

**THE GROWTH OF PRIVATE
AND PUBLIC INDUSTRIES
IN PLANNED DEVELOPMENT
(India, Pakistan, and Puerto Rico)**



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Some Features of
THE GROWTH OF PRIVATE AND PUBLIC INDUSTRIES IN PLANNED DEVELOPMENT:
survey of manufacturing developments in India, Puerto Rico and Pakistan

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PART I. INTRODUCTION

The Objectives of the Investigation

Many underdeveloped countries of the world have undertaken economic planning in an effort to promote development. Some countries adopted such plans even prior to World War II; many others have undertaken planning activities only subsequent to the war. Some countries have seriously undertaken planning and the deliberate fostering of economic growth; others appear to have paid little more than lip service to the idea.

As far as our investigation is concerned we accept as fact that economic planning activities have been carried out for some time (prior to 1957) in a number of countries outside of the USSR and its satellites. Furthermore, countries which are not now actively engaged in planning may do so in the near future. In short, we are not trying to pass judgment on whether planning should or should not be engaged in; we are simply acknowledging its existence.

Our overall objective, then, becomes that of investigating the efficacy of plans already in operation. Thus, we try to establish which planning activities seem to lead to the desired economic growth and which types of activities seem to be more or less futile. We are interested in what has actually happened in a few countries which have been engaged in planning for several years to determine what can be learned from their experiences that may be useful to other countries. We wish to arrive at generalizations based on historical experiences that will be practical and useful to underdeveloped countries now planning for economic growth.

Our investigation is concerned primarily with planning in the fields of manufacturing and power. Such other areas as are often included in national plans, as agriculture, transportation, distribution, education, finance, public health, among others, are outside the scope of our investigation. These areas are at least as important but limited time and staff necessarily restrict our efforts to manufacturing and power. However, since the growth of manufacturing and power cannot be studied in isolation, we note such other characteristics of the countries and their plans as seem highly relevant for an understanding of developments in manufacturing and power.

Within the fields of manufacturing and power, then, we wish to determine what kinds of growth the plans visualized, how such growth was to be brought about, and to what extent it was achieved. If we can learn what has happened in several countries with regard to this sequence we may then be able to make suggestions with respect to the nature of the targets which might be specified in plans, and the nature of the mechanisms which might be adopted to fulfill these targets.

Note that we are concerned with planning in a free democratic society. This means that the planning must take into account the wishes and desires of the people, and the planners must be prepared to adapt their plans, if necessary, in accordance with public opinion. This means that people must be persuaded rather than ordered to act in such a manner as to facilitate the carrying through of the desired plans. If planning is to be accomplished under a police state, however, some of the economic problems of planning may remain. Many, if not most, of the problems of the planners, however, center about the use of police power to force adherence to the desired plans. We are not concerned with the study of police activities.

The present investigation is limited to the analysis of the plans of three countries: India, Pakistan and Puerto Rico. These countries were chosen

for several reasons:

1) all had begun planning by the late 1940's so that five or more years of actual experience are observable, and some judgment is possible about how well the plans are proceeding;

2) all have at least some statistical information about their economy and can provide reasonably correct information about what has happened;

3) each of these countries appears to have a real desire to make the plans work and to achieve economic progress;

4) planning activities in the three countries represent a range of approaches. At one end of the planning scale is India with very detailed plans covering many aspects of contemplated development and with the government exercising close control. At the other end is Puerto Rico whose plans are quite general in most respects and aim at providing a proper milieu in which economic development can take place, without prescribing in detail how it should occur. Pakistan lies roughly midway between these two extremities.

On the basis of the experiences of these countries we are attempting to determine whether generalizations can be made about planning--the aims of the plans, the methods used to achieve fulfillment and their success or failure. Are there any similarities in the types of manufacturing industries which various countries attempt to foster? Are there any similarities in the methods which they use to carry out the plans? And what parts of these plans seem to meet with greater success, and what parts with lesser success? If we can derive any generalizations from our investigations such generalizations should be useful as guides to planners in other countries. By combining such guides with the detailed information about a particular country, it should be possible to draw improved plans.

Note that we are not investigating why particular targets in specific industries were set at the levels specified in the plans, nor why these

specific targets may or may not have been met, as the case may be. To explain why specific incidents occurred is outside the scope of our study; indeed, there is reason to believe that answers to such questions would not justify the elaborate investigation required.

Neither are we trying to "second guess" the planners of these countries and tell them what they ought to have done five or ten years ago. Nor are we trying to tell the planners in these countries what they should now be doing with reference to specific projects and proposals. It is for the experts in the countries concerned to determine whether a specific factory producing a certain product should be located in one city or another, or perhaps doubled in size, or stricken from the plans altogether.

An outline of the analysis

In order to arrive at generalizations we must ask substantially the same questions in all countries studied. The specific list of questions we are asking and attempting to answer can be grouped under the following outline:

I. Content of plans

- A. What similarities, if any, are there in the characteristics of manufacturing plants selected for development? What priorities are assigned to the various industries? Are certain industries always given top priority?
- B. Are the same industries reserved for development by the governments of the three countries under study? What industries are favored by the private sector?
- C. To what extent are labor intensive or capital intensive industries scheduled for development?
- D. Do countries tend to place the major emphasis on the expansion of old industries, or on the introduction and development of new industries?

II. Mechanisms for carrying out the plans

- A. What similarities are there in the measures taken to encourage and promote private industry?

- B. How is private industry aided to obtain a trained labor supply? How is a trained labor supply obtained for the publicly owned industries?
- C. What similarities are there in methods used for financing private industrial development? Public industrial development?

III. Targets and success or failure

What aspects of the plans under I above were most successful? Which least successful? For example, are the industries given top priority likely to be more successful than those given a lower priority? Do the industries in the government or private sector have greater success in meeting the targets, or is there no difference? Are labor intensive or capital intensive industries more likely to meet the targets? Is there any difference in the degree of success in meeting the targets, between old industries being expanded and new industries being introduced?

IV. The unplanned sector

Even within the limited area of manufacturing and power, most plans do not embrace everything; instead they select certain areas for development. The parts not selected for development, may be ignored entirely by the government concerned, or the government may desire to prevent these areas from expanding. If the intent is to prevent expansion then properly speaking, such industries are part of the plan. If the government simply ignores them, however, and permits them to develop howsoever they may, then they are part of the unplanned sector as that term is here used. The basic question then becomes: if economic growth occurs in the planned sector of manufacturing does it carry over into the unplanned sector also? Or does growth occur only in those areas where plans are specific? In this connection it is important to note that most governments seem to hope that if economic growth can be engendered in one part of manufacturing, it will carry over into the other parts, and into the unplanned sector.

In passing we should note that a number of other highly relevant questions can be asked, questions which are outside the scope of our immediate investigation. For example, under "Content of plans," it would be relevant to enquire about the scheduling of industries which utilize domestic raw materials as compared with those based on imported raw materials. It would also be important to enquire whether industries scheduled for development are those for which there is already a considerable local demand (as judged from the import statistics); or those for which the demand is anticipated in the future; or

those the products of which the government believes can be exported.

Another set of relevant questions center about the raising of capital for investment. Questions involving deficit financing, foreign exchange, the export-import relationships, among others, can and should be asked.

Finally, the relationship between economic development and the social structure of the developing country offers broad scope for study. Unfortunately our study and analysis is limited to the outline discussed above.

Brief description of methodology

The basic methodology involves establishing two measures of the "success" of plans, insofar as the available data permit. The first measure involves the extent to which targets were met. We seek from the plans of a country information about the targets set for specified dates, generally as of the end of the plan period. Next we seek statistical information on actual production achieved during the plan period. The analysis consists of a comparison of the two. For example, the first five year plan of India specified that the country wished to reach a target of 435,000 tons of ammonium sulphate by the year 1955-56. In 1950-51, the start of the plan period, about 50,000 tons were being produced; hence, the target called for an increase of 385,000 tons. By 1955-56 production data showed that 393,000 tons were being produced, an increase of 343,000 tons over the beginning date (1950-51). Dividing 343,000 by 385,000 shows that the plan was fulfilled to the extent of about 89 percent.

The second measure of success involves calculating the coefficient of growth for a time series of production. Given such a series, covering several years, a line can be fitted and the slope determined using the equation: y equals $a + bx$. Dividing b by the mean of y provides the growth coefficient (b/m_y). The larger the coefficient the more rapid was the increase in production of the product being studied.

Each of these measures of success was then related to other factors

with which our investigation is concerned. For example, industries in the government and private sector could be compared as to the degree of success achieved, using both of these measures. Or, industries could be ranked by priority assigned in the plan, and then compared to see in which priority group the greatest degree of success was achieved, using both measures of success.

The details of the above methodology had to be adapted, of course, to the data provided by the country being studied. All countries do not supply identical information. Indeed, the largest methodological problem involved finding the pertinent information in the plans, finding the statistics to evaluate them, and in general, obtaining enough information from the written plans to give us some idea of what the planners really had in mind at the time the plans were drawn.

In this connection we have had to include as a "plan document" such official papers as gave clues about the thinking and expectations of the government. Of the three countries we are studying India seems to have put itself on record in greater detail than any of the others. The Indian government has a published plan document which specifies the targets for a number of industries in very precise quantitative terms. On the other hand, the same Indian plan sometimes mentions other industries in a much less precise manner, making it necessary to infer the probable intentions of the planners.

Puerto Rico, unlike India, has no specific targets for individual industries. Rather, the Puerto Rican plan consists of a series of government documents in which the Governor and other political leaders have outlined general goals. They are, among others, raising of the level of living, increasing the volume of employment, improving health conditions, providing more education. From time to time the Puerto Rican legislature passes legislation to aid in reaching these goals. Such legislation; together with the Governor's messages, and statements made by government officials, constitute "the plan."

Summary and Conclusions

This section brings together the findings and conclusions for the three countries studied. In compiling and analyzing the data upon which the conclusions are based, every effort was made to take account of the weaknesses of the statistical material. However, being far removed from the sources of the data, all of which were public material, generally government collected, must result in oversights and perhaps misinterpretation. But the basic difficulty remains the "limitation of the underlying data." ^{1/}

The first objective of this study is the development of generalizations that would improve the techniques of planning. It was thought that these generalizations would become apparent after study of a limited number of countries. Indeed, this is still believed to be the case but limitations of time have required the writing of this report after only three countries were studied. The results must therefore be considered preliminary and of a tentative nature. Clearly it would be desirable to study an additional three to five countries.

Content of plans

Because India and Pakistan have explicit plans which list projects, specify production targets and delimit areas of private and government interest, it is possible to make a useful comparison of the kinds of manufacturing plants included in the development programs and the priorities assigned to them. Puerto Rico's planning is quite different from that of India and Pakistan. The main purpose is to create conditions and provide incentives that would attract private industry. Thus, the industries developed in Puerto Rico may be compared with those planned in India and Pakistan.

Despite the difference in degree of industrialization between India and

^{1/} See Part IV, page 119.

Pakistan, the plans of both countries call for the establishment or expansion of an almost identical list of industries. India's plan covers a far larger number of industries; it is a much more comprehensive scheme. Of the thirty-two industries included in the Pakistan plan^{2/} --only five are missing from the Indian plan. Two of these, antimony refining and coal tar derivatives, made no progress at all during the plan period. Cotton ginning and jute baling are classified in this study as planned industries although they do not appear in a planning document.^{3/} The remaining industry not included in the Indian five year plan was tires and tubes.

That most industries included in the Indian plan were also included in Pakistan's plans is not to say the two countries placed equal emphasis on the same industries. The jute goods and cotton textiles industries received high priority in Pakistan and low priority in India. But this is a special situation as before partition Indian jute and cotton mills handled almost all the cotton and a large part of the jute grown in Pakistan. Even ignoring the political difficulties that arose as a result of partition, it seems logical that Pakistan should process some of its most important industrial raw material.^{4/}

If the cotton textile industry, the jute industry and those Pakistan industries not included in the Indian plan are omitted from the comparison, then the number of industries we are dealing with are reduced to twenty-five. Of these, nineteen have the same priority in both Pakistan and India. In addition to electric power, those that have high priority in both countries include cement, fertilizers, paper, heavy chemicals, pharmaceuticals, iron and steel, petroleum refining, shipbuilding and communications equipment

^{2/} A somewhat smaller number of industries are dealt with in the analysis because of the dearth of data.

^{3/} In this study planned industries include those for which the Pakistan Industrial Development Corporation are responsible.

^{4/} There were no jute mills in Pakistan in 1947.

and materials. It is among the light industries that the difference in priority occurs. Pakistan gave high priority to its leather tanning, sugar refining, oil expressing and woollen cloth industries. In India these industries and jute and mill made cotton textiles were expected only to utilize fully existing capacity.

From the foregoing it is seen that India and Pakistan planned to build or expand the same industries and assigned to these industries the same priority except to the extent that certain consumers goods industries were given a higher priority in Pakistan than in India.

The Indian plan, and also the Pakistan plan, although to a lesser degree, concentrated on establishing or expanding basic industries such as cement, fertilizer, steel, chemicals and paper. Puerto Rico, as a result of its promotional activities, was able to attract light, generally consumers' goods industries such as apparel manufacture, textile mill products, leather products, plastic products and some fabricated metal products, light electrical and non-electrical machinery. Moreover, because of the special relationship with the United States, almost all of Puerto Rico's newer industries produce for export to the United States. Very few Indian or Pakistan industries produce primarily for export. The jute industry in both countries and the cotton textile industry in India are, of course, important exceptions, among others.

In terms of plans, there is a difference of approach between India and Pakistan to the matter of government ownership. India planned to have a large government owned sector and Pakistan did not. In actuality, both now have a large government owned sector. In Puerto Rico, the government continues to rely on private entrepreneurs for its development except for electric power. The governments of all three countries are the main developers of electric power. In both India and Pakistan, a few industries, such as arms and ammunition manufacture are state monopolies. More usually, an industry consists of

wholly government owned and wholly privately owned factories. Not unusually the same industry has factories of mixed ownership.

It is simpler to list the planned industries in Pakistan which have not attracted government investments. These include only soda ash, leather tanning, glassware, tires and tubes and oil expressing. And it is possible that recent government investments include the soda ash and rubber tire industries. As the Indian plan is a much more detailed one and as private enterprise was expected to invest almost two and a half times the amount that the government planned to invest in industry, it is to be expected that many wholly privately owned industries are included in the plan. Those industries which attracted government investments in Pakistan but did not do so in India are: jute goods, cotton textiles, woolen cloth, sulphuric acid, sugar refining, caustic soda, cotton ginning, jute baling and pharmaceuticals. The Indian Government also planned to invest in the machine tool industry, locomotive and rail car manufacture, engineering instrument manufacture, rare earth refining, and artificial fibre manufacture, among others. These industries have no counterpart in Pakistan's plans.

The Puerto Rican plan adopts increasing employment as its main objective. In India and Pakistan this problem is seriously considered; major emphasis is placed on increasing agricultural employment and the development of cottage and small scale industries to provide opportunities for substantial industrial employment. Providing employment is only a marginal consideration in the large scale industry plan which is what is under study here. This is evident from the emphasis placed on the installation of the most modern labor saving machinery and its efficient operation.

The final question to be answered about the plans is whether major emphasis is placed on expanding established industries or on establishing new industries. In Pakistan, the answer is clearly that major emphasis is placed

on establishment of new industries. ^{5/} At least thirteen, if not more, of Pakistan's twenty-nine planned industries are new to the country. In India the number is smaller and new industries form a much less important part of the total plan. However, some of the new industries are very large capital intensive installations.

Mechanisms for carrying out the plans

The three plans under study deal with measures to facilitate implementation in quite similar terms. All provide:

- (a) tax exemptions of all or part of the profits from new capacity for varying numbers of years;
- (b) loans through government banks or other government financial institutions;
- (c) special depreciation allowances for new plant and equipment, and in India and Pakistan, the relative freedom with which licenses are granted for the import of capital goods and raw materials;
- (d) tariff protection; ^{6/}
- (e) facilities for the training of labor for skilled jobs.

The three countries exercise a measure of control over the establishment and expansion of industries and India and Pakistan are empowered to control the operation of manufacturing plants. In India and Pakistan more stringent controls are in force for certain specified industries (forty-two in India and twenty-seven in Pakistan) over which the two governments exercise regulatory control which covers establishment, location, expansion and some operating functions. The Indian Government, which has the most comprehensive control, may take over companies in the event of non-compliance with the terms of the control regulations and the public interest.

^{5/} For definition of "new" industry see Part II: India, Section on New Industries.

^{6/} United States tariffs are applied in Puerto Rico.

Detailed findings

This study attempts to assess the results of planning by investigating what actually happened in the manufacturing and power sectors of the Indian, Pakistan and Puerto Rican economies. The basic methodology involves the establishment of two measures of "success." The first measure, the extent to which targets were met, compares the target specified in the plan with production (or installed capacity) actually achieved. The second measure involves calculating the rate of growth of industrial production from time series data. The figure thus obtained is called the "growth coefficient." To the extent that targets were specified and time series data were available, both measures of success were used to compare the degree of success achieved (1) by the government and private sectors of the plan, (2) by new and established industries, and (3) by high priority and low priority industries. For comparing the unplanned sector with the planned only the growth coefficient could be used.

Comprehensive use of these measures was possible in studying the Pakistan and Indian plans. However, in Puerto Rico, where the plan did not specify targets and where government played a much less direct role in industrialization, these measures were less frequently used. A rate of growth was, nevertheless, calculated for all manufacturing in Puerto Rico and for the electric power industry.

Results achieved by planned industries. In both India and Pakistan those industries which had high priority achieved better results in terms of targets than those assigned low priority. This is not only the desired result, it is also expected as both governments exercise control at strategic points of their economies by which they direct effort and resources to fulfill the plans. About half the industries included in the Indian plan and a somewhat smaller number in the Pakistan plan achieved seventy percent of the assigned target. But three-fourths of Indian high priority industries and sixty per-

cent of Pakistan's high priority industries achieved this figure.

In terms of growth coefficients high priority Indian industries grew at a faster rate than low priority industries. In Pakistan the results are not as clear cut as they are in India.

The average rate of growth of planned industries in Pakistan included in the analysis was about thirteen percent per year. The same result was recorded in India. In Puerto Rico all manufacturing except sugar grinding grew at the somewhat slower rate of eleven percent per year. These rates can lead to a doubling of production in from five to seven years.

Electric power. In all three countries, governments generate most of the public utility power. Production of electricity grew rapidly in all three: India, nine percent per year; Pakistan, the very high rate of twenty-two percent; and Puerto Rico, twelve percent. The average annual rate of growth of power production in the United States was ten percent during the period under study. The fact that the rate of growth of power production in India was less than the average growth of planned industries in that country is not cause for concern. The rate achieved by Pakistan is striking and may be the highest rate of growth achieved by any country during the past decade.

Government owned industries. A comparison of the degree of success achieved by government owned factories and those privately owned was only possible for India. This showed that ownership did not appreciably affect production results. Some government owned factories fulfilled their targets; others did not. On a percentage basis the number fulfilling their targets were about the same as privately owned industries included in the plan.

Establishment of new industries. The belief that underdeveloped countries have less success in bringing into production new industries is not supported by either Indian or Pakistan experience. In India it is possible to argue that new industries made a better showing than did established in-

dustries while in Pakistan they did at least as well as established industries.

In addition to new industries the establishment of which were called for in the plan, many new unplanned industries were established in Pakistan. This would support the belief that new industries, producing quite diverse products, have been successfully introduced.

It should be remembered that the results reported in the preceding paragraph are based exclusively on production data. Other criteria of success, for example, costs, are at least as important and even though production in some of these new factories reached the target it cannot be inferred necessarily that the cost of production was such as to produce a profit. They may or may not have been profitable.

This result is, however, indicative of India's and Pakistan's ability to overcome engineering and administrative problems usually associated with the establishment of new industries. As virtually all the new industries established in Puerto Rico were the work of continental Americans who were thoroughly familiar with their operation and markets, the results attained in Puerto Rico are not strictly comparable.

Planning and employment. A major objective of the Puerto Rican, Indian and Pakistan plans was to provide employment. In India and Pakistan the unemployment and underemployment problem was dealt with primarily by programs designed to increase the amount of arable land and intensify its use as well as by assistance to cottage and village industries. The industrialization programs in these countries provided a significant number of employment opportunities but despite the surplus labor the factories constructed were the most modern type with everything this implies about direct labor utilization.

In Puerto Rico, with its much greater population density, industrialization appears to offer the best solution to the unemployment and underemployment problem (except for large scale out-migration). The government's plans

to increase employment called for the establishment of relatively labor intensive industries. However, those factories actually established were more capital intensive than similar units in existence prior to the industrial development program.

The unplanned sector

The question here considered is what happened to industries which, for whatever reason, were not included in the plan. In all three countries these were a substantial segment of the industrial sector. In India and Puerto Rico comparable results were obtained although a different method was used in each country. In India growth coefficients were calculated for each industry in the unplanned sector and compared with rates of growth recorded by planned industries. The unplanned industries compare unfavorably with planned industries suggesting that unplanned industries are lagging behind.

In Puerto Rico employment was used as the criterion. Employment increased rapidly in those parts of the economy which were directly aided by the government. In other sectors of the economy employment did not increase.

In Pakistan many more industries exist than are included in the plans. Data were available for sixteen out of perhaps forty such industries and show that about two-thirds of them grew at a rate of thirteen percent per year while only somewhat more than one-half of the planned industries grew at this rate. Planned and unplanned consumers' goods industries grew at about the same rate. The same result is obtained from a comparison of producers' goods industries. It is possible that the sixteen unplanned industries are not fully representative of the entire group. It is also possible that the unplanned industries grew more rapidly because many of them produce consumers' goods.

PART II. INDIA

Brief Notes on the Demographic and Economic Background

The first Indian five year plan covered the period 1950-51 to 1955-56. Let us examine, very briefly, the situation with regard to population changes and overall economic growth during this period; this will serve as background information and provide a better appreciation of the results of the plan.

Population

In 1951 India contained about 363,000,000 persons. By 1955 the population had increased to almost 382,000,000, a rate of growth of about one percent per year. During this period the United States had a rate of growth of one and one-half percent per year. India has both a high birth rate and a high death rate. ^{7/} If the death rate should be reduced it is likely that population growth will increase considerably above its present level since decreases in fertility seem to follow only slowly decreases in rates of mortality. ^{8/}

Not only is India a large country--it contains about fifteen percent of the world's total population--but population density also is quite high. India contains about one hundred fifteen persons per square kilometer, as

^{7/} The Indian government considers that the recorded birth rate of about 25 per 1,000 population and the death rate of about 14 (1952) are incomplete. Even these incomplete figures, however, suggest that the excess of births over deaths annually amounts to some 11 per 1,000 population. The Indian census estimates that for the period 1941-50 the birth rate was 39.9 per 1,000 population, and the death rate, 27.4. The rate of natural growth thus amounts to 12.5 per 1,000 population per year, (Census of India, Paper No. 6, 1954, "Estimation of Birth and Death Rates").

^{8/} The Determinants and Consequences of Population Trends, United Nations, 1953. See especially Chap. VIII "Future Population Trends"; for discussions of India see pp. 16 and 160.

compared with a density of twenty-eight in Burma and thirty-nine in Thailand (1954). In all Asia (excluding USSR) population density is estimated at fifty-four persons per square kilometer. ^{9/} A growing population in India means increasing density in an already densely settled area.

Income

Per capita income in 1949 was estimated at about \$57. ^{10/} Since 1949, the changes in per capita real income have been as follows:

Year	Index ^{11/}	Year	Index
1950	100	1952	103
1951	101	1953	109
		1954	109

From these figures it is clear that the Indian economy has more than kept up with the increase in population. Whereas population growth is about 1 or perhaps to 1-1/4 percent per year the growth in total real income is approximately 2 percent per year. (Chart 1)

Summary of the Provisions of the First Five Year Plan

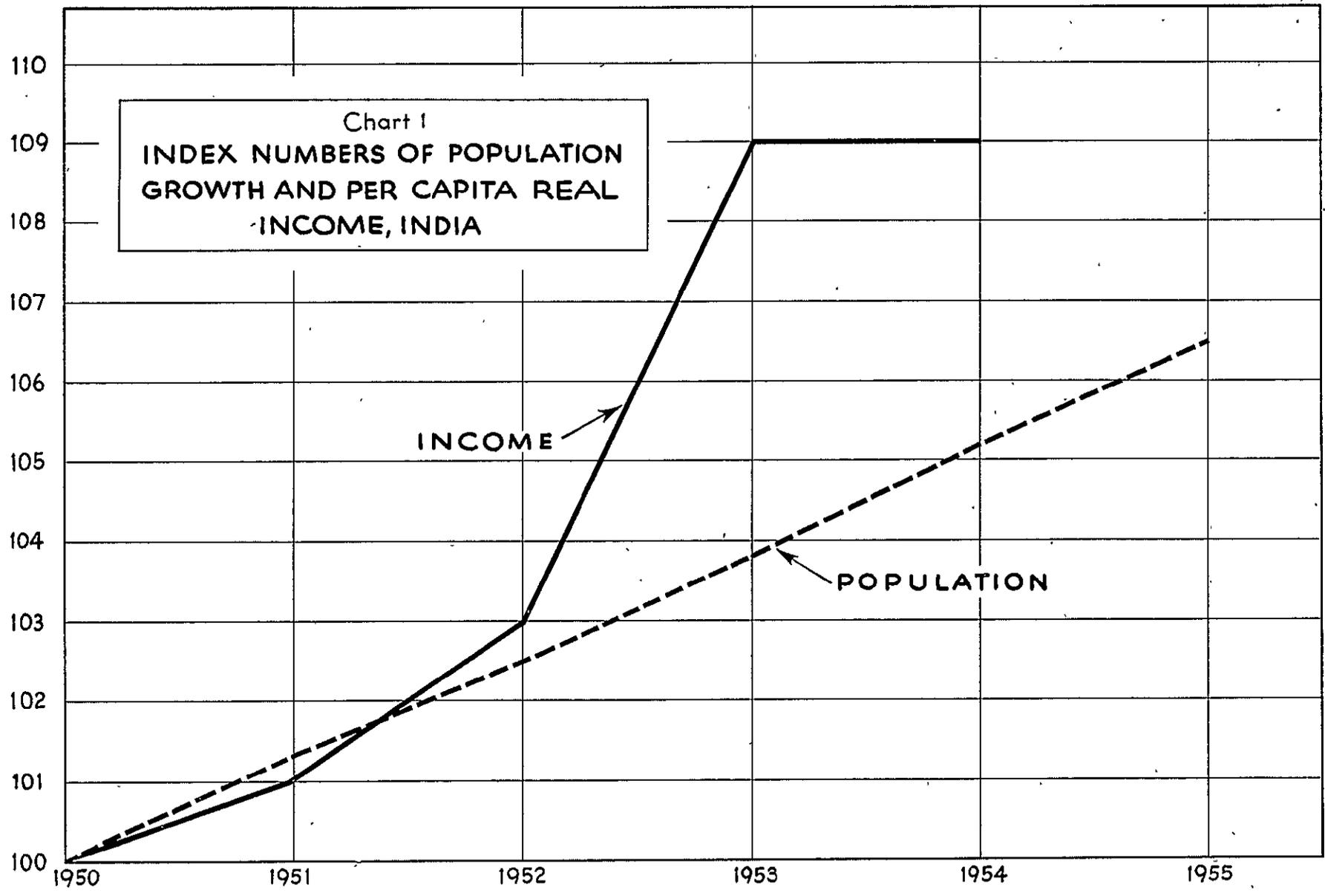
The first Indian five year plan ^{12/} 1950/51 to 1955/56 was adopted in 1952 and incorporated changes in a draft plan circulated in 1951. The revisions increased targets. The overall objective of the first five year plan was to increase the national income by 11 percent (from Rs. 90 billion to Rs. 100 billion), and in view of population growth, per capita income by about 7.5 percent.

^{9/} U. N. Demographic Year Book, 1955, Table 1.

^{10/} "National and Per Capita Incomes, Seventy Countries, 1949," Statistical Papers, Series E, No. 1, Statistical Office of the United Nations, October 1950, p. 15.

^{11/} U. N. Statistical Yearbook, 1955, Table 157. The index for 1954 is our own estimate.

^{12/} India, The Planning Commission, The First Five Year Plan, Delhi, December 1952.



Source: United Nations statistical office,
 UN Statistical Yearbook 1955, New York, 1956

Total government expenditure on all parts of the plan during the five year period was estimated at Rs. 20,687.8 million or about 4.2 billion dollars. Over \$2.6 billion was considered to be available from internal sources and the balance from sterling reserves, foreign loans and assistance and deficit financing.

According to the Indian Planning Commission, agriculture, including irrigation and power had top priority. A sizeable surplus, it was stated ^{13/} had to be created in the agricultural sector and mobilized for sustaining increased employment in other sectors. The bulk of the available resources in the public sector were therefore allocated to the development of irrigation and power which, together with funds earmarked for agriculture specifically, made up about 45% of the \$4.2 billion. Statements in the plan about the industrial field point out that industry would have to depend greatly upon private capital for development. After consultation with private industry, the Planning Commission expected private investment in this sector to amount to about \$490 million. The state, in turn, planned to invest about \$200 million in key industries in which it had special responsibilities. These included iron and steel, heavy chemicals, electrical equipment and others.

