as was done in Ciudad Sahagún.^{4/}

* The establishment of industrial estates

Two industrial estates, known as Ciudad Industrial de Irapuato and the Zona Industrial Lagunaera, have been set up on the initiative of the Federal Electricity Commission - a decentralised Federal Government body - with the co-operation of the Governments of the States of Guanajuato and Durango.

Even if the stated aim is "to find consumers for this official body's growing output of energy" the basic purpose is to stimulate the industrial development of the province, so as to avoid excessive concentration of industry in the metropolitan area of Mexico City.

^{3/} Ernesto López Halo, op. cit., p.237.

^{4/} Paul Lemartine Yates, op. cit., p.243.

The planning and execution of the necessary works, as well as publicity and sale of industrial sites is carried out by the Fondo Inmueble de la Construcción, S.A., which manages a trust estate assigned to it by the Federal Electricity Commission in 1957, when work began.

The Ciudad Industrial de Irapuato is situated in a very important agricultural region of the country, 355 kilometres from Mexico City; it is in the geographical centre of the Republic, in the Central Region, is connected by rail and road to the main centres of consumption and has abundant electrical energy to service the industries that are being established.

The industrial estate has an area of 280 hectares and is divided into two large sections, one for light and the other for heavy industry. In neither case have buildings been constructed for the factories; the works consist in town planning, the provision of a water supply, drainage, road surfacing and electric energy and the division of the estate into lots. By 1964 capital investment in such works had reached a total of approximately 30 million pesos, and ten of the ninety lots making up the light-industry section had been sold.^{5/}

The Zona Industrial Lagunera is located at Gómez Palacio, a town in the State of Durango, 1,270 kilometres from Mexico City and 380 kilometres from Monterrey.

The region in which the estate is located was predominantly agricultural, based on the cultivation of cotton; however, owing to the lack of water and the over-exploitation of groundwater, it rapidly became impoverished in recent years, with a consequent aggravation of social problems. It was partly as the result of this special situation that the Government actively intervened to promote industrial development, the only outlet for the growing number of agricultural unemployed. Similarly, the Federal Government is reclaiming land under its irrigation scheme, promoting changes in crop structure and redistributing the land to improve the lot of the lower income farmers.

^{5/} The lots varied in price between 30 and 40 pesos per square metre; industrialists pay only 5 to 10 per cent of the value of the site on purchase, the rest being spread over a period of ten years at 8 per cent interest on the unpaid balance.

The estate has an area of 265 hectares, of which 224 have been split up into 120 lots. Land development work has been carried out and the estate has been provided with the necessary services so that manufacturers can construct their installations as they wish. By the end of 1964, eight enterprises had been established on the estate.

* The National Frontier Programme

The National Frontier Programme, a regional development body, was set up at the beginning of 1961 with the aim of developing the frontier zones of Mexico and intensifying their social, economic and cultural integration with the rest of the nation. This body has powers to promote the development of both the northern and the south-eastern frontiers of the country; however, the most pressing need is to incorporate the Northern Region into the national economy, as most transactions involving manufactures produced in the United States are carried on in that area, to the detriment of national industry.

To enable the Programme to operate, a trust fund of 42 million pesos was set up in the National Finance Corporation, and by 1964 it had increased to 323.5 million.

This trust fund is managed by a Technical Committee consisting of representatives of the Government and public and private institutions: the Ministry of Finance and Public Credit, the Bank of Mexico, the National Finance Corporation, the National Chamber of the Processing Industry, the Confederation of Chambers of Industry, the Confederation of National Chambers of Commerce and the Mexican Bankers Association.

To promote competition in the frontier markets, the Ministry of Finance granted two subsidies: a 25 per cent discount on rail, air and ship freight, and a 1.8 per cent reduction in the tax on business income, which is payable to the Federal Government. In 1965, the rail freight subsidy was raised to 50 per cent for finished manufactures.

So far, buildings for Customs, migration, health and tourist services, supermarkets, restaurants, hotels, shops and schools have been constructed under this programme; highways have been modernised, bridges built, public lighting improved, etc., benefiting the main frontier cities in the north.

By the end of 1964 the capital investment carried out by the National Frontier Programme totalled 322 million pesos; the subsidies granted to industrialists who sent their products to the northern frontier zone reached 69.2 million pesos: 29.3 million in respect of business income tax and 39.9 million in respect of rail freight.

Thus far the results achieved have mainly been to the advantage of commerce, since the Programme administration has not directly engaged in the task of promoting industries in the region, having only an industrialization committee which carries out the necessary studies to assess the utility and viability of the most desirable industries.

Private enterprise

* The construction of industrial estates

In 1960, through promotion by the private enterprise Inmuebles de Querétaro, S.A. and the Banco Internacional Inmobiliario, S.A., the Zona Industrial de Querétaro was set up in the city of the same name, 240 kilometres from Mexico City.

The Zone, or industrial estate, has an area of 600 hectares, of which 200 are for industrial use and the rest for shops, parks and workers' housing. The Zone is completely developed and has a water supply, sewers and electricity; it is connected by rail and road to the rest of the country.

The industrial plots are sold in sizes from two to ten hectares, and prices vary according to location within the Zone.^{6/} By 1965 eighteen private industrial plants had been set up in the Zone, mostly engaging in the production of food items or mechanical and electrical goods.

This industrial zone is developing more rapidly than any other in Mexico. However, its location has followed the traditional pattern of industry, namely, excessive concentration in the central portion of the country; this has nevertheless helped to advance the economic development of the State of Querétaro, one of the poorest and most backward in the Republic. Although the new industries provide employment for only 800 persons, the multiplier effect of the wages and salaries paid greatly benefits the region.

^{6/} The average price is 26 pesos per square metre for serviced sites and 5 pesos for non-serviced sites.

State Governments

* Industrial promotion legislation

In view of the need to promote the development of manufacturing, the Governments of the various States of Mexico have encouraged industrial promotion acts copied largely from federal legislation dealing with the promotion and attraction of industries.

The varied legislation of the States, by which tax exemptions are granted to industrial enterprises established in their territories, might at first sight be considered as an effective instrument for preventing further aggravation of the problem of geographical concentration of industry, within the framework of a general industrial development policy. However, as all the States in the Federation have passed their own laws for the promotion and protection of industry, by means of mainly fiscal incentives, the entire national territory has been placed on an equal fiscal footing, thus neutralizing the effect of such legislation as a means of attracting manufacturing enterprises.

Furthermore, in addition to deriving no benefits industrially, the States have lost the fiscal income they would have obtained from any new industries in their territories, which would have been set up even without the incentive of tax exemptions; this is untenable in view of the reduction of their own income and the industrial urbanization work that some States have had to undertake in order to supplement their ineffective legislation to attract industries.^{7/}

From another point of view, almost all the state laws aim to offer fiscal advantages to industries that are considered new in the state, adopting a strict criterion in this matter, almost as if each state were a country. This criterion would obviously be uneconomical for Mexico if, say, an attempt were made to attract a given industry to a particular state by means of tax exemptions, when that industry might be established under optimum locational conditions a short distance outside that state.^{8/} The importance that the establishment of industries

^{7/} José Benito Key. Justificación y fundamentación económica para una nueva legislación industrial (The justification and economic grounds for new industrial legislation). Professional thesis, National School of Economics, 1964, p.23.

^{8/} Gustavo Romero Kolbeck and Víctor L. Urquidí, op. cit., pp.19 and 20.

- not merely new or necessary industries but any type in general - may assume for the various states should not be disregarded; however, state tax exemption laws create obstacles to the economic development of the country if they are genuinely successful as locational factors, in so far as they reduce the scope of inter-regional competition and limit the scale of production at which enterprises can operate. In fact, if all existing state legislation achieved its object, there might be a considerable decentralization of industrial activity, discouraging the development of large plants and favouring the proliferation of small-scale plants. Adopting a purely economic criterion, therefore, it would seem logical to promote the location of industries in places where greater productivity and reduced costs would be ensured by the availability of transport, markets, manpower, electric energy, etc. State tax exemptions which, for the sake of fiscal expediency or other reasons, are intended to counter this natural pattern of location, would probably have unfavourable effects on the country as a whole.

To sum up, local fiscal exemption designed to attract industries is an unimportant locational incentive compared with basic economic factors. Furthermore, if it is successful, it may hamper the optimum location of industry from the national point of view.^{9/}

By 1965, twenty-eight of the twenty-nine states in the country had enacted legislation to promote the establishment of industries in their territories.^{10/}

^{9/} Ibid., p.20

^{10/} The breakdown of this legislation by states is as follows: nine states had an Industrial Promotion Act (Chihuahua, Hidalgo, Jalisco, Michoacán, Nayarit, Puebla, Sinaloa, Tlaxcala and Zacatecas); eight had an Industrial Protection and Promotion Act (Aguascalientes, Coahuila, Colima, Querétaro, Oaxaca, Tabasco, Tamaulipas and Veracruz); two had an Economic Promotion Act (Baja California and San Luis Potosí); three had an Industrial Protection Act (Guerrero, Mexico and Nuevo León); one had an Act for the Protection of Industry and Investments (Campeche); one, an Act for the Promotion of New Industries and Processing Industries (Chiapas); one, an Act Regulating the Political Constitution of the State (Coahuila); one, an Act on Tax-free Privileges and their Reform (Durango); one, an Act for the Promotion of Investment (Morelos); and one an Act for the Protection of the Processing Industries (Sonora). The only state without industrial promotion legislation is Yucatán.

Generally speaking, state industrial promotion legislation offers incentives for the creation of new and necessary industries and for the expansion of existing industries. These incentives consist in partial or total exemption from the following taxes: land tax, tax on the transfer of immovable property, interest on financing capital, and fees for registration in the Register of Property. The period in which the incentive is valid varies from two to twenty years; on the average, it is usually between seven and ten years.

* Industrial estates

In view of the need to attract industries more effectively than by industrial development acts, some States have promoted the establishment of partially serviced industrial zones or estates, in which lots are offered for sale to manufacturing enterprises interested in setting up business there. Estates of this kind have been set up in the States of Jalisco, San Luis Potosí, Guerrero, Tamaulipas and Veracruz. The most important of these zones, in terms of the number of industries already established, is the Industrial Zone of Western Mexico, which was promoted on the initiative of the Government of the State of Jalisco, one of the most dynamic territorial units in the Central Region.

The zone is located in the immediate vicinity of the city of Guadalajara, the capital of the State, and occupies an area of approximately 2,000 hectares. It is linked by road and rail with the centre and north of Mexico and has abundant water, one of the scarcest resources of the Central Region of the country. By the end of 1965, two plants producing pharmaceuticals had been established there.

Department of the Federal District

* Tax exemption legislation

A large part of the area of Mexico City forms an enclave within the Federal District, which is the seat of the federal administration of the Republic and the most highly industrialised area in the whole country.

At the end of the Second World War, this State pursued a policy of tax exemption to attract industries and thus create employment opportunities and eventually obtain greater revenue from taxes. This type of local exemption system is different from the federal exemption system; federal exemption has no specific locational effects within the country, whereas local exemption is a marginal factor in the location of industry.

Exemption by the Department of the District covers two taxes: (a) the land tax on immovable property intended for use in the exempted industries and (b) the 1.2 per cent payable to the Department out of the federal tax on business income. The exemption might be granted to the so-called "new" industries that is to say, "those which have initiated or are to initiate the manufacture or production in the country of articles or goods not previously produced there", (article 936, II) and the "necessary" industries, that is to say, "those whose aim it is to manufacture or produce articles or goods not made in the country in sufficient quantities to satisfy the needs of national consumption" (article 938, III). As a rule, both types of industry receive complete exemption from these taxes during the first three years in which exemption is granted, 50 per cent exemption for three years more and 25 per cent for another three years, the maximum permissible extension being nine years.

The Federal Government has so far granted complete exemption from the following taxes: (a) income tax (b) tax on business income and (c) levies on the importation of materials, machinery, equipment, materials for repairs, ancillary raw materials and semi-finished products, provided that similar articles are not produced in the country. The exemption is granted for ten years to enterprises considered as basic to the industrial development of the country, for seven years to those considered "of economic importance" and for five years to the others. Consequently, compared with federal exemption, the least that can be said of that granted by the Department of the District is that it has been insignificant. The taxes from which it granted exemption were obviously much less important than those covered by federal exemption and, furthermore, exemption was granted for shorter periods. The tax on industrial profits and the Customs duties from which exemption was granted are probably more important alone than all Federal District taxes combined (whether the latter are included in the exemption or not). These two exemptions granted by the Federal Government for a total of ten years carried far more weight in the investment decisions of private individuals than any exemptions granted by the Federal District.^{11/}

^{11/} Gustave Emere Kolbeck and Victor L. Urquidi, op. cit., pp.53 and 54.

At the end of 1955, this system ceased to apply and no exemptions are being continued. Of the two taxes from which the Federal District granted exemption, the land property tax had a very small yield and its influence on industrial costs was minimal. The tax on business income, although higher, represented no more than 1.25 per cent of sales and, at the same time, a varying amount of profits, depending on the efficiency of the various enterprises.^{12/} To sum up, while tax exemption by the Federal District was in force, it did not constitute a powerful fiscal incentive for the establishment of enterprises either in respect of the amount of tax exemption or in relation to the level of industrial profits.

The main branch of industry to benefit from the District exemption law was metal manufactures, with a total of twenty-three enterprises, followed by the chemical industry with nineteen enterprises, the production of electrical equipment and appliances with nineteen and the production of machinery and accessories with eighteen; together, these accounted for 54 per cent of the enterprises exempted. The remaining 46 per cent represented sixteen branches of industry and nine enterprises that were not classified. The labour force employed by the exempted enterprises totalled about 15,000, i.e. about 8 per cent of the total labour force of the Federal District employed in 1950.^{13/}

* Restrictions on industrial estates

At the beginning of 1963, in view of the scarcity of resources for investment and in order to limit the horizontal expansion of Mexico City and thus be able to meet the growing demand for public works and services springing from the rapid population growth, the Department of the Federal District revised the building regulations in force up to then, with the aim of introducing amendments to restrict the sub-division of lots and to prohibit the establishment of new residential districts. However, instead of mitigating the serious urban problems of this large metropolitan area, these measures accelerated the spread of urbanization to the municipalities in the State of Mexico adjacent to the Federal District. Moreover, this policy favours the owners of undeveloped land, agents authorized to divide land into lots and owners of apartment buildings by promoting a constant rise in rents.

