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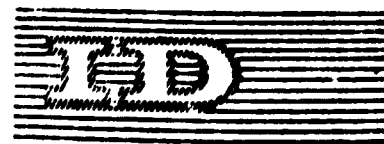
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INDUSTRIAL DEVELOPMENT STRATEGY AND POLICIES:
THE EXPERIENCE OF ECUADOR^{1/}

by

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^{1/} The views and opinions expressed in this paper are those of the author and
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I. PRE-CONDITIONS FOR INDUSTRIALIZATION

A. The market

In 1950 (30 June), the population of Ecuador was 3,230,500, which by itself constituted an extremely limited market for the consumption of manufactured products and the promotion of new industries. The limited nature of the market, however, was not due merely to the small size of the population, but was closely related to the per capita income levels of the inhabitants and to the extent to which they were involved in the market economy.

In 1950, the gross domestic product, national income and disposable family income per capita were estimated at US\$143, 119 and 107 respectively, incomes so extremely low as to be scarcely sufficient to provide, however inadequately, for the immediate needs of the population - food, clothing and housing. The result of this was that the industry then in operation was limited to that one market alone, that is, the supply of non-durable consumer goods, principally in the food, beverage, textile, footwear and clothing branches.

In addition, the problem of the country's small population and their limited buying power was further aggravated by the fact that a sizable section of the population had no recourse to the market, either because they produced for their own consumption or because they lacked the money to purchase goods on the market. Seventy-one per cent of the population were estimated to live in rural areas, where their employment situation was extremely uncertain.

In 1973 (30 June), the population of Ecuador was put at 6,726,600, which is to say that it had doubled over the period since 1950.

It is evident that the country's present population creates a new set of conditions as far as industrialization is concerned, although it cannot be regarded as large enough to support any major effort at industrial diversification or, much less, to permit sufficient industrial integration to achieve autonomy.

Nevertheless, per capita income had doubled by 1970 (US\$232), the ratio of the rural population to city-dwellers had declined (61 per cent), communications between communities had become easier, and the employment situation in the countryside had also changed, although not in a substantial manner.

Industrialization in Ecuador has achieved some solid successes, given the size of the market. During the 1950s, the industries established were limited to the area of consumer goods for immediate use, such as food, beverages, textiles, footwear, clothing and construction materials. During the 1960s, as a result of a co-ordinated policy of industrial development, industry moved on to a new stage, supplying several categories of durable consumer items and also beginning the production of a number of intermediate products.

The limited size of the domestic market has undoubtedly been an obstacle to a faster rate of industrial growth than has actually been achieved over the period in question. At the same time, the expansion of the market that has occurred over the years has created opportunities for the development of new industrial projects.

For the most part, the industries established have been set up on what may be regarded as very nearly the minimum technical and economic scale and have always been shielded, except in the case of a few export products, by the tariff and exchange barriers which the country has maintained to protect its industrialization effort.

Because of the limited size of the market, industry has had to operate on a scale which has meant higher costs and prices than for goods produced outside the country, and which has thus led to a need for protection against the competition of foreign suppliers producing on a larger scale.

B. Transport

In 1950, the transport and communication system was altogether inadequate to provide access to and unite markets in all parts of the country. The mountainous area and coastal strip, where most of the inhabited communities are located, were virtually cut off from each other, the sole communication artery and only main line being the railway which linked the country's chief port, Guayaquil, with its capital, Quito.

Some of the towns, particularly in the mountainous areas, had been partially able to break out of their isolation by means of stone-surfaced but inadequate roads. As a result of the lack of links between the cities, small enterprises and artisanal activities sprang up to meet the needs of the limited markets.

Although not the principal problem, the absence of an appropriate transport and communication infrastructure may be said to have restricted the country's industrialization during the 1950s, and even the 1960s. The first five-year road-building plan, which was drawn up in 1954 and marked the beginning of a programme of action to link the country's markets together, was carried out during the period 1957-1962, and was then followed by a second five-year plan for 1964-1968, implementation of which was extended up to 1971. A rather ambitious third five-year plan for road-building was begun in 1972. Apart from a few exceptions, it is possible to say that now, for the first time, the country's main urban markets have been successfully knit together by means of a major highway network, which has certainly created better prospects for industrialization; however, still to be completed is the secondary system which will mainly serve to link the rural communities.

Particular industrial activities, such as the production of certain foods, beverages, footwear and clothing, and wooden furniture, were developed to satisfy small local markets; on the other hand, products such as sugar, textiles, cement and petroleum derivatives were forced to create a nation-wide distribution system so that they could achieve a given scale of production.

In certain very specific cases, it would be possible to show that transport problems have delayed the development of local raw materials; more frequently however, it has been a lack of studies and surveys on these raw materials that has left them largely unknown, so that their industrial utilization has not been possible.

C. Power and water

The availability of supplies of power, water and fuel has been a continuous problem in the industrial development of the country.

The inadequate supply situation, particularly with respect to electric power, has acted to retard the development of the electro-chemical, electro-mechanical and other industries, for which electricity is an important cost factor.

In some cases, faced with the absence of a central supply service, enterprises have had to plan and install their own power-generating facilities in order to be able to operate. This explains the high percentage of power privately generated by individual enterprises, as can be seen from the following table, which is based on data obtained from industrial censuses and surveys for various years.

INDUSTRIAL CONSUMPTION OF ELECTRIC POWER
(millions of kWh)

	1955	1961	1965	1970
Public service	45.3	58.5	99.6	178.8
Privately generated	36.5	50.4	53.2	77.1
TOTAL:	81.8	108.9	152.8	255.9

Source: Industrial censuses of 1955 and 1965; industrial surveys of 1961 and 1970.

A trend can be observed toward a lower proportion of privately generated power in the electricity consumed by industry, this being in large measure attributable to the improved service, which has not yet, however, been adequately developed, since industry still generates privately 30 per cent of its own power requirements.

Still unresolved is the problem of assuring the availability of electric power for the development of medium and heavy industry, which has been impeded as a result.

D. Industrial sites

It is generally fair to say that the country has not pursued any programme to control the planning of industrial sites in the cities, in connexion with the planning of the cities themselves.

Ecuadorian industry is concentrated for the most part in two cities - Quito and Guayaquil. However, not even in these two cities have industrial zones been set aside or industrial development parks established.

The industrial and artisanal programme within the General Plan for Economic and Social Development for 1963-1973 provides, as part of the industrial decentralization policy, for the siting and establishment of industrial parks and zones. Under this policy, a number of cities, such as Cuenca, Tulcán, Ambato, Loja and Ibarra, have set aside sites on which they have established industrial complexes of different types and scales. This has been a co-ordinated effort in which government assistance has been combined with action by local authorities.

In general, the intention in establishing such industrial zones and parks has been to bring to these areas such basic infrastructural services as roads, power, water and sewerage, and in several of them modular-type industrial workshops have been built for sale or rent. The main problem standing in the way of the implementation of this programme has been a shortage of funds.