Table 1 summarizes government expenditure in all fields. Details about investments and targets in the public and private industrial sectors are contained in Tables 2 and 3 respectively. Table 4 gives data on the power development program.

In drawing up the plan in the industrial sector, the Planning Commission was guided by the following criteria:

- 1) Existing industrial capacity to be fully used. Perhaps the most important industries with open capacity were the jute and plywood industries;

^{13/} India, The Planning Commission, The First Five Year Plan, Dehli, December 1952.

Table 1.-Government Expenditure Under the Plan
(million Rs.)

Agriculture & Community Development		Irrigation & Power		Transport & Communication		I n d u s t r y		Social Services		Miscellaneous	
Agriculture	1,842.2	Multi-purpose projects	2,659.0	Railways	2,500.0	Large-scale industries	1,403.3	Education	1,556.8	Rehabilitation	850.0
Animal husbandry & dairy	222.8			Roads	1,088.7			Health	995.4	Works & Buildings	110.2
Forests	116.9	Irrigation projects	1,679.6	Road transport	89.6	Cottage & small scale	270.4	Housing	488.1	Finance ministry schemes	43.9
Cooperation	71.1			Power projects	1,275.4			Shipping	180.5	Scientific & industrial research	46.1	Labor & labor welfare	69.1	North-East Frontier Agency	30.0
Fisheries	46.4	Civil aviation		Civil aviation	228.7	Mining Development	10.6	Welfare of backward classes	288.7	Andamans	38.2
Rural dev.	104.7			Ports & harbors	330.8			Inland water transport	1.0	Loans to corporations	120.0
Community projects	900.0	Posts & telegraph		Posts & telegraph	500.0	Broad-casting				Other miscellaneous	177.4
Local works	150.0			Overseas communic.	10.0						
Programs for scarcity areas	150.0	Meteorological Dept.		Meteorological Dept.	6.2						
Total ^{a/}	3,604.3										

Source: Government of India, Planning Commission. Development Schemes in the First Five Year Plan (Supplement Volume), De lhi, December 1952.

^{a/} Sum of columns may not equal totals because of rounding.

Table 2.-Industrial Projects in the Public Sector
(million Rs.)

Development Projects	I n v e s t m e n t				Year of Completion of Project	New or Additional Capacity 1955-1956
	Up to 1/4/1951	During 1951-1952	During 1952-1953	During 1951-1956		
I. Central Government.						
1. Iron and Steel Project	.. ^{a/}	.. ^{a/}	5.0	300.0	1957-1958	350,000 tons of pig iron by 1955-1956
2. Ship building	15.0 ^{b/}	23.2	28.2	140.8	1956-1957	50,000 DWT
3. Machine tool factory	1.4	9.8	15.0	96.4	1953-1954	1,600 Units
4. Sindri fertilizer factory	184.2	43.5	30.0	90.3	Oct. 1951	350,000 tons Ammonium Sulphate
5. Chittaranjan locomotive factory	102.0	28.2	19.1	47.3	Manufacture has started	100 loco's
6. Railway coach factory	..	0.6	12.0	40.0	1955	50 Units
7. Penicillin factory	0.4	1.7	6.0	20.6 ^{c/}	1954	4.8 million Mega Units
8. National instruments factory	0.4	1.4	2.5	18.2	Production has started	Additional Rs. 6.44 million worth of instruments
9. Indian telephone industries	12.0	6.5	3.3	13.0	Assembly has started	Rs. 0.2 million worth of telephone and other articles.

Table 2. (Continued)

Development Projects	I n v e s t m e n t				Year of Completion of Project	New or Additional Capacity 1955-1956
	Up to 1/4/51	During 1951-1952	During 1952-1953	During 1951-1956		
I. Central Government (cont'd.)						
10. Hindustan Cables Ltd.	0.0	2.3	7.0	13.0	1953-1954	Rs. 10.0 million worth of cables
11. Mandi salt works	..	..	1.0	10.0	1954	61,000 tons of salt
12. Rare earth factory	2.6 ^d /	N.A.	N.A.	5.4	June 1952	800 tons of rare earth compounds & 200 tons of thorium compounds in terms of thorium nitrate.
13. D.D.T. factory	..	..	0.5	3.9 ^e /	1954	700 tons
14. Existing salt works	0.4	0.4	0.8	5.0	1955-1956	About 380,000 tons of salt
15. Housing factory	9.4	1.0	0.2	1.1	1952-1953	..
16. Other projects ^f /	N.A.	N.A.	N.A.	20.2	1955-1956	..
Total	327.7	118.7	130.6	825.3		
II. State Government						
1. Mysore iron and steel works	21.6	4.0	12.5	28.3	1954-1955	Additional 50,000 tons of finished steel
2. U.P. Government cement factory	15.3	6.5	12.5	23.1	1953-1954	200,000 tons
3. Nepa mills	22.5	9.1	8.2	20.0	1954	30,000 tons of news-print (300 working days)
4. Sirsilk Ltd. ^g /	38.1	} 6.6 ^h /	} 9.0 ^h /	20.0	1953-1954	16.5 million yards of artificial silk (330 working days)
5. Sirpur paper mills	20.3			6.0	1953-1954	

Table 2. (Continued)

Development Projects	I n v e s t m e n t				Year of Completion of Project	New or Additional Capacity 1955-1956
	Up to 1/4/51	During 1951-1952	During 1952-1953	During 1951-1956		
II. State Government (cont'd.)						
6. U.P. precision instrument factory	1.4	1.0	0.7	5.0	Expansion	12,000 water meters & 300 microscopes
7. Bihar government super-phosphate factory	0.1	1.1	4.0	4.1	1953-1954	16,500 tons of superphosphate
8. Other projects	N.A.	N.A.	N.A.	6.5	1955-1956	
Total	119.3	28.4	46.9	113.0		
Grand Total (Central and State) ^{j/}	447.1	147.1	177.5	938.3		

Source: Government of India, Planning Commission. Development Schemes in the First Five Year Plan (Supplement Volume), Delhi, December 1952.

- a/ No explanation of meaning of .. given in source. Believed to be zero.
- b/ Represents investment of Central Government only.
- c/ Including Rs. 5.7 million from WHO and UNICEF.
- d/ Investment up to end 1957.
- e/ Including 350,000 U.S. dollars from WHO and UNICEF.
- f/ Including, inter alia, Nasik Printing Press, Silver Refining, New Mint.
- g/ Provision in the Hyderabad State Plan for this project amounts to Rs. 8.57 million
- h/ Includes expenditure on Singarani Collieries Ltd.
- i/ Including Rs. 4.0 million for the D.D.T. factory in the Bombay State Plan.
- j/ Sum may not equal totals because of rounding.

Table 3.-Expansion Programs in the Private Sector

Industry and Unit	1950-1951		1955-1956		Capital Investment 1951-56 (million Rs.)
	Rated Capacity	Production	Rated Capacity	Production	
Metallurgical					
Iron and steel					
Pig iron..... 1,000 tons	1,850	1,572 ^{a/}	2,700 ^{b/}	1,950	430.0
Finished steel, main producers only... do	975	976 ^{a/}	1,550 ^{b/}	1,280	.....
Aluminum..... tons	4,000	3,677	20,000	12,000	90.0 ^{c/}
Mechanical engineering ^{d/}					
Agricultural implements and machinery					
Pumps, power-driven centrifugal..... number	33,460	34,310	69,400	80,000- 85,000	12.0
Diesel engines..... do	6,320	5,540	39,725	50,000	.....
Automobiles, ^{e/} manufacturing only..... do	30,000	4,077	30,000	30,000	30.0
Railway rolling stock					
Locomotives..... do	n.a.	n.a.	50 (plus 50 boilers)	50 (plus 50 boilers)	25.0
Underframes..... do	n.a.	n.a.	400	400	.....
Machine tools (graded)..... do	3,000	1,101	3,000	3,000	2.0
Textile machinery					
Carding engines..... do	600	.....	600	600	.....
Spinning ring frames..... do	396	360	800	700	.....
Looms, plain, semi and automatic..... do	3,600	1,894	8,000	6,000	.....
Ball and roller bearings thousands ...	600	87	1,200	1,200	52.5 ^{g/}
Bicycles..... number	120	101	530	530	.....
Sewing machines..... do	37,500	32,965	91,500	91,500	.....
Hurricane lanterns..... thousands ...	4,260	3,240	4,510	6,000	.....
Grinding wheels..... tons	360	231	840	750-800	.....
Electrical engineering					
Dry batteries..... thousands ...	285,000	136,500	310,000	320,000	.....
Storage batteries..... do	446	200	538	400	.....
Electric cables and wires ASCR cables... tons.....	2,500	1,674	5,000	5,000	.....
Electric fans..... thousands ...	288	194	360	320-350	.....
Electric lamps					
GSL lamps..... do	23,000	15,000	32,000	30,000	.....
Miniature lamps..... do	900	n.a.	27,500	16,000	.....
Electric motors..... 1,000 h.p.	150	99	300	320	.....
Electric transformers..... 1,000 k.v.a. ..	370	179	485	450	.....
Radio receivers..... thousands ...	77	49	380	350	.....

Table 3. (Continued)

Industry and Unit	1950-1951		1955-1956		Capital Investment 1951-56 (million Rs.)	
	Rated Capacity	Production	Rated Capacity	Production		
Chemical and allied products						
Fertilizers						
Ammonium sulphate	tons	78,670	46,304	131,270	120,000	21.0
Superphosphate.....	do	123,460	55,089	192,855	164,000	21.0
Heavy chemicals						
Sulphuric acid.....	1,000 tons	150	99	230	192	73.0
Soda ash.....	do	54	45	86	78	73.0
Caustic soda.....	do	19	11	37	33	73.0
Drugs and pharmaceuticals						
Benzene hexachloride.....	tons	.....	.....	500	500	35.0
Sulpha drugs.....	1,000 pounds	.....	.....	400	400	35.0
Para amino-salicylic acid.....	tons	.....	.....	48	48	35.0
Calcium lactate.....	do	.....	.....	50	50	35.0
Paints and varnishes						
Ready-mixed paint, varnish, etc....	1,000 tons	65	29	70	60	5.0
Pigment, titanium dioxide.....	tons	.....	.....	1,800	1,800	5.0
Nitro-cellulose lacquers	1,000 gallons	.....	.....	350	300	5.0
Aluminium paste and powder.....	tons	.....	.....	750	750	5.0
Soap.....	1,000 tons	265	106	280	200	60 (includes glycerine)
Tanning and footwear.....	million pairs	.....	85	.....	91	6.0
Paper and paperboard.....	1,000 tons	137	114 ^{h/}	198	188	53.5
Strawboard and other boards.....	do	48	22	58	53	53.5
Cement	do	3,194	2,692 ^{h/}	5,016	4,515	154.0
Glass and glassware						
Sheet glass.....	tons	11,700	5,850	52,200	26,000	22.0
Blownware and pressed ware.....	do	201,550	86,000	237,800	137,500- 142,500	.....
Bangles.....	do	35,000	16,000	35,000	16,000	.....
Liquid fuels						
Petroleum products, input of crude oil.	do	250	.....	2,000 ^{1/}	.....	640.0
Liquid petroleum products	million gallons	n.a.	n.a.	n.a.	403 ^{1/}	.....
Bitumen.....	tons	n.a.	n.a.	n.a.	37,500 ^{1/}	.....
Power alcohol						
Power alcohol.....	million gallons	13	5	21	18	12.0 ^{k/}
Commercial spirit.....	do	3	n.a.	3	2	.....

Table 3. (Continued)

Industry and Unit	1950-1951		1955-1956		Capital Investment 1951-56 (million Rs.)
	Rated Capacity	Production	Rated Capacity	Production	
Textile					
Cotton					
Yarn..... million pounds	1,669	1,179	1,722	1,640	90.0
Cloth, mill made..... million yards	4,744	3,718	4,779	4,700	90.0
Cloth, handloom..... do	3,000 ^{m/}	810	3,000	1,700	90.0
Jute..... 1,000 tons	1,200	892	1,200	1,200	90.0
Rayon					
Rayon filament..... million pounds	4	1	18	18	151.0
Staple fibre..... 1,000 bales .....	.....	.....	28	28	.....
Cotton linters..... million pounds ....	.....	.....	5	5	.....
Chemical pulp..... tons .....	.....	.....	11,500 ^{n/}	n.a.	.....
Woolen..... 1,000 pounds	20,150	18,000	20,150 ^{o/}	25,000 ^{n/}	.....
Timber					
Matches..... 1,000 gross boxes ...	35,300	29,100	38,300 ^f	35,300	5.0
Plywood tea chest..... 1,000 sq. ft.	138,840	4,940	180,000- 190,000	100,000	6.0
Food					
Salt ^{p/} 1,000 tons	2,270	1,920	4,026	2,186	n.a.
Sugar..... do	1,540	1,116 ^{g/}	1,550	1,500	1.0
Vegetable oils..... do	n.a.	1,118 ^{r/}	n.a.	1,299	6.0
Vanaspati..... do	333	153	389	300	5.0
Total.....	.....	.....	.....	.....	2,333.0 ^{s/}

Source: Government of India, Planning Commission, Programmes of Industrial Development 1951-1956, New Delhi 1952.

a/ Including the output of the Mysore Iron and Steel Works

b/ The rated capacity will be achieved when the expansion of projects are completed; i.e., by 1957-58.

c/ Covers only what is expected to be spent during the period of the Plan.

d/ The development program for shipbuilding industry is also covered in this group. No mention of it has been made in this table because the industry is in the public sector.

e/ Based on the program of the two existing manufacturers.

Table 3. (Continued)

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- f/ Figure relates to calendar year 1950.
- g/ Covers the other light engineering industries referred to under serial numbers 9 to 20 also.
- h/ Actual production includes the output of the factory in the public sector.
- i/ Rated capacity will reach 3,450,000 tons in terms of input of crude oil by 1956-57 when the two refineries are expected to be in full production.
- j/ Exclusive of existing capacity.
- k/ Includes expenditure for creating facilities for petrol-alcohol mixture.
- m/ Rated capacity of handlooms is based on the number of handlooms in existence at present and availability of yarn at the rate of 20 lbs. per month.
- n/ Construction will be almost complete so that the actual production is assumed negligible.
- o/ Figures for rated capacity as well as production do not take into account the installation of 30,000 spindles for fine woolen yarns.
- p/ Figure relating to rated capacity (i.e., potential production capacity) and actual production of salt in the private sector have been estimated, except for the industry's total capacity of 4,026,000 tons by 1955-1956 (including the capacity in the public sector) which has been estimated by the Salt Experts Committee.
- q/ Figure relates to the sugar season 1950-51.
- r/ Production figure for vegetable oils, excluding coconut oil, relates to the year 1949-50.
- s/ Includes Rs. 380,000,000 investment on other schemes including power generation in the private sector.
- n.a. Not available.

Table 4.-Power and Irrigation Developments ^{a/}

Year	Expenditure (million Rs.)	Additional Acres Irrigated (1,000 Acres-Cumulative)	Additional Power (1,000 Kw-Cum.)
1951-52	8.5	646	58
1952-53	12.1	1,890	239
1953-54	12.7	3,555	724
1954-55	10.7	5,749	875
1955-56	7.8	8,533	1,082
Ultimate ^{b/}		16,942	1,465
New Schemes ^{c/}	4.0		
Five Year Total ^{d/}	55.8		

Source: Government of India, Planning Commission, First Five Year Plan, Chap. XXVI, Page 30, Delhi, December 1952.

^{a/} Public Sector only: Private power companies are estimated to increase capacity by 176,000 kw.

^{b/} Relates to projects where completion dates extend beyond plan period.

^{c/} Relates to new projects with an aggregate final cost of Rs. 2,000 million on which a start might be made during the first plan.

^{d/} Total cost of schemes included in first five year plan was Rs. 7,650 million made up of Rs. 1,530 million spent prior to March 1951, Rs. 5,180 million to be spent during the plan period and, by subtraction, Rs. 940 million to be spent after the plan period.

source of their raw materials was Pakistan. Generally, non-durable consumers' goods industries were considered to have sufficient capacity. Among the industries in this category were cotton textiles, sugar, salt, matches and vanaspati (hydrogenated vegetable oil). Durable consumers' goods were also required to use existing capacity fully although new units could be constructed to improve efficiency and increase parts manufacture in India rather than mere assembly. Among the industries in this category are bicycles, radios, and electric fans.

2) Capacity of capital goods industries was to be expanded. Highest priority was given to iron and steel, chemical fertilizers and cement industries, because they were essential to developments in agriculture, industry and transport as well as defense. Other high priority industries included locomotive production, manufacture of heavy electrical machinery, agricultural implements, diesel engines and pumps.

3) Partially completed industrial units to be completed.

4) New plants to be established which would strengthen the industrial structure by rectifying, as far as resources permitted, existing omissions; for example, manufacture of sulphur from gypsum and chemical pulp for rayon.

Mechanisms for Carrying Out Plans ^{14/}

Introduction

Before proceeding to determine how these plans worked out let us review very briefly the role of the Indian government in the actual conduct of manufacturing and other business enterprises and the important steps taken by the government to ensure the fulfillment of the plan. A resolution issued by

^{14/} Source for much of the material contained in this section is: U.S. Department of Commerce; Investment in India, conditions and outlook for United States investors; U.S. Government Printing Office, Washington, D.C.; June, 1953.

the Ministry of Industry and Supply in 1948 set forth government policy as the establishment of a centrally planned mixed economy in which both private and government enterprise would participate. All industries were to remain open to private enterprise except arms and ammunition manufacture, atomic energy production and railway transport over which the government exercises monopoly control. Later, six additional industries were reserved for State development except to the extent that the cooperation of private enterprise was thought necessary. These industries were: coal mining, mineral oil refining, iron and steel manufacture, aircraft manufacture, shipbuilding and the manufacture of telephone, telegraph and wireless apparatus (except home receivers). It may be noted that private capital is still quite active in some of these industries. Furthermore, private firms own and operate most other factories and industries.

Finally, the plan states that if it is to succeed control must be exercised over the distribution of scarce commodities, prices must be regulated, imports and exports controlled and investments channeled so that favorable conditions are maintained. What follows is a summary of the more important measures adopted by the Government of India.

Although it would be highly desirable to evaluate the effectiveness of each measure adopted by the government to promote economic growth and successful planning, this is outside the scope of our investigation. A summary of the various factors which are common to all three of the countries studied, was presented in the Introduction, page five.

Aids to encourage private investments

Tariffs. A most important distinction between India's revenue tariffs and protective tariffs is that revenue tariffs can be changed only by an act of parliament. Export taxes are also imposed for revenue purposes and to control the internal price of a commodity.

Protection for Indian industries is an established policy of the government. In general, it is the intent of the government to use the tariff to encourage the growth of domestic manufacturing particularly in those areas deemed to be strategic, basic or key industries. To provide such protection a Tariff Commission recommends to the government the form and content of the protection, and makes terms and conditions for the grant of protection. Moreover, the Commission not only attempts to provide protection against foreign competition, but also specifies how the domestic producer who is benefitting from the protection, is to operate his establishment. The Commission may specify the scale of output, quality and price of product, use of domestic raw materials, prices, etc.

Industrial finance corporation. Indian industry in common with industries in many underdeveloped countries has difficulty in obtaining long term credit. In March 1948 the government established the Industrial Finance Corporation (IFC) in order to provide credit. The IFC may only assist public limited companies ^{15/} or cooperatives registered in India and engaged in mining, manufacturing or power production and distribution.

IFC assistance takes the following forms:

- 1) Guaranteeing loans floated in the public market and repayable within twenty-five years;
- 2) Underwriting share, debenture and bond issues by eligible concerns;
- 3) Granting loans or advances and subscribing to debentures payable within twenty-five years.

Tax exemptions. Certain features of Indian tax laws are designed to assist the establishment of new industries. In particular, producers' goods industries seem to be favored. New industrial undertakings which employ more

^{15/} For tax purposes a public company is defined as one which is not a private company under the Indian Companies Act. (A private company being one which restricts the right to transfer shares and limits the number of members to fifty and where not over 50% of the voting shares are controlled by less than six persons).

than twenty persons and use electricity and which began production within six years after April 1, 1948 are exempt from normal and super taxes on the first six percent of their profits during their first five assessment years. Dividends paid out of such profits are also exempt from taxes.

Provisions in the 1953 Finance Act exempt companies from supertax on dividends from an Indian subsidiary meeting certain conditions when the subsidiary engages in the manufacture or production of the following products:

(1) coal and derivatives; (2) iron and steel; (3) motor fuel, kerosene, crude oils, and synthetic oils (excluding oil exploration); (4) heavy chemicals including fertilizers; (5) heavy machinery used in industry including ball and roller bearings and gear wheels and parts thereof, boiler and steam generating equipment; (6) machinery and equipment for the generation, transmission, and distribution of electric energy; (7) non-ferrous metals including alloys; (8) paper, including newsprint and paper board; (9) internal combustion engines; and (10) power driven pumps. The exemption is also applicable to dividends paid to a parent company which arises from fresh capital raised through public subscription by an Indian subsidiary for the purpose of increasing production of the products listed above.

Special depreciation allowances are granted in the case of new plant and machinery installed between 1948 and 1959. During the first five years of the operation of such assets, an additional allowance equivalent to the normal depreciation allowance is granted. Such additional allowances are deducted from written-down value in calculating depreciation in subsequent years.

Investment and repatriation of foreign capital and profits. Although investment and repatriation of foreign capital require the prior approval of the government, the regulations appear to make both matters possible. Capital owned by residents of the sterling area and Norway, Sweden and Denmark is freely granted repatriation. Capital owned by the residents of other countries if in-

vested after 1 January, 1950 in a project approved by the Indian government will also be granted repatriation at any time up to the extent of the original investment and reinvestments which were approved by the government. The assurance of the right to repatriate investments was extended to capital gains on such investments in 1953.

All other remittances of a capital nature are not otherwise permitted to countries outside the sterling area except where foreign companies are acquired by the Indian government.

Availability of skilled labor. A surplus of unskilled labor for industrial employment exists in most of India. Some types of skilled labor and technicians are said to be in short supply, for example, draftsmen, surveyors, electricians. The government has established facilities to expand the skilled labor supply and as of 1952 was training over 11,000 persons in government centers.

Government labor exchanges are active in India. In 1952 there were 128 in existence which, together with their branch offices, helped to place workers in the industry of major cities. As unskilled workers are in large surplus, the exchanges deal mostly with skilled personnel.

Government controls

Legislation and industrial control. The government of India exercises regulatory control over the establishment, location, expansion, and operation of forty-two industries under the terms of the Industries (Development and Regulation) Act, 1951, as amended in 1953. Among other things, the act provides for licensing of industries, requires reports, directs compliance with government orders concerning production and prices and provides for government managers to take over companies in the event of non-compliance with the terms of the act and the public interest. ^{16/}

^{16/} The Industries Act is concerned primarily with the larger company. Industrial enterprises which employ fewer than 100 workers without the aid of power or fewer than 50 workers with power, and undertakings with less than Rs.100,000 invested are exempt from the provisions of the Act.

A feature of the act is the establishment of a Central Advisory Council and Development Councils for the scheduled (forty-two) industries. Members of the Advisory Council are all appointed by the central government and represent owners, employees and consumers. The government must consult with the Advisory Council before exercising its powers under the act or before it takes control of individual enterprises although it is not obliged to follow the Council's advice.

The Development Councils are bodies which the central government may set up. (Several had been set up by 1953.) These councils operate in accordance with government directives and concern themselves with industrial targets, coordination of production programs, efficiency and the improvement of quality.

The act also permits authorized representatives of the central government to inspect the premises of any scheduled enterprise, order the production of records and examine any person employed by or having control over the enterprise. As a result of such investigations the government may order the enterprise to adjust production, amend prices or to take steps to stimulate the development of the industry or prohibit it from resorting to any act which might reduce production, capacity or economic value.

Import and export controls. Import and export controls are in force in India in accordance with the Import and Export (Control) Act, which was passed in 1947 and extended in 1950 until 31 March 1955. The general purpose of the controls is to conserve foreign exchange.

Import controls are effected by issuing two types of licenses:

(1) the open general license and (2) individual licenses. Licenses are more freely available for the import of capital goods and materials required for industry than for consumer goods for which only a few licenses are granted. Import controls also involve directional controls in that imports from soft currency countries are more freely licensed than from the dollar area.

Export controls are designed to direct the commodities toward hard currency areas to the maximum extent possible.

Exchange controls. The Foreign Exchange Regulations Act has been extended to 31 December 1957. India's exchange control measures are similar to those of the United Kingdom. They give the government wide powers to control transactions in foreign exchange and securities and in the import and export of bullion or currency. The purpose of the controls is to conserve foreign exchange for essential developments. The Reserve Bank of India is in charge of the overall administration of exchange control and exchange must be bought and sold at prices prescribed by the Bank.

Labor regulations. Large companies usually find it necessary and perhaps advantageous to follow a rather paternalistic policy toward employees in view of the generally low standard of living. Many provide at cost, and in some cases at below cost or free, such facilities and services as housing, lunches, commissary supplies, technical training, libraries and clinics.

The provision of certain facilities and services is required by government regulations. It is frequently requested as a condition of entry that new foreign enterprises provide housing. Some Indian States require employers who do not provide housing to make small contributions, based on number of employees, to government housing projects for industrial workers.

A Minimum Wage Act was passed in 1948 providing for establishment of minimum wages in certain industries. The minima being adopted are not uniform but are generally the prevailing wages in the particular industry in the area at the time the minimum was adopted.

Price, production and distribution controls. In addition to the previously mentioned controls, the Government of India has the power to control prices, production and distribution of commodities in addition to those specified in the Industries (Development and Regulation) Act. At various times

these controls have been exercised over a wide variety of industries, as for example: infant foods, casein, electric bulbs, and tanning materials.

Detailed Findings

Introduction

The industrial and power development schemes included in the first Indian five year plan may be conveniently divided into industries, or perhaps more precisely, factories that are government owned and those that are privately owned. With regard to government owned factories the plan may be taken as reflecting a fairly definite decision either to build a new factory or expand an old one. On the other hand, the plans involving the private sector are perhaps less precise.

It will be recalled that private sector plans were drawn up by the government on the basis of information from private industry groups. Plans to increase capacity and production by Indian private industry reflect the private industrialists' evaluation of a given situation in terms of the usual entrepreneurial motives plus pressures exerted on him by the government. For the usual reasons, therefore, such plans are subject to change. However, the fact that these plans are incorporated in the plan document implies that government has an interest in their fulfillment and presumably is prepared to assist as necessary.^{17/} It is also prepared to insist upon certain developments considered to be in the public interest. In general, and with minor reservations, the Indian industrial sector plan can be taken as reflecting targets which were seriously desired. What results were achieved?

Measures of Plan Fulfillment and Growth

It may be recalled from the brief methodological description in the Introduction that our two measures of the results of the first Indian five year plan are: (1) percent of target achieved and (2) coefficient of growth. The first measure reveals how well a specific industry responded to the direc-

^{17/} Except that the plan makes it quite clear when expansion of capacity of certain industries is not desired.

tive of the planners. The second measure, the coefficient of growth, is the equivalent of an annual percentage production increase. It is a direct measure of secular growth.

The two measures of success are fairly well related (as can be seen in the cross tabulation presented in Table 5). ^{18/} Clearly, a number of industries experienced both a high rate of secular growth and a high percentage of target attainment. There are enough deviant cases, however, (diesel engines and finished steel, for example) so that the two measures of success cannot be used interchangeably. Indeed, they seem to be measuring somewhat different aspects of the degree of development. ^{19/}

We may note the conditions under which the two measures would be highly correlated and the conditions which would give no correlation. Assume the target for an industry to be set well above its level at the start of the planned program, say, a 100 percent increase in the five year period. Then if the target be met the growth coefficient must be large--of the order of some 15 percent per year. Under these conditions the two measures would be highly correlated. However, if the target be set very low--say, a 10 percent increase in a five year period--then even if the target be met fully, the growth coefficient would be very low--of the order of $1\frac{1}{2}$ percent per year. Under these conditions, then, there would be little relationship between the percentage of target achieved and the size of the growth coefficient.

^{18/} The coefficient of contingency equals .7 indicating a fairly high degree of relationship. Chi-square indicates a probability of less than .01 that this could have happened by chance alone.

^{19/} In part this may result from the fact that the measure "percentage of target attained" is usually based on a comparison of the first and last years of the plan period. The second measure "growth coefficient," however, is based on annual data for a number of years; for some industries only the five years of the plan period are included, for others the eight years 1948-1955 are included.