^{12/} Ibid., p.59

^{13/} Ibid., p.23

3. Indirect measures to influence the geographical distribution of industry

Federal public sector

* Industrial promotion legislation

Another factor that may perhaps have motivated or at least facilitated the establishment of industrial enterprises in the country has been the legislation passed for this purpose. The year 1939 saw the enactment of an industrial promotion act, entitled the General Act on Processing Industries, which was amended in 1941 and 1946. Under this Act, various exemptions from federal taxation were granted to all new or necessary industries established in the national territory or to established industries that met the relevant legal requirements. The Act was repealed in 1955 with the promulgation of the Act for the Development of New and Necessary Industries, whose purpose is to stimulate industrialization through exemption from levies on import and export, stamp duty, business income and private income, for fixed amounts and for periods of ten, seven or five years, according to the merits of each particular case. For the application of these exemptions, industries are divided into new and necessary industries and are further classified as basic, semi-basic and secondary.

Under the Act, basic industries are considered to be those producing raw materials, machinery for industry, equipment or vehicles for the country's industry or agriculture; semi-basic industries are those producing goods to satisfy vital needs of the population, tools and scientific instruments for industry or agriculture, or products for important industrial activities; and secondary industries are those producing luxuries or non-essentials.

For the period 1939-1948 there are no reliable data on the amount of fiscal earnings foregone by the Federal Government in respect of the enterprises that enjoyed such exemption; however, from 1949 to 1960, this loss was slightly less than 1,000 million pesos at current prices, which may be considered as the direct fiscal sacrifice originating from the exemptions, as distinct from the loss of income by the state on cessation of the importation of certain goods through the production of similar goods in the country itself, which could be called indirect fiscal sacrifice.^{14/}

^{14/} Ministry of Finance and Public Credit, General Directorate of Financial and Press Studies. La Hacienda Pública Federal (Federal Public Finance), 1960, p.39.

Initially, and in view of the urgent need to accelerate the country's development, exemptions were granted without making any considerable demands on applicants. The main consideration was to attract investment, whatever its origin, quantity, quality, object and geographical location. With the passage of the years and with the economic progress of Mexico, the Government revised its policy on exemption, passing from the stage of a broad degree of liberality to one of selectivity; nevertheless, existing legislation still contains no measures aimed at directing industry towards zones which have resources suitable for industrial processing, or expanding markets, and which thus far have remained on the fringes of industrial development.

Between 1940 and the first half of 1962 a total of 792 enterprises,^{15/} of which 505 (64 per cent) were located in the Federal District and in the State of Mexico, 77 (10 per cent) in the State of Nuevo León and 210 (26 per cent) in the rest of the country were granted tax exemptions under the various industrial promotion act. This indicates that the Federal Government has indirectly and accidentally favoured certain regions of the country through its general tax exemption policy. This means of industrial promotion might substantially aid the development of manufacturing and help to ensure better utilization of the resources available in the various regions if the legislation provided for measures to achieve a better geographical distribution of national industry. Table XIII shows the geographical location of the exempted plants as well as the industrial acts under which they were exempt.

The main industries enjoying exemption are those that produce metal goods, electrical goods, machinery and equipment, with 265 enterprises (33 per cent of the total), those producing chemicals and chemical products, with 115 plants (15 per cent), those producing food products and beverages, with 105 enterprises (13 per cent) and the iron and steel industry with 45 plants (6 per cent) - see table XIV.

^{15/} In actual fact, more enterprises were granted tax exemptions, but some did not make use of them, because they were not fully established, did not manufacture the products to exemption applied, had been granted the exemption at a time when they no longer needed it or because they closed down while enjoying exemption. The 792 enterprises include those that closed down after the expiry of their exemption. Bank of Mexico, Department of Industrial Research. Directory of Industrial Enterprises Granted Tax Exemptions, 1940-1960 and Supplements, 1961 and first half of 1962.

To permit the renewal of the equipment of each enterprise the reinvestment of 10 per cent of the distributable profits has been allowed since 1949; as of 1954 the percentage was increased by a further 20 per cent of these profits, for the same purpose: this means that 30 per cent of the profits may be reinvested without any corresponding payment of taxes.

In addition to this industrial promotion policy there are measures to protect established industries under the General Import Tariff Act which imposes high to prohibitive charges on the import of goods that are produced in the country, thus inducing the consumer to choose domestic products. At the same time, raw materials that have to be imported from abroad are either taxed lightly or not at all, and direct control of imports is ensured by means of prohibitions and special licences. On the other hand, the General Export Tariff favours the export of finished or semi-finished goods rather than raw materials, so as to encourage processing within the country.^{16/} However, none of these laws includes measures affecting the geographical distribution of industries.

* **The National Finance Corporation**

This is the chief agency for industrial promotion in the country. It was established in 1934, benefiting from the experience of the investment bank founded in Europe during the second half of the nineteenth century and of the first development banks.

In 1941 the Corporation was assigned its present aim of promoting economic development, starting by sponsoring projects designed to offset the scarcity of products arising out of the war and by intervening in the stock market to capture a large portion of domestic savings. There is no doubt that the industrial progress made by the country in recent years is largely due to the work of the National Finance Corporation which, through its banking and promotion activities, has channelled resources and established enterprises in branches of industry that contribute to the economic integration of the country, in addition to undertaking large infra-structural investments.^{17/}

^{16/} Sergio Miceli Sánchez, La concentración industrial en el área metropolitana de la Ciudad de México (Industrial Concentration in the Metropolitan Area of Mexico City). Professional thesis, National School of Economics, National Autonomous University of Mexico, 1965, p.56.

^{17/} Octaviano Campos Salas, Las instituciones nacionales de crédito. México - 50 años de Revolución (National Credit Institutions, Mexico - 50 years of Revolution) I, La Economía, Fondo de Cultura Económica, Mexico, 1960, pp.431 and 432.

Notwithstanding its resources and powers, the National Finance Corporation has not directly intervened in the geographical distribution of industry except with regard to the founding of Ciudad Bernardino de Sahagún. However, this institution has incidentally promoted the establishment and expansion of a large number of enterprises in the Central and Northern regions of the country. As shown in table XV, 46.9 per cent of the loans granted by the National Finance Corporation up to 1963 went to the Federal District and the State of Mexico and 14 per cent to the States of Coahuila and Nuevo León.

The work of this agency, which has considerable resources and is empowered to carry out industrial promotion studies systematically, will probably be much more effective when its programmes form part of a national industrialization plan, which the country still lacks.

* Guarantee Fund

The Guarantee and Promotion Fund for Medium and Small-scale Industry was set up in 1953 with the aim of meeting the credit needs of small and medium-scale manufacturers, through private credit institutions, and particularly deposit banks and finance companies; it has been of outstanding assistance in stimulating the industrial development of Mexico.

The Fund grants loans for equipment and repairs to small and medium-scale manufacturers according to their needs and the book value of the enterprise's capital. The small-scale industries established in the metropolitan area of Mexico City and Monterrey, which are considered as zones of industrial concentration for the purposes of Fund operations, must have a book-value capital of not less than 50,000 pesos; in the case of small-scale industries established in the rest of the country, a minimum of 25,000 pesos is required. However, this difference is so slight that it has not significantly affected the geographical distribution of enterprises. ^{18/}

^{18/} It is interesting to note that 69 per cent of the loans granted by the Fund were not greater than 200,000 pesos and that the average was 85,000 pesos.

In fact, by 1965, the Fund had granted financial support to 3,559 enterprises, 1,971 (55.3 per cent) of which were located in the Federal District and in the State of Mexico and 226 (6.3 per cent) in the State of Nuevo León. Of the total loans granted, 88.4 per cent went to the ten most highly industrialized areas in the country^{19/} (see table XVI), benefiting about 3,000 enterprises and giving employment to more than 130,000 workers. From this information it can be concluded that the Fund has fortuitously helped to promote the growth of industrial development in the most highly industrialized areas, thus contributing to further congestion of manufacturing activity.

* Public works policy

The public sector indirectly influences the location of industrial enterprises through its infrastructural works policy. In the period 1959-1965, total gross capital investment in Mexico was 167,000 million pesos, 38.4 per cent being accounted for by the public sector and the remaining 61.6 per cent by the private sector.^{20/} Public action is basically directed towards promoting productive activity, and particularly the construction of roads and railways, irrigation systems, the generation of electric energy and industrial development; this category of works has accounted for about 72 per cent of total capital investment by the public sector in recent years. Furthermore, in the last decade there has been a relatively large growth in public investment for social development projects, such as schools, housing, hospital and welfare facilities, the supply of drinking water and the construction of sewers.

Thus far public investment has not been incorporated into a national development plan so as to permit more harmonious development of the country. The government's most pressing concern in recent years has been to obtain foreign exchange in order to maintain the high rate of economic growth, which is indispensable if the domestic market is to be substantially expanded for the benefit of industrialization.

^{19/} These areas are: the Federal District, Mexico, Nuevo León, Veracruz, Coahuila, Jalisco, Chihuahua, Tamaulipas, Guanajuato and Puebla.

^{20/} Ministry of the Presidency, Directorate of Public Investments, Mexico Inversión Pública Federal 1925-1963 (Mexico: Federal Public Investment 1925-1963). Mexico, 1964.

As a result of this situation, investment has been directed mainly towards States that offer the greatest possibilities of economic expansion, because they have either abundant natural resources that can easily be exploited or a relatively more highly developed infrastructure, which has favoured a degree of industrial growth that should be stimulated further. Under these circumstances, it is logical to suppose that the most industrialised territorial units obtain the greatest volume of public investment, as is illustrated in the following table:

PERCENTAGE OF TOTAL PUBLIC INVESTMENT INTENDED FOR THE MOST
INDUSTRIALIZED TERRITORIAL UNITS IN 1959-1965

Territorial Units	Total investment	Promotion of agriculture and animal husbandry*	Industrial promotion**	Social welfare***
Federal District	21.7	2.5	6.7	64.8
Mexico	4.2	5.1	4.1	3.4
Nuevo León	2.7	1.5	3.7	1.3
Veraacruz	9.7	2.4	16.7	2.1
Coahuila	4.6	2.8	7.3	1.8
Jalisco	3.0	2.2	3.2	1.4
Chihuahua	3.6	4.3	2.4	1.6
Tamaulipas	6.7	5.0	11.7	2.7
Guanaajuato	2.6	2.3	4.1	0.7
Puebla	2.7	0.5	4.2	0.8
Totals:	<u>61.5</u>	<u>28.6</u>	<u>64.1</u>	<u>80.6</u>

* Agriculture, animal husbandry, forestry, hunting and fishing.

** Fuels, chemicals, fertilizers, iron and steel, mining, food and beverages, paper, wood, publishing and other industries.

*** Public services, hospitals and welfare centres, education and research, housing and community development.

In the light of these figures, it is not surprising that the national industry has tended to be concentrated in a few territorial units of the country, excluding the rest of the country from the beneficial effects of industrialization. Unfortunately, as has been pointed out in earlier sections, until a few months ago there was no national development plan in which to integrate the growth of sub-divisions of the territory; there is still no comprehensive industrial development programme that would make it possible to orientate the geographical distribution of manufacturing activity within the general objectives of Mexican industrial and social development policy.

In the future, public investment policy could play a predominant role in the geographical distribution of national industry, by encouraging and introducing incentives in the less-developed areas in order to create a climate favourable to the development of manufacturing. Otherwise it will be difficult for the country to continue the rapid expansion of the domestic market, which is an essential requirement for maintaining the rapid rate of economic growth achieved in recent years.

* Policy on electric energy and fuels

The State has actively intervened in the production of electric energy and fuels and at the moment has complete control of these important sectors of the national economy.

Before the electricity industry was nationalized in 1960, electrification had tended to be determined by the economic growth recorded in the more rapidly expanding sectors of activity or zones rather than the outcome of a deliberate promotion plan. Hence the enormous concentration of electrical installations in the main centres and their relative stagnation in the less dynamic zones (see Table IV). Accordingly, the main features of national electricity development up to that date were: an imbalance in the regional growth of the electricity industry, scant progress in rural electrification, and little electrification of new zones or sectors.^{21/} The pattern of electricity charges was one of low average prices per kWh in communities with greater demographic concentration and higher prices in the small communities with a lower degree of economic development. The situation was thus biased in favour of the population of the most highly industrialized states, which have the largest incomes.

^{21/} Cristóbal Lara Beutell. La industria de energía eléctrica. México - 50 años de Revolución (The Electricity Industry. Mexico - 50 Years of Revolution), I. La Economía, Fondo de Cultura Económica, México, 1960, pp.251-255.

Nation-wide rates were introduced at the beginning of 1962 with a view to standardizing electricity prices for the same type of service throughout the country. However, this is not equitable as the richer zones with high per capita incomes are specially favoured. Consideration is now being given to the possibility of setting different prices per kWh according to the capacity of the consumers to pay and the degree of development of each region, which will undoubtedly provide a considerable incentive for promoting the industrial development of the regions relatively less developed economically.

Through the decentralized agency Petróleos Mexicanos, the State is responsible for the production and national distribution of gas and petroleum products. Natural gas is so cheap in comparison to any other source of energy that its occurrence or absence is a determining factor for the installation of various industries. A large proportion of the industrial growth of Monterrey is attributable to the fact that it has had natural gas since 1926, that is, almost twenty-five years earlier than any other city.^{22/} Up to 1950, the market for natural gas was limited to this city and to the frontier communities of Ciudad Juárez, Nuevo Laredo, Naco and Piedras Negras. Between 1950 and 1962 the structure of the market for natural gas changed when various gas pipelines supplying the Central Region of the country were brought into service.^{23/} In the last year of this period, 51 per cent of National consumption was absorbed by the metropolitan area of the city of Monterrey, and 33 per cent by Valle de México, the remaining 16 per cent being distributed among various localities.^{24/} The network of pipelines for gas and other products has been extended from the production zones to Monterrey, Torreón and Chihuahua in the Northern Region and Mexico City, Salamanca and Gundalajara in the Central Region, with branches along the length to supply the main industries.

22/ Paul Lamartine Yates, op. cit., p.166.

23/ Raúl González Gómez. Producción y mercado del gas natural en México. (The Production of Natural Gas in Mexico and its Market), Professional thesis, National School of Economics, National Autonomous University of Mexico, 1964, p.36.

24/ Ibid, Table 40.

To sum up, policy with regard to electricity, gas and petroleum products has favoured the growth of manufacturing in the Northern and Central Regions of the country, thus leading to a greater degree of concentration in industry.