Despite the lack of a planning policy, particularly for the country's two main industrial cities, the application of municipal zoning ordinances has resulted in a clustering of the new industries in certain quarters of these cities.

E. Local raw materials

The new industries established in the 1950s were installed primarily to produce goods for immediate consumption, normally using local raw materials: foods, beverages, textiles, footwear and clothing, wooden furniture, petroleum derivatives and cement. Nevertheless, it must be acknowledged that these industries were not adequately supplied, since, as a result of the low productivity of the primary activities (agriculture, mining and even the very industries which turned out certain intermediate products), raw materials for the national industry were of faulty quality and as a rule of high price. This problem was further aggravated by the lack of standardization for raw materials and intermediate products and the absence of government controls on weights and measures.

During the 1960s, as a result of the application of the development plan, which provided for the study of the country's natural resources, a number of major sources of local raw materials were developed, among which particular mention might be made of the following: forestry, livestock and mineral resources, new agricultural areas, and, during the closing years of the decade, the discovery of oil in the eastern region.

As far as foreign raw materials are concerned, while it is generally true that industry has been able to import them, it cannot be said that it has had a free hand in this respect, since it has always been charged customs duties of one type or another. The Industrial Development Law, in effect since 1957, has extended certain tax exemptions for the import of raw materials, in accordance with the priority classification of the enterprises.

Imported supplies have been quite reliable throughout the entire period under review. Nevertheless, there have been occasions when the country has had difficulties with its balance of payments and certain exchange restrictions have been introduced, although always of a temporary nature. The net effect was that foreign raw materials cost more.

F. Human skills

It is generally fair to say that shortages of suitable manpower at all levels of skilled workers and technical personnel retarded industrialization during both the 1950s and the 1960s. The inadequate education of the average factory worker and his lack of technical training in the many specialized skills essential for the efficient operation of an industrial enterprise have worked to the continuous disadvantage of industry during this period. The fact that among workers, of whom there is an abundant supply, basic general education is as deficient as it is has made it difficult to train personnel for more responsible positions.

The problem may be said to have been particularly severe at the level of foremen, and supervisors, technologists (middle management), and all those executives and administrators who bear responsibility for the organization and normal flow of production.

G. Available financing

During the 1950s, the availability of funds for longer-term industrial financing was extremely limited.

During that decade, the National Development Bank alone - an institution concerned primarily with financing agricultural activities - allocated small sums of money to industrial financing. In addition, the Development Corporation, which had been set up to promote the establishment of new industrial enterprises, played a modest role in this field, and the few firms that did receive promotional assistance became part of the assets of the National Development Bank. The bond certification machinery of the Securities Commission, which had been created in 1953 under the Central Bank of Ecuador as an agency to regulate the country's securities market, served to some extent as an instrument for industrial financing. At all events, most industrial financing during the 1950s was provided by equipment suppliers, upon conditions that were not such as to encourage industrial development.

In the next decade, under the industrial policy called for by the General Development Plan, the National Finance Corporation was established in 1964, as a successor to the former Securities Commission, and was followed in 1966 by the Private Finance Corporation (COFIEC). With the establishment of these two institutions - the one public, with a role of financing industrial projects having high priority for the country's economic development, and the other private, charged with achieving a balanced distribution of financing for all new industry - funds were obtained from different sources, including the Agency for International Development (AID), the Inter-American Development Bank (IADB), the World Bank and foreign countries, in order to provide the new institutions with sufficient capital to promote industrial development. The favourable conditions on which these funds were obtained have resulted in a significant decline in the percentage of financing secured through suppliers of equipment.

Machinery and equipment has not been imported freely, since such imports have always been subject to government control, whether in the form of general duties or the customs exemptions granted under the Industrial Protection Law and the Industrial Development Law. The Industrial Protection Law, which remained in effect until 1957, provided for exemptions from duty for imports of machinery and equipment by industry on the basis of a contract signed between the enterprises and the Government, with no division of industry into different categories. The Industrial Development Law, which was enacted in 1957, established various categories of industries according to their importance for the country's economic development, fixing an exemption of 80 per cent for imports of machinery and equipment in category "A", 80 per cent in category "B" and 50 per cent in category "C". Subsequently, a number of reforms were introduced into the system, and at the present time the exemption for imports of machinery and equipment in the categories "Special", "A" and "B" amounts to 100 per cent; only for the last category, known as "Registered", is it reduced to 30 per cent.

H. Entrepreneurial initiative

In general terms, the main initiative for the establishment of new industrial enterprises may be said to have come from Ecuadorian commercial circles, since it was they that possessed the greatest experience in product marketing and sales.

Occasionally, the initiative has been taken by the agricultural sector, motivated by the desire to add to the value of primary production through appropriate processing. Mention should also be made, however, of foreign private enterprise, because of the importance of the areas in which it has played a role, of initiative, including such activities as petroleum refining, cement production, brewing, ice-making and the tinning of fish. During the 1960s, foreign investment spread to other industrial activities, such as textiles, paper, chemicals and metal products.

Leaving aside the foreign enterprises, which, because of their economic strength, can finance their investments in the normal manner, Ecuadorian entrepreneurs have been able to finance a part of their investments through a certain initial amount of equity capital and the rest through loans granted to them by the financing institutions and by equipment suppliers, who have normally financed between 75 and 90 per cent of their costs. Equity capital has been drawn from the surplus left over from the commercial and agricultural sectors.

The expansion of the entrepreneurial group over the last twenty years cannot be said to have been very great in the factory industry sector; where it has been evident, on the other hand, is in the area of small-scale and cottage industry. Larger-scale industry has become concentrated in the hands of a few groups, either Ecuadorian or foreign. The widening of the entrepreneurial ranks in Ecuador has been and continues to be one of the crucial problems in the country's industrial development.

II. INDUSTRIALIZATION ACHIEVEMENTS IN THE PERIOD 1950 - 1972

A. A brief review

The principal industries established in Ecuador during the 1950s were in areas that had to do with satisfying the basic needs of the population: foods, beverages, textiles and certain construction materials. With the exception of the last, all the new products produced by Ecuadorian industry during this period were goods designed for immediate consumption.

In the 1960s, there was a significant diversification of the country's industry, which began to produce durable consumer goods and intermediate products: cardboard boxes, plywood, tyres, refrigerators and cookers, fertilizers, structural steel and tubes, glass containers, paper, etc.

