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PROCESSES AND PROBLEMS OF INDUSTRIALIZATION IN UNDER-DEVELOPED COUNTRIES

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FOREWORD

During the discussion of the subject of integrated economic development at the fifteenth session of the Economic and Social Council, emphasis was laid on industrialization as a means of achieving such development, and in resolution 461 (XV) of 23 April 1953 the Council requested that the Secretary-General, "in continuing his studies on the question of industrialization as part of the problem of integrated economic development", prepare "a study on the processes and problems of industrialization which may assist the under-developed countries in preparing practical programmes of rapid industrialization, the study to deal also with the economic, social, fiscal, technical and organizational problems involved and with the role which the industrially advanced countries can play in order to help further such programmes".

In accordance with this resolution, the Secretary-General initiated a study of the processes and problems of industrialization in under-developed countries, requesting the assistance of the specialized agencies most directly concerned with the specific aspects of the subject mentioned in the resolution. The present report is the outcome of that study. It is submitted to the Council as an introductory document designed to indicate both the general framework within which the processes and problems of industrialization have to be analysed and some of the special topics which are of particular significance to many under-developed countries.

For the most part the study is based on an examination of the industrialization process in a number of countries in different but early stages of economic development, and of the growth of a number of specific industries in the less developed countries. Use has been made of the work done in this field by the secretariats of the regional economic commissions of the United Nations—especially by the staff of the Economic Commission for Europe (ECE) in its examination of the problems of southern Europe, by that of the Economic Commission for Asia and the Far East (ECAFE) in its studies of small-scale and cottage industries and of industrial finance and by the Economic Commission for Latin America (ECLA) secretariat in its annual surveys and its theoretical analyses of the development process in general and industrialization in particular. The report as a whole was written in the Economic Development Branch of the Bureau of Economic Affairs. Material on fiscal matters was contributed by the Fiscal Branch of the Bureau; on social and cultural aspects by the Social Welfare Branch of the Bureau of Social Affairs and by the United Nations Educational, Scientific and Cultural Organization (UNESCO); on demographic problems by the Population Branch of the Bureau of Social Affairs and on certain aspects of labour and migration by the International Labour Organisation (ILO). Some of the statistical material was provided by the Statistical Office of the United Nations, and in several instances reports of Technical Assistance Administration (TAA) experts in various fields were utilized. The outline of the study was examined by both the International Bank for Reconstruction and Development and the International Monetary Fund, which contributed helpful observations and suggestions.

In conformity with the authority granted in paragraph 3 of the Council's resolution, a mimeographed version of the study was circulated during the summer of 1954 not only to these agencies, but also to experts in a number of countries who were not connected with the international organizations mentioned. Among these experts, the Secretary-General would like to extend his thanks especially to the following persons who went to considerable trouble to submit detailed notes on the preliminary draft: Mrs. Barbara Ward Jackson, Sir Douglas Copland and Professors Raymond Burrows, Henri Janne, Simon Kuznets, Gaston Leduc, Arthur Lewis, Sir Dennis Robertson, Eugene Staley and Jan Tinbergen. The report was drafted only after careful consideration had been given to comments and suggestions received from all these agencies and experts, who, it is perhaps unnecessary to add, bear no responsibility for the final text.

EXPLANATION OF SYMBOLS

The following symbols have been used in the tables throughout the report:

Three dots (. . .) indicate that data are not available or are not separately reported

A dash (—) indicates that the amount is nil or negligible

A full stop (.) is used to indicate decimals

A comma (,) is used to distinguish thousands and millions

A slash (/) indicates a crop year or fiscal year, e.g., 1952/53

Use of a hyphen (-) between dates representing years, e.g., 1950-53, normally signifies an annual average for the calendar years involved, including the beginning and end years. "To" between the years indicates the full period, e.g., 1950 to 1953 means 1950 to 1953, inclusive.

References to "dollars" indicate United States dollars, unless otherwise stated.

The term "billion" signifies a thousand million.

Details and percentages in tables do not necessarily add to totals, because of rounding.

CONTENTS

List of tables

Appendix A

Appendix B

Chapter 1

INTRODUCTION

Within the scope of this first report on the processes and problems of industrialization in under-developed countries, it has obviously been impossible to do more than sketch the general nature of the many problems associated with the growth of industry. The report will have served its main purpose, however, if it succeeds in placing industrial development in a clearer relationship to economic development as a whole and in a perspective that will enable the Economic and Social Council to decide the most promising course of further research in this field.

The text of resolution 461 (XV) and the discussion that preceded it indicate the Council's special interest in three aspects of the subject: the place of industrialization in the wider problem of integrated economic development, means of assisting under-developed countries to draw up practical programmes of rapid industrialization, and the part that might be played by the economically more advanced countries in furthering such programmes.

In giving particular attention to these three aspects in the present report, no attempt has been made to hammer out a theory of industrialization: however desirable that might be, it will have to wait upon the completion of much more research. Indeed, this preliminary study, of necessity as geographically comprehensive as possible, has been devoted chiefly to the presentation of what would seem to be some of the most relevant considerations affecting the growth of industry, and these have been left in large measure to speak for themselves.[1] Nevertheless, a certain amount of analysis and interpretation has been attempted and in the course of this a number of assumptions have been made, which, though implicit throughout the study, may with advantage be more explicitly stated at the outset.

It is assumed in the first place that no great change is likely to take place in the international mobility of the factors of production and in the second place and partly as a corollary, that most of the industrialization that is carried out will be on a national basis as an integral part of the more general process of economic development within each country, and motivated in varying degree by national aspirations to greater security and higher status and prestige. In the light of these two assumptions, this report does not debate whether any particular country should or should not industrialize: instead, consideration is given to the forces governing the pace at which industrialization may proceed, the determinants of the type and character of the industries and the order in which they are likely to be established, and the factors limiting the extent of possible industrial development.

A third assumption is that the rate and nature of technical advance in the foreseeable future will not differ so greatly from those of recent decades as to change fundamentally the relative scarcities of the various factors of production. The problems of industrialization might be significantly altered, for example, if cheap and abundant power suddenly became available to under-developed areas.

A fourth assumption, implicit in both the general approach to the subject and in many of the specific arguments, is that individual freedom of economic decision is an important element in human welfare. The significance of this is magnified when it is subsumed in a fifth and final assumption: that industrialization is not an end in itself but that the ultimate if not the immediate aim of economic development, and therefore of industrialization, is the raising of average levels of living.

In the circumstances prevailing in under-developed areas, the raising of average levels of living is less a matter of effecting large increases in the incomes of a small minority in the community than of ensuring a steady, if smaller, increase in incomes of the majority. In most of the less developed countries this majority is large and rural, working at agricultural tasks in which its marginal productivity is extremely low. In such countries the raising of average productivity is the prime task of economic development. Initially and to a large extent this must be undertaken in the agricultural sector itself. In many cases, however, the diversion of under-employed rural labour to other occupations is an urgent requirement for development. Even when its productivity in the new tasks is lower than that normally found in comparable tasks in the more advanced countries, it is likely to be, or in a comparatively short time to become, appreciably higher than it was in agriculture. In such circumstances secondary industry becomes an important means of development. It should be borne in mind, however, that the whole social and economic organization of an under-developed country has in the course of time become adjusted to the low efficiency of its factors of production. Hence any attempt to speed up the process of industrialization

[1] Such a systematic discussion of the various forces influencing the growth of industry would seem to be an essential preliminary to the evolution of a theory of industrialization. This might be followed by an attempt at a more dynamic analysis by means of a series of models in which the various parameters are given hypothetical values, then by studies of particular policies and finally by the application of the hypotheses to individual countries. The present report does not venture beyond the preliminary background stage.

must be multi-pronged, affecting, to a greater or lesser extent, each element of the country's social and economic life, its administration and its relations with other countries. This is the central theme of the present report.

Notwithstanding the many difficulties they face, under-developed countries today have one notable advantage over those that were industrialized during the eighteenth and nineteenth centuries: there is a vast fund of knowledge and experience to draw on and for the most part the experiments and mistakes of European countries need not be repeated. In view of the fact that the social and economic environment that exists in most under-developed countries has many features which are unfavourable to industrial growth, however, it is probable that governments will have to play a more positive role in guiding investment, preparing the factors for more productive employment and assisting in the mutually beneficial adjustment of human and industrial needs than was the case in most European countries—especially if the rate of industrialization is to be accelerated. Although the present report is not intended to help improve the techniques of government planning or programming, much of the emphasis that is laid upon obstacles to industrialization is designed to focus attention on areas of the economy in which initiatory or supplementary government action may be needed.

Both the absolute and the relative importance of these obstacles vary considerably, not only from one under-developed country to another but also from time to time and from one stage of development to another. In view of this, no attempt has been made to grade the various obstacles in any order: in the succeeding chapters they are treated as if they were of much the same importance. The cumulative result of this procedure may be to magnify the difficulties that lie in the way of the industrial development of any particular country. It should be clear from what has been said above, however, and from what is implicit in the rest of the study, that industrialization is regarded as an urgent part of the wider process of economic development especially in those countries in which the relationships among factors of production make for under-employment and low productivity in the agricultural sector of the economy. Recognition of the importance of industrial development demands recognition of the forces which tend to hamper or retard it.

Nevertheless, in most of the less developed countries, to accelerate the rate of industrial development is by no means a simple matter. To assume that it is would be a disservice to all countries in which strenuous efforts have been and are being made simultaneously to maintain or improve standards of living, to retain in the hands of the individual as much freedom to make economic choices and decisions as is consistent with the wider social good, and to accelerate the rate of investment not only in the manufacturing sector but also in the other sectors—agriculture, power and transport and export activities, in particular—upon whose balanced growth integrated economic development depends.

The nature of the industrialization process

In the Council's discussion, the term "industrialization" was used in its restricted sense to designate the growth of manufacturing industry, and it is in this sense that the word is used throughout the present report. In the light of this narrow connotation, industrialization is conceived of as part—but no more than a part—of the much broader process of economic development, which in the present context involves the raising of standards of living through a steady increase in the efficiency of factors of production. One method of achieving such an increase is by the continual transfer of resources from less productive to more productive occupations.[2] Since, to a certain extent, as indicated later in the present chapter, this type of transfer entails the movement of factors from primary activities to secondary and other activities, one element of the development process consists of a movement from agriculture to manufacturing, that is, industrialization in the narrow sense of the term.

Though the fact that workers in one occupation may be economically more productive than workers in another is well recognized, the reason for such differential productivity is less obvious; yet it has an important bearing on the actual process of transfer. In so far as productivity is measured by wage differences it may merely reflect institutional arrangements or the results of extra training or skill or capital, but it is governed in the last resort by changes in effective demand for the various products. The demand for manufactured goods is in general less urgent than the demand for at least a minimum of food. Unless a community is assured of its basic food supplies, therefore, there is likely to be little demand for manufactures, and the productivity of factory workers would be relatively low. The process of economic development, which begins by raising the productivity of agricultural workers, is sooner or later likely to reach the stage where the demand situation is such that further increases in average productivity can best be secured by a transfer of labour to other employment.

The movement of factors from agriculture to manufacturing, however, has indirect effects which extend far beyond the resources that are directly involved. Labour which leaves the land and enters industry has not only still to be fed but also to be supplied with raw materials for processing and fabricating. Hence, as very few secondary industries are likely to be oriented exclusively towards foreign trade,[3] the organization and output of the primary activities are affected; the productivity of the labour and capital that remain on the land must be increased, by changes in the system of land tenure and use, by new investment in the land, by

[2] The term "transfer" as used in this discussion embraces not only the physical movement of existing resources but also, and to a much larger extent, a change in the relative rate of absorption or recruitment of the factors of production into the various occupations.

[3] An example of a close approach to such an industry is oil refining in Curaçao or Bahrein.

technical innovations or by other means. In so far as the necessary transfer of products between primary industries (producing food and raw materials) and secondary (processing and manufacturing) industries involves an expansion of the exchange system, additional resources are also required in such occupations as commerce, transport and finance. Consequently, even if it were defined as aiming principally at the development of the non-agricultural sectors of the economy and the employment of a gradually increasing percentage of population in other than agricultural jobs—and not merely as the expansion of manufacturing—industrial development could not be dissociated from progress in the agricultural sector.

Thus, the development of manufacturing industries does not preclude the development of agriculture. On the contrary, they are mutually dependent: the problem facing the less developed countries is not one of choosing between primary and secondary activities but rather one of ensuring the balanced expansion of all appropriate sectors of the economy, first attaining and then maintaining an equi-marginal distribution of resources.

It is true, however, that for a variety of reasons—economic, political and other—many of the under-developed countries, in their efforts to achieve a more stable economy and a better standard of living, tend to give manufacturing industries the highest priority. In some cases this reflects the desire to mitigate the risks of undue dependence upon the export of a small number of primary products. Often, however, it may reflect a misreading of European history and a tendency to attribute too great an importance to the industrial revolution, as against the agricultural revolution which preceded it, and the transport revolution which accompanied it and made possible the opening up of the primary resources of the new world. There may also be a tendency to underestimate the significance of the long period of social and economic change which prepared western Europe for the advent of the industrial exchange economy, and to overlook the many occasions —some quite recent—when the relative neglect of primary activities, even in some of the industrially advanced countries, has been the cause of serious interruption in the course of economic development.

In countries in which labour is abundant in relation to natural resources, secondary industry can perhaps be manned by under-employed workers from rural areas, and the effort to raise agricultural output pressed forward simultaneously with the extension of industrial activities. Where labour is in short supply, the effort to raise agricultural and mining productivity will usually have to precede any withdrawal of workers for employment in industry, unless external capital is available in sufficient amounts to finance the importation of whatever food and equipment are required to permit the firm establishment of new industries. The feasibility of financing industrialization in this way depends, in part, upon the country's natural resources: the richer and more readily exploitable these are, the easier and more practicable is the early withdrawal of labour from agriculture likely to be. Very few of the under-developed countries, however, possess such obviously exploitable natural resources and those that do—the oil-bearing regions of the Middle East, for example—have been faced with other obstacles to the rapid growth of domestic industry.

In general, therefore, the development of agriculture, simultaneously with, if not in advance of, manufacturing is needed to achieve steady economic progress and avoid structural disequilibria which may later be the source of hardship. The need to keep the various sectors of the economy more or less in step in order to assure a steady advance inevitably tends to slow down the process of industrialization. Over-rapid and unbalanced growth of the industrial sector, unaccompanied by complementary changes in the agricultural sector, may give rise to phenomena which in the long run are likely to retard economic development—balance of payments difficulties, inflation, excessive urbanization, the disruption of accepted social patterns.

Except in the event of the discovery of some particularly valuable natural resource that would greatly enlarge the country's overseas credit, or some permanent improvement in its terms of trade, any major increase in the rate of industrial investment must depend initially and mainly upon the country's ability to increase its rate of saving.

This is not likely to be easy, for in most of the countries in question average income is extremely low. Nor, in general, is the number of high incomes—from profit or rent—hidden in the average, large enough to provide a significant volume of savings without any reduction in the consumption levels of the majority. Such a reduction in consumption may be mitigated if there are idle resources available in the economy, but in the under-developed countries the resources that are idle usually do not reflect lack of effective demand but the absence of complementary factors which are required for their productive employment: in some areas land is lacking, in other areas manpower, in most areas capital.

When domestic savings are the only source of capital in low income countries in which consumption cannot sustain a very great reduction, the lowering of consumption standards is not likely to be merely a short-term necessity followed in a year or two, as the industrial investment bears fruit, by an appreciable rise in average incomes. In most under-developed countries, the existing level of industrialization is such that only after sustained investment for two or three decades will per capita production of manufactures show an expansion that is significant in terms of the average standards of consumption prevailing in the more industrialized countries.

Generalization in these matters is obviously difficult. As indicated above, much depends upon the elasticity of supply of the local factors of production and this varies considerably from country to country. But even

where one factor—labour, in most of the under-developed countries—is in fairly elastic supply, the contribution it can make to the growth of secondary industry is necessarily limited by the lack of complementary factors. While some forms of production may be feasible with a very low ratio of capital and land to labour, the technical coefficient of most forms of manufacturing is such that little immediate industrial development can be expected in these circumstances.

The concepts of per capita supply of capital, per capita production and per capita income raise again the question of population: its size in relation to other resources and its rate of growth. In some under-developed countries it is the sparseness of the population that places a limit upon the speed and extent of industrialization. In general, however, if other things are equal, rapid industrial development under contemporary conditions is likely to be easier in countries with a low ratio of population to land and a low rate of natural increase than where there is a combination of high population density and high rate of population growth. To increase agricultural productivity, savings and industrial investment—the prerequisite of industrial development—is generally more readily achieved in the former than in the latter, where the system of land use is likely to militate against any major improvement in agricultural techniques and efficiency, mechanization is likely to be more difficult and a very high proportion of small per capita savings has to be invested in the younger generation. Moreover, the countries of low population density are usually in a better position to benefit from an inflow of the appropriate factors—industrial capital and skilled labour — from abroad, while historically they have been the main recipients of the stream of emigrants flowing from Europe during periods of rapid economic change.

The resource situation in most under-developed countries lies between these two extremes. In each case, industrialization poses a unique set of problems, both in the actual process of establishing and operating secondary industries and in the wider task of co-ordinating the growth of manufacturing potential with the development of other sectors of the economy. In the last resort, therefore, each country has to devise and organize its own development process, adapting its industrialization effort to the basic economic realities of resource endowment, population growth, production pattern and social structure. Although, as suggested later in the present chapter, the process of economic growth has common elements discernible in a wide range of countries, it is evident that no general pattern of industrial development is applicable equally and in all its details to all the under-developed countries.

With regard to the common principles and common problems that are to be found in the experience of countries that have undergone a certain degree of industrialization in recent years, it is one of the purposes of the present report, in accordance with the second directive implied in resolution 461 (XV), to discuss them in a way in which their relevance to particular situations will be brought out, for the guidance of governments now in the process of making an effort to raise industrial capacity.

The common problems have been grouped together under the heading "obstacles to industrialization". Some of them have been mentioned above in the discussion of the place of industrialization within the broad framework of integrated economic development. Others—the inability of domestic demand to sustain economic levels of production, the general inadequacy of the various economic and social overhead facilities, the resistance that traditional social and cultural patterns often manifest in the face of the forces generated by the industrialization process, for example—may be just as important and are often more prevalent. The extent and effect of shortages in factors of production vary from one country to another, but lack of capital and technical knowledge and entrepreneurial ability is a characteristic common to almost all under-developed countries and one that usually sets a limit on the rate of autonomous industrialization. Industrial enterprise depends largely on the successful adaptation of production techniques to the availability and relative cost of the factors of production and to the pattern of demand that exist in the under-developed country in question. The availability of foreign exchange may, from time to time, be another limiting influence, while in most of the less developed countries weaknesses in public administration tend to handicap industrialization programmes in which governments are necessarily concerned.

Although no under-developed country is likely to have to meet all these obstacles at any one time, an industrialization programme depends for its success on a simultaneous attack on all the obstacles that do exist; pursued by itself, borrowing capital, expanding credit, restricting imports, extending technical training or any other single policy is unlikely to achieve very much in the way of sound industrial growth. On the other hand, industrialization is a cumulative process, and the successful negotiation of early difficulties itself tends to reduce the dimensions of later difficulties: policies which succeed in raising productivity and incomes lessen the inadequacy of the local market and facilitate the process of saving; the establishment of certain industries tends to improve the economic environment and assist in the establishment of other industries.

Considerable stress has been laid upon obstacles, in other words, not because they are likely to prove insuperable but because they must be clearly recognized in the formulation of "practical programmes" of industrialization. If an industrialization programme is to result in a more viable economy and higher living standards it must embody measures for overcoming all the existing obstacles. Consequently, it should be designed specifically to fit the economic and social conditions of the country and the time. No attempt has been made in this report to draw up specific programmes.

Instead, there is a general review of a number of measures which are likely to assist the industrialization process. Although, as in the case of the obstacles, the relative significance of these measures may differ widely from country to country and from time to time, each is likely to be appropriate during some phase of the industrial growth of under-developed countries. Hence, in spite of the fact that this report is quite general in nature, and by no means exhaustive, it may provide a useful basis for the subsequent analysis of the industrialization policies of individual countries.

Evaluation of measures designed to foster industrial development is inevitably of a tentative nature. Rarely, if ever, is it possible to conclude that certain lines of action are "good" or "effective" and others "bad" or "ineffective" in any general or absolute sense. In many cases, a good deal of additional research is required before an adequate assessment can be made of the effectiveness of particular policies as instruments for encouraging industry and it is to be hoped that this preliminary report may lead to more detailed examination of specific problems affecting particular countries.

Similar considerations apply in interpreting the term "rapid" in connexion with industrialization; consequently no attempt has been made to assign any absolute meaning to the term or to suggest any scale by which it might be measured. Instead, the problem has been analysed in terms of what might be called decelerating and accelerating forces: the obstacles to industrial progress tend to reduce the speed of development while the various industrializing policies and measures that are examined in this report are designed to increase the speed of development. Whether industrial growth is rapid, therefore, depends upon the nature and magnitude of the obstacles that exist at any particular time as well as upon the appropriateness and effectiveness of the steps taken to overcome them. Rapidity, moreover, refers to the rate of growth and not to the absolute amount of growth. Thus, in the early stages of industrialization comparatively small new developments will result in a rapid rate of growth, whereas maintenance of the rate of growth will require an ever-increasing volume of new industrial investment.

The resources facilitating such subsequent investment, however, tend to expand with the expansion of industry itself. For, as indicated above, when it is based on sound economic foundations, the process of industrial development is a cumulative one: the successful operation of one industry tends to make it easier to obtain the enterprise, the capital, the skill and the ancillary services required by another. Consequently, it is the early industrial steps that are likely to prove the most difficult, and it is in this initial phase that various forms of external assistance are likely to be most useful for speeding up the process.

The maximum feasible rate of industrial development, however, is not merely a function of the availability of the necessary factors of production. Industrialization involves structural changes in the economy, and in many instances, if undue social costs are to be avoided, the pace at which such changes can be brought about is governed by considerations, such as the rate of growth of population and of agricultural production, which are not usually susceptible to sudden or rapid short-term change. Moreover, since industrial development entails profound changes in social organization, the rate at which it may proceed and still bring a net social advantage in the short run is also limited by the capacity of the community to make the necessary adjustments in relationships and status as well as in mode of living.

The importance of the human factor bears emphasis. The speed and success with which an under-developed country is able to industrialize depend in no small measure upon its human resources and their potentialities for development. "The major capital stock of an industrially advanced country is not its physical equipment; it is the body of knowledge amassed from tested findings and the capacity and training of the population to use this knowledge effectively."[4]

In narrower economic terms, however, the extent to which the rate of increase in industrial output is able to exceed the rate of population growth, and in due course induce a significant increase in real per capita income, is a function of new industrial investment, which depends largely upon the rate of increase in capital accumulation. As indicated above, this in turn depends largely upon an increase in the output of the primary activities, mainly agriculture, and seldom are the relevant technical, social and organizational conditions in this sector conducive to very rapid improvement.

It has been argued from time to time that the financing of industrialization, at least in its initial stage, by means of additional bank credit might be the answer to the problem of speeding up the process. It is true that direct provision of purchasing power to the indicated sector might rapidly divert resources towards the desired types of investment. In so far as these resources were previously idle such a movement would raise incomes and facilitate the general process of economic development, at least up to the point where bottlenecks in production began to cause a reduction in efficiency and an undue rise in prices. Where the factors of production required in the industrial sector are not readily available, however, such an investment policy would be tantamount to industrialization by means of a price inflation which would reduce the real purchasing power of the incomes accruing to other sectors of the economy, that is, by bringing about that reduction in consumption which, it was argued above, was difficult to contemplate in view of the extremely low levels already prevailing.

Thus, although it is possible for the industrial sector in which the initial inflationary impetus is applied to succeed in securing a larger fraction of the country's

[4] Simon Kuznets, *Towards a Theory of Economic Growth*, a paper read at the bicentenary celebration of Columbia University, New York, 1954.

real resources, the final effects of this type of investment upon the economy as a whole are likely to be socially inequitable, and if the inflationary practice is continued, self-defeating. For the resultant redistribution of national income, together with the price-wage spiral which sooner or later is likely to be generated, will tend to transform the pattern of economic activity into one that makes less productive use of national resources, and perhaps ultimately to bring about an unwillingness to invest in industry and a reversion to speculative transactions in land and inventories, in which the economic history of under-developed countries with inflationary traditions abounds. The "pump-priming" techniques which are sometimes used in the more advanced countries have no parallel in under-developed countries in which lack of co-operant resources makes it impossible for idle or under-employed factors to add to the stream of industrial production at comparatively short notice. In most under-developed countries, inflationary investment is unlikely to result in a sufficiently rapid increase in production, in other words, to offset the tendency of inflationary forces to alter the distribution of income and resources to a detriment of consumption levels.

The truth is that the impediments to industrial development in these countries are real and not likely to be overcome merely by monetary devices. There is a real shortage of capital and not merely a reluctance of capital to enter the industrial field, and this can be overcome only by an increase in the available amount of savings. There is a real shortage of technical skill and entrepreneurial ability which can be overcome only by the extension and deepening of education, by the training of labour, by the prosecution of research and ultimately by creating the conditions in which the country's savings can be effectively used in industrial investment.

It is in the light of these considerations that the third element of resolution 461 (XV) assumes importance. For one of the ways in which some of the real obstacles to industrial development can be reduced is by external assistance: some of the capital, a good deal of the technical knowledge, a small proportion of the labour, much of the enterprise and initiative that are required in the industrialization programmes of less developed countries may be obtainable from more advanced countries, either directly or through the medium of one or other of the international organizations.

In the past, industrially advanced countries have provided an important flow of private capital for investment in under-developed countries, some of which indeed owe much of their industrial growth to this source and to the technical knowledge and managerial ability which often accompanied it. In general, however, factories serving the small domestic market have exercised little attraction for foreign investors and only a small proportion of this flow of private capital has gone into secondary industry. In recent years, moreover, foreign investment has not been on a scale large enough to give rise to a marked and widespread increase in the rate of economic development. This reflects both the changed financial circumstances of several of the industrial countries and the absence from many of the less developed countries of the conditions which are conducive to an inflow of capital—not only profitability but also security, stability and the right to the reasonable transfer of funds. The insufficiency of private foreign investment has not been made good by the flow of capital from the International Bank for Reconstruction and Development and other institutions concerned with international lending. Although these institutions have helped to finance the construction of various basic facilities in many under-developed countries, capital has been directed into industrial investment to only a very small extent, and international lending is not likely to be an adequate substitute for the movement of private industrial capital in the foreseeable future.

The greater the extent to which the under-developed countries are thrown back upon their own capital resources, the more important does it become to raise local productivity. It is in this field that technical assistance, whether organized bilaterally or internationally, is likely to prove of particular value. Any knowledge or training or technique or device that succeeds in so improving the productivity of any or all of the factors of production as to raise per capita output tends to facilitate the formation of capital, which is the first step towards industrial investment.

Until the present, however, technical assistance schemes have done comparatively little in the narrower field of secondary industry itself. In this respect, the present report may suggest a number of problems directly connected with the industrialization process to the solution of which, in any particular country, the advice and assistance of experts might make a major contribution.

Even a cursory review of the course of industrial development during the past few decades suggests that one sphere in which expert assistance could be of considerable value is that of pre-investment surveys. There are numerous examples of countries embarking on ambitious projects on the basis of no more than the general desire to industrialize and with astonishingly inadequate information concerning all the relevant technical, social and economic data upon which the success of the project so greatly depends. It may be true that even industries that fail leave behind them a legacy of experience and, in some cases, equipment which may have alternative uses, but given the fundamental scarcity of capital in under-developed countries, this is a costly way of gaining knowledge and furthering the process of industrialization. Resource and market surveys and pre-investment evaluations, which might be provided through the medium of one or other of the technical assistance programmes, would help to avoid such misdirection and waste and thus, in the long-run, speed up the process of industrialization.

Again, while it may be true that no two countries face identical difficulties in their industrialization process, it is also true that countries at a similar developmental

stage face difficulties of much the same kind and, being subjected to much the same economic forces, often find themselves in very similar situations. Instances of common problems may be found even in the present general study. A series of more detailed analyses, dealing more specifically with the problems and obstacles that are encountered most frequently by under-developed countries in the course of their industrialization, would enable attention to be focused on particular impediments to industrial development one at a time and hence make it easier to appraise the means used by governments in seeking a solution of their particular version of the common difficulty. Analyses of this nature might reveal new and perhaps unsuspected needs and difficulties, the meeting of which might contribute greatly to the planning and realization of the industrialization objectives of under-developed countries. In this way, it is hoped, the present report may help to lay the foundations for a constructive approach to problems of industrial development.

The successful carrying out of this type of analysis, however, depends (as, to a more limited extent, do the investment decisions referred to above) on the availability of adequate and precise information concerning most, if not all, of the important variables relating to economic development in general and to the course of industrialization in particular. In under-developed countries which lack appropriate statistical services, the necessary information simply does not exist and, in such cases, high priority should be given to making good the deficiency. In countries in which basic economic data are regularly compiled and where, in consequence, periodic measurement of various elements in the process of industrialization can be carried out, the need lies rather in the direction of regular analyses of relevant facts. For this, the first requirement is that the right questions be posed and, in this respect, it is often useful to have the experiences, policies and progress of one country compared with those of other countries at similar stages of development.

As already indicated, the present report is general and indicative rather than specialized or exhaustive. It deals with the industrialization process from the point of view of less developed countries. Even in this respect, economic development being a dynamic phenomenon and the world economy subject to continuous change, new problems are constantly emerging, old problems are constantly taking on new forms, and no solutions are ever final. Moreover, two important aspects of the industrialization process have not been discussed at all—namely, its effects, first, on the economies of more advanced countries and, second, on the course of international integration and international economic equilibrium. Even if the more advanced economies are affected only by changes in the pattern of world trade, the industrial growth of under-developed countries will obviously have a significant influence on their economic structure and the distribution of their factors of production. Industrialization that is not compatible with closer international integration and with an extension of the international division of labour may in the end serve to hold down world levels of living. These are obviously important subjects but they would seem to lie outside the scope of this inquiry.

Patterns of development

The initial phase in the process of autonomous economic development has usually been the transformation of an elementary subsistence society by the introduction of exchange, first of localized products—salt or fish, for example—or casual food surpluses and then, as the institution of the market has taken shape, of commodities produced more or less systematically and intentionally for this purpose. The evolution of a market economy, especially when money becomes generally used, implies a certain amount of occupational specialization and, in the transition between the subsistence and the exchange organization of society, there has usually been a stage in which a small proportion of the population has been engaged in both primary and commercial occupations, that is, both in producing food and other primary products and in conveying them to the market for disposal by exchange.

This type of society, basically self-contained but with expanding elements of an exchange system within it, is typical of much of contemporary Africa and may also be found in parts of Latin America and south-eastern Asia. In one important sense it is pre-industrial: there is no elaborate transformation of materials, still less, any use of machines for this purpose or any employment of specialized wage earners in a common working place. In another sense, however, by organizing a system of exchange, it has taken the first step leading from subsistence to industry. The transition is marked by the emergence of certain specialized activities, transport and commerce in particular, necessary for the proper functioning of an exchange system, which in turn provides the appropriate framework for further specialization. In this way, it becomes possible for some members of the community to devote themselves entirely to secondary occupations, to the processing, transformation and fabrication of primary materials, first as individual craftsmen, later in groups organized co-operatively or through a contract of employment. Thus, logically, the society progresses from the subsistence phase, through a commercial phase, to an industrial phase, though in practice these phases are rarely, if ever, distinct and easily separable. In general, indeed, they merge in the continuous process of economic growth, while at any moment of time in most countries—especially the less developed countries—they exist side by side. In terms of economic chronology, however, the commercial phase grows out of the subsistence phase, while the industrial phase generally represents a later development and a higher degree of functional specialization.