* Transport policy

As a result of the topography of Mexico, rail and road transport predominate. What is needed for industrial development is a widespread network of roads and railways, a rapid delivery service and reasonable freight charges.

The areas with the best rail links are in the Central Region, and especially the metropolitan area of Mexico City, from which almost all of the railway lines and the most important roads originate. Consequently, raw materials can easily be sent to the centre from all points in the country. However, it should be pointed out that the rail freight tariffs have been formulated in such a way as to force industry towards the central regions; as a rule, raw materials, especially minerals, pay the lowest rates, while finished products and dangerous products pay the highest rates. The rationality of this pattern has been disputed for a long time because it favours the long-distance transport of raw materials and restricts that of finished products to short distances, resulting in a concentration of processing industries in the principal centres of consumption, despite the distance from sources of raw materials.^{25/} This freight pattern is an unfortunate reminder of the days when railways operated for the benefit of the mining enterprises, and has been unsuitable for the requirements of national development while undoubtedly encouraging the centralization of industry.^{26/}

* Policy on other matters

Policy on other matters has undoubtedly been of importance with regard to the geographical distribution of manufacturing activities. We shall refer in particular to policies concerning wages, industrial training and higher education in science and technology.

^{25/} Norman D. Lees, Localización de industrias en México (The Location of Industry in Mexico), Bank of Mexico, S.A., Industrial Research Department, Mexico, 1965, pp.51 and 52.

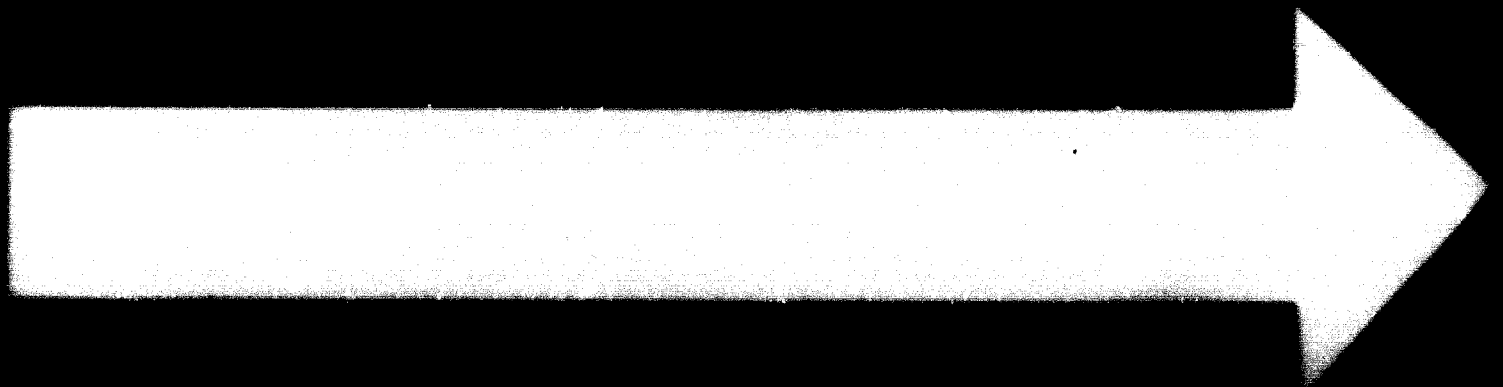
^{26/} Paul Lemartine Yates, op. cit., p.171

Industries tend to be established around places where there is cheap labour - that is, cheap in terms of output, or, in other words, in terms of the quantity of output per unit of wages. Accordingly, the manufacturer is sometimes more interested in expensive labour, owing to its greater productivity. Even though there may be a more abundant and cheap supply of labour in the rural districts than in the large centres, labour may be more economical in the latter areas, because it is more adaptable to new processes and because the workers are already trained in the kind of techniques to be introduced. It would therefore seem that the fundamental consideration in the location of Mexican industries has been not so much the relative cheapness of labour as the availability or non-availability of skilled labour to carry out the industrial processes with the required efficiency. ²⁷

All these factors suggest that the attraction of the low wages prevailing in certain zones has not been sufficiently powerful to divert the flow of new enterprises towards such zones and that industries have been drawn to centres with skilled labour rather than to zones with cheap labour.

This process, by encouraging the concentration of the various branches of industry in two or three main territorial divisions, has helped to build up a labour force that is geared to industrial work and has tended to increase and perpetuate concentration in the more highly developed areas, particularly the Federal District.

Through its policy of training industrial manpower the Federal Government has indirectly helped to accelerate the above-mentioned process by establishing its industrial training centres precisely in the most highly industrialized areas. In fact, of the ten centres of this type existing in 1965 throughout the country, four were in the Federal District and one in each of the six following areas: Jalisco, Nuevo León, Guanajuato, Coahuila, Puebla and Veracruz, that is, those with the highest degree of manufacturing development in the country. So it is not the industrial development of the areas with relatively less economic development that has been promoted but rather the expansion of the most developed areas. The most highly skilled technical personnel has been channelled towards these areas and the professional skill of the manpower employed in industry has been raised.

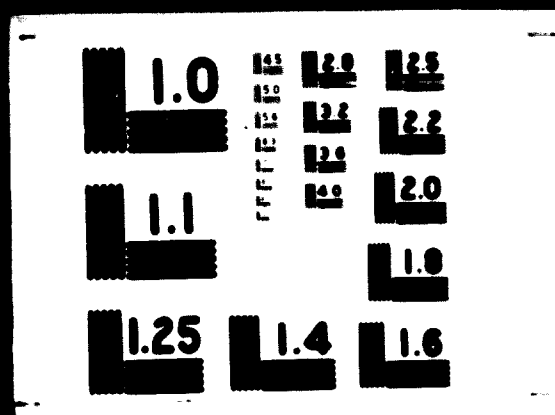


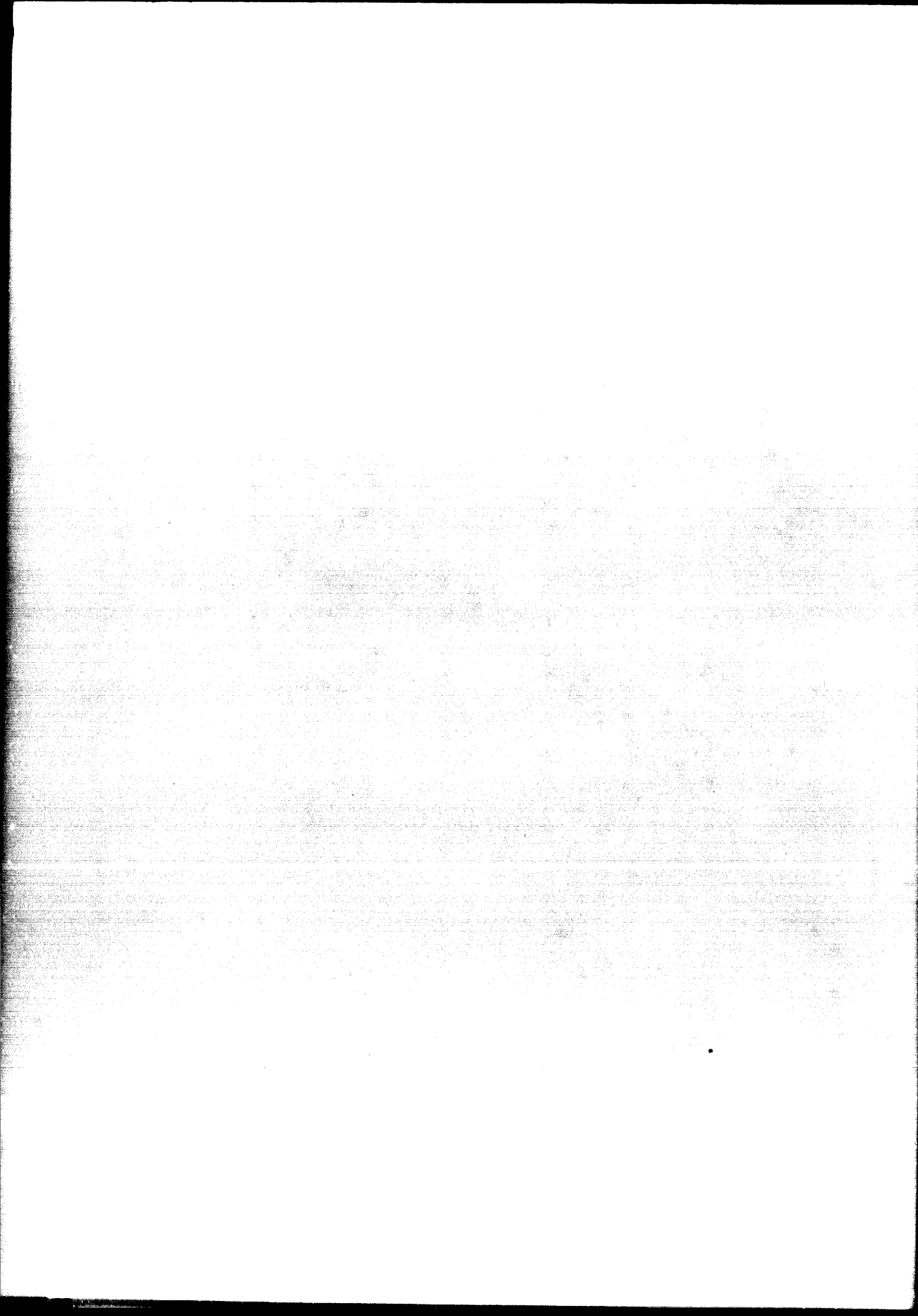
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APPENDIX

TABLE I

PERCENTAGE PARTICIPATION OF FEDERAL POLITICAL DIVISIONS IN MEXICAN INDUSTRIAL PRODUCTION

<u>Political divisions</u>	<u>Population in 1960</u>	<u>1930</u>	<u>1940</u>	<u>1950</u>	<u>1960</u>
Agascalientes	255,700	0.45	1.28	0.24	0.24
Lower California	535,700	2.47	1.63	3.19	1.65
Lower California, Southern Terr.	82,400	0.30	0.15	0.23	0.19
Campeche	176,500	0.18	0.22	0.30	0.23
Coahuila	951,700	5.58	12.27	5.32	4.33
Colima	163,900	0.18	0.45	0.14	0.16
Chiapas	1,218,700	1.22	0.85	0.31	0.27
Chihuahua	1,245,700	1.94	7.30	6.20	3.38
Federal District	5,010,900	27.74	31.52	28.55	39.65
Durango	787,200	2.78	3.82	2.24	0.90
Guana Justo	1,786,800	4.26	2.27	2.02	2.57
Guerrero	1,241,700	0.34	0.15	0.69	0.31
Hidalgo	1,030,100	2.00	3.32	1.20	1.25
Jalisco	2,512,400	3.75	2.92	3.86	4.31
México	1,937,400	3.50	2.53	4.75	10.05
Michoacán	1,938,900	2.21	1.44	1.43	0.91
Morelos	402,900	0.34	0.46	0.71	0.62
Mayarít	410,600	0.56	0.43	0.24	0.22
Nuevo León	1,118,700	7.75	4.67	6.52	9.17
Oaxaca	1,763,900	0.98	0.47	0.76	0.47
Puebla	2,021,800	6.96	0.56	3.50	2.32
Querétaro	370,600	0.80	4.51	0.44	0.42
Quintana Roo	50,400	0.02	0.01	0.13	0.02
San Luis Potosí	1,098,400	2.02	0.83	2.77	1.17
Sinaloa	866,900	2.49	0.98	1.79	1.68
Sonora	822,400	1.86	2.36	2.41	1.76
Tabasco	508,400	0.27	0.13	0.19	0.09
Tamaulipas	1,060,000	2.55	0.78	4.04	3.04
Tlaxcala	360,200	0.91	0.45	0.46	0.26
Veracruz	2,761,300	10.02	9.22	12.67	6.80
Yucatán	646,300	2.99	1.13	1.73	1.09
Zacatecas	858,500	0.58	1.88	0.98	0.47
Totals:	36,003,000	100.00	100.00	100.00	100.00

TABLE II

PERCENTAGE PARTICIPATION OF THE VARIOUS REGIONS
 IN NATIONAL INDUSTRIAL PRODUCTION

Regions	1930	1950	1960
NORTHERN	<u>22.1</u>	<u>27.1</u>	<u>21.1</u>
Lower California	2.5	3.2	1.6
Sonora	1.9	2.4	1.8
Chihuahua	1.9	6.2	3.4
Coahuila	5.6	5.3	4.3
Nuevo León	7.7	6.5	9.2
Tamaulipas	2.5	4.1	3.0
CENTRAL	<u>61.1</u>	<u>60.0</u>	<u>60.3</u>
Veracruz	10.0	12.7	6.8
Puebla	6.9	3.5	8.3
Tlaxcala	0.9	0.5	0.2
Morales	0.3	0.7	0.6
Federal District	27.7	28.6	39.6
Mexico	3.5	4.8	10.1
Hidalgo	2.0	1.2	1.3
Michoacán	2.2	1.4	0.9
Querétaro	0.8	0.4	0.4
Guanaajuato	4.3	2.0	2.6
Colima	0.2	0.1	0.2
Jalisco	3.8	3.9	4.3
Aguascalientes	0.5	0.2	0.2
OTHER REGIONS	<u>14.7</u>	<u>12.1</u>	<u>1.2</u>

Source: Industrial Censuses of Mexico, General Directorate of Statistics, Ministry of Industry and Commerce.