The expansion of the market and a number of co-ordinated development measures have helped to broaden the structure of the industrial sector. The following data give some idea of the changes that have taken place in the structure of industry:

	<u>Census</u> <u>1955</u>	<u>Survey</u> <u>1961</u>	<u>Census</u> <u>1965</u>	<u>Survey</u> <u>1971</u>
	<u>Percentages</u>			
A. Branches engaged principally in the production of consumer goods	78.1	72.3	67.4	64.3
B. Branches engaged principally in the production of intermediate goods	19.1	25.4	28.8	29.0
C. Branches engaged principally in the production of capital goods	2.8	2.3	3.8	6.7

During the 1950s, the utilization of natural resources was the over-riding criterion governing the establishment of industries; in the 1960s, a wider range of criteria were used in the evaluation of new projects, such as employment, value added, the saving or earning of foreign currency, the type of product, etc., and this led to the introduction of industries processing foreign raw materials which the country either lacked or had not yet prospected. Nevertheless, resource-based industry continues as in the past to be the predominant factor in Ecuador's industrial development and has in fact led it to specialize in a certain number of industrial products for export to foreign markets.

The industries which have traditionally supplied the building and housing sector are wood and non-metallic minerals, and, on a far smaller scale, metals and chemicals. In recent years, metal-working for building applications has been expanded and is gradually reaching the stage where it can contribute substantially to local supply.

Because of the consistently high rate of growth in the building and housing sector it has been possible to establish large plants to produce materials for which there is also a marked upward trend: cement, structural iron, tubing, paints, roofing materials, bricks, tiles, wooden products, and the like.

The capture of the domestic market through import substitution protected by high tariffs has been the moving force behind Ecuador's industrialization effort over the last 20 years, apart from some exceptional cases when industries were established with an eye to foreign markets, always on the basis of the relative advantages to be derived from the use of natural resources.

The supply ratios are shown in the following table

	<u>1955</u>	<u>1961</u>	<u>1965</u>	<u>1970</u>
	<u>Percentages</u>			
Domestic production (Gross value of production)	52.2	60.7	67.3	66.7
Imports (CIF value)	47.8	39.3	32.7	33.3

During the 1950s, the principal manufactures for export were: tinned fish, sugar and molasses, wood (mainly balsa), pharmaceutical products and, from cottage industry, Panama hats. The 1960s witnessed the growth of almost all these products, accompanied by diversification to include such important items as the following: tinned fruit, tinned mushrooms, cocoa derivatives, woods other than balsa and plywood, and pyrethrum extract.

During the first years of the 1970s, greater export diversification began to take place under the effect of the preferential treatment accorded to the country within the Andean Integration Group.

Nevertheless, despite the substantial increases which have occurred, the proportion of manufactures exported in relation to total industrial production, or to total exports, continues to be low, as is evident from the following tables:

	<u>1955</u>	<u>1961</u>	<u>1965</u>	<u>1970</u>
	<u>Percentages</u>			
A. Exports of manufactures in relation to total production	3	4	6	5
B. Exports of manufactures in relation to total exports	4	7	13	12

The regional or subregional market (and especially the latter) has created a new situation for the country, and as a result the impact which these markets will have on industry is only now beginning to become clear. The industries established in the country to serve the foreign market were intended to supply markets outside the region, and although a few categories of products have been exported to the regional market, this has only been on a complementary basis. Ecuador's manufactured exports have gone mainly to the United States; pharmaceuticals have largely been marketed in Latin America, while more diversified markets have been available for wood, cocoa derivatives, pyrethrum extract and Panama hats.

The Treaty of Montevideo first, and then the Cartagena Agreement, may be said to be the instruments which have opened up a preferential market for Ecuadorian manufactured products. Under the former, which is the older of the two, the results have been very modest, while the second, which is newer, has only just started to produce results, although the prospects are good, given the machinery set up under the Agreement.

B. Statistical indicators of industrial development progress

The contribution of the manufacturing sector to the gross domestic product during the period under consideration has evolved as follows:

<u>Years</u>	<u>Total product</u> <u>(millions of 1970 sucres)</u>	<u>Industrial product</u>	<u>Contribution</u> <u>(percentage)</u>
1950	12,042	1,922	16.0
1955	15,483	2,328	15.0
1960	19,507	3,052	15.7
1965	24,205	4,176	17.2
1970	32,898	6,040	18.4

It can be seen that there was an appreciable drop in the contribution of the manufacturing sector to the gross domestic product between 1950 and 1955, not so much because the other sectors expanded faster as because of setbacks in industrial growth. Since 1955, and more specifically since 1967, the year in which the new Industrial Development Law was enacted, this sector's share has increased continuously as the result of a systematic development programme.

The industrial growth rate between 1950 and 1960 was 4.8 per cent, and between 1960 and 1970, 7.1 per cent.

The data presented are based on the national accounts estimates drawn up by the Central Bank, which have been subjected to some revision to take into account the figures produced by the industrial censuses and surveys that have been regularly carried out since 1955.

The following table shows industry's contribution to the employment of the population:

Year	<u>Economically active population</u>		
	<u>Total</u> (thousands of persons)	<u>Industry</u>	<u>Contribution</u> (percentage)
1950	1,043	152	14.3
1960	1,437	202	14.0
1970	1,941	250	13.4

In view of its declining share of the economically active population, the decreasing ability of Ecuadorian industry to contribute significantly to the achievement of full employment is evident.

The existence of a large cottage industry, representing 81 per cent of all persons employed in the manufacturing sector, with very low productivity per worker, constitutes one of the most important problems which Ecuador's industrial development has had to face over the last 20 years.

A few figures, taken from the industrial censuses of 1955 and 1965 and the industrial surveys of 1961 and 1971, will show the growth of this sector:

	<u>Census</u> 1955	<u>Census</u> 1965	<u>Survey</u> 1961	<u>Survey</u> 1971
Number of establishments	987	2,506	552	1,053
Persons employed (number)	29,768	47,629	27,628	50,333
Value of production (thousands of sucres)	1,059,900	5,305,170	2,537,916	11,137,004
Value added (thousands of sucres)	786,845	2,059,286	1,180,820	4,492,693
Electricity consumed (thousands of k.h)	81,920	152,071	108,900	198,147

As their basis of calculation, the industrial censuses have taken those establishments which employ at least five persons and have an annual production value greater than 100,000 sucres, and the industrial surveys those which employ at least seven persons and have an annual production value greater than 180,000 sucres.

III. THE STRATEGY OF INDUSTRIALIZATION, 1950 - 1972

A. Selection of priority industries

Ecuador's experience in the area of planning, as an integrated approach, is limited to its first Economic and Social Development Plan for 1963 - 1973. The targets set for the manufacturing sector are accordingly those put forward in that plan.

The characteristics of the Ecuadorian manufacturing sector are such that it has been necessary to divide it into two sectors: factory industry and cottage or artisan industry. The following table shows the targets set for gross product value and employment:

	1963		1968		1973		Growth rates	
	Pro- duct*	Employ- ment**	Pro- duct*	Employ- ment**	Pro- duct*	Employ- ment**	Pro- duct (percentages)	Employ- ment
<u>Manufacturing</u>	<u>2,523</u>	<u>213</u>	<u>3,426</u>	<u>231</u>	<u>5,199</u>	<u>247</u>	<u>8.6</u>	<u>0.9</u>
Factory indus- try	1,449	32	2,126	45	3,540	65	10.5	8.0
Cottage indus- try	1,074	181	1,300	186	1,659	182	5.5	-

* In millions of sucres; ** In thousand of workers.