Table. 5.-Relationship Between Growth Coefficients and Percentage of Target Attained, India

Target Attained Percent	Growth Coefficients			Total 16 cases
	High range .201 to .500 † 8 cases	Intermediate range .101 to .200 5 cases	Low range .00 to .100 3 cases	
High range 70-100†	Carding engines	Cement	Finished steel	
	Ammonium sulphate	Caustic soda	Sulphuric acid	
	Bicycles	Grinding wheels	Vanaspati	
	Soda ash	Hurricane lanterns		
	Ring spinning frames	Plywood chests		
	Power transformers			
	Electric motors			
	Sewing machines			
	1 case	2 cases	3 cases	6 cases
Intermediate range 35-69	Viscose yarns	Power alcohol	Paper and paper board	
		Electric lamps	Aluminium	
			Electric fans	
	1 case	3 cases	5 cases	9 cases
Low range 0-34	Diesel engines	Superphosphate	Pig iron	
		Power driven pumps	Dry batteries	
		Radio receivers	Calico looms	
			Storage batteries	
			Paints & varnish	
Total	10	10	11	31

Source: Tables 7 and 9.

Percentage increase called for by target and percentage achieved. The increase in production called, for by the plan varied from a minimum of forty-one percent for pig iron to infinity for penicillin and a few other new products--i.e., products which were not being produced prior to the plan period. From Table 6 it may be seen that the degree to which planned targets were met varied considerably--from almost zero percent to well over 100 percent. Hence, it is pertinent to inquire whether there is any relationship between the amount of increase called for in the plan and the amount achieved. Since an ambitious plan might be difficult to achieve it might be expected that those industries supposed to increase the most often failed to meet their targets while those not required to increase production substantially usually were most successful in terms of percentage of target received. Apparently, however, there is no relationship between the amount of increase called for by the plan and the degree of success achieved. Of the twenty industries which were to increase production by 100 percent or more according to the plan, eight or 40 percent achieved a target fulfillment of 75 percent or better. Of the eleven industries which were supposed to increase only moderately--i.e., less than 100 percent--four achieved 75 percent of the target or better.

We do not know, of course, how much more effort may have been required to achieve target fulfillment in those industries where over 100 percent increase was desired, as compared with the industries having less ambitious targets. It seems clear, however, that the amount of increase called for by a plan in itself need not limit the degree of fulfillment achieved.

Of the eleven industries which did very badly--i.e., fulfilled less than half of the target--pig iron did the least well. The plan called for only a forty-one percent increase in production and only 23 percent was achieved. Furthermore, this industry had a growth coefficient of only .029, well below that of other industries.

Table 6.-Relationship Between Percentage Target Achieved and Percentage Increase Called for in Plan, India

Planned Increase Percent	Target Attained - Percent			
	0 to 24	25 to 49	50 to 74	75 †
0 to 24				
25 to 49	Pig iron			Finished steel
50 to 74			Vanaspati. Electric fans	Plywood chests Cement Caustic soda
75 to 99		Paints & varnishes	Hurricane lanterns Paper & paper board Sulphuric acid	
100 to 199	Dry batteries Calico looms Power driven pumps	Storage batteries	Electric motors Electric lamps	Transformers Ring spinning frames Sewing machines Caustic soda Grinding wheels
200 †	Superphosphate Radio receivers Diesel engines	Aluminium Power alcohol	Viscose yarn	Carding engines Bicycles Ammonium sulphate

Source: Tables 2, 3 and 7.

Of the remaining ten industries which failed to meet even half of the target, four, nevertheless, had relatively high rates of growth (as measured by the growth coefficient). These were: superphosphates, diesel engines, radio receivers and power alcohol. All of them had been assigned targets which called for increases in production of three fold or more. The fact that they all grew relatively fast (i.e., faster than the median rate of growth for all manufacturing industries) suggests that targets were set unrealistically.

Three of the remaining industries which failed to meet half the targets assigned, had just below average rates of growth. These were: power driven pumps, aluminum, and storage batteries. There are, of course, many reasons why targets were not met but one possibility is that targets were unrealistic.

The remaining three industries in the group did rather poorly--calico looms, dry batteries and paints and varnishes. Despite targets calling for a two fold increase in production, there was no increase at all. Whether or not the targets were reasonable for these industries is difficult to say on the basis of our investigation. The planners may have been justified in setting the targets, but for some reason the industries failed almost entirely to increase production.

To summarize, our investigation suggests that carefully set targets calling for very large increases in production can be met; a two or three fold increase does not automatically lead to failure in achieving targets. In the case of India, however, of the twenty industries for which a two fold or larger increase had been planned, in some four to seven industries (if not more) targets were not met owing to a lack of realism in planning--among other causes.

Priority assigned to industry and percentage of target met

Is there any tendency for the more important industries--i.e., those with high priority--to meet their targets more successfully than those with low priority? We noted earlier that a government may look upon certain targets as more important than others; certainly, an essential of planning requires setting

priorities for the various social and economic objectives in relation to time. When such priorities are set an evaluation of a plan means evaluating the results in terms of priorities. If an important target has been met and an unimportant one missed, then the importance for future development is quite different from the reverse situation, i.e., where the unimportant target is met and the important one missed.

The Indian plan does establish priorities for the various manufacturing industries, some explicitly and some only implicitly. Definite priorities were indicated for relatively few industries. Therefore, it was necessary for us to assign priorities to the various industries in accordance with Planning Commission criteria. We consider first priority industries to be those which would directly effect increased agricultural production. Priority II industries are capital goods industries and certain durable consumer goods industries. Priority III industries are those where existing capacity exceeds production and priority IV industries are those not included in the plan at all. ^{20/}

Of the thirty-seven Indian industries analyzed about half--nineteen of the thirty-seven--attained seventy percent or more of planned production. Priority I industries may have done somewhat better; five out of seven or seventy-one percent achieved at least seventy percent of the production level specified in the targets. Industries in priorities II and III achieved just about the median success; i.e., about half of each fulfilled seventy percent or more of the target, (Tables 7 and 8). These findings are suggestive, but not conclusive, that the industries which receive the highest priority and major attention from the government are more likely to be successful.

^{20/} Certain industries have been excluded from the analysis. See Appendix A for explanation.

Table. 7-Progress of Planned Industrial Development, India
(Percentage of Target Achieved by Priority)

Industry	Percent of Target	Industry	Percent of Target
Priority I		Priority I	
1. Locomotives	126	5. Sulphuric acid	70
2. Ammonium sulphate	89	6. Pig iron	23
3. Cement	87	7. Superphosphate	14
4. Finished steel	80		
Priority II		Priority II	
1. Indian telephone ind.	200	12. Shipbuilding (ocean)	65
2. Power transformers	159	13. Electric lamps	62
3. Ring spinning frames	137	14. Viscose yarn	57
4. Penicillin	137	15. Power alcohol	43
5. Sewing machines	118	16. DDT	40
6. Caustic soda	110	17. Aluminium	38
7. Grinding wheels	109	18. Instruments	35
8. Soda ash	106	19. Radio receivers	12
9. Bicycles	91	20. Diesel engines	9
10. Electric motors	73	21. Calico looms	0
11. Paper and paper board	66	22. Power-driven pumps	0
Priority III		Priority III	
1. Plywood chests	137	5. Electric fans	65
2. Carding engines	102	6. Paints and varnishes	31
3. Hurricane lanterns	72	7. Storage batteries	28
4. Vanaspati	70	8. Dry batteries	11

Source: Tables 2 and 3 and India, Ministry of Commerce and Industry, Directorate of Industrial Statistics, Statistics of the Production of Selected Industries of India, Vol. IX, No. 1, Calcutta, January 1957.

Table 8.-Distribution of Industries by Priority and Percentage of Target Attained, India

Percent of Target	Priority I	Priority II	Priority III.	Total
0 to 29	2	4	2	8
30 to 69	0	8	2	10
70 to 99	4	2	2	8
100 †	1	8	2	11
Total	7	22	8	37
Number achieving 70% and over	5	10	4	19
Percent of total achieving 70% and over	71.4%	45.4%	50%	51.4%

Source: Table 7.

In terms of priorities the following may be observed:

1) Five of the seven industries in the first priority accomplished seventy percent or more of target. This would suggest that the Indian government gives close attention to high priority industries.

2) Ten of the twenty-two priority II industries attained seventy percent of target. But eight of the ten overfulfilled the plan and one of the remaining two exceeded ninety percent of target. On the other hand two industries in this category made no progress at all and the balance ranged from sixty-six percent down to nine percent of target. Considering the importance of the industries included in the second priority, this is a not too impressive performance.

3) Four of the eight industries in the third priority attained seventy percent of target. Two of these overfulfilled the target. One may have expected third priority industries to have done relatively better because the targets in this category were generally set so that the only requirement was the full utilization of existing capacity. Third priority targets may also be considered as resulting from straight forward market analysis. If this were the case it would appear that the market analysts were only fifty percent correct.

Growth coefficients and priorities

Coefficients of growth were calculated for those industries for which time series were available. The median growth was about .13; actually just fifty-five percent of all the industries had a growth coefficient of .13 or more, but for convenience sake let us take .13 as the dividing line (Tables 9 and 10).

With regard to priorities the following may be observed:

1) Among priority I industries half--three of six industries--grew at a rate of .13 or more;

Table 9.-Progress of Planned Industrial Development, India
(growth coefficient by priority) ^{a/}

Industry	b/My	Industry	b/My
Priority I		Priority I	
1. Ammonium sulphate	0.325	4. Sulphuric acid	0.091
2. Superphosphate	0.133	5. Finished steel	0.050
3. Cement	0.133	6. Pig iron	0.029
Priority II		Priority II	
1. Bicycles	0.308	10. Grinding wheels	0.145
2. Ring spinning frames	0.300	11. Power alcohol	0.142
3. Soda ash	0.247	12. Radio receivers	0.135
4. Power transformers	0.244	13. Electric lamps	0.119
5. Electric motors	0.244	14. Power driven pumps	0.104
6. Sewing machines	0.217	15. Aluminium	0.097
7. Viscose yarn	0.212	16. Paper & paper board	0.087
8. Diesel engines	0.210	17. Calico looms	0.002
9. Caustic soda	0.154		
Priority III		Priority III	
1. Carding engines	0.510	5. Storage batteries	0.083
2. Hurricane lanterns	0.177	6. Electric fans	0.057
3. Plywood chests	0.102	7. Paints and varnish	0.023
4. Vanaspati	0.087	8. Dry batteries	0.022

^{a/} There are fewer industries in this Table than in Table 7 because of a lack of time series data.

Source: Tables 2 and 3 and India, Ministry of Commerce and Industry, Directorate of Industrial Statistics, Statistics of the Production of Selected Industries of India, Vol. IX, No. 1, Calcutta, January 1957.

Table 10.-Distribution of Industries by Priority
and Growth Coefficient, India

Growth Coefficient	Priority I	Priority II	Priority III	Total
0.00 to .12	3	5	6	14
.13 to .20	2	4	1	7
.21 and over	1	8	1	10
Total	6	17	8	31
Number 0.13 †	3	12	2	17
Percent 0.13 †	50	71	25	55

Source: Table 9.

2) Among priority II industries twelve--or seventy-one percent--grew at this rate;

3) Among third priority industries only two of eight grew at this rate.

It would seem that second priority industries grew more rapidly than did the first priority. On the other hand, as noted previously, a somewhat larger proportion of the higher priority industries seemed to have met the target. This is explainable (in part at least) by the fact that priority I industries seemed to have been given smaller targets, than was the case with priority II industries. For example, of the priority I industries, four out of seven were assigned planned increases of less than 100 percent. Among priority II industries on the other hand only two out of twenty were supposed to increase by less than 100 percent.

Electric power

Development of electric power is recognized in India as among the most important steps on the road towards greater industrialization. Since the end of World War II India has suffered from an acute power shortage. Power supply has been inadequate in the centers of Indian industry and in some cases has been responsible for delays in construction of new factories and expansion of existing industries. ^{21/}

Various steps have been taken by the Government of India to overcome the shortage. This is indicated not only by statements in the plan about the importance of power and irrigation in the form of multipurpose projects, but also by the magnitude of the funds allocated for this purpose in comparison with other sectors of the economy such as large scale industries (see Table 1).

^{21/} Shortage of power was one of the reasons given for government control over the location of new private industries (see section on government controls, Industries (Development and Regulation) Act, 1951).

The sum allocated for multipurpose projects and straight power projects amounted to Rs. 3,934 million (about \$780 million). It is true, of course, that a large percentage of the cost of multipurpose projects goes into works required for irrigation, transportation, and conservation. Nevertheless, the power program is substantial. It is also almost wholly a government program.

During the period 1951-52 to 1955-56 government owned projects were to have accounted for an increase in installed capacity of 1,082 thousand kw., mostly hydroelectric. Privately owned power plants, by contrast, were to increase by only 176 thousand kw. It may be noted in this connection that the industry is under close government supervision under the terms of an act of 1948.

The questions which concern us in the case of power are the same as those asked in connection with planned industries; namely, what percentage of the target called for in the plan was actually achieved, and what was the rate of growth. We shall answer these questions in terms of installed capacity (kw.) and production (kwh.)

1) Capacity. In 1951 the aggregate installed capacity of public utility power plants was 1,835 thousand kw. From 1951-52 to 1955-56 it was planned to increase this by 1,258 thousand kw. An increase of this magnitude represents a very ambitious program for India. However, only 59.2 percent of this amount was installed by the end of 1955. ^{21a/} It may be recalled that in manufacturing one half of planned industries achieved seventy percent or more of target.

The growth coefficient calculated from data on capacity extending back to 1948 amounts to 0.10. This is less than the median rate of growth (0.13) for planned industries and just under the median (0.10) for unplanned industries. Nevertheless, it is a rapid rate of growth.

^{21a/} The target completion date was 1955-56 (April 1956) but our data extend only to the end of 1955. It is possible that a large installation was commissioned during the interim although this is not likely as reports indicate that the power program is behind schedule.

2) Production. The growth coefficient for electric power production amounts to 0.09. Here again the rate of growth compares unfavorably with planned and unplanned manufacturing industries. And yet it may be considered a satisfactory rate of growth as it compares favorably with the rate of growth of power production in more developed countries. For example, the rate of growth of power production in the United States from 1948 to 1955 amounted to 0.10. ^{22/}

It is most important to compare the rates of growth of capacity--0.10-- and production--0.09. Capacity is increasing at a slightly higher rate than production. This should be a welcome development as at the start of the plan capacity was overtaxed. It is likely, however, that this situation persists because demand for power was quite far ahead of the capacity to produce.

Government owned industries.

Earlier, we raised a question about the degree to which government owned ^{23/} factories met their targets as compared with those privately owned and operated. The information we have is incomplete and from an unofficial source. However, an analysis is possible.

Table 11 brings together our information on performance of government owned factories. The targets given in this table may be compared with those given in column 7 of Table 2. ^{24/}

22/ From unpublished analysis of data on production of electricity in various countries.

23/ According to George B. Baldwin, Public Enterprise in Indian Industry, Princeton, March, 1957 (a pamphlet of the Inter-University Study of Labor Problems in Economic Development) most of the industrial enterprises owned by the government of India are organized as 'private limited companies'. (An example of such a company from United States experience is the Ford Motor Company before 1955.) The government holds most of the stock in such companies although many of them have foreign assistance which may be arranged through a management contract or by giving the foreign firm partial ownership.

24/ It should be noted that targets in the earlier table are given in terms of capacity and are therefore not strictly comparable with those presented in Table 11. Differences in targets shown in the Tables may also be attributed to the fact that Table 11 is based on more recent data. Target changes over time are not unusual in the Indian five year plan. Thus, for example, Table 2 gives 100 locomotives as the target for the Chittaranjan factory while Table 11 indicates that only 92 are to be built. In fact, 129 were actually built. We should also note that time series information on production was virtually unavailable for these factories and industries. Hence this analysis is based entirely on 'percent of completion of target' as the criterion of success.

Table 11.-Production Achieved by Selected Government Owned Factories, India

Name of Factory	Unit	Target for Fiscal Year 1955-56	Production Achieved in Fiscal Year 1955-1956	Target (revised) Achieved Percent
I. Central Government Projects				
Iron & Steel Project (pig iron)	1000 tons	350	0	0.0
Hindustan Shipyards	G.R.T. ^{a/}	20,000	13,000	65.0
Machine Tool Factory	Units ^{b/}	1,600	77	4.8
Sindri Fertilizer Factory	1000 tons	315	326	103.5
Chittaranjan Locomotive Factory	Units	92	129	140.0
Penicillin Factory	million mega. units	4.8	6.6	137.5
National Instruments Factory	Ps.	400,000	142,000	35.5
Indian Telephone Industries	Units ^{c/}	25,000	50,000	200.0
Hindustan Cable Ltd.	miles	470	520	110.4
Hindustan Insecticides (DDT)	tons	700	284 ^{d/}	40.6
II. State Government Projects				
U.P. Government Cement Factory	1000 tons	200	180	90.0
Nepa Mills (newsprint)	tons	30,000	4,000	13.0
Bihar Government Super-Phosphate Factory	tons	16,500	0	0.0

^{a/} In Table 2 the target is in dead weight tons, a unit which generally gives a larger value than gross registered tons.

^{b/} Lathes; ^{c/} telephone instruments; ^{d/} estimated

Source: The Eastern Economist, Vol. XXVII, No. 13, Sept. 28, 1956, New Delhi.

Of the thirteen government sponsored projects for which information is available, five over-fulfilled their targets and one attained 90 percent of the target. Four did poorly completing only from 13 to 65 percent of the target. One did very badly -- 4.8 percent -- while two did not start at all. One of the two that failed to start was among the projects specified as having the highest priority -- iron and steel.

Overall the government's factories seem to have been about as successful as industry in general in meeting the targets. This can be seen by comparing the information about government plants with the information for all manufacturing (as given in Table 7). Among the government's factories six of thirteen met 70 percent or more of the target; among all industries nineteen out of thirty-seven met 70 percent or more of the target.

A more precise evaluation of the results of government owned factories is obtained by examining the degree of completion of target within the same industry for government as compared with privately owned plants. Such comparisons could be made only for six industries.^{25/} (See Chart 2).

Privately operated factories met their targets more successfully than did government owned factories in two industries: pig iron and paper and paper board. The privately owned pig iron establishments met 49 percent of the target and the government owned -- none. In the manufacture of paper and paper board the respective percentages were 96 and 13. Neither was very successful in manufacturing superphosphates; however, the private sector met 16 percent of its

^{25/} The number analysed is limited to six not so much because of a dearth of data but rather because the Indian government has not attempted in the first five year plan seriously to compete with established industries. On the contrary, most of the government owned industries are those new to India; there are few if any already existing privately run factories in these industries. See section on "New Industries." However, "government owned industries constitute the most important group of large-scale industries to arise in the Indian economy in the past decade and their importance is likely to grow during the decade ahead. They will even be important should they fail because the government has placed a great many eggs in one basket and the economy will go hungry if it is dropped"; George B. Baldwin, op. cit. p, 20.

target whereas the government sector failed to meet any part.

Government factories met their targets more successfully in producing ammonium sulphate--103 percent as compared with 24 percent in the private sector; and in building locomotives--140 percent and 100 percent respectively.

In cement manufacture there was almost no difference between the two sectors. Privately operated cement factories met 87 percent of their target, and the publicly owned cement mill met 90 percent of its target.

In summary, both publicly owned and privately owned factories seemed to have obtained equivalent results. In both sectors there was great variation, some industries meeting no part whatsoever of the target whereas other industries overfulfilled the targets.

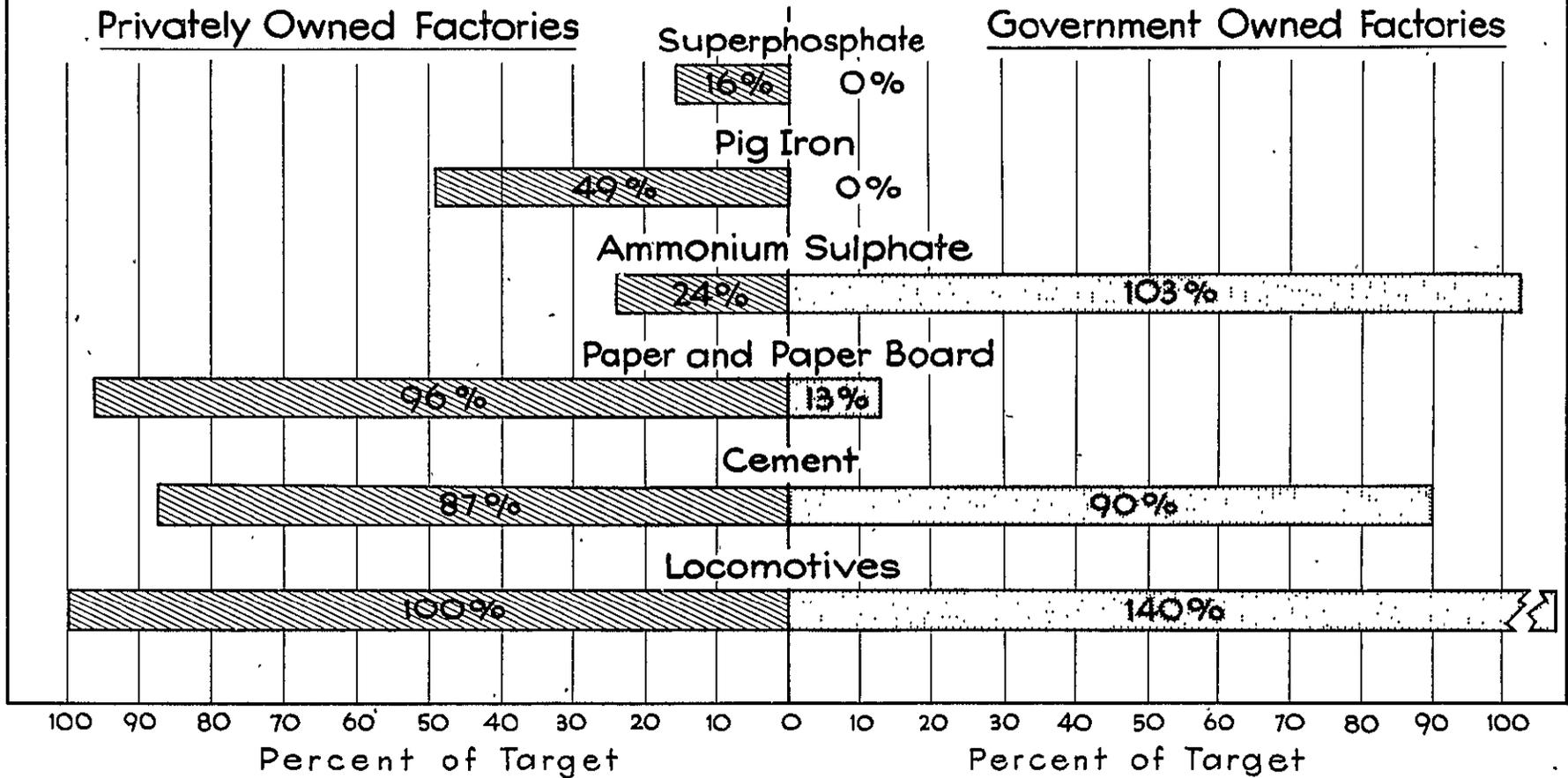
Labor intensive manufacturing industries

A primary objective of the Indian five year plan was to increase employment opportunities. The main problem is rural unemployment and under-employment and therefore the main programs were the irrigation and reclamation of land and assistance to village industries. Despite the plan to irrigate some nineteen million acres and the expenditure of about \$30 million for the development of village industries and other handicrafts, it is appreciated that a solution to the problems requires that large numbers of farmers be removed from the land and employed in industry. ^{26/} The problem is aggravated by a deterioration in the competitive position of cottage industries vis a vis large industries.

This section attempts to evaluate how effective the industrial development program actually was in meeting the unemployment problem. Such an evaluation could be based on data showing capital invested per employee and some stand-

^{26/} According to W. Arthur Lewis, "Indian economists estimate conservatively that a quarter of the rural population is surplus in the sense that its removal from the land would make no difference to agricultural output." Quoted in Buchanan and Ellis, Approaches to Economic Development; The Twentieth Century Fund, New York, 1955.

Chart 2
NEITHER PRIVATELY OWNED NOR GOVERNMENT OWNED FACTORIES ACHIEVED BETTER RESULTS THAN THE OTHER IN TERMS OF TARGETS



Source: Tables 2, 3, and 11 India, Ministry of Commerce and Industry, Directorate of Industrial Statistics, *Statistics of the Production of Selected Industries of India*, Vol. IX, No 1, Calcutta, Jan 1957.

ard against which to compare the Indian figures. Unfortunately such data are unavailable, and it is not possible to determine exactly the effect on unemployment of the industrialization programs. ^{27/} But study of the types of industries included in the plan shows that many are highly capital intensive--fertilizers and heavy chemicals, iron and steel, heavy machinery--and among those that are less capital intensive--instruments, light machinery and electrical equipment--the objective is to operate at an efficiency equal to western standards. Indeed, some of the products of the latter group are to be exported and would have to compete with Japanese goods for South Asian markets. It appears safe to conclude, therefore, that no special effort was made in the industrialization program to provide employment. Rather, it appears that labor saving methods and machinery were preferred.

New manufacturing industries

A distinctly underdeveloped country such as India, when it attempts to develop its economy must often introduce many new industries and factories. That is, it must introduce factories which utilize processes not previously used in the country or manufacture products not previously produced or, if not entirely new in either of the above respects, factories which are so much larger than any existing ones as to pose new problems in management and operation.

It seems to be generally accepted that underdeveloped countries have great difficulty in bringing new industries into production on schedule, in operating them at rated capacity or, in terms of this investigation, in accordance with the target, and in producing at a profit. It is our intention to test this precept against the facts of Indian experience. Our test, however, will be

^{27/} The plan contains an estimate of 400,000 as the number of people to be employed in newly established or expanded large-scale industries. It may be recalled that such industries were to benefit from an investment of about \$690 million. Thus, about \$1,725 is required to employ one worker in industry. This figure may be low as the number of workers includes some who would be employed in small industries.

limited by the data to production results only--i.e., to the extent that production targets were met. ^{28/} Comparison of production costs are at least as important as comparisons of production. However, the data required for such an analysis are not available.

The extent to which the new industries met their targets (as shown in Table 12) can be compared with the degree of success achieved among all industries (as shown in Table 7). Of the eight new industries, four met 100 percent or more of the assigned targets. Among all industries, eleven of the thirty-seven met 100 percent or more of the targets, and another eight met between 70 and 99 percent of the target. On the whole, there does not seem to be much difference in degree of success achieved, between the new factories and all industries. (See Chart 3).

Table 12 also records the results achieved by new industries along with the results of selected established industries. The selection of the latter was based on the following criteria: (1) industries included are in priority I and II only, the same priorities as the new industries; (2) to the extent possible industries using processes similar or related to the new industries were included in the established industry list; and (3) the percentage of target achieved by the selected industries as a group is approximately equivalent to the percentage of target achieved by first and second priority industries listed in Table 7.

These results also do not seem to indicate that India has had more difficulty in operating new industries than those long established. Indeed, a quick glance at the figures would seem to indicate the reverse; new industries appear to have done better than the established ones. Of the eight new industries listed, four exceeded their targets, one by double the target. Three

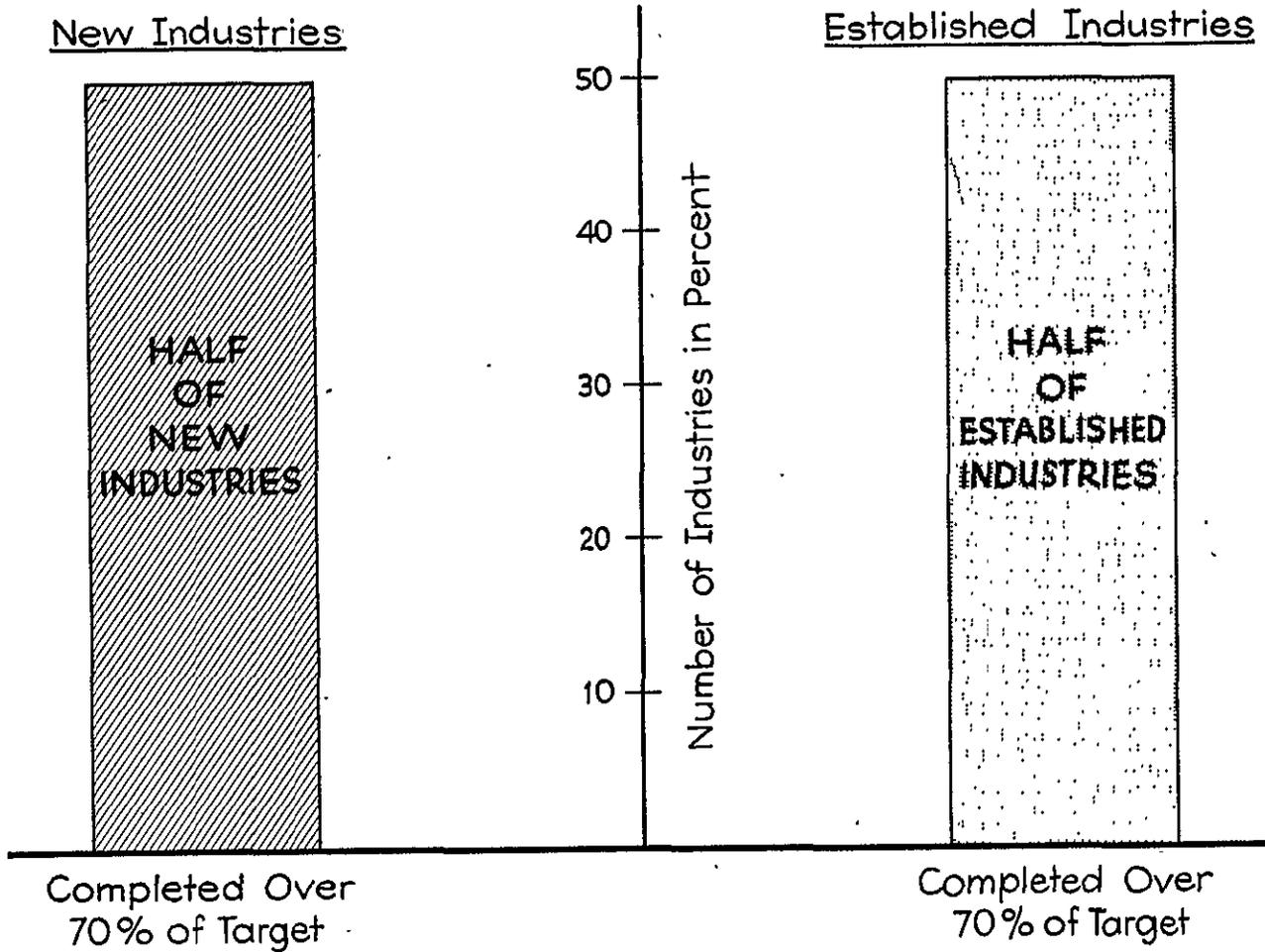
^{28/} Information on production over time is not available for most of these new industries, making it impossible to use growth coefficients as a criterion of success.