TABLE III

PERCENTAGE PARTICIPATION OF THE VARIOUS REGIONS
 IN NATIONAL EMPLOYMENT IN INDUSTRY

Regions	1930	1950	1960
NORTHERN	13.7	23.9	18.3
Lower California	0.3	0.8	0.4
Sonora	1.2	1.4	1.8
Chihuahua	1.8	3.8	3.1
Oaxaca	3.9	6.1	3.5
Nuevo Leon	5.1	5.5	7.9
Tamaulipas	1.4	6.3	1.7
CENTRAL	62.5	59.8	68.8
Veracruz	10.4	5.0	5.0
Puebla	8.2	5.0	4.8
Tlaxcala	1.2	0.7	0.6
Morales	0.5	0.9	0.7
Federal District	19.5	30.3	36.2
Mexico	3.6	4.8	10.7
Hidalgo	2.5	2.3	1.0
Michoacan	3.7	2.0	1.5
Queretaro	1.1	0.8	0.4
Guanajuato	5.1	2.9	2.5
Colima	0.4	0.3	0.3
Jalisco	6.8	4.4	4.7
Aguaascalientes	0.5	0.4	0.4
OTHER REGIONS	22.8	16.3	12.9

TABLE IV
THE 100 MOST IMPORTANT INDUSTRIAL CENTERS IN MEXICO
(1960)

Order of importance	Municipality	Political division	Population (thousands)	Total value of industrial production (thousand pesos)	Number employed	Value of production in basic industries	Value of production in processing industries
1	Mexico City*	Federal District	5,147	30,875,139	490,387	8,181,573	22,693,566
2	Monterrey**	Nuevo Leon	708	5,758,017	67,737	2,133,020	3,624,997
3	Guadalajara	Jalisco	740	1,596,973	26,986	138,243	1,458,730
4	Minatitlan	Veracruz	68	1,196,268	3,172	1,193,771	2,477
5	Chihuahua	Chihuahua	186	1,024,551	9,231	759,082	265,469
6	Puebla	Puebla	297	937,098	23,940	38,137	898,961
7	Salamanca	Guamajuato	67	858,844	2,829	800,759	58,085
8	Morelos	Coahuila	45	857,780	6,911	791,871	65,909
9	Toluca	Mexico	156	612,213	6,827	53,385	558,848
10	Cd. Hidalgo	Tamaulipas	53	610,769	6,813	606,099	4,670
11	Mrida	Yucatan	190	559,896	10,659	19,803	540,093
12	Mexicali	Lower California,	281	546,628	6,596	128,639	417,989
		Barthina					
13	Orizaba	Veracruz	69	523,924	7,796	3,931	519,993
14	San Luis Potosi	San Luis Potosi	193	459,670	6,996	277,007	182,663
15	Torreón	Coahuila	203	459,074	5,899	145,849	313,225
16	Veracruz	Veracruz	153	436,794	4,723	294,156	142,638
17	Saltillo	Coahuila	127	390,346	7,519	35,586	354,760
18	Cajeme	Sonora	124	361,300	2,855	163	361,137
19	Matamoros	Tamaulipas	143	329,249	3,197	16,936	312,313
20	Culiacan	Sinaloa	208	320,929	6,260	15,854	305,075
21	Bayamon	Tamaulipas	134	298,247	1,886	157,701	140,546
22	Ledn	Guamajuato	260	276,642	9,108	38,371	238,271
23	Queretaro	Queretaro	103	255,999	2,547	2,221	253,778
24	Chapas Palacote	Durango	103	237,175	3,217	15,240	221,935
25	Camague	Sonora	21	216,540	1,688	211,724	4,816
26	Irapuato	Guamajuato	127	195,608	3,272	6,155	189,453

TABLE IV (Cont'd)

Order of importance	Municipality	Political division	Population (thousands)	Total value of industrial production (thousand pesos)	Number employed	Value of production in basic industries	Value of production in processing industries
27	Tampico	Tamaulipas	129	165,081	3,904	28,286	156,795
28	Córdoba	Veracruz	62	179,326	2,808	8,056	171,270
29	Cd. Juárez	Chihuahua	277	178,353	2,559	23,390	154,963
30	Jalapa	Veracruz	78	178,132	3,821	53,474	124,658
31	Hermosillo	Sonora	118	176,732	3,238	28,670	148,062
32	Mazatlán	Sinaloa	113	176,713	3,003	32,736	143,977
33	Pasa Ricos	Veracruz	72	176,609	1,358	155,583	21,026
34	Tequila	Jalisco	15	174,269	811	168	174,101
35	Durango	Durango	143	169,631	3,765	37,336	132,295
36	Ahome	Sinaloa	90	155,017	2,208	195	164,822
37	Zacapa	Michoacán	39	164,649	1,482		164,649
38	Guernavaca	Morelos	86	162,817	3,710	4,487	158,330
39	Tula	Hidalgo	29	158,938	1,327	158,326	612
40	Tijuana	Lower California, Northern	156	153,121	2,395	9,193	143,928
41	Pachuca	Hidalgo	72	148,016	5,272	87,340	60,676
42	Lagos de Moreno	Jalisco	52	145,954	553	166	145,788
43	Atlixco	Puebla	58	144,027	6,258	845	143,182
44	Aguascalientes	Aguascalientes	154	142,950	3,792	7,525	135,425
45	Parras	Coahuila	33	141,835	2,094	8	141,827
46	Ocotlán	Jalisco	32	133,426	419	419	133,007
47	El Mante	Tamaulipas	50	121,691	1,950	4,880	116,811
48	Tecate	Lower California, Northern	8	120,964	283	2,406	118,558
49	Tepic	Nayarit	74	114,742	1,853	795	113,947
50	Ensenada	Lower California, Northern	65	113,010	1,832	9,396	103,614
51	Tepeapulco	Hidalgo	14	11,972	3,063	38,054	73,918
52	Navojos	Sonora	54	104,881	823	205	104,676
53	Morelia	Michoacán	153	103,683	2,249	10,366	93,317
54	H. del Parral	Chihuahua	45	103,600	1,183	58,489	45,111
55	Zacatepec	Morelos	16	95,672	2,417	432	95,240
56	Celaya	Guanaajuato	99	88,605	1,897	1,705	86,900

TABLE IV (Cont'd)

<u>Order of importance</u>	<u>Municipality</u>	<u>Political division</u>	<u>Population (thousands)</u>	<u>Total value of industrial production (thousand pesos)</u>	<u>Number employed</u>	<u>Value of production in basic industries</u>	<u>Value of production in processing industries</u>
57	Nuevo Laredo	Tamaulipas	96	85,792	1,284	296	85,496
58	Sabinas	Coahuila	37	79,778	1,238	39,872	39,906
59	Cd. Victoria	Tamaulipas	80	79,063	2,994	43,161	35,902
60	Tlaquepaque	Jalisco	56	78,237	1,376	58,456	19,691
61	Acapulco	Guerrero	85	74,566	1,621	27,639	46,927
62	Cd. del Carmen	Campeche	41	72,678	1,467	84	72,594
63	Delicias	Chihuahua	52	70,682	1,195	269	70,413
64	Zapopan	Jalisco	55	64,416	1,356	560	63,856
65	Tulancingo	Hidalgo	37	57,783	1,252	1,142	56,641
66	Turtepec	Oaxaca	29	54,596	412	65	54,531
67	Teziutlán	Puebla	31	49,871	790	43,625	6,246
68	Fco.I. Madero	Coahuila	35	49,700	370		49,700
69	Tehuacan	Puebla	45	48,461	1,232	2,700	45,761
70	Oaxaca	Oaxaca	79	45,908	1,154	5,602	40,306
71	Colima	Colima	54	39,483	1,925	2,268	36,815
72	Piedras Negras	Coahuila	48	39,229	1,343	23,622	15,607
73	San Pedro	Coahuila	70	38,343	356	318	38,025
74	Chiantempan	Tlaxcala	25	38,168	1,142	62	38,106
75	Guanaajuato	Guanaajuato	55	36,265	884	34,171	2,094
76	Camargo	Chihuahua	29	36,231	896	22,802	13,429
77	Guaymas	Sonora	54	35,890	996	17,399	18,491
78	Tapachula	Chiapas	85	34,125	1,045	315	33,810
79	La Paz	Lower California, Southern	29	33,987	849	17,564	16,423
80	Salina Cruz	Oaxaca	16	32,063	455		32,063
81	Tixtlan	Yucatan	27	30,562	597	81	30,481
82	Campeche	Campeche	54	28,318	725	7,424	20,894
83	Coahuacoalcos	Veracruz	54	28,299	1,206	9,283	19,016
84	Cd. Valles	San Luis Potosi	44	27,840	1,127	6,891	20,949
85	Izucar de Mata- moreos	Puebla	35	26,055	249	1,202	24,853
86	Centro	Tobasco	104	22,919	701	3,418	19,501

TABLE (Cont'd)

Order of importance	Municipality	Political division	Population (thousands)	Total value of industrial production (thousands pesos)	Number employed	Value of production in basic industries	Value of production in processing industries
87	Tuxpan	Veracruz	50	21,013	357	232	20,731
88	Apatzingo	Michoacán	31	20,823	1,707	46	20,777
89	Loma Bonita	Oaxaca	15	20,614	260		20,614
90	Silao	Guanaajuato	54	20,075	270	18	20,057
91	Tuxtla Gutiérrez	Chiapas	45	19,304	698	566	18,738
92	Hogales	Sonora	40	17,926	378	5,805	12,121
93	Chilpancingo	Guerrero	36	17,446	1,024	8,161	9,287
94	Lerdo	Durango	39	14,933	294	25	14,908
95	Angangueo	Michoacán	8	14,611	809	14,592	16
96	Tecoman	Colima	24	12,961	111	96	12,905
97	Zamora	Michoacán	54	12,451	462	130	12,321
98	San Juan del Río	Querétaro	39	9,360	257		9,360
99	San Luis	Sonora	42	6,188	280		6,188
100	Río Colorado	Manzanillo	40	6,065	223	1,158	4,907
			14,326	56,182,749	840,735	17,229,340	38,952,939

* Metropolitan area with the following municipalities in the State of Mexico: Mexcalpan, Tlalnepantla, Zaragoza, Cuautitlán, Tultitlán, Ecatepec and administrative sub-divisions of the Federal District.

** Metropolitan area with the following municipalities in the State of Nuevo León: San Nicolás de las Garzas, Santa Catarina, Guadalupe and Garza García.

TABLE V
INDUSTRIAL STRUCTURE OF THE THIRTY MAIN MANUFACTURING CENTERS IN MEXICO
(Percentages)

Serial No.	Municipalities	BASIC INDUSTRIES					PROCESSING INDUSTRIES					14		
		1	2	3	4	5	6	7	8	9	10		11	12
1	Area Metropolitana Mexico City	4.15	3.86	2.11	10.81	5.48	15.50	9.74	3.53	13.61	11.28	6.57	0.01	13.26
2	Area Metropolitana Monterrey	0.90	15.93	0.48	6.45	1.35	25.86	4.08	5.50	6.41	11.02	2.25	7.82	
3	Guanajuato Jalisco	0.05	0.39	0.04	3.32	4.85	42.92	14.83	3.53	9.90	7.08	0.45	12.46	
4	Minatitlán Veracruz	94.02	5.33	55.78	12.98	0.36	0.01	1.23	0.30	0.50	0.92	0.13	0.19	
5	Chihuahua Chihuahua	0.12	0.16	0.20	3.61	0.77	15.43	63.85	0.77	1.76	4.06	0.13	2.08	
6	Puebla Puebla	93.24	0.62	0.14	0.04	0.77	20.21	0.05	0.05	3.64	0.18	0.14	5.08	
7	Salamanca Coahuila	3.31	0.42	0.14	0.04	0.77	0.09	0.03	0.03	6.54	0.35	0.67	0.67	
8	Mocelva Coahuila	99.21	0.30	0.14	0.04	0.77	35.37	11.17	11.17	30.06	10.89	0.26	3.53	
9	Toluca México	0.25	1.05	0.60	0.04	0.77	0.61	0.05	0.05	1.53	0.01	0.09	0.09	
10	Col. Madero Tamaulipas	0.25	0.30	0.14	0.04	0.77	25.76	65.50	0.06	1.53	0.38	0.24	3.24	
11	Merida Yucatán	0.25	0.30	0.14	0.04	0.77	33.75	5.29	0.25	0.17	0.21	8.86	8.10	
12	Matamoros B.C. S.P.A. Veracruz	0.25	0.30	0.14	0.04	0.77	83.16	9.76	3.75	4.56	0.06	0.02	2.33	
13	Orizaba Veracruz	0.25	0.30	0.14	0.04	0.77	21.11	6.20	0.23	10.54	1.60	7.01	5.23	
14	San Luis Potosí Veracruz	0.25	0.30	0.14	0.04	0.77	42.21	6.20	0.19	0.26	1.85	0.10	7.33	
15	Torreón Coahuila	0.25	0.30	0.14	0.04	0.77	23.83	0.14	0.19	0.26	3.45	0.01	4.78	
16	Veracruz Veracruz	0.25	0.30	0.14	0.04	0.77	19.94	11.84	0.06	0.22	25.66	30.31	2.85	
17	Santiago Coahuila	0.25	0.30	0.14	0.04	0.77	21.82	52.40	0.06	0.22	0.75	0.04	4.39	
18	Cajeme (Cd. Oregón) Sonora	0.25	0.30	0.14	0.04	0.77	10.75	61.83	0.06	0.22	0.47	0.04	2.24	
19	Matamoros Tamaulipas	0.25	0.30	0.14	0.04	0.77	71.13	5.34	0.06	0.22	0.49	0.08	9.03	
20	Oaxaca Oaxaca	0.25	0.30	0.14	0.04	0.77	1.04	21.30	8.15	14.88	0.10	0.08	1.65	
21	Rayón Tamaulipas	0.25	0.30	0.14	0.04	0.77	25.13	42.49	2.23	1.75	0.97	0.01	13.35	
22	León Coahuila	0.25	0.30	0.14	0.04	0.77	42.11	14.09	0.03	0.16	12.02	0.01	30.71	
23	Querétaro Querétaro	0.25	0.30	0.14	0.04	0.77	24.44	6.74	60.02	0.13	0.13	0.01	2.24	
24	Ódessa Palencia Sonora	0.25	0.30	0.14	0.04	0.77	7.41	0.36	1.02	1.02	1.02	0.43	0.43	
25	Guamala Coahuila	0.25	0.30	0.14	0.04	0.77	76.01	5.04	0.37	4.66	4.00	0.64	4.13	
26	Irapuato Tamaulipas	0.25	0.30	0.14	0.04	0.77	51.50	1.50	10.80	5.30	5.30	1.10	14.80	
27	Campeche Campeche	0.25	0.30	0.14	0.04	0.77	81.08	0.20	6.49	1.87	0.33	0.33	4.81	
28	Campeche Campeche	0.25	0.30	0.14	0.04	0.77	60.70	11.20	3.80	1.10	1.10	0.33	8.90	
29	Cd. Juárez Chihuahua	0.25	0.30	0.14	0.04	0.77	40.00	24.50	0.80	0.80	0.90	0.33	3.80	
30	Jalisco Jalisco	0.25	0.30	0.14	0.04	0.77	40.00	24.50	0.80	0.80	0.90	0.33	3.80	

Source: 1960 Industrial Census, General Directorate of Statistics, Ministry of Industry and Commerce, Mexico.