If satisfactory external markets are available for the primary surpluses of the country, the development of

secondary industry may tend to be delayed. In so far as this leads to a sound international division of labour, it is not necessarily to the detriment of local levels of living. In these circumstances, domestic industrial development is likely to be confined very largely to the processing of the country's primary products, chiefly for export, at least until a breakdown in international trade impels a greater degree of industrial diversification.

Assuming satisfactory external markets, the course of development depends partly on the marginal productivity of workers in their primary activities; the lower this is, the more urgent is the need for occupational change and the greater will the economic gain from diversification tend to be.

Although a considerable amount of commercial activity usually precedes the industrial stage, the evolution of the latter does not necessarily result in the displacement of commercial and ancillary occupations. On the contrary, one of the characteristics of an industrialized society is the tendency for other activities to proliferate in response both to the needs of an economic organization which involves a good deal of concentration and movement of the factors of production and to the changing demands of consumers as living levels rise. One of the few functions that seem generally to have declined in importance in the course of industrial development in domestic service—a reflection on the one hand of the opening up of other forms of employment and, on the other hand, of changes in the pattern of housing and family life and in the availability of household equipment.

Secondary activities have usually commenced with the processing of primary products: milling grain, expressing oils, curing fish or bacon, preparing skins and furs, tanning leather, smelting the more readily reducible ores, spinning vegetable fibres, preparing timber. The second stage in the evolution of secondary industry has usually consisted of the transformation of materials: making bread and confectionery, beer, footwear, horseshoes and ploughshares and other metal goods, cloth and clothing, furniture and paper. The third stage, historically as well as logically, has comprised the manufacture of machines and other capital equipment to be used, not for the direct satisfaction of any immediate want, but in order to facilitate the future process of production.

Here again the three phases are seldom clearly demarcated in practice; the first phase is a function of the country's endowment in resources, the second phase may be based partly on imported raw materials and hence may develop independently of the first, particularly since many of the second phase, fabricating, industries are technically simpler than some of the first phase, processing, industries. Some of the least developed countries have first and second phase industries which evolved in close relation to each other. Where industrial evolution has reached only the first phase, the bulk of the output is likely to be exported, while in most under-developed countries, second phase industries serve only the local market. The development of third phase industries represents a considerably higher degree of industrial maturity. In both second and third phase industries, assembly operations based on imported parts and components have preceded local fabrication.

This attempt to epitomize the development of secondary industry in terms of three principal stages—the preparation of primary materials, their transformation and fabrication, and the manufacture of capital goods—reflects, on the one hand, the pattern of industrial development that might be expected to emerge in an economy which is changing freely and spontaneously in response to ordinary economic stimuli and on the basis of a fairly diverse endowment of resources and, on the other hand, a synthesis of the various patterns of development actually experienced by countries that have industrialized to a considerable degree within the past half-century. In both senses, this attempt suffers from the defect common to generalizations: no one case fits precisely into the mould. Some of the reasons for this are worth pursuing for the light they may shed on the various problems concerning the process of industrial development with which the rest of this report deals. From this point of view, four types of exception to the general pattern deserve to be pointed out.

First are the societies in which there has so far been little or no autonomous economic growth. These exist in various parts of the under-developed world: areas in which only the most rudimentary system of exchange has evolved, too tenuous to support more than a very elementary division of labour. These subsistence economies, unspecialized and lacking capital, do not possess the means within themselves for rapid industrial development. Their industrialization cannot but be slow and it will have to be preceded, if not by a fully operating agricultural-commercial organization postulated in the general pattern, at least by a more or less firmly and widely based exchange system. The rapid conversion of a subsistence economy to an exchange economy requires the provision by an outside agency of capital and knowledge not present in the society in its static state. Given a long enough period of time, such societies might experience a certain degree of autonomous, if slow, industrialization. But for present purposes, practical considerations rule out such a protracted process; rapid industrialization means telescoping the development process and in general is not likely to be achieved without a certain amount of external assistance.

In the past, however, the introduction of major external influences into static or nearly static societies has not always resulted in accelerating the process of development in the sequence of stages outlined above: it has usually given rise to various types and degrees of divergence from the generalized pattern.

A second and perhaps the most common variant of the development pattern due to external influences is the result of an initial acceleration of the process—reflecting

the rapid evolution or, more frequently, the imposition, of a commercial economy upon the traditional agricultural economy—followed by a marked retardation of the process, leaving the country seemingly settled in the second (pre-industrial) stage of development. This seems to be the situation in a number of the raw material exporting countries (Indonesia and Malaya, for example) which have highly organized commercial economies in the export sector, superimposed in each case upon a more or less primitive agricultural economy based on peasant farming and supplemented to varying extent by a plantation sector. Whatever industrial development has taken place in these circumstances has usually been limited to the first phase: the processing of the export crop, as exemplified in the sisal factories of Tanganyika.

Where the raw material is a mineral rather than an agricultural product, the result may differ to the extent that technically complicated beneficiation may be necessary before export. The establishment of an elaborate smelting and refining plant at the mine, for example, has the effect of imposing an industrial element belonging to a later phase of development on an economy which may previously have experienced no more than an elementary degree of commercialization. The electrolytic copper refineries in Northern Rhodesia and the great oil refineries of the Persian Gulf area, for example, seem quite out of keeping with the surrounding subsistence society out of which they could never have grown but into which external enterprise has placed them.

A third type of variation from the generalized pattern of development is the result of internal rather than external factors, affecting either the market or the supply of factors of production. In so far as autonomous economic growth reflects the magnitude and distribution of demand, the pattern of industry is governed in part by the distribution of purchasing power in the community. Where, for any reason, purchasing power is concentrated in comparatively small segments of the population, the demand for the ordinary run of consumer goods is likely to be restricted, perhaps to the extent of affecting the structure of the industry catering for it. The effect may be merely to inhibit the expansion of the second phase of the industrialization process while imported manufactures continue to meet the demands of higher income groups. This appears to be the situation in a number of Latin American countries as well as in the Union of South Africa, where an increase in productivity, and thus in the purchasing power of the indigenous majority of the population, would probably have given rise to a more rapid growth of consumer goods industries. This peculiar structure of the domestic market may, however, prompt an investment in the production of capital goods which when compared with the hypothetical general pattern is either somewhat premature or disproportionately large. Such a hastening of the third phase of the industrialization process tends to occur where, as a result of limitations of the domestic market for goods of mass consumption, new funds are diverted into heavier industry, even though, as in the case of Chile, the latter must rely partly on export markets.

On the supply side, the nature and distribution of industries depend partly on availability of raw materials either from the country's own resources or from readily accessible markets. Only in the absence of any significant material shortage is the three-phase pattern of industrialization likely to be fully worked out. While many countries that are still classified as under-developed might in fact have such a wide range of raw materials at their disposal, there are others whose resource endowment is likely to limit or alter the nature of their industrial development. The extent to which lack of resources is likely to handicap the process of industrialization is discussed in chapter 3 below; in the present context, it is sufficient to point out that the order in which industries are established has often been related to the country's resource endowment: in segments in which there is notable abundance or notable deficiency in supplies, associated industrial activities are likely to be disproportionately large or advanced in the one case (especially if exports are involved) or disproportionately small or retarded in the other (especially if there is any difficulty in importing the supplies in question). Thus, Egypt with its large domestic supplies of raw cotton was able to set up a commercial cotton spinning industry as early as the third decade of the nineteenth century (on a government basis) and in the first decade of the twentieth century (on a private basis); in the Union of South Africa, however, which though industrially more advanced, has grown very little cotton, the corresponding industry was established only after the Second World War.

The fourth and increasingly important cause of departure from the generalized pattern of development lies in the active intervention of government. In most cases it is probable that this has tended to accelerate the process, resulting in an earlier transition from subsistence to exchange and a more rapid expansion of secondary industries than the operation of ordinary market incentives on the country's available factors of production is likely to have brought about. This is illustrated by some of the community development projects that have been encouraged by various governments, especially in south-eastern Asia, in order to increase the diversity and productiveness of economic activities at the local level. In a number of instances these projects have been the means of introducing new industries into the village economy, though only as part of a wider programme in which health, education and other social aspects have been integrated with schemes for economic development which itself has usually been based on improvements in agriculture and in power, transport and other overhead facilities.

In some cases, however, particularly where the government has had power to allocate factors of production and organize economic activities, the development proc-

ess has been not only accelerated but also, in a sense, realigned by high rates of investment in certain sectors of the economy. In general, the effect of this type of programme has been to expand secondary industry to a relatively greater extent (in comparison with primary activities, especially agriculture) than it is likely to have been under the free interplay of demand and other economic forces. Within the industrial sector, moreover, the tendency in certain instances has been to concentrate a substantially higher proportion of total investment in the field of capital goods production. In the long run, the limits to industrial orientation of this nature are determined very largely by the government's ability to restrain consumption, while the level of industrial investment as a whole is likely to be limited by the adequacy of the supply of raw materials. In some of the eastern European countries in which rapid industrialization and a high rate of investment in heavy industry have been essential features of economic planning since the war, recent modifications which tend to favour agriculture and consumer goods industries may denote the approach of those limits.

The main purpose of this discussion has been to amplify the thesis that industrialization is a process of growth and, as such, is organically linked both to the social and economic past and to parallel processes of social and economic development. Historically, manufacturing industry has rarely developed beyond the handicraft stage until an adequate system of exchange, with its associated activities in finance, commerce and transport and so on, has been evolved. Although the general development of industry itself has usually proceeded in three broad stages from simple processing of raw materials through the transformation of goods for the direct satisfaction of consumer needs to the more elaborate fabrication of heavier capital goods, there are many variations of this pattern, both in terms of the time taken to attain later stages and in terms of the relative importance of each of the stages. The circumstances of each country, in respect of available resources, government powers and policies, foreign trade links and so on, determine the actual course that its industrialization will follow. Although the rate of development is thus variable within considerable limits, there is no escape from the organic connexion that industry must maintain with factors and resources on the one hand and with the market on the other.

In general, given the contemporary distribution of production facilities and orientation of world trade, the chief market for manufactures during the early stages of industrialization is likely to lie mainly in the primary and, in particular, the agricultural sector of the industrializing country itself. In these circumstances, industrial output is sustained by the incomes accruing to the primary sector as well as by the supply of raw materials flowing from that sector. At a later stage, when the manufacturing processes have become lengthier and more complex and industrial employment occupies a larger proportion of the population, the balance of growth within secondary industry becomes increasingly important. At all stages, complementary expansion is necessary in power and transport facilities and in the associated commercial and financial framework. This reinforces the conclusion that industrialization must be considered as being merely one part of the total process of economic development. Development plans for industry cannot be framed in isolation; they must be integrated with plans for the development of agriculture, mining, transport, power and all other sectors of the economy. This is true even within an economy which is well endowed with natural resources. Where there is a greater dependence upon imports—whether of plant and equipment, skill and knowledge, or components and raw materials—a balance must also be maintained with export activities. And throughout the process human adjustments must be made to the changing occupational structure of society.

The feasible rate of industrialization is thus not governed merely by the problems associated with the erection of factories; it is a function of an organic type of growth in which the essential feature is the mutual dependence of the various sectors that are involved. In their development these sectors must keep in step.

Chapter 2

OBSTACLES TO INDUSTRIALIZATION IN UNDER-DEVELOPED COUNTRIES

In some respects a list of the forces and circumstances which tend to handicap the industrialization of under-developed countries is no more than a list of the principal characteristics which distinguish them from more advanced countries. Although such obstacles impede not only industrialization but the process of economic development in general, there are certain aspects which may from time to time be of particular relevance to the growth of secondary industry. These may be grouped in three major categories: inadequacies of the economic environment, socio-demographic problems and shortages in factors of production. An additional obstacle is sometimes to be found in the special problem of adapting production techniques that are usually evolved in more advanced countries to the pattern of resources and markets of less developed countries. Two other problems—international circumstances and public administration—also merit a brief discussion, for though they are of a much more general nature and affect all phases of economic development, they have special significance for the process of industrialization.

The discussion of these obstacles in the present chapter is intended as a background to the review of measures to promote industrial development contained in the following chapter. Because their relative importance differs not only from country to country but also from time to time, it has been considered more useful in this introductory report to discuss them in static terms. Although it has the double disadvantage of giving the impression that they are of equal weight and of ignoring some of their interrelationships in a dynamic economy, it probably forms a better foundation for possible future analysis of the actual process of industrial development under a series of hypotheses concerning the relative magnitude and conditions of operation of the major variables.

The Economic Framework

In this section, three aspects of the economic environment that have special implications for the growth of secondary industry in less developed countries are singled out for preliminary examination: first, deficiencies in the economy which tend to handicap production and then two conditions which affect demand, major disparities in the development of various sectors and the associated problem of market inadequacy which, though itself symptomatic of more fundamental shortcomings, is probably the principal immediate deterrent to the expansion of local manufacturing.

Unsuitability of basic economic facilities

The principle that the marginal efficiency of a particular factor of production is likely to decrease as its relative supply increases (and conversely, rise with its relative scarcity) though valid when large quantities of the factors are actually engaged in production, has to be applied to under-developed countries very circumspectly. It is not generally true, for example, that the return on a unit of industrial capital invested in an under-developed (capital-poor) country is likely to be greater than that on a unit invested in an advanced (capital-rich) country. Nor is it generally true that the early investment of capital in an under-developed country is more productive than the later investment. In many cases, indeed, especially in the least developed countries, the opposite of these two postulates actually obtains. The initial investment of capital in many under-developed areas may produce no immediate tangible return at all. And the flow of industrial capital to under-developed countries would be much greater than it is if its productivity compared more favourably with that in the more advanced countries.

One reason for this apparent anomaly lies in the fact that the less developed the country the more is any single investment likely to change its economic nature, so that successive doses of capital are in effect applied to economies which differ in important respects. Thus the early investments in such a country, though they may be very unproductive in their immediate pecuniary return, make their major contribution by bringing about basic changes in the economic environment. This is of special importance to manufacturing industry for seldom is industrial investment a very appropriate form of pioneer capital. Investment in manufacturing industry is likely to be much more productive at a later stage, when the economic environment has been made more favourable by previous investment in the building up of basic facilities, and in enlarging the supply of complementary factors of production.

Absence of these basic facilities, indeed, is one of the major obstacles to profitable investment in secondary industry in the less developed countries. The exact nature of the deficiency varies from country to country and even from region to region within some of the larger countries, but certain common problems, because they are so widespread, are worth special mention.

One of these is the general inadequacy of the transport system. Secondary industry is particularly vulnerable to transportation difficulties, for the actual manufacturing process is often no more than a brief act of separation, synthesis or transformation preceded by the lengthy operation of assembling raw materials and fuel and followed by the complicated business of distributing the product to its multiple consumers. Economic secondary production consists very largely in the correct choice of a location which will minimize the combined costs of assembly and distribution, and is thus very dependent upon the availability, cost and effectiveness of the transportation system.

In many of the less developed countries—Afghanistan, Ethiopia, Nepal, New Guinea, South West Africa, for example—transport difficulties have been a major force tending to inhibit industrialization altogether. In many others—Brazil, Mexico, Turkey, for example—transport difficulties have tended to reinforce those centripetal influences making for industrial concentration, often in coast cities with ports that provide an important transport link with the outside world. In most of the under-developed countries that have been undergoing industrial expansion in recent years, transport has tended to become a bottleneck, retarding the pace of further development.

Another vital physical element of the economic environment whose absence or inadequacy may constitute a serious obstacle to industrialization is power. With increasing mechanization, manufacturing industry comes to depend more and more upon local power facilities, and although large concerns may be capable of generating their own power, this procedure is usually inappropriate to less developed countries, partly because it involves new establishments in considerably larger capital charges, partly because the resulting energy is more costly and partly because it is the lighter industries and smaller units which are usually pioneers in the industrialization process. Shortage of purchasable power, therefore, is a distinct disadvantage from the point of view of industrial expansion. In recent years it is a disadvantage from which most of the under-developed countries have suffered in varying degrees (see table 1).

Post-war strain on electricity generating capacity in the less developed countries has been particularly severe because not only has there been a considerable industrial expansion in many of these countries (with its roots in war-time developments), but there is also a secular trend towards electricity as a source of power for industry. This is a trend which in the long run will probably tend to favour industrialization in a number of under-developed countries, since electricity is in general a more flexible source of power and more easily adapted to the technical needs of manufacturing in such countries. But in the post-war period, the combined effect of inadequate investment in generating capacity during the war and the rapid re-equipment of factories with electrical machines and devices (added to the growing use of electricity for domestic purposes in the expanding urban areas) has been to cause real and apparent shortages and bottlenecks from time to time in most of the countries under review.[1]

Table 1. Electric Power: Installed Capacity and Production, 1952

Area	*Installed capacity (thousands of kilowatts)*	*Production (millions of kilowatt-hours)*
World total	270,751	1,139,013
Industrial countries	247,731	1,061,523
Northern America[a]	107,453	524,842
Western Europe[b]	85,026	304,348
Eastern Europe[c]	12,620	50,600
USSR	28,000[d]	116,400
Japan	11,270	51,647
Australia and New Zealand	3,362	13,686
Under-developed countries	23,020	77,490
Africa	4,069	17,463
Asia (excluding Japan)	3,734	11,862
Latin America	11,796	36,435
Eastern Europe[e]	1,904	7,000
Middle East	950	2,728
Others	567	2,002
Per cent in under-developed countries	8.5	6.8

Source: United Nations, *Monthly Bulletin of Statistics*, November 1953.

[a] Canada and the United States.
[b] Europe, excluding the two groups of eastern European countries.
[c] Czechoslovakia, Hungary and Poland.
[d] Estimated by applying the average utilization coefficient of other industrial countries to the figure for production.
[e] Bulgaria, Romania and Yugoslavia.

War-time difficulties thus accentuated what by its very nature constitutes an awkward development problem. Facilities such as transport and power generally involve large and discrete investments. They cannot be gradually expanded as the demand for them increases but must be laid down in single, technically complete, and usually costly, units; there cannot be less than a single track railway line between two given points if a transport connexion is to be made, or less than a barrage of certain height and width if a given river is to be harnessed for power. Thus it is in the nature of these investments that when they are first made they are somewhat in advance of requirements and that after the economy has developed around them they become less and less adequate and subject to increasing strain—until the process is recommenced by another large investment in similar facilities. The effects of this "lumpy" course of investment are greatest where the base on which they are carried out is smallest, that is, in the least developed countries. But in all under-developed countries in which capital is particularly scarce, the

[1] In many instances, particularly in Latin America, the problem of inadequate public utilities has been aggravated in recent years by a lag in private investment in new facilities, induced in large measure by price control policies which lowered very appreciably the relative profitability of such enterprises.

tendency for facilities to fluctuate from under-utilization to over-utilization in the course of economic growth poses an awkward development problem for the government, upon which, in most cases, such investment decisions tend to fall. While lack of these facilities doubtless constitutes an obstacle to industrialization, extravagant investment in them, beyond foreseeable demand, may constitute a diversion of resources which could be used more beneficially elsewhere in the economy.

Though transport and power are probably the most important requirements of secondary industry, they are by no means the only elements determining the suitability of the economic environment. The development of domestic industry depends very largely upon the size of the local market, but this in turn, though ultimately a function of the national income and its distribution, depends partly upon machinery for taking the product to the potential consumer. The effectiveness of this distributive organization is one measure of the adequacy of the economic framework. Where the commercial sector is poorly equipped to handle the output of local factories, the absorptive capacity of even the small domestic market is not fully realized. Some of the benefits for manufacturing that may stem from an effective means of mass distribution have been demonstrated in Mexico in recent years with the establishment there of a large mail order concern.[2]

Inadequacy of the commercial sector not only reduces the size of the accessible market and throws the burden of carrying stocks of finished goods and organizing their distribution, at least partly, on to the factory, but it also magnifies problems of supply, making it necessary for the producer to maintain larger stocks of raw materials and consumable stores than would be required if ordinary trade channels were more effective. Increased stocks—and the consequent increase in costs—are also a factor in the organization of equipment and machinery, for the lack of repair facilities and ancillary industries in the under-developed country may render it necessary to carry more spares and replacements than would otherwise be required and, in some cases, to install standby plants in order to assure continuous production or at least avoid unduly long breakdown delays.

Pioneer industries are also likely to suffer from the absence of other establishments to which waste by-products might be passed. They may also be handicapped by the absence of institutions which in a more developed society would help to improve the skill of the labour force and facilitate the raising of capital. Where the work requires it, a new factory may have to organize its own training facilities—again a cost-raising expedient—but the lack of financial institutions is likely to be less tractable. This is a deterrent to industrial investment partly because it makes more difficult the raising of local capital and partly because it tends to reduce the liquidity of investment in secondary industry. In much the same way, the day-to-day operations of a manufacturing establishment are likely to be less smooth and hence less efficient, because of the absence of many of the services of insurance, credit and banking institutions which are part of the normal environment of an industrial economy.

[2] See Richardson Wood and Virginia Keyser, *Sears Roebuck de Mexico, S.A.*, National Planning Association (Washington, D.C., 1953).

Disparities in the development of various sectors of the economy

The most obvious cases of disparate development occur in those countries which have within their borders subsidiary subsistence economies or more or less self-contained village societies. This is the situation to a greater or lesser degree in almost every under-developed country, and it tends to inhibit the growth of manufacturing industry in a number of ways.

Within the subsistence sectors proper, the pre-commercial economic organization practises too rudimentary a degree of division of labour for any industrial specialization to occur. By the same token a subsistence sector cannot form part of the general market of the country. This insulation of a portion of the population —a very large portion in most African countries, not much smaller in many Asian countries and significant in several Latin American countries—affects economic growth in general but is particularly inimical to the development of secondary industry. It inhibits the flow of labour into occupations requiring industrial skills; it keeps off the market a significant proportion of the country's potential purchasers of industrial products.

The coexistence within an under-developed country of subsistence and exchange economies represents perhaps the most obvious example of disparate growth in different sectors, but there are others of the same nature in most of the less developed countries. There is a gap between the farm and the non-farm population in many Latin American countries, between landowning and landless in many Middle Eastern countries, between the immigrant and the indigenous population in many African countries. This means that substantial elements of the population tend on the average to be much less productive, much less adaptable, much less educated, much poorer than those belonging to the more favoured sectors. The restrictive effects, though different in degree, are the same in nature, as in the case of insulated subsistence sectors: labour tends to be less mobile or less suitable than it might otherwise be and the market for industrial products much narrower.

In geographic terms the immobility of labour in many of the countries in question is reduced to a certain extent by a flow from the less developed to the more developed sectors on a seasonal or temporary basis. While migrant labour is quite suitable for many types of employment, factory work—except perhaps in such seasonal industries as sugar refining and fruit and vegetable canning—is not among these. In the factory, as a rule, stability is an asset without which the requisite degree of industrial skill is costly to achieve and difficult to maintain.

The distortion of the market which may result from disparate economic growth among the sectors also tends to militate against the expansion of secondary industry. In general, the manufacturing concerns most appropriate to early stages of industrial development are those which produce consumer goods for mass consumption. Where, because of the failure of one or more sectors to keep up with the general pace of development, the mass market is unduly curtailed, industry may be handicapped by its inability to establish optimum size, minimum cost, factory units. At the same time, capital may be diverted to activities with a lower development potential—luxury building or services for example—catering for the more varied demands of small high-income groups or providing somewhat prematurely, and usually at a relatively high average cost, for the more specialized capital goods requirements of the economy.

In most under-developed countries the inhibiting effect of the narrowing of the market or, more usually, the failure of the market to expand because of lags in different sectors is overshadowed by the far more general characteristic of these economies, namely the basic deficiency of the market as a whole. This is discussed in the following section.

Inadequacy of the domestic market

Low per capita national income is one of the principal attributes of less developed countries. Low personal incomes, in turn, are reflected in a pattern of expenditure which is very unfavourable to secondary industry; in general, the lower the income the higher is likely to be the proportion spent on food, much of which is unprocessed.[3] It is only as income rises that a market for manufactured products is created. This is one of the senses in which the process of industrialization, when soundly conceived and executed, tends to be cumulative: the higher incomes which flow from new investment and employment are among the principal elements of an expanded demand for manufactures. Nevertheless, many under-developed countries are too small—quite apart from income levels—to be able to sustain factories of economic size in more than one or two segments of secondary industry. The attainable level and patterns of industrialization in such countries are obviously limited.

The limited market affects the development of industry in several ways. First of all it offers no attraction to industrial capital. In so far as foreign capital is concerned, the under-developed country is at best likely to be regarded as no more than a marginal market, capable of being served from manufacturing plants located in more favourable sites. The effect will be strongest in the case of normally market-oriented industries, but in general on demand grounds alone there is likely to be little or no inducement for the establishment of a local factory.

If a local factory is in fact established, whether with foreign or domestic capital, the limited market is likely to restrict the size of the plant. The implications of this in terms of techniques of production and unit costs obviously vary from industry to industry. In general, however, the limitation of demand may prevent the use of various cost-reducing devices and the adequate spreading of overhead, with the result that average costs may be appreciably higher than in countries in which the market is large enough to justify continuous large-scale production.

The fact that average personal income is comparatively low in under-developed countries affects not only the magnitude of the local market for manufactured products but also its nature. Except in areas in which a long handicraft tradition has created or reinforced distinctions and peculiarities in local consumer wants, the demand in general is for goods in the lower quality range and for standardized goods for which variations in style or quality are of much less importance than low price. The willingness of consumers to accept comparatively poor grade goods is, of course, an advantage to a small and newly established factory, but it should be borne in mind that by and large these are the goods for which mass production methods are usually most appropriate and in the supply of which, therefore, a small establishment in an under-developed country may often find itself at a disadvantage in competition with larger manufacturers in major exporting countries.

In many of the less developed countries, the market for manufactures may be even less favourable than would appear from the low figures of per capita national income. Rarely is the market homogeneous and continuous throughout the country; for not only is it likely to be broken up by such disparities among the sectors as were described in the preceding section but in many cases it is geographically segmented, either by the presence of formidable natural obstacles to the movement of goods or by lack of effective means of transport and communication. Thus what would be a small market even if it were a single entity is in fact no more than a congeries of more or less unconnected and much smaller markets. This aggravates the difficulties of the local factory, especially in countries with relatively long coast lines (such as Indonesia and Libya) where physical access to the various market units is at least as easy for foreign exporters as for the small domestic producer.

In one sense the deficiency of demand is a fundamental difficulty, for in an exchange economy the division of labour is limited by the size of the market. If markets were available, it is likely that local factories would soon be established, and hence anything that can be done to extend and enlarge the local market contributes directly or indirectly to industrialization. In another sense, however, market inadequacy is merely symptomatic of underlying forces inhibiting develop-

[3] True subsistence economies, of course, exercise no demand for manufactures, but in cases where money incomes are earned by cash cropping or outside labour, most of this money is likely to be spent on manufactures.

ment, and in this sense the process of enlarging the market is no more—and no less—than the process of developing the economy.

In this connexion, the possibility of expanding production for sale on foreign markets should be borne in mind. This may be a significant means of accelerating industrial development in its early stages; later in the process it may become more or less imperative, for although under-developed countries are not normally regarded as exporters of manufactures, where population pressure on the land is particularly heavy, one result of economic development is likely to be an increasing dependence upon the importation of food. Countries in this position will probably find it necessary to follow the example of the United Kingdom, Belgium and Japan, relying in growing measure upon the export of manufactured goods to finance their imports of food and raw materials. To this extent, they are likely to find themselves competing with "older" industrial countries in third markets, and under these conditions the importance of efficiency is greatly enhanced and the need to overcome environmental disadvantages made more urgent.

The Social and Institutional Framework

From the point of view of both economic development in general and industrialization in particular, the social environment is no less important than the economic environment and in the present section it is proposed to review briefly, first, the demographic aspects, then the institutional aspects of the social structure and, finally, certain aspects of public administration in under-developed countries.

Population growth[4]

In any analysis of the economic effects of the size of populations and changes in their rates of growth, it is necessary to keep in mind the fact that consumption is involved no less than production.

The implications of change in the number of producers depend upon the relationship between the population and the other factors of production, land and capital. Where land resources are abundant in relation to population, it is the fact that the number of producers is small that is likely to constitute an obstacle to industrialization. Many of the countries that have experienced a fairly rapid rate of industrial expansion in recent years—Argentina, Australia, Canada and the Union of South Africa, for example—have been those in which population growth, whether by natural increase or by immigration,[5] has contributed to a better use of natural resources. The resultant increase in production gave rise not only to an increase in incomes and hence in the demand for manufactures, but also to an increase in the margin of savings and hence in the capacity to invest in industrial plant.

The advantages of an increasing population, however, can be realized only if the volume of investment is sufficient to supply the growing labour force with an increasing per capita amount of productive equipment so that average output can be raised. In a country with a low per capita level of income and a severe shortage of capital, rapid natural growth of population tends to add to the difficulty of saving and investing enough to achieve this result; for in such circumstances, a large part of the new capital formed each year is pre-empted for the working equipment, education, housing, health service and so forth required merely to maintain the existing level of capital assets per person, before anything becomes available for new industrial investment. Consequently, excessively rapid growth of population may hinder the industrialization even of a country with relatively abundant land and other natural resources. The effect of this drain on savings may be illustrated by a hypothetical, but not unrealistic, example.

In a country in which the ratio between the value of the existing fixed capital and the annual national income is of the order of four or five to one, a population increase of one per cent a year requires an annual investment of the order of 4 or 5 per cent of the national income merely to provide the increased population with a constant per capita endowment of capital assets. With a population growth of 2 per cent a year—which has been the average annual rate in Latin America since 1920—the basic pre-expansion investment would be about 8 to 10 per cent of the national income. With a population growth of 3 per cent a year—a rate approximated in Ceylon, Mexico, Venezuela, El Salvador and Puerto Rico in recent years—the required investment would be as high as 12 to 15 per cent of the national income. As few under-developed countries have a rate of gross capital formation as high as 15 per cent of the national income (see table 2), the difficulty of making good capital depreciation as well as providing the population increment with its average share of capital assets is manifest. Even if there is a gradual increase in the efficiency with which existing equipment is used, the margin left over after this holding investment has been made is not likely to permit a very rapid rate of investment in new industrial enterprise.

Where higher rates of capital formation have been attained—as in Japan during the decades before the First World War—it has involved, if not depressing,

[4] For a detailed examination of some of the demographic aspects of economic development see United Nations, *Determinants and Consequences of Population Trends* (sales number 1953.XIII.3).

[5] Immigration is of particular value in this respect, partly because it usually involves a very high proportion of persons of productive age and possessing valuable skills and partly because it is often accompanied by an inflow of capital. This point is taken up again in chapter 4, below.

Table 2. Gross Domestic Product and Capital Formation, Selected Countries, 1952[a]

(Quantities in millions of national currency)

Country and currency unit	Gross domestic product	Gross capital formation	
		Amount	Per cent of gross product
Australia (pound)	3,853	1,581	41
Austria (schilling)	76,800	16,000	21
Canada (dollar)	23,110[b]	4,543[c]	20
Denmark (krone)	27,144	6,080[d]	22
Finland (markka)	793	250[e]	31
France (franc)[f]	13,412	2,392	18
Germany, western (deutschemark)	125,967	29,657	24
Ireland (pound)	447	52	12
Italy (lira)[f]	10,358	1,933[g]	19
Japan[h] (yen)[f]	6,180	2,387	39
Netherlands (guilder)	21,995	6,765[i]	31
New Zealand (pound)	713	182	26
Norway (krone)	22,546	7,498[d]	33
Sweden (krona)	42,020	12,640[j]	30
United Kingdom (pound)	15,376	2,060[k]	13
United States (dollar)	346,500	130,100[l]	38
Belgian Congo (franc)	45,820	12,600	27
Brazil (cruzeiro)	306	52[m]	17
Burma (kyat)	4,116	751[d]	18
Ceylon (rupee)	4,572	609[n]	13
Chile (peso)	126,327[b]	15,545	12
Colombia (peso)	6,124	1,163	19
Cuba (peso)	2,395	392[o]	16
Cyprus (pound)	41	7	16
Dominican Republic (peso)	414[b]	35[n]	8
Gold Coast[p] (pound)	152	21	14
Guatemala (quetzal)	558[b]	53	10
Honduras (lempira)	513	89	17
Israel (pound)	672[b]	150[q]	22
Mexico (peso)	43,299	5,937[n]	14
Nigeria[r] (pound)	610	40	7
Northern Rhodesia (pound)	63[s]	20[t]	31
Panama (balboa)	316	31	10
Peru (sol)	20,866[b]	5,550[u]	27
Philippines (peso)	8,102	881	11
Puerto Rico (dollar)	1,124[b]	307[v]	27
Southern Rhodesia (pound)	127[s]	58[t]	45

Source: United Nations, *Statistics of National Income and Expenditure*, series H, No. 6, August 1954 and *Monthly Bulletin of Statistics*, October 1954; *Revista Brasileira de Economia*, December 1953 (Rio de Janeiro).