Table 12.-Percentage of Target Met by New and Established Industries, India

New Industries		Selected Established Industries	
Name of Industry	Target Achieved Percent (From Table 11)	Name of Industry	Target Achieved Percent (From Table 7)
Hindustan Shipyards	65.0	Pig Iron	23
Sindri Fertilizer Factory	103.5	Cement	87
Locomotives (Chittaranjan plus Tata's Factories)	126.0	Paper & Paper Board	66
National Instruments Factory	35.5	Transformers	159
Indian Telephone Industries	200.0	Radio Receivers	12
Machine Tool Factory	4.8	Diesel Engines	9
Penicillin Factory	137.5	Sulphuric Acid	70
Hindustani Insecticides (DDT)	40.6	Caustic Soda	110

Source: Tables 7 and 11.

Chart 3
**NEW INDUSTRIES MET TARGETS AS WELL
AS ESTABLISHED INDUSTRIES**



Source: Table 12

established industries attained target production if one would concede that 87 percent is the equivalent of full target.

The Unplanned Sector

India is sometimes thought of as a country where government has taken over most of the industries. Quite the opposite is the case. According to the provisions in the first five year plan, private industry was to have invested almost two and one half times as much money as the government in industrial development. The total contemplated investment was to be about \$690 million, of which the government expected to invest about \$200 million and private industry about \$490 million.

In addition to the private investment in manufacturing envisioned in the plan there is the very large unplanned sector, which is all under private control. These are the manufacturing industries such as cigarettes, enamelware, rubber products which the government left to the discretion of the private entrepreneur. What happened in this unplanned sector? Did the economic development generated in the planned sector stimulate growth in the unplanned sector also?

Inasmuch as targets were not set for the unplanned sector only one of our two measures, the growth coefficient, can be used. Our analysis consists of a comparison of rates of growth of planned industries and unplanned industries. The various industries are listed in Table 13 under appropriate priorities. Priority IV consists of those industries which are not included in the plan. ^{29/}

^{29/} A few industries included in priority IV are mentioned in a planning document (Programme of Industrial Development 1951-56; Government of India Planning Commission), but it appears that the intent of the planners was to allow these industries relatively free reign.

Table 13.-Planned and Unplanned Industries, India
(Industries Ranked by Growth Coefficient Under Four Priorities)

Industry	b/My	Industry	b/My
Priority I		Priority IV	
1. Ammonium sulphate	0.325	1. Razor Blades	0.487
2. Cement	0.133	2. Copper pipes & tubes	0.423
3. Superphosphate	0.133	3. Wood screws	0.407
4. Sulphuric acid	0.091	4. Arc welding elec.	0.313
5. Finished steel	0.050	5. Machine screws	0.301
6. Pig iron	0.029	6. Lead (refined metal)	0.206
Priority II		7. Sodium sulphide	0.202
1. Bicycles	0.308	8. Crown cork	0.190
2. Ring spinning frames	0.300	9. Liver extract (inject)	0.179
3. Soda ash	0.247	10. Welding gas (oxygen)	0.172
4. Transformers	0.244	11. Insulators (H.T.)	0.172
5. Electric motors	0.244	12. Duplicators	0.171
6. Sewing machines	0.217	13. Enamelware	0.147
7. Viscose yarns	0.212	14. Copper sulphate	0.131
8. Diesel engines	0.210	15. Welding gas (acet)	0.123
9. Caustic soda	0.154	16. White ware	0.122
10. Grinding wheels	0.145	17. Coated abrasives	0.117
11. Power alcohol	0.142	18. Plastic moulding	0.112
12. Radio receivers	0.135	19. Commercial plywood	0.109
13. Electric lamps	0.119	20. Expanded metal	0.102
14. Power driven pumps	0.104	21. Antimony (refined)	0.097
15. Aluminum	0.097	22. Insulators (L.T.)	0.094
16. Paper & paper board	0.087	23. Brass pipes & tubes	0.090
17. Calico looms	0.002	24. Rubber products	0.084
Priority III		25. Twist drills	0.076
1. Carding engines	0.510	26. Cotton hair belting	0.076
2. Hurricane lamps	0.177	27. Refractories	0.038
3. Plywood chests	0.102	28. Bichromates	0.034
4. Vanaspati	0.087	29. Oil pressure lamps	0.033
5. Storage batteries	0.083	30. Liver extract (oral)	0.028
6. Electric fans	0.057	31. Sanitary ware	0.025
7. Paints & varnishes	0.023	32. Asbestos (cement sheet)	0.018
8. Dry batteries	0.022	33. Tea	0.018
		34. Copper (refined metal)	0.014
		35. Cigarettes	0.011
		36. Brass sheets & circles	-0.027
		37. Lead pipes & tubes	-0.029
		38. Copper sheets & circles	-0.350

Source: Table 9 and India, Ministry of Commerce and Industry, Directorate of Industrial Statistics, Statistics of Production of Selected Industries of India, Vol. IX, No. 1, Calcutta, January 1957.

In an earlier section we computed the median growth coefficient for industries in priorities I, II, and III; this was 0.13. ^{30/} Fourteen industries--37 percent-- out of a total of thirty-eight in priority IV attained a growth coefficient of 13 percent or better. It may be recalled that industries in priority I attained the median rate of growth; seventy percent of the industries in priority II achieved this rate of growth while only twenty-five percent of the industries in priority III exceeded the median. From the foregoing it may be concluded that unplanned industries grew somewhat more slowly than did planned industries.

The progress of planned industries as compared with unplanned industries can be shown to be decidedly more impressive by dropping priority III industries from the calculations. There is justification for doing this when one recalls that the third priority consists of industries in which the main object is to use fully existing capacity. Indeed, there is a rather fine line dividing some priority III and priority IV industries. However, the division between first and second priority industries as a group and fourth priority industries is quite definite.

The variation in rates of growth between planned and unplanned industries is now much sharper, not only in the range of high rates of growth but also in the low range. From this one may conclude that unplanned industries lagged behind the planned sector. And the industries listed under priority IV are by no means unimportant in terms of industrial development. Indeed, more than half of them are producer goods industries. It may also be observed (Table 13) that these industries are not clustered in the high range of growth coefficients but are well scattered throughout the list.

^{30/} It may be recalled that the growth coefficient is equivalent to an annual percentage increase. A 13 percent increase per year is a very substantial rate of growth and implies a doubling period of about seven years.

Table 14.-Distribution of Planned and Unplanned Industries
(Priorities I and II Grouped; Priority III Dropped)

Growth Coefficient	Priorities I and II	Percent	Priority IV	Percent
Under .05	2	8.7	12	31.6
.05 to .12	6	26.1	12	31.6
.13 †	15	65.2	14	36.8
Total	23	100.0	38	100.0

Source: Table 13

The results of a closer analysis of growth in the unplanned sector based on a division of the industries into producers' and consumers' goods is given by the following distribution.

Table 15.-Distribution of Producers' Goods and Consumers' Goods Industries

I. <u>Producers' Goods</u>			
Growth Coefficient	Priorities I and II		Priority IV
13% and over	12		11
Under 13%	6		16
Total	18		27
II. <u>Consumers' Goods</u>			
Growth Coefficient			
13% and over	3		3
Under 13%	2		8
Total	5		11

Planned producers' goods industries achieved better results than unplanned producers' goods industries. The same may be said of consumers' goods industries. However, unplanned producers' goods industries made a somewhat better record than unplanned consumers' goods.

Summary of Findings, India

Introduction

One of the objectives of this investigation is to determine whether the industrial development plans of certain underdeveloped countries have had the desired result. Given this information for several countries it is planned to attempt to segregate those features of plans to which one might attribute whatever measure of success was achieved from those features which might have had a negative effect on growth. One of the factors taken into account when choosing the countries to be studied was the extent of planning undertaken. In this investigation India represents the most fully planned economy.

In India a high level Planning Commission produced an extremely detailed plan document, which the Government adopted. In carrying out the plans the Government was given very broad powers to control and direct the development of the most important organized--as distinguished from cottage--industries. The Government also undertook to assist industries by, inter alia, protective tariffs and long term loans.

Measures of success

Two measures are used in evaluating the results achieved by manufacturing industries and electric power installations included in the Indian first five year plan; they are (1) percent of target achieved and (2) growth coefficient. The second measure is the equivalent of an annual percentage increase. These measures are also used to determine how well Government controlled industries fared as compared with privately owned ones and whether new industries met their targets more or less successfully than established industries.

Since all Indian manufacturing was not included in the plan, it was considered important to see whether the unplanned sector kept pace with or lagged behind the planned sector. For this aspect of the problem it was only possible to use the growth coefficient.

In this connection it may be noted that some forty-two industries including many heavy, mechanical and chemical industries, as well as highly organized light manufacturing industries such as textiles, vegetable oils and shoes are included in the plan. Nevertheless, the largest employer, in the aggregate, of industrial labor in India is cottage industries. ^{31/} These, plus the unplanned organized industries, are probably much larger, in terms of labor force utilized, than the industries included in the plan.

Relationship between degree of target achieved and rate of growth. The results achieved by planned industries were determined by using the two measures described above. Before summarizing the results it is important to note that there is a strong relationship between the two measures. In other words, industries experiencing rapid growth usually met their targets and vice versa. The two measures are not, however, interchangeable.

Relationship between degree of target achieved and amount of planned increase. The Indian five year plan calls for very large increases in production for some industries and quite modest increases for others. The question which may be posed here is whether an ambitious plan (large increases in production) was more difficult to achieve than a more modest plan. The data do not reveal any definite relationship between the amount of increase called for in the plan and the degree of success (percentage of target) achieved. Some industries with modest targets achieved poor results; some did well; several industries with large increases did poorly and others did well--in terms of meeting the targets. This would seem to suggest that very large increases in production, if realistically planned, can be realized. It would also suggest that a number of targets had been set unrealistically.

^{31/} It should be noted that the plan concerns itself with cottage industries also. Village industries is still another group dealt with in the plan. Dearth of data about these industries makes it impossible to consider them in a study such as this.

Priorities and measures of success

Priorities and degree of target achieved. The Indian plan permits assigning priorities to the various industries. Obviously, it is more important to fulfill the target of a high priority industry than of a low one. In terms of priorities the following results were obtained:

Target Met Percent	P r i o r i t y			Total
	I	II	III	
Under 70%	2	12	4	18
Over 70%	5	10	4	19
Total	7	22	8	37

About half of the thirty-seven industries analyzed achieved 70 percent of the target or better. But almost three-fourths of priority I industries achieved this result. This appears to indicate that high priority industries are more likely to reach the target than lower priority industries. The number of cases included in the first priority is unfortunately rather limited. There is no significant difference in results obtained by second and third priority industries. As, however, third priority industries were required only to utilize fully their existing capacity it is believed that targets should have been relatively easy to reach. Perhaps this is a case where planning was unrealistic.

Priorities and rate of growth. With a growth coefficient of 0.075 or 7½ percent there will be a doubling in about ten years. The median rate of growth of the thirty-one industries analyzed amounted to 0.13. In terms of the growth coefficient, second priority industries were the best performers. The results for the three priorities are tabulated below.

Growth Coefficient	P r i o r i t y			Total
	I	II	III	
Under .013	3	5	6	14
Over .013	3	12	2	17
Total	6	17	8	31

First and second priority industries grew much more rapidly than those in third priority. This is the expected result when one recalls that priority III consists of industries which were required only to utilize fully existing capacity.

Electric power

The size of the electric power development program in India indicates concretely how important a factor power is in the overall development program. In 1950-51 there was a serious shortage which hindered industrial development. At the end of the plan period it was likely that the shortage still existed as only 59.2 percent of the target for installed capacity was completed.

In terms of growth coefficient, production of electric energy increased at the rate of 9 percent per year; less than the median rate of growth of both planned and unplanned industries. Still this is a good rate of increase. It is only slightly less than this industry recorded in the United States--0.10--during the same period. As, however, production and capacity grew at approximately the same rate, and as there was a shortage of capacity at the start of the plan, it is likely that electric power is still in short supply.

Government owned industries

There appears to be no significant difference between results achieved by government owned industries and those privately owned. Both types experi-

enced great variation, some industries meeting no part at all of the target and others recording results in excess of 100 percent.

New industries

The belief that underdeveloped countries have less success in bringing new industries into production than in expanding established industries was tested against Indian experience. The results do not support this belief. It is even possible, on the basis of Indian experience, to argue that new industries made a better showing than established industries as four of the eight new industries analyzed exceeded 100 percent of target. The median of planned industries was 70 percent of target.

The Unplanned sector

The question here considered is what happened to industries which, for whatever reason, were not included in the plan. In India these are a substantial percentage of the industrial sector. In considering this question, the growth coefficients of unplanned, or priority IV industries, are compared with rates of growth recorded by planned industries. The results of this comparison are shown below.

Growth Coefficient	Planned Industries ^{32/}	Unplanned Industries
Under .13	8	24
.13 and over	15	14

The difference in rate of growth between planned and unplanned industries is significant. Unplanned industries lagged behind planned industries. This is cause for concern as about two-thirds of the industries in this category are producer goods industries. Why these producer goods industries had lower rates of growth is outside the scope of this investigation.

^{32/} For reasons given in the main body of the report, priority III industries are not included.

PART III. PUERTO RICO

Brief Notes on the Population and Economic Background

The various actions taken by the United States and Puerto Rican governments, and the various documents issued, which, all taken together, constitute the Puerto Rican "plan" for economic development, stretch over a period from about 1935 to the present (1956). There are no precise and specified beginning or ending dates, rather the "plan" is an indefinitely continuing one. Let us examine briefly the major demographic and economic trends during this period.

Population

In 1930 Puerto Rico contained about one and a half million persons. The population increased at a rate just short of two percent per year and in 1950 there were about 2,200,000 persons on the Island. In 1954 the population density was 253 persons per square kilometer, or over two times as great as in India.

The high rate of population growth resulted from high fertility and low mortality. In the years 1949 to 1951 the birth rate was about forty-one per 1,000 population, and the death rate about ten; the rate of natural increase then was thirty-one per 1,000 population. The Puerto Rican population quite obviously was growing at a rate two to three times as great as that of India.

Since 1950 there has been little growth in the Island because of the very extensive out-migration to Mainland United States. ^{33/} Indeed, since 1950 almost all the excess of births over deaths has been absorbed either in such

^{33/} Large scale out-migration actually began about 1946. Between the end of World War II and April 1950 (census date) there was a net out-migration of about 140,000.

out-migration or by men entering the United States military forces and thereby withdrawing from the Puerto Rican labor market. In the absence of these two factors the population would have increased to perhaps 2,600,000 by 1956, or by almost 400,000. Instead the civilian population increased by only about 40 to 50,000 and numbered 2,242,000 in 1956 (July 1). ^{34/}

Compared with India, Puerto Rico already has high density (with its attendant land and agricultural problems) and potentially a faster rate of population growth. That the Puerto Rican population has not grown since 1950 results from factors extraneous to any developments which may be considered to be strictly Puerto Rican; whether and how such extraneous factors may affect the growth of the Island's population and economy in the future cannot be predicted. In the meantime it is important to note that the actual working out of the Puerto Rican plans for economic development have all been influenced (directly or indirectly) by the fact that the population has not increased appreciably since 1950.

Income

Total net national income (and gross national product) almost doubled between fiscal year 1939-40 and 1955-56 (in terms of the price level as of 1954). The estimates are as follows: ^{35/}

Fiscal Year	National Product (1954 dollars)	
	Gross (millions)	Per capita
1939-40	\$499.3	\$ 269
1946-47	704.3	327
1949-50	865.4	393
1954-55	1,113.6	495
1955-56	1,150.0	506

^{34/} Puerto Rico, Bureau of Labor Statistics, "Migration and Population Growth for Puerto Rico--April 1950 to July 1956"; Report on Population, No. 4. (San Juan) Sept. 1956.

^{35/} Estimates for the years 1939-40 to 1954-55 from Net Income and Gross Product of Puerto Rico--1940 and 1947-1955, Puerto Rico Planning Board, Bureau of Economics and Statistics (undated but probably 1957), San Juan, Puerto Rico; Table 28, p. 192. Estimate for 1955-56 derived from data presented in Puerto Rico Monthly Economic Bulletin.

There was a growth in the gross national product during this decade and a half amounting to about 130 percent. Per capita gross national product, as an approximate measure of the welfare of the individual citizen also increased but only by some 88 percent. (See Chart 4).

If there had been no population increase at all not only national product but also per capita product would have increased by 130 percent and might have amounted to over \$600. If there had been no out-migration, the population in 1956 would have numbered some 2,600,000 and per capita gross product would have been , all other things being equal, about \$440--this would have been 65 percent higher than in 1939-40. Under these conditions (no out-migration) about half of the increase in total gross national product would have gone toward the support of a larger population.

Let us now return to our main question and attempt to see how this growth in the economy may be related to the planning activities.

Puerto Rico's Plan and Planning Activities

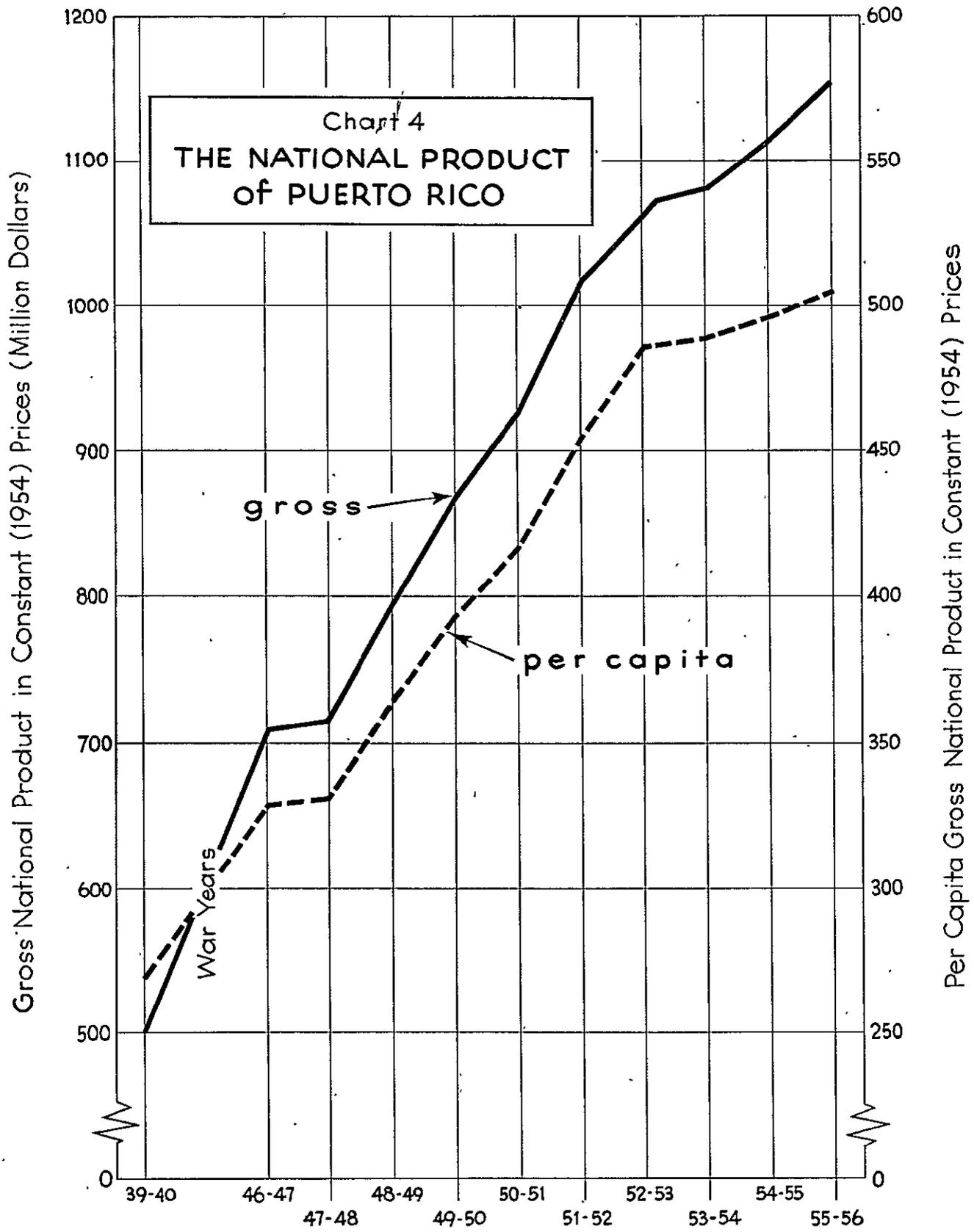
The plan

This is a hope for the future--at some unspecified date-- rather than any particular list of targets to be met, as was the case in India. Perhaps the most nearly complete statement of this "plan" or "hope" is the following excerpt from a speech of Puerto Rico's Governor Munoz ^{36/} delivered in 1953:

"It is something more than the improvement of our economic standard of living. It is a way of life, a culture. The economy is intended to sustain a way of life. Culture is only in a degree the tool of economics. What a people with spiritual values want is a way of life. Their economic effort must be made to serve that purpose--it must not be allowed to master it.

"I see at the top of the symbolic hill a people well housed--very few of them in luxurious palaces and none in wretched huts or slums. I see the opportunity for honest work at a rate of pay

^{36/} Speech of the Governor of the Commonwealth of Puerto Rico, the Honorable Luis Munoz Marin, broadcast by the National Broadcasting Company on July 25, 1953; mimeographed, pp. 5,6.



Source: For the Years 1939-40 to 1954-55; *Net Income and Gross Product, Puerto Rico-1940 and 1947-1955*, Puerto Rican Planning Board, Bureau of Economics and Statistics, San Juan, 1957 (2), table 28, p.192. Estimates for 1955-56 from Puerto Rico Monthly Economic Bulletin.

moderate but adequate to a good and satisfying life. I see families that are at peace in the thought that their children will be educated to the maximum of their natural abilities, and happy in the knowledge that they will have security against sickness and old age and the hazards of fortune beyond the control of the human will. I can see that some will have more than this as a result of their own effort, and in some cases much more than this. But none shall have less than this."

For the immediate future, however, the government wishes to increase employment, reduce unemployment and provide jobs for an increasing population. In the absence of extensive out-migration the labor force would increase by perhaps two percent to three percent each year. In the long run the plan is to improve the life of the people; in the immediate future the plan and hope is to alleviate unemployment, both actual and incipient. Puerto Rico's program for economic development--operation Bootstrap--

"has tackled one approach to Puerto Rico's basic problem: overpopulation. More than 2,300,000 cram the island, 670 to the square mile. From the approach of providing work, Bootstrap has been barely a holding operation. It has created 33,000 industrial jobs; and perhaps even more resulting service jobs. But a runaway birth rate combined with a death rate lower than the mainland's--plus a parade of labor from the increasingly efficient farms--pours 20,000 workers a year into the market. In the short run, only by heavy emigration to the mainland and the Army's draft has Puerto Rico been able to keep unemployment from rising despite Bootstrap." 37/

In order to carry through an action program to provide more jobs immediately as well as lay the basis for continued economic developments, specific programs had to be drawn. The plan, as finally evolved in terms of activities actually carried out by the Commonwealth, centered on the promotion of manufacturing, electric power, and the sale of increased quantities of rum in the continental United States. Other activities included promotion of the tourist industry, fostering of agricultural development, and a

37/ Government Development Bank for Puerto Rico, Quarterly Report to Investors in Puerto Rican Securities, Period Ended March 31, 1956. San Juan, Puerto Rico, Vol. 3, No. 1, p. 3.

whole series of activities in the area of social welfare, including housing, education and public health. Since our investigation is concerned primarily with manufacturing and power, we shall consider the plans for these two sectors, for the most part; expansion of the rum industry is a part of manufacturing.

Determining the extent to which these plans were met (as of 1956) consists, then, only of determining whether or not significant growth occurred. Since no targets were specified we cannot measure the "percent of target achieved." We cannot even calculate growth coefficients (as was done for India) because few time series of quantity of manufacturing production are available.^{38/}

Summary of planning activities

The philosophy of planning is almost as general as the plan, as previously expressed by the Governor. Puerto Rico's approach can best be described as pragmatic. Governor Munoz described planning activities by stating, "Any weapon fit for the purpose of abolishing scarcity and fairly distributing emerging abundance, if it be constitutional and if it respect individual rights, has a place in our armory."^{39/} The technicians concerned

^{38/} What are called "targets" appear in the report, Economic Development of Puerto Rico, 1940 - 1950 and 1951 - 1960, prepared by the Puerto Rico Planning Board, February 1951. See "The Current Situation and Prospects of the Puerto Rican Economy," (chapt. 12); "Targets for the Puerto Rican Economy 1955 and 1960," (chapt. 13); chapt. 14 to 20 inclusive consider various specific aspects such as public expenditures, agricultural development, etc. What is difficult to ascertain is the extent to which any specific "target" figures cited, were accepted as such by the Puerto Rican government, and to what extent these "targets" simply represented hoped for achievements. It is our feeling that the latter is more nearly the case. Government officials viewed these "targets" as a generalized picture of the future and as an indication of what was to be accomplished in the long run, if real economic development were to be achieved. They did not consider these figures as guiding rules for their daily activities; rather they tended to work on an ad hoc and pragmatic basis, changing their plans from day to day as circumstances seemed to require.

^{39/} "The Commonwealth of Puerto Rico - a House of Good Will," address delivered before the Annual Convention of the 'International Ladies Garment Workers' Union, May 18, 1956, p. 7.

with implementing the plan, of course, had to arrive at a specific series of activities, which we will now review in greater detail.

Since the activities and programs currently being employed stem from government programs undertaken during the depression years of the 1930's, let us review this past history very briefly. The Puerto Rican Emergency Relief Administration was established in August 1933 by the federal government: its mission was to provide relief and rehabilitation. In 1935 this was replaced by the Puerto Rican Reconstruction Administration with a two-fold program: (a) to deal with the immediate problem of the unemployed whose numbers had been increased by the depression of the 1930's; and (b) to try to develop a permanent program of economic reconstruction which would provide long run new sources of employment and income. This agency, using Federal funds, apparently laid the groundwork for much of the subsequent economic development in the Island.

In 1941 Dr. Rexford G. Tugwell was appointed Governor of Puerto Rico. One of his contributions in the field of planning activities was in the reorganization of the executive branch of the Island's government so that it had a mechanism for carrying on planning activities. Some of the agencies created in the early 1940's, and which subsequently initiated and carried out various plans, were the Land Authority, the Economic Development Administration, Water Resources Authority, and the Planning Board. Much of the activity of this Planning Board was of a zoning nature and involved land use; later it became more concerned with economic planning. Other government agencies, for example, the Department of Labor, were expanded to provide services useful for a development program. ^{40/}

^{40/} Taken from: Rexford G. Tugwell, The Stricken Land, Doubleday & Co., 1947; Harvey S. Perloff, Puerto Rico's Economic Future, University of Chicago Press, 1950, chap. 3; Thomas Hibben and Rafael Pico, Industrial Development of Puerto Rico and the Virgin Islands of the United States, Caribbean Commission, July 1948.