The "factory industry" category includes establishments which employ at least seven workers and have an annual production value greater than 180,000 sucres.

In the case of factory industry, this being the sector for which statistical data are available, the evaluation that has been carried out indicates that the targets for production and investment were met, but that in the area of employment, they were not, the number of workers absorbed by the sector being fewer than planned. This may have been due to greater mechanization.

Planning officials have always been concerned with establishing priorities for the development of new industries. It was on this basis that the classification of industries into different categories was undertaken as part of the 1957 Industrial Development Law, according to the importance of projects in those industries for the country's economic development.

Originally, these priorities were established in the form of general criteria, but since 1961 the criteria have been supplemented by the compilation of lists of specific projects for inclusion in the "Special" or "A" categories in accordance with the Industrial Development Law. Since the responsibility for commending the lists of priority industries to the Government continues to rest, as in the past, with the planning commission, these lists have provided an excellent means of co-ordinating the programming, promotion and implementation of projects.

The Government's machinery for the support of industrial development, above all its legal and institutional procedures, caused investors to gear their operations almost totally to the policy followed in the public sector. Nevertheless, since Ecuadorian law has established no mandatory requirement whereby prior authorization must be obtained before enterprises are set up, a certain degree of excess capacity has developed in some activities, which under different circumstances might have been controlled. On the project level, there are always new private ventures which have not been identified and included in the planning, but such cases are more the exception than the rule.

The following criteria have been adopted for evaluating projects and determining their priority:

- Utilization of domestic raw materials;
- Employment of manpower;
- Amount of the investment;
- Cost of production;
- Saving or earning of foreign currency;
- Secondary effects;
- Technological level of the production process;
- Upgrading of the technical skills of the work-force;
- Location of the project;
- The market, and competition in the industry.

The National Planning Council, as part of the formulation of industrial programmes, identifies investment opportunities and, using "industrial profiles", analyses the projects identified in order to establish their priority. On the basis of these analyses, the Development Centre (CENDES) carries out feasibility studies

and promotes the projects among Ecuadorian and foreign investors. Promoters or entrepreneurs request and obtain classification of their projects, in accordance with the National Development Law, from the Ministry of Industry and Trade. At different stages in the study, evaluations are made of the project's commercial viability, its costs and sale prices, and its dependence on tariff protection.

B. Implementation of industrial projects

There was no clear policy during the period 1950 - 1972 to indicate which industrial projects should be implemented by the public and which by the private sector, Neither was there any kind of restriction or limitation on foreign investment.

However, the public sector, working through the Development Corporation in the 1950s and the Social Insurance System and Regional Development Corporations in the 1960s, made itself responsible for a number of industrial projects. It was guided in these activities by the definition of strategy contained in the industrial programme of the Development Plan for 1963 - 1973, which stipulated:

"Industrial development in Ecuador shall mainly be achieved through private enterprise and investment, the role of the State being to assist and to stimulate private enterprise through industrial policy. The State shall invest in industrial projects only in exceptional cases; that is, when the projects in question are of fundamental importance for economic development, especially in the least developed zones. Its principal responsibility shall be to invest in infrastructural works, eliminate institutional obstacles, provide incentives and actively promote industrial investment".

Before 1963, the Government, on the basis of studies carried out by the National Planning Council and the Central Bank, had taken a number of actions in the area of industrial policy. The more important of these actions included the enactment of the Industrial Development Law in 1957 and the establishment of the Development Centre in 1962. With the formulation of the General Development Plan for 1963 - 1973, the sectoral programme provided a specific definition of the industrial policy to be applied.

The industrial policy set forth in the Development Plan was systematically and continuously applied in a fairly consistent manner. It has been changed at the

political and administrative levels that have been mainly responsible for some degree of fluctuation in investment levels in the industrial sector.

In general, during both the 1950s and the 1960s, the main thrust for industrialization came from the local private sector. Before 1950 and during the 1960s, a considerable amount of initiative was taken by foreign investors. Clear instances of involvement by the State occurred during the mid-1950s and mid-1960s, but at no point did this become the predominant factor.

C. Promoting exports of manufactured goods

One measure which Ecuador has continued to apply in order to stimulate exports is the temporary-import or "drawback" system, whereby imported raw materials are used in manufactured products which are then exported. Taken by itself, this measure has not proved effective, except in the pharmaceuticals sector, where significant quantities of raw materials are imported. With regard to other products, which are based on domestic raw materials, the measure has had no positive effect on the stimulation of exports.

Apart from the priority status assigned under the Industrial Development Law to plants established with a view to exporting their production, no special measures were adopted in the 1960s to promote the development of these industries.

It was only in the 1970s that a number of additional measures were taken to supplement the "drawback" system as a means of stimulating the export of manufactures. These supplementary measures include: the study of foreign markets, the issue of tax allowance certificates for the amount of non-traditional products exported, the extension of credit through the export promotion fund and the opening up of regional markets. Initial results suggest that these measures are proving effective.

D. Promoting employment

Although abundant and cheap manpower is available in Ecuador, it is unskilled labour, whereas industry normally requires workers with certain skills, who are frequently difficult to recruit.

The application of foreign technology through the importation of machinery and equipment, with no technical adaptation whatever to the country's factor endowment, has led to a trend in favour of mechanization at the expense of greater employment. The need to meet market competition both at home and abroad has also caused industry to adopt a higher degree of automation.

The Government has taken no special steps to promote employment in the face of mechanization and the greater use of capital in the manufacturing industry.

The generation of employment by industry has been taken into account only as a secondary criterion when evaluating the importance of a project for the country's development. The artisanal sector has traditionally absorbed surplus labour, thereby creating a serious problem of marginality.

E. Location of industry in new centres and rural areas

With the aim of promoting industrial decentralization and bringing new industry to a zone which had been severely affected by the decline in the world market for Panama hats - an activity on which an area of the country was dependent - in 1954 the Government enacted an Industrial Protection Law granting a number of tax privileges to new projects which might be established in that zone.

Nevertheless, it was only when this measure was combined with a number of others, such as the provision of auxiliary services, adequate sites, project studies and investment promotion, that it became possible to secure the installation of major industrial projects in the zone, promoting thereby the cause of geographic decentralization.

The city of Cuenca, to the south of the Ecuadorian mountain range, may be said to represent a successful effort to establish a new "industrial pole" during the 1960s. In the case of the city of Manta, to the north along the coast, for which a major industrial complex had been planned, this goal could not be realized because of delays which arose in the programmes for setting up the required infrastructural facilities: the port, electricity, water, communications, and the like.