[a] Calendar or fiscal year ending in 1952, unless otherwise indicated.

[b] Gross national product at market prices.

[c] Capital formation in the private sector and government enterprises; excluding general government capital formation.

[d] Maintenance and repair costs have not been deducted.

[e] Excluding variations in stocks, and maintenance and repair costs.

[f] Quantities in billions of indicated unit.

[g] Including durable consumer goods and net balance of imports over exports.

[h] Data for year ending March 1953.

[i] Including general government consumption expenditures.

[j] Including military capital formation. Maintenance and repair costs have not been deducted; account has been taken of stock valuation adjustments.

[k] Account has been taken of stock valuation adjustments.

[l] Including general government consumption expenditures. Account has been taken of stock valuation adjustments. Profits of public enterprises are not included.

[m] Including military capital formation.

[n] Excluding variations in stocks.

[o] Including net balance of imports and exports.

[p] Data for year ending March 1951.

[q] Including outlay on durable consumer goods.

[r] Data for 1950–51.

[s] Net domestic product at market prices. Including a nominal estimate (£ 5.0 million for Northern Rhodesia; £ 4.5 million for Southern Rhodesia) of African subsistence consumption and investment; excluding value of their own produce consumed by European farmers and African plotholders.

[t] Net capital formation.

[u] General government and public enterprises include only public construction and works. The data include motor vehicles for personal use.

[v] Including increased stocks of raw sugar, tobacco and distilled spirits, valued at $28.9 million.

then at least holding down the level of living so that the fruits of rising productivity could be realized in savings rather than consumption: just before the Second World War, the daily per capita intake of food in Japan had a calorie value no greater than that in far less industrialized countries in south-eastern Asia. Where the average level of living is too low to allow of its reduction, the chances of raising the rate of capital formation from within the economy depend upon increasing productivity in primary occupations or the discovery of new and richer natural resources. Conventional techniques of production tend to become less appropriate and in such cases the use of special labour-intensive methods of production—through "community development" projects and otherwise—may be more successful, though the applicability of such methods to manufacturing is obviously somewhat circumscribed.

An examination of the demographic characteristics of a rapidly growing population shows that the obstacles facing industrialization are likely to be even greater than implied in the preceding analysis, for a country with a very high birth rate tends to have a smaller proportion of its population in the age brackets which are the most economically productive in an industrial society.[6] The output of this proportionately small productive group has to satisfy its own consumption needs and those of its dependants before anything can be used for purposes of investment. In other words, assuming other things to be equal, the margin of production over consumption from which investment may be made is smaller in under-developed countries of this nature than in most industrial countries, merely because of this relative deficiency in population of productive age. As in these circumstances, moreover, mortality rates are usually highest in the younger age groups, a large proportion of the investment made in the bearing and rearing of children is economically unfruitful: many children die before they are old enough to enter productive employment.[7]

Nor, in such a case, is the outlook likely to show any early improvement in the numerical relation between dependent and productive age groups of the population. The principal change in the demographic picture is likely to be a decline in mortality rates, especially among infants, following the application of new public health techniques and new methods of disease control.[8] Although the proportion of children surviving to an economically productive age is thereby increased, the ratio between the child and the adult populations is not substantially altered, for as they become parents, the additional numbers of surviving adults, so long as the birth rate remains unchanged, produce proportionately larger numbers of children. Hence the burden of childhood dependency will not be lessened, unless, indeed, there is either a sufficient rise in the productivity of the labour that has benefited from the new health measures, or a reduction of fertility.[9] The probability of the latter is lessened by the fact that in many under-developed countries a sharp cut in the death rate is attainable at comparatively low cost and without the necessity of any substantial prior increase in either economic productivity or level of living such as might presage a decline in the birth rate. The precise effects of such demographic changes depend chiefly upon the natural resources (and the techniques for exploiting them) that are at the disposal of the country in question. The decline in mortality in the meantime increases the rate of population growth, which in the circumstances is itself likely to be an obstacle to industrial development. In many cases, therefore, the economic difficulties resulting from the growth of population are likely to be intensified—at least in the short run—by the widening gap between the birth and death rate. Because other factors rarely remain unaffected, however, generalization is difficult; each demographic situation requires separate analysis.

The effects of a rapid rate of increase are accentuated in a country in which land resources are meagre in relation to population, for in these circumstances further population growth is even more likely to impede the process of industrialization. In an under-developed country with a high density of population, the marginal productivity of labour on the land is not likely

[6] If the economically productive age bracket is taken as 15 to 64 years, the proportion of population falling in this category is of the order of 57 per cent in under-developed countries compared with 67 per cent in industrial countries. According to United Nations, *Demographic Yearbook, 1953* (sales number 1953.VIII.9), the percentage of the total population between the ages of 15 and 64 in 1947 was as follows: United Kingdom, 68.8; United States, 66.7. In under-developed countries, the percentages were lower. For example, in Africa (Egypt, Angola, Cape Verde Island, Mozambique, São Tomé and Principe, Mauritius, South West Africa), 56.5; in Asia (Burma, Ceylon, India, Korea, Philippines, Thailand, Turkey, Portuguese India and Timor, Federation of Malaya, Palestine), 57.5; in Latin America (Costa Rica, Cuba, Dominican Republic, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Leeward Islands, Windward Islands, Puerto Rico, Virgin Islands, Brazil, Chile, Colombia, Peru, Venezuela), 55.5; and in south-eastern Europe (Bulgaria, Greece, Romania, Yugoslavia), 60.4. In other words, the number of dependants that have to be supported by every 100 members of the economically productive age group is about 56 in North America compared with about 82 in the under-developed continents. Cf. Eugene Staley, *The Future of Under-developed Countries* (New York, 1954), page 280.

[7] *Loc. cit.*; and also "Population Structure as a Factor in Manpower and Dependency Problems of Under-developed Countries", in *Population Bulletin of the United Nations*, No. 3 (October 1953), sales number 1953.XIII.8.

[8] The following figures for 1932 and 1950, respectively, give an indication of the order of magnitude of recent declines in the crude death rate per 1,000 of the population: Chile, from 27 to 16; Mexico, from 26 to 17; Ceylon, from 21 to 13; British Guiana, from 21 in 1932 to 14 in 1949; and Egypt, from 29 in 1932 to 20 in 1948.

[9] The probable effect of a constant decline in mortality upon total population, age structure and rate of increase under different fertility conditions is illustrated in the following figures, which are based on data for Central America (including Mexico). The total population (in millions) for 1950, 1955 and 1980, respectively, would be as follows: with constant fertility, 34, 52 and 86; with fertility declining 10 per cent every five years, 34, 49 and 64. The percentage of population between 15 and 59, for 1950, 1955 and 1980, respectively, would be as follows: with constant fertility, 53, 50 and 50; with fertility declining 10 per cent every five years, 53, 56 and 60. The average annual rate of increase (in percentages) for 1955 to 1965 and for 1965 to 1980, would be as follows: with constant fertility, 2.9 and 3.2; with fertility declining 10 per cent every five years, 2.3 and 1.9. (United Nations, *The Population of Central America (including Mexico), 1950-1980*, sales number 1954.XIII.3.).

to be much above zero, with the result that average per capita production is likely to be very low, which in turn means a low average income and a relatively much lower demand for manufactured products, as well as a much smaller margin of savings that might be used as industrial capital. Although in a low-income country with high density of population and rural under-employment the need for industrial development is likely to be more urgent and the real social cost of industrialization less than in countries in which population density is lower and agrarian conditions better, the unfavourable relationship between population and resources tends to perpetuate the situation in which low output and low income result in a shortage of capital and considerable difficulty in increasing the rate of industrial investment.

Moreover, though when people are taken off the land in over-populated areas agricultural output may not suffer unduly, food for their sustenance will not automatically be available outside of the agricultural sector, and its collection and transfer may then become a more serious difficulty than its production. The large absolute increase in population would thus remain one of the basic problems in countries which already have an unfavourable relationship between population and natural resources. This is implicit in the emphasis laid on absolute growth by the Census Commissioner of India, for example, when, in his review of the 1951 census, he referred to the annual increase of five million mouths to be fed—the result of recent growth at the moderate rate of 1¼ per cent a year.[10]

Rapid population growth in low-income countries militates against industrialization not only by reducing the volume of capital available for this purpose but also by virtue of the fact that unless income rises more rapidly the demand pattern in such a situation is likely to be heavily weighted towards food and to present little inducement to manufacturers of other products. Nor, in the circumstances now prevailing, is the position likely to be eased by any substantial decline in food prices or rise in food supply such as facilitated simultaneous industrialization and population increase in western Europe in the nineteenth century following the settlement and cultivation of the North American, South American and Australian plains. Hence, in the absence of a substantial increase in agricultural productivity, or other economic progress which will raise per capita income—or continued external aid—high birth rates and rapid population increase are likely to remain a handicap to the industrialization process, especially in heavily populated, low-income, under-developed countries.

Social structure, institutions and values

The social situation in most under-developed countries today, whether they are pre-industrial economies or are at an early stage of industrialization, is essentially different from that which prevailed in most of western Europe on the eve of the industrial revolution. There, society had been conditioned for impending technological innovations by several centuries of slower change not only in production techniques but also in social and economic organization. In under-developed countries, this process of slow organic growth towards industrial maturity, with its associated evolution of technology, is not likely to be repeated, nor indeed is it compatible with the demand for rapid industrialization. Even where small-scale industries can play their appropriate part, these countries face the problem of instituting and expanding an industrial system not in its early elementary forms, but to a large extent at a much more advanced technological stage. Such a complex innovation may require rapid and far-reaching, direct and indirect, transformations in the existing social structure.

In most under-developed countries there is a sector organized on a market basis in which social as well as economic institutions have already adapted themselves, with varying degrees of success, to the requirements of modern methods of production and exchange. The relative size and influence of this sector differ from one under-developed country to another, but in all cases there are elements of population that have hitherto remained outside the modern economy. In these sectors the advent of manufacturing industries based to a greater or lesser extent on machine technology, practising a considerable degree of division of labour and designed to serve an impersonal and sometimes distant market, will inevitably present a totally new form of productive organization, alien in origin and functionally unrelated to the existing economic structure and social pattern.

The social organization of the subsistence or near-subsistence sectors of under-developed countries invariably contains elements which are not conducive to the internal growth of new forms of industrial production and which generally constitute serious obstacles to the introduction of these new forms from without. These elements of social resistance to economic change are most conveniently considered in relation to their influence upon the supply of the three factors of production, entrepreneurial ability, labour and capital.

The general lack of indigenous leadership in the initial stages of the industrialization process may be due in part to the very newness of the factory system and its various concomitants. This point is taken up in the first section of chapter 3 below; in the present context, emphasis must be laid on the fact that in addition to such initial difficulties there may be major impediments rooted in the social structure itself, in the rigidity of the social system and in the values society attaches to different kinds of economic activity. In pre-industrial societies, the great part of the population usually consists of peasant groups whose traditional outlook, closed family economy and general cultural background are not the best training ground for industrial leadership. The sources of potential industrial leadership, therefore, may be limited to the numerically small upper

[10] Census Commissioner of India, *Census of India*, 1951 (Government of India Press, New Delhi, 1953).

classes. Even in this group, however, entrepreneurial ability is not purely a function of the education and wealth that many of its members may have, for in most cases their standards of values and ways of life do not dispose them towards industrial undertakings.

One of the best examples of a social structure in which rigid stratification of occupations, reinforced by traditional beliefs and values, represented a considerable barrier to industrial expansion, may be seen in the caste system of India. In traditional Hindu society, the highest premium was placed on social roles that either excluded economic pursuits and activities devoted to material gains, or at least subordinated them to non-economic goals and interests. The priestly and scholarly Brahmans were at the top of the caste system. The hereditary principle governing the division of labour barred low-caste persons from the attainment of higher roles and required them to follow occupations prescribed by their caste status. A powerful factor in the stabilization of the system was a deep-rooted belief that the achievement of a higher status, possible in the next life through the transmigration of souls, required perfection in the performance of the hereditary caste roles, and that non-conformist behaviour resulted in corresponding degradation to inferior caste positions. Such value orientations, in so far as they still exert influence, obviously inhibit individual initiative in penetrating new fields of economic activity, preventing, in particular, those who might be well fitted for leadership from turning their talents to industrial entrepreneurship.

A different kind of social pressure tends to operate in the more flexible social structures that are characterized by an "open class" system which allows for a considerable degree of mobility between the social classes or from one occupational group to another. The problem here lies not in restrictions which prevent the individual from entering new activities, but in the inferior valuation attached to business roles and their incompatibility with the patterns of living and concepts of social dignity upheld by the high-status groups.

Traditional Chinese society may be quoted as a case in point. The system did not exclude the movement of individuals from lower social positions, such as merchant, artisan or peasant, to the gentry class or the scholarly class at the top of the social pyramid. Theoretically, the upper stratum was open to everybody who could meet its requirements: office holding, scholarly attainment or substantial landownership, inherited or acquired. For newcomers from other classes, the upward path lay not only through the acquisition of wealth, but also through its disposal in a way necessary to establishing its possessor in his new social status. This social setting may have tended to act as an incentive to the fulfilment of entrepreneur roles through which social advance could be obtained; but it was also an incentive for getting out of these roles once the objective was reached. Capital accumulated by a prosperous merchant or a successful farmer was likely to be absorbed in the costly education of sons and in the purchase of land, rather than in reinvestment in new productive activities.

The fascination that the life of the leisure classes may have under the open class systems for the business and merchant members of a pre-industrial society may not only limit the amount and continuity of business activity, but also exert a strong influence on business orientation and on the kind of business activity followed in the community. In so far as the businessman's role, whether that of a merchant or that of an industrial entrepreneur, is defined, not as a goal that is legitimate in itself, but as a means of advancement to other classes enjoying higher prestige, business may be deprived of indispensable incentives towards permanent careers and long-range undertakings.[11] A preference for short-term commercial operations or for speculative enterprises rather than long-term industrial undertakings is, in fact, known to be common among merchants in many under-developed areas. Some of the economic reasons for this are examined in the next chapter.

The problem of the status of business is complicated where the roles of the middle-class merchant, money-lender and industrial entrepreneur are played largely or almost exclusively by individuals outside the local culture. Originally, no doubt, alien elements in the society entered business because for various reasons native elements were unable or unwilling to, and, as indicated in chapter 4 below, their activities usually tended to speed up the process of industrial development. One of the consequences of such alien leadership, however, may be a further dissociation of local culture from certain types of business enterprise; for whatever tendencies there may be among the dominant social classes to prevent businessmen from expanding and acquiring greater power are likely to be reinforced in these circumstances by popular dislike of those who are regarded as outsiders. Jews, Armenians, Germans and Genoese, for example, variously played the role of middle-class money-lender and entrepreneur in different parts of Europe in the past; Hindu and Chinese merchants play a somewhat similar role in various parts of Asia, Africa and the Carribbean today. Where middle-class business functions tend to be identified with an alien group, the result may be an increase in the economic rigidity of the society as a whole, making it more difficult for indigenous businessmen to increase in number and strength and to develop into industrialists, and deterring suitably talented members of farming and administrative groups from moving into commercial and industrial activity.

Another characteristic of pre-industrial society, found in all its subdivisions and at all levels, is factionalism—that is, the tendency of the society to be divided by caste and class cleavages, ethnic or religious dis-

[11] Similar attitudes to industrial entrepreneurship were displayed in various parts of Europe during the early phases of the industrial revolution. Cf. D. S. Landes, "French Entrepreneurship and Industrial Growth in the Nineteenth Century", in *Journal of Economic History*, May 1949 (New York); and Y. Brozen, "Determinants of Entrepreneurial Ability", in *Social Research*, autumn 1954 (New York).

tinctions, differences in cultural tradition and social pattern, kinship loyalties and regional identifications, and so on. These divisions tend to inhibit the development of a feeling of unity in the society and of identity among its members, and as a result the individual's sense of personal loyalty and duty may be limited to the members of a very narrow social environment: his family, clan, local community or other parochial circles and groupings. The normative pressures rooted in such an environment may profoundly affect the conduct of the individual in external situations and relations. In particular, they may pose difficult problems for personnel recruitment and management in industrial undertakings.

In an efficient industrial enterprise, the basic criteria for the recruitment of personnel and the assignment of tasks must be the ability to do the required work and a sense of responsibility in performance. The admission of exceptions may mean the difference between success and failure. Hence the particularist spirit which dominates segments of pre-industrial society, both in economic activities and in public life, and which tends to place personal loyalties and obligations to kin and friends above other considerations, while occasionally helpful in building up family businesses, may easily clash with the demands of industry. It may foster extreme practices of nepotism—such as putting relatives on the payroll even though they are incompetent or do not report for work—which may have a crippling effect on a small industrial undertaking and seriously reduce the efficiency of even the largest enterprise. Inimical to efficiency in most circumstances, such practices may prove a major deterrent to economic development in societies in which industrial enterprises are just beginning to emerge.

Where the family does play an important part in business it is often a reflection of the economic immaturity of the population, the absence of a tradition of impersonal service in industry and the unreliability of employees who have no kinship ties to the firm. Industrial development cannot but be handicapped by inappropriate standards of economic morality.

There may be a carry-over to industry, not only of attitudes of in-group loyalty and favouritism towards family and kin, but also of attitudes and practices associated with another of the institutions which has characterized agrarian society in many parts of the world, namely, landlordism. In particular, the new industrialist who comes from the landowner class, or has been deeply influenced by this class, may approach his workers as if they were the equivalent of urban peasants or peons. Moreover, this arbitrary attitude towards workers may not be accompanied in the urban environment by whatever paternalistic responsibilities for the welfare of tenants and workers may have been traditional in the rural areas. The resultant labour-management difficulties may be aggravated if the workers, in turn, interpret all their problems of industrial employment and unemployment in terms of the greed of a factory owner.

Furthermore, the carry-over to industry of ideas and outlook associated with static agrarian economies often means that there is little conception on the part of either employer or employee of the possibilities of an expanding industrialized economy based upon the increasing application of science and technology. The landowning class, for example, has traditionally sought to increase its income by increasing the amount of land it possessed, or by raising rents, rather than by improving the techniques of production. Historically, where new techniques have in fact expanded output in pre-industrial economies, they have usually been importations (often by immigrants) or the result of chance discoveries. Prevailing attitudes have usually tended to oppose technical innovation and there has been no assumption that research and development can constantly improve technology and create new products. Hence, when industries do become established in such societies, they are apt to lack—at least at first—the dynamic and expansionist approach which tends to characterize entrepreneurs in more advanced economies. Moreover, the new industrialist in an under-developed country often tends to regard all the techniques and skills involved in his enterprise as absolutely private property, and therefore to act in such a way as to prevent the diffusion of such techniques and skills through the society as a whole.

Even if new industries are developed under government ownership, the basic social problems of enterprise and management may not be very different. Experience has shown, indeed, that, in under-developed countries moving from semi-feudal agrarianism to urbanized industrialism, government ownership may be associated with nepotism, with arbitrary action towards the working class, with special upper-class privileges for the managerial class and even with extreme secrecy regarding knowledge and technology.

Social obstacles to industrialization are by no means confined to the entrepreneurial and managerial fields; they are as prevalent and, because of the larger number of people involved, often more formidable in the field of labour. Thus, though many processes in modern factories do not require considerable skill or education on the part of workers, the low level of literacy in most under-developed countries is undoubtedly a handicap to industrial growth to a much greater extent than illiteracy was in the technologically simpler environment of early European industrialization. Moreover, literacy is important not only for the successful adjustment of the labourer to factory work, but also for his assimilation to urban ways of life.

Another social factor generally considered to have a significant effect upon the labour supply is the state of health of the population from which industrial manpower is recruited. Low health levels of the working population inevitably result in low rates of efficiency and high rates of absenteeism. The prevalence of endemic and debilitating diseases is obviously detrimental to all kinds of productive activity, but industrial work

is in general much more sensitive to its effects than peasant farming, for in the factory efficient production depends upon continuous, concentrated and co-operative effort from a closely interdependent team of workers.

While ignorance and ill-health effectively limit the potential labour supply, the actual flow of workers into industry may be subject to powerful restraints arising from peculiarities of the social organization and culture pattern of the population. The modern industrial system assumes not only a certain responsiveness of workers to wage incentives but also a certain degree of occupational mobility. In under-developed countries, however, neither of these conditions can be taken for granted among peasant populations or other traditional groups of the agrarian society from which industrial manpower has to be drawn. Wage incentives may have relatively little appeal to people whose economic organization has been of a non-monetary nature and who find their satisfactions chiefly in traditional rewards (whether economic or in recognition and prestige) and customary types of consumption. Money may be regarded as no more than a means of fulfilling certain limited requirements. Similarly, occupational mobility, facilitating the upward movement of workers to jobs on a higher economic level, may have little meaning in societies where production is organized on a family basis, and occupation is inseparable from the family status and kinship roles.

In some societies, the immobilizing influences of a closely knit family organization or well-integrated local community may be augmented by the checks and restraints of a wider social system. Caste systems; various forms of peonage, servitude or bondage, including indebtedness; segregation laws and colour bars are all detrimental to the manpower and mobility requirements of an expanding industrial economy. These handicaps are widespread among less developed countries, though there are significant local and regional differences in the degree to which they actually limit the size and effectiveness of the available labour force. By and large these social factors are more potent in Africa than in Latin America or Asia, where urban labour reservoirs tend to be much larger.

One of the consequences of unresponsiveness to monetary incentives and low occupational mobility, combined with the more general features of imperfect adaptation to a new social organization, is a high rate of labour turnover and absenteeism. Never-ending recruitment and training of new workers constitute a significant drain on the efficiency and earnings of industry. In many South African factories costs are appreciably raised by the instability of the labour force; Turkish peasants and their families show a reluctance to enter permanent employment off the land;[12] while in Ceylon in recent years, difficulty in obtaining local replacements for Indian immigrants on estates and in other enterprises, including a pottery factory, has led to a reduction in output and in some cases the prospect of having to close down.[13]

In most less developed countries, there is a constant flux of workers between industrial employment in towns and traditional agriculture in their home villages. They may work only long enough to collect the money they need to pay taxes or to fulfil other obligations; they often become homesick and dissatisfied with their food and quarters, particularly if they have left their wives in the villages; lacking means of expressing their grievances and improving their status, they may move from industry to industry seeking better conditions. Attempts to stabilize the industrial labour force by means of a variety of incentives—holidays with pay contingent upon a certain period of steady work, regular wage increases for those who stay on the job, provision of appropriate facilities for eating, housing, health, education, recreation and so on—have often met with no more than limited success.[14]

If it is to be a smooth and not unduly painful process, the transition from rural peasant to urban industrial worker is not one that can be greatly accelerated. It requires, at the point of departure, emancipation from the dictates of custom and tradition, and at the place of employment, adjustment to an unfamiliar kind of work and labour discipline, and assimilation to a new type of social environment. Peasant patterns of work and leisure are generally incompatible with the demands of machine work and factory discipline. The pre-industrial organization of production, closely related to the seasons and the course of nature, entails a quite different rhythm of work. It lacks minute division of labour and is free from a rigid daily time schedule imposed by human organization for the performance of productive operations. The basic incentive to work is provided by the social meanings attached to the performance of traditional occupational roles, and by social, ritual and leisure activities with which the work itself is frequently varied. The factory environment, with its rigorous labour discipline, presents a complete contrast to the traditional setting and patterns of work. Absenteeism and high labour turnover are inevitable symptoms of inadequate adjustment.

Loss of traditional forms of security may be mentioned as another important impediment to the stabilization of the newcomer in industry and to his assimilation in the new social environment. The traditional society usually has established patterns of family reciprocity and mutual aid, which provide for the individual's economic and social security in times of need. Numerous studies of urban industrial areas of recent growth indicate that attachment to the traditional forms of social

[12] International Bank for Reconstruction and Development, *The Economy of Turkey* (Washington, 1951), pages 118 ff.

[13] *Ibid.*, *Economic Development of Ceylon* (Balitimore, 1953), page 522.

[14] The difficulties are reminiscent of those experienced in the early years of the industrial revolution in Europe. Complaints of the unreliability of labour were very general in England throughout the first half of the nineteenth century.

security and confidence in their efficacy—as compared with the uncertainties of industrial employment—are important influences preventing the peasant migrant from identifying his future and his life interests with a career as industrial worker and from settling permanently in an urban environment.

This is not to say that secondary industry is generally short of labour as such. On the contrary, there is a marked movement towards towns in most under-developed countries. By and large, however, the forces motivating this movement are to be found, not in the inducements of industrial employment, but in economic pressures exerted by adverse rural conditions. As a result, the industrial labour class created in under-developed areas in this way retains for a considerable period of time all the characteristics of a floating and unsettled rural proletariat. This lack of stability distinguishes the potential worker in most under-developed countries from the normal factory worker in more advanced countries, where the urban wage earning class is completely divorced from the land.

The resultant "arrested assimilation" of the industrial worker is in many cases intensified by the instability of employment in industries that are directly dependent upon foreign trade or seriously affected by it and are sensitive to the fluctuations of the world market. In Latin America, for instance, the movement of persons from agriculture to industry and back again appears to have followed the cyclical disturbances in the world economy. In times of prosperity some workers leave rural subsistence or semi-subsistence communities and shift to industrial occupations, which generally provide higher standards of living. In times of depression, the movement is reversed: workers transfer to what in the long run are less productive occupations, shifting the cost of depression adjustment to rural families and communities, in the form of reduced average consumption and lowered standards of living.[15]

Similarly, in the Far East, urban industry has come to depend to a considerable extent upon rural labour forces that return to village life when either the necessity or the opportunity of earning a living in the town has passed.

The African migrant labour system provides another variant of the same phenomenon. In some parts of Africa, moreover, the stabilization of indigenous workers in industry encounters an additional obstacle in conditions created by colour bars and various forms of segregation. In these cases the stabilizing effect of free occupational mobility, with its implied opportunities for rising in the industrial labour structure, is either absent or appreciably curtailed. The consequent tendency for African industrial workers to remain at the unskilled level increases their instability and reduces their productivity.

In spite of the fact that the ability and the opportunity to return to rural society may be an important advantage during urban depressions, the imperfect assimilation of peasant labour to industrial careers and urban ways of life which this implies is in many places a major obstacle to the efficient functioning and steady growth of the industrial system. To the forces inhibiting the formation of a reliable industrial labour class must be added another set of social obstacles—those which impede transition to industrial employment not at the rural but at the urban end. Such urban difficulties, which are among the reasons why industrial development is often less smooth and less productive of human welfare than it should be, usually reflect the results of over-rapid industrialization. As such, they are examined in the final portion of chapter 5 of this study.

Another problem which merits discussion is the shortage of capital in under-developed countries and the extent to which social forces influence its accumulation and use. The economic aspects of this are dealt with in chapter 3. In the present context, the point that requires emphasis is that even the small amount of surplus wealth that does emerge from the productive efforts of the community may not be readily convertible into industrial capital because of long-established social customs, values and attitudes. Thus, surpluses of income accruing to a small wealthy class are frequently used to pay for local entertainment and feasts or luxury expenditures abroad, or are dissipated in other forms of "conspicuous consumption". For the purpose of financing industrial development, a much greater amount of domestic capital is needed than is usually made available by such wealthy groups, but the motivations which tend to prevent the formation of productive capital in this group are by no means absent in other classes of pre-industrial society.

Generally, in agrarian societies, social status and economic security are closely associated with ownership of land. As a foundation for the welfare, continuity and expansion of the family group, land has a basic social value involving deep sentimental attachments, as well as an economic value. Hence, the preference for investment in land—frequently at prices well above its potential earning capacity—is a trait common to most pre-industrial societies and to all levels within those societies. As a result, a comparatively high proportion of the small amount of capital that becomes available in such societies tends to remain in circulation in the real estate market.

Even capital that is not dissipated in conspicuous consumption or used for financing land transactions may not be available for industrial uses. It may be invested in speculative commercial undertakings or, in a desire for security and liquidity, it may be hoarded.

[15] Sanford A. Mosk, *Industrial Revolution in Mexico* (Berkeley and Los Angeles, 1950), page 13. The movement back to the land during times of depression and urban unemployment is not confined to Latin America, though in many countries the fact that relief is better organized in towns has tended to work in the opposite direction. In some of the more advanced countries the drift to the countryside during periods of depression carried with it a much higher proportion of technical skill and experience, which in some instances—notably Japan in the nineteen thirties—became the basis of low-cost rural industries.

Although in seeming contrast with the safety motive in hoarding, speculative activity is usually traceable to a similar set of circumstances. The quick turnover usually involved in such activities affords opportunities for speedy liquidation which are greatly valued under conditions of uncertainty. In comparison with industrial activities, moreover, they are simpler both to start and to operate. And, in some countries, they are in a better position to escape taxation and various government controls. As pointed out in chapter 3, provision of simple, reliable facilities for small investors may succeed in channelling some of these minor savings into more productive uses, but in many societies there is a reluctance to disclose the possession of monetary wealth that is not going to be used for conspicuous consumption to relatives and neighbours who might expect to benefit from it.

In some communities a good deal of hoarding takes the form of investment in jewellery, usually for the adornment of women and children. This custom had its origins at a time when the possession of a commodity that was indestructible, transportable and divisible was sound practice as insurance against the consequences of political insecurity or periodical economic disasters, such as drought or famine. Though it has largely outlived its economic justification in some of the countries in which it was once a wise provision, it is still firmly rooted in existing family usages, and whenever it involves the use of scarce resources in mining or importing gold or precious stones it tends to lessen industrial capacity.

As an example of non-productive investment under a subsistence economy, the African "cattle complex" is of considerable economic importance over a wide area. In most parts of eastern and southern Africa, cattle-keeping has little relation to the traditional subsistence economy, except as a means of simultaneously producing wealth and "banking" it. The animals are rarely slaughtered for commercial sale or domestic consumption; they are used chiefly for ceremonial feasts and religious celebrations associated with death rites or ancestor worship, for validating marriages and cementing kinship bonds, for paying fines, settling conflicts or financing undertakings requiring hired labour. Ownership of cattle determines a man's position in the community; his social standing, influence and potential economic power are measured by the size of his herd.

In a sense, the accumulation of capital in modern industrialized economies is also to a significant degree a social phenomenon, involving in this case, however, attitudes and social relationships which are quite different from those ordinarily found in pre-industrial agrarian economies. In this sense, any substantial increase in the volume of industrial capital from the domestic resources of many under-developed countries requires more than an expansion in average incomes and the provision of the external machinery of a capital market. Although, as suggested above, the early industrial history of the European economies is not likely to be repeated in the less developed economies of today, it is worth pointing out that the period of rapid accumulation of industrial capital in Europe was marked by profound social and psychological changes.[16]

The parts of Europe which experienced the most rapid development of industry during this period, moreover, were those in which the influence of Puritan and Calvinist ideas of thrift as a virtue and work as a vocation were strongest. These ideas might be a useful counterweight to the "demonstration effect" that consumption standards in highly industrialized countries tend to exert upon less sophisticated communities in many under-developed areas.