In this investigation we are concerned mainly with the activities of the Puerto Rico Planning Board and the Economic Development Administration and incidentally with those of the Water Resources Authority. The first agency, acting for the Governor and the executive branch of the Puerto Rican government, is largely concerned with formulating programs of action which might lead to economic growth. The latter two agencies are largely concerned with implementing such programs and actually getting developmental programs underway. Of the two, the Economic Development Administration is directly involved in attempting to increase manufacturing activity on the Island; the Water Resources Authority has the job of providing the water and electricity needed for a program of economic development (and also for domestic consumption).

The line of reasoning followed by the government and the Planning Board which led to the activities of the Economic Development Administration, was roughly as follows:

1) Geographically the Island is very small, comprising only about 3500 square miles, or about two-thirds the size of Connecticut. Much of the land is unsuitable for agriculture; all the good land was already being used to its fullest extent by 1940. Obviously improvements in agriculture were and still are possible. But it is also obvious that economic development extensive enough to increase the level of living of the present population and provide for a growing population cannot possibly be based on improved agriculture alone.

2) Other forms of economic activity, except manufacturing, cannot be counted on to provide much economic growth: Development of fisheries, of tourism, provision of services to the outside world (of which supplying soldiers to the U.S. Army is one) can contribute a little, perhaps, but cannot be counted on as the backbone of a developmental program.

3) This leaves then, manufacturing as the basic activity which must

be pushed in order to achieve economic development and provide increasing numbers of jobs.

The efforts of the Economic Development Administration (EDA) to induce the growth of manufacturing in Puerto Rico, thus became the main feature of the developmental program. However, from the very beginning, it was decided that private entrepreneurs rather than public bodies should initiate, own and operate new manufacturing plants. Hence, in essence, the activities of EDA center about the problem of attracting and encouraging private business men to invest money in the Island. At present, the essential features of this agency's program consist of the following:

- 1) a ten year tax holiday to investors;^{41/}
- 2) factory buildings erected by the EDA and leased at nominal rents;
- 3) Commonwealth government assistance in the selection and recruitment of labor, and perhaps payment of some training costs (The Puerto Rico Department of Labor aids in this phase);
- 4) Special efforts to supply extra power requirements if existing power facilities are insufficient (In this case the Water Resources Authority participates);
- 5) Availability of credit through the Government Development Bank.

The private firm which is to open and operate a factory ordinarily supplies working capital, the machinery and equipment, and the management. The investor must also know his business, in particular he must know and have sales channels in the continental United States where most of the manufactured goods are sold. EDA can give but limited assistance in either the manufacturing or selling processes.

^{41/} For details see, What You Should Know About Taxes in Puerto Rico, 1955-56 Edition. Department of the Treasury, Office of Research and Statistics, San Juan, Puerto Rico. Salient portions of this document are reproduced in Appendix B.

The essential qualification for a private investor who wishes to participate in this program, is that he produce a product which will not compete in the domestic sales market with factories already in operation. This means, in effect, producing for export to the United States. The more jobs there may be in a prospective factory, the more interested EDA will be in having the factory started.

In addition to encouraging the growth of manufacturing, Puerto Rico desires to increase the export of rum to the United States. Distilling and bottling rum provides very few jobs, approximately a thousand. However, since the Federal government returns the excise taxes collected by it to the Commonwealth government, the sale of rum in the United States becomes exceedingly profitable to the Island.

In order to carry out the above activities, authority from the Commonwealth legislature was obtained as needed.

Finally, Puerto Rican conditions are considered by the federal government in its application of minimum wage laws and certain tax regulations. Originally Puerto Rico was included under the provisions of these laws, and the 75¢ minimum hourly wage was to apply to Puerto Rico as on the Mainland. Because of hardships presumably created by this federal law, the Fair Labor Standards Act of 1938 was amended by the Congressional Act of June 26, 1940 (Public Resolution no. 88, 76th Congress). This amendment in effect lowered the minimum hourly wages in Puerto Rico on products that were to enter interstate commerce. The Administrator of the Wage and Hour Division was permitted to set rates below the statutory minimum, industry by industry as circumstances seemed to warrant.

This amendment together with the abundant labor supply has resulted in employers in factories in Puerto Rico paying hourly wage rates one-third to one-half the rates paid for similar work on the Mainland. It may be that

in some cases the productivity of this labor is only from one-third to one-half as great so that the labor costs per unit of output are as large in Puerto Rico as in the U.S. In other cases it seems clear that labor costs per unit of output are lower on the Island because of the lower wage scale. There is no question but that these lower wages have been an important "additional activity" which implicitly is part and parcel of the Commonwealth's planning activities.^{42/}

Federal fiscal measures also contribute to the success of Puerto Rican planning activities. For example, Federal income taxes do not apply to Puerto Rico; this gives real meaning to the Puerto Rican tax holiday. Furthermore, the Federal government returns to the Commonwealth government all excise taxes collected on Puerto Rican rum and tobacco sold on the Mainland. Also, the customs receipts on all dutiable foreign goods which go through Puerto Rico's ports are returned to the Puerto Rican treasury. Such funds help pay the costs of planning and promoting economic development in Puerto Rico.

Detailed Findings

Growth of Manufacturing

Value of production. The volume of manufacturing activity has grown steadily over the last decade and a half. In 1939-40 manufacturing accounted for about \$26 million net income, or about 11.6% of total Puerto Rican national income.^{43/} As of this date the EDA had not yet begun its operations. By

^{42/} Milton C. Taylor, "Tax Exemption and New Industry in Puerto Rico," Social and Economic Studies, (Jamaica, B.W.I.), vol. 4, no. 2, June 1955. See also the Statement of David Dubinsky, President, International Ladies Garment Workers' Union, before the Labor Subcommittee of the Senate Committee on Labor and Public Welfare, April 20, 1955. Statement of Fernando Sierra Berdecia, Secretary of Labor of Puerto Rico, before the above Committee, May 5, 1955:

^{43/} It would be preferable to calculate the proportion of gross national product originating from manufacturing. However, the only information available on industrial origin of income is for net national income. It is very unlikely, however, that any trends shown by analysis of gross national product would be substantially different from those presented in this report.

fiscal year 1950-51 when the EDA had already begun to attract new factories to Puerto Rico, net income from manufacturing had risen to about \$106 million, or fifteen percent of total net income, (Table 16). Part of this rise, of course, simply resulted from increases in the price level. Nevertheless, that there was a significant rise cannot be denied, since manufacturing accounted for a larger proportion of total net income in 1950-51. We know that there was no decrease in agricultural or other activities which would have forced a statistical but economically fictitious increase in the importance of manufacturing. Furthermore, the price level of manufactured products, relative to that of agricultural products, did not change sufficiently to produce an artificial and meaningless increase in the proportion of net income originating from manufacturing.

Manufacturing continued to grow and by 1954-55 its contribution to national income amounted to about \$159 million, or 17.2 percent of total net income. Part of this increase resulted from rises in the price level, but much of it was a genuine increase in the volume of manufacturing.

The possible significance of EDA's activities may be gleaned from the information on "value added by manufacturing." In 1952 the tax exempt factories had a value added of about \$36 million; by 1954 this amount had almost doubled (Table 17). Value added by manufacturing in the factories which did not have tax exemption - i.e., those not aided by the development program - increased only from about \$91 million to \$106 million in 1954. Clearly EDA's activities contributed toward the growth of manufacturing in the Island. What is not clear from the available data, however, is, -- how much of the increase in industrial activity of tax exempt factories resulted from the introduction of new factories to Puerto Rico, and how much resulted from factories already operating in the Island and managing to qualify for tax

Table 16. -Net Income Originating in Manufacturing and Other Industries,
Puerto Rico: 1939-40 to 1954-55
(millions of dollars)

Industrial Origin	Amounts			Change			%
	1939- 1940	1950- 1951	1954- 1955	'39-40 to '50-51	'50-51 to '54-55	'39-40 to '54-55	Change '39-40 to '54-55
Total	\$227.8	\$705.7	\$924.0	\$477.9	\$218.3	\$696.2	306%
Agriculture	70.5	157.7	162.3	87.2	4.6	91.8	130
All other exc. mfg.	130.9	442.2	602.8	311.3	160.6	471.9	360
Manufacturing	26.4	105.8	158.9	79.4	53.1	132.5	500
% originating in mfg.	11.6	15.0	17.2	-	-	-	-

Sources: Data for 1950-51 and 1954-55 from Net Income and Gross Product of Puerto Rico - 1940 and 1947 - 1955, Puerto Rico Planning Board, Bureau of Economics and Statistics (undated but probably 1957), San Juan; Table 2, p. 148; data for 1939-40 from Economic Development of Puerto Rico, 1940-50 and 1951-60, op. cit., Appendix Table no. 11.

Table 17, -Value Added by Manufacturing,^a
All and Tax Exempt Factories,
Puerto Rico: 1952 and 1954
(in millions of dollars)

	<u>1952</u>	<u>1954</u>	<u>Change</u>
All factories	\$ 126.5	\$ 176.6	\$ 50.1
Tax exempt	35.8	71.1	35.3
Other	90.7	105.5	14.8

Source: Puerto Rico Planning Board, 1952 Census of Manufactures, San Juan (?),
1953 (?). U.S. Bureau of the Census, 1954 Census of Manufactures,
Series: MC-PR 1, February 1956.

^aExcluding tobacco manufactures

exemption. ^{44/}

Obviously, EDA's program is most successful to the extent that additional factories are added to the Puerto Rican economy; success for the program can also be claimed to the extent that factories already existing in the Island were able to expand their activities through the aid of this program. As of the end of 1956 about 450 factories started under EDA's program were actually in operation.

Employment. One very important purpose in encouraging the growth of manufacturing was to increase employment opportunities. Hence, changes in employment in manufacturing over the last decade and a half, are as important criteria of the success or failure of the planning activities as are the value or volume of production. In 1939 prior to the start of the EDA's program, there were about 32,000 persons engaged in industry (excluding home needlework). By 1946, just as the EDA's activities were beginning to get underway, about 50,000 were so employed of whom about 1,000 were in government aided factories. After 1946 employment increased steadily and reached some 73,000 in 1956, (Table 18). Practically the entire gain was in government assisted factories.

The volume of employment in those factories not involved in any government program seems to have remained largely unchanged since 1952. The decline observed for the period 1949 to 1952 (Table 18) was due in part to decreases in employment in food processing factories very few of which are government aided. ^{45/}

^{44/} EDA data showing growth of manufacturing attributable to its activities are probably an over-estimate. Established factories may qualify for EDA assistance by increasing plant capacity, among other ways. EDA considers such establishments, in their entirety, as EDA assisted. It can be argued that strict accounting would require only the new addition to be counted in EDA's results.

^{45/} Some further error may have been introduced as the figures are estimates. The results from the 1949 and 1952 censuses had to be adjusted to each other and to the data derived from the monthly factory payroll reports as collected by the Puerto Rico Bureau of Labor Statistics. The number of employees in government aided factories is also estimated in part.

Table 18. -Employment in Manufacturing in Puerto Rico: 1939 to 1956
(average monthly employment in thousands)

Year	Total			Production workers
	Total	Government aided factories	Other	
1939	32.0 ^a	-	32.0 ^a	30.0 ^a
1947	50.0 ^b	1.0 ^b	49.0	43.0 ^b
1949	55.1	5.0 ^b	50.1	47.7
1952	56.7 ^c	16.2	40.5	50.2 ^b
1953	62.4	18.8 ^b	43.6	56.4
1954	65.7	22.0 ^d	43.7	59.0
1955	68.0	25.1	42.9	60.3
1956	72.2	31.7	40.5	64.1

Sources: 1939 data from: United States, 16th Census of the United States, 1940: Manufactures (1939) Reports for Outlying Areas, Washington, 1943.

1947 data estimated from: Puerto Rico, Department of Labor, Employment in the Manufacturing Industries in Puerto Rico, April 1946, San Juan, November 1946 (mimeographed).

1949 data from: United States, Census of Manufactures, 1949, Puerto Rico, Washington, 1951.

1952 data from: Puerto Rico, Planning Board, 1952 Puerto Rico Census of Manufactures, San Juan (?), 1954(?).

1953 to 1956 data from: Puerto Rico, Bureau of Labor Statistics, Employment, Hours and Earnings in the Manufacturing Industries in Puerto Rico, (A series publication), San Juan.

^aIncludes estimated 6000 persons employed in tobacco manufacturing excluded from Census of Manufactures.

^bEstimated

^cIncludes an estimated 7,900 employed in tobacco manufacture; 7,600 production workers.

^dAs reported in Monthly Bulletin; differs from 1954 Census of Manufactures.

Power Production

The production of electricity has increased greatly in the years since 1940. Between fiscal 1939-40 and 1955-56 production increased about six fold (Table 19). Indeed, power production for industrial use increased more rapidly than employment in manufacturing. In fiscal 1952-53 an estimated 350 KWH electricity were used per employee in manufacturing. Three years later, in fiscal 1955-56 about 420 KWH were used per employee. This increase in consumption per employee suggests an increase in mechanization and, very likely, productivity per worker, during these years.

Power production is the one industry in Puerto Rico for which time series data are available. The growth coefficient based on these data amounts to 12 percent per year. This is a very rapid rate of growth. It exceeds the rate of growth of this industry in the United States which was 10 percent and that of India which was 9 percent.

Rum Sales in the United States

During World War II great quantities of rum were sold in the United States. In fiscal year 1945-46 about 3,800,000 gallons were sold. At the end of the war the re-entry of other liquors into United States sales channels caused shipments to fall to a low of 317,000 gallons in 1947-48. At that time promotion was seriously undertaken by the government's Rum Promotion Division (part of EDA), and sales gradually climbed. By 1949-50 about one million gallons were sold. In 1954-55 about 1 1/2 million gallons were sold, and some \$15 million of Federal excise taxes ^{46/} returned to the Island (Table 20).

Government Owned Industries

Practically all factories are privately owned; hence, no comparison of the two sectors of the economy can be made for Puerto Rico as was made for

^{46/} United States excise tax on distilled spirits amounts to \$10.50 per proof gallon.

Table 19. -Production of Electricity, Puerto Rico
(million kwh)

Fiscal Year	Total	Water Resources Authority	Other
1939/40	165.9	69.6	96.4
1940/41	192.1	80.7	111.4
1941/42	231.0	96.2	134.8
1942/43	253.4	241.5	11.9
1943/44	283.5	279.1	4.4
1944/45	293.0	286.7	6.4
1945/46	350.7	342.5	8.2
1946/47	396.9	390.7	6.2
1947/48	458.6	448.2	10.4
1948/49	494.4	487.6	6.8
1949/50	539.4	529.4	10.0
1950/51	620.2	610.9	9.3
1951/52	685.0	674.0	11.0
1952/53	771.9	760.6	11.3
1953/54	873.2	860.3	12.9
1954/55	964.7	n.a.	n.a.
1955/56	1136.0	n.a.	n.a.

Sources: Puerto Rico, Bureau of Economics and Statistics, 1955 Statistical Yearbook, San Juan, 1954, p. 174.
1954/55 to 1955/56 data from Current Business Statistics, Bureau of Economics and Statistics, Planning Board, August, 1956.

Table 20. -Exports of Puerto Rican Rums to the United States:
1945-46 to 1955-56

<u>Fiscal Year</u>	<u>Gallons (millions)</u>	<u>Value (million \$)</u>
1945-46	3.7	12.5
1946-47	2.1	7.0
1947-48	0.4	1.3
1948-49	0.9	2.7
1949-50	1.1	3.0
1950-51	1.6	4.6
1951-52	1.5	4.5
1952-53	1.5	4.7
1953-54	1.4	4.4
1954-55	1.5	4.9

Source: Puerto Rico, Planning Board, Statistical Yearbook 1956; (Table 190, p. 363), San Juan.

India. There are two government owned sugar mills and one pineapple factory; how their operations compare with privately owned establishments is not known. Originally the Puerto Rican government built and operated several factories but these had been sold to private investors by 1950. One of the reasons advanced for the government disposal of its manufacturing plants was that strikes at the factories "showed the vulnerability of government in the double role of industrial labor's friend and employer."^{47/}

Practically all of the electricity is produced by the Government Water Resources Authority. Originally much of the electric power capacity was in the private sector. Apparently the private companies would not or could not expand sufficiently to supply the additional needed electricity throughout the Island, particularly in the rural areas. Hence, the government agency took over the job in 1942.

Labor Intensive Industries

As was seen, neither the Puerto Rican plan nor the various planning activities precisely specify the new factories or industries to be developed. Hence, there was no deliberate selection of certain types of manufacturing and deliberate exclusion of others (except insofar as the government did not wish to encourage the establishment of new factories which would simply replace existing ones and hence create no new net additions to the economy). Nevertheless, the government did try to encourage labor intensive industries (industries which by their very nature require a high proportion of labor, as apparel, for example) in accordance with its desire to increase employment opportunities and cut down the volume of unemployment. Since any new factory was preferable to no factory at all, however, capital intensive industries (industries which

^{47/} Government Development Bank for Puerto Rico, Quarterly Report to Investors in Puerto Rican Securities, Period ended March 31, 1956, San Juan, Puerto Rico, Vol. 3, No. 1, p.2.

by their very nature require a high proportion of capital, as oil refining, for example) were not rejected, if they otherwise appeared to be satisfactory. What type of factory was actually started in Puerto Rico as a result of the planning activities?

Before trying to answer this question it should be noted that the sugar industry must be excluded from the following analysis. Since the volume of sugar cane grown and ground is governed by the U.S. Department of Agriculture's sugar quota, this industry cannot be developed as the Puerto Rican planners or EDA officials might desire. However, sugar grinding is a fairly large segment of total manufacturing; in 1954 the number of employees in sugar mills constituted 14 percent of all employees in manufacturing, and the value added by these mills constituted 18 percent of the total value added by manufacturing for all factories in the Island. The sugar mills are all mechanized and capital intensive.

Information on the degree of capital intensity of the new factories as compared with all other factories is unavailable. Some information is available on the assets per employee in the factories started under the EDA program; this amounted to between \$5000 and \$6000 per employee.^{48/} Unfortunately data on capital assets per employee in factories existing in the Island prior to the EDA program are unavailable.

Relative to the United States very few factories in Puerto Rico can be considered capital intensive. Few industries requiring heavy machinery and equipment per employee, such as metal refining and basic chemical manufacture were established in Puerto Rico. In general the factories which were established

^{48/} Puerto Rico, Economic Development Administration, Annual Statistical Report on EDA Manufacturing Plants, 1955-56 Edition, San Juan (?), 1957, (mimeographed).

used a relatively high ratio of labor to capital, as compared with the average for all manufacturing in the United States. Those factories started under EDA auspices are relatively much more capital intensive than factories existing in Puerto Rico prior to the EDA program.

Increased capital intensity was accomplished both by introducing new factories with modern equipment to produce products formerly made by hand, and by introducing new industries which by their very nature were more capital intensive. As an example of the first case we note the increase in factory work in the apparel industry associated with a decrease in home needlework.^{49/} Home needleworkers use at the most very simple sewing machines; factory workers often use far more complicated and expensive sewing machines and other equipment. Another example of the displacement of hand work by machinery is represented by the opening of new cigar factories which produce cigars by machine rather than hand rolling.

Among new industries which by their very nature were more capital intensive than industries previously existing in the Island are oil refining, cement manufacturing, breweries and textile manufacturing.

One indication of an increase in capital intensity is the increased output per employed person. Increased output stems from the introduction of new machines as well as from other factors such as improved managerial efficiency. It has been calculated "that of the total increase of \$522 million in real net income (for total Puerto Rico between 1940 and 1954) \$325 million resulted from increased output per man year within the specified industries and the balance was attributed to shifts of employment from industries in which output per man year of labor input is lower to those in which it is higher."^{50/}

^{49/} The number of women employed in home needlework decreased from about 53,000 in 1947 to 24,000 in 1956.

^{50/} Puerto Rico, Planning Board, Net Income and Gross Product, Puerto Rico - 1940 and 1947 - 1955, San Juan (?), 1957 (?), p. 7.

During this same period manufacturing industries alone produced an increase in real net income of about \$106 million. Virtually all of this amount may be attributed to increased output per man year.^{51/}

In summary, despite the desire of Puerto Rican government officials to attract manufacturing plants which would maximize employment, the factories which were started under the EDA program tended to be relatively more capital intensive than existing factories. Furthermore, probably all factories -- EDA assisted and those established prior to EDA -- have tended to modernize and improve their productivity over the years, thereby minimizing the demand for labor. A question which we cannot answer is whether the EDA factories were as capital intensive as modern engineering and technological knowledge permits, or whether they were made somewhat less capital intensive in order to use more of the relatively cheaper labor supply in Puerto Rico (i.e., cheaper in comparison with Mainland wage rates).

The Unplanned Sector

Once a nucleus of new jobs have been started as part of the planning program of the government of an underdeveloped country, it is hoped that increases in employment will spread throughout the economy as a result of the "natural workings" of the economic system. The general idea is simple enough: the government aids in creating a number of new jobs; the persons who work at these new jobs, in turn, require raw materials or services and supplies, which must be furnished by other workers, thus helping to create secondary increases in employment. Furthermore, the people employed in these new jobs presumably earn more and hence have more money to spend than they formerly had; thus they help create additional secondary employment as a result of their increased spending.

^{51/} Ibid., Table 37, p. 202.

The Puerto Rican government hoped that the efforts it is making to promote economic development would have precisely this effect. This was expressed by a representative of the Puerto Rican Economic Development Administration who, in describing the plans and aims of his organization, reported that

"Puerto Rican economists had estimated that when the total of 'Bootstrap' (manufacturing) plants reached 905 they would account for direct employment of 77,800 workers...The United States Chamber of Commerce had estimated that new plant development created one indirect job for every direct one. This is based on the principle that a new manufacturing entity acts as an economic leavening, stimulating other activity by its supply and service needs and by employees' purchasing power. By this standard, Puerto Rico would have ... more than 150,000 industrial jobs (77,800 times two) providing support for 500,000 workers and dependents."^{52/}

Perloff, writing about Puerto Rico in 1949, was not sure about the relationship between increases in direct and indirect employment.

"As the proportion of the island's needs being supplied locally increases, the stimulative effects of expenditures can be expected to reach out in a widening circle, so that a rapid growth of manufacturing enterprises would induce a strong derived demand for service activities, for example, in the construction of new factories and homes....On the other hand, certain of the service industries, especially trade, appear to be overexpanded in terms of employment, so that increased income flowing into service industries might merely lead to the more efficient use of manpower rather than to a large increase in the number of jobs."^{53/}

With these observations in mind, let us examine the historical relationship between direct increases in employment resulting from the planning activities of the Commonwealth government (as aided by the Federal government) and such increases as may also have resulted in other sections of the economy: these other sections comprise the unplanned sector for the purposes of our analysis.

The number of persons employed by the Federal, Commonwealth and local governments (excluding agricultural workers) increased by about 26,000 between

^{52/} New York Times, "Puerto Rico Accelerates Program to Lure New Industries to Island," July 25, 1956.

^{53/} Harvey S. Perloff, op. cit., pp. 254-55.

1947 and 1956. In addition, employment in government aided factories (those sponsored by the Economic Development Administration) grew by about 30,000. Altogether government sponsored employment -- what we consider to be the planned sector -- increased by about 56,000 (Table 21).

During this decade total employment (excluding home needlework) decreased by about 10,000; agriculture experienced a decrease of about 66,000 and nonagriculture an increase of about 56,000.

Employment in what we may call the unplanned sector, then, considering the entire Island, experienced a decrease of 66,000 while government sponsored employment -- i.e., the planned sector -- increased by 56,000. This comparison would suggest that increases in employment in the planned sector had the effect of reducing employment in the unplanned section; this is unrealistic since the entire decrease was in agriculture, in which far more men were employed in 1947 than were required. Accordingly, let us compare the increase in government sponsored employment with that in the unplanned sector of nonagriculture. There was no change in the level of employment in the unplanned section of nonagriculture during the period in which government sponsored employment increased by 56,000. ^{54/}

Indeed, a decrease might have appeared in the unplanned sector if we had classed the tourist industry in the government -- i.e., planned -- sector. The hotels and most of the tourist attractions are privately owned and operated and are included in our data as part of the unplanned sector. But tourism has been actively promoted and aided by the Commonwealth government and should be included, properly speaking, under "government sponsored" employment. Much of the construction industry, which in Table 21 appears under unplanned should also be allocated to the planned sector; very much of the employment is provided

^{54/} Compare lines 1 and 9 in Table 21.

Table 21. -Employment in the Planned and Unplanned Sectors,
Puerto Rico, 1947 to 1956
(1,000)

	1947	1949	1952	1955	1956	Change 1947- 1956
1. Planned, i.e. government-sponsored employment, nonagricultural	55.5	66.8	88.0	102.8	112.4	+ 55.7
2. In government	54.5	61.8	71.8	77.7	80.7	+ 26.2
3. In factories	1.0	5.0	16.2	25.1	31.7	+ 29.5
4. Total employment, excluding home needlework	543.3	539.3	523.3	522.5	533.5	- 9.8
5. Agriculture	223.3	217.3	181.1	160.5	157.7	-65.6
6. Nonagriculture	320.0	322.0	342.2	362.0	375.8	+ 55.8
7. Employment in unplanned sectors						
8. Line 4 minus line 1	487.8	472.5	435.3	419.7	422.3	-65.5
9. Line 6 minus line 1	264.5	255.2	254.2	259.2	264.6	+ 0.1

Source: Unpublished manuscript dealing with labor force and population changes
in Puerto Rico, by A. J. Jaffe.

by private contractors working on Federal or Commonwealth financed roads and building construction. Unfortunately, we were unable to segregate employment in this industry into the two components; namely, that created or engendered by government action, and that created in response to nongovernment economic demand. Presumably, if a more precise segregation of changes in levels of employment between unplanned and government sponsorship had been possible we should have found unplanned employment to have been even less than shown in Table 21.

In short, it would seem that the creation of a nucleus of new jobs as a result of planning does not necessarily result in the spread of employment throughout the economy as a result of the "natural workings" of the economy; at least, it does not result during the initial phases of economic development. It is undoubtedly true that when a new job is created by the addition of a person to the government payroll or the opening of a new tax exempt factory (i.e., through planning) the person so employed has more money to spend. His increased expenditures, then, could -- theoretically -- create increased demand in retail distribution, various service industries, the construction industry, for utilities, transportation, etc. To satisfy his increased demand these other industries in the unplanned sector should increase their employment: this secondary employment would create tertiary employment, etc.

In reality, however, these secondary industries were operating at such low levels of worker utilization, and with so much underemployment, that they had virtually no trouble in supplying increased demands for goods and services without increasing their own employment levels. At some future date, when labor utilization has increased very significantly and underemployment has been considerably reduced, then increases in government sponsored employment will lead to increases in employment in the unplanned sections of the economy.

Summary of Findings, Puerto Rico

Puerto Rico desires to create more jobs and reduce unemployment, and achieve a higher level of living - to develop economically. To do this the government has fostered the growth of manufacturing activities and the sale of more rum in the United States market (and engaged in other activities outside the scope of our investigation).

1) Manufacturing activities increased considerably between 1939 and 1956. In fiscal year 1939-40 about \$26 million net income was derived from this sector. In 1954-55, \$159 million net income was generated. Even after allowing for a price increase of two or three fold, it is clear that there has been considerable growth in manufacturing.

2) Employment in manufacturing increased from about 50,000 in 1947 to 73,000 in 1956, primarily in factories aided by the EDA.

3) Power production also increased greatly, from 166 million KWH in 1939-40 to over 900 million KWH in 1955-56.

4) Rum shipments to the United States rose from a low point of some 317,000 gallons in 1947-48 to about 1 1/2 million gallons in 1954-55.

5) The government's plans to increase employment called for the establishment of labor intensive manufacturing industries although heavy, capital intensive industries were also welcomed. Factories introduced into the Island by EDA, however, were more capital intensive than those established prior to EDA's activities. This is indicated by the rise in output per man in manufacturing.

6) Employment increased rapidly in those parts of the economy which were most directly aided by the government. In those parts of the economy where the government's planning efforts were not directly aimed at increasing employment, there were no increases..

7) There was considerable out-migration from Puerto Rico following World War II. As a result population grew but little, and the economy could be directed almost exclusively at improving levels of living. It was not necessary to divert effort simply to provide for a growing population.

PART IV. PAKISTAN

Brief Notes on the Population and Economic Background

The primary aim of the economic development program in Pakistan, as in Puerto Rico and India, is to provide a higher level of living in the face of a rapidly increasing population.