With few exceptions, when the State has undertaken the direct promotion of projects in rural areas or in zones where natural resources were available, no steps have been taken to persuade the private sector to locate its industries in rural regions.

For certain categories of goods, it has been the artisanal sector that has expanded in the countryside, where, because of the manual nature of its activities, it has been able to provide a source of employment and income in addition to that provided by farming.

F. Development of manufacturing technology

Practically no technological research in the industrial area has been carried out in Ecuador. All new techniques and processes have been brought into the country from the more industrialized nations, mainly through the importation of equipment, with no regard to differences in resource endowment.

During the 1960s, work was begun to set up a research infrastructure which in the course of time might prove effective in the area of technological development. Particular emphasis was placed on providing a number of the research institutes attached to universities and polytechnical colleges with the necessary equipment, laboratories and materials.

The country has benefited principally from the foreign technical co-operation made available through organizations providing multilateral assistance and through bilateral agreements, as a result of which appropriate bodies have been established to follow through on the research effort. In the industrial area, special mention might be made of the Ecuadorian Technological Institute and the Ecuadorian Institute of Standardization. In other fields, the National Fisheries Institute, the Institute for Agricultural Research and the Forestry Service, also contribute to the support of industry.

There have been no measures to regulate the adoption of specific types of technology, and until 1970 there was no attempt to regulate the fees paid in this area. The only measures taken were an analysis and registration of trademarks and patents by the ministry concerned. Decision 24 of the Sub-regional Integration Agreement established a number of rules on these matters, which the country is now beginning to put into effect.

In the industrial sector, the responsibility for adapting or improving manufacturing processes and product design lay entirely with the enterprises themselves, and by importing equipment, employing better raw materials and following the lead of other markets, these enterprises have managed to keep pace with new production techniques.

In cottage and small-scale industry, it has been the State which has done the necessary work on improving manufacturing processes through mechanization and studying new prototypes and designs for products, and in this effort it has been quite successful, especially in the field of artistic handicrafts.

The Development Centre (CENDES) was given the responsibility for promoting projects through the planning and detailed design of new manufacturing plants in keeping with the priorities established by the programmes, and also for providing technical assistance to existing industry in order to improve its productivity.

The installation and starting up of new plants has always remained in the hands of industrial promoters and investors.

G. Training of local labour and management

In general, the enterprises that were established undertook the task of training the labour force required in their plants. However, considering that this was one of the basic problems in Ecuador's industrial development, it was felt necessary, as a part of the industrial programme, to establish the Vocational Training Service, which was set up in 1967, unfortunately with very little financial resources. It was only in 1970 that greater funds for the expansion of training programmes became available, through technical assistance from the United Nations (ILO) and contributions from enterprises.

As far as managerial personnel are concerned, Business Training Centres have been organized, in both Quito and Guayaquil, under the auspices of CENDES and with the assistance of the Chambers of Industry. In the area of technical personnel, the universities and polytechnical colleges have expanded their training programmes and instituted new specialized courses, including business administration and mechanical, industrial and petroleum engineering, in addition to existing courses in economics and chemical, electrical and civil engineering.

Government subsidies have been made available for the Vocational Training Service and for the courses of instruction at the universities and polytechnical colleges.

IV. INDUSTRIAL POLICIES AND MEASURES, 1950 - 1972

Direct intervention by the State in industrial projects has been intermittent, and where it has occurred, the aim has not been merely to see that the projects were technically and commercially sound, but also to ensure the use of specific resources, to balance markets, to decentralize industry and to promote employment in the less advantaged areas of the country.

Although feasibility studies were carried out in most cases, for a variety of reasons the implementation of these projects did not produce the technical and commercial results hoped for. Technical, administrative and political shortcomings caused serious problems for the normal operation of the projects, with the consequence that certain enterprises which had been set up by the public sector were transferred to private hands, examples being the pottery works at Riobamba, the sugar mill at Imbabura, and the match factory at Quito.

During the entire period in question, revenue from tariffs constituted the State's main source of funds for its budget. Although fiscal considerations have always been paramount in the application of the tariff system, tariffs were modified in 1965 to afford greater protection to the country's newly established industries.

The tariff levels established for their revenue-producing effect have provided enough protection to promote the establishment of new industries, especially for consumer goods.

Average tariff levels, according to the type of product, were as follows:

Consumer goods	60 per cent or more
Intermediate goods	30 - 50 per cent
Capital goods	20 - 30 per cent

There has been no definite policy of gradually reducing the levels of tariff protection as a means of promoting greater efficiency. In many instances, at the request of entrepreneurs, duties have been raised on competitive products and lowered for the raw materials and intermediate products used by the firms.

Since 1957, the Industrial Development Law has provided a major incentive in the form of relief from duty for imports both of machinery and spare parts and of raw materials, according to a graded scale, in keeping with the classification of the enterprise. The 1957 law and the one now in effect have established the following system for the different categories involved:

	Law of 1957		Law now in effect	
	For machinery, accessories and spare parts	For raw materials	For machinery, auxiliary equipment and spares	For raw materials, other materials and packaging
"Special" category	Did not exist	Did not exist	100 per cent	Up to 80 per cent for the first 5 years and up to 70 per cent from the 6th year on
Category "A"	80 per cent	80 per cent	100 per cent	Up to 65 per cent
Category "B"	80 per cent	-	100 per cent	Up to 40 per cent in special cases
Category "C" or "Registered"	50 per cent	-	30 per cent	-

In general terms, the granting of these duty concessions has not slowed the development of the local industries supplying these products, for the following reasons:

- (a) Under the Industrial Development Law, the national Government, public and private institutions pursuing social or public goals, and all other institutions which enjoy any State, provincial or municipal benefits or which share in public funds are required to obtain their supplies from domestic sources.
- (b) The industrialization stages through which the country has passed during the period under review and the limited nature of its market have permitted the production of only certain intermediate products.

The Income Tax Law has established the following rates of tax for industrial enterprises:

	<u>1950 - 1963</u>	<u>1964 - 1970</u>
	Percentages	
On undistributed profits	16	20
On distributed profits	16	35
On registered stock	10 - 22	20
On bearer shares	20	40

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Until 1964, the Income Tax Law provided for a 25 per cent deduction from the amounts invested by industrial enterprises in the expansion or improvement of their facilities.

The Industrial Development Law of 1957 introduced incentives for the re-investment of profits by making such amounts deductible from income tax payments. During the period from 1957 to 1970, the total amount of profits re-invested to increase plant capacity was deductible, on a deferrable basis, from the enterprise's income tax liability.

This benefit was suspended from May 1970 to June 1971 because of the grave budgetary crisis which confronted the country, and was subsequently re-introduced under different conditions, namely, the deduction, on a deferrable basis, of only 50 per cent of the sums re-invested, contingent on their application, following prior authorization, according to selective criteria.