The accumulation and utilization of capital are also influenced by the general framework of social, legal and political institutions. In western Europe the role of government varied from passive concurrence in the countries in which the industrialization process started earliest to active encouragement in the case of many of the late-comers. Though subsequent legislative measures to protect workers, to redistribute income and to provide for public health, education and other social needs have involved certain restraints on private industrial enterprise and various controls of business, on balance, industry has undoubtedly gained from the preservation of social and political security and stability, from the various services performed by government, from the reliability and responsibility of the labour force and from the expansion of the mass consumer market.

In contrast to this, in a number of less developed countries now seeking rapid industrialization, potential investors in industrial enterprises enjoy neither a free hand under laissez-faire nor security and protection under paternalistic rule. They may be faced simultaneously with numerous restrictive measures modelled on those now operating in more developed countries and with ancient practices of arbitrary government, including unpredictable shifts of policy and political nepotism and favouritism that may carry the threat of sudden ruin or confiscation of successful enterprises. As a result, potential investors in such countries may actually prefer to put their money into securities or enterprises in foreign countries where there is a more

[16] "The great growth of capital in the eighteenth and nineteenth centuries in Europe was due not to mechanical forces but to the evolution of new patterns in social relationships. It was due to the emergence of new types of social activity . . . To repair and maintain; to think of tomorrow, not only of today; to educate and train one's children; to prepare oneself for new activities; to acquire new skills; to search out new contacts; to widen the horizon of individual experience; to invent, to improve, to question the 'dead hand of custom', and the heritage of the past—in all these, and not in mechanical calculations, or mechanical regimentation, lay the causes of capital accumulation. For indeed capital was but 'accumulated' in the ledgers of the counting-house; in the objective world it was embedded in the general stream of changing activity, in world-wide migration, in the co-operant bonds of commerce and mutual confidence, and in painfully created new aptitudes of action and responsibility." S. Herbert Frankel, *The Economic Impact on under-developed Societies; Essays on International Investment and Social Change* (Oxford, 1953), page 69.

developed and stable economy, or at least a smaller risk from sudden social or political changes.

The obverse of this argument also deserves emphasis. To a certain extent industrial development depends upon the political will of the country concerned. Although the precise direction and speed of the process are governed by the various economic, physical and social considerations that are discussed in this chapter, in the last resort the ease with which the obstacles to industrialization are overcome depends in no small measure upon the ability of the government to work out and carefully administer a sound economic policy reflecting both the realities of the situation and the objectives to be attained.

In concluding this section, it should be pointed out that some of the social obstacles to industrial development in under-developed areas may be surmounted by the communities themselves where they acquire a clear realization of their nature and effects. Studies in many of the less developed countries indicate that local populations are becoming more and more insistent upon change and improvement, sometimes even going to the extent of radically revising their social systems to make them more amenable to modern economic and technical organization.[17] Moreover, while industrialization in the countries that are now under-developed may require more rapid social transformations than were required in the early stages of western industrialization, there is a greater understanding of these problems today and greater knowledge of possible ways of dealing with them.

It remains true, however, that industrialization is not merely a technological revolution; it involves profound social changes which must be fully taken into account if the process is to result in higher material standards and a greater degree of human welfare.

Public administration

Because all the impediments to industrialization which are outlined in this chapter may be mitigated or aggravated by government action it seems appropriate at this point to review briefly the ways in which faulty public administration may handicap industrial development.

The first responsibility of government is the maintenance of public order. Where this breaks down, as it did in so many areas after the Second World War, industrialization and other forms of economic development become impossible. An adequate police force and the maintenance of minimum standards of speed, efficiency and justice in the courts are basic to sound administration and thus to economic development.

Efficiency of the government services themselves is also a matter of major importance. An undertrained and underpaid civil service, which lacks prestige as well as competence, is not likely to be very successful in devising and administering a programme of industrial development. In this respect countries which are now building up their own public administration after a long period during which the service was organized and controlled largely from outside have a particularly heavy responsibility, the effectual discharge of which is likely to have a significant influence upon the rate of industrialization.

Competence and honesty in public administration exert an important stabilizing effect upon the economy, while uncertainty and risk have an inhibiting effect on economic initiative. Many risks and uncertainties are inherent in pioneer ventures, but some of them are the outcome of inefficient administration or ill-advised government action and others are magnified by the failure of government to appreciate their significance.

Among the difficulties of the second type, the inadequacy of statistical information is one of the major causes of uncertainty. In very few of the under-developed countries have governments made any great effort to gather and make available the data necessary for evaluating investment and production decisions. Deficiencies in industrial information tend to reduce the effectiveness of the government's own investment programme as well as to handicap the would-be industrialist, narrowing his economic horizon and enlarging the risk premium required to attract capital. Even in countries which enumerate population and trade and industrial activities regularly—and these are a small minority among less-developed countries—there is often so long a delay between taking a census or compiling returns and the final publication of the results that much of the value of the statistics to current business decisions is lost.

The risks associated with investment—and especially with the highly specific investment in secondary industry—are also enhanced wherever there is the possibility of arbitrary action on the part of the government. Sudden and frequent changes in tax rates or taxation policy, in foreign exchange rates or the administration of foreign trade controls, or in customs or excise duties, are all disruptive of business and hence tend to magnify the reluctance of investors to commit their savings to industrial enterprises which are thus exposed to unpredictable forces. The danger is greatest where power to initiate such changes has been delegated to bodies not directly accountable to the legislature.

This is not to argue against the need either for occasional changes in tax rates, exchange rates, tariffs and other such variables or for independent bodies to administer complex economic regulations efficiently. It is merely to emphasize that arbitrary change increases business risk and therefore inhibits investment, especially in the less liquid assets of industrial establishments.

Insecurity is also magnified, and new investment correspondingly deterred, by the possibility of expro-

[17] For discussion of the thesis that the desire for economic development and the realization that such development requires social changes are becoming increasingly deep and widespread, see R. W. Firth, "Social Changes in the Western Pacific", South Pacific Commission, *Quarterly Bulletin*, October 1953 (Noumea, New Caledonia).

priation, irrespective of the arrangements made for compensation. This and other risk-increasing factors have their greatest effect on foreign investment, for in this respect the under-developed country in question is in competition with all other countries and all other investment outlets.

Some under-developed territories — Fiji, Kenya, Nyasaland, Uganda and to a lesser extent the Belgian Congo, for example—have adopted a strict licensing system for industrial enterprises, using it in part to protect established local concerns against undue competition. The sound administration of such a system presents a considerable challenge, since faulty decisions might have a serious effect upon the development of local secondary industry.

Because of their direct effect upon established industries, such activities as price control and factory inspection call for careful and honest administration. This would be too obvious to be worth mentioning were it not for two facts, first, that in most under-developed countries, building up a competent civil service presents a very difficult problem; second, that in a country which is just beginning to become industrialized, government inspectors have an important educational function.

A problem of a rather different kind has arisen in some less developed countries in which regulations that are useful in principle have been interpreted in a manner that tends to retard industrial progress. In an effort to provide security to workers, for example, instead of placing the responsibility on the community as a whole through a system of insurance financed by progressive taxation, labour legislation has in some instances been administered in such a way as to make it extremely difficult for a company to discharge its employees. When even closing down does not end their liability to workers, new firms are likely to be deterred from opening up.

Because industrialization involves profound social and economic changes and the emergence of new problems connected with the concentration of factory workers—in the field of public health, education and labour, and fiscal and trade policy, for example—it inevitably requires a parallel growth in the administrative services of government. The problem is to organize public administration to guide and assist the process of industrial growth and not to frustrate and distort it. Efforts to achieve this in some countries have tended to result in over-centralization and a consequent intensification of the strain placed upon various organs of government which are concerned with economic and social matters. In such cases, some devolution of authority would probably help to raise standards of efficiency. The problem then becomes one of adapting traditional forms of village administration and local government to new and complicated tasks imposed by the development of industry.

Where the government itself is responsible for the establishment and operation of industrial enterprises, the burden upon the civil administration is correspondingly increased. Because the organization of a factory differs in so many ways from that of an administrative department, experiments have been conducted in a number of countries in the operation of industries by quasi-autonomous bodies, answerable periodically and in matters of principle and policy to the legislature. This is an important problem, but beyond references to it that are contained in chapter 3 below, it is not pursued further in this report.

Limitations Imposed by International Conditions

Some of the principal limitations imposed by international conditions upon the rate at which an under-developed country may become industrialized are reflected in its balance of payments; as such they are discussed in chapter 3. In the present section, attention is directed towards situations which are entirely outside the control of less developed countries but which may on occasion militate against their industrial growth.

Three such situations suggest themselves. The first results from the dependence of under-developed countries on more advanced countries, not only for industrial machinery and equipment and other capital goods, but also in a large measure for technical knowledge and the fruits of industrial research. The second lies in the resistance of those who have an established interest in traditional forms of production and trade to changes which industrialization is likely to bring about in the pattern of economic relations between the more developed and the less developed countries. The third arises from the dependence of under-developed countries upon foreign capital, the flow of which may be very sensitive to changes in tax and exchange policies in the industrially advanced countries in which it originates.

Remoteness from the source of capital equipment and technological advance

Under-developed countries are dependent for a varying but large proportion of their capital equipment upon industrial countries. There was a time when attempts were made by leading industrial countries to prevent the export of newly devised machines which were raising productivity in their own manufacturing industries. These attempts were never successful for very long; with growing competition between machinery producers both within and between industrial countries, the emphasis for many years has been on selling capital goods to less developed countries rather than denying them such goods. A relic of the older pattern survives in the case of special types of equipment

which are not sold by the makers but are leased to users for a fixed annual rental and a royalty which varies with the machine's output. While such arrangements are undoubtedly restrictive, limiting the freedom of the entrepreneur to equip his factory in accordance with his own needs and means, they probably constitute much less hindrance in an under-developed country than they would if the entrepreneur were better supplied with funds and technical advice. Indeed, in so far as the contract of hire incorporates arrangements for the maintenance of the machinery by its producer, this method of acquiring the use of capital equipment circumvents a serious deficiency in the economic environment of under-developed countries.

In normal circumstances, the would-be manufacturer in an under-developed country has fairly free access to the sources of plant and machinery, subject always to the disadvantage of being much less familiar with the market than his counterpart in the industrial country. There are times, however, when the capacity of the machine-making industry is pre-empted because of events in industrial countries, and the dependence of less developed countries then becomes a major obstacle to growth. The situation appears even more unfortunate because at such times the supply of finished consumer goods from industrial countries is also likely to be restricted, and opportunities for the expansion of manufacturing industries substantially increased. This was the position during the two world wars when, as indicated in appendix A, below, under-developed countries that had achieved a certain degree of industrialization were able to advance far more rapidly than those that were still drawing the great bulk of their manufactured products from industrial countries. The shortage of plant and machinery continued for several years after the Second World War, when countries that had sustained war damage were devoting a large proportion of their output of capital goods to domestic reconstruction. During this period, the difficulty of equipping new factories continued to slow down the rate of industrial growth in several less developed countries. Where plants were improvised, the results were not always satisfactory, especially in terms of average operating costs. Importation of second-hand machinery and use of equipment that had been discarded by concerns in industrial countries also tended to result in high-cost production. In this way, shortage of capital goods has from time to time hindered industrialization, at least in its early stages when the under-developed countries have not been in a position to produce much of their own equipment.

At times, the relative price of capital goods has also tended to retard industrial expansion in less developed countries. When raw material prices have been particularly low—from 1930 to 1933, for example—the relative cost of acquiring industrial plant has risen considerably, increasing both the cost of industrialization in relation to internal prices and the burden on the balance of payments. In so far as there is any secular decline in raw material prices the relative cost of acquiring industrial equipment will tend to rise—and with it both the need for industrialization and the difficulty of financing it from primary exports.

In many cases the cost of capital goods to less developed countries is likely to be higher than to manufacturers in industrial countries, for not only have the latter a better knowledge of the market but, because they are nearer the source of supply and have the advantage of more developed domestic transport and engineering industries, they are able to have plants conveyed and installed more expeditiously and at lower cost. The higher the proportion of capital costs—interest and amortization—in total manufacturing costs, the greater is the relative disadvantage of the under-developed country. This handicap is of particular significance during and immediately after a period of rapidly rising plant and equipment prices, such as that which followed the Second World War, when newly built factories have to compete for some time, possibly on falling markets, with older factories with substantially lower capital costs which may have been completely amortized.

In the post-war period, moreover, some less developed countries, by reason of their inability to earn sufficient hard currency, have been restricted to soft currency sources of capital goods. As many of the soft currency countries were heavily committed to internal economic rehabilitation programmes, delivery dates were often delayed and in some cases prices were appreciably higher—with adverse effects on industrialization plans in the purchasing country.

Dependence upon industrial countries for capital equipment also implies certain technical disadvantages for less developed countries. Plant design is usually dictated by the needs of the large domestic market rather than by the much more diverse needs of various small markets in under-developed areas. As a result, equipment is often poorly adapted to specific local conditions. Automatic devices suited to conditions in advanced industrial countries are often left unused in under-developed countries, while the intricacy of many machines, though appropriate to the type of labour available in industrial countries, tends to magnify repair and maintenance costs in factories in less developed countries which depend upon a high proportion of unskilled labour. Some of the consequences of this unsuitability are discussed in chapter 3; in the present context it is merely necessary to call attention to the competitive handicap that this involves for the manufacturer in the under-developed country compared with his opposite number in the industrial country.

Another disadvantage which flows from dependence upon industrial countries for capital goods is the fact that technical improvements are quickly adopted by manufacturers in equipment producing countries whereas those in less developed countries usually tend to lag behind. Remoteness from the main area of technological advance is sometimes an important cause of delay in instituting changes in the factories of less

developed countries. Shortage of capital is an even more compelling reason, for where capital is more plentiful, the rate of obsolescence tends to be higher and the tempo of technical progress faster. The technological gap between industrial and less developed countries tends, therefore, to be maintained.

Competition and restrictions originating in industrial countries

It was pointed out above that restraints on the setting up of new firms were sometimes imposed by the governments of under-developed countries, with the object of increasing the security and profitability of an existing (usually newly established) industrial concern. Similar restraints may be imposed from outside the country, though with a different purpose and by means of different devices, by a company or group of companies with a particular interest in the industry in question. The possibility and the effectiveness of such opposition to local industrial development are likely to be greatest where political and economic ties are closest, as in the case of a metropolitan country and its dependencies.

Generally, restraints of this type are exercised by means of patents taken out by a producing concern in one of the industrial countries, either for a particular type of machine or for a particular manufacturing process. The effect of such a patent is to prevent a firm in any country in which it is valid from using the machine or process in question except with the permission of the owner. This permission may be given by means of a licence, franchise or royalty agreement which may add appreciably to production costs in the under-developed country. Moreover, because of their smaller markets, the less developed countries are usually less eligible for such arrangements; the patent owner often prefers to supply these markets from larger establishments in more advanced countries.

Where the manufacturing process involves skills or techniques or raw materials that are particularly scarce, concerns in industrial countries may be in a position to exercise a high degree of control over the circumstances in which they are used. In such cases less developed countries are likely to find their industrial expansion restricted by curbs on the flow of the factors in question. These tendencies are reinforced when the industry is organized in such a way as to place power of control in the hands of single firms or small groups of firms.[18]

In smaller industries, opposition to local manufacturing is more likely to come from firms in industrial countries which have previously enjoyed a market for their own products in the under-developed country in question. In this they may be supported by commercial, financial and transport concerns that participated in functions ancillary to the previous import trade. In the mercantilist era, such interests might have enlisted the direct aid of government; at present it is chiefly by the use of economic weapons that they may succeed in retarding local industrial development.

In attempting to overcome the various obstacles referred to in this chapter, the manufacturer in an under-developed country usually incurs additional expenditure. In general, therefore, and especially during the early stages of a factory's operation, average production costs are likely to be higher in less developed than in more advanced countries. This obviously tends to make a new industry particularly vulnerable to price competition from older establishments in industrial countries, especially from those which had previously marketed part of their output in the country in question. Hence the ability of established foreign producers to undercut a new domestic enterprise is often a significant deterrent to industrial expansion.

In almost all under-developed countries the answer to this type of price competition has been tariff protection, but manufacturers from industrial countries have from time to time been able to surmount tariff walls, especially if these were based on *ad valorem* duties on extremely low c.i.f. prices, and to compete in the local market to the disadvantage of local industry. This has usually led the latter to seek further protection, either through the imposition of high specific duties or through restriction of imports under a system of quotas.

Where embargoes or very high duties are required for the protection of a local industry, the burden on the economy as a whole requires careful scrutiny, for if the industry is an important one its excess costs may constitute an appreciable handicap to all those activities, including other manufacturing establishments, which directly or indirectly purchase its high-priced product. In such a case, this form of reaction to keen competition from foreign factories may tend to make the local industry an impediment to further industrialization. Up to a point cheap imports are an advantage in maintaining levels of living and in keeping industrial costs low. Japanese exports of cheap textiles before the war may have discouraged a local cotton industry in Africa and elsewhere but they helped to raise consumption standards and thus indirectly assisted other forms of local industry. Similarly, a cement plant would have been a doubtful form of investment in many less developed countries during the nineteen thirties, when for several years, cement was readily available at very low cost from industrial countries, whence it was being exported as freight-free ballast in ships. In these circumstances, a local factory producing high-cost cement would have been more of a liability than an asset to an industrialization programme, and though it might have aided development later — when war intervened — it would probably have handicapped development at the time.

[18] It would be difficult, for example, for any of the less developed countries to establish a sizable aluminium smelting industry on an economic basis without assistance from one or another of the world's major aluminium companies. It would be even more difficult to build and operate a petroleum refinery without the support of one of the large oil companies.

If low-priced exports are being used by firms in industrial countries for the purpose of eliminating a new establishment by severe and persistent underselling, however, there is much greater justification for protection, since once the local industry is successfully eliminated, the price of the import will doubtless rise again. In this case the temporary advantage of lower prices hardly compensates for the loss of a domestic industry.

The same type of problem arises when a large-scale producer in an industrial country offers supplies at a low price because, during a period of under-utilization of resources, the firm may be working with increasing marginal returns. To expand output by disposing of part of the product on the foreign market at a low price (perhaps at less than the domestic price) will, in such circumstances, serve to reduce average costs and, as far as the firm itself is concerned, may therefore be economically justified. If the low-priced supply is likely to be only a temporary one which will disappear from the market of the under-developed country as soon as recovery in the industrial country restores the firm's home market, protection of the domestic industry in the under-developed country might again be called for.

Dumping or underselling by large foreign producers is a hazard facing every small factory in less developed countries. The danger is greatest to a newly established firm, for an "infant" industry of this nature is likely to be in a weak position by reason of its relatively high unit price and its lack of financial reserves no less than its lack of experience. But older firms, too, are likely to be vulnerable to keen price competition from abroad, for even when the industry ceases to qualify as an "infant" it is usually operating in what is still, in relation to the industrial country, an "infant" economy, handicapped by the various environmental shortcomings outlined above. Where there are monopolistic elements in an industry, as there have been occasionally in some Non-Self-Governing Territories, and, more generally, in soap, match and cement production, for example, the possibility of eliminating potential competition from local factories by price cutting is enhanced; losses that may be incurred in the period of intense competition then have a good chance of being recouped after the competitor has been eliminated.

Manufactures from industrial countries usually compete with those of less developed countries not only in price but also in quality; in the case of many consumer goods, indeed, with production of which the industrialization process often begins, differences in quality, real or imagined, are sometimes more important than differences in price. This was illustrated most clearly in many less developed countries during the periods which succeeded the world wars. The additional element of protection afforded by war, and the need to improvise from time to time as regards both materials and methods of production tended to result in deterioration in the quality of numerous products, so that when imports became more readily available, many consumers turned away from local manufactures. In some countries, many years passed after the First World War before prejudice against local products engendered by the sale of poor quality goods was finally overcome, while, in others, imported goods continued to possess prestige value. In some cases this prestige value had little basis in fact; it was a result of higher prices for dutiable imported articles. In other cases, however, the differences between domestic and imported products were real; they reflected the fact that the local industry catered chiefly for the largest sector of the local market, in which the demand was for lower price, and therefore poorer quality goods. As indicated earlier in this chapter, local demand for special and high-grade products in many less developed countries is still insufficient to sustain economic domestic manufacture, especially in the face of competition from imports.

Fiscal policies in industrial countries

Capital shortage tends to make the industrialization process in all under-developed countries dependent to some extent upon external financing. This is achieved either by means of public or private borrowing abroad or by means of equity investment in foreign companies which operate in under-developed countries. Some of the problems associated with the resultant capital flow are discussed in chapter 4, below; in the present context it is intended merely to examine briefly the extent to which fiscal policies in capital exporting countries are likely to exercise a deterrent effect on the outflow of industrial capital to under-developed countries.

In general, all fiscal measures which tend to reduce the available volume of capital in industrial countries—by encouraging domestic consumption or by pre-empting a large proportion of the national income for government spending, for example—make it more difficult to lend or invest abroad. In this sense, the impoverishment of many industrial countries in the Second World War, the need to reconstruct and rehabilitate their economies and, more recently, the imposition and maintenance of high tax rates for financing extensive rearmament programmes have all tended to reduce the amount of capital available for overseas investment.

This relative shortage of capital in industrial countries has given rise to various measures designed to ease the strain imposed by the many demands for investment funds upon both the capital market and the balance of payments. Thus, in many European countries there have been fairly stringent controls over the issue of new shares and the flotation of new loans as well as over the export of capital. To this extent the financing of new enterprises in less developed countries has been impeded. Even when funds have been obtained on European capital markets, balance of payments considerations have often restricted their use to prescribed currency areas, thus limiting the range of goods they could command and in some cases delaying the actual delivery of the goods.

Criteria connected with the balance of payments have also influenced selection of projects permitted

to seek funds in European capital markets. Since an underlying difficulty throughout the post-war period has been the shortage of hard currencies, there has been a tendency for applications for entry to the capital market from less developed countries to be judged by whether the project to be financed would sooner or later be a dollar-earning export or a dollar-saving import substitute. As the ordinary range of manufactured products rarely meets either of these criteria, this form of capital control has probably tended to favour enterprises producing rubber, tin, coffee, cocoa and other primary products commonly exported to the United States, or cotton, tobacco, non-ferrous metals and other raw materials commonly imported from the United States. To this extent, therefore, this combination of fiscal and exchange controls has probably militated against the foreign financing of secondary industry in less developed countries.

Apart from these special problems which the war has so greatly aggravated and which may be expected to diminish as economic recovery of industrial countries increases the rate of capital accumulation and facilitates a wider convertibility of currencies, fiscal obstacles to foreign investment comprise essentially those tax measures in capital exporting countries which place a special burden on investment abroad as against that imposed on domestic investment. This is not to imply that the ordinary tax liabilities that rest equally on foreign and domestic operations may not in fact be a deterrent to foreign investment, because of the special difficulties confronting the latter, but the problem in this case is less one of removing an obstacle than one of granting special tax incentives in order to increase the attractiveness of foreign relative to domestic investment. This is a matter of internal fiscal policy which lies outside the scope of the present study, though it will be referred to again in chapter 4, below.

In the narrower sense, the principal fiscal obstacle to foreign investment is undoubtedly international double taxation which subjects the earnings of capital that is being used abroad to the imposts of both the country of origin and the country of investment. The fact that many industrial enterprises in less developed countries are financed not by the raising of capital on a foreign market, but by the less formal opening up of branches and subsidiaries by companies that already operate in one of the more advanced countries, might render double taxation a very real deterrent to such investment. In the past thirty years and especially since the end of the war, however, unilateral relief measures and an increasing number of bilateral tax agreements have considerably reduced the incidence of this type of burden.[19] While the use of international tax agreements has been confined in the main to the more developed countries,[20] the unilateral relief measures adopted by the principal capital exporting countries have largely removed the double taxation obstacle to the investment relationships between industrial, capital exporting countries and under-developed, capital importing countries.

Legislation currently in force in most of the actual and potential capital supplying countries provides for substantial or total relief from double taxation of profits earned abroad. Canada, the United Kingdom and the United States, for example, have credit systems under which taxes on all types of foreign income, paid in the country where the income arose, may be deducted from taxes levied on the same income by the taxpayer's home government.[21] In Belgium, France, the Netherlands and Switzerland,[22] as the result of the strict application of the principal of territoriality, or through the provision of tax rebates which, in some cases, are tantamount to exemption, or through their exclusion from the income tax base, foreign business profits are in most cases exempt from all or most domestic taxation. Some countries have even suspended the tax obligations of foreign income when that income is blocked by exchange restrictions in the country in which it is earned.[23]

The only cases of overlapping taxation that now remain arise chiefly from differences in the concepts of income taxes qualifying for credit,[24] net taxable income, residence, domicile and so on, though in some European countries double taxation is not always completely avoided where foreign business profits are realized through dividends from foreign subsidiaries, or in the form of interest or royalty payments.[25]

The virtual elimination of double taxation has, in general, been the result of a systematic effort on the part of the principal capital exporting countries to detect and remove tax obstacles to the movement of capital. As an impediment in the way of foreign investment in the secondary industries of under-developed countries, therefore, double taxation is no longer of great significance.

[19] See United Nations, *Effects of Taxation on Foreign Trade and Investment* (sales number 1950.XVI.1), chapter IV.

[20] United Nations, *International Tax Agreements*, vol. II (sales number 1951.XVI.1), page xi.

[21] Details are set out in the following United Nations publications: *Taxation in Capital Exporting and Capital Importing Countries of Foreign Private Investment in Latin America*, vol. 1; *United States Income Taxation of Private United States Investment in Latin America*, (sales number 1953.XVI.1), pages 6, ff; *Corporate Tax Problems, Taxation of Corporate Profits and Dividends in the United Kingdom* (mimeographed), pages 7, 8; and *Taxation of Foreign Taxpayers and Foreign Income in Canada* (mimeographed), page 8 and part III, "Business Profits".

[22] United Nations, *Questionnaire on the Tax Treatment of Foreign Nationals, Assets and Transactions*, Replies of the Governments of Belgium, France and the Netherlands (mimeographed); for Switzerland, see Wehrsteuergesetz (Defence tax law) of 9 December 1940, as amended, article 19.

[23] United Nations, *United States Income Taxation of Private United States Investment in Latin America*, annex I on "Taxation of Blocked Income and Foreign Exchange Transactions"; and United Kingdom Finance Act, 1953, section 21.

[24] United Nations, *United States Income Taxation of Private United States Investment in Latin America*, pages 49 ff.

[25] See reports on Belgium in the report on the seventh Congress of the International Fiscal Association, in *Cahiers de droit fiscal international—Studies on International Fiscal Law*, vol. XXIV, 1953, part III, published by the International Fiscal Association (Amsterdam).

Chapter 3

DOMESTIC MEASURES CONDUCIVE TO INDUSTRIALIZATION

In its resolution 461 (XV) the Council called for a study which might "assist the under-developed countries in preparing practical programmes of rapid industrialization". As no programme can be "practical" outside the economic context of the country in which it is to be put into effect, and as this study is not concerned with individual countries as such, no attempt is made to map out an industrialization programme *in vacuo*. Instead, this chapter is devoted to a review of various measures that might be taken by national governments to start or to speed up the industrialization process. The following chapter deals with ways of facilitating the industrialization of the less developed countries through the actions and policies of more advanced countries or by means of international measures.

By and large, the policies and measures examined in the present chapter are designed to meet the various difficulties discussed in the preceding chapter. Their applicability and their effectiveness will differ from one under-developed country to another—depending, among other things, upon its industrial status, its size and resources, the relative incidence of the obstacles and the extent to which its government is prepared to guide or participate in its economic life—but in general they are not mutually exclusive, so that in most cases an active programme of industrial development is likely to require the adoption and simultaneous carrying out of several of the appropriate policies.

It has not been considered necessary to discuss those characteristics of under-developed countries, or those resources possessed by some, or those forces inherent in the process of economic development which are, in general, likely to favour industrial growth. In the first category, perhaps the most commonly favourable attribute is the low level of money wages for unskilled workers which is the result of the abundance of labour in relation to other factors of production. In the second category lie the natural advantages which under-developed countries may have: some are highly mineralized, some have good soils and climate, some have large reserves of oil or water-power. And in the third category is the fact that the process of industrialization tends to be cumulative: not only does the economic environment tend to improve progressively with the establishment of each new industry but, on the demand side also, a rise in total and average income tends to favour secondary industry, as—up to a fairly high level of average expenditure—an increasing proportion of the national income is ordinarily spent on manufactures.

Beyond stressing the desirability of making maximum use of favourable conditions of this nature, it is not proposed to examine them further. It has been deemed more useful to discuss ways and means of meeting some of the difficulties encountered in the course of the industrialization process. To this end the discussion that follows deals first with possible methods of overcoming or at least mitigating the shortage or inadequacy of the various factors of production, then with some of the problems of technology and thirdly with the fields—fiscal, monetary, foreign exchange and customs duties—in which governments inevitably play the prime role, whether or not they are engaged in industrial planning. This third section concludes with a brief description of the extent to which secondary industry has in fact entered into the recent development plans and policies of under-developed countries.

The Flow of the Factors of Production into Secondary Industry

For analytical purposes it is convenient to divide the factors of production into four groups: entrepreneurial ability and risk taking; plant and equipment and other forms of capital; labour and skills; and raw materials and natural resources. As the industrialization process may be retarded by shortage or inadequacy of any one of the factors, which must work together to ensure production, it is proposed to discuss briefly the problems involved in overcoming the difficulties commonly encountered in the less developed countries in respect of each of the factors in turn.

Entrepreneurial ability and risk taking

The entrepreneurial function may be divided into several distinct elements—technical innovation or adaptation, business promotion, capital provision and risk bearing and finally business management—and in the economically advanced countries there is a tendency for each of these sub-functions to be carried out by separate persons or groups. The industrial entrepreneur in an under-developed country, in contrast, is likely to have to perform all or most of these sub-functions himself. Partly in consequence of this, he is rarely a technical innovator; more frequently his task is one of technical adaptation—the application of technologies evolved in the industrial countries to the particular conditions of the less developed country. In the task of business promotion, he is likely to be involved much more directly in the physical process of bringing together the various factors of production at the chosen site than is his

counterpart in a more advanced country in which there are appropriate specialized institutions—issuing houses, commodity markets, labour exchanges and so on—available for taking over or facilitating specific functions. In the same way, the task of providing the capital for the new enterprise and taking the consequent risk is likely to be borne to a much greater extent by the entrepreneur himself than it would be in a more developed economy where there is a greater supply of capital, a more highly organized capital market and a much longer and more widespread tradition of financial risk taking among the population. When the factors have been duly assembled and the new enterprise launched, the entrepreneur in the under-developed country is unlikely to be able to withdraw to the extent that his opposite number in an industrial country probably would: suitable managerial skill is usually scarce and sometimes not immediately available, and the personal involvement of the entrepreneur in the whole project is often likely to be too close (and too necessary for its success) for him to avoid a more or less protracted period of service within the factory.

To describe the functions of the entrepreneur in these terms is to suggest why entrepreneurial ability is likely to be a scarce factor in most of the under-developed countries. And because manufacturing industry represents not only one of the least liquid and flexible types of investment in under-developed countries, but also one of the most difficult forms of undertaking to manage, what is true of entrepreneurial ability in general is of particular relevance to the industrial entrepreneur.