N.B. The figures 1 to 14 in the first line indicate the following branches of industry: (1) Coal, petroleum and derivatives; (2) Iron and steel; (3) Non-metallic minerals; (4) Cement and other building materials; (5) Non-ferrous metals; (6) Generation of electric energy; (7) Food products, beverages and similar products; (8) Textiles, footwear and other garments (including hard-fiber textiles); (9) Paper, cellulose and paper products; (10) Chemicals and chemical products; (11) Metal and electrical goods, machinery and equipment; (12) Transport equipment; (13) Sawmills and (14) Other.

THE VALUE OF INDUSTRIAL PRODUCTION BY BRANCH OF INDUSTRY IN 1960

(Percentage)

States	OTHER PROCESSING INDUSTRIES														Percentage of total value of industrial production
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	
MEXICO	21.2	20.1	21.4	16.6	21.2	16.7	13.2	16.7	16.7	13.2	16.7	13.2	16.7	13.2	25.2
Lower California				1.3	4.9	0.5	0.1	0.1	1.7	0.2	0.2	2.0	1.3	1.5	1.1
Sonora	0.3		2.0	0.6	1.6	4.8	0.1	0.2	1.0	0.3	0.2	0.9	0.9	0.9	1.5
Chihuahua		2.9		3.0	2.5	0.7	0.2	1.0	2.6	0.3	0.2	2.4	2.4	5.3	5.3
Oaxaca	1.7	22.5	11.6	0.4	3.2	3.4	0.2	2.6	2.4	2.4	4.8	4.8	1.1	4.2	4.2
Baja Lora	1.2	26.9	14.7	8.1	11.9	3.8	20.0	6.2	6.2	13.5	5.3	5.3	8.0	10.7	10.7
Tampico	18.3		0.1	1.2	2.5	5.0	1.5	2.3	2.3	0.3	0.1	0.1	1.0	2.4	2.4
CENTRAL	28.2	26.4	26.1	21.2	29.8	20.1	14.7	14.1	13.8	22.2	22.2	22.2	22.2	22.2	22.2
Venezura	29.3	8.6	35.1	1.4	2.2	6.4	1.3	1.6	0.3	0.5	0.5	0.1	0.1	1.1	6.2
Puebla		1.3		0.8	0.1	2.1	0.5	11.9	0.3	0.8	0.1	0.1	0.5	1.0	1.4
Tlaxcala								0.6							
Morelos				0.1			1.7	1.1	3.4	0.1	0.1	0.1	0.8	0.5	0.2
Federal District	30.0	13.0	10.0	68.3	15.2	35.6	45.9	39.8	54.6	58.4	71.3	71.3	0.8	61.1	41.9
México	0.2	22.2	0.7	5.5	9.3	4.6	22.9	10.4	17.7	19.1	11.1	11.1	0.1	12.0	9.7
Hidalgo	1.1	1.1		3.5	3.1	0.2	1.1	1.1	0.3	0.1	3.0	3.0	0.1	0.1	0.9
Huachuca					1.1	1.1	0.5	0.5	0.4	0.1	0.1	0.1	0.8	0.3	0.5
Querétaro	19.6			0.1	0.9	0.9	0.6	0.6	0.7	0.7	0.1	0.1	1.4	0.3	0.3
Guanaajuato				1.0	2.6	2.2	0.5	2.2	0.8	0.5	0.1	0.1	1.1	2.1	2.1
Colima					0.1	0.1			0.5	0.5			0.3	0.1	0.1
Jalisco		0.2	0.3	2.4	3.7	9.2	3.6	3.9	3.4	2.6	2.6	0.3	1.5	3.8	2.5
AguaCalientes				0.1	1.1	1.1	0.3	0.3	1.1	0.1	0.1	0.1	0.3	0.1	0.1
OTHER	1.3	25.2	2.2	2.2	8.2	2.1	3.2	1.7	3.8	9.4	1.2	1.2	25.2	3.2	8.2

Source: 1960 Industria Census, General Directorate of Statistics, Ministry of Industry and Commerce, Mexico.

N.B. The figures 1 to 14 in the first line indicate the following branches of industry: (1) Coal, petroleum and derivatives; (2) Iron and steel; (3) Non-metallic minerals; (4) Cement and other building materials; (5) Non-ferrous metals; (6) Generation of electric energy; (7) Food products, beverages and similar products; (8) Textiles, footwear and other garments (including hard-fibre textiles); (9) Paper, cellulose and paper products; (10) Chemicals and chemical products; (11) Metal and electrical goods, machinery and equipment; (12) Transport equipment; (13) Sawmills and (14) Other.

TABLE VII

TOTAL POPULATION EMPLOYED IN INDUSTRY BY BRANCH OF MANUFACTURING IN 1960

(Percentages)

Region	BASIC INDUSTRIES						PROCESSING INDUSTRIES						Percentage of the total population employed in industry	
	1	2	3	4	5	6	7	8	9	10	11	12		13
NORTHERN	51.7	48.0	37.5	14.6	31.3	13.2	21.7	13.9	2.8	10.5	18.9	17.7	61.4	16.2
Lower California				2.1		1.6	3.4	1.0	0.2		0.1	2.0	1.9	1.5
Sonora	0.1		2.0	0.4	9.9	0.3	2.2	1.6		0.7	2.4	0.7		1.3
Chihuahua		3.1		3.0	9.4		2.6	1.4	0.7	0.5	0.5		35.0	1.2
Coahuila	9.5	20.0	10.9	0.7	5.1	0.3	2.6	3.0	0.2	1.4	3.8	3.4	24.5	1.8
Nuevo León	4.4	24.9	24.6	6.8	6.9	1.7	7.4	4.6		6.2	11.8	11.1		8.5
Tamaulipas	37.7			1.6		9.3	3.5	2.3	1.7	1.7	0.3	0.5		1.9
CENTRAL	48.3	50.7	28.4	82.3	58.1	85.3	65.0	80.2	24.5	86.3	78.4	78.8	6.8	77.5
Veracruz	14.7	7.1	22.2	1.9		1.3	6.9	2.0	1.3	0.2	0.5	0.2	0.2	2.9
Puebla		1.5		0.8	0.1	0.2	2.7	16.1	0.5	0.6	0.7	0.3	1.2	1.3
Tlaxcala								0.7						
Morelos				0.2			2.3	1.4		0.1				0.5
Federal District	22.4	18.6	11.8	69.4	9.9	75.7	37.7	41.0	57.7	61.4	54.1	45.0	1.0	55.1
México	1.0	19.4	3.5	5.3	23.1		3.9	7.6	23.7	16.5	18.0	22.5	9.2	40.0
Hidalgo		3.5		1.2	20.9	0.4	0.6	1.1			0.2	4.9	0.2	2.4
Michoacán				0.1		3.5	0.7	0.1		3.1	0.2	0.3	1.9	0.8
Quartfaro			1.0	0.1			0.5	0.7			0.5			0.2
Guanaajuato	10.2			0.9	4.9		3.4	3.9	5.9	0.6	0.7	0.2		1.4
Colima						0.4	0.2			1.0				1.4
Jalisco		0.6	0.9	2.1		3.7	6.1	5.0	5.4	2.8	3.3	5.2	2.5	0.8
Aguaascalientes				0.3	0.2	0.1		0.6			0.2	0.2		3.9
OTHER		1.3	23.1	3.1	2.6	1.3	13.3	5.9	2.1	3.2	2.7	3.5	31.8	6.3
														0.6
														1.7

N.B. The figures 1 to 14 in the first line indicate the following branches of industry: (1) Coal, petroleum and derivatives; (2) Iron and steel; (3) Non-metallic minerals; (4) Cement and other building materials; (5) Non-ferrous metals; (6) Generation of electric energy; (7) Food products, beverages and similar products; (8) Textiles, footwear and other garments (including hard-fiber textiles); (9) Paper, cellulose and paper products; (10) Chemicals and chemical products; (11) Metal and electrical goods, machinery and equipment; (12) Transport equipment; (13) Sawmills and (14) Other.

Source: 1960 Industrial Census, General Directorate of Statistics, Ministry of Industry and Commerce, Mexico.

TABLE VIII

LOCATIONAL COEFFICIENTS FOR FOURTEEN BRANCHES
 OF MEXICAN INDUSTRY
 1960

Branches of industry	Coefficient
A. BASIC INDUSTRIES	
1. Coal, petroleum and derivatives	0.57
2. Iron and steel	0.53
3. Non-metallic minerals	0.64
4. Cement and other building materials	0.22
5. Non-ferrous metals	0.60
6. Generation of electric energy	0.35
B. OTHER PROCESSING INDUSTRIES	
7. Food products, beverages and similar products	0.21
8. Textiles, footwear and other garments	0.21
9. Paper, cellulose and paper products	0.26
10. Chemicals and chemical products	0.21
11. Metal, electrical and photographic goods, machinery and equipment	0.20
12. Transport equipment	0.21
13. Sawmills	0.83
14. Other branches	0.09

TABLE IX
ECONOMICALLY ACTIVE POPULATION BY GROUPS OF ACTIVITY
AND REGIONS IN 1950 AND 1960
 (Percentages)

Regions	1950			1960		
	Primary %	Secondary %	Tertiary ^{1/} %	Primary %	Secondary %	Tertiary ^{1/} %
NORTHERN						
Lower California	12.2	16.2	17.6	13.1	18.5	19.2
Sonora	0.7	0.9	1.4	1.1	1.5	2.3
Chihuahua	1.8	2.0	2.3	2.2	1.9	2.5
Coahuila	2.9	3.5	3.3	3.1	3.5	3.8
Nuevo Leon	2.3	3.6	3.1	2.1	3.2	3.0
Tampulipas	2.0	4.3	4.0	1.9	5.5	4.2
	2.5	2.6	3.5	2.7	2.9	3.4
CENTRAL						
Veracruz	52.1	64.5	65.2	52.3	67.6	65.1
Puebla	9.1	5.9	6.5	9.3	6.1	6.0
Tlaxcala	7.5	5.8	4.7	7.2	4.5	4.0
Morelos	1.3	1.0	0.6	1.2	0.9	0.5
Federal District	1.3	0.7	1.0	1.2	0.9	1.0
México	1.1	27.6	32.1	0.8	31.4	33.8
Hidalgo	6.6	3.6	3.1	5.8	5.5	3.5
Nichoasda	3.9	2.4	2.1	3.7	1.9	1.7
Queretaro	6.6	3.5	3.3	6.9	2.8	2.9
Guanajusto	1.3	0.8	0.8	1.3	0.7	0.7
Colima	5.8	5.0	3.3	5.5	4.3	3.1
Jalisco	0.5	0.4	0.5	0.4	0.4	0.5
Agascalientes	6.7	7.0	6.4	6.4	7.4	6.7
	0.6	0.8	0.8	0.6	0.8	0.7

TABLE IX (Cont'd)

NUMERICALLY ACTIVE POPULATION BY GROUPS OF ACTIVITY
AND REGIONS IN 1950 AND 1960

Regions	(Percentages)							
	1 9 5 0	Secondary %	1 9 5 0	Tertiary ^{1/} %	Primary %	1 9 6 0	Secondary %	Tertiary ^{1/} %
OTHER		<u>18.6</u>		<u>17.2</u>	<u>36.6</u>		<u>13.2</u>	<u>15.7</u>
Lower California, Terr.		0.3		0.2	0.2		0.2	0.3
Sinaloa		1.5		2.0	2.7		1.4	2.0
Durango		1.7		1.6	2.7		1.2	1.4
Zacatecas		1.4		1.1	3.2		1.0	0.9
San Luis Potosí		2.6		2.4	3.6		2.0	2.0
Morelos		0.7		0.9	1.5		0.6	0.8
Guerrero		1.7		1.5	3.0		1.1	1.5
Oaxaca		3.9		2.3	8.3		2.3	2.0
Tabasco		0.6		0.8	1.6		0.7	0.8
Chiapas		1.7		1.9	5.2		1.3	1.8
Campeche		0.5		0.5	0.5		0.5	0.5
Quintana Roo		0.1		0.1	0.2		0.1	0.1
Yucatán		1.9		1.9	1.9		1.5	1.6
National total:		<u>100.0</u>		<u>100.0</u>	<u>100.0</u>		<u>100.0</u>	<u>100.0</u>

^{1/} Includes activities not adequately described.

Source: General Directorate of Statistics

TABLE X

TOTAL FAMILIES AND POPULATION BY MONTHLY
INCOME AND REGIONS, 1964-1965

REGIONS	TOTAL FAMILIES		POPULATION		TOTAL INCOME OF FAMILIES		MONTHLY PER CAPITA INCOME (Pesos)
	Thou- sands	%	Thou- sands	%	Million pesos	%	
NORTHERN	1,222	16.2	6,682	16.6	1,436	17.6	215
Baja California	132	2.7	730	1.8	245	3.0	336
Baja California Sur	169	2.2	971	2.4	273	3.3	281
Chihuahua	263	3.6	1,480	3.8	324	4.0	219
Coahuila	179	2.4	1,018	2.5	150	1.8	147
Estado Libre Soberano de Sinaloa	235	3.1	1,265	3.1	211	2.6	167
Nuevo Leon	244	3.2	1,224	3.0	233	2.9	191
CENTRAL	4,320	27.2	23,168	57.2	5,402	65.1	222
Veracruz	607	8.1	3,158	7.8	494	6.1	156
Puebla	403	5.3	2,174	5.4	289	3.5	133
Tlaxcala	74	0.9	382	0.9	44	0.5	226
Morelos	87	1.2	441	1.1	64	0.9	145
Federal District	1,061	14.1	5,912	14.7	2,923	35.8	495
Mexico	394	5.2	2,150	5.3	306	3.7	142
Hidalgo	213	2.8	1,104	2.7	119	1.5	107
Michoacán	386	5.1	2,118	5.2	264	3.2	125
Querétaro	77	1.0	331	0.9	56	0.7	148
Guanajuato	341	4.5	1,705	4.9	229	2.8	115
Colima	38	0.5	159	0.5	30	0.4	150
Jalisco	592	7.8	2,693	7.2	458	5.6	158
Agua Calientes	47	0.6	213	0.7	29	0.4	106
SOUTH	2,023	26.7	10,548	26.1	1,411	17.3	134
Yucatán	16	0.2	92	0.2	25	0.3	267
Chiapas	164	2.2	942	2.3	228	2.8	242
Quintana Roo	145	1.9	820	2.0	84	1.0	103
Baja California Sur	170	2.2	904	2.2	93	1.1	102
San Luis Potosí	212	2.8	1,174	2.9	124	1.5	106
Nayarit	86	1.1	441	1.1	73	0.9	162
Guerrero	263	3.5	1,348	3.3	201	2.5	149
Oaxaca	387	5.2	1,906	4.7	179	2.2	94

TABLE X (Cont'd)

REGIONS	TOTAL FAMILIES		POPULATION TOTAL		TOTAL INCOME OF FAMILIES		MONTHLY PER CAPITA INCOME (Pesos)
	Thou- sands	%	Thou- sands	%	Million pesos	%	
Tabasco	103	1.4	556	1.4	102	1.3	184
Chiapas	283	3.7	1,399	3.5	175	2.1	123
Campeche	42	0.6	230	0.6	31	0.4	134
Quintana Roo	13	0.1	67	0.2	9	0.1	133
Yucatán	139	1.8	669	1.7	87	1.1	130
National total	7,565	100.0	40,404	100.0	8,152	100.0	202

Source: La población económicamente activa de México en junio de 1964 y abril de 1965. (The Economically Active Population of Mexico in June 1964 and April 1965). Ministry of Industry and Commerce, General Directorate of Sampling, Mexico.