Population^{55/}

The last census of population of Pakistan was taken in February, 1951, and reported 76.23 million people in the country. By 1960 it is expected that the population will have grown to 88.42 million. This expectation is based on an estimated rate of growth of 1.4 percent --- a very high rate of growth indeed. The estimated growth rate was calculated in the following way. The rate of increase in the population of undivided India between 1931 and 1951 was 1.29 percent. But fertility of Muslims is believed to be higher than Hindus. Kingsley Davis^{56/} estimates the differential fertility of Muslims over Hindus at 12 percent. This suggests that the annual rate of increase of the Muslim population of undivided India increased at an annual rate of 1.36 percent during 1931 - 1951. If this figure is applied to present day Pakistan, bearing in mind the percent of Muslims and non-Muslims in the population, the rate of increase equals 1.35 percent. However, two disasters occurred; a famine in 1943 and communal disorders in 1947, which were of sufficient magnitude to influence population growth. But for these the Muslim population would have been larger than the 1951 census reported. Taking

^{55/} Unless otherwise noted data on the growth of population in Pakistan are from The First Five Year Plan, 1955-1960 (Draft), pages 109 ff.

^{56/} Kingsley Davis, The Population of India and Pakistan, Princeton: Princeton University Press, 1951.

these and other factors into account, such as net immigration of 50,000 per year and an improvement in health, an estimated rate of increase of about 1.4 percent appears justifiable. From this it may be seen that during the period under study, 1951-1957, the population of Pakistan increased by about 11 percent. National income would have had to increase by at least this amount before any real improvement in the standard of living took place.

Income

No single indicator can accurately reveal the state of development of a country. Nor are economic indicators alone sufficient for this purpose. At least as important are data which indicate the welfare and position of the individual in his milieu. But if one must deal with a single indicator, per capita income is perhaps the most useful and revealing. An increase in per capita income usually indicates that national income is growing at a faster rate than population. In Pakistan, as well as in other countries undertaking development programs, increases in national income are taken to be indicative of economic progress.

Data on national income are available only for the years 1950 through 1954. During this period national income rose from Rs.17,828 million to Rs 19,086 million based on 1949-52 factor cost prices.^{57/} Using population estimates from the United Nations^{58/} and adopting 1950 as a base one may obtain

^{57/} United Nations, "Statistics of National Income and Expenditure", Statistical Papers, Series H., No. 10, New York, January 1957.

^{58/} United Nations, Monthly Bulletin of Statistics, New York, January 1957.

index numbers of real per capita national income. (See also Chart 5.)

<u>Year</u>	<u>Index</u>	<u>Year</u>	<u>Index</u>	<u>Year</u>	<u>Index</u>
1950	100	1952	96	1954	99
1951	97	1953	98		

National income statistics from underdeveloped countries are subject to many qualifications. The figures for Pakistan are no exception. However, they suggest that from 1950 to 1954 economic growth in Pakistan was barely keeping pace with population.

Summary of the Six Year Development Program of Pakistan

In accordance with a decision of the Commonwealth Consultative Committee on South and South East Asia the Government of Pakistan authorized its Development Board to draw up a Six Year Development Program. This was done during the last half of 1950 and outlined developments to be undertaken from July 1951 to June 1957. Prior to 1950, the Development Board had been engaged in examining and approving various projects proposed by the Central and Provincial Governments on an ad hoc basis. Virtually all of the projects so approved were incorporated into the six year plan.

According to the plan document,^{59/}

"Estimated expenditure on the entire plan during the years 1951 to 1957 is Rs. 2400 million ^{60/} out of which it is hoped that private capital (both foreign and local) will be able to invest Rs. 400 million thus leaving Rs. 2000 million to be financed by Government. After a very careful consideration the Government of Pakistan has come to the conclusion that they will be able to finance the entire internal expenditure of Rs. 1000 million and assistance is therefore needed to the extent of Rs. 1000 million to cover external expenditure. It is obvious that unless the external expenditure can be financed

^{59/} Government of Pakistan, Ministry of Economic Affairs, Six Year Development Programme of Pakistan, July 1951 to June 1957. Karachi, 1950 (?), (mimeographed).

^{60/} This sum was subsequently increased to Rs. 2600 million by including in the plan certain items of social capital as housing, health services and educational facilities.

Index
Numbers

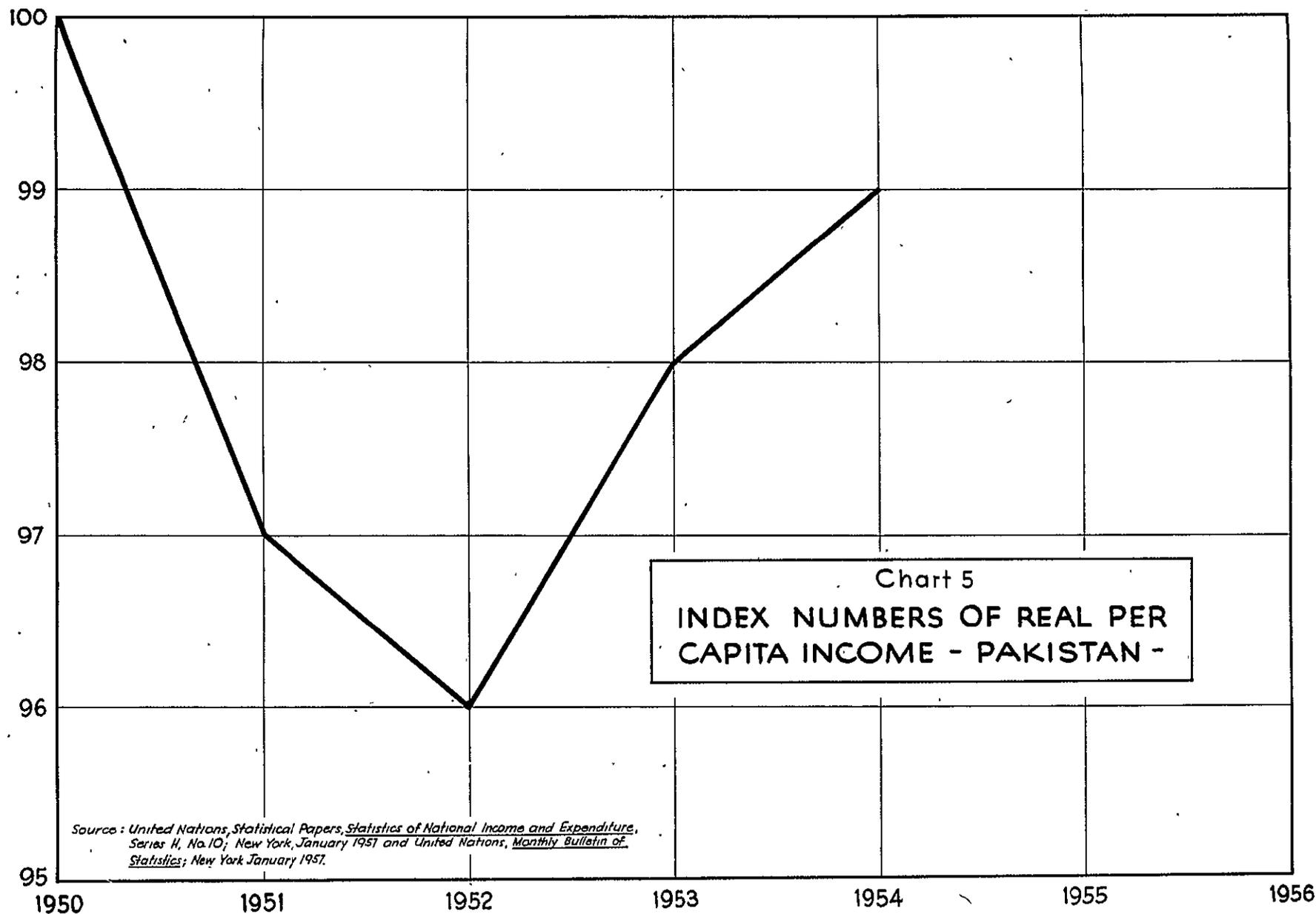


Chart 5
INDEX NUMBERS OF REAL PER
CAPITA INCOME - PAKISTAN -

Source: United Nations, Statistical Papers, Statistics of National Income and Expenditure, Series H, No. 10; New York, January 1951 and United Nations, Monthly Bulletin of Statistics; New York January 1951.

and equipment and machinery imported into the country the plan cannot be taken in hand."

The main objectives of the plan were a net increase of Rs. 800 million in the country's foreign exchange earnings, an increase of Rs. 100 million per year in Government revenues, and a thirty percent rise in the standard of living. This was to be brought about by the following expenditures:

	Rs. (million)	
Agriculture	820	
Transport & Communications	530	of which
Railroads	200	
Roads	100	
Ports	140	
Telecommunications	90	
Fuel & Power	470	
Industry & mining	490	
Social Capital	290	of which
Housing	40	
Health & medical	40	
Education	100	
Tech. training	90	
Water supply	20	
Total	2600	

From the list it will be observed that 32 percent of the total planned expenditure was assigned to agriculture including irrigation; 19 percent was earmarked for industry including mining; 18 percent for power and fuel; 20 percent for transport and the remaining 11 percent for social capital.

As in the case of India, the bulk of the Government's resources were to be applied to agriculture and irrigation, fuel and power, transport and mining. The industrial field was to be left more or less open to private investors. In other respects Pakistan's plan was quite different from India's. These differences are attributable as much to other factors as to planning concepts. For example, the Pakistan Plan was put together in

perhaps half a year's time; there existed at the time (and at present as well) a much greater shortage of economists and engineers in Pakistan than in India; the Pakistan Plan was designed not only as an overall guide to Government agencies and entrepreneurs at home but also as a basis for Colombo Plan assistance in particular projects. The result was a document which was very detailed for some projects and, by contrast, very indefinite regarding desired capacity and production of other projects.

Tables 22 and 23 summarize the industrial and power programs of the Pakistan Six Year Development Program. They are based on tables appearing in the plan document. Statements in the plan about the industrial sector assign high priority to the establishment of jute and cotton mills as at partition Pakistan, the world's leading jute grower, had not a single jute mill. High priority was also assigned to the cotton industry since Pakistan grows considerable quantities of cotton, but at the time of partition, imported virtually all of its cotton textile requirements. Power projects were also given high priority because of the power shortage.

When the Six Year Plan appeared it was understood to represent projects and targets that the Government itself was prepared to undertake and meet or that it had reason to believe private capital would undertake and meet. Later, it appears that the Government took a much less firm view of the targets and projects. This was so because: (1) the Plan was hastily drawn up and contained rather inaccurate estimates of the funds required; (2) private capital did not come forward in the amounts necessary to construct the proposed factories; and (3) the Korean War affected the program by making the supply situation increasingly difficult. The recession which followed the Korean War presented Pakistan with perhaps its most difficult planning problems.

Action taken by Government with regard to (1) above, was merely to adjust targets as necessary. With regard to (2), the Government organized the

<u>Industry and Present capacity (June 1950)</u>	<u>Capacity in June 1951</u>	<u>Requirements in 1957</u>	<u>Additional Capacity Required</u>	<u>Capacity to be Developed</u>	<u>Total Internal Production Planned</u>
<u>Textile Industry (cotton)</u>					
i. Spindles: 277,000 spindles 5,000 looms (power) 400,000 hand looms	i. Spindles: 400,000	Cloth and Yarn: 1,000,000 bales p.a. at 17 yds. per head p.a. of which 25% will be produced by handloom industry.	600,000 - 800,000 bales	600,000 Spindles	i. Spindles: 1,000,000 spindles, 75% covered by loans
ii. Production: 90,000 bales (cloth) 19,000 bales (yarn) 109,000 bales	ii. Production: 200,000 bales This production will considerably improve when the new mills get into full swing.				ii. Production: 454,000 bales (2 shifts) ^a 680,000 bales (3 shifts)

But when the new mills are in full swing the production should be 900,000 bales of cloth, including 225,000 bales produced by handlooms. This capacity should consume .78 million bales of cotton p.a. Value Rs. 600,000,000. This plan will suffice for 17 yds. per head p.a. for total population in 1957 as against present consumption of 9 yds. per head p.a.

<u>Textile Industry (wool)</u>					
<u>Negligible</u>	i. 10,500 worsted spindles ii. 6,000 woolen spindles	The present requirements are expected to increase by 25% within the next 5 yrs. and rise to 25,000 worsted spindles and 18,750 woolen spindles.	i. 14,500 worsted spindles ii. 12,750 woolen spindles	i. 20,000 worsted spindles ii. 24,000 woolen spindles iii. 10 finishing units iv. 5 hosiery knitting mills mfg woolen items only. v. 5 carpet mfg. mills for machine-made carpets	i. 30,500 worsted spindles ii. 30,000 woolen spindles iii. 10 finishing units iv. 5 hosiery knitting mills manufacturing woolen items only. v. 5 carpet manufacturing mills for machine-made carpets.

Table 22 (Continued)

<u>Industry and present capacity June 1950)</u>	<u>Capacity in June 1951</u>	<u>Requirements in 1957</u>	<u>Additional Capacity Required</u>	<u>Capacity to be Developed</u>	<u>Total Internal Production Planned</u>
<u>Jute Industry</u>					
Nil	One (1) jute mill	67,000 tons		43,380 tons	i. Looms 6,000
	i. Loomage:	(present re-		Five(5) jute mills	ii. Production 130,000
	1000 looms	quirements		i. Loomage 5,000	tons
	ii. Production:	50,000 tons)		looms	56,100 tons (bags)
	21,620 tons			ii. Production b	75,720 tons (hessian)
	9,350 tons (bags)			109,850 tons	
	12,620 tons				
	(hessian)				
<u>Paper</u>					
Nil	Nil	30,000 tons of paper and pulp products	30,000 tons of paper and pulp products	One paper mill in East Pakistan producing 30,000 tons p.a.	30,000 tons, value Rs. 33,000,000
<u>Heavy Chemicals</u>					
Fertilizers	Nil	80,000 tons	80,000 tons	n.a.	Plans for a fertilizer factory to produce 80,000 tons p.a. under preparation
Sulphuric acid					
330 tons	12,330 tons	15,330 tons	3,000 tons	n.a.	Left to private enterprise
Caustic soda	3,000 tons	20,000 tons	17,000 tons	" "	" "
Soda ash					
20,000 tons	20,000 tons	50,000 tons	30,000 tons	" "	" "
Soap (washing)					
50,000 tons	50,000 tons	55,000 tons	5,000 tons	" "	" "
(toilet)					
300 tons	52,300 tons	5,000 tons	n.a.	" "	" "
Glycerine	250 tons	n.a.	n.a.	" "	" "

Table 22 (Continued)

<u>Industry and Present capacity (June 1950)</u>	<u>Capacity in June 1951</u>	<u>Requirements in 1957</u>	<u>Additional Capacity Required</u>	<u>Capacity to be Developed</u>	<u>Total Internal Production Planned</u>
<u>Miscellaneous</u>					
Leather:					
10,750,000 prs. (shoes)	10,750,000 prs.	27,500,000 prs.	16,750,000	n.a.	Left to private enterprise
3,500,000 lbs. (sole)	3,500,000 lbs.	31,659,757 lbs.	28,159,757	" "	" "
3,700,000 sq.ft. (upper)	3,700,000 sq.ft.	27,438,546 sq.ft.	23,738,456	" "	" "
Oil: 80,000 tons	142,000 tons	300,000 tons	158,000	" "	" "
Ceramics:					
Glass					
13,200 tons	14,200 tons	30,000 tons	15,800	" "	" "
Fire bricks					
8,000 tons	8,000 tons	40,000 tons	32,000	" "	" "
Sugar: 103,000 tons ^c	107,000 tons	200,000 tons ^d	93,000	" "	" "

Source: Pakistan, Ministry of Economic Affairs, Development Board, Six Year Development Program of Pakistan, July 1951 to June 1957. Karachi, (1950?) (mimeographed).

^a Bales of yarn and cloth.

^b 46,750 tons of bags and 63,100 tons of hessian cloth.

^c 42,000 tons produced in East Pakistan and 61,000 tons produced in West Pakistan.

^d 100,000 tons to be produced in East Pakistan and 200,000 tons to be produced in West Pakistan. (These figures taken from the plan appear to be in error. Subsequent calculations are based on a target of 160,000 tons.)

Table 23. -Power Development Program, Pakistan^a
(capacity in kw)

	<u>Hydro</u>	<u>Thermal</u> ^b	<u>Total</u>
I. The Six Year Plan (1951-57)	207,000	40,300	247,300
II. The Two Year Priority Program	nil	140,000	347,300
III. Installed Capacity in 1951	20,700	95,700	116,400

Source: (1) Pakistan, Ministry of Economic Affairs, Development Board, Six Year Development Program of Pakistan, July 1951 to June 1957. Karachi (1950?) (mimeographed).
(2) Great Britain, Board of Trade, Overseas Economic Surveys, Pakistan: Economic and Commercial Conditions in Pakistan, 1954. London: H.M. Stationery Office, 1955.
(3) U.N., Statistical Year Book, 1956. New York, 1956.

^aPublic utilities only.

^bIncludes diesel power plants.

Pakistan Industrial Development Corporation (see section on Mechanisms for Carrying out the Plan) which became a most important factor in Pakistan's industrialization program. The Korean War resulted in substantial foreign exchange earnings for Pakistan. As, however, the capital goods supply situation became difficult in 1951, the Government selected a number of projects for special developmental effort which, when taken together (Table 24) became known as the Two Year Priority Program. This was drawn up in March 1951.

The Two Year Priority Program, like the Six Year Plan also underwent certain modifications. In some cases the targets have been exceeded and new industries have been added; other schemes have not been proceeded with and others again have not yet been completed. For the purposes of our analysis progress made in implementing the Two Year Priority Program will be considered concurrently with progress of the Six Year Plan.

The deterioration of the world market for Pakistan's exports after the Korean War had an adverse effect on Pakistan's development program. The appearance of a food shortage compounded the problems. Delay in imposing stringent controls on imports put pressure on Pakistan's foreign exchange reserves. Nevertheless, industrial production continued to rise as, with assistance from the United States and the Colombo Plan, industries were built and the food position stabilized.

In the spring of 1953 Pakistan emerged from its recession. The foreign exchange budget was balanced by restricting imports of consumers' goods and by drawing down stocks already in the country. Substantial gifts of wheat from the United States made this possible. All available resources were put into increasing agricultural and industrial production. At this point the Government of Pakistan decided to review the Development Program and methods for carrying it out. The results of this review were a

Table 24. -Two Year Development Program, Pakistan

Projects	Estimated Cost (million Rs.)
(1) Transport and Communications	<u>127.7</u>
Construction of a commercial drydock, Karachi	12.1
Expansion of ship-repairing facilities in East Pakistan	30.0
Formation of a national steamship corporation	30.0
Purchase of 15 ocean going steamers	30.0
Establishment of a mercantile marine academy	3.0
Purchase of three Convair aircraft	6.5
Line stores factory	1.0
Telephone factory	3.3
Installation of wireless transmitters, wireless receivers and aerial equipment	5.0
Installation of high frequency radio equipment for telegraph and telephone	6.8
(2) Fuel and Power	<u>135.7</u> ^a
Additional capacity thermal stations at:	
Karachi	30,000 kw
Hyderabad (Sind)	20,000 kw
Lyallpur (Punjab)	30,000 kw
Chittagong	20,000 kw
Khulna	10,000 kw
Narayanganj	20,000 kw
(3) Industry and Mining	<u>244.1</u>
Wires and cables plant	8.0
Cotton textiles - additional 250,000 spindles	75.0
Steel melting, re-rolling and fabricating mills	63.5
Leather and footwear	5.0
Cement - two factories	20.0
Jute mills - 4 of 500 looms each	45.0
Straw-board, box-board, etc. 3 factories	10.5
Caustic soda	3.0
Power alcohol	2.0
Pharmaceuticals and chemicals	6.0
Rubber tires and tubes	---
Cotton seed oil mills, two plants of 50,000 tons annual capacity	4.5
Coal tar distillation pilot plant	1.1
Antimony refining plant	0.5
Establishment of a pool of drilling machines	---
(4) Agriculture	<u>10.6</u>
Grand Total	518.1

Source: The Colombo Plan: Report of the Commonwealth Consultative Committee on Economic Development in South and South East Asia. H.M. Stationery Office, 1952.

^a This figure has been revised upward.

^b Not available and not included in totals.

comprehensive revision of plans and Government planning organs. A Planning Board was set up in 1953 which inter alia was:

"to assess the resources -- material and human -- which can be made available for development during the next five years beginning from 1st April 1954 and to prepare a national plan of development based on the fullest possible utilisation of those resources for implementation in a period of five years from 1st April, 1954, as a step towards the attainment of the economic and social objectives of the Government's policy." ^{61/}

The Planning Board has completed a five year development plan covering the period from 1955 to 1960. Although it supercedes the six year plan, it does not indicate any large scale abandonment of projects already underway.

Mechanisms for Carrying Out Plans^{62/}

Introduction

The industrial policy of the Government of Pakistan was outlined in a statement made in April, 1948. On the question of planning it was considered necessary that industrial development should be carried out according to a well defined and integrated plan drawn up and administered by the central government. This was a departure from British practice prior to 1947, under which development of industries was a provincial subject.

Development planning by the central government is not considered in any way to be a substantial restriction on opportunities for private industry. On the contrary, the government stated (in 1948) that it would create conditions in which private industry and trade may develop and prosper. However, it is noted in the policy statement that communication services

^{61/} From the Government resolution constituting the Planning Board as reproduced in Great Britain, Board of Trade, Overseas Economic Surveys, Pakistan, Economic and Commercial Conditions in Pakistan, 1954. London: H.M. Stationery Office, 1955, page 38.

^{62/} Much of the material in this section is from: U.S. Department of Commerce; Investment in Pakistan, Conditions and Outlook for United States Investors, Washington, June 1954, and Great Britain, Board of Trade, Overseas Economic Surveys, Pakistan, ibid.

such as telephone and telegraph, wireless and broadcasting, and transport services such as railroads and some road transport facilities are already government owned while civil aviation was to be nationalized. Other industries scheduled for government ownership are arms and munitions manufacture, hydro-electric power stations and manufacture of railway wagons, telephone, telegraph and wireless apparatus.

The statement on industrial policy outlines the various assistance measures which industry may expect. These include tariff protection, tax exemptions and the establishment of an industrial finance corporation. These measures, and others, are discussed below. Finally, central planning in Pakistan is concerned with twenty seven major industries and industrial groups. These are listed in Appendix C. Not only does the government plan for these industries, but it has also undertaken to establish factories in those instances where private capital is unwilling or unable to do so because of "its own inherent limitations or the nature of the industry."

Aids to Encourage Private Investments

Tariffs. -- Pakistan's tariff system is predominantly a revenue producing device. Protective duties, however, are levied under an act of 1950 which established the Pakistan Tariff Commission. The principle of protection of industries was contained in the policy statement of 1948. It is there recorded that the government will always be prepared to give favorable consideration to claims for a reasonable measure of protection for industries established in Pakistan.

The Pakistan Tariff Commission is required to satisfy itself that the industry is operating with reasonable efficiency, that it will improve its operations so that within a reasonable time it may be expected to face foreign competition without protection and that the establishment is essential to the security or economy of the country. The Tariff Commission may in

addition, or in the alternative, recommend any other forms of assistance which may be given to the industry by the central and/or provincial governments.

Finance Corporations. -- There are five government sponsored finance corporations which have been developed in Pakistan since 1948 to promote the growth of agriculture, industry and commerce and the rehabilitation of refugees. (Table 25.)

The purpose of the Industrial Finance Corporation is to encourage venture capital and provide medium and long term loans to industrial concerns which are broadly defined to include in addition to manufacturing, companies generating power and mining enterprises. The Corporation may make loans not only to public limited companies and cooperatives but also to private limited companies and unincorporated private companies.^{63/} It also assists by underwriting the issue of stocks, shares, bonds or loans raised elsewhere. It does not subscribe directly to the shares or stock of any company. In order to assure proper management it reserves the right to nominate one or two directors on the managing boards of the concerns.

Pakistan Industrial Development Corporation (P.I.D.C.). -- Despite the various forms of assistance offered to industry, private investment in manufacturing during Pakistan's earlier years proved disappointingly small (the cotton textile industry was a notable exception). The Pakistan Government therefore decided to implement the suggestion in the statement of industrial policy of 1948 that it might find it necessary to participate directly in the establishment of certain factories. The Pakistan Industrial Development Corporation Act, 1950 (which came into force in 1952) established a government controlled corporation to promote certain key industries, i.e., jute and

^{63/} A "Public Company" is one in which the shares are widely held and traded on the public market. A "Private Company" is one in which the shares are not traded publicly and the shareholders are few.

Table 25. -Government Sponsored Finance Corporations, Pakistan
(Rs. million)

Corporation	Date Incorporated	Authorized Capital	Issued and Paid up Capital	Government Share (percent)
Pakistan Refugee Rehabilitation Finance Corporation	April, 1948	30	16.7	100
Pakistan Industrial Finance Corporation	July, 1949	30	20.0 ^{1/}	51
Agricultural Development Finance Corporation	July, 1952	50	not issued	
Housebuilding Finance Corporation	Nov., 1952	50	not issued	
Pakistan Insurance Corporation	Jan., 1953	10	2.0	90

Source: Great Britain, Board of Trade, Overseas Economic Surveys, Pakistan, Economic and Commercial Conditions in Pakistan, 1954. London: H.M. Stationery Office, 1955, p. 64.

^{1/}Rs. 10.2 subscribed by the Government and Rs. 9.8 million by the State Bank, commercial and corporate banks, insurance companies and the general public.

paper, heavy engineering, shipbuilding, heavy chemicals and fertilizers. Sugar, cement, and textiles were added to the list of key manufactures. The development of power from natural gas, chemicals, pharmaceuticals and dyestuffs were added in 1954.

The P.I.D.C.'s authorized share capital amounted to Rs. 10 million. The Corporation was to take the initiative in the field of industry; it was to build factories with funds provided by the Government. It would also, in suitable cases, assist private capital in its projects. It was the intention that, when the projects were completed and successfully in operation, the P.I.D.C. would transfer the share capital gradually to private investors. In the meantime, however, the Corporation was responsible for establishing individual companies to operate under the Companies Act for specific industrial projects. In most cases the Corporation was to act as managing agent for such companies.

Since its founding the Corporation has been most active. It has finalized plans or commenced investigations for establishing over 35 industrial projects. It has become the principal agent in carrying out the government's industrial development plans. Pakistan's revised budget estimates for 1953-54 provided Rs. 96 million for Corporation sponsored projects: the 1954-55 budget estimates allocated Rs. 114.4 million for this purpose.

Tax Exemptions. -- Central Government income tax rates are quite high, both for corporations and for individuals. However, special concessions are available to new investors. The Statement of Industrial Policy of April 1948 deals with tax concessions in the following terms:

Despite its stringent budgetary position, the Pakistan Government recognise that taxation policy should, so far as possible, investigate the hazards to which new industrial projects are likely to be subject

for some time to come and that a reasonable opportunity and level of profit should be allowed to those who take part in the industrial development of the country. The following taxation relief measures have been offered to industry:

(1) New industrial undertakings using power driven machinery and employing more than 50 persons in Pakistan are, during the first five years beginning with the 1948-49 assessment, exempt from income-tax, super tax and business profits tax on so much of their profits as do not exceed 5 percent of the capital employed.

(2) A special depreciation allowance (which is in addition to the normal depreciation allowance) is given in the first year at the rate of 15 percent on buildings erected between 1st April 1946 and 31 March 1953 and at 10 percent on other buildings.

(3) Initial depreciation is allowed at 20 percent in the case of machinery or plant installed where the machinery or plant has not previously been used in Pakistan.

(4) Depreciation in respect of plant and machinery installed on or after 1st April 1948 and before 1st April 1953 is allowed at double the prescribed rate.

(5) An extra depreciation allowance is given on machinery and plant at 50 percent of the normal rate for double shift operation and at 100 percent of the normal rate for triple shift operation, proportionate to the number of days during which double and triple shifts are worked.

Remittance of Profits, Repatriation of Capital and Investments. -- Prior to November 1954 the policy on remittance of profits and repatriation of capital was not too clear and perhaps involved some difficulty for businessmen. After that date the policy was reviewed in order to provide additional incentives

to foreign investors. The revised policy provides that:

- (1) Capital invested in Government approved projects after September 1954 may be repatriated at any time to the country from which the investment originated,
- (2) Profits invested in approved enterprises may be considered capital and may be repatriated.
- (3) Appreciation of any capital investment under (1) and (2) above may also be considered as investment for repatriation purposes.
- (4) Such repatriation facilities will be subject to exchange control regulations as are in force from time to time.

The remittance of profits is governed by a number of limitations including exchange control although the Statement of Industrial Policy says that the Government "will allow facilities for the remittance of a reasonable proportion of profits to countries from which capital is drawn."

Other Means Designed to Assist Industry. -- The importation of capital goods generally receives preferential treatment. For example, in 1951-52 imported capital goods were exempted from sales tax and in 1953 from import duties. Some basic raw materials are also exempt from customs duty. Investments in approved industries are not liable to state taxes.

Assistance in Recruiting Skilled Labor. -- In 1954 there were 17 employment exchanges located in the main industrial centers and in important towns, but only a small number of workers were processed. Since there is a shortage of skilled workers and an abundant supply of unskilled labor, the Ministry of Labor operates several training programs for the purpose of providing trained operatives in a variety of trades.