In an under-developed economy the unknown elements are usually more numerous than they are in an industrial economy. This is partly a reflection of the general inadequacy of its statistical services and partly an inevitable consequence of the fact that in an under-developed country the effect of even small changes often tends to be magnified. A slight increase in the inflow of particular imports or in the rate of new investment, for example, may make a large difference in the local producer's potential market. As a result, the industrial entrepreneur is often required to make decisions—with regard to production technique, scale of operation, location of factory, means of distributing the product and so on—without any accurate knowledge of some of the key variables which would affect the result of his investment and without access to any specialist institutions which might relieve him of part of the burden.[1] This might be less serious if the entrepreneur were himself a specialist in setting up a company, but usually, as indicated above, he is associated with the new factory more closely and for a longer period than a promoter as such is likely to be in any industrial country. Indeed, he is often the chief provider of the capital and, in the absence of a well-developed security market, may well be more or less irrevocably and indefinitely tied to the enterprise. This magnifies very considerably the risk that has to be faced by any initiator of an industrial enterprise in most under-developed countries.

Risk cannot, of course, be eliminated. Nor, indeed, if resources are not to be diverted into less productive uses, would it be generally desirable to have it reduced —by government guarantees, for example—beyond the limits customarily facing industrial entrepreneurs. But in a pre-industrial economy the risks of investment in manufacturing industry are usually higher than those facing either other local activities or manufacturing industry in the more advanced countries. The adoption of an industrialization programme implicitly commits the government of an under-developed country to a policy of equalizing the degree of risk at least in so far as this can be achieved by government action in those fields in which special uncertainties exist.

Improving the flow of reliable economic data, as mentioned above, is one such line of action.[2] Another is the lessening of the various deficiencies in economic and social overhead facilities which constitute special obstacles to industrial growth, in the knowledge that any improvement in the economic environment is likely soon to be followed by an increased flow of entrepreneurial skill into the manufacturing sector. And, as implied in the preceding chapter, risks may be reduced by actions which lessen the likelihood of arbitrary changes in the administration of laws and regulations by the government or its agents.

The problem of entrepreneurial shortage as it affects the growth of secondary industry in the less developed countries would thus seem to have two mutually reinforcing aspects: first, the fact that the economic environment in an under-developed country is not generally conducive to the emergence and training of the type of person likely to prove successful in initiating industrial activities; and, second, the fact that even if there were a good supply of such persons their task as industrial entrepreneurs in a pre-industrial economy would tend to be an extremely difficult one.

In general both initiatory ability and managerial ability are the result of innate capacity cultivated by experience and therefore are likely to become more plentiful only as the economy develops. Since the process of economic development itself depends partly on the effective operation of promoters and managers, the main problem is the breaking of the circle in the early stages of industrial development. Several approaches may be suggested.

[1] In India, before the war, for example, entrepreneurs commonly decided on the nature and size of a new plant by reference to other enterprises known to them. Thus the indigenous cotton industry is said to have been modelled very largely on the basis of the jute industry, which was originally imported from Scotland by foreign entrepreneurs. If the local entrepreneur had no such knowledge or model, then in the absence of the relevant technical and economic information, only very arbitrary decisions could be made, with the result that many factories turned out to be unnecessarily high cost units. Cf. D. R. Samant and M. A. Mulky, *Organisation and Finance of Industries in India*, (London, 1937).

[2] Given the cost and complexity of a full statistical service, under-developed countries may find it more appropriate to use sampling techniques which are now widely used to keep regularly and promptly informed about the working of key sectors of the economy.

In the first place, any enlargement of the pool of general talent from which the special entrepreneurial skill is drawn is equivalent to an increase in the potential supply. Hence, in many of the less developed countries, a rise in the standard of education, fundamental and formal, general and technical, is a prerequisite to any increase in the flow of entrepreneurial ability. In most of the under-developed countries, education is largely in government hands, so that, within limits imposed by budgetary resources, it should be possible to devote a higher proportion of the national income to this purpose. Although the cost of educational services is commonly grouped with other administrative costs as part of current government expenditure, a sizable element of it should more properly be regarded as a form of investment, improving the future flow of the country's productive resources.

It may not be irrelevant to point out in this connexion that a premature attempt to achieve universal literacy might so dilute and spread the teaching force that the outcome would be merely wider semi-literacy, which would probably be inimical to the growth of entrepreneurial ability. A genuine raising of the general educational level, on the other hand, even if it took a little longer, would also increase the potential supply of managerial talent, which would in turn tend to release for more purely promotional activities the entrepreneurs who might otherwise become tied down indefinitely to factory management. This would result in a more economical use of scarce entrepreneurial talent.

When an under-developed country has reached a certain stage of industrial growth, it may be possible to augment, or at least to economize or utilize more effectively, its supply of domestic entrepreneurial ability by means of institutional devices such as industrial development corporations, which tend to concentrate the function of starting manufacturing undertakings, thereby enabling a single group of skilled personnel to become specialists in the field of industrial promotion, one of the most important of the entrepreneurial tasks.

The shortage of entrepreneurial ability at the disposal of private investors in the under-developed countries has in many cases thrown part—and sometimes the main part—of the burden of starting new industries upon the government itself. This was the case in Turkey in the nineteen thirties, for example, when the social and economic environment was not at all favourable to industrial development, and the Government carried out a scheme of rapid industrialization very largely on its own initiative. In several of the under-developed countries in which steel industries have been established—Brazil, Chile, Colombia, Peru and South Africa, for example—it has been the government which has acted as entrepreneur.

In the case of the steel industry the magnitude of the undertaking, with its heavy capitalization, has probably been an additional deterrent to private industrial entrepreneurs. This is borne out by the fact that even where the industry has been largely in private hands—in Argentina, India and Mexico, for example—the government has participated at least to the extent of subscribing or lending a sizable proportion of the capital. Private entrepreneurs have been handicapped by size in other types of establishment, too: in the case of the coal hydrogenation project now under construction in South Africa, for example, the investment outgrew the resources of the industrial group that initiated it and the Government took over by arrangement.

The size of the investment is not the only reason why private entrepreneurs in the under-developed countries have on occasions tended to give way to the government. In some cases, the nature of the product is such that government initiation may be necessary and government enterprise the most appropriate. Where an industrial establishment is to produce materials for use in a particular government scheme—fertilizer for a farm programme, locomotives and rolling-stock for a publicly owned railway system, or DDT or antibiotics for a public health programme, for example—the desirability of close co-ordination between manufacturer and consumer may make government initiative more expedient and government operation more suitable. Similarly, in a number of the development plans, industries or plants of special importance, whether because of the nature of the product or because of their strategic relationship to the rest of the plan, have been reserved for government enterprise, even in countries in which private entrepreneurs have been able to undertake most of the industrial development. And where the entire economy is planned from the centre—as in Bulgaria, Romania and mainland China in recent years—the whole entrepreneurial burden naturally falls on the government.

In general, in so far as an industrialization programme depends upon the mobilization of scarce entrepreneurial ability, it should be borne in mind that the key incentive in those under-developed countries which rely greatly on private initiative is the difference between prospective gross receipts and prospective gross expenditure after an allowance has been made for the special risks facing this particular sector of the economy. Anything that tends to magnify the prospective net return or reduce the uncertainties—whether it be change in government fiscal or commercial policy, an increase in the efficiency of the other factors of production or an improvement in the economic environment—will tend to stimulate the flow of entrepreneurial skill into secondary industry, both from other domestic fields of activity and from abroad. The flow into secondary industry is also likely to be increased by anything that tends to enlarge the total supply of entrepreneurial talent, whether it be immigration or education or a change in the social structure. As indicated above, moreover, the supply of entrepreneurial ability like so many other elements in economic dynamics is likely to feed on itself, becoming relatively less and less scarce as industrialization proceeds. It is in the early stages of industrial development that any speeding up

of the process will necessarily involve increased government participation and the assumption by government departments or agencies of the entrepreneurial role in various industrial undertakings. On the other hand, if foreign entrepreneurs are encouraged to take part in the industrialization programme, the direct responsibility of the government for the initiation and organization of new industries is thereby reduced, even though government participation may be one of the conditions of foreign entry. It is the least developed countries, however, especially those in the pre-commercial phase, that are likely to have the most difficulty in providing their own private industrial entrepreneurs. In these countries, both government responsibility in this field and dependence upon foreign enterprise are likely to be greatest.

It should be borne in mind in this connexion that the assumption of the entrepreneurial role by government does not of itself solve the problem of management. Hence, when the government of an under-developed country acts directly in the promotional field either for special purposes or, where central planning is practised, over the whole range of industries, it will be the shortage of managerial rather than entrepreneurial ability that is likely to be crucial. In order to prevent undue waste of resources or deterioration of the quality of factory products, it may then become necessary to devote relatively more attention to the training of managers and to the improvement of works organization so as to permit the more rapid rise of suitably talented members of the labour force.

It is evident that the shortage of entrepreneurial and managerial skills is among the least tractable difficulties of an under-developed country which desires to industrialize rapidly. It cannot be overcome from indigenous sources in a short space of time and, although it can be lessened by making the best use of local talent and government initiative and by judicious encouragement of the local activities of foreign entrepreneurs, it is likely to exercise a restraining effect upon the rate of industrial growth in most under-developed countries. Partly in consequence of this, the organizational aspects of industrialization are likely to differ in many respects from the pattern set in western Europe and the United States, where, according to a recent analysis,

> "before the Industrial Revolution came . . . it was preceded by several centuries of commercial and early industrial development, which had formed a class of private entrepreneurs prepared morally, intellectually and technically, to exploit the potentialities of the innovations that came forward. The middle class, in a sense, was the most important of the economic innovations of modern times; and it is not susceptible of rapid diffusion throughout the under-developed regions of the contemporary world."[3]

The chief implication of this in most of the under-developed countries—that any acceleration of the rate of industrialization is likely to entail an appreciable increase in the participation of government—is borne out by a recent survey of development plans and progress in Asia and the Far East which concluded that

> ". . . most governments of the region, despite the greatly enhanced importance of their development expenditure, appear to adhere to the traditional view that the public authorities should be responsible for the basic economic facilities such as power and transport and should provide assistance and incentives to private business, but should step directly into the industrial field only where the scale of the enterprise or its technical difficulties or the lack of immediate earning prospects would discourage private investment. Such a policy has much to commend it provided that the business community is responsive to the incentives provided by government. Government enterprise, to be efficient, must perforce be concentrated in a relatively small number of large units which by their very nature will tend to be capital intensive while active local initiative is better fitted to start small-scale and diversified enterprises requiring little capital and offering good prospects for rapid and widespread growth in capital-poor countries."

Nevertheless, there has been a conspicuous lack of interest on the part of private businessmen in manufacturing for the domestic market. This

> "is confirmed by events in Pakistan and Indonesia, where there has been little response to a monetary situation and a system of import restrictions that appeared to promise ready markets to enterprising firms. Most new plants established in these countries in recent years have been either directly government-owned or at least established on government initiative and with considerable government financial participation. Only in Japan and in Hong Kong does private business appear fully and immediately capable of developing the economy by its own resources and on its own initiative. Thus, despite the limits to the fields for which large-scale government enterprises are suitable, governments deciding to shift the emphasis of development to the manufacturing sector may at first have to carry the main burden themselves."[4]

Even in the case of Japan—which no longer ranks as an under-developed country—it was the Government which took most of the initiative during the period of most rapid industrialization. It was not until manufacturing had attained a more important place in the economy that the government-owned factories and plants were sold to private entrepreneurs.

Capital

It is against a background of four important considerations that the capital requirements of an industrialization programme have to be examined: (1) that most under-developed countries suffer from a serious shortage of capital in relation to both land resources and labour resources; (2) that in general a manufacturing establishment requires substantially more capital than an agricultural or commercial unit; (3) that most of the capital invested in a factory is usually far more fixed in nature and location and far less flexible in function than that invested in a farm or shop; and (4) that most under-developed countries have no tradition of industrial investment.

[3] W. W. Rostow, *Process of Economic Growth* (Oxford, 1953), page 258.

[4] United Nations, *Economic Survey of Asia and the Far East, 1953*, sales number 1953.II.F.8, pages 23 and 24.

Capital shortage is a characteristic phenomenon in under-developed countries, sometimes relative in the sense that labour and land could be made more productive if more capital were available, sometimes absolute in the sense that the supply of capital is insufficient to employ the population fully even in the least capital-intensive activities. As its causes and consequences have been analysed in a number of United Nations documents,[5] they need not be repeated here; on the general problem of capital shortage it will be sufficient to emphasize the fact that in most under-developed countries the mass of the population have little or no margin between receipts from wages or the sale of produce and expenditure on necessary consumption goods; that only a small number are regularly in receipt of an income which permits savings, and that in those under-developed countries which have high birth and death rates, the age group in the population which is likely in any event to have disposable savings constitutes only a small proportion of the total.

The difficulty is aggravated by certain aspects of the distribution of income in many of the less developed countries: the higher income group, from which the bulk of private capital formation must come, consists predominantly of traders and landowners. In the case of most traders, savings tend to accrue in comparatively small sums, which may not be realized in money terms but are more likely to flow directly into business expansion by way of increasing inventories. In the case of landlords and plantation owners, savings also tend to flow back into the same or cognate economic fields and to become invested—at least in part—in additional land. In the first instance, the funds leak out of the economy fairly rapidly in payment for imports, predominantly of consumer goods. In the second instance, as suggested in chapter 2, they may circulate in the real estate market for some time; part may be used for clearing, draining, levelling or otherwise improving the land, but a large proportion tends to lose its capital potential, leaking out of the economy as sellers of land use the proceeds for consumption involving imports. In Latin America, one of the commonest uses to which such funds are put is the construction of luxury residences, which, though from one point of view a form of investment, add little to the country's industrial output and in many cases have a fairly high import content.

Given the economic climate of many of the less developed countries, land and trading stocks are always likely to attract a certain amount of capital away from uses which might be more socially productive. Investment in real estate, as described above, has often been criticized as inimical to development in such countries as Brazil and Chile, for example, but in the prevailing circumstances it is probably a rational private choice, providing as it does in those countries both a liquid asset and a hedge against currency devaluation and price inflation. In these respects, investment in inventories also presents advantages over less flexible and more hazardous investment in manufacturing enterprise. Moreover, there is a good deal of evidence to show that, even in fairly normal and not unduly inflationary times, investment in real estate and inventories and in some countries in money lending, too, is profitable enough to make the ordinary returns that might be expected from an industrial undertaking look comparatively unattractive.

The movement of savings largely within the sector generating them has a parallel in the more advanced countries, where there has long been a tendency for capital growth to depend very largely upon the reinvestment of profit within the business that produced it. The crucial difference lies in the fact that in the less developed countries there are comparatively few secondary industries whose profits if reinvested might be the mainspring of industrial growth. The disadvantage which arises from the lack of industrial firms ploughing back part of their earnings might be lessened by the operations of institutions which could channel savings from one sector to another, but here again the under-developed countries are handicapped by the economic environment and its institutional inadequacies.

Another aspect of the problem of mobilizing savings deserves mention because of its special relevance to the industrialization process. As indicated in the preceding chapter, industrial development depends on the one hand upon the size of the local market and on the other hand on the country's ability to acquire machinery and other factory equipment. At a given level of income, savings can be increased only by reducing expenditure on consumption, which in turn involves a reduction in the demand for the local industrial output and hence a reduction in the prospective profitability of the industry to which the savings might be directed. This competitive relationship between savings and consumption is resolved to the extent that the level of real income is rising, and this enhances the importance of selecting the new secondary industries in such a way that the marginal productivity of the factors engaged is greater than it was in their previous uses.

Although rising income is the prime necessity for making increased savings possible, the extent to which savings are actually accumulated and investments actually made depends largely upon the distribution of the new income. In general, the rate of savings rises with income so that egalitarian distribution is much less favourable to savings than gross inequality. The existence of a certain proportion of high incomes, however, is not of itself a guarantee of capital formation: as pointed out in chapter 2, the use that is made of savings and other surpluses depends in the first instance upon investment opportunities and attitudes, which in turn

[5] *Methods of Financing Economic Development in Under-Developed Countries*, sales number: 1949.II.B.4; *Domestic Financing of Economic Development*, sales number: 1951.II.B.1; *Report on Special United Nations Fund for Economic Development*, sales number: 1953.II.B.1; *Mobilization of Domestic Capital in Certain Countries of Asia and the Far East*, sales number: 1951.II.F.3; *Mobilization of Domestic Capital: Report and Documents of the First and Second Working Parties of Experts*, sales number: 1953.II.F.2 and 1953.II.F.4.

are strongly influenced by the economic and social structure of the country.

While it is true that manufacturing industry, in general, tends to employ a greater amount of capital per unit of labour and land than most of the activities carried on in a pre-industrial society, it is also true that capital requirements differ very considerably from one industry to another. In so far as the capital shortage in the under-developed country is reflected in a higher capital price, there is a natural pressure on entrepreneurs to select from available techniques those which have the lowest capital intensity. Capital requirements do not constitute the only criterion of suitability, but there is evidence that in the course of industrialization. the less developed countries have in fact tended to invest in light, labour-intensive, consumer goods industries sooner than in the heavier, capital-intensive, producer goods industries. The question of industrial priorities is referred to again later in this chapter; in the present context it is sufficient to stress the importance of aiming at something approaching the equi-marginal distribution of the country's supply of capital at least to the extent of avoiding extravagant investment in industries (or public works) whose capacity runs far ahead of contemporary demand.

The capital requirements of manufacturing industry tend to be much larger per unit of operation than those of the existing agricultural and commercial activities of most of the under-developed countries. Moreover, because of the higher cost of acquiring and installing plant and equipment, and the need to provide various ancillary services normally available for purchase in an industrial environment as well as to carry larger stocks of stores and raw materials, they also tend to be larger than the corresponding requirements of a comparable unit in a more industrialized country. This magnifies the relative shortage of domestic capital and also helps to explain the tendency for the local entrepreneur to underestimate the capital needed for a given industrial enterprise, thus putting himself in the awkward position of having to seek more funds long before his factory has become firmly established. As second calls on the capital market seldom meet with a favourable response, especially in an economy in which capital supplies are scarce and appropriate institutions lacking, such underestimation is a frequent cause of business failure. And every industrial failure tends to confirm the reluctance of local investors to tie up their funds in manufacturing establishments and reduces the relative attractiveness of manufacturing as a field of local investment, thereby increasing the shortage of capital to other would-be industrial entrepreneurs.

The reluctance of investors to venture into the industrial field may be augmented by other considerations peculiar to under-developed countries. Some of them were mentioned or implied in the discussion of the shortcomings of the economic framework in chapter 2: they range from the combination of absence of fire-fighting services and inadequacy of local insurance facilities to sudden variations in disposable incomes due to the country's undue dependence on a single export product. The situation may be aggravated in some cases by a general uncertainty concerning the government's economic policy; sudden changes in tax rates or customs duties or exchange rates may increase costs or reduce the domestic market or invite foreign competition. In the face of such risks and uncertainty, due to lack of knowledge on the one hand and to the possibility of arbitrary government action on the other, private investors are likely to require a considerable risk premium over and above the normal expected rate of profit. Where there is little chance of obtaining such a premium, industrial investment is not likely to take place. In general, the greater the degree of uncertainty prevailing in the economy, whether due to absence of information concerning relevant facts and trends or to ill-advised economic policies or to inherent structural shortcomings, the less favourably is the necessarily long-term investment required for industrial enterprises likely to be regarded and the more difficult the task of raising private industrial capital.

In this connexion it should be noted that one of the functions of the public and semi-public bodies—such as the Industrial Development Bank in Turkey or the Nacional Financiera in Mexico—created to stimulate the industrialization process in some of the less developed countries has been to increase the confidence of private investors in industrial ventures. It is said that certain of the managing agencies in the early days of industrial development in India attracted capital to industries that would not otherwise have been financed by local investors, the respectability of the agency's name being more important than the probable soundness of the proposed enterprise.[6]

One of the reasons for the reluctance of investors to finance manufacturing enterprises is the rather unadaptable nature of industrial capital. This reflects both the physical characteristics of particular machines or individual pieces of equipment and the economic characteristics of the factory in which they have been installed. While some machines possess considerable technical flexibility as single units, being capable of being moved from one site to another and of being used if not for different purposes then at least in different processes, their installation in a plant in a precise association with other machines usually serves to reduce this adaptability markedly, often to the point where their function is confined to the one process for which the plant was designed. With the extension of mass production, indeed, the technological trend has been in the direction of single purpose machines, designed specifically for one particular job within a prescribed sequence.

Given the smaller market of the under-developed countries as well as the advantage of a higher degree of

[6] P. S. Lokanathan, *Industrial Organization in India*, (London, 1935).

flexibility in respect of single items of equipment, it may be possible in certain circumstances to select techniques of production which, while not unduly sacrificing efficiency or inflating cost, succeed in imparting to the various components of the plant, if not to the plant as a single unit, a valuable element of adaptability. This is one of the problems facing the industrial entrepreneur in most of the under-developed countries which has no exact counterpart in the more advanced countries.

The principal advantage of flexibility lies in the fact that it tends to reduce risks: if the factory is unsuccessful, most of the plant has at least a chance of being used for other purposes. Anything that seems to reduce risks helps to improve the position of secondary industry *vis à vis* competing forms of investment, and this is important if industrial entrepreneurs are to secure a larger share of local capital. From the point of view of individual subscribers of capital, however, flexibility has a different connotation and is more likely to be attained by institutional than by technological methods. For what the individual investor requires in order to induce him to participate in new and untried industries is a higher degree of liquidity for his own investment rather than the more general liquidity derived from technological flexibility of the plant.

There are two institutions which help to bring about this type of liquidity for an investor's funds: the limited liability company and a securities market. In many of the less developed countries, the fact that neither of these institutions is well organized or effectively used may well tend to restrict the extent of private investment in secondary industry. While it is true that institutions grow out of an economic environment and are not often successfully transplanted in their original form from one economy to another, it is also true that during a period of rapid economic development there tends to be an institutional lag. In this way, a programme of rapid industrialization may be retarded by institutional inertia.

In most of the under-developed countries, the existing institutions, designed in the first place to serve the primary and commercial activities of the pre-industrial era, are likely to require a good deal of adaptation to turn them into more effective instruments for industrialization. Even the lending policies of the commercial banks are likely to favour the plantation, mining or trading activities with which they are more familiar. They are, moreover, accustomed to handling short-term credits, not the long-term loans which manufacturing enterprises are more likely to require. As collateral they are used to real estate and inventories—assets which are far less important to a factory. And in any case they are more likely to lend to older, better established firms than to new and untried industrial concerns.

In some of the less developed countries the institution of the incorporated limited liability company is exploited to only a minor extent. In Argentina, for example, in 1943 not many more than 8 per cent of all firms were organized in this way. By forgoing the advantages of the joint stock limited liability company as the unit of industrial organization, a country tends to reduce its potential supply of industrial capital, increase the risks of all those savers who do invest in industry and throw a greater burden upon the one-man or the one-family enterprise—or the government. Where capital usually becomes available in small sums, it is of particular importance that machinery should exist for combining small contributions into amounts appropriate to the requirements of industrial investment. Factories cannot be built on a piecemeal basis in the way inventories are built up by the trader, who year after year may reinvest his profits. Industrialization of many of the less developed countries would benefit considerably from the evolution of suitable institutions to meet the situation caused by their basic shortage of capital.

This is not to say that new institutions should or can be created *in vacuo* and imposed upon a developing economy. It is rather to suggest that every encouragement should be given to institutional development parallel to industrial development. Since many of the institutions common to more highly organized economies may be inappropriate in the circumstances of most under-developed countries, such a policy may involve a certain amount of experimentation by government; more certainly, it involves the setting up of a suitable legal framework within which institutions appropriate to the needs of the emerging factory system may evolve and operate successfully, thereby aiding the industrialization process. In the present context, the prime requirement is a sound law governing both the flotation and operation of industrial companies and the organization and functioning of stock exchanges and other segments of the securities market. The basic objective in both fields is the more effective mobilization of savings and their more effective channelling into secondary industry.

While the appropriate institutions may be invaluable in collecting and directing savings, they do not necessarily contribute to the actual creation of capital. That problem remains. The argument for industrialization is usually strongest "where . . . the land is carrying more people than can be fully employed in agriculture [and] substantial technical progress in agriculture is not possible without reducing the numbers engaged in agriculture".[7] In these circumstances it may be possible to use the surplus labour in substitution for capital, increasing output by establishing and expanding industries in which little or no plant or equipment is required. In countries in which the marginal product of labour in primary occupations is not negative or zero, however, "a transfer of labour from agriculture to industry is, by itself, no solution, because it begs the question of capital formation; it does not by itself provide the capital necessary for industry. The problem

[7] United Nations, *Measures for the Economic Development of Under-developed Countries*; sales number 1951.II.B.2.

of capital formation must be solved first".[8] In the absence of foreign borrowing, local savings must be increased; in the absence of any increase in the productivity of primary activities, local consumption levels must be lowered.

The limitations of institutions should therefore be clearly recognized. An institution capable of making long-term loans may be an essential part of an industrial framework, but if, in the absence of idle factors of production which can be fairly readily re-employed, it lends funds that do not represent prior voluntary savings, its operation is likely to be inflationary and the increase in total welfare flowing from the new industry, necessarily concentrated in a small area, may well be offset by the decrease in welfare caused by forced and haphazard saving spread over the whole economy and bearing most heavily upon the poorest, who are least able to protect themselves. The institution of import control may be essential to the acquisition of capital goods for industrial investment, but if it merely abstracts more capital goods from the flow of foreign trade without simultaneously bringing about a corresponding act of voluntary saving in the domestic economy, the result is again likely to be inflationary and not only may forced savings be necessary to fill the gap, but resources may be diverted away from the desired pattern of investment into industries producing the type of goods whose importation has been barred, or if the inflation becomes serious enough to deter industrial investment, into the speculative holding of land or inventories.

The budget with its strong sanctions is usually a more reliable instrument for creating and gathering savings, though the extent to which it is used depends upon the degree to which responsibility for economic development in general and industrial development in particular is assumed by government. Surpluses on current account may be brought about either by selective increases in taxes on incomes, in duties on imports and exports, or in prices in government-operated factories or by corresponding reductions in normal government expenditures. The resulting surplus is available for investment in accordance with the development plan or for advancing to one or more lending institutions, to be invested in due course by approved borrowers. In this way, India expected to spend some 940 million rupees of public money on manufacturing industries during the course of its first five-year plan. Between 1951 and 1953, government-owned plants producing fertilizer, locomotives, telephones and machine tools came into operation, and public funds were used for the expansion of the steel, aluminium, ferroalloy, caustic soda and soda ash industries.

A possible advantage of the provision of capital by government even in an economy which is not centrally planned lies in its capacity to encourage the participation of private investors in "joint" or "mixed" enterprises and thus to enhance the total volume of savings available to industry. Budget surpluses and public borrowing in most of the less developed countries, however, are likely to channel new capital less into secondary industry than into the more general field of public works. This may tend to slow down the rate of industrialization in the short run, but in the long run the development of the public sector—including, in most of these countries, the provision of water and power, and transport and communications as well as schools and hospitals—must run parallel and, if possible, slightly in advance of the development of secondary industry.

Without actually investing in industry, governments are sometimes able to make the raising of capital easier by offering some sort of guarantee to those who lend to approved private concerns. Such guarantees have also enabled various firms in the less developed countries to draw on the resources of foreign and international lending institutions. Thus, the third largest of Mexico's steel producers, La Consolidada, built its structural steel mill at Lecheria shortly after the Second World War with the aid of $1.5 million borrowed from the Export-Import Bank of Washington, D. C., guaranteed by the Mexican Government and administered by Nacional Financiera.

It is probable that some of the success in raising local capital which has been achieved by some development corporations is attributable at least in part to their links with government. It is argued by small investors, not always with justification, that the government is not likely to allow an industry sponsored by an official development corporation to fail. The apparent security of such an investment is sufficient to attract those who would not be interested in a pioneer industry promoted entirely by a private entrepreneur.

More deliberately, governments have occasionally attracted private capital into approved industries by means of a guarantee of minimal dividends. The Bazalkot cement plant in Bombay, India, for example, was built by an ordinary limited liability company in 1948 after the Government had undertaken to guarantee a minimum dividend of 3 per cent a year for a period of five years.[9]

Other fiscal means of encouraging a flow of local capital into secondary industry are reviewed later in this chapter; in concluding the present section the significant point to be made is that in many of the less

[8] See R. Nurkse, *Problems of Capital Formation in the Underdeveloped Countries* (Oxford, 1953) page 51, where the problems arising in "sparsely populated areas" are discussed. The terms "densely" and "sparsely" applied to populated land tend to hide our ignorance of what actually happens to agricultural output when workers are diverted into other occupations. It may be that in some Asian and Middle Eastern countries agricultural production would not be affected, but over most of Africa and Latin America it is doubtful whether output could be sustained, at least without a considerable reorganization of farming which would itself require a major capital outlay—in fences, tools, wells and so on.

[9] United States Department of the Interior, Bureau of Mines, *Mineral Trade Notes*, vol. 27, No. 1, July 1948 (Washington, D. C.), page 30.

developed countries, even though capital in general is in very short supply, a certain amount could in fact be made available to industry if suitable machinery existed for the purpose. Indeed, if the other factors are available and the economic climate not too unfavourable, local capital sometimes responds with unexpected readiness to the initiative of local entrepreneurs. The first large iron and steel plant in India, for example, built in the period 1907 to 1911 with the aid of European and American experts, was financed entirely by domestic capital, collected in three weeks from large and small savers, after the entrepreneur J. N. Tata had failed to raise the requisite £1,630,000 on satisfactory terms in London.

Labour and skills

Labour stands in a dual relationship to industrialization in many of the less developed countries: on the one hand the prevalence of under-employment and low incomes is one of the main reasons for the active encouragement of secondary industry by governments; on the other hand labour shortages and difficulties of one kind or another are often among the influences tending to prevent or retard the growth of secondary industry. The anomaly implied in this situation is partly the result of the population's lack of industrial skills and in some cases its low geographic mobility. Villagers in a rural subsistence economy, even when they appear to be under-employed, cannot suddenly be converted into urban factory operatives, still less into skilled technicians. If a labour policy is to be geared to an industrialization programme, two of its chief objectives will generally have to be to raise the level of training of the working population and of those preparing for employment and where necessary to increase geographical mobility selectively.

As in so many other aspects of economic development, the less developed countries are often handicapped by an ignorance of many of the basic data pertinent to any redeployment of labour in the course of the industrialization process. One of the first requirements for the evolution of a sound labour policy, therefore, is the assembly of information regarding the elementary dimensions of the economy. This is not the place to discuss the mechanics of such a project[10]—its nature and scope are likely to differ from country to country, depending, *inter alia*, upon the data already in the hands of the government, the distribution and density of the population and the industrial status of the economy—but it would be useful to indicate the type of information required for increasing the speed and benefits of an industrialization programme.

In the first place there is the information which may normally be derived from regular and accurate censuses: the size and territorial distribution of the population and its composition in respect of age, sex, industry and occupation. Unlike other resource surveys, enumeration of the population cannot be carried out piecemeal over a long period; it is probably the most essential of all socio-economic measurements, and efforts should be made in even the least developed countries to have it carried out as completely, as precisely and as regularly as possible, making full use of all the recently developed techniques of sampling.

The rest of the desired data are more likely to become available as the result of special inquiries and the systematic observation and measurement of specific social and economic situations and experiences. The questions to which answers should be sought relate to such complex variables as incentives to movement of labour, the effect on agricultural output of the withdrawal of rural workers and the effect on the availability of workers of technical advances in agriculture. These problems lie at the heart of the industrialization process as it affects, and is affected by, the supply of labour. They indicate the context within which the concept of manpower resources has to be examined. And they give point to the practical questions which, it is suggested by the International Labour Organisation, should be used to test the soundness, from the point of view of labour requirements, of each new industrial project:

(1) What are its requirements in manpower, in the four broad categories (*a*) managerial, (*b*) technical and supervisory, (*c*) skilled, and (*d*) unskilled, subdivided into the number required in each occupation?

(2) From which area and which sectors of economic activity is it proposed that these different groups should be drawn?

(3) Is the carrying out of these proposals likely to rob other vital activities, such as food production, of essential manpower?