TABLE XI

LEGISLATION AUTHORIZING TAX EXEMPTION FOR ENTERPRISES

1940 - first half of 1962

States	D	LIT	LPIT	LPIN	D and LPIT	LIT and LPIT	LPIN and LPIN	LIT, LPIT and LPIN	Other	Total (4) enterprises
Lower California, Northern	-	1	4	-	-	1	1	-	-	7
Lower California, Southern	-	-	12	-	-	-	-	-	-	12
Campeche	-	-	5	1	-	-	-	-	-	6
Coahuila	-	-	15	2	-	3	1	-	-	21
Colima	-	-	1	-	-	-	-	-	-	1
Chiapas	-	-	2	-	-	-	-	-	-	2
Chihuahua	-	1	12	2	-	1	2	-	-	18
Federal District	11	54	221	32	4	39	18	3	1 (1)	383
Durango	-	-	3	1	-	-	-	-	-	4
Guanajuato	1	1	4	3	-	1	-	-	-	10
Guerrero	-	-	2	-	-	-	-	-	-	2
Hidalgo	1	1	3	-	-	-	1	-	-	6
Jalisco	-	3	16	2	1	3	1	2	-	28
México	3	10	59	23	-	6	17	3	1 (2)	122
Michoacán	-	-	1	-	-	-	1	1	-	3
Morelos	-	-	-	1	-	1	-	-	-	2
Mayarit	-	1	-	-	-	-	-	-	-	1
Nuevo León	-	9	41	7	-	11	8	1	-	77
Oaxaca	-	-	-	1	-	1	-	-	-	2
Puebla	-	2	9	2	-	-	-	-	-	13
Quertaro	-	1	2	1	-	-	-	-	-	4
San Luis Potosí	-	1	6	-	-	-	-	1	-	8
Sinaloa	-	-	5	1	-	1	1	-	-	8

TABLE XI (Cont'd)

States	D	LIT	LPIIT	LPINN	D and LPIIT	LIT and LPIIT	LPIIT and LPINN	LIT, LPIIT and LPINN	Other	Total (4) enterprises
Sonora	-	1	12	-	1	1	1	-	1 (3)	17
Tamaulipas	-	3	6	1	-	1	-	1	-	12
Tlaxcala	-	-	-	1	-	-	-	-	-	1
Veracruz	1	5	9	-	1	2	-	-	-	18
Yucatán	-	3	1	-	-	-	-	-	-	4
Totals:	17	97	451	81	7	72	52	12	3	792

Key to abbreviations: D - Decree of December 1939; LIT - processing industries act;

LPIIT - act for the promotion of processing industries; LPINN - act for the promotion of new and necessary industries.

(1) D, LIT, LPIIT

(2) D and LIT

(3) D, LPIIT and LPINN

(4) In fact, more enterprises were granted tax exemptions, but some did not make use of them, because they did not manufacture the products for which the exemption was granted, they had been granted the exemption at a time when it was no longer necessary or because they closed down while enjoying exemption. The 792 enterprises include those that closed down after the expiration of exemption.

Bank of Mexico, Department of Industrial Research. Directory of Industrial Enterprises Granted Tax Exemptions, 1940-1960 and supplements for 1961 and first half of 1962.

TABLE XII
EMPLOYERS EMPLOYING THE EMPLOYERS, BY BRANCH OF INDUSTRY
1960 - 1st half of 1962

States	BASIC INDUSTRIES				OTHER PROCESSING INDUSTRIES				Total						
	1	2	3	4	5	6	7	8		9	10	11	18	13	
Lower California, Northern							5			1	1			14	7
Lower California, Southern							6							11	12
Colorado							4			3	9	1		21	6
Connecticut							1							1	1
Delaware							1							1	2
Florida							1							1	18
Georgia							2			52	178	14	1	57	303
Idaho							2			1	3			1	4
Illinois							4			1				10	10
Indiana							1							2	2
Iowa							1							1	6
Kansas							3			4	6	1	1	4	28
Kentucky							5			2	6	31	6	6	122
Louisiana							5			2	2			3	3
Maine							1			1				2	2
Maryland							1							1	1
Massachusetts							1			6	29	3		9	77
Michigan							1			1	1			2	1
Minnesota							1							1	2
Mississippi							1							1	13
Missouri							2				4			4	4
Montana							1							1	4
Nebraska							1							1	6
Nevada							1							1	6
New Hampshire							1							1	1
New Jersey							1							1	77
New Mexico							1							1	2
New York							1							1	13
North Carolina							1							1	4
North Dakota							1							1	4
Ohio							1							1	6
Oklahoma							1							1	1
Oregon							1							1	77
Pennsylvania							1							1	2
Rhode Island							1							1	13
South Carolina							1							1	4
South Dakota							1							1	4
Tennessee							1							1	6
Texas							1							1	3
Utah							1							1	18
Vermont							1							1	4
Virginia							1							1	18
Washington							1							1	4
West Virginia							1							1	18
Wisconsin							1							1	4
Wyoming							1							1	18
Totals	45	6	38	17	105	44	25	115	265	33	5	94	792		

Source: Bureau of Economic Research Department, Ministry of Industrial Enterprises Employing Ten Employees, 1960-1960 and supplements for 1961 and first half of 1962.

Footnote: The figures 1 to 14 in the first line indicate the following branches of industry: (1) Coal, petroleum and derivatives; (2) Iron and steel; (3) Non-metallic minerals; (4) Glass and other building materials; (5) Non-ferrous metals; (6) Generation of electric energy; (7) Food products, beverages and similar products; (8) Textiles, footwear and other goods (including hard-fiber textiles); (9) Paper, cellulose and paper products; (10) Chemicals and chemical products; (11) Metal and electrical goods, machinery and equipment; (12) Transport equipment; (13) Shipbuilding and (14) Other.

TABLE XIII
GEOGRAPHICAL BREAKDOWN OF THE MAIN FINANCING
ACTIVITIES OF THE NATIONAL FINANCE CORPORATION

Balances for 31 December 1963

<u>District</u>	<u>No. of subscribers</u>	<u>Amount of finance (thousand pesos)</u>	<u>%</u>
Lower California	6	371 439	4.3
Lower California, Southern terr.	1	10 647	0.1
Coahuila	5	779 403	9.0
Chihuahua	7	192 346	2.2
Federal District	15	3 670 656	42.2
Durango	1	7 585	0.1
Guanaajuato	2	8 780	0.1
Guerrero	5	57 714	0.7
Hidalgo	4	1 121 556	12.9
Jalisco	7	181 789	2.1
Mexico	17	410 253	4.7
Michoacán	1	2 571	0.0
Nayarit	1	2 939	0.0
Nuevo León	6	434 974	5.0
Oaxaca	4	264 950	3.0
Puebla	3	18 185	0.2
Quintana Roo	1	14 380	0.2
San Luis Potosí	3	130 519	1.5
Sinaloa	6	122 581	1.4
Sonora	1	2 075	0.0
Tabasco	1	2 500	0.0
Tamaulipas	2	105 562	1.2
Veracruz	12	783 222	9.0
Yucatán	1	8 791	0.1
Total:	134	8 705 417	100.0

Source: National Finance Corporation, Annual Report, 1963.

TABLE XIV

GEOGRAPHICAL BREAKDOWN OF LOANS GRANTED BY THE
 GUARANTEE AND PROMOTION FUND TO MEDIUM- AND
 SMALL-SCALE INDUSTRY

Cumulative figures for the period
 April 1954 to 31 December 1965

<u>Federal political divisions</u>	<u>No. of enterprises</u>	<u>%</u>	<u>Amount (thousand pesos)</u>	<u>%</u>
Federal District	1 729	48.6	639 218	52.5
Agua Calientes	34	1.0	13 819	1.1
Lower California	19	0.5	6 485	0.5
Chiapas	77	2.2	6 106	0.5
Chihuahua	53	1.5	20 691	1.6
Coahuila	62	1.7	20 244	1.5
Colima	7	0.2	2 590	0.2
Durango	23	0.6	10 177	0.8
Guanajuato	277	7.8	69 660	5.3
Guerrero	16	0.4	4 564	0.4
Hidalgo	10	0.3	7 050	0.5
Jalisco	145	4.1	42 943	3.3
Mexico	242	6.8	180 971	13.8
Michoacan	32	0.9	8 763	0.7
Morales	19	0.5	14 635	1.1
Nayarit	2	0.1	521	0.0
Nuevo Leon	226	6.3	78 634	6.0
Oaxaca	227	6.4	9 630	9.7
Puebla	73	2.1	37 105	2.8
Queretaro	13	0.4	4 263	0.3
San Luis Potosi	58	1.6	12 443	0.9
Sinaloa	31	0.9	9 699	0.7
Sonora	84	2.4	20 359	1.6
Tabasco	4	0.1	1 771	0.1
Tamaulipas	33	0.9	13 062	1.0
Tlaxcala	12	0.3	10 805	0.8
Veracruz	42	1.2	10 643	0.8
Yucatan	8	0.2	5 011	0.5
Zacatecas	1	0.0	500	0.0
Total:	3 559	100.0	1 313 147	100.0

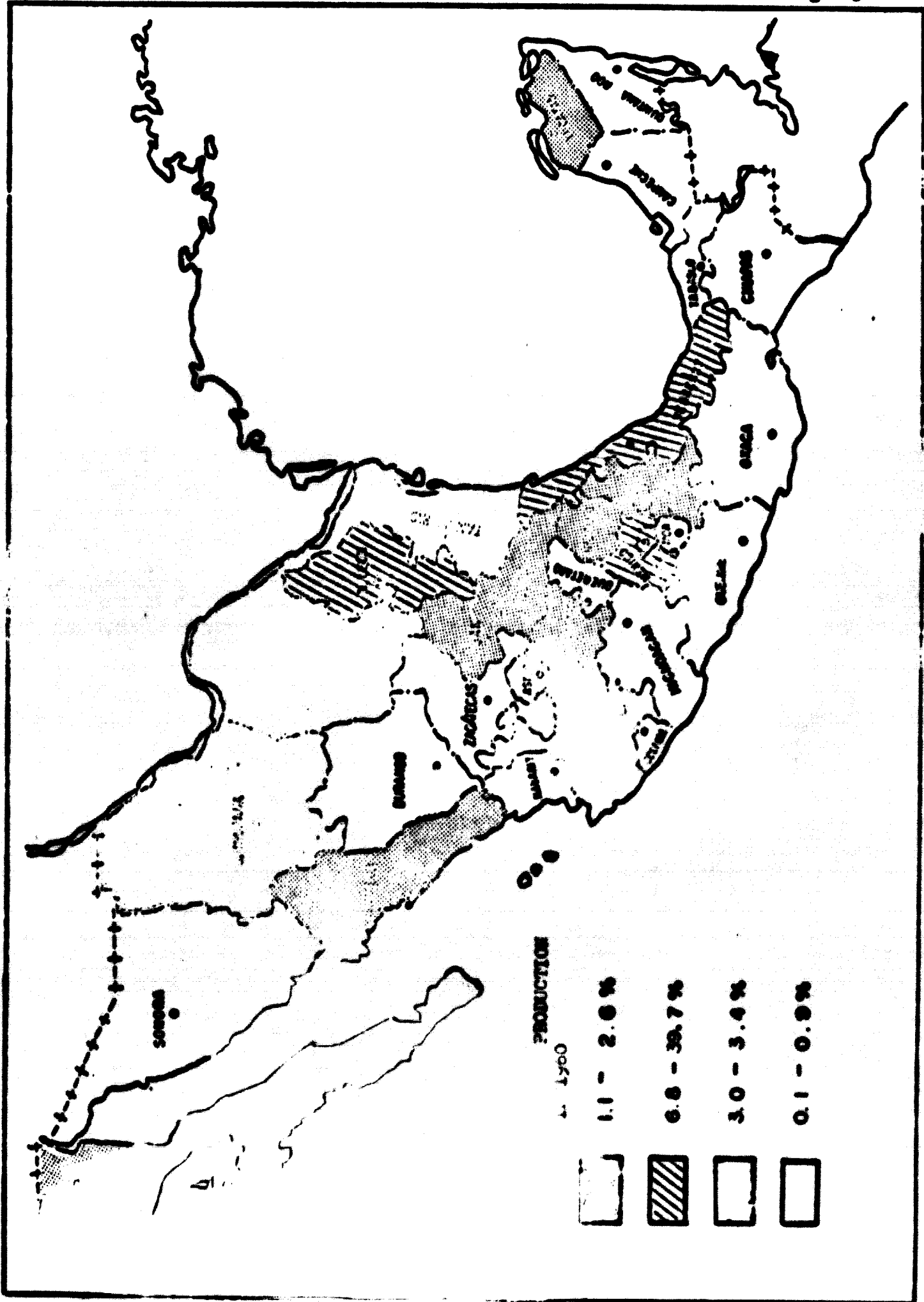
Source: Guarantee and Development Fund for Medium- and Small-scale Industries.