A further investment incentive, in effect from 1957 to 1962, provided for more rapid depreciation.

The income tax exemptions for re-investment of profits have proved effective as a means of stimulating industrial investment, but for the treasury they have represented a very serious loss of income, further aggravated by the absence of any machinery for ensuring that this relief led to a genuine expansion of productive capacity, and not merely the replacement of equipment, as happened in practice. It was this last-mentioned circumstance that prompted the changes in industrial legislation.

Until July 1971, when Decision 24 of the Cartagena Agreement on the treatment of foreign capital came into effect, Ecuador had imposed no restrictions on the operation of foreign capital in the country. It was accorded the same treatment as domestic capital, in the belief that this was the best way to encourage its promotion and entry.

Nevertheless, as a result of the problems facing industry in its efforts to develop, above all the limited nature of the market, the share of foreign capital in the nation's industry has failed to reach the same substantial levels as in other countries of the region.

With the formation of the expanded regional or sub-regional market and the need to ensure that integration primarily benefits local firms, it has become necessary to adopt a statute, at the regional level, governing the treatment of foreign capital and

setting forth the ground rules on which such capital can enter or remain in the States making up the group. Capital from within the region is, of course, treated as domestic capital, and this has led to a number of moves to establish multinational enterprises.

Industrial investments over the last nine years during which the country's first development plan has been in force have exceeded the amounts contemplated in the industrial programme. That these targets have been met is due to a whole range of industrial policy measures for the stimulation of private investment, chief among which are the following: the Industrial Development Law with all its various incentives, the availability of enough credit, the study and promotion of industrial projects, relative flexibility in the administration of the incentives, the training of personnel for industry, tariff and exchange protection, the establishment of the legal and institutional framework for the stimulation of industrial development, and finally the country's new awareness of the need for industrialization.

V. INSTITUTIONS AND INDUSTRIALIZATION, 1950 - 1972

Studies of the country's economic development -- and, within that larger category, studies of industry and the determination of policies and strategies -- began in Ecuador in 1952 with the technical assistance of ECLA. The main institution co-operating in these studies was the Central Bank of Ecuador.

Since 1954, the year in which the National Planning and Economic Co-ordination Council was created, it is this agency which has been responsible for formulating the broad outlines of the industrialization strategy.

Until 1956, its aim was simply to find out what the industrial situation in Ecuador was, but as early as 1957 the Council was involved in drawing up the Industrial Development Law, and since that time, by means of various studies, it has gradually succeeded in laying down guidelines for industrialization policy and strategy.

In 1958, section four of the study entitled "Principles and Guidelines for Planning the Economic Development of Ecuador" dealt with the "Role of Industry in Economic Development". The year 1961 saw the preparation of the Short-Term Development Plan, which included an industrial programme for the period 1961 - 1963. In 1963, the

country received its first Economic and Social Development Plan for 1963 - 1973, with specific programmes for industry and the artisanal sector. In 1969, with the collaboration of the Latin American Institute for Economic and Social Planning (ILPES), a report was prepared with the title "Basis for a Development Strategy within the Context of Sub-regional Integration", a section of which dealt with industrial strategy. In 1972, the Integrated Plan for Reorganization and Development for 1973 - 1977 was drawn up, incorporating specific programmes for factory and cottage industry.

The Planning Council continues to bear responsibility for the implementation of industrial programming and the assignment of priorities to industrial projects. With the preparation of the lists of priority activities for the "Special" and "A" categories, under the Industrial Development Law, it has been possible to co-ordinate the programmes with the promotion and execution of the projects. The Ministry of Industry, Trade and Integration (formerly the Ministry of Development and the Ministry of Production) is responsible for the formulation of operational plans and the administration and control of industrial development, sharing this function with the Finance Ministry.

In the administration of the Industrial Development Law, it is the role of the Directorate of Industrial Development of the Ministry of Industry, Trade and Integration to evaluate proposals for projects; however, under the Law, the classification of the enterprise is entrusted to an Inter-ministerial Industrial Development Committee, in which the Ministry of Industry, the Finance Ministry and the Planning Council participate with a right to vote. The Development Centre (CENDES) and representatives from the Chambers of Agriculture, Industry and Trade have an advisory function.

Implementation of economic policy aimed at facilitating the rapid industrialization of the country has not been entrusted to a single agency, since the approach adopted in Ecuador has been to decentralize responsibilities and functions among a number of different specialized agencies.

During the period from 1950 to 1970 with which we are concerned, no one institution was responsible for the execution of the industrial projects promoted by the public sector. During the 1950s, it was the Development Corporation which performed this function; however, after a few projects had been carried out - pottery, cement and rice-hulling - the responsibility for the projects was transferred to the National Development Bank.

During the 1960s, responsibility for project implementation was assigned to different agencies. On the one hand, the Ecuadorian Social Security Institute promoted and carried out the Guapán cement and the Tababuela sugar projects; on the other, the Regional Development Corporations were charged with both promotion and investment in the industrial area, with the result that a number of projects were undertaken for activities involving mainly dairy products, slaughterhouses, balanced feeds and organic fertilizers. Finally, since the establishment in 1964, the National Finance Corporation has been authorized by its charter to make direct investments in industries, either alone or through the formation of mixed-ownership enterprises. It was only towards the end of the decade that the Corporation made use of this power and began to participate in the financing of mixed enterprises.

The industrial programme of the Integrated Plan for Reorganization and Development of 1973 specifically assigned responsibilities for the promotion and execution of industrial projects in the public sector and established as the primary agency in the area the National Finance Corporation, which was to act as the co-ordinating institution in the management not only of its own investments but also those of other organizations in the public sector, but including funds allocated by the Ministry of Industry, Trade and Integration.

It is important to distinguish between the various types of investment incentives devised in Ecuador, for which responsibility has been vested in different institutions. One kind of investment incentive has been in the form of project feasibility studies and the promotion of the projects themselves among Ecuadorian and foreign investors - a role which has been entrusted to the Development Centre with additional assistance from the National Finance Corporation.

The main investment incentives, however, are those which are provided under the Industrial Development Law and which are granted on the basis of interministerial agreements involving the Ministry of Industry and the Finance Ministry. These agreements derive from the decisions taken by the Interministerial Industrial Development Committee, which was described above.

Another type of incentive which has been applied, is loans for industrial financing granted by the financial agencies.

Although each of these individual functions is performed by a different specialized institution, action is co-ordinated through the guidelines given in the development plans and through the participation of the National Planning Council and the other agencies responsible for industrial development in the governing organs of these institutions. The Ministry of Industry, Trade and Integration functions as the central governmental agency through which investment incentives, particularly those extended under the Industrial Development Law, are arranged.

During the 1950s, the specialized institutions engaged in channelling financial resources to industry were the Development Corporation and the National Development Bank, with the latter ultimately assuming the responsibilities of the former. In addition, the Securities Commission, a unit attached to the Central Bank of Ecuador, also contributed some financial assistance through its machinery for the certification of bond issues traded through private banking channels.