(4) Is the proposed location suitable from the point of view of available manpower?

(5) If certain types of manpower are not available in the country, what is the proposed method of obtaining them: (*a*) employment of immigrants on a permanent basis, (*b*) employment of foreigners on a temporary basis until local workers are trained, (*c*) retraining of local workers or (*d*) training of young workers?

In most of the under-developed countries, the government's capacity to assist secondary industry to obtain the manpower it requires may be exercised in four different directions: in organizing and supervising domestic recruitment, in sponsoring and aiding suitable immigration, in establishing and maintaining an employment service and in arranging and staffing adequate educational and training facilities. The second of these —immigration—which because of the general shortage of managerial, supervisory, technical and skilled personnel is sometimes of critical importance, is examined in chapter 4 of this study; in the present section each of the other three fields of action merits a brief discussion.

[10] Helpful material in this connexion is available in many of the International Labour Organisation publications.

Where active recruitment is necessary it is usually symptomatic of a shortage of labour or of a low degree of mobility or both. A deficiency in numbers arises most frequently in those areas in which agricultural techniques are especially primitive and the agrarian structure cannot sustain—without social breakdown and a serious decline in food production—any large loss of manpower. This situation has been met in some countries, notably in Africa, by the evolution of a system of migrant labour under which workers are withdrawn from the agrarian economy for comparatively short periods for temporary employment in industrial and other occupations. Unless a reorganization of agriculture proceeds during this phase of development, however, the limits of manpower withdrawal are soon reached; thereafter additional industrial workers are obtainable only at the risk of serious disruption of the agrarian economy. The Belgian Congo appears to have reached that stage, while in South Africa, where most of the reserves in which the indigenous agricultural economies exist have become net importers of food, the withdrawal of labour into the industrial sector has probably gone beyond that stage. In both these countries, expansion of secondary industry is being curbed by shortage of labour. In a number of other underdeveloped countries quantitative labour shortages affecting secondary industry have occurred from time to time—during brief periods of rapid industrial growth or of particularly remunerative employment in certain primary export activities, for example—and from place to place, owing to social and geographical immobility, in some cases, or the inadequacy of housing or other facilities in rapidly expanding urban concentrations. In spite of its large population, Japan had considerable difficulty in recruiting labour in the early stages of its industrialization. More recently, villagers in Ceylon and in other countries with a well established rural society have shown reluctance to abandon rural life in spite of the attraction of higher nominal wages offered by the country's new industries.

Recruitment of manpower for new industries is basically the responsibility of the management of each industry, but governments have an interest in assisting this recruitment and seeing that it is carried out with fairness to the workers and with as little disturbance as possible to the economy. They should see that labour legislation is complied with, that fair recruitment practices are followed—by supervising private recruiting agents, for example—and that an intelligible contract of employment with clearly defined conditions of work and payment is offered to the worker.

As recruitment by private agents is resorted to most frequently in the least developed countries and in those sectors which are commonly in the pre-commercial stage of development, government responsibility is a dual one: not only to protect the interests of the (usually illiterate) worker who elects to enter industrial employment, but also to ensure that migration from the sector is not on a scale sufficient to disrupt the local economy. While it is to the advantage of the country as a whole and the under-developed sector in particular that under-employed manpower have a chance to do more productive work, there is likely to be a net social loss if this occurs at the cost of a breakdown in the rural economy. As indicated above, the situation calls for the simultaneous introduction of new agricultural techniques which will tend to raise the productivity of those who are left without the labour of the recruited workers. When this cannot easily be done, it may become necessary—as in parts of Africa—to close certain areas from time to time to prevent further leakage of labour.

In many countries recruitment of this nature involves a lengthy journey from the point of origin to the place of work. This often constitutes a notable waste of labour, especially when—as in the migrant system outlined above—workers are recruited for comparatively short-term contracts and have to repeat the journey within a brief period. Anything that the government can do to facilitate the movement of labour—by maintaining prescribed routes, instituting reception or rest centres and operating transport services, or by any other means—will help to reduce this waste. Where short-term contracts are common, the government may be able to mitigate some of the harmful results on the local economy by operating an efficient mail service and a means of transmitting funds from the industrial area.

Short-term contracts are rarely suitable for factory employment, in which high productivity is usually the result of continuous practice and stable service. But even where workers are not recruited for short periods of employment, labour turnover often proves to be very high in newly established industries. In some cases this may be due to bad selection or to lack of a clear employment policy on the part of the employer. But largely it is the result of the natural difficulty which workers, often illiterate and with little experience outside subsistence agriculture, have in adapting themselves to factory routine. The fact that their families remain behind in the villages often tends to draw them back; they often want to return home to help with the harvest; in some cases they wish only to accumulate a fixed sum of money and return home when this is achieved. Workers of this type may be encouraged to settle down if there is sufficient incentive in the form of markedly better real income and amenities. Managements in some countries have found it useful to establish extensive services for the workers—medical treatment, welfare clubs, shops for the sale of commodities at low prices, and so on—but in many areas being industrialized the underlying sociological problems are not of a type which can be met wholly by action taken in individual factories. Some of these problems are discussed in chapter 5.

In this connexion, it may be pertinent to point out a danger that from time to time threatens to offset the advantage that, as indicated above, most of the less developed countries enjoy in respect of labour costs in secondary industry. This is the tendency, fostered by trade unions or by governments, to provide the industrial workers with greater job security and higher in-

come than can be justified in poor and rapidly changing economies. In general, wage rates should be in line with the workers' productivity and the industry's profitability within the under-developed country and not necessarily related to rates payable in the industry in question in any of the more advanced countries. If undue security of tenure in a particular position leads to economic rigidity, it is likely to act both as a handicap to the enterprise in question and as a deterrent to new enterprise. A certain amount of flexibility in resource utilization is a most desirable attribute in a developing economy. So too is a certain degree of labour mobility; it is only when labour turnover becomes unduly high or when mobility is not so much purposive movement as aimless, footloose shifting of jobs that action may be required to increase stability.

Wasteful use of labour, which tends to magnify whatever shortage of manpower or skill there may be, is sometimes the result of bad programming or bad management, but it may also stem from the workers' desire for job security and their opposition to technical change, which in turn reflect an attitude common in an immature economic environment in which alternative industrial employment is still very scarce and the traditions of a more or less static subsistence society still exercise an appreciable influence. Apprenticeship laws, for example, though ostensibly designed to increase the local supply of skilled labour, may have the effect of unduly protecting the existing wage structure and discouraging both suitable training and the adoption of new techniques of production. The long periods of indenture implicit in the 1923 apprenticeship law in South Africa, for example, became less and less appropriate for the training of factory operatives as this type of workman replaced the journeymen craftsmen of the pre-factory era. In Cuba, the fact that apprentices have to be paid full wage rates and may not be discharged once they have completed six months of service doubtless acts as a deterrent to the training of new workers in existing establishments.

When industry is beginning to develop in an emergent subsistence economy, the availability of suitable goods to buy is frequently an important means of keeping workers in cash-earning employment, providing as it does tangible evidence of the advantage of money wages. During the Second World War, when the supply of consumer goods was low, many countries experienced greater difficulty in recruiting labour from their subsistence sectors.

The flow of recruited labour is in due course likely to be paralleled by a flow of independent work-seekers. In so far as they arrive in the industrial centres without skill but with exaggerated hopes of highly paid employment, they often constitute a serious social problem. The substitution of urban unemployment for rural under-employment usually represents a net loss to the community. Labour mobility is an important advantage in the industrialization process in most of the less developed countries, but it must be purposeful mobility: from under-employment to full employment, from over-crowded rural areas to growing industrial areas, from low wage jobs to higher wage jobs, from unskilled work to more skilled work.

The achievement of this type of mobility may be materially assisted by a government employment service. This institution is often lacking in under-developed countries, and the setting up of such a service is likely to be of material benefit to the labour market, enabling entrepreneurs to staff their factories and work-seekers to obtain suitable employment with greater speed and much less waste. An employment service is not a rigid prefabricated institution, however; it is something which should be capable of growth and adaptation in accordance with the development of the economy in which it operates.

In an under-developed country in which both budget and public administration are hard pressed to provide the services expected of government in an industrializing economy, it may be wise to start with a pilot office in one area undertaking specific inquiries or recruiting campaigns, and relying on the help of existing government machinery—such as the labour inspectorate—in other parts of the country. In some cases the service may have to perform functions which are not usually carried out by employment services in industrial countries. For instance, it may be expected to assist in the movement of under-employed workers from rural to urban areas by providing accommodation and reception and advice centres. It may be called upon to co-operate in the organization of community development centres. It may be expected to provide training facilities for unemployed workers.

Whatever form an employment service takes, however, the important thing is that it should act as the organ of government specifically responsible for the supervision of the employment market. As industrialization progresses, it may be required to undertake more and different duties. It may give vocational guidance to young people; it may administer aptitude tests and assist unemployed workers to obtain suitable vocational training; it may provide special services for disabled workers. Its officials should acquire some knowledge of how newly established industries work and of the duties appropriate to, and the qualifications and requirements for, each occupation. They should also receive further training in methods of gathering and presenting employment market information. Systematic contacts should be maintained with employers in order that the service may be notified of vacancies to which workers can be referred as well as information collected on current and prospective manpower requirements.

If managements adopt the practice of recruiting through the employment service, instead of recruiting at the factory gate or in the rural subsistence sector of the economy, they will find that applicants referred to them have been sifted out in advance, and that they can draw on a wider employment market. If work-seekers and unemployed workers adopt the habit of going to

the employment offices, they can be given reliable and up-to-date information on employment opportunities, not only in their own district but elsewhere in the country. The more efficient the employment service, the greater will be the inducement to employers and workers to utilize it, and the wider as a result will be its coverage of the employment market. Moreover, as industries expand and fresh industries are created, movement from one industry, or one factory, to another tends to become more common, and the need for machinery through which purposive movement can take place is likely to grow.

Although the employment service may be able to apply aptitude tests and provide vocational guidance, this does little to overcome the more fundamental problems of low educational standards and lack of technical training which in most of the under-developed countries become increasingly apparent as industrialization progresses. Indeed, the lack of so many specific skills and abilities that are essential to the efficient functioning of an industrial society is a major hindrance to the rapid growth of manufacturing industry in most of these countries.

The shortage rarely lies in machine operatives: recent experience in Asia and Africa has shown that even workers who are quite unfamiliar with machine technology are capable of acquiring reasonable proficiency at repetitive tasks in a mechanized factory within a not unduly long period of training and practice. Nor is there usually any great difficulty in finding workers capable of being trained within the plant to perform more intricate tasks requiring a greater degree of judgment. The main difficulty lies at the succeeding levels in the factory hierarchy: foremen, plant supervisors, technicians and skilled mechanics, maintenance engineers, experts in raw materials, designers, research workers, production and programme engineers, works managers and all the various executive and administrative decision-making personnel normally responsible for organizing and maintaining the smooth flow of production. Faulty planning of production, poor choice of materials, incorrect assignment of machines, lack of balance between parallel movements of components or semi-finished materials, inadequate maintenance of plant and equipment, bad staff relations due to ineffective management — these are the weaknesses reported time and time again by experts who examine the working of factories in under-developed countries. Almost all these weaknesses result from shortages of particular types of labour.

It is in this technical and managerial field that inadequacies of the environment and deficiencies of general vocational and technological education combine to make themselves felt. And the result is a considerable obstacle to industrial development: factories cannot be established for want of suitable personnel at the critical levels of control and those factories that are established become victims of frequent delays and breakdowns, of bottlenecks and idle sections, of wasteful use of materials and machines, all of which reduce productivity and raise unit costs, detracting very considerably from the gain which the local industry might otherwise mean to the under-developed economy.

It is very difficult to provide training facilities for large numbers of people quickly, and even if this were feasible the training process itself is not something that can be easily compressed into short periods of time. A training policy appropriate to a programme of rapid industrialization, therefore, must concentrate on the key sectors and ensure that all locally available skill, supplemented where necessary with immigrants' skills, is utilized to the best advantage in those segments of the programme upon which later industrial investments and operations are likely to depend. Within the various industries themselves the most urgent needs are usually for workers to install, operate, maintain and repair machinery of all types.

In general, it is difficult to train men and women for any kind of skilled work unless they have received a basic general education. The abolition of illiteracy and the institution of nation-wide compulsory free education are essential long run objectives, though the immediate labour requirements arising from national industrialization and other development plans may have to be met long before such an extension of the educational system is feasible. Nevertheless, in all the under-developed regions, increasing efforts are being made to lay the educational foundations for technical progress.

In this connexion, it is pertinent to point out that, although a rise in the general level of literacy and knowledge would do much to increase the size of the pool from which skilled workers are ultimately drawn, improvement in formal education is neither the only answer nor in many cases even the best answer to the shortage of skill. It has been noted in some countries, for example, that the higher the level of education attained by a local worker the less likely he is to turn to factory employment, which under the conditions obtaining in the early stages of industrialization often involves hard, pioneering service. This helps to explain the emphasis on the importance of vocational education that has been so marked a characteristic of recent educational reform in many Latin American and Asian countries. This emphasis, which, of course, does not reduce the importance of general education, is based on the premise that a far closer relation between education and national economic needs is not only essential for industrial development but also desirable from other standpoints as well. In this field, co-operation is called for between the universities and the technical colleges on the one hand and government and industry on the other.

The relation between general education, pre-vocational preparation and vocational education and training needs to be carefully planned in the light of the social and economic conditions obtaining in the country in question. Care is always required, on the one hand,

to prevent vocational emphasis from narrowing the educational horizon and, on the other, to avoid such undue emphasis on the literacy side of education as might tend to create a surplus of would-be white collar workers. It should be recognized, however, that such a policy may raise awkward psychological problems in areas in which "prestige occupations" such as law and medicine exert a strong pull on those who attain certain educational standards, as they do in West Africa, for example, where the mines have so far been unable to recruit a single African graduate into the field of mining engineering.

In-plant training is often more directly successful than formal education in raising operational standards, but that implies well organized factories and competent worker-teachers, a combination which is usually lacking in the less developed countries. If there are establishments capable of providing it, in-plant training has this advantage: that most of the critical skills and attitudes in industry, though not readily taught, are more likely to be learned through on-the-job experience. In those under-developed countries which lack facilities for such in-plant training, recruits for the upper echelons of factory service must depend largely on the opportunity of employment in industrial countries, or in local branches of efficient foreign concerns.

As indicated earlier in this chapter, many of the functions of management in the less developed countries fall upon the entrepreneur, who is rarely equipped with both the patience and foresight necessary for long-term planning and the knowledge and ability necessary for day-to-day business administration within the technical framework of an industrial plant. In these circumstances laws which make it difficult to hire and retain the services of foreign personnel tend to aggravate rather than relieve the shortage of domestic skill.

In most under-developed countries training arrangements are best made in accordance with some systematic, co-ordinated plan, drawn up in the light of demographic trends and of current and prospective needs for labour and skills. Training, in other words, should be related primarily to expected requirements, but it should be organized on a broad front and not unduly restricted in respect of type or specific object. As a corollary of this, it is evident that public initiative on a large scale is an essential element in the planning, organization, operation and financing of any youth training programme. Only a government is likely to be able to carry out a programme adequate in scope and in character while safeguarding and reconciling the different interests involved, but if the programme is to be realistic and supported by the parties directly concerned, the co-operation and participation of employers' and workers' organizations and other interested groups should be enlisted.

While the long-term aim should be to expand training opportunities on as wide a scale as possible and to provide suitable vocational guidance facilities for all young persons, in the short run training opportunities in any one area may have to be developed according to the relative urgency of immediate needs. Thus, when local opportunities are few, every effort should be made to select those persons most likely to derive the greatest benefit from the training. And, whether technical training is given in specialized vocational schools, or on the job in the form of apprenticeship, or under a system combining elements of both these methods, young workers who go into jobs at relatively low levels of skill should be encouraged to avail themselves of any facilities that provide opportunity for advancement to higher levels of skill.[11]

The training of youth is not the only problem to be faced in attempting to gear skills to the increased needs of countries in process of industrialization. In most of these countries there are large reserves of manpower —adults with the capacity to learn additional skills and thereby advance themselves and play a more productive part in national economic development. Many under-developed countries are beginning to regard adult training as important from both the economic and the social standpoints and are therefore anxious to provide incentives to adult workers to take additional training. In some cases facilities are provided in government establishments; in others private undertakings are used with government encouragement. Training of adults can often be fitted in with programmes of youth training, in which case use may be made of the same schools and instructors.

Two other special problems deserve mention in the present context: the training of supervisors and the training of instructors. It has already been pointed out that supervisors, as the link between management and workers, occupy a key position in new industries as well as in efforts to increase productivity in older industries. In a large measure, indeed, the quality of the supervisor determines the productive efficiency of a factory. As there is a serious deficiency of supervisory skill in most under-developed countries, programmes of supervisory training are needed both to increase the supply of this scarce factor and to increase the competence of personnel already employed in this capacity. Such a programme should be designed to improve the supervisor's technical capability, skill and knowledge of his job and also to provide guidance for the carrying out of his non-technical functions: instructing, planning and controlling work, and improving the standard of human relations in the factory.

The training of teachers and instructors is obviously indispensable to any expansion of educational services in general. Instructor training is one of the fields in which external help is most likely to be needed and most easily arranged. Where suitable higher technical training institutes do not exist in the country, a nucleus of instructional staff may be sent abroad for fairly intensive courses which will equip them for teaching

[11] The International Labour Organisation has developed, in its recommendations and in resolutions at regional conferences and elsewhere, detailed standards and suggestions for the guidance of countries in developing youth training in all these forms.

at home. The supply of qualified instructors is the major determinant of the rate at which training services can be extended in any long-term programme.

These general observations have been designed to show the nature of the problems which are likely to arise in the field of labour supply in the course of the industrialization process in an under-developed country. Conditions tend to vary more in this field than in most others, and a practical programme can be worked out only when the circumstances of the individual country are known. The strains on labour in the transition from a wooden plough in a subsistence economy to a mechanized textile factory in an exchange economy, for example, are inevitably much greater than those that are likely to arise in the gradual industrialization of a country that already has an advanced, mechanized agricultural system.

The nature of the labour problem also varies with the type of industry. Although a highly capitalized industry may require far fewer workers than a labour-intensive one, it may, by virtue of its special labour requirements, present much greater difficulties not only in its construction but also in its day-to-day operation. The shortage of key personnel may slow down or bring to a virtual halt a whole industrialization programme.

In concluding this discussion of labour as a scarce factor likely to present special difficulties in the course of industrial growth, it should be noted that modern technology has tended to lessen the dependence of secondary industry upon highly specialized labour. In many types of factory the majority of the workers are now operatives, who, in general, are far more easily trained than skilled craftsmen or technicians. This fact may later give some of the less developed countries a marked advantage in terms of labour costs in certain industries. Even under these circumstances, however, the problem of supervisory and managerial personnel remains and with it the risk of bottlenecks in industrial growth and low efficiency in factory operation.

Raw materials, fuel and other natural resources

Variations in the range, quality and availability of local resources are among the most important causes of differences in the process of industrial development between one country and another. As resource endowment depends in part on the size of the country, it is a major consideration distinguishing the course of industrialization in small countries from that in large ones. In many of the smaller under-developed countries, lack of natural resources is likely to be an effective barrier to intensive industrialization. In some—Jordan, Libya and Somaliland, for example—lack of water is likely to be the decisive obstacle. In others—Eritrea, Gambia, Jamaica and many of the Caribbean islands, for example—lack of fuel is more significant. In all, the range of locally produced raw materials is necessarily restricted either by the limitation of land area or by the uniformity of climate.

Among the larger countries, too, there are many instances of deficiency in resources retarding, or likely to retard, the development of secondary industry. In relation to its population, Pakistan has comparatively poor energy resources, though they are being improved by development of natural gas wells. Though better placed than Pakistan, Argentina is also handicapped by inadequate supplies of domestic fuel. In South Africa, lack of water may well restrain industrial progress: already the country's principal industrial area is reaching the limits of the Vaal water supply on which it depends.

Water shortage is probably the most serious limiting factor, for not only is water required in abundance by many industries—power stations, paper mills, rubber factories and many chemical plants,[12] for example—but it is essential, in at least minimal quantity and purity, for the maintenance of an industrial population. And, unlike many raw materials and fuels, it cannot bear the costs of transportation over great distances.

While it is true that none of the countries that have attained a high degree of industrialization has been deficient in domestic sources of power, it is also true that several countries with distinctly poor energy resources—Denmark and to lesser extent Italy and Japan, for example— have been able to develop a considerable range of secondary industries. Inadequacy of local fuel supplies, in other words, though a definite handicap to industrialization, is not an insuperable barrier. Fuel can be imported to augment domestic supplies and, although energy costs are likely to be appreciably higher than in better endowed countries, the difference that this will make in local manufacturing costs is unlikely to be very significant except in the case of energy-intensive industries—metal smelting, for example—which would probably be precluded from any local industrialization programme, as they have been in Denmark, for example.[13]

Apart from the essential elements of water and fuel, the availability of raw materials is usually an important determinant of the feasibility and success of processing and manufacturing industries and the speed with which industrialization is likely to be able to proceed. Hence, whatever can be done by government to stimulate development of local raw material resources is likely to facilitate the growth of secondary industry.

In some fields, governments have a special responsibility. Surveys, for example, generally need to be carried out under public sponsorship, whether the resource is minerals, timber, water-power or soil. Though this does not imply that private prospecting and ex-

[12] The refining of one barrel of crude oil requires more than 18 barrels of water; the production of one ton of steel requires 65,000 gallons of water; the processing of one gallon of milk requires 5 gallons of water; 100 gallons of water are needed for a gallon of alcohol, 10 to 75 gallons for every pound of finished fabric, 66,000 gallons for every ton of paper (plus a large amount for diluting effluents) and 80 gallons for each kilowatt-hour produced in a thermal generating station.

[13] The importance of domestic energy resources may be substantially reduced when technical advance makes it possible to generate low-cost power from easily transportable atomic fuel.

ploration may not be useful in adding to knowledge and in opening up resources for later exploitation, it does mean that supplementing such spot investigations there should be a systematic exploration organized by a government agency.

Because of scarcities of capital and skill, it is rarely possible for an under-developed country to complete thorough-going resource surveys before attempting any exploitation. The financing of later research, indeed, often depends upon the exploitation of earlier discoveries. Though this adds to the risk of misdirecting or mistiming investment—by giving priority to a railway link with a known mineral deposit, for example, when a delay of a few years would have led to the linking of a much richer deposit unknown at the time—it is manifestly difficult, if not impossible, to hold up development pending the completion of exploration. Indeed, the exploration process is never really completed: new techniques open up new fields of investigation, while the less accessible or less healthy parts of the country become exploitable only gradually with development elsewhere.

Research in other fields of resource utilization presents a similar type of problem. In general, it is a continuing responsibility of the government, though private individuals and firms as well as universities and scientific societies may be able to make important contributions, while technical assistance provided by the more advanced countries — through the United Nations or otherwise—may also prove valuable. Improvements in the quality of domestic raw materials or in the efficiency of the factors that produce them tend to raise their development potential irrespective of whether they are exported or absorbed by local manufacturers.

In the present context it is the use of domestic raw materials in local factories which has to be stressed, and from two points of view. First, it is in the interest of industrialization to have the raw materials supplied to local factories priced as low as possible, due allowance being made for variations in their grade; and, second, it is desirable that primary products exported from the country should be locally processed as far as possible, due allowance being made for relative costs both of processing and of transport and for the special requirements of overseas markets.

For the price of domestic raw materials to be low, productivity in the primary activities of mining and farming should be high; this is also the basic prerequisite for the release of factors for the development of secondary industry. Actual raw material cost at the factory, however, incorporates other charges—transport and distribution expenses, in particular—which may add substantially to the total. Where the industry is using a primary product that is usually exported, the system of distribution is likely to be fairly efficient and if the factory is located either at the source of the material or at the port, raw material costs in the industry should compare favourably with those incurred by those foreign concerns that normally purchase the exports. This is the situation in the jute industry of Calcutta and the silk industry in China and Japan. Given efficient manufacturing, such industries are in a strong position compared with foreign factories using the same raw material, though not necessarily compared with industries using synthetic or substitute materials, as the recent history of the silk industry has shown.

Where the industry uses raw materials which are mined or grown especially for local consumption, there is much less assurance that the price will be competitive: the cost of producing the material may be higher in the first place, and it is likely that transporting it over less developed routes will be a much costlier process. In Egypt, for example, it was calculated in 1947 that chromite could be mined locally at £E2 per ton; however, conveying it to Suez, the nearest urban centre where it might be used, cost £E8 per ton. Imported chromite at this time cost £E4 per ton c.i.f. Suez.

The possibility of importing raw materials widens the industrial field for all under-developed countries, even those whose large land area and diverse climatic conditions provide them with a considerable range of domestic raw materials. The disadvantages of dependence upon imports should be recognized, however, for in many cases they may add up to a major obstacle to industrialization, at least in the initial stages and especially if the raw materials are difficult or costly to transport or lose a high proportion of their weight in the course of manufacture.

The flow of imported raw materials often is less steady and reliable than that of local supplies, especially if the imports come from distant sources. In consequence, the manufacturer may have to carry much larger stocks, thus increasing both the capital requirements and the unit costs of the firm. On a well organized, competitive commodity market, a small buyer, such as an industry in an under-developed country is likely to be, would be at little or no disadvantage compared with larger firms. On many of the less regular markets, however, and in times of raw material stringency, the small buyer may have to pay somewhat higher prices or accept somewhat lower quality material than the larger buyer, with obvious detrimental effects upon the relative cost position of the industry in the less developed country.

One of the results of drawing raw material supplies from overseas is the tendency for factories in an under-developed country to be located at its ports, where transport relations may be as favourable as in any of the more highly industrialized countries. An oil refinery in Bombay or Durban, for example, is not likely to be markedly less efficient than a comparable installation on the Californian or Belgian coast. An industry located in this fashion and supplied with imported raw materials, while contributing to the growth of a large conurbation, is likely to have a much smaller developmental effect than it might have had if it had been economically feasible to site it at some raw material source in the interior.

More important to many under-developed countries, at least during certain stages of their industrialization, is the fact that a shortage of local raw materials increases very considerably the foreign exchange requirements of the new industry. In one sense, this tends to render the country's foreign exchange position more sensitive, for whereas in times of special stringency it is usually feasible to curtail the imports of particular finished manufactured products without harmful effects on the economy, any interference with the inflow of raw materials into local factories is likely to have much more serious repercussions—on employment, incomes, tax revenue and other economic variables. This, of course, is a measure of the country's success in employing its resources more fully; it does not imply that the lower incomes associated with a subsistence economy are preferable to the hazards of a more vulnerable exchange economy. Nor should it be overlooked that the process of domestic industrialization itself reduces the dependence of employment upon the state of export markets.

Nevertheless, it is generally preferable for an industry to use domestic raw materials rather than rely on imports, for not only does the importing of raw materials place a burden upon the country's foreign exchange resources but, as hinted above, part of the development potential of a new manufacturing industry lies in the very stimulus that it gives to ancillary activities, including the local production of the raw materials it requires. This developmental effect is of particular importance in economies with sizable agrarian subsistence sectors in which production for the market is not widely practised, and in all under-developed countries it represents the type of association between primary and secondary industries which is of the essence of integrated economic growth.

In view of this it might well be to the advantage of an under-developed country for its new industries to be based as far as possible on domestic raw materials, even if that involved the payment of a slight premium to cover excess costs. The extent to which primary activities merit the protection of such a premium would obviously vary from case to case, depending among other things upon the proportion of raw material costs to total costs in the secondary industry in question, the developmental effects of the primary activity in the rural economy and the outlook for greater efficiency and lower costs among the primary producers.

This is not to imply that no secondary industry should be established in an under-developed country unless it can be supplied with all its raw material requirements from indigenous resources; nor does it imply that every industry that is established should be compelled to use only domestic raw materials. Although in general the country probably stands to gain most from an economic development that involves the mutual dependence of primary and secondary activities, there have been many instances in which, in order to maintain a balance between production and the emerging pattern of demand, the development of one particular sector or type of activity has been maintained or pushed ahead without special reference to activities that might in other circumstances have been regarded as complementary. Though the Gold Coast and Nigeria produce the bulk of the world's cocoa, for example, climatic conditions in those areas are quite unsuitable for working with this rather sensitive product; and in the absence of a local confectionery industry, therefore, the crop will continue to be exported in its raw state.

In some cases the local raw material may be unsuitable for the local market because of its superiority or because it can be sold more profitably on export markets, where purchasing power is greater. This, in part, has been true of cotton in Egypt, where in 1916 a ban was imposed upon the importation of raw cotton ostensibly to prevent the introduction of pests which might have constituted a threat to the local crop. The effect of this prohibition was to force the Egyptian textile industry to use only local cotton, which is a high-grade, long staple type, selling on the world market at a price substantially higher than short staple cotton. In order to prevent local textile output from being of too high quality and cost to be readily salable on the local market, which requires mainly cheap cloth for mass consumption, the high-grade fibre which is used to produce high (30 to 180) count fabrics in other countries is used to produce low (16) count fabrics in Egypt.

More frequently the unsuitability of the local raw material stems from its relative inferiority. Very few of the industries that sprang up in the less developed countries during the Second World War, using local substitutes for such scarce raw materials as rubber latex and manila hemp, managed to survive long when the better grade material again became available.

Unsuitability of local raw materials is not necessarily a permanent stumbling-block to the development of industries using them, however. Technical advances in treating materials and changes in manufacturing processes have often served to increase the value of particular resources and by the same token expose those which are traditionally more readily usable to greater competition. The presence of phosphate in the limestone of Uganda, for example, has long made the cement produced from it a weak and badly setting material. Recently, the building of the Owen Falls hydroelectric station far inland reopened the question of a local cement industry since transport costs on the imported product doubled the c.i.f. price by the time it reached the site. Further research on the use of local limestone resulted in two new techniques: one permitting use of limestone with a phosphate content of up to 2 per cent and the other making it possible to remove the phosphate altogether (for subsequent use as a fertilizer). The outcome of these new developments was the Tororo cement works, opened in 1953 with a capacity of 65,000 tons a year—an important basic industry not only for the construction of the power station but also for the further industrialization of the country.

Table 3. Industrial Output and Raw Material Costs in Selected Countries

(Values in millions of the national currency)

Country and year	Gross value of industrial output	Raw material bill	
		Amount	Per cent of total
Argentina, 1946	13,750	6,929	50
Australia, 1951/52	2,634	1,513	57
Brazil, 1949	104,815	55,580	53
Canada, 1953	17,772[a]	9,328	52
Chile, 1948	35,238	18,282	52
Egypt,[b] 1950	274	198	72
Mexico, 1945	5,571	3,153	56
New Zealand, 1951/52	431	291	68
Turkey, 1950	2,319	1,420[c]	61
Union of South Africa, 1950/51	964	541	56

Source: National industrial census unless otherwise stated.

[a] Value of factory shipments, subject to revision.

[b] National Bank of Egypt, *Economic Bulletin;* based on 19,800 factories engaged in production proper and not in repair or maintenance work.

[c] Including fuel and electricity.

Undue support of high-cost primary activities may, by a system of pyramiding, succeed in retarding the whole process of industrialization. Egypt affords an example. Local sugar-cane refineries and dairies both use high-cost domestic produce and pass on to the chocolate industry sugar and milk which in 1947 cost between two and three times the price of the imported material.[14] A similar burden is laid on many of the industries which use the products of the local chemical and metallurgical works, which are based in turn upon high-cost domestic raw materials. In 1947, raw material costs in general accounted for more than three-fourths of the total costs of Egyptian secondary industry. This is a higher proportion than in many other countries and may indicate that local industry has to carry a somewhat greater burden of excess costs in the country's primary activities.