TABLE XV

INSTALLED GENERATING CAPACITY OF POWER
 STATIONS IN THE REPUBLIC OF MEXICO
 1960

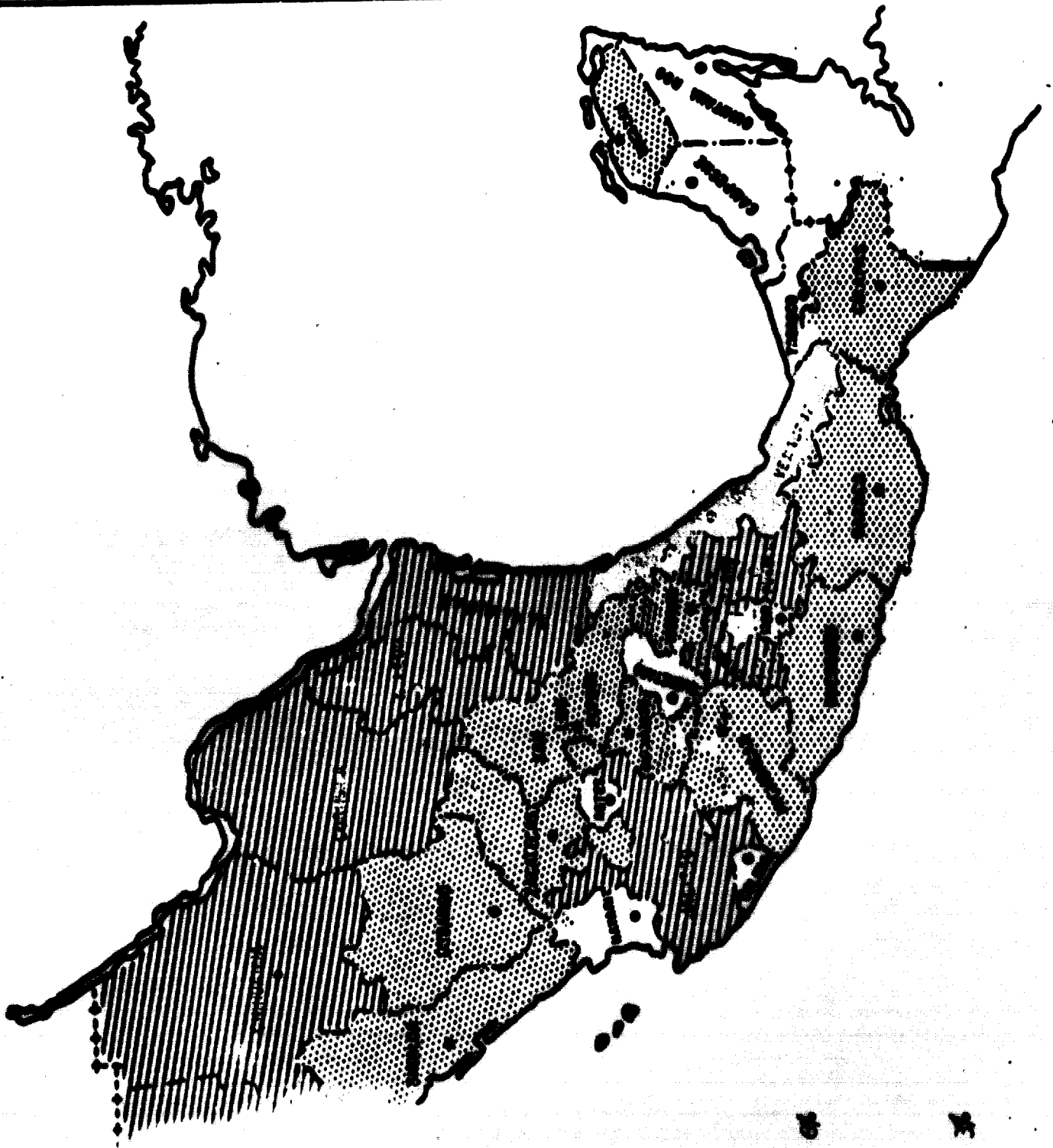
<u>Political divisions</u>	<u>Thousand kw</u>	<u>%</u>
National total	2,918.3	100.0
Agua Calientes	12.2	0.4
Lower California, Northern	7.1	0.2
Lower California, Southern	8.4	0.3
Campeche	8.0	0.3
Coahuila	79.7	2.7
Colima	4.4	0.2
Chiapas	14.5	0.5
Chihuahua	131.6	4.5
Federal District	165.4	5.7
Durango	137.2	4.7
Guamajuato	61.3	2.1
Guerrero	27.5	0.9
Hidalgo	18.0	0.6
Jalisco	134.7	4.6
Mexico	545.0	18.7
Michoacán	177.3	6.1
Morelos	15.1	0.5
Nayarit	12.0	0.4
Nuevo León	238.0	8.2
Oaxaca	175.0	6.0
Puebla	287.8	9.9
Querétaro	8.3	0.3
Quintana Roo	1.6	0.1
San Luis Potosí	34.4	1.2
Sinaloa	85.2	2.9
Sonora	105.3	3.7
Tabasco	15.0	0.5
Tamaulipas	124.1	4.3
Tlaxcala	1.0	0.0
Veracruz	225.5	7.7
Yucatán	24.3	0.8
Zacatecas	30.4	1.0

Source: Reports of electricity enterprises and power stations of the Mexican Republic. Federal Electricity Commission.