Government Controls

Regulation of Industry. -- The Development of Industries (Federal

Control) Act of 1949 as amended in 1952 and the "Development of Industries Rules, 1950" authorize the central government "to plan and regulate the setting up of any new undertaking or the development of any new or existing undertaking" in 27 scheduled industries.^{64/}

The Rules require that all existing industries register and thereafter, biannually, supply statistics to the central government in accordance with a fixed standard form. New industrial undertakings are required to apply for permission to operate and such permission, if granted, may contain such conditions as the "Central Government may see fit to impose, in particular regarding the location and size of the undertaking, the minimum standards in respect of the quality of raw materials and products, and the equipment to be provided therein."

It is stated that the purpose of the Act and the Rules is to gather statistics so that proper planning may be conducted and to aid industry by preventing overproduction and making the best use of available resources. The central government is empowered to publish plans, and to "appoint or demarcate areas for the establishment of new industrial units."

Import and Export Controls. -- Import controls were established under the terms of the Imports and Exports (Control) Act, 1950, which empowered the Government of Pakistan to "prohibit, restrict, or otherwise control the import or export of goods of any specified description, or regulate generally all practices (including trade practices) and procedures connected with the import or export of such goods..."

During most of the period under study, Pakistan found it necessary to exercise a stringent licensing policy in order to conserve foreign exchange. Most liberal treatment was accorded imports of industrial materials and capital goods. Controls are used to favor imports from soft currency

^{64/} See Appendix C for list of scheduled industries.

areas.

Export licensing policy is much more liberal than import policy. Control policy in this case seeks to direct exports to hard currency areas. Destinal controls are also used to assure fulfillment of obligations under trade agreements.

Exchange Controls. -- Exchange control regulations in Pakistan are similar to those in force in other sterling-area countries. Balance of payments problems and mobilization of domestic capital for development are the reasons for controls. Transactions in foreign exchange, securities, currency and bullion are controlled. The State Bank of Pakistan is in overall charge and all exchange must be bought and sold at rates authorized by the State Bank.

Labor Regulations. -- Legislation of pre-partition India affecting labor was taken over by the Government of Pakistan. These included acts covering workmens' compensation, employers' liability and industrial disputes, among others. But perhaps as important as legislation are the unwritten social conventions which govern labor relations. For example, new industrial concerns are expected to provide housing and medical aid. Many Pakistani workers enjoy a large number of paid holidays, annual leave, sick leave and other forms of permissible leave with pay. It is also conventional in many plants to distribute an annual bonus to workers based on company profits.

There are two important factors which affect foreign firms in Pakistan: (1) it seems to be tacitly agreed that foreign firms will pay higher wages, and (2) Pakistani citizens must participate both in the technical and administrative branches of foreign firms. To insure that this is accomplished, training facilities must be provided. The second factor is formalized in the Statement of Industrial Policy of April 1948.

Controls on Price, Production and Distribution. -- Originally initiated as a war measure, a number of controls on price, production and distribution continue in force or are revived as the exigencies of the situation require. The act under which the controls are imposed specifies certain essential commodities such as foodstuffs, cotton and wool textiles, paper, petroleum and mica, among others. Provincial governments may be delegated the authority to exercise the controls.

Detailed Findings

Introduction

Economic planning in Pakistan has gone through quite distinct phases from government interest in a limited number of projects to the adoption of a formal national development plan. An intermediate stage in Pakistan's planning was represented by the Six Year Development Program which began in mid 1951 and was to have been completed by mid 1957. A Two Year Priority Program (1951/53) was to have been implemented concurrently with the six year program. In 1954 a Five Year Plan was drawn up covering the period 1955 to 1960. This was the latest and most comprehensive of Pakistan's planning measures.

We have taken the Six Year Development Program and the Two Year Priority Program as our frame of reference from which has come, inter alia, information about Pakistan's industrial targets, ownership and priorities. It is true that the six year program has been superseded by the recently adopted Five Year Plan. But this need not concern us as most of the projects in the six year plan continue to be implemented. Furthermore, study of the results attained under the six year plan is desirable as it affords consideration of a planning situation intermediate in the extent between India and Puerto Rico.

There are, however, certain difficulties which a loosely drawn plan,

such as the six year plan, creates for those who attempt to evaluate its progress. Targets change, projects are quietly dropped, others may be added, priorities alter, etc. Perhaps even more important than changes in the plan is the dearth of statistical data about results, especially time series data. The reliability of statistical data when it is available is a matter about which the Government of Pakistan may speak for itself:

"Reliable statistical information on the development of industry in recent years is far from complete. Some data are available from the census of manufactures which is based upon an annual report from owners of factories employing 20 or more persons using power. The census of manufacturers has been completed for only one recent year, 1953, and very many firms which should have reported did not do so. The Department of Supply and Development has gathered considerable information about basic industries. A number of items of information are available also about the production of certain goods -- cloth, cigarettes and cement, for example -- which are reasonably reliable and correct and a large volume of miscellaneous figures for different individual industries, many of which are estimates of varying reliability. These data leave a great deal to be desired.... For some of the smaller industries for which data were not available we (the Planning Board) made our own estimates. The limitations of the underlying data must always be borne in mind." ^{65/}

Priority Assigned to Industries

The six year plan document does not deal with priorities in a manner that would permit the investigator to segregate the industries into, say, three priorities as was done in the case of India. With the exception of a statement about the high priority assigned to electric power developments the industries included in the plan are all characterised as "basic". Fortunately, however, there is a quite definite indication from the government which industries it considered, if not more important than others, at least as deserving special developmental attention. These are the industries, the development of which was assigned to the Pakistan Industrial Development Corporation. In the analysis which follows planned industries are divided into two categories; those for which the P.I.D.C. was responsible and all others.

^{65/} Pakistan Planning Board, The First Five Year Plan 1955-60 (Draft), Karachi: Manager of Publications, 1956, p. 217.

The question of priorities was also considered by the Economic Appraisal Committee ^{66/} which reported to the government early in 1953 about progress of the development program. Four general criteria were given as guides to govern the planning of industrial growth -- utilization of local raw materials, reduction of imports, maximization of productivity and the general welfare of the country. It is clear that these criteria are too general to use in assigning priorities. The Economic Appraisal Committee appears to have recognized this later in its report when it stated that cotton and jute manufactures should have high priority because the ratio of value of finished goods to capital invested was high and investment per worker employed was low. Other products mentioned as eligible for high priority were: (a) medicines and pharmaceuticals, (b) insecticides and disinfectants, (c) refined petroleum and allied products, (d) chemical fertilizers, (e) certain heavy chemicals, and (f) materials on which other industries depend, such as cement. It may be noted that most of the industries listed are among those for which the P.I.D.C. was responsible.

P.I.D.C. Industries Compared with Other Planned Industries

As was noted earlier, the P.I.D.C. is a government corporation the function of which is to participate directly in the establishment of certain industries which are considered essential to the development of the country and which have not had investments from private sources in sufficient amounts. It is stated in numerous government publications that the results of reliance upon private enterprise for industrial development were not promising and that the government had to take action. In accordance with an act of 1950 the P.I.D.C. was entrusted with the development of nine industries: (1) jute, (2) paper, (3) sugar, (4) textiles, (5) heavy chemicals,

^{66/} Pakistan, The Economic Appraisal Committee, Report of the Committee, November 1952, (Reviewed February 1953), 2 Vols., Karachi, 1953.

(6) fertilizers, (7) ship-building, (8) cement, (9) iron and steel. Later natural gas, power produced from natural gas and pharmaceuticals were added to the list.

The above list comprises the backbone of Pakistan's industrial program. It is of interest, therefore, to examine in as much detail as the data permits the progress of these industries in terms of the plan and in comparison with other planned industries which were not included under P.I.D.C. jurisdiction.

Before analyzing the data presented in Table 26, it is necessary to explain that none of the P.I.D.C. industries are reserved exclusively for government development. On the contrary, the government is desirous of having private capital participate in the companies formed to develop those industries, and when opportunity affords, to sell the Government's holdings to private interests. Some industries are wholly or almost wholly P.I.D.C. owned; the fertilizer and paper industries are examples. Others have substantial P.I.D.C. investment; P.I.D.C. has invested about one-third of the capital in the jute industry. The cotton textile industry is virtually in private hands, an exception being one spinning mill owned by P.I.D.C. in East Pakistan. These industries are all recent developments. The cement, woolen textile and sugar industries are examples where private capital predominates. In the chemical industry the situation is quite mixed. Some products are produced in wholly P.I.D.C. owned factories, others in jointly owned establishments and still others in privately owned plants. And for natural gas transmission, P.I.D.C. has joined with international oil companies to form a new company.

Percentage of Target Achieved

Of the fifteen industries for which there is a definite

Table 26. -Progress of Planned Industrial Development, Pakistan
(Percentage of target achieved; P.I.D.C. and non-P.I.D.C. industries)

<u>Industry</u>	<u>Target Achieved- Percent</u>	<u>Target^{a/} Source</u>	<u>Production Data^{b/} Source</u>
<u>P.I.D.C. Industries</u>			
Cement	163	2 year plan	Monthly Bulletin of Statistics
Jute goods	110	6 year plan	do
Cotton cloth ^{c/}	109	do	do
Paper ^{d/}	77	do	do
Woolen spindles ^{e/}	54	do	Weekly Bulletin
Sulphuric acid ^{f/}	30	Revised target based on 6 year plan	Calculated
Sugar	28	E.A.C.	Monthly Bulletin of Statistics
Caustic soda	17 ^{g/}	Revised target	Calculated
Soda ash	7 ^{h/}	6 year plan	do
Ammonium sulphate	0 ^{i/}	do	
<u>Non-P.I.D.C. Industries</u>			
Upper leather	86 ^{j/}	do	Economic Indicators, January 1957
Glassware	15 ^{k/}	do	Economic Appraisal Committee
Tires and tubes	No target	2 year plan	Monthly Bulletin of Statistics
Steel ingots	do ^{m/}	do	Planning Board Estimate
Steel re-rolling	do ^{m/}	do	do
Antimony refining	0 ^{n/}	do	Progress of Economic Development
Coal tar derivatives	0	do	do
Power alcohol	0	do	do

Note: The following P.I.D.C. industries could not be included in the table because of a lack of target information or production data: pharmaceuticals, gas transmission and power from natural gas and ship-building. The following planned industries could not be included in the table for the same reason: wires and cables and fire brick. Soap and vegetable oil were also omitted because large amounts are produced by cottage industries while available data only cover a portion of actual production.

Table 26. (Continued)

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- a/ (1) The 2 year plan refers to a list of industries compiled by the Government of Pakistan during the Korean War. The list became known as the Two Year Priority Program, March 1951 to March 1953.
- (2) The 6 year plan refers to the publication, Six Year Development Program of Pakistan, July 1951 to June 1957. Ministry of Economic Affairs, Karachi.
- (3) Revised targets are discussed in Appendix D.
- (4) E.A.C. refers to the publication, Report of the Economic Appraisal Committee. Ministry of Economic Affairs, Government of Pakistan.
- b/ (1) Monthly Bulletin of Statistics is a serial publication published by the Central Statistical Office.
- (2) Weekly Bulletin refers to the publication of the same name (annual number) published by the Department of Supply and Development in Karachi in September 1956.
- (3) Economic Indicators (January 1957) is a publication of the Ministry of Economic Affairs (Secretariat of the National Economic Council).
- (4) Planning Board Estimate refers to the publication, The First Five Year Plan 1955-60 (Draft). The Planning Board, Karachi, 1956.
- (5) Progress of Economic Development in Pakistan refers to a publication of the same name.
- c/ See Appendix D: Revised Targets, for method used to determine target and production figures on cloth.
- d/ The two year program mentions two additional paper factories to manufacture straw-board and box-board. Both of these factories came into production in 1955 and the production data used to calculate the percentage of target fulfilled contains the output of the factories. However, the target which was used in this calculation reflects only the capacity of a plant completed in 1953.
- e/ Recent production data are not available. Data on spindles installed include those under installation in 1956.
- f/ As up to date data on sulphuric acid production are not available the percentage of target achieved was calculated on the liberal assumption that existing capacity was being fully utilized except in the case of a 6000 ton per year plant in Lyallpur where it was only possible to allow 50 percent utilization of capacity. A superphosphate plant is being added to this plant which will use about half the acid the plant is capable of producing. See also Appendix D: Revised Targets.
- g/ As up to date data on caustic soda production are not available the percentage of target achieved was calculated on the liberal assumption that the only plant producing caustic soda for sale in 1956 was operating at 100 percent of its 10 ton per day capacity.
- h/ As of the end of 1956 there was only one factory producing soda ash. Production data for this plant cover the period up to 1954 when production was in excess of rated capacity. It is believed that this production could

Table 26. (Continued)

not have been exceeded by the end of 1956. Percentage of target achieved was calculated from the 1954 production figure.

- i/ The fertilizer factory is under construction. The International Cooperation Administration, a major contributor to the cost of construction, advises that the plant will come on stream late in 1957. As its capacity is only 50,000 tons per year and the six year plan gives a target of 80,000 tons per year the best possible percentage would be 63 percent.
- j/ The industry also manufactures sole leather. Sole leather achieved 78 percent of its target.
- k/ Based on 1954 production. It is probable that production had not increased appreciably by 1956. This may be deduced from data on silica sand mined. Silica sand is an essential raw material for the manufacture of glass. In 1956 the amount mined was the same as the amount produced in 1954. In 1955 the amount mined was less than the 1954 production. The plan calls for the production of 10 million square feet of sheet glass. This has not been included in the calculations of percentage of target fulfilled.
- m/ By placing steel ingots and steel re-rolling among non-P.I.D.C. industries a justifiable distinction is made between these industries and the production of iron and steel from ore. The P.I.D.C. appears to be primarily interested in the latter.
- n/ A mining lease for antimony has been granted and the leasee is required to set up a refining plant. This had not actually occurred by the end of 1956.

target^{67/} and recent production data (see Tables 26 and 27) only a third -- five of the fifteen -- attained 70 percent or more of target. P.I.D.C. industries did better; four of these ten industries fulfilled the target. Only one of the five non-P.I.D.C. industries fulfilled over 70 percent of target. These results are somewhat similar to those found in India and tend to confirm the observation that those industries which are given highest priority and most attention from the government are more likely to be successful.

As may be noted from Table 27, a number of industries could not be included in the distribution because of the dearth of production or target data. The following general information about some of those industries and about some industries where apparently less than 70 percent of the targets were met should be considered now.

(1) According to the Planning Board the number of woolen spindles currently (1955) operating, plus those under installation, are considered to be sufficient to produce the amount of woolen cloth and yarn required by Pakistan and it therefore recommended that no more spindles be installed. If this recommendation was adopted, and it is likely to have been, its effect would be a reduction of the target given in the six year plan, and a considerable increase in target achieved.

(2) It is true that the ammonium sulphate plant was to have been completed early in 1956, and until it is completed, the percentage of target achieved must be zero. However, it is under construction and it is likely to be in production late in 1957. It is not unreasonable to assume that it will be producing at or near its rated capacity shortly thereafter.

^{67/} There is no target for antimony, coal tar derivatives and power alcohol. They have, nevertheless, been included. Had any one of them actually begun production it would have been necessary to consider whether such production was sufficient to place the industry among those achieving 70 percent of target as in the case of ammonium sulphate, tires and tubes, and steel.

Table 27. -Distribution of Industries by Percentage of Target Achieved, Pakistan

<u>Percentage of Target Achieved</u>	<u>P.I.D.C. Industries</u>	<u>Non-P.I.D.C. Industries</u>	<u>Total</u>
0 - 29	4	4	8
30 - 69	2	0	2
70 - 100	1	1	2
100 +	3	0	3
Total	10	5	15
Number achieving 70 percent or over	4	1	5
Percent of Total Achieving 70 percent or over	40	20	33

Source: Table 26.

(3) There was no production of cycle tires and tubes in Pakistan prior to 1948. By 1954 about 2 million tires and tubes were being made.

(4) Steel ingots production has increased considerably since 1948, but current production is still about half of installed capacity. The same condition obtains in the re-rolling branch of the industry.

From the foregoing it may be permissible to consider the ammonium sulphate industry as among P.I.D.C. industries which fulfilled 70 percent or more of target. The woolen cloth industry may also be considered among the better P.I.D.C. performers if one allows a target reduction as proposed by the Planning Board.

Among non-P.I.D.C. industries cycle tires and tubes may be put in the 70 percent or better category but the steel ingot and steel re-rolling industries, while making considerable increases in production do not appear to have come up to expectation and may therefore be considered as being under the 70 percent dividing line.

The above information is reflected in a revised distribution:

<u>Percentage of Target Achieved</u>	<u>P. I. D. C. Industries</u>	<u>Non-P. I. D. C. Industries</u>	<u>Total</u>
0 - 69	4	6	10
70 +	6	2	8
Total	<u>10</u>	<u>8</u>	<u>18</u>
Percentage of Total Achieving 70 percent and over	60	25	44

The reasoning used to arrive at the above distribution is such as to present most favorably the progress of industrial production in Pakistan. It may be observed that:

(1) Less than half the industries listed in the six year plan achieved

70 percent of the target specified.

(2) P.I.D.C. industries did much better than non-P.I.D.C. industries.

This tends to support the thesis that those industries in which governments have the most interest achieve the best results.

This result is not wholly unexpected: industries for which P.I.D.C. are responsible appear to have very important advantages over those without P.I.D.C. attention. An important feature of P.I.D.C. interest is its influence with government bureaus in such matters as foreign exchange allocation and import licenses, among others. In a situation such as exists in Pakistan this kind of influence is often crucial to the development of an industry. It is not unusual for private capital to require P.I.D.C. sponsorship before investing in such industries as heavy chemicals, paper and fertilizers. The P.I.D.C. has also been able to assist private entrepreneurs, who, for reasons common in underdeveloped countries such as poor managerial skills or inadequate market analysis, have been unable to operate a factory successfully. This is possible because of P.I.D.C.'s position as a government corporation and its diverse industrial interests. For example, the capacity of two sulphuric acid plants, one in East and the other in West Pakistan, were found to be in excess of the market for the acid. The plant in East Pakistan was incorporated into a P.I.D.C. paper factory and the other was integrated into a superphosphate plant being erected by P.I.D.C.

Growth Co-efficients: P.I.D.C. and Non-P.I.D.C. Industries

Time series data were available for nineteen industries ^{68/} included in the six year plan and the two year priority program. Growth co-efficients calculated from these data (Tables 28 and 29) show that the median growth was 0.13+, about the same as in India.

^{68/} Three of the nineteen did not start at all.

Table 28. -Progress of Planned Industrial Growth, Pakistan
(Growth co-efficient: P.I.D.C. and non-P.I.D.C. industries)

<u>P.I.D.C. Industries</u>	<u>b/My</u>	<u>Non-P.I.D.C. Industries</u>	<u>b/My</u>
Jute goods	0.42	Leather tanning	0.31
Cotton cloth	0.29	Tires and tubes	0.31
Sulphuric acid	0.25	Steel re-rolling	0.28
Sugar refining	0.14	Petroleum refining	0.20
Pharmaceuticals	0.13	Steel ingots	0.17
Woolen and worsted yarn	0.12	Glassware	0.14
Cement	0.10	Antimony refining	0.00
Cotton ginning	0.08	Power alcohol	0.00
Jute baling	0.07	Coal tar derivatives	0.00
Soda ash	0.04		

Source: See Table 26

Table 29: -Distribution of Industries by Growth Co-efficient, Pakistan
(P.I.D.C. and Non-P.I.D.C.)

<u>Growth Co-efficient</u>	<u>P.I.D.C.</u>	<u>Non-P.I.D.C.</u>	<u>Total</u>
Under .05	1	3	4
.05 to .12	4	0	5
0.13 and over	5	6	11
Total	10	9	19
Percent 0.13 and over	50	66	57

Source: Table 28

It may be observed that five of the ten industries in the P.I.D.C. category grew at the median rate or faster, and that six of the nine industries without P.I.D.C. attention achieved this rate of growth.

Although a larger proportion of the non-P.I.D.C. industries grew at a faster rate we cannot conclude that this group as a whole really did better than the P.I.D.C. industries. This is because of the extreme variability within the non-P.I.D.C. group; although many of them grew rapidly, three out of the nine were complete failures having zero rates of growth. On the other hand, among the P.I.D.C. industries, none were complete failures. Hence, we can only conclude that the available data do not seem to demonstrate clearly that either group grew faster than the other.

Electric Power

There is no question about the high priority assigned to the electric power industry in Pakistan. Since 1949 Pakistan has had an acute and continuing shortage of power as the development of industries and the growth of cities has outstripped the growth of power. As in the case of India the government of Pakistan regulates closely the development of power. Indeed, hydroelectric plants are all government owned, and the government has a financial interest in some of the larger thermal stations. In 1947 capital invested in privately owned power stations amounted to Rs. 33 million, about the same as was invested in government owned plants. By 1955 the government's investment had increased to Rs. 170 million while private funds invested in the power industry had increased to only Rs. 46 million.

The power development program outlined in the six year plan called for an additional 247,300 kw to be installed by 1957.^{69/} This was largely a hydroelectric program which overlooked the immediate needs of the larger

^{69/} Public utilities only.

cities. The two year priority program sought to correct this situation by providing for the installation of an additional 140,000 kw of thermal power in the cities. Thus, the total program amounted to 387,300 kw.

1) Capacity. In 1951 the aggregate installed capacity of public utility power plants was 116,400 kw. By mid 1957 this figure was to have amounted to 458,800 kw (387,300 plus 71,500; the latter figure being the 1948 capacity). An increase of this magnitude represents a very ambitious program. As, unfortunately, our data on installed capacity extend only to 1955 we shall have to use current (1956) production data (kwh) to estimate installed capacity in order to calculate the percentage of target achieved.^{70/} This is accomplished by determining the percentage production increased in 1956 as compared with 1955 and applying this percentage to the 1955 capacity.^{71/} By this method of calculation, 40 percent of the target was achieved.

Forty percent is not too impressive a figure. But conclusions about the success of the power installation program should consider the growth coefficient: from 1948 until 1955 power capacity grew at a rate of .14 percent per year. This is indeed a very high rate of growth.

2) Production. Increases in electric power production have been striking. The rate of increase, i.e., the growth coefficient, amounts to no less than 22 percent per year. This may be the most rapid increase in power production achieved by any country during the period 1948 - 1955. India and the United States recorded growths of under 10 percent and Puerto Rico achieved the high rate of 12 percent. Pakistan's rate of growth of power production also exceeds the median growth of planned and unplanned industries

^{70/} Based on 1955 data 24 percent of the target was completed.

^{71/} Estimated 1956 production (based on data extending to June 1956) was 757.3 million kwh; 1955 production was 607.2 million kwh; percentage increase, 1956 over 1955 was 24.7 percent. 1955 capacity was 200.3 thousand kw; applying the production rate of increase (24.7 percent) to this figure gives an estimated 1956 capacity of 249.8 thousand kwh.

(see section entitled The Unplanned Sector).

Despite this outstanding rate of increase Pakistan continues to suffer from a lack of power. However, with the discovery of natural gas, the position may have changed as the dearth of suitable solid fuel need no longer restrain the planners from proposing thermal power near the sites of industrial plants. Unfortunately, it is outside the scope of our investigation to consider the effects of the discovery of an important natural resource, but certainly these are bound to be far-reaching.

Labor Intensive Manufacturing Industries

As in India and Puerto Rico, a major objective of planning is to increase employment opportunities. Although information is sparse, it is clear that unemployment and underemployment in rural areas are very high: rural unemployment may be as high as in India. To remedy the situation the six year plan allocated about 32 percent of the total planned expenditure to agricultural developments including irrigation, land settlement and anti-water-logging measures. Two major irrigation projects aim at watering some 3.1 million acres.

The effect of these measures on underemployment and unemployment is difficult to assess. Reliable information is also not available about increases in employment that have been taking place during the period under study as a result of the industrialization program. However, study of the factories actually built gives the impression that both government and private industries are primarily concerned with efficient production. Factories are equipped with the most modern machinery with everything that this implies about labor utilization. Nevertheless, the two largest industries developed in Pakistan, jute goods and cotton textiles, are relatively labor intensive. The cotton textile industry has provided considerable secondary employment by making yarn available to hand weavers.

New Manufacturing Industries

Pakistan is still very much of an agricultural country, although a considerable growth in manufacturing has occurred. This would hardly have been possible without the establishment of a relatively large number of new industries. In this section we shall attempt to determine whether these industries were more or less successful than existing industries. Because of a dearth of data our test of success is limited to production results in terms of planned targets. As we noted previously other tests, for example -- cost of production, are at least as important as is the meeting of a target. Such other tests, however, are outside the scope of this investigation.

Table 30 brings together our information on new industries and compares the results achieved by them with those of established industries. It should be noted that the table includes only those industries which had been assigned specific targets with the exception of tires and tubes, antimony refining, coal tar derivatives and power alcohol which had no specific targets. As was noted previously, production of tires and tubes was considered in excess of 70 percent of target. There is justification for this assumption as the production of tires and tubes had a very rapid rate of growth -- 31 percent per year. Only jute goods had a faster rate of growth. Antimony refining, coal tar derivatives and power alcohol apparently were not brought into production at all and they are not likely to be producing soon. Therefore, no matter what target might have been set, no percentage of target could have been achieved because of the absence of production.

But quite a large group of industries had to be omitted from Table 30. These are the new industries in the unplanned sector, including cigarettes, plastics, starch, grinding wheels, plywood, razor blades, home radio receivers and hydrochloric acid, among others. The omission of this group, despite the number of industries involved, probably affects our conclusions to a lesser

Table 30. -Percentage of Target Achieved by New Industries, Pakistan

<u>Industry</u>	<u>Percentage of Target Achieved</u>
Jute goods	110
Woolen spindles	54 (70) ^{a/}
Paper	77
Tires and tubes	-- (70) ^{b/}
Sulphuric acid	30 ^{c/}
Caustic soda	17
Glass	15 ^{d/}
Ammonium sulphate	0 (70) ^{e/}
Antimony refining	0
Coal tar derivatives	0
Power alcohol	0

Source: Table 26.

- a/ As was noted elsewhere woolen spindles may be considered to have attained 70 percent of target.
- b/ Although no target was specified in the plan, the growth of production has been very rapid.
- c/ At partition there were two small factories producing sulphuric acid by the "chamber process". Their capacity was about 330 tons per year. The new plants use the "contact process" and are considerably larger.
- d/ In 1947 the capacity of the glass factories amounted to about 400 tons per year. At present capacity is in the neighborhood of 25,000 tons per year.
- e/ As was noted elsewhere ammonium sulphate may be considered to have attained 70 percent of target.

degree than might be expected because all of these industries, with the exception of cigarettes, are quite small, at least in terms of capital invested.^{72/} Nevertheless, the number of new industries which have been built is impressively large and would surely support the belief that new industries, producing quite diverse products can be successfully introduced.^{73/}

But is this contention supported by the data in Table 30? The answer would appear to be affirmative if, as was done earlier, woolen spindles, tires and tubes, and ammonium sulphate are considered to have accomplished 70 percent or more of target.^{74/} Thus, five of the eleven, or 45 percent, of the new industries listed achieved 70 percent or more of target. This is virtually the same result as was achieved by all planned industries. (See the revised distribution of page 127). While this may not be a high degree of success, it does tend to confirm the tentative conclusion based on Indian experiences, namely that new industries can be brought into production with about the same probability of success as results from the expansion of established industries. Whether more effort is required to make a success of a new industry as compared to the enlargement of an already existing one, we cannot tell from our analysis.

The Unplanned Sector

Introduction

The Government of Pakistan has steadfastly maintained in public statements its belief in the free enterprise system. However, it has also

^{72/} The cigarette industry ranks 14 in terms of capital invested. The remaining industries are below the 20 rank in terms of capital invested.

^{73/} This is not to dispute the statements made by the government about how shy Pakistan capital was and probably still is. The government refers mainly to heavy industry where the required investments are sizeable and returns are sometimes delayed.

^{74/} See section on Percentage of Target Fulfilled.

made known its readiness to participate actively in any industry when the security or economic well being of the state so requires. In actuality the Government has taken a leading role in the industrialization of the country, justifying its action on the grounds that private capital was unwilling or unable to develop these industries. In particular, the heavy, capital intensive industries, such as paper, fertilizers and others required government participation (so it was claimed). Many, indeed most, of these industries were included in the six and two year plans. Those for which data were available have been analyzed in previous sections.

Despite the heavy investment in and the importance of the industries included in the plan, they constitute only a part of the industrial development of Pakistan during the past six years. A far larger number of industries are operating -- all under private control. In this section we shall try to answer the question -- what development, what growth took place among this group of industries?

As was explained in our analysis of India, of the two criteria used in this study the only one that applies to unplanned industries is the growth co-efficient. Table 31 lists the industries to be analyzed under the three categories. The third category is made up of unplanned industries and P.I.D.C. and non-P.I.D.C. industries comprise the first and second categories.