Nevertheless, the main point of this discussion is of general application: while secondary industry should be encouraged to use domestic raw materials, the industrialization process is likely to be slowed down by excess costs if productivity in the primary activities is unduly low. In such a case, one of the most effective ways of assisting secondary industry would be by raising the efficiency of primary industry and improving the means of distributing its output. If the prospects for improvement are fairly bright, it might be sound development policy to continue the protection of the primary producers, otherwise the balance of advantage seems to lie with the free importation of the raw materials by secondary industry.

In some of the less developed countries in which the needs of secondary industry have been given special recognition, raw material imports have been granted high priority and favourable rates of exchange during periods of control. While such a policy may have been to the advantage of secondary industry in the short run, in some cases it has tended to result in the diversion of government attention and investment away from those primary activities which either directly or indirectly (by earning foreign exchange) supply manufacturers with their raw material requirements. The industrialization process cannot run too far ahead of primary production, whether the primary materials are used directly in the factories or sold on export markets. Any neglect of the agricultural sector and its ancillary services, moreover, is soon likely to be felt by industry through rising food prices and higher wage costs.

A similar problem has arisen in some of the more densely populated countries in which the development of secondary industries has absorbed part of the primary output previously exported. In these instances the area sown to industrial crops has tended to increase at the expense of that sown to food crops, with the result that, except in so far as agricultural productivity or total area planted has risen, food exports have declined or dependence upon food imports has increased. In India, for example, the area sown to commercial non-food crops expanded from 15 per cent of the total in 1900-04 to 20 per cent in 1940-41 and, after partition, to 22 per cent in 1950-51. During this period the expansion of the jute and cotton industries was accompanied by a growing tendency to import food.

Generalization concerning the role that domestic raw material production should play if the expansion of manufacturing industry is to exercise its greatest development potential and its most beneficial effects on local levels of living is obviously very difficult. Much depends upon the country's resource endowment and the organization of its primary activities. Because of the cost or difficulty of transporting certain raw materials—such as weight-losing minerals or perishable fruit—some industries are strongly "raw material oriented", while others, whose finished product is less easily moved, are more closely tied to the market. The former

[14] *Report of Government Committee on Industry* (Cairo, 1948).

group of industries is necessarily much more dependent upon local primary resources than the latter, whose raw materials are likely to be more readily obtainable through international trade.

Moreover, it would appear that the degree to which imported raw materials are used varies considerably in the course of the industrialization process itself. In the early stage, raw material imports tend to be very low: the first industries are usually based on indigenous produce, processing materials previously exported in their natural state or manufacturing for domestic consumption simple products—beer, bricks, confectionery, leather, wagons, furniture and so on—from local grain, clay, hides and timber. With the expansion of secondary industry, however, import requirements tend to grow as the second stage of industrialization usually includes many establishments devoted to the finishing or assembling of products that are rather more complex than those of the first stage. The apparel industry imports different types of cloth, the engineering industry imports a wide range of metals in various shapes and forms, cast, rolled or extruded, the vehicle industry imports a large number of components, and in general there is a considerable upsurge in the importation of semi-manufactured products and components which constitute the raw material input of the new factories.

This second stage of industrial growth tends to last a long time and certain aspects of it may be found in the most advanced industrial economies. Thus, the United Kingdom's importing of unbleached cloth from Japan or of aluminium shapes from Canada shows the same type of raw material dependence as does Brazil's importing of electronic tubes for its radio industry or South Africa's importing of cotton yarn for its textile weaving industry. However, a third phase of the industrialization process gradually becomes more important as local factories are established to produce direct from the appropriate raw materials the various semi-finished goods and components that had previously been imported. The import requirements of this phase depend upon the resource endowment of the country in question and the extent to which primary activities are developed parallel to secondary industry. In general, given a balanced development policy in the country, the import requirements of secondary industry tend to decline as the third phase evolves; the rate and magnitude of the decline will depend, however, upon the range and quality of available natural resources, the primary producing capacity of the country, the nature and size of its new industries as well as price movements among imported materials, both absolute and relative to those among domestic materials.

In this connexion, an instructive comparison can be drawn between Australia and South Africa in regard to recent trends in the proportion of imported raw materials used by secondary industry. The rapid post-war expansion of manufacturing resulted in an increase in this proportion in Australia (from 14 to 16 per cent of the total raw material intake in the years before the war to 19 to 28 per cent in the years 1948 to 1952) but a decrease in South Africa (from 45 to 50 per cent in the nineteen thirties to 37 to 46 per cent in the years 1945 to 1950). The post-war growth of the chemical and textile industries and the automotive, aeronautic and electronic industries in Australia gave rise to larger import requirements, of raw materials in the first group and of components and semi-manufactures in the second. In South Africa, however, the import requirements of new industries were offset to a much greater extent by the expansion of import-saving industries: between 1938 and 1952, for example, steel output, which increased by about 30 per cent in Australia, was quadrupled in South Africa, with a consequent reduction in the imports of the engineering industry.

In Argentina, the proportion of imported raw materials, which was 28 per cent of the total before the war, had fallen to 16 per cent in 1946. In Chile, the proportion was the same in 1945 (30 per cent of the total) as it had been in 1928, though there was a slight decline in the post-war period. In Mexico, 23 per cent of the raw material intake of secondary industry was imported in 1940—much the same proportion as ten years earlier. In Turkey, where the proportion varied between 15 and 20 per cent in the nineteen thirties, there appears to have been a decline in the post-war period.

It may be concluded, therefore, that a rise in the average import content of the raw material intake of secondary industry is not necessarily a tendency inimical to economic development: it may be no more than a phase in the process of industrial maturation. It does constitute a drain on foreign exchange resources, however, and one that is not subject to ready adjustment. If it persists, it may be the result of the encouragement of industries that are not appropriate to the resources of the country or to its stage of economic development, or it may reflect a relative lack of development of the primary sector of the economy. In this sense, the rate of growth of the under-developed country's capacity to earn or save foreign exchange on the one hand, and the rate of development of its natural resources through expansion of appropriate primary activities on the other, tend to set limits to the feasible rate of industrialization.

Problems of Production Techniques

It was pointed out earlier in this chapter that one of the main functions of the entrepreneur was innovation: the devising or introduction of new commodities and new techniques of production. It was also pointed out that, in the nature of the process, most industrial innovations were likely to be evolved in the more

advanced countries, leaving industrial entrepreneurs in less developed countries the often difficult task of adapting the new techniques to conditions quite different from those in which they were elaborated.

Though each industry has its own particular adaptation problems, both economic and technical elements are generally present. In the first place, differences in the size of the market for the product impose differences in the scale of operations. Where the plant serving the larger market consists essentially of a multiplication of certain basic production units, the building of a factory with fewer operating units presents no great problem, even though this procedure is likely to magnify average overhead costs for the smaller output. Where the original plant is itself a large single unit, its reproduction on a smaller scale is likely to present serious technical problems, which in certain cases may be resolved only by breaking down the production process and replacing the more rigid large-scale elements with simpler procedures. This may involve a reduction in the degree of mechanization, usually a backward step in an advanced economy, but one which may be quite appropriate in an under-developed country. The question then resolves itself into one of selecting or evolving a technique which allows the setting up of at least one optimum size establishment in the country in question.

In this, a major determinant is the fact that factor availability and factor price in the under-developed country are likely to differ considerably from those obtaining in the country in which the technique was originally worked out. In general, cost criteria in an under-developed country are likely to call for a relatively smaller use of capital. The use of local raw material with its particular characteristics may also require technical modifications to the plant. The lack of skill and experience among local workers may make simple, sturdy machines preferable to the more elaborate and intricate ones in a plant designed for a better trained labour force in areas where maintenance and repair facilities are readily available.

There are usually technological limits to the extent to which a given production process can be altered, but within these limits the success of a new industry in an under-developed country often depends upon the appropriate adaptation of scale and factor proportions. The disadvantages that tend to arise from the simple transfer to under-developed countries of plants that have been designed for operation in industrial countries —repeated breakdowns, waste or misuse of capital, a low co-efficient of utilization and high unit costs of production — are all inimical to the industrialization process, while the ultimate failure of an inappropriately designed factory tends to increase the reluctance of local investors to place their savings in industry.

As indicated above, this challenge raises problems of a technical-economic type which are extremely difficult to discuss in abstract or general terms: each has to be solved within the framework of technical facts and economic relationships peculiar to the time and place at which it arises. By and large, the most suitable technologies are likely to be those which yield the maximum social return per unit of capital, reckoning labour at its social cost rather than market cost. In many instances this means that the answer probably lies in the direction of choosing the simplest of alternative techniques, the sturdiest of available capital equipment, the smallest type of plant consistent with technical efficiency, the technology that makes the best use of the most plentiful factors of production. Multi-storied factories are usually inappropriate in areas where land is abundant; wheelbarrows may be more suitable than conveyor belts where capital is scarce and the marginal productivity of labour in traditional occupations is near zero.

Even where the core of the plant is more or less standardized, there are usually a number of peripheral operations in which technical variation is quite feasible. Hence, there remains a wide field for research in which the scientists, engineers and technologists of less developed countries may be able to play as important a part as the research institutes and equipment manufacturers of industrial countries. Government may be able to contribute as much to the solution of some of the adaptation problems as can be expected from private entrepreneurs. Indeed, in some areas the main burden of this type of research may have to be borne by the government—in the development of small-scale industry at the local level and in the integration of handicraft production into the general pattern of industrial growth, for example.

In between large-scale, mechanized mass production and small-scale handicraft production lies a considerable range of techniques superior in efficiency to the traditional cottage industry but inferior to the latest advances in the most highly industrialized countries. There are many industries in which secondhand equipment, acquired at a fairly low cost, may be profitably installed, and there are many cases in which techniques evolved in Europe or Japan may be more suitable than those evolved to meet North American conditions. On the other hand, where the gains in terms of social costs appear to warrant it or technical indivisibilities require it, the very latest methods of production may be called for, however capital-intensive these are.

This is not the place for an analysis of the role that small-scale industry, using modern techniques as far as possible but organized within local communities, might have in an industrialization programme.[15] In the present context it will suffice to point out that this type of industry may be the best means of introducing industrial organization and techniques into areas which are still only on the fringe of the exchange economy. As

[15] Some aspects of this question were examined in document E/2384, submitted to the Economic and Social Council in the series dealing with integrated economic development. It was the debate on this paper that gave rise to resolution 461, calling for the present study on the processes and problems of industrialization. Some aspects of the problem are referred to in United Nations, *Efforts towards Raising Productivity in Industry* (mimeographed), especially section III.3.

indicated in the previous chapter, there are many such areas in the under-developed countries, and any means of speeding up the process of economic growth without simultaneously disrupting the social framework is to be welcomed as a contribution to a more general industrialization and higher average levels of income. Small-scale industries at the local level may help to bridge the gap between the subsistence sector and the advanced exchange sector more swiftly than is likely to be the case if the development of trade and commerce in the former is left to the normal growth of agricultural surpluses and the slow emergence of handicraft specialization.

This is not to say that handicrafts have no place in a programme of rapid industrialization. On the contrary, in a number of under-developed countries, particularly in Asia, handicrafts pose a challenge which, if successfully met, could accelerate quite appreciably the rate of industrial growth. If no attempt is made to integrate them with industrial progress on a wider front, however, they may well tend to retard the development of more modern forms of industry, at least in countries in which handicrafts occupy a sizable fraction of the population.

Some of the problems associated with the integration of handicrafts into a more advanced industrial economy may be illustrated by reference to the position of cottage industries in India, where in 1948/49 they are estimated to have contributed almost twice as much to the net domestic product as conventional factory establishments.[16] Since more than six times as many workers were engaged in cottage industries as in factories, the average productivity was less than one-third that of the factory employee —and only 10 to 15 per cent above that of agriculturists. Although average wages in the cottage textile industry were not much more than half those in the mills, unit cost of production was substantially higher.

In these circumstances, it is not surprising that in the face of competition—first from imports and subsequently from the output of indigenous factories—cottage industries, in general, have gradually been falling into decay. In recent years, for example, less than one-third of the available hand loom capacity has in fact been utilized, and where production has been maintained this has been made possible only by the acceptance of extremely low rewards by the factors engaged. Cottage weaving units, which employ about four-fifths of all cotton textile workers, produce little more than one-fifth of Indian cloth output. Hand loom production before the war reached an annual peak of about 1,920 million yards; in 1950/51 the output was only 750 million yards.

In the face of a fairly low degree of social and geographical mobility and a paucity of employment opportunities in more productive fields, however, any decline in cottage industry tends to magnify the extent of rural over-population and under-employment. While capital is particularly scarce, labour relatively abundant, mobility low and alternative activities lacking, therefore, handicrafts will continue to be important. They help to collect and utilize whatever capital there is in rural areas; they help to maintain the traditional social fabric; they prevent an over-rapid flow of population to the urban areas, where expenditure on social overhead facilities is necessarily higher and more urgent than in the villages; and as long as the marginal productivity of the labour they employ remains positive, they add to the national income. In India, thus, as in other heavily populated countries in which a long tradition of hand craftsmanship exists, the immediate problem is to prevent a too rapid breakdown of the system of cottage industries, and consequent worsening of rural under-employment.

Policies which may contribute to the solution of this problem are those which on the one hand help to expand the total market for manufactured products and on the other assign a lower priority in the industrialization programme to mechanized factories which would compete seriously with the cottage industries that already exist. Under these circumstances, the proportion of new industrial investment channelled into the production of such capital goods and other products as cannot be manufactured with the facilities normally at the disposal of hand craftsmen might be larger than would otherwise be the case. The longer term problem is to raise the productivity of the cottage industries and, by the introduction of new techniques, bring them more into line with larger scale factories.

In India, the Government has answered the short-term problem by measures to protect cottage industries against some of the competition of the mills and factories. In the important cotton weaving industry, for example, the Government in 1950 fixed approximate quotas and targets for both the mills and the hand looms. When the mills began to exceed their quota in 1953, a special cess was levied on specific types of mill cloth and a system of penalties introduced for excess production, the funds raised being earmarked for the assistance and development of both the hand loom and the *khadi* (hand spinning, hand weaving) industries. In order to assure the supply of yarn to the former, mills were required to leave one-fourth of their spindles uncovered by looms, and at one stage expansion of loom capacity was prohibited. In the same vein, the Planning Commission has suggested that large-scale plants in the oil pressing section of the food processing industry should be confined to non-edible oils, leaving the edible oils to be handled at the village level, and that the huller type of rice mill be replaced as far as possible by organized hand pounding in the traditional manner.[17]

Such a damping down of production is obviously not in the interests of rapid industrialization: it is part of the price paid for easing the transition from manual to mechanical production and for preventing the sudden dissolution of the ancient industrial organization, which by throwing large numbers of people[18] back on the land would involve heavy social costs as well as a reversal of the industrialization trend. It can be made meaningful only if the long-term problem of the cottage industries is tackled simultaneously.

[16] Government of India, Ministry of Finance, *First Report of the National Income Committee* (New Delhi, April 1951), page 30.

[17] This policy has a parallel in post-war Japan, which, though far more highly industrialized, has sought to assist rural industries by special credit and research facilities and by reserving to them certain sections of the domestic market.

[18] It is estimated that in India 10 million people are still engaged in hand loom weaving alone. As a result of recent measures production has risen markedly above the post-war levels but the output of 1,200 million yards in 1953/54 was still less than one-fourth of the country's mill output.

Raising the productivity of cottage industries is not purely a matter of improving technical efficiency. Some causes of high production costs lie in the individualistic organization common in this sector, and might well be overcome by the introduction of a co-operative system, based perhaps on a regional grouping of establishments. In this way it might be possible to effect savings in the price of raw materials and in the cost of short-term credit[19] as well as to eliminate some of the charges of middlemen, to whom the individual craftsman frequently has to resort for one purpose or another. The extension of government-sponsored lending institutions into the villages, where they would be accessible not only to handicraft co-operatives but also to other small-scale local industries, might help to meet some of the financial difficulties which often reflect the rudimentary nature of monetary organization in those areas. In this connexion, it is worth referring to the experiments in rural credit being carried out in Indonesia which are mentioned briefly later in the present chapter.

On the technical level, there is no reason why cottage industries should be equipped with nothing more than traditional tools and equipment. Great advances have been made in the range and operation of hand tools and small machines in recent years, and with the wider dispersion of electric power facilities and the greater production of fractional horsepower motors, many of the disadvantages of small-scale production have been notably reduced. Rural electrification, indeed, holds out the principal hope for a major increase in the productivity of workers in cottage industries. Much of the present industrial structure of Denmark developed out of handicrafts and cottage activity when in the third quarter of the nineteenth century mechanical power began to be used.

When power becomes available the credit needs of the hand craftsman, whether working on his own, with his family or in some form of co-operative organization, are likely to increase, and with them the importance of appropriate institutions. The use of new tools, especially if power-driven, is likely to require a certain amount of training and in most cases this would have to be provided under government auspices, either in the co-operative village workshops or by some system of extension service organized for industry in much the same way as it has been organized in many places for agriculture.

The attempt to revitalize cottage industry by means of new equipment and new techniques of production is likely to require a certain amount of continuing research. In this respect the needs of a programme for creating new small-scale industries in communities still on the fringe of the exchange economy coincide very largely with those of a programme of technical innovation in long-established cottage industries. The testing of new machines, tools and techniques for the latter purpose might well be carried on in close association with the experimentation with process adaptation required for the former. Research of this nature, significant in its social and economic implications for the country as a whole but offering little in the way of early profit to any individual or firm, is likely to become a government responsibility.[20]

Mechanization of cottage industry will lead to an appreciable increase in production, which in turn is likely to cause important changes in the economic organization of the village. The greater inflow of raw materials, the need for maintaining and repairing tools and equipment, the greater output of finished goods, all would tend to enlarge the village economy, diversifying it to a certain extent by making new activities necessary, perhaps in the production of primary materials and more surely in the provision of ancillary industrial goods and commercial and other services. In so far as this happens, the cottage industry in question will cease being merely a manifestation of village self-sufficiency and begin playing a more significant role in the wider process of industrial development of the whole economy.

Not all types of cottage industry are likely to be susceptible to this process of technical and organizational modernization: technological improvement may require a fundamental transformation of the industry, the market for the product may be declining too rapidly to warrant any expansion of production, the conservative attitude of the hand craftsmen may render the necessary innovation unacceptable. In other cases, the advantages flowing from large-scale production may be so great that any feasible improvement in the efficiency of small-scale production would fail to justify the expenditure and effort involved.

Nevertheless, the threat of mass produced goods must be met, and in the short run this may require some form of holding operation to prevent a too rapid disintegration of traditional occupations, with all the social and economic loss that this would entail. More positively, it is likely to mean efforts to raise the quality of cottage production, and simultaneous development of alternative employment in other industries at the village level, in light industries of the modern factory type or in labour-intensive construction activity associated with building a more appropriate infrastructure and laying the foundations for future industrialization. At the same time, the employment service and the system of education and training may be used to raise the level of economic and social mobility so that the problem of the declining handicraft industry is confined as far as possible to the current generation of workers, younger people being guided into expanding occupations.

To sum up: the essence of economic development lies in the movement of factors from less productive to more productive forms of activity. For the most part the less

[19] The Indian Tariff Board has indicated that in the post-war period interest rates have been in the neighbourhood of 10 per cent for larger firms and 12 to 18 per cent for cottage industries.

[20] Acting on the recommendation of an expert survey by the Ford Foundation, India is in the course of setting up no less than four Institutes of Technology for research into the problems of handicraft and small-scale industries.

productive activities are of an agricultural nature, but where they take elementary industrial forms the process is no different. In the long run the factors will tend to move from the less efficient cottage industry to the more efficient factory, but in the short run, as implied above, the effect of social and economic frictions—shortages of capital and skill, factor immobilities and so on—may well be to force village handicraft workers into agricultural activities of even lower social productivity. As this would not only be industrial retrogression but also the occasion of considerable distress, there might be some justification in protecting the cottage industries while attempts are made to raise their productivity and to facilitate the movement of hand craftsmen into more productive, larger scale, secondary industry. The faster the economy is expanding, the less difficult is the process of adjustment likely to be; hence policies which succeed in raising the national income and extending the market for manufacturers will go a long way towards easing the transition.

Government Activities

In the preceding sections, the discussion has been concerned chiefly with the problems arising from factor shortages and the policies that might be adopted to stimulate the factor supply or to divert a more substantial portion of the increased flow into secondary industry. These policies comprised, for the most part, more or less direct government action designed to increase, or reduce the impediments to, the desired factor flow. Factor movements, however, also respond to less direct influences, which have their origin in the government's monetary policy, and it is these monetary influences which form the principal subject of the present section. They are dealt with under three heads: (1) fiscal policy and the effects of changes in government revenue and expenditure patterns; (2) credit policy and its relation to the financing of industry; and (3) balance of payments policy, as reflected both in the regulation of foreign exchange rates and in the pattern of import and export duties. The section concludes with a brief, preliminary assessment of the place of manufacturing industry in some of the recent plans for economic development.

Schemes designed specifically to encourage secondary industry have to be conceived and executed as integral parts of these more general development policies. The latter lie outside the terms of reference of the present study, but it should be borne in mind that in so far as they are directed towards increasing the volume of scarce resources, raising the productivity of the factors of production, improving the economic and social environment and overcoming whatever bottlenecks may appear in the course of development, they are likely to facilitate the process of industrialization. By pushing investment, for example, to the point where inflationary signs reveal inelasticities in the factor supply, a development policy will contribute to rising incomes (and hence a larger market for manufactures) and to an increase in savings (and hence a larger potential supply of industrial capital). By raising agricultural productivity, it will help to provide the food supplies required by the growing urban industrial population. By pursuing sound fiscal principles, it will help to divert part of the higher incomes into capital formation and thus reduce the need to lower standards of consumption in order to increase the rate of investment.

It is against the background of a general development policy of this nature that the narrower devices to promote manufacturing industry have to be regarded.

Fiscal policy

Fiscal incentives to secondary industry are many in number and varied in nature: in this section it will not be possible to do more than indicate some of the more common types.[21] Little will be said about their effectiveness: this is capable of assessment only within the context of the particular economy in which they are applied. Little will be said about the problem of administering tax measures except to underline that it is a limiting consideration in respect to both feasibility and efficiency.

Fiscal incentives in general and in respect of secondary industry in particular have come increasingly to be regarded as a desirable instrument of government policy in the under-developed countries, and since the Second World War have been adopted as a feature of the tax systems of most countries in Latin America and in the Far East[22] and more recently of certain countries in the Middle East, too.[23] Due to the lack of adequate fiscal machinery in many of these countries, however, such tax measures have often failed to reach the stage of effective implementation. Low educational standards, the existence of a large non-monetary subsistence sector, the political influence of large agricultural interests and other aspects of the social and economic organization, moreover, often limit the range and complexity of the tax structure.

[21] As the United Nations has published a number of studies on tax problems in the under-developed countries, the need for illustrative examples in the present section is greatly reduced. The various references given in the footnotes should be regarded as an integral part of the text.

[22] See the following United Nations publications: *Foreign Capital in Latin America*, sales number: 1954.II.G.4, especially chapter 2, "Governmental policies", section on "Taxation"; *The Use of Taxation Techniques as Incentive to Private Investment in Far Eastern Countries* (mimeographed); and *Foreign Investment Laws and Regulations of the Countries of Asia and the Far East*, sales number: 1951.II.F.1.

[23] See United Nations, *Review of Economic Conditions in the Middle East, 1951-52*, sales number: 1953.II.C.1, chapter 5, on "Public Finance". A recent example in this area is that of Egypt (law of 3 September 1953 on the "Application of Some Taxation Measures for the Development and Stabilization of the Economy").

One of the main weaknesses of the fiscal system in many of the less developed countries lies in the fact that despite efforts to tax some of the outward forms of wealth, the results of speculative transactions tend to escape taxation much more easily than the more "visible" flow of income which is generated by more socially productive forms of investment. If a tax measure is to influence the direction of investment, therefore, it must not only raise expectations of profit in the chosen sector of the economy but it must also reduce, if not eliminate, the advantage of lower taxability which less desirable investments enjoy. Hence, in the present context the main purposes of a tax policy designed to encourage industrialization should be (1) to bring about an increase in investment in both old and new industries and, conversely, to discourage speculative investments in unproductive activities, and (2) to increase the productivity of the various factors of production engaged in secondary industry.

Within the framework of the government's broad policy of industrial development, however, tax concessions may conflict with the government's need of revenue, at least in those countries which no longer derive the bulk of government revenue from taxes on a few basic export commodities. In general, tax concessions to the industrial sector should be predicated on the expectation that they will be sufficiently effective as a stimulus to new investment to justify the resulting loss of revenue and that the latter will be offset by increased (taxable) industrial production at least to the extent of avoiding either an unduly large cut in the government's direct contribution to economic development as a whole or an unduly large and potentially inflationary deficit.[24]

Where fiscal incentives consist in a reduction of the normally applicable tax liability, techniques may be broad and general, designed to encourage a wide range of industrial activities, or they may be narrow and refined, seeking to direct investment into specific channels in order to dovetail with a governmental development plan. Most refined fiscal techniques are likely to be more effective if there is a co-ordinated scheme of industrial investment and are certainly "cheaper" in terms of revenue losses, but they are also more exacting in their demands on administrative efficiency.

Tax concessions are designed to influence those responsible for decisions about investment, whether new or expanding enterprises or private or institutional investors. They may intervene at various stages of the process of production or of income and profit formation. They may be addressed either to cost items, thus lowering the operating burdens of the favoured activity —by reductions in property taxes or licence fees, for example[25]—or to net profits, increasing the returns on already profitable investments by exemptions from profits tax or deductions from taxable incomes, for example. The net return on a new investment may be increased by profits tax concessions during an initial period in order to help the company over its first years by providing it with larger sums for reinvestment. A relaxation of the loss carry-over provisions of the tax law may serve the same purpose of lessening the risk inherent in new undertakings.

Where the enterprises in question are foreign-owned, income tax concessions are not always effective. Investors from some of the principal capital-exporting countries, for example, receive domestic tax credit only in respect of foreign income taxes actually paid and hence retain no advantage from concessions on the latter which merely reduce their credit and correspondingly increase their income tax liability at home. The advocacy by many capital-importing countries of exemption for such income from tax in the foreign investor's home country is predicated on their desire to make their own income tax concessions more effective in the case of foreign investors.[26] Where foreign investors operate through local subsidiaries, however, income tax concessions are more likely to be effective since the income of subsidiaries is not taxable in the home country of the investor, at least until it is repatriated in the form of dividends. Since, as pointed out in chapter 4 below, this type of organization is being adopted to an increasing extent by manufacturing concerns in the more developed countries, reinvestment in the subsidiary—in order to avoid domestic taxes—is becoming a significant factor in stimulating the industrial growth of a number of under-developed countries.[27]

Directional concessions—whether at uniform rates or at rates varying with the urgency of the required investment—usually seek to channel funds into new and "necessary" enterprises, such as manufacturing industries producing goods that have not previously been produced in the country or that are not produced in sufficient quantities. This was the object of the Mexican Manufacturing Industries Act (Ley de Industrias de Transformación) of 1941 for example; while in the Philippines the eligibility of firms to benefit from tax incentives is determined by three considerations: (1) whether the industry is likely to contribute to the establishment of a stable economy, taking into account the number of similar enterprises already in existence and their total productive capacity relative to the size of domestic and export demand for the product; (2) the import content of the product; (3) whether or not the industry operates on a commercial scale in conformity

[24] See United Nations, *The Effects of Taxation on Foreign Trade and Investment*, sales number: 1950. XVI.1, page 17.

[25] Rebates or exemptions from customs duties granted on specific items of imported equipment, referred to later in this chapter, also fall into this category.

[26] See resolution 486 B (XVI) of the Economic and Social Council, of 9 July 1953, on fiscal incentives to increase the international flow of private capital for the economic development of under-developed countries.

[27] See United Nations, *United States Income Taxation of Private United States Investment in Latin America* (sales number 1953.XVI.1), pages 24 and 25.

with up-to-date practices and indicates ability to survive after the tax exemption is withdrawn.[28]

In most countries joint-stock companies are subject to heavier taxation than partnerships and other forms of business enterprise. While this can be defended on the grounds that their taxable capacity is usually greater, it is worth noting that a few under-developed countries have begun to pay attention to the fiscal aspects of the problem of cost-size relationship and of economies of scale. A recent example is that of Egypt, where only corporations and share-partnership companies can avail themselves of the tax benefits granted in 1953, a limitation that probably reflects the belief that the corporate form of organization is likely to contribute more than any other to the process of capital formation. In India, exemption from income tax is given only to new industrial undertakings which employ at least twenty workers or are run with the aid of power and employ ten or more persons. In Ceylon, the tax privileges are accorded only to new undertakings that use electric energy and employ more than twenty-five persons.[29]

Industrial development may be stimulated by means of tax concessions on reinvested profits in the form of either an exemption from income tax on the amount ploughed back or a reduction in the tax rate or the tax base.

Rate reduction may be uniform or it may vary in accordance with some scale of priorities assigned to different activities or with the needs of individual enterprises or with the degree of response to a stated policy. Thus, it may be withheld from firms earning more than a specified maximum rate of return on capital invested, or it may increase as the proportion of reinvested profit increases.

Reductions in the tax base are usually intended to encourage specific expenditures which are considered particularly desirable. Such encouragement may be achieved by allowing accelerated rates for the depreciation of specific types of investment, by permitting the rapid writing off of a given investment or through other concessions in the determination of depreciation. Certain items of capital expenditure—on workers' housing, training or health, for example—may be allowed to qualify as an ordinary deductible current cost, along with certain specially approved disbursements, such as contributions to research or to private or public industrial promotion associations.

While tax concessions may be granted in order to promote favoured activities, penalty taxes may be imposed on courses of action which are contrary to the government's industrialization policy. Though, in some cases, penalty taxes may be difficult to administer, especially in regard to speculative activities, most of which are easily hidden, or if carried on in the open, often result in capital gains which are hard to reach, luxury purchases and quick turnover real estate operations are more amenable to tax.

Tax incentives are not always applied to an enterprise as such; they may sometimes be directed at influencing potential investors, workers, landowners, licensors or any other group that is likely to be involved in the process of industrial development. Special fiscal devices have been used to encourage the evolution of a local capital market by inducing those with savings at their disposal to participate in corporate industrial enterprises. Thus Egypt now exempts from movable property tax all profits distributed by new enterprises in certain fields, and since 1950 Israel has extended to the dividend income of stockholders the 50 per cent reduction of the income tax rate that was applicable to approved enterprises.[30]

Tax incentives of this nature, designed to attract outside investors by tax concessions on the distributed dividends, tend to run counter to those aimed at promoting reinvestment and discouraging the distribution of profits. Which is the more appropriate in any particular case depends partly on an assessment of the relative fruitfulness of the two sources of capital and of their probable responsiveness to the fiscal stimulus. In some of the less developed countries private savings are too small and scattered and the security market too poorly organized for a tax concession on dividends to have much effect on the flow of such funds into new industrial enterprises. In these circumstances, established companies are likely to be more sensitive to fiscal incentives favouring reinvestment.

In general, indirect taxes tend to have an adverse effect on industrial development, at least in so far as they are levied on locally produced goods and services, for not only are they likely to raise the price of domestic manufactures but they are usually regressive, bearing relatively more heavily on the lower income groups and thereby tending to restrict the local market. A tax on exports, however — provided it is adjusted to world prices so as not to handicap exports—may be used for channelling funds into the industrial sector, while at the same time holding in check sudden accretions to export incomes which under the conditions prevailing in most under-developed countries are more likely to result in local inflation than in accelerated industrialization.

The applicability of a particular device depends upon its place within the wider tax structure, which in turn is influenced by even wider budgetary considerations that reflect the economic situation of the country as a whole. Tax incentives, in other words, do not operate in an economic vacuum. Not only do they have an impact on government revenue, and consequently on the financial implementation of development plans, but

[28] See United Nations, *The Use of Taxation Techniques as Incentive to Private Investment in Far Eastern Countries*, pages 5 and 6.