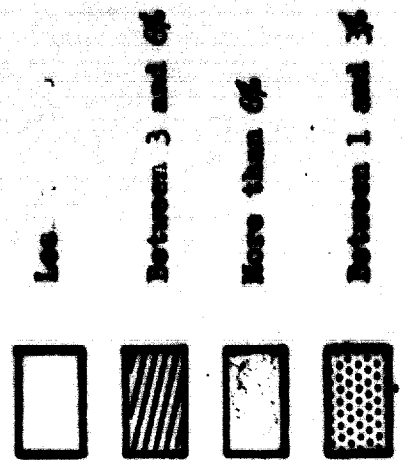


MEX 2

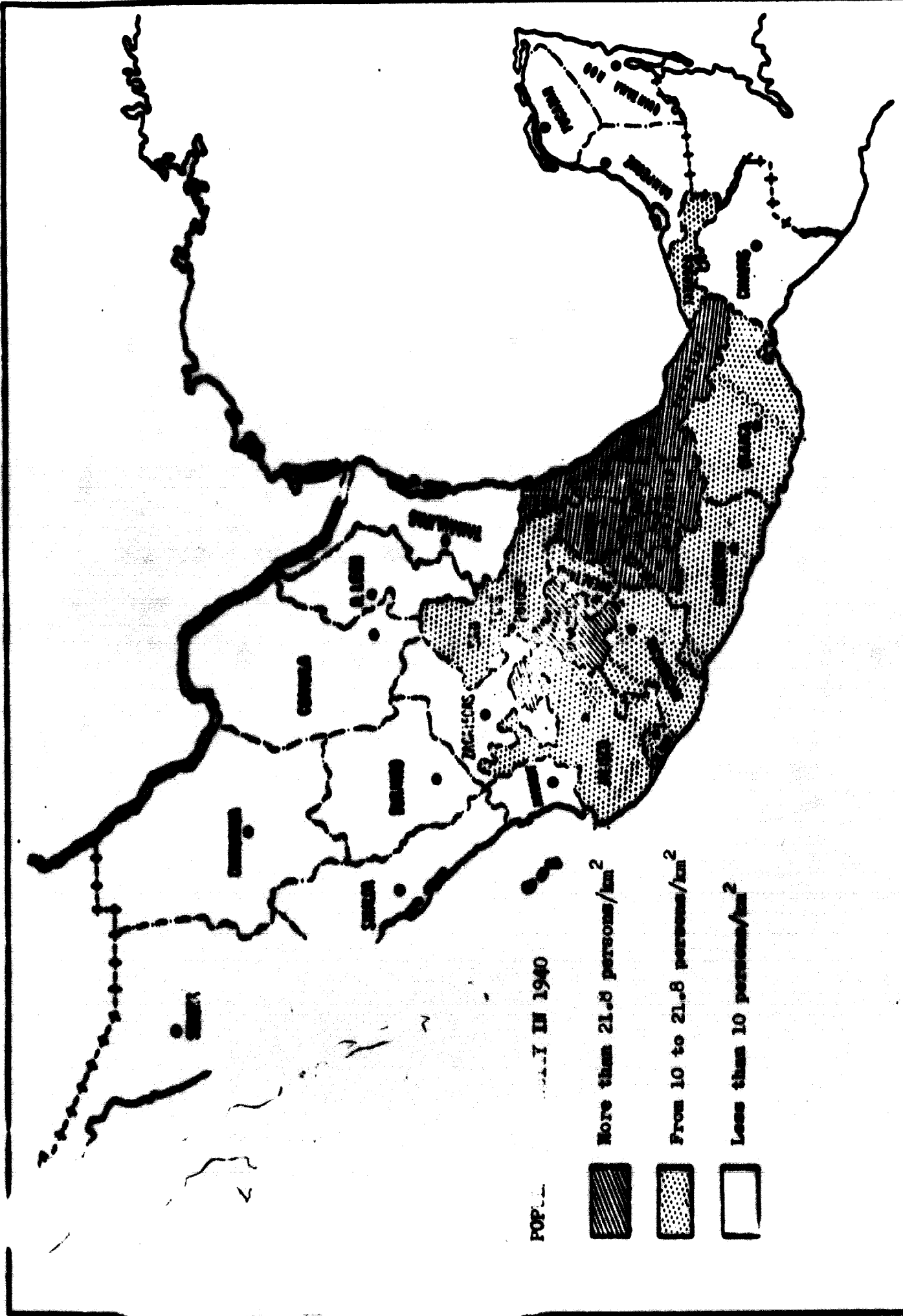
MAP 3



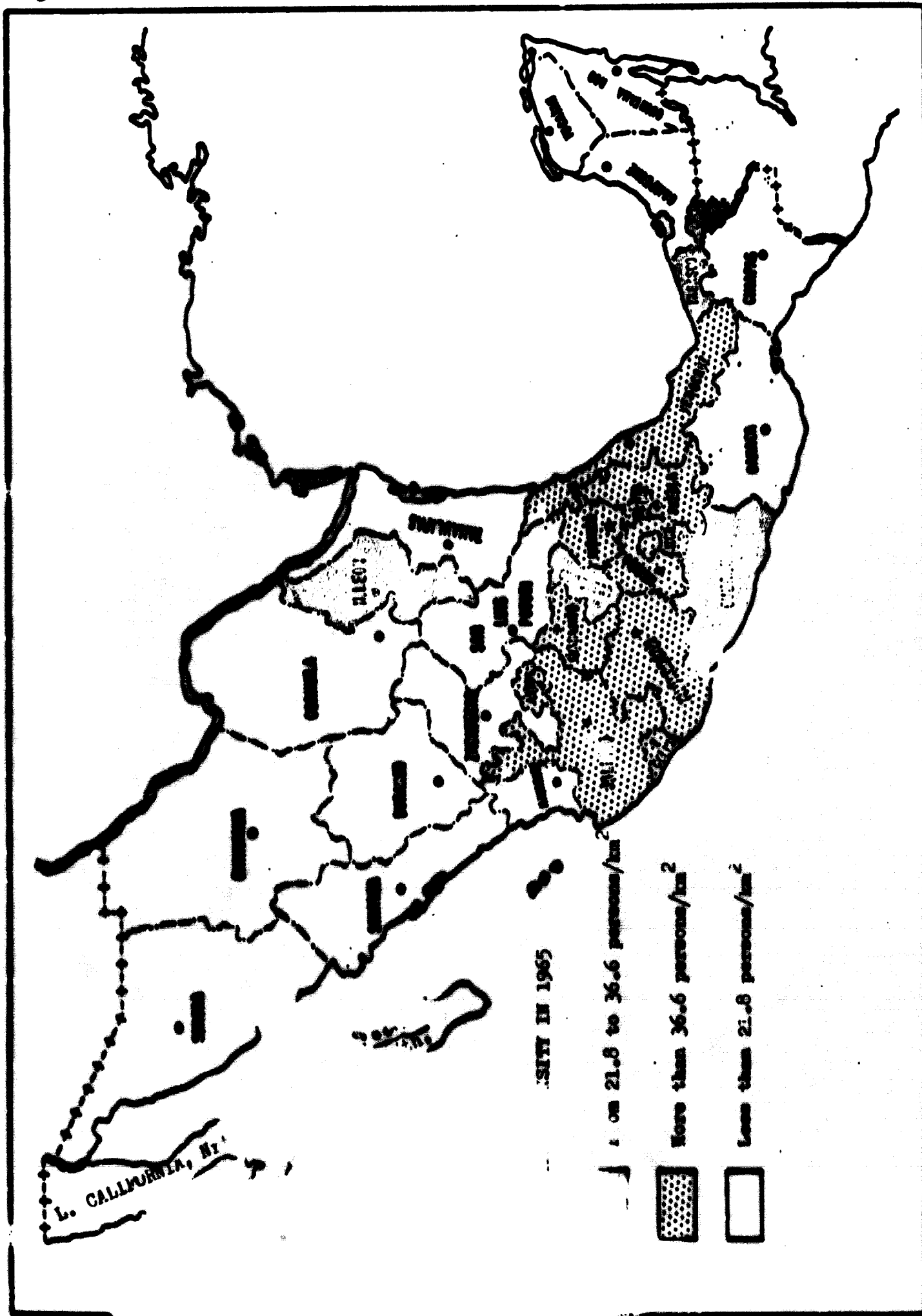
VALUES AT



MAP 4



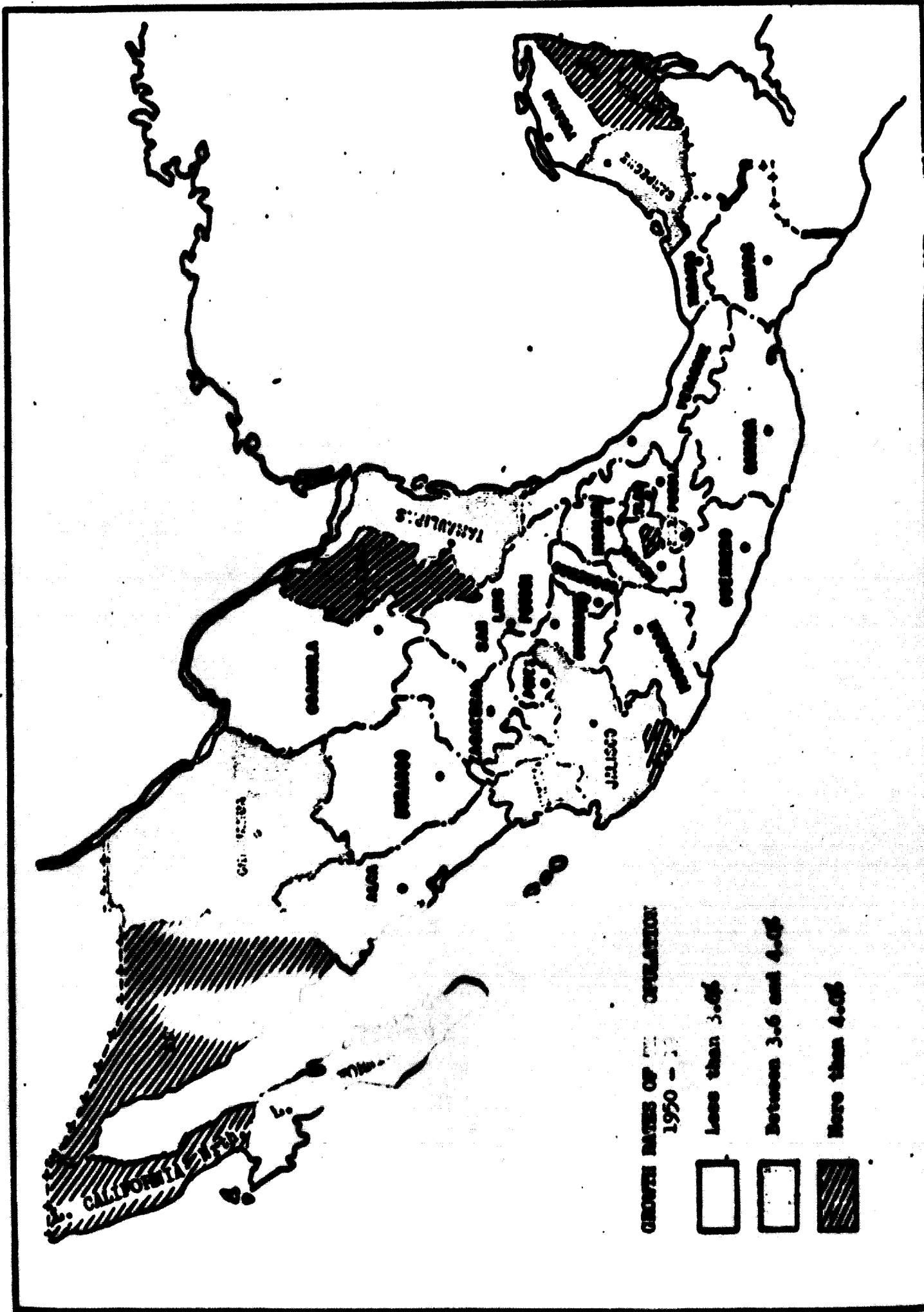
MAP 5



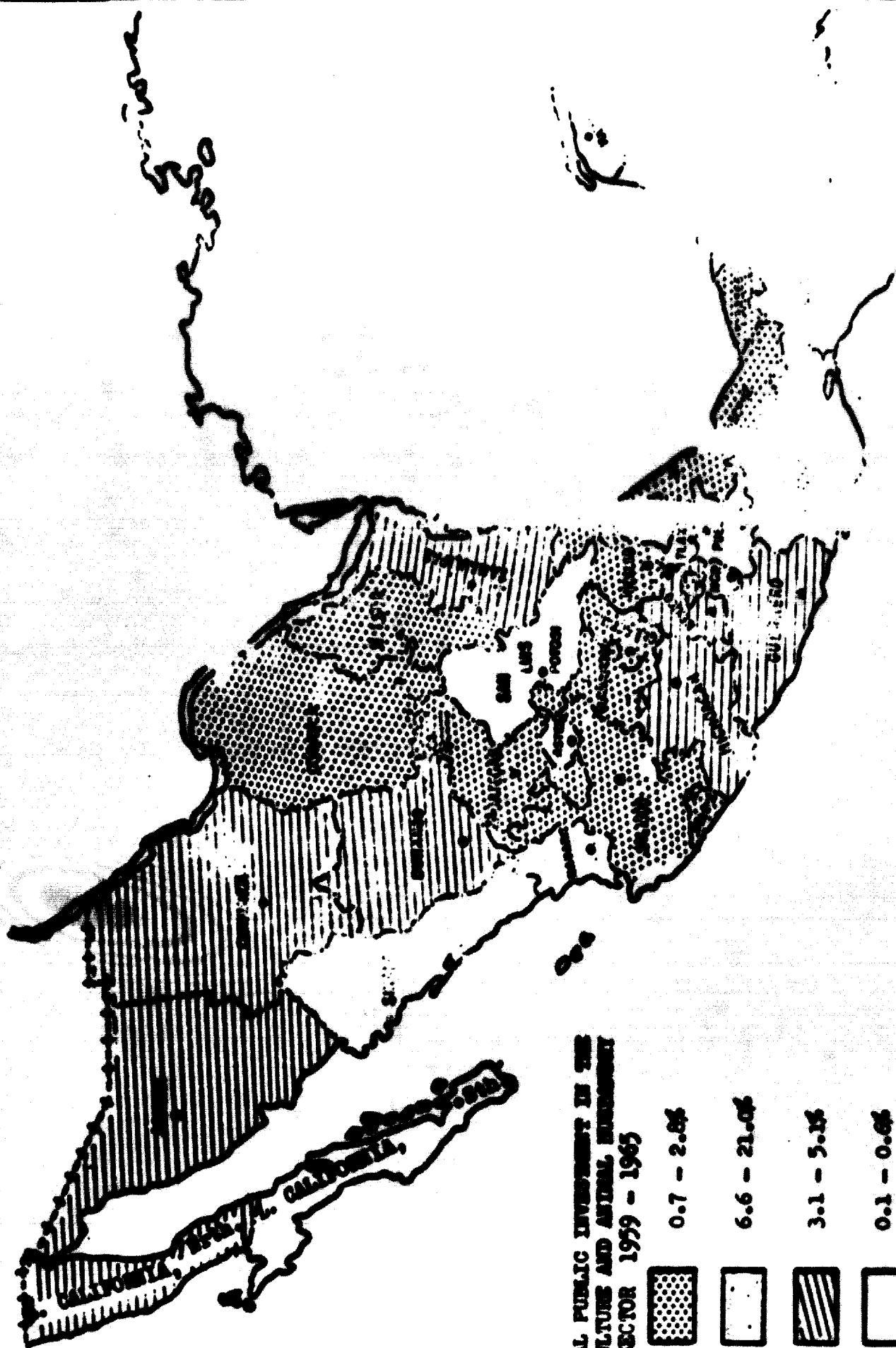
MAP 6

MAP 7

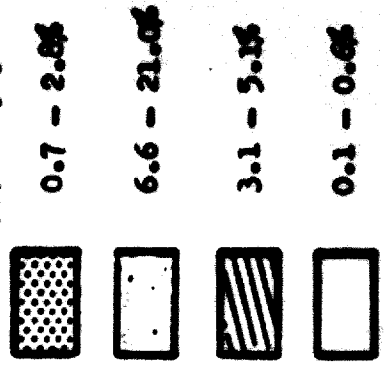
MAP 7

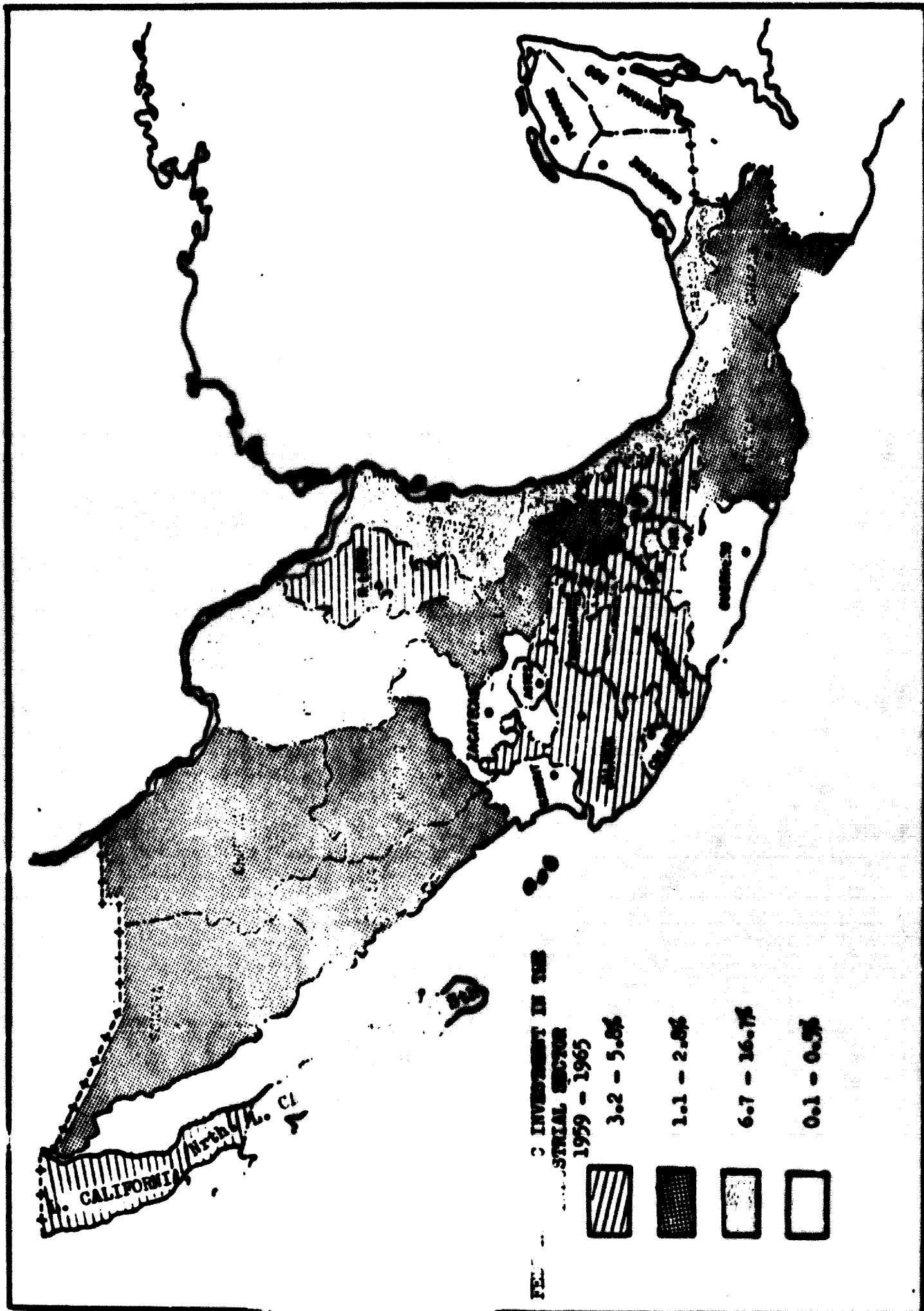


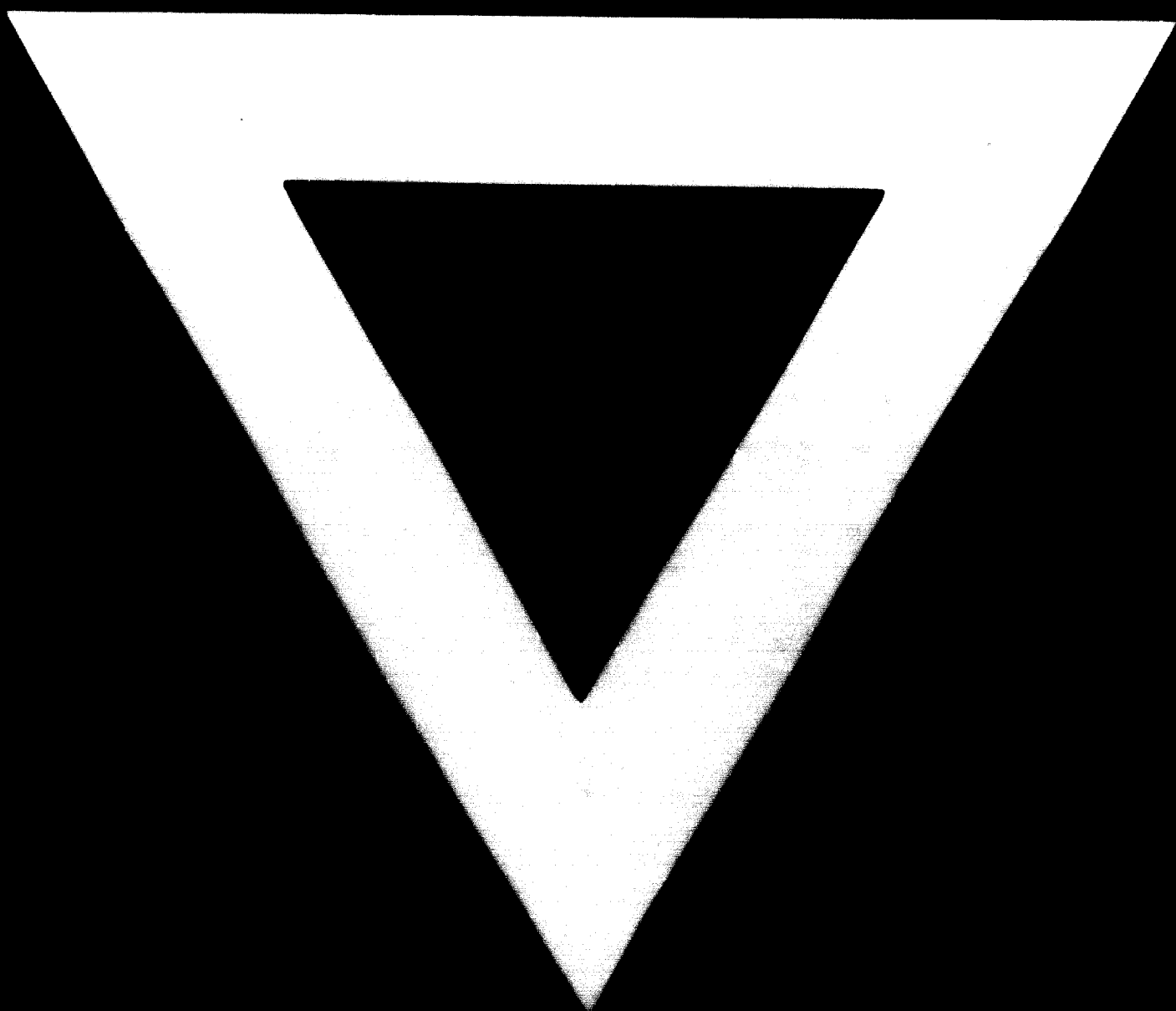
MAP 3



FEDERAL PUBLIC INVESTMENT IN THE
AGRICULTURE AND ANIMAL HUSBANDRY
SECTOR 1959 - 1965







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