First the Development Corporation, and later the National Development Bank, were authorized to invest directly in new industries, and a number of projects in specific fields were carried out in this way during the decade in question.

During the 1960s, with the application of the General Development Plan for 1963 - 1973, a number of specialized bodies were established to provide greater financial backing to industry and improve its administrative and managerial systems. In 1964, the National Finance Corporation was created from what had been until that time the Securities Commission, and was given the resources and mandate required to pursue industrial financing and the direct promotion of investment.

In 1966, the Government authorized the formation of the Private Finance Corporation (COFIEC), which, with functions similar to those of the National Finance Corporation, was designed to offer a supplementary service by making funds available for promising private ventures whose backers had decided not to seek financial assistance from the public corporation.

In addition to its banking operations, the National Finance Corporation has also played an important role in the identification and promotion of new industries, particularly in the agro-industrial area and in connection with projects which have been assigned to Ecuador within the framework of Andean subregional integration.

With regard to manpower training, in 1967 the Government established the Vocational Training Service (SECAP), but, because of its limited resources, this institution was unable to undertake any very ambitious programmes until 1970, when it received a sizable contribution from the United Nations (ILO) and a system calling for mandatory contributions by business was established.

In the area of management training, actions of two types have been taken: on the one hand, in 1968 the private sector, with the help of official agencies, established what are known as Executive Centres in Quito and Guayaquil, the second of which is continuing to operate normally to this day, while the Quito Centre was succeeded in 1969 by the Business Training Centre (CEFT).

The Government also contributed in the 1960s to the training of management personnel by setting up business schools and departments at the country's higher educational establishments.

Another organization which has been established by the Government is the Development Centre (CENDES), which has two specific functions: industrial promotion and technical assistance to industry. This Centre engages both in specific promotional activities by preparing market analyses and feasibility studies for industrial projects, which are then made available to the public and private sectors, and in promotion of a general nature with respect to governmental regulations and concessions regarding the establishment and expansion of projects.

To promote the export of manufactured goods, in 1965 the Government established the Central Office for the Export of Artisanal Products (OCEPA), whose purpose is to stimulate exports of products turned out by cottage and small-scale industry. This was followed in 1968 by the creation of the Institute for Foreign Trade and Integration (ICEI), which had a much wider range of responsibility for the promotion of exports both from the manufacturing sector and from agriculture, mining, etc. In 1973, ICEI became part of the Ministry of Industry, Trade and Integration.

Technical information regarding the selection of manufacturing processes, product design, machinery and equipment, is provided by CENDES, whose functions include technical assistance.

As long ago as 1964, as part of its technical assistance role, CENDES began to carry out "industrial diagnostic studies" at industrial enterprises, formulating recommendations for management to follow in order to improve plant operation. Unfortunately, in only a very few areas was CENDES able to follow through with the second phase of this effort, namely the implementation of the measures suggested. With a view to completing the work of in-plant technical assistance, the Government of Ecuador submitted to the United Nations Industrial Development Organization a proposal, which was accepted, for a project to combine the two aspects of technical assistance - the diagnostic study and the implementation of measures to improve plant productivity.

The Government has intervened only with regard to the adaptation of product designs and manufacturing processes to local conditions in the case of products produced by the handicraft and small-scale industrial sector. This function has been entrusted to OCIPA.

Regarding standardization and quality control of manufactured products, despite the fact that in 1963 the development plan drew attention to the need to establish a specialized body, it was only in 1970 that the Ecuadorian Institute of Standardization (INEN) was formed to function in this area. The institute is attached to the Ministry of Industry, Trade and Integration.

In conclusion, the Government of Ecuador has decided to decentralize, to a number of specialized bodies, the responsibilities and functions involved in the promotion and direction of the industrialization process, in order to achieve greater efficiency in the performance of this task.

It is clear that this decision must be backed by effective co-ordination if the effort to achieve programmed industrial development is not to be sidetracked by conflicts and inconsistencies.

In large measure, it has been possible to secure this co-ordination through the participation of representatives from the agencies concerned with industrial development in the various governing bodies of each of the interministerial organizations and committees. Nevertheless, there is a continuing effort to improve this co-ordination with the help of political action by the Government on behalf of the programmes called for in the Integrated Plan of Reorganization and Development.

Table 1

LIST OF THE 25 MAJOR INDUSTRIES ESTABLISHED IN ECUADOR SINCE 1950

Name of enterprise	Product line of enterprise	Year established	Capital assets*	Sales	Cost of imported supplies,	Tariff protection %
			1970	1970	1970	
In millions of sucres						
Fábrica de Aluminio UMCO	Aluminium household articles	1950	5.0	16.1	8.3	86
Textil San Vicente	Woven cotton fabrics and fibres	1951	43.6	63.1	20.4	72
Molinos del Ecuador	Wheat flour	1952	27.1	84.1	50.3	195
Textilana	Woollen and synthetic-fibre fabrics	1953	26.2	62.0	34.1	184
Durex S.A.	Enamelled iron articles	1954	14.3	26.1	15.0	95
Bebidas Gaseosas S.A.	Soft drinks	1955	27.0	86.6	24.0	117
Eternit Ecuatoriana C.A.	Asbesto-cement tiles	1956	15.0	43.2	8.0	70
Pinturas Ecuatorianas C.A.	Paints	1957	1.3	33.1	12.6	70
Productos Latino-americanos S.A.	Plastic articles	1958	14.1	55.7	33.1	44
Panadería Moderna Supan	Bread	1959	9.2	22.2	-	93
CABLEC	Electrical conductors	1960	11.6	32.6	6.3	47
Pasteurizadora Quito S.A.	Pasteurized milk	1961	11.5	81.4	2.4	95
Ind. Cart. Ecuat. S.A.	Cardboard boxes	1961	22.5	394.0	305.0	115
Monterrey Azucarera Loja	Sugar	1962	19.4	22.3	0.5	135
Ecuadorian Rubber Co.	Tyres for vehicles	1963	64.6	139.1	54.6	67
Plywood Ecuatoriana S.A.	Plywood	1964	14.7	40.6	3.0	130
Ecuatoriana de Artefactos S.A.	Refrigerators and stoves	1964	10.7	42.0	18.0	65

* Book value

Source: Industrial survey of 1970.