For the purposes of our investigation it is unfortunate that time series data are available for only sixteen industries in the unplanned sector. There are a much larger number of industries in operation; the 1953 census of manufactures listed at least forty industries exclusive of those specifically included in the planning program.^{75/} Since only a small proportion of the unplanned industries can be studied the question arises as to how representative

^{75/} See also Appendix E: Industries for which Time Series Data are not Available.

Table 31. -Planned Industries Compared with Unplanned Industries, Pakistan
(Industries ranked by growth coefficients under three categories)

<u>Category I (P.I.D.C.)</u>		<u>Category II (non-P.I.D.C.)</u>		<u>Category III (Unplanned)</u>	
<u>Industry</u>	<u>b/My</u>	<u>Industry</u>	<u>b/My</u>	<u>Industry</u>	<u>b/My</u>
1. Jute goods	0.42	1. Leather tanning	0.31	1. Paints and varnishes	0.49
2. Cotton cloth	0.29	2. Tires and tubes	0.31	2. Silk and rayon fabric	0.39
3. Sulphuric acid	0.25	3. Steel re-rolling	0.28	3. Matches	0.36
4. Sugar refining	0.14	4. Petroleum refining	0.20	4. Radio assembly	0.32
5. Pharmaceuticals	0.13	5. Steel ingots	0.17	5. Incandescent lamps	0.28
6. Woolen & worsted yarn	0.12	6. Glassware	0.14	6. Hydrogenated vegetable oil	0.24
7. Cement	0.10	7. Power alcohol	0.00	7. Cigars	0.24
8. Cotton ginning	0.08	8. Coal tar derivatives	0.00	8. Fruit & vegetable processing	0.18
9. Jute baling	0.07	9. Antimony refining	0.00	9. Beer	0.17
10. Soda ash	0.04			10. Cigarettes	0.16
				11. Foreign type liquor	0.15
				12. Rectified spirits	0.11
				13. Medicated wines	0.11
				14. Sea salt	0.06
				15. Resin and turpentine	0.04
				16. Tea manufacturing	0.02

Source: Table 28 and Pakistan, Ministry of Economic Affairs, Central Statistical Office, Statistical Bulletin, Vol. 5, No. 1, Karachi, January 1957.

these sixteen may be of all unplanned industries in the country. Unfortunately we cannot answer this question since, among other things, we do not know why data are presented for these sixteen and not for others. (In the case of India, it will be recalled, production data were available for 38 industries in the unplanned sector.)

Results

Planned industries achieved a median growth coefficient of 0.13 plus, as we noted earlier. Of these planned industries eleven out of nineteen grew at the rate of 13 percent per year or better. Among the unplanned industries, on the other hand, eleven out of sixteen, or about two-thirds, grew at the rate of 13 percent per year or more (Table 31).

The observation that more of the unplanned industries grew at this higher rate perhaps may be accounted for to the extent that the sixteen are not fully representative of all unplanned industries. Possibly those unplanned industries for which production data are not available, grew much less rapidly than did those we were able to study. Perhaps the unplanned industries include a larger proportion of consumers' goods industries than do the planned industries, industries in categories I and II. Among planned industries about six out of nineteen are consumers' goods industries; among the unplanned industries fourteen out of sixteen are consumers' goods.

What results are obtained if we analyze the consumers' goods industries separately? In the planned sector five such industries grew at a rate of 13 percent per year or more, and only one at a lower rate. Among the unplanned consumers' goods industries, ten grew at a rate of 13 percent or more per year and four at a lower rate. Considering the small number of industries available for study, we can only conclude that there is little if any difference between planned and unplanned industries in terms of rates of growth.

The rapid growth of consumers' goods industries in Pakistan, both planned and unplanned, may be attributed in part to the fact that the source of many of the products before partition was India. After 1947 the market remained but the source of supply was blocked. New industries as well as established industries quickly expanded to meet the demand. An important factor in this situation was, and still is, the readiness with which tariff protection has been granted.

Among the producers' goods industries, thirteen of the fifteen for which we were able to calculate growth coefficients were in categories I and II. Of these, six grew at a rate of 13 percent or more per year, and seven at a slower rate. Of the two producers' goods industries in the unplanned sector, one grew at a rate well above 13 percent (paints and varnishes) and the other at a very low rate (rosin and turpentine).

In summary then, it would appear that the planned industries grew about as rapidly as did the unplanned industries in Pakistan, after taking into account producers' and consumers' goods separately. The observation that more unplanned than planned industries grew more rapidly reflects the greater prevalence of consumers' goods industries in the unplanned sector. Consumers' goods industries, on the whole, grew more rapidly than did producers' goods industries. This observation applies not only to the planned sector but to the unplanned industries as well.

These results differ from those observed in India where more of the higher priority industries clearly grew at a more rapid rate than did the unplanned industries. In the case of India, as we noted previously, this held true for both the producers' and consumers' goods industries separately.

Summary of Findings, Pakistan

Introduction

In this investigation of industrial development plans Pakistan represents an intermediate situation: India is an almost fully-planned economy and Puerto Rico a country where planning is least detailed or comprehensive.

Pakistan has gone through several quite distinct planning phases from government interest in a limited number of projects to the adoption of a formal national development plan in 1955. This study takes as its basic source the Six Year Development Program which was drawn in 1951 in accordance with a decision of the Colombo Plan Organization. It is true that this plan has been superseded by the new five year plan, but study of the results obtained under the six year plan is desirable in that it represents the intermediate position, mentioned in the preceding paragraph. Moreover, projects and developments initiated under the six year plan continue to be implemented. In addition to the project and target data contained in the six year plan our study uses similar information from the Two Year Priority Program. This program consisted of a list of projects chosen for special developmental effort in 1951 when the capital goods supply situation was difficult.

Mechanisms for Carrying Out Plans

As in many underdeveloped countries the Government of Pakistan adopted measures designed to promote the industrialization program. Protective tariffs are in force, new firms are partially tax exempt, foreign firms may remit profits and repatriate capital and efforts are made to teach workers new techniques. Perhaps the most important device to develop Pakistan's industries is the government owned Pakistan Industrial Development Corporation which is empowered to participate, either alone

or in association with private capital, in the establishment of certain industries. The existence of many of Pakistan's most important industries may be directly attributable to the work of the P.I.D.C.

Some measures adopted by the government may have had a negative effect on industrial growth. Import, export and exchange regulations are among the controls adopted by the government. Price controls were also in force during some part of the six year plan period. In a quite direct way, the government is empowered to exercise control over the size and location of industries and it may inter alia impose standards in respect to the quality of the final product and raw materials used.

Measures of Success

The same measures of success were used in studying Pakistan as were used for India, namely, percent of target achieved and growth coefficient. However, Pakistan's plans did not deal with priorities in a manner that would permit projects to be segregated in accordance with degree of urgency of development. A close approximation to a classification of this type was arrived at by considering that P.I.D.C. sponsorship was indicative of urgency. The balance of the planned industries were classified as less important, at least from the government's point of view. Unplanned industries made up a third classification, the development of which could be considered to be least urgently desired. Thus, for Pakistan, in place of priorities we consider industries as being divided into three categories: P.I.D.C. and non-P.I.D.C. are two planned categories, and a third category consisting of unplanned industries.

Categories and Degree of Target Achieved

Before summarizing the results obtained for Pakistan it is necessary to state that both the quantity and reliability of statistical data leave much to be desired. In drawing conclusions, the limitations

of the underlying data must always be borne in mind.

In terms of categories the following results were obtained:

<u>Percent of Target Achieved</u>	<u>Number of Industries</u>		<u>Total</u>
	<u>P.I.D.C. Industries</u>	<u>Other Planned Industries</u>	
Under 70%	4	6	10
70% and over	<u>6</u>	<u>2</u>	<u>8</u>
Total	10	8	18

Not quite half of the eighteen industries analyzed achieved 70 percent of the target or better. But 60 percent of the P.I.D.C. industries achieved this result. This tends to confirm earlier findings to the effect that industries in which the government has taken an active interest are more likely to reach the targets.

Priorities and Rate of Growth

Half the planned industries in Pakistan achieved a rate of growth of better than 13 percent. This is equal to the rate of growth recorded in India. Non-P.I.D.C. industries obtained somewhat better results than did P.I.D.C. industries. However, the non-P.I.D.C. group also contained three industries which completely failed to grow whereas all P.I.D.C. industries recorded some growth. On balance, then, there doesn't appear to be any real difference in the rates of growth of P.I.D.C. and other planned industries.

Electric Power

There is no doubt about the urgency with which the growth of electric power production is viewed in Pakistan. Pakistan suffered from and continues to feel the effects of a very serious power shortage which curtailed industrial production. In the early years of the existence of Pakistan about half of the electric power capacity was owned by the government, but since then the government's share of power facilities has increased rapidly, most of it being hydro power installations.

In terms of the target set in the six year plan, the power program completed only about 40 percent of its goal. However, the size of the program and the rate at which capacity grew are factors to be considered. The growth of power capacity was at the very high rate of 14 percent per year.

In terms of production, the growth coefficient amounts to no less than 22 percent per year, perhaps the most rapid increase in power production achieved by any country during the 1948-55 period. India and the United States recorded growths of under 10 percent and Puerto Rico achieved the high rate of 12 percent. Despite this outstanding rate of increase, Pakistan continues to suffer from a lack of power.

New Industries

In terms of targets, new industries in Pakistan do not appear to have fared less well than established industries. This conclusion is supported not only by a comparison of the percentage of target achieved by new industries and by established industries within the planned group, but also by the fact that many new industries have been set up in the unplanned sector. With regard to targets, five of the eleven new industries for which data are available fulfilled 45 percent of the target, while 44 percent of all planned industries achieved this result.

The Unplanned Sector

Many industries -- some quite important, some new, others long established -- are not included in the plans. In Pakistan these industries are far more numerous than those included in official plans. They probably employ more people, although very likely less capital, in the aggregate, than the planned industries. In considering what development took place in the unplanned sector we may use only one of our two criteria -- the growth coefficient. The results of a comparison of planned and unplanned

industries, using the growth coefficient, are shown below.

<u>Growth Coefficient</u>	<u>Number of Consumers' Goods Industries</u>		<u>Number of Producers' Goods Industries</u>	
	<u>Planned Sector</u>	<u>Unplanned Sector</u>	<u>Planned Sector</u>	<u>Unplanned Sector</u>
13% and over	5	10	6	1
Under 13%	<u>1</u>	<u>4</u>	<u>7</u>	<u>1</u>
Total	6	14	13	2

After taking into consideration consumers' and producers' goods industries separately, it would appear that the industries in the planned sector had about the same rates of growth as those in the unplanned sector of Pakistan's economy. In India, on the other hand, the planned industries grew at a more rapid rate than the unplanned.

We should also note, in passing, that consumers' goods industries as a group grew more rapidly than did producers' goods industries. Why this is so, is outside the scope of our investigation. In India, it will be recalled, producers' goods industries grew more rapidly. The observed difference between Pakistan and India may reflect differences in emphasis placed by the respective planning groups, as well as other factors inherent in the manufacturing or marketing processes, or the political situation.

APPENDIX A. INDUSTRIES EXCLUDED FROM THE ANALYSIS, INDIA

I. The following industries were excluded from the analysis because data on production covers products which are not quite the same as are dealt with in the plan:

- | | |
|---------------------------------|------------------------|
| 1) cable and wire | 5) home service meters |
| 2) aluminium conductor | 6) automobiles |
| 3) winding wire | 7) woolen yarn |
| 4) sheet glass and glass shells | |

II. The following industries were excluded from the analysis because the plan did not require additional capacity or production:

- | | |
|----------------|-------------------|
| 1) cotton yarn | 3) sugar refining |
| 2) jute | 4) bangles |

III. The following industries were excluded from the analysis because data reported reflects only production from organized factories. Cottage and small-scale industries produce substantial quantities of these products and their operations might be affected by increased factory production so that total production of the product might actually be decreasing or increasing at a much less rapid rate than would be supposed from data originating solely with factories:

- | | |
|------------------|---------------------------------|
| 1) soap | 5) rice milling |
| 2) glue | 6) coffee roasting and grinding |
| 3) stoneware | 7) cotton cloth |
| 4) wheat milling | 8) matches |

APPENDIX B. FURTHER DETAILS ON THE ACTIVITIES OF THE PUERTO RICO
ECONOMIC DEVELOPMENT ADMINISTRATION

The following information, taken from official publications of the Commonwealth of Puerto Rico, forms a general outline of the various incentives employed by the Puerto Rican government to attract private investment to the Island. The Economic Development Administration (EDA) is the main agency engaged in this effort, and hence the major part of this Appendix is devoted to a description of its activities. Activities of other Commonwealth agencies functioning in this field are also described.

Tax exemptions

The major emphasis of the program is on tax exemptions. A firm which can qualify pays neither United States nor Puerto Rican taxes. The essential elements of the program are described in the following excerpts.

From What You Should Know About Taxes in Puerto Rico (1955-56 edition, Department of the Treasury, Commonwealth of Puerto Rico, San Juan, pp. 33-36).

Puerto Rico's Industrial Tax Exemption Program

The Commonwealth of Puerto Rico has established a broad program of incentives for the purpose of stimulating the establishment and growth of manufacturing and other enterprises in the Island. Under this program the Puerto Rican Government--besides offering direct technical and financial aid--grants exemption from the major taxes bearing on business to firms fulfilling certain conditions and to qualified individuals receiving dividend income from these firms, or rental payments for leasing their properties to exempt operations.

Exemption is granted as shown on the following table:

From	On	For
The corporate and partnership net income tax.	Net income from those operations of a business declared exempt by the Governor after application to, and investigation and hearings by, the Office of Industrial Tax Exemption.	10 years
The personal and corporate partnership net income taxes.	Income from the leasing of property to exempt operations.	10 years
	Dividends or profits received from exempt operations (only when paid to residents or nonresidents of Puerto Rico who can establish the fact that they are not required to pay taxes on such dividends or profits in the jurisdiction where they reside).	7 years
The property tax	Property owned by or leased to exempt operations.	5 years if firm's property is valued at less than \$1 million;
		6 years if between \$1 and \$3 million;
		7 years if between \$3 and \$5 million;
		8 years if between \$5 and \$7 million;
		9 years if between \$7 and \$10 million;
		10 years if over \$10 million

In addition, eligible operations are exempt from payment of municipal license taxes for a ten year period.

Eligible firms:

Any firm is eligible for tax exemption if it:

- a) produces or seeks to produce on a commercial scale in Puerto Rico any manufactured product which was not produced on such scale on or before January 2 1947; or

- b) with certain qualifications, initiates on a commercial scale the production of any product or the carrying on of any process in the following list:

- processed food products
- ceramic products
- glass and glass products
- footwear
- soap
- tin cans and tinware
- furniture
- wearing apparel
- balls for sports
- straw, reed and similar fiber products
- bedsprings and mattresses
- leather goods and imitation leather goods
- bodies for motor vehicles
- tanning and finishing of leather
- paints
- animal feed
- artificial flowers
- candles
- candy
- cigars
- cigarettes
- perfumes, cosmetics and other toilet preparations
- hosiery
- biscuits, crackers and pretzels
- edible oils and fats
- fishing tackle
- gloves
- paper boards and paper pulps
- rugs
- food pastes
- agricultural produce cultivated by the hydroponic process
- polishing or other processing of diamonds
- products of slaughter or meat packing operations
- book printing, if accompanied by binding

- c) operates a tourist or commercial hotel

From Industrial Incentives Act of 1954 (a publication of the Economic Development Administration, Commonwealth of Puerto Rico, pp. 4-5).

- 1) What does this new program provide in the way of specific incentives?

a) Tax exemption (1) of profits derived from certain industrial and hotel operations; (2) of the income derived from the use of real property, improvements thereon and machinery and equipment owned by or leased or otherwise made

available to, exempted businesses; and (3) of the dividends therefrom received. (Sections 1 (a), 2 (a), 2 (b), 2 (f), and 3 of Act No. 6 approved December 15, 1953, the text of which is hereinafter set forth, cited hereafter as the 1954 Act.)

b) Exemption from taxes on real and personal property. (Section 1(b) and 2(b) of the 1954 Act.)

c) Exemption from municipal license taxes (Section 1 (c) of the 1954 Act).

2) For how long are such exemptions granted?

A substantial and effective change or departure is made as compared to the incentive situation under the 1948 Act. Income tax and municipal license tax exemptions (par. 1(a) and 1(c) above), are effective, with respect to each exempted business, for a period of ten years (except in the case of dividends where the period of exemption is seven years--Section 3 of the Act), which commences on the date when the business starts its tax exempt operation. In the case of real property, machinery and equipment, the period varies from five to ten years, depending on the amount of investment, and such period starts on the 1st of January preceding the commencement of operations as regards property then owned by the exempted business and on January 1 next following the start of operations as regards property acquired after such start of operations (Section 1(b) of the Act).

3) Who is eligible for these tax incentives?

Individuals, partnerships and corporations who or which:

a) Start the production in Puerto Rico of a manufactured product (the definition of manufactured product is crucial; it is given in Section 2(g) of the 1954 Act) not being produced there on January 2, 1947 (Section 2(d) of the 1954 Act).

b) Start an additional unit to produce a substantial amount (Section 2(d) 2 of the 1954 Act), of any one of the articles "designated" in the list contained in Section 2(e) of the 1954 Act.

c) Operate any old units which produce any one of the articles so "designated," but only after the additional unit referred to in the preceding paragraph (b) has begun to produce the same article on a commercial scale (Section a(d) 3 of the 1954 Act).

d) Operate commercial or tourist hotels in accordance with prescribed standards of sanitation and efficiency. Commercial hotels are only entitled to exemption of fifty percent of the tax rates (Sections 2(f) and 1(d) of the 1954 Act).

4) How may profits be withdrawn from an exempted business?

The 1954 Act, like the 1948 Act, permits the withdrawal of the earnings of an exempted operation in various ways:

a) The fullest benefits of the Act are available to bonafide residents of Puerto Rico, particularly an individual who either owns the business directly or through a corporation whose stock is principally held by him. The Act provides that dividends paid out of the earnings of an exempted operation during its first seven years of operation may be distributed free of taxes to resident individuals and corporations. But such distributions must be made within the period of fifteen years counted from the commencement of operations of the exempted business. This means that the earnings of such seven year period may be retained and used in the operation of the exempted business for a maximum period of eight years after such seven years. However, stockholders need not wait for such tax exempt dividend distributions. They may sell the stock at a price higher than the original price to them and the gain derived in such sales is tax free if made prior to the expiration of the tax exemption period of the exempted business (paragraphs (a) and (c) of Section 3 of the Act).

b) Another means of withdrawing tax free profits is through the liquidation of an exempted business through the procedure better known as a tax free merger. This procedure provided by Section 4 of the Act is closely similar to the one provided by Section 331 of the Federal Internal Revenue Code of 1954.

c) For further details on this subject, reference is made to Rudick and Allan's article "Tax Aspects of Operations under the Puerto Rican Tax Exemption Program," published in the Tax Law Reveiw of New York University School of Law in May 1952, pages 425-430. These comments are still in point under the 1954 Act.

An example of how these tax exemptions may actually benefit a firm is provided in the Industrial Newsletter of EDA, (October 1956, p. 2)

Firms Domiciled in Continental U. S.	Firms Domiciled in Puerto Rico
Net Profit After U. S. Corporate Income Tax is:	Net Profit in Puerto Rico Would be:
<hr/>	<hr/>
\$ 29,500	\$ 50,000
53,500	100,000
245,500	500,000
485,500	1,000,000

Flexible depreciation

Those firms which for one reason or another cannot obtain tax exemp-

tions are allowed the privilege of depreciating real property and capital equipment, for income tax purposes, at any rate the enterprise desires. This provision is described in a mimeographed statement released by the EDA in 1956, entitled, "The Privilege of Flexible Depreciation Under the Income Tax Law of Puerto Rico."

What articles may be depreciated flexibly? The privilege of flexible depreciation is extended, according to Act No. 105, to all real property acquired or first used in an eligible business (agriculture, construction, or manufacturing) subsequent to December 31, 1954, and to other depreciable equipment used in an eligible business.

Advantages to the firm. The principal advantages of flexible depreciation are as follows:

1. Capital requirements are lowered. By accelerating depreciation, a firm can in effect "borrow" capital from the government in its earlier, expanding years and repay that capital when it has reached a more mature position and accumulated resources through profits. If expansion of plant and/or equipment continues, "repayment" can be further postponed. As depreciation allowances on old plant and equipment are exhausted, in an expanding firm there are always new allowances, on new plant and equipment, to take their place.
2. Long-run tax liability is lowered. Although the long-run depreciation deduction for any one item is the same on either a flexible--or a straight-line depreciation basis--a long-run tax saving is nevertheless possible by using depreciation as an adjustment to annual profits. Even if tax rates do not change, a firm may take higher depreciation in good years and lower depreciation in lean years and in this way remain in the long run in the lowest possible surtax brackets. The effect is similar to that of a liberal loss carry-forward and carry-back privilege, without the attendant administrative complications.
3. An incentive is provided for replacement of obsolete equipment. If efficiency and profits can be increased by the replacement of old equipment by new, there is no longer any disincentive in terms of long "pay-out" periods. The pay-out period of new equipment can be speeded up by application of higher depreciation allowances. Moreover, accelerated depreciation facilitates a continued equipment replacement policy by both reducing the need for fresh funds and at the same time making such funds easier to raise. Equity capital will be attracted by the possibility of the faster "pay-out" and by that of higher profits and/or increase in capital worth. Loan capital will be attracted by knowledge that taxation need not interfere with the repayment of a loan from operating profits.

Relation to capital gains taxes. Upon sale of flexibly depreciated property, the additional gain or loss resulting from application

of flexible, rather than straight-line, depreciation is treated as ordinary income. However, capital losses includible in gross income may be netted out against such "extra" gains. Moreover, any residual gain is taxed at no higher a rate than that at which it would be taxable if averaged out over three years (ending with the taxable year in question) or over the life of the property, whichever is smaller. The purpose is to prevent the shifting of business income, for tax purposes, from a current-income to a capital gains basis by means of the flexible depreciation device, yet at the same time to prevent any undue disadvantage to the firm which disposes of rapidly-depreciated property.

Relation to Industrial Tax Exemption. A tax exempt firm does not have the privilege of flexible depreciation, since depreciation at less-than-normal rates during the tax-exempt period could be used, in effect, to extend the period of tax exemption beyond the allotted ten years. After the tax-exempt period, however, such a firm has the same privileges as any other firm with respect to newly-acquired or newly-employed property. Also, a new firm using the old property may have flexible depreciation thereon. A variety of attractive possibilities thus exist for the reinvestment in Puerto Rico of accumulated tax-exempt profits.

Value to the Puerto Rican Economy. Flexible depreciation provides a powerful incentive to the continued expansion of successful firms. So long as a firm keeps expanding, it always has an underpreciated assets position against which to charge depreciation as profits warrant. In effect, the Government says, "We will forego collecting part of the taxes that would normally be due, if you reinvest the saving in new plant or equipment." For an enterprise with limited expansion possibilities, flexible depreciation provides the dual incentive of shorter pay-out periods and higher long-run profits. Coupled with Puerto Rico's lower business tax rates and possibly supplemented by further tax reforms, flexible depreciation thus provides a long-run incentive for establishment in Puerto Rico which may eventually replace tax exemption and which even now is much broader in its application. Contrasted with the situation in Puerto Rico, only a very limited amount of flexibility in depreciation is currently available to mainland firms under the Federal Internal Revenue Law.

Other Aids

Factory buildings. The Puerto Rico Industrial Development Company builds for manufacturers single story factories with rents between 40¢ and 80¢ per square foot per year. The location of the building as well as its type determines its rental. Buildings in the interior of the Island, and other locations less attractive to potential investors, are offered at lower rentals in order to disperse manufacturing throughout the Island. A number of multi-purpose structures are scattered throughout the Island, ready for immediate occupancy.

Bank loans. The Government Development Bank for Puerto Rico, established in 1942, has a two-fold purpose (described in an advertisement in the New York Times, July 25, 1954, Section 10).

First, it is Fiscal Agent for the Commonwealth itself, its Authorities and some seventy-five municipalities. Secondly, it is expected to provide leadership in the expansion and development of the financial aspects of the economy.

Among its operations in the latter respect, the Bank is a source of term loans to private industry, supplying funds to manufacturing companies for periods up to ten years. In this way it complements and assists the normal lending activities of local commercial banks.

In its dual role, the Government Development Bank necessarily must keep close check on significant statistics relating to the economy of Puerto Rico. In the first instance, the Bank as fiscal agent desires to bring such information to the attention of buyers of Puerto Rican bonds on the mainland. In its second capacity, the Bank must keep its finger on the pulse of the financial, industrial and business life of the Island so that it can be most helpful in making effective contributions to Puerto Rico's expanding industry.

APPENDIX C. LIST OF INDUSTRIES SUBJECT TO
CENTRAL PLANNING, PAKISTAN

- | | |
|--|--|
| 1. Arms and munitions of war | 13. Marine fisheries |
| 2. Cement | 14. Mineral industries |
| 3. Coal | 15. Non-ferrous metals and alloys industry |
| 4. Electrical equipment--fans, lamps, motors, generators, transmitters and switchgears | 16. Paper and pulp |
| 5. Generation of electric power--hydro and thermal | 17. Petroleum and mineral oils |
| 6. Glass and ceramics | 18. Power and industrial alcohol |
| 7. Heavy chemicals industry--sulphuric acid, caustic soda, soda ash, fertilizers | 19. Pharmaceuticals and drugs |
| 8. Heavy engineering industries for construction of aircraft, ships locomotives, wagons, automobiles, agricultural machinery | 20. Preserved and prepared foods |
| 9. High temperature and high pressure reaction and carbonization plants | 21. Rubber manufacture |
| 10. Iron and steel | 22. Scientific instruments, gauges and precision tools |
| 11. Machine tools | 23. Sugar |
| 12. Manufacture of telephones, telegraphs and wireless apparatus | 24. Salt |
| | 25. Tanning and leather |
| | 26. Textiles--cotton, woolen, jute, silk and rayon |
| | 27. Tobacco |

APPENDIX D. REVISED TARGETS, PAKISTAN

1. Cotton cloth. The target for cotton cloth includes cotton yarn (termed surplus yarn in Pakistan statistics) manufactured for sale to hand-weavers. The target given in the six year plan is 680,000 bales of yarn and cloth. Production data are given separately in terms of yards of cloth and pounds of yarn. The units used in our calculations were yards of cloth and yarn combined. This was possible as a bale of cloth equals 1,550 yards and a bale of yarn weighs 400 pounds and yields 1,600 yards of cloth as four yards of cloth (on the average) are obtainable from one pound of yarn. In other words a bale of yarn and a bale of cloth are equivalent.

The target from the six year plan is 680,000 bales of cloth and yarn.
 $680,000 \times 1,550 = 1,054$ million yards which is roughly $680,000 \times 400 \times 4$.

Production in 1956 = 481.1 million yards of cloth and 166.7 million pounds of yarn. $481.1 \div 166.78 \times 4 = 1,148.2$ million yards of cloth.

2. Caustic soda. The target for caustic soda as given in the six year plan is 20,000 tons per year. According to government reports a 2,700 ton per year plant was installed integrally with a paper factory. As the paper plant is operating near capacity it is assumed that the caustic soda plant is likewise fully productive. This situation is reflected in a reduction of the target from 20,000 to 17,300 tons per year.

3. Sulphuric acid. The target for sulphuric acid as given in the six year plan is 15,330 tons per year. As in the case of caustic soda, a 3,000 ton per year plant was incorporated in a paper factory. A 6,000 ton per year plant was also incorporated in a super phosphate factory. However, the capacity of the superphosphate factory is such as to enable it to utilize only one half the capacity of the sulphuric acid plant. The sulphuric acid target is therefore reduced by 6,000 tons per year and becomes 9,330 tons per year.

APPENDIX E. INDUSTRIES FOR WHICH TIME SERIES DATA

ARE NOT AVAILABLE, PAKISTAN

1. Biscuit baking	15 tons per 8 hr. day
2. Aerated waters	n.a.
3. Refractories	3.6 million bricks per year
4. Hydrochloric acid	600 tons per year
5. Machine tools	550 lathes, 515 bandsaws, 315 drilling machines, etc.
6. Pumps	Rs. 300,000 per year
7. Diesel engines (excl. marine engines)	n.a.
8. Bicycles	350 per month <u>a/</u>
9. Sewing machines	1,000 per month <u>b/</u>
10. Hurricane lanterns	209,000 lanterns <u>c/</u>
11. Metal containers	n.a.
12. Razor blades	30 million per year
13. Oxygen	n.a.
14. Acetylene	n.a.
15. Plywood (tea chests)	n.a.
16. Cement products	n.a.
17. Grinding wheels	100 tons per year
18. Starch	8,000 tons per year
19. Printing	n.a.
20. Dry batteries	7 million cells per year
21. Storage batteries	n.a.
22. Switch gear	n.a.
23. Electric fans	n.a.

a/ Estimated production; basically an assembly operation.

b/ Production is estimated at about 300 per month.

c/ Production in 1952.

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