Table 1 (cont'd)

Name of enterprise	Product line of enterprise	Year established	Capital assets*	Sales	Cost of imported supplies,	Tariff protection
			1970	1970	1970	%
In millions of sucres						
Fertilizantes Ecuatorianos S.A.	Fertilizers	1965	78.4	63.1	2.0	30
INEDECA	Cocoa products	1965	24.0	47.2	1.5	75
Cemento Guapán S.A.	Cement	1965	101.0	32.0	..	31
Azúcar Tropical Ecuatoriana	Raw and refined sugar	1967	519.0	67.1	1.0	135
Papelería Nacional C.A.	kraft paper	1968	72.0	38.0	2.	45
Cristalería del Ecuador	Glass containers	1968	30.0	22.7	4.1	32
Acerías Nacionales del Ecuador	Structural steel	1969	75.5	48.6	39.7	49
Union Carbide Ecuatoriana	Electric batteries	1970	4.2	23.0	10.0	39

* Book value

Table 2

COMPOSITION OF GROSS DOMESTIC PRODUCT AT FACTOR COST

Sectors	1950	1955	1960	1965	1970	Growth rates	
	(In millions of 1970 sucres)					1950-1960	1960-1970
						(In percentages)	
Agriculture	4.672	5.587	7.179	8.205	10.242	4.4	3.7
Manufacturing	1.922	2.328	3.052	4.176	6.040	4.7	7.1
Trade	1.235	1.952	2.249	2.633	3.442	6.2	4.4
Other sectors	4.213	5.616	7.027	9.191	13.174	5.3	6.5
TOTAL	12.042	15.483	19.507	24.205	32.898	4.9	5.4
	<u>COMPOSITION IN PERCENTAGES</u>						
Agriculture	38.8	36.1	36.8	33.9	31.1		
Manufacturing	16.0	15.0	15.7	17.2	18.4		
Trade	10.2	12.6	11.5	10.9	10.5		
Other sectors	35.0	36.3	36.0	38.0	40.0		
TOTAL	100.0	100.0	100.0	100.0	100.0		

Table 3

BALANCE OF INTERNATIONAL TRADE
(In millions of suores)

	1955	1960	1965	1970
Imports (value C.I.F.)	1,629	1,728	2,978	5,254
Exports (value F.O.B.)	1,331	1,538	2,375	3,919
Trade Balance	-298	-190	-603	-1,335
Imports of manufactured goods (value C.I.F.)	1,517	1,643	2,605	4,750
Exports of manufactured goods (value F.O.B.)	107	86	314	474
Exchange rate for one US\$ (suores)	16.07	16.25	18.22	21.42

Table 4

NUMBER OF PERSONS ACTIVELY EMPLOYED IN THE ECONOMY
(In thousands of persons)

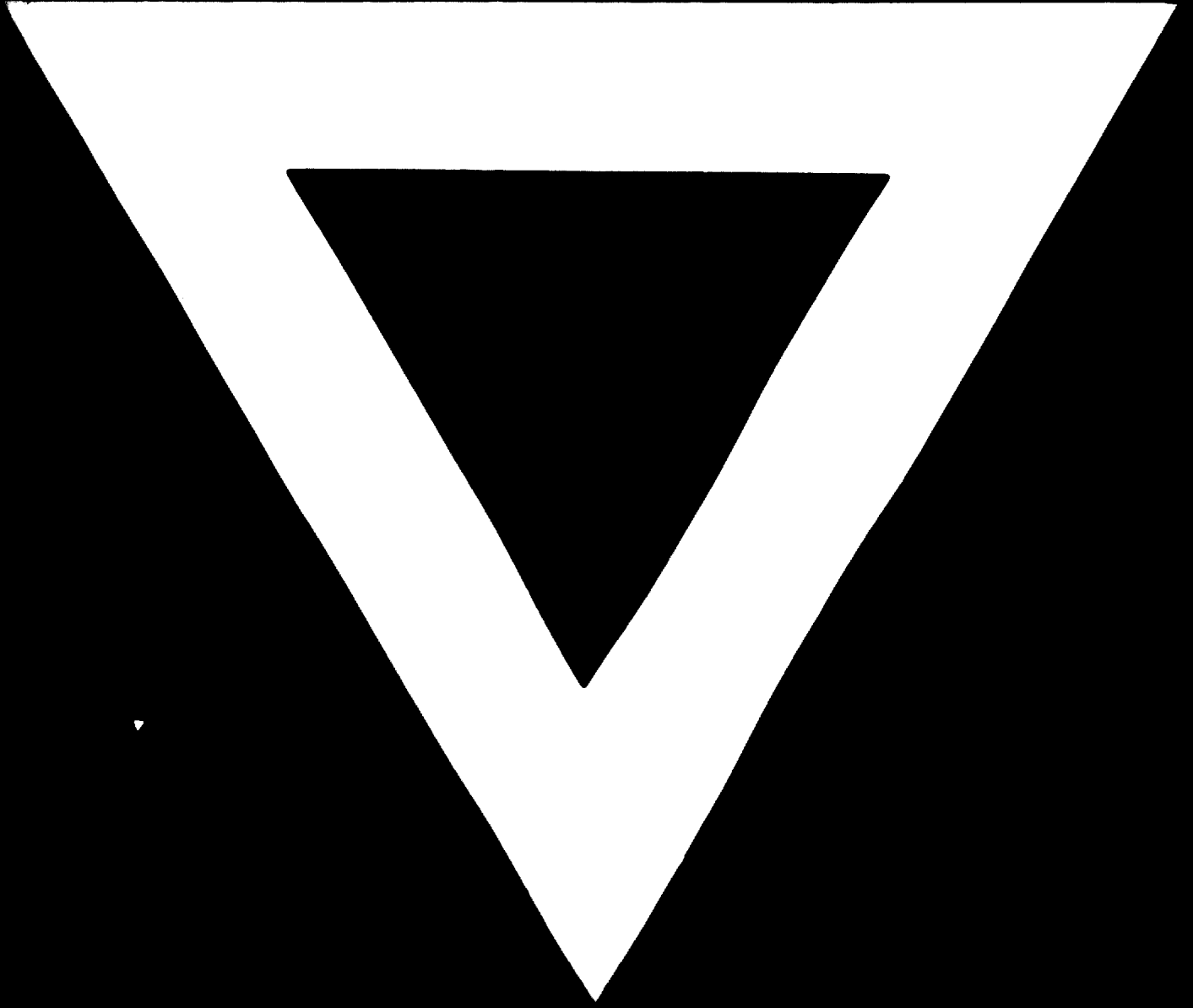
	1950	1960	1970	1972
Agriculture	626.1	829.5	1,085.4	1,154.1
Manufacturing	152.3	201.8	260.1	273.3
Trade	67.9	92.7	135.4	147.7
Other sectors	216.4	313.1	460.0	500.6
Total	1,062.7	1,437.1	1,940.9	2,075.7

Table 5

NUMBER OF PERSONS EMPLOYED IN THE MANUFACTURING SECTOR

	Number of enterprises	Total number of persons employed
A. Enterprises employing over 100 persons	72	20,090
B. Enterprises employing from 10 to 99 persons	707	18,811
C. Enterprises employing from 5 to 10 persons	1,727	8,728
D. Enterprises employing less than 5 persons	19,789	40,969
Total	22,295	88,598

Source: Industrial census of 1965.



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