[29] *Ibid.*

[30] Note also the recommendation by a mission of the International Bank for Reconstruction and Development of tax exemption of dividends distributed by "Institutos de fomento", in *The Economic Development of Nicaragua* (Washington, D.C., 1953), page 367.

because of their close relationship with a number of strategic variables in the economy, their suitability and effectiveness have to be kept under constant review. In the first place, therefore, tax concessions should be allowed to result in a loss of government revenue only to the extent that they can be expected to bring about an adequate compensating increase in the volume of productive capital. And, in the second place, it is essential to build into the tax structure sufficient flexibility to avoid the necessity of frequent modifications with their tendency to disrupt the course of industrial development.

Study of the effectiveness of tax incentives has not yet reached a stage where it is possible to formulate any very precise conclusions. While it is usually possible to indicate particular types of incentives that are better adapted than others to the pursuit of given industrialization policies, their over-all results in terms of increase in capital investment or of other basic economic criteria cannot readily be demonstrated. In general, therefore, the place of fiscal incentives in an industrialization programme would appear to be as an integral part of the wider complex of economic and financial measures by means of which the government of the under-developed country may implement its over-all policy.

Credit policy

In most under-developed countries, especially those in which a deliberate effort is being made to accelerate the rate of economic advance, the probability of excess credit and inflation is generally far greater than that of shortage of credit and deflation. Hence it is advisable to examine briefly the effects that inflationary forces —set up by the deficit financing of investment, for example—are likely to have upon the course of industrial development.

Inflation, in so far as it is reflected in a rapid rise of prices, ranks among those unsettling forces which, by altering the pattern of demand and the absolute and relative costs of resources, increase uncertainty and therefore magnify the risks attendant upon an investment as specific and inflexible as one in a factory establishment. Where secondary industry already ranks low in the scale of investment preference, therefore, an inflationary tendency is likely to decrease its relative attractiveness, making funds that are available for investment flow even more decidedly towards real estate and inventories. Within the industrial field, export industries are likely to be avoided in favour of domestic industries, which are able to pass on rising costs more easily, a tendency which has important implications for the country's balance of payments. Among domestic industries, those with a high proportion of fixed (capital) costs are likely to be favoured more than those whose costs are more apt to rise with any general rise in prices. In so far as inflation tends to restrict the real purchasing power of the lower income group, moreover, industries supplying marginal requirements of this group are likely to prove less attractive than industries supplying basic goods of low price elasticity or industries catering for the "luxury" demand of those whose real incomes may be increased by the inflationary process.

In general, inflation tends to divert income towards those who have fixed resources in real estate or stock and away from those whose income is derived largely from money wages. As the group that is most likely to benefit is the group that is usually responsible for the bulk of personal savings, the supply of investible funds may well tend to rise. However, this may not increase the amount of industrial investment, for the pattern of demand is likely to change in a manner unfavourable to local manufacturers while alternative fields of investment are likely to offer a relatively more rapid and more certain return to the speculator. In other words, by eliciting forced savings from those whose money incomes rise less than the prices of the goods and services they purchase and by increasing the costs of, and diverting resources away from, export activities, inflationary forces are likely to be inimical both to the market for local factories and to the balance of payments.

During a period of economic development which involves a high level of investment, countries in which incomes and the capacity to set aside savings are very low, are likely to find inflation an ever-present danger. Although an excessive money supply is thus likely to be a more common difficulty than is a shortage of money, nevertheless, the fact that the fundamental obstacles to economic development in general and industrialization in particular lie in the inadequacies of the country's real resources makes it of special importance that these obstacles should not be magnified by any deficiency of credit. In this connexion two distinct desiderata may be suggested: (1) that the total volume of money in circulation be allowed to rise *pari passu* with the growth of activity in the economy; and (2) that each of the various sectors of the economy be provided with a share of the total volume of money appropriate to its needs in the development process.

Though the first of these raises problems that lie outside the scope of the present study, it is as well to note three circumstances in which credit expansion may not only be justified but may in fact be necessary if deflationary effects are to be avoided: (1) expansion of the economy, either through a rise in population, production and incomes or through an extension of the exchange nexus into sectors previously organized on a subsistence basis; (2) when a current account deficit in the balance of payments yields a supply of goods and services from abroad that is unmatched by any increase in the flow of domestic incomes through capital imports; and (3) when a capital account deficit in the balance of payments is liable to result in an equivalent outflow of savings. It should also be noted that where there is a tendency—because of factor immobilities, social rigidities or any other reason—for an under-developed economy to stagnate, there may be justification for use of an expansionary credit policy as a stimulus to better utili-

zation of resources. The degree to which such a policy may be carried before inflation supervenes, and whether or not the resultant inflationary forces do in fact tend to inhibit industrialization, depend upon a number of considerations, among which the nature of the country's idle resources, the vulnerability of its export activities, its industrial tradition and the extent to which the inflation is itself the fruit of accelerated industrial investment are probably the most important. In general, the more rapid the fruition of the investment the less inflationary is financing without prior saving likely to be. And in this connexion it is pertinent to point out that, historically, many periods of rapid economic development have been characterized by slowly rising price levels.

The extent to which inflationary investment can be used to stimulate industrial enterprise varies from country to country and from period to period within a given country. In many of the less developed countries, however, the limitations on such a policy are stringent: there is comparatively little slack within the existing economic framework and the impediments to increased production are not financial but are much more deeply rooted in resource inadequacy and unfavourable social and organizational conditions. Even in situations in which an initial monetary stimulation might assist in accelerating the rate of industrial investment, the difficulty of regulating the credit structure in such a way as to prevent unwanted effects or too rapid a rise in prices tends to reduce the value of this instrument of economic policy.

In most of the under-developed countries, the money market does not lend itself to accurate control. In south-eastern Asia, for example, it has been estimated that about two-thirds of the total effective volume of money in circulation consists of currency notes;[31] the activities of the banking system touch only a small fringe of the population, and the rate of interest is rarely an important factor in determining the volume and direction of investment. Actions of the central bank have their most immediate effects upon the cost of government investment—where direct control is in any case most easily exercised. Nor is the rate of interest a very sensitive tool during a period when inflationary forces are strong. Between 1940 and 1950, in Peru, for example, the rate of interest, which varied between 8 and 12 per cent per annum, was not likely to be very effective when the annual average price increase was of the order of 15 to 20 per cent.

Credit control through changes in the reserve requirements imposed on the banks is also of little effect, for not only are the banks far from the points at which control is most needed, but also their actual reserves are often well above the legal limit and hence not likely to be affected by small changes in the requirements. In Ceylon, for example, the ratio of reserves to demand liabilities in 1951 was actually 20 per cent, against a legal minimum of 14 per cent; in India, the corresponding figures were 10 to 12 per cent against a legal minimum of 5 per cent. And in both cases the banks held foreign assets not counted in these percentages.

Where drastic action has been taken to curb inflationary credit, its effects have often been only short-lived. In some countries, for example, the withdrawal of high denomination notes has soon been offset by renewed government borrowing from the banks; in others, attempts to reduce the volume of credit in circulation have been offset by budget deficits and the need to issue new currency to meet government obligations.

The normal apparatus of credit control, so sensitive in many industrial countries, is thus largely inoperative in many of the less developed countries. Such inflationary forces as tend to inhibit productive, long-term industrial investment have to be countered on a broader front, and during a period of development, therefore, the granting of credit has to be regulated in accordance with budgetary and balance of payments considerations so that any undue price-raising tendencies generated by the investment programme may be restrained or countered. Credit policy, in other words, must be regarded as a single element in the country's broader monetary policy.

Further discussion of the general problem of credit policy would be out of place in this report; it is more appropriate to turn to the second of the desiderata suggested above—that of insuring the availability of credit in those sectors in which expansion is desired—which, in view of the fact that secondary industry is often in a relatively weak position in respect of finance in most of the under-developed countries, is of special relevance to the process of industrialization. Low incomes set a low limit on the rate of capital formation, and pioneer industries are not well placed to compete successfully for its use. Nor are new industries able to finance their own expansion by use of reserves or undistributed profits.

In these circumstances, industrial development depends far more upon lending institutions than is the case in most of the more advanced countries. And in this respect, the under-developed countries are usually ill-provided. The traditional attitude of the commercial banks—which are the commonest form of lending institution—tends to confine their loans to short-period or seasonal purposes. Such loans may be useful for financing the purchase of raw materials or the sale of the product or even the actual costs of processing a particular crop or batch of raw materials, but are quite unsuitable for the initial investment in building, plant and machinery. In view of the banks' constant concern about liquidity, two-month or three-month advances are not a satisfactory substitute for specific long-term finance, even if there is a strong possibility that they will be periodically extended.

[31] A. K. Das Gupta, M. Friedberg, I. G. Patel, "Inflation and the Mobilization of Domestic Capital", a working paper prepared for the United Nations Economic Commission for Asia and the Far East (Bangkok, November 1951).

This is the background against which many of the less developed countries have found it necessary to create special government-sponsored institutions to meet the need for longer term industrial credit.

In India, shortly after partition, it was the need to renew and replace much of the industrial equipment that had been heavily worked all through the war that brought home the inadequacy of existing credit institutions. An Industrial Finance Corporation was set up by the Central Government in 1948. Its initial capital—guaranteed in respect of both minimum dividend and ultimate repayment—was 50 million rupees, but in its first five years it lent more than three times that amount, not only to finance equipment replacements in established industries such as cotton textiles, chemicals, ceramics, and glass, sugar and engineering, but also—and to the extent of almost half the total—to help provide the fixed capital of a number of new industries, including automobile and tractor plants. The rate of interest charged by the corporation is not adjusted to any assessment of the risk associated with specific loans, but, in line with the general shortage of capital in the country, it rose from 5½ per cent in 1948, to 6 per cent in 1952 and 6½ per cent in 1953.

Six years of operation have shown that one of the principal weaknesses of an institution such as the Indian Industrial Finance Corporation lies in the fact that it is not readily accessible to smaller enterprises. In India, this defect has been partly overcome by the establishment of similar corporations on a smaller scale by several of the state governments. Some doubt has also been thrown upon the adequacy of the corporation's financial resources in face of the need to speed up the process of industrialization. To this end, it has been suggested[32] that closer collaboration be sought with the banking system: the corporation might be able to underwrite or guarantee bank loans to industry, while in some cases in which the loan is divisible into short-term and long-term maturities, the banks might be able to take up the former, leaving the latter to the corporation. As things stand, the capital of the corporation, which was contributed not only by the Central Government and the Reserve Bank but also by several commercial banks, insurance companies and investment trusts, may be supplemented by the issuing of bonds in the open market.

Pakistan, which has a less developed industrial structure than India, faced much the same type of problem in providing credit to new enterprises and followed India in setting up an Industrial Finance Corporation in 1949. Of the authorized capital of 30 million rupees, 20 million rupees was paid up, 50 per cent by the Central Government, the remainder in varying degrees by provincial and local governments, the State Bank, commercial banks, provincial co-operative banks, insurance companies and the general public. The shares offered to the general public were immediately oversubscribed, showing both the availability of a certain amount of free capital and the relative attractiveness of a government-sponsored institution paying a guaranteed annual minimum dividend of 2¾ per cent, tax free but subject to a maximum of 5 per cent. The corporation may increase its funds by issuing bonds and debentures up to five times its paid-up capital and reserves and also by the acceptance of deposits from the public.

While the corporation is required to operate on a sound financial basis, it is also expected to take a fairly broad view of public interest in industrial development. Any co-operative society or corporation (and since 1952 any other concern) actually engaged in manufacturing, mining or power generation is eligible for credit, although certain key industries subject to central planning are given priority. In the case of industrial concerns, loans usually take the form of debentures on which a moderate rate of interest (4½ per cent) is payable semi-annually. Repayment conditions vary with the borrower; the maximum term is twenty years though ordinarily it does not exceed twelve years. The corporation is also authorized to guarantee industrial loans of not exceeding twenty years' maturity, floated on the open market, and to underwrite the issue of industrial securities. It is precluded, however, from subscribing directly to the shares or stock of any company, although it has the right to insist on appointing one or two of the directors to the board of any borrowing concern. Up to the present its underwriting activities have been severely circumscribed by the restricted nature of the capital market in Pakistan, which also limits its ability to issue its own debentures. In the first three years of operation the corporation actually underwrote only one issue of industrial shares.

During the year ended 30 June 1953, the largest loans made by the corporation were to the textile, food, chemical and engineering industries, though the leather, jute and cement industries also shared in the 15.4 million rupees which was disbursed. During this financial year, earnings were for the first time sufficient to meet the minimum dividend payable on the public holdings of the corporation's capital.

Egyptian experience with special institutions to provide industry with credit is also instructive. It goes back to the period of the First World War, when military demands, the distribution of extra purchasing power in the community and the reduced supply of imports combined to stimulate a number of industrial enterprises. In an effort to maintain this progress after the war, the Bank Misr was established in 1920 with power to participate in the capitalization of new industrial concerns as well as make loans and advances to suitable applicants. Following the recommendation of a Committee on Industry and Trade (1917), the Government placed £E200,000 at the disposal of the bank in 1922 for the express purpose of granting loans to small and medium sized industrial concerns. The upper limit of such loans was fixed at £E1,000 at a rate of interest not exceeding 6 per cent per year, repayable over five years. Although the amount lent by the bank under this scheme rose from £E145,000 in 1923 to £E1,137,000 in 1938, the basic objective was not attained. The majority of applicants did not possess the necessary qualifications, particularly in the matter of collateral, and most of the advances were in fact made to larger concerns, especially in the textile industry, which could probably have raised capital in other ways.[33]

Another attempt to meet the main problems of supplying credit to small industries whose efficiency stood in urgent need of being improved was made after the Second World War, when the Government established the Industrial Bank of Egypt. This bank was also empowered to participate in the capitalization of industrial enterprises as well as to grant short-term advances with securities or inventories as collateral and medium-term loans (of up to ten years) with fixed property mortgages as collateral. During the first three years of its operation (1949 to 1952), the bank found that the major obstacles to successful lending lay for the most part in the status and qualifications of the applicants. On the one hand many,

[32] *Economic Development with Stability*, report to the Government of India by a mission of the International Monetary Fund (Washington, 1953). Recently (June 1954) the Shroff Committee (appointed by the Reserve Bank of India) recommended the setting up of a consortium of financial institutions for the purpose of underwriting or subscribing to new industrial capital issues and the creation of a special development corporation to meet the financial needs of small industries.

[33] Cf. National Bank of Egypt, *Economic Bulletin*, No. 2, (Cairo, 1952).

indeed most, of the proposed projects were either inadequately prepared or submitted prematurely, while on the other hand there were many difficulties in appraising and establishing the credit-worthiness of applicants. These obstacles reflect some of the basic conditions prevailing in many of the less developed countries—shortage of entrepreneurial skill, low level of literacy and education, ignorance of relevant technical and economic data and so on—which have already been pointed out as impediments to industrialization.

The working of a different type of credit institution may be followed in Mexico, where since 1934 the Nacional Financiera has been one of the principal instruments of government investment. Its original purpose was to assist the sale of public bonds and to help the recently established stock exchange become an effective market for the securities of private companies. In 1941, however, it was reorganized into what was in effect an investment bank, still designed to handle public bonds but concerning itself increasingly with the financing of new industrial projects. Its functions were broadened to include not only lending to other banks but also direct investment in industries producing goods which the war had made particularly scarce: iron and steel, wood-pulp, caustic soda and rayon yarn, for example. Since 1949, it has tended to concentrate more on public utilities—a form of investment which was being neglected, to the detriment of the industrial framework.

In contrast to the institutions in India, Pakistan and Egypt, Nacional Financiera has tended to devote most of its funds to larger ventures, a lag in the development of which might have held up the whole industrialization process. In 1949 and 1950, for example, almost 80 per cent of its investment was in four large concerns. As a result of the policy of paying particular attention to potential bottlenecks, its contribution to industrial growth has probably been more important than is indicated by the fact that in none of the post-war years, 1946 to 1950, did its investment amount to more than 9 per cent of total industrial investment in the country.

Nacional Financiera's original source of funds was its paid-up capital, 51 per cent of which was subscribed by the Government. This capital has been augmented several times and at the end of 1952 stood at 100 million pesos. More important in quantitative terms have been its receipts from the sale of "certificates of participation" which by the end of 1952 amounted to no less than 1,216 million pesos.[34] Purchasers of each issue of these certificates become in effect co-owners of certain securities in Nacional Financiera's portfolio, which are designated backing for the certificates. As the latter bear fixed rates of interest, however, the risk of fluctuations in the return on the investment remains with Nacional Financiera. This arrangement has served the purpose of attracting private capital into industrial uses into which it probably would otherwise not have gone; indeed, smaller concerns have complained from time to time that by draining the market, its operations have tended to make their financing problems much more difficult. Its certificates possess, in fact, just those attributes which are most frequently desired, by small investors in particular, in the less developed countries: they offer a fairly high rate of interest—7.2 per cent in 1941, 7 per cent from 1942 to 1943, 6 per cent from 1943 to 1950 and 5 per cent from 1951 to 1952—a high degree of security, being government-guaranteed, and a very high degree of liquidity, being readily resalable to Nacional Financiera itself. In its expressed intention of acting as a training ground for small investors, encouraging them to offer their savings as risk capital in local industrial enterprises, Nacional Financiera would seem to have failed, however. As an industrializing instrument, therefore, the test of the institution lies in its investment policy.

Another example of a government's concern about the financing of domestic industry is offered by Indonesia, where the new republic found in 1948 that, as in most under-developed countries, the banking system was designed primarily to finance trade and there was no machinery through which longer term credits could conveniently flow. In the early days of the new régime, the Government itself undertook the complex business of granting loans to industrial and other types of firms. Lack of coordination between the various departments made this a wasteful procedure, however, and a more effective system soon became necessary. In answer to this need, in 1951 the Government created three institutions—the Bank Industri Negara (BIN), the Bank Rakjat Indonesia (BRI) and the Jajasan Permusatan Djaminan Kredit Rakjat (Jajasan Kredit).[35]

An important function of the BIN is provision of credit to medium-scale and large-scale industrial establishments, whether private or government-owned. By the end of 1953, about 30 per cent of the amount it had lent had gone into manufacturing, including some of the government factories erected under the emergency industrialization programme: a printing works, a desiccated coconut factory, a cotton spinning mill and several plants for remilling rubber, manufacturing glass and so on. The bank's nominal capital is 500 million rupiah, of which 240 million had been paid up by the end of 1953 from the Government's ordinary budget, while a further 186 million rupiah of government funds had been placed in the bank on deposit. Its total lending amounted to 130 million rupiah at the end of 1951, 250 million at the end of 1952, and 351 million at the end of 1953.

The BRI's activities are confined largely to small-scale industry and agriculture, including cottage industries common to the rural areas. Its capital also had its origin in a budgetary allocation and increases in this capital (100 million rupiah in 1952 for example) have come from the same source. Like those of the BIN, advances made by the BRI rose rapidly, exceeding 130 million rupiah at the end of 1951, 256 million at the end of 1952 and 460 million at the end of 1953.

The Jajasan Kredit commenced as another source of credit, acting both as a direct lender and as the guarantor of loans made by other institutions to agriculture and commerce as well as to industry, but after being reorganized in the middle of 1952, it became not so much a direct lending institution as the intermediary through which credits were advanced by certain designated banks. For this purpose it was financed by the Java Bank (central bank), which, under government guarantee, opened a credit set provisionally in 1952 at 88 million rupiah. During the first two years of its existence it had received some 726 applications for loans totalling more than 94 million rupiah, of which some 23 million had been granted and some 58 million was still under review. Rather more than 40 per cent of the amount advanced was intended for secondary industry, while 11 per cent was for co-operative ventures, some of which were also industrial.

In addition to these institutions, which are concerned more specifically with the provision of credit to industry, many of the lending operations of the Java Bank, the government-owned Bank Negara Indonesia (which operates chiefly in the commercial sector) and the seven private foreign-owned banks add to the funds at the dis-

[34] Of which 123 million pesos worth of certificates issued before 30 June 1943 had been redeemed.

[35] This discussion of Indonesian experience is based on information derived principally from the annual reports of the Java Bank from 1950/51 to 1953/54.

posal of secondary industry.[36] So too, but on a much smaller scale, do the eighteen private Indonesian banks, whose main function, however, has been to lend funds provided by deposits made by the Government, or by credits from the central bank. They have done little to attract outside investors or depositors, and have therefore tended to become mere agents for the Government and the central bank.

The Government itself has also contributed directly to the industrial sector. The emergency industrialization plan, promulgated in 1951, placed special emphasis on development of small-scale industry—handicraft activities and workshops with less than fifty workers and little or nothing in the way of mechanical aids. In the budget of the plan allowance was made for the expenditure over two years of 56 million rupiah for assisting such small-scale private industry as was not organized into co-operative societies and not in receipt of loans from one of the credit institutions. The funds were used chiefly for the purchase of equipment, title to which was not acquired by the user until he had paid for it over a period averaging about five years, during which time he had also to pay 10 per cent interest per year on the loan.

Encouragement to co-operatives was part of a similar plan, and in 1952 some 24 million rupiah of government funds was set aside to finance the construction of a number of central workshops (or "mother factories", as they were called) in which the more costly items of capital equipment could be shared by individual craftsmen and small-scale establishments operating in the district in question. Money expended for this purpose was repayable over ten to twenty years and bore only a 3½ per cent administrative charge. By the end of 1953 a central ceramics workshop was operating at Plered, a forge at Tjisaät, a tannery at Magezang and an umbrella works at Djuwiring, while several other industrial projects were being planned. This encouragement of co-operative industry was regarded more as a matter of social policy than as a commercial transaction although it was supplemented by a training programme designed to teach members the importance of effective organization, higher productivity and the profitable operation of the unit.

These Indonesian attempts to ensure that the industrial development of the country was not held back by any deficiency of credit have a particular relevance in the present context. From the above outline of recent events and policies it is apparent that it has been the Government which in each case has been the major (and in several cases the only) source of funds at the disposal of the various institutions and programmes. But the Government itself has not raised these funds by the issue of public bonds or by compelling the population to save through the medium of budget surpluses. On the contrary, during the period 1948 to 1952, the average annual budget deficit was no less than 1,377 million rupiah. This has been financed almost entirely by advances from the central bank, the government's indebtedness to which grew from 908 million rupiah on 31 March 1949 to 6,190 million on 31 March 1954. Even if all the advances made by the various institutions had been productively used, it is difficult to see how this method of financing could have avoided being inflationary.

Even though much of the credit created by government borrowing from the central bank is invested in enterprises which ultimately yield an increment to the flow of goods and services on which the additional purchasing power might be spent, there is likely to be a considerable delay between the release of the credit and the realization of the extra output. In this respect there is a marked difference between industrial countries and those that are under-developed. In the former, there is ordinarily a much larger reserve of productive capacity —plant and machinery, inventories of raw materials and semi-finished goods and man-hours of labour—which is capable of responding rapidly to an increase in purchasing power injected into the economy through such a device as deficit-financed investment in new industry. In most of the less developed countries, there is no such reserve, even though in numerical terms there may be a much larger degree of under-employment of manpower. Rarely does investment bear fruit quickly: capital goods have to be imported, often after considerable delay; workers have to be trained in new techniques; a whole complex of overhead facilities has sometimes to be created; comparatively small bottlenecks may hold up the whole process of production; and frequently an increase in the supply of many of the consumer goods required by workers—into whose hands a large part of the new credit passes — depends upon an increase in imports, which a shortage of foreign exchange may preclude.

Balance of payments policy

The process of establishing a new industry in an under-developed country almost inevitably involves the use of foreign exchange, for it is probable that a large proportion of the capital equipment required in the new factories will have to be purchased in one or other of the industrial countries. It is also probable that some of the funds paid out to local factors of production will be used to increase the purchase of imported goods. Whether or not the whole investment transaction imposes a strain on the country's balance of payments depends partly upon its magnitude in relation to current surpluses and accumulated reserves. In the absence of foreign assistance, therefore, the rate of industrialization is limited in the first instance by the size of the current balance of payments surplus, which determines the resources available for financing imports of capital goods and the additional goods required by the factors selling material or services to the builders of the new factories.

The actual establishment of the factory, however, is only the beginning of the process: after its construction, when it is operating in a normal manner, the factory continues to influence the country's balance of payments. On the one hand it contributes or saves foreign exchange by producing goods which are exported or, more usually, consumed locally in the place of imports.[37] On the other hand, it uses foreign exchange to import raw materials, accessories and spare parts for plant repair and maintenance, and the additional supplies of foreign consumer goods required by the factors

[36] In 1952, the net increase in advances made by this group of banks and the BIN amounted to 315 million rupiah—56 million to private industrial enterprises, 88 million to other private concerns and 171 million to semi-public bodies.

[37] The new factory need not produce a direct import substitute, for provided there is no inflation, the new product, if it satisfies a genuine demand, will compete for the use of income and thus indirectly displace imports.

employed in and by the new industry. Simultaneously, to the extent that it draws on factors not previously idle, it tends to reduce the available supply of foreign exchange by diverting domestic resources away from the export industries, and in cases where its product costs more or is inferior to the import it replaces, by raising the costs of those export industries.

Although, in general, the operation of a new industrial undertaking may well improve the balance of payments of the under-developed country, there are many instances in which the gain is greatly reduced by heavy dependence on imported raw materials. Moreover, in cases in which domestic raw materials that were previously exported are used by a new industry for local consumption the resultant loss of export earnings, though relatively small, may be significant if the local factory is inefficient while in the foreign factories these raw materials account for a high proportion of total costs.

Industries of low efficiency may save foreign exchange if they are protected by a customs tariff or other means, but in so far as their products enter into the costs of export industries, reducing the profitability of sales on foreign markets, they are likely to cause an offsetting loss of foreign exchange. Export earnings may be affected more directly by the diversion of labour from various export activities to the new secondary industries. This is not likely to be important in countries in which there is appreciable under-employment, but where labour is scarce—in Australia and South Africa, for example—industrialization has proceeded in part at the expense of the export activities, agriculture in the first case and mining in the second. Where protection raises the marginal profitability of a manufacturing industry, there may also be a tendency for export activities to suffer as a result of the diversion of scarce local capital to industrial investment.

In some of the least developed countries, a major leakage of foreign exchange resources is likely to arise through changes in the consumption pattern of those employed in the new industries. Such changes reflect both the provision of the various "social overhead" facilities which are a necessary corollary to the concentration of industrial population, and also the new purchasing habits of the workers themselves, as they move from rural, in many instances subsistence, society to urban or semi-urban exchange society. Although the increase in consumer imports will generally be substantially less than the increase in the wage bill and may be limited both through taxation of the wage earner himself and through imposition of duty on the imports, the consequent rise in the import content of the worker's budget is one of the principal reasons why in some countries—Indonesia, for example—import control has been considered an inevitable accompaniment of industrialization.[38]

[38] It should be pointed out that, as far as the foreign exchange losses occasioned by a new industry are concerned, there is an inverse relationship between the importation of raw materials and the importation of consumer goods for the workers who are responsible for adding value to these raw materials.

A rise in imports and a decline in exports are to be expected if the products of the newly established industries are sold to domestic consumers on lengthy credit terms such as would tend to expand the effective supply of money and militate against savings; subsidization of such sales from tax revenue would generally be a safer method of distributing them. These conditions are not likely to arise in many of the under-developed countries, however, especially in the early phase of industrialization when their results would be greatest, because in general the industries which are important in that early phase do not produce goods which lend themselves as vehicles of credit expansion.

The initial strain on the balance of payments imposed by an industrialization programme may be eased by foreign borrowing to finance the original investments. Although the subsequent burden is correspondingly increased by the payment of interest and the amortization of the debt, the country may be expected to be in a stronger position to meet such obligations, at least if the borrowed capital was invested in industries that contributed to exports or reduced the need for imports.

When the foreign investment takes the form of an equity interest, the effect on the under-developed country's balance of payments is less predictable for, although this form of financing makes for greater flexibility, there is no guarantee that either the profitability of the company or the dividend policy of its directors will be geared to the foreign exchange position of the country. Nor will the directors' desire to repatriate capital necessarily coincide with the availability of foreign exchange for the purpose. This raises problems wider than those of an industrialization programme as such, but in the present context it must be pointed out that an under-developed country's defence against movements of profits or capital which are excessive in relation to its foreign exchange resources is the restriction of the rate of transferable profit and the rate of capital repatriation. Such restrictions, however, inevitably tend to deter foreign investors and therefore militate against the use of this method of distributing the foreign exchange costs of industrialization more conveniently over time.

In assessing the significance of balance of payments considerations as a hindrance to industrial development, it should be borne in mind that a programme of industrialization is likely to extend over a period of years during which the expenditure of foreign exchange for capital equipment will continue at a fairly high level. The establishment of each new factory removes the need to import its product, while simultaneously imposing a somewhat less flexible claim on foreign exchange resources for the importation of the necessary capital replacements and raw materials, as well as a more readily controlled claim for the importation of additional consumer goods and various capital requirements demanded by the changing economic and social environment in the areas being industrialized. Very few under-developed countries have an export potential

large enough to allow them to carry out such a programme without reference to the availability of foreign exchange; in most of these countries, indeed, shortage of foreign exchange is likely to be among the main limiting factors governing the rate of industrialization. In view of this, it becomes important, in evaluating the suitability of a given industry or a given technique of production as part of a programme of industrial development, to balance the claims upon foreign exchange which its establishment is likely to occasion, both directly and indirectly, against its probable contribution to exchange earnings or to the saving of exchange which would overwise be expended in importing the product in question.

In singling out this criterion of suitability in the present context, it is not intended to give it pre-eminence over those enumerated later in the present chapter. In point of fact, industrialization will ordinarily give rise to balance of payments difficulties only if it is the result of investment in excess of domestic savings and capital inflow or if the resultant industries are too inefficient to produce at a cost at which their product can be sold. In other words, from the point of view of maintaining a sound payments position, it is more important to aim at monetary stability and efficient investment than to restrain new industries that might have a claim on foreign exchange or to build up an elaborate system of exchange control to protect unwise investments.

The extent to which balance of payments considerations are likely to influence the scope and speed of industrialization obviously varies from country to country, depending upon the nature and exploitability of its domestic resources, upon the type, magnitude and variability of its exports, upon the volume of its gold and foreign currency reserves, upon the capital and raw material requirements of its new industries.[39] In view of the great diversity of conditions, it is not possible to prescribe a single balance of payments policy as being the most appropriate to an industrializing country. Each country has to work out a policy sufficiently flexible to fit its own changing economic circumstances and yet remain in the service of a wider programme of economic development. All that can be attempted in the present study is a discussion of two problems that are likely to arise in the course of industrialization, the significance of which will differ from one under-developed country to another and from one occasion to another. The first of these problems is the place of exchange control in an industrialization programme; the second is the elaboration of an appropriate tariff policy. These topics take the discussion into a field in which a good deal more research is needed, for many of the postulates of earlier studies of international trade are no longer applicable. There is no international gold standard, and foreign exchange rates are widely regarded as an instrument for achieving certain internal results in the face of changing external conditions. Factor mobility is severely limited—neither capital nor labour can move freely towards points of higher marginal returns when these lie across national boundaries—and there are widespread restrictions on the movement of goods. Superimposed on these conditions has been the division of the world into currency blocs, reducing severely the extent of multilateral trade and making the currency of payment one of the principal criteria of the desirability of each transaction. In the light of these complexities, the discussion that follows is largely of a descriptive and empirical nature, designed to examine both the usefulness and the shortcomings of exchange controls and customs duties as instruments of industrial development.

Foreign exchange control

By and large the genesis of modern exchange controls lies in the balance of payments crisis of the 1930 to 1932 depression. At the outset they were conceived of as purely monetary measures designed to protect gold and foreign currency reserves by curbing the outflow of capital and regulating expenditures abroad; but within a very short time they had become instruments of much wider significance in many of the under-developed countries. For not only did the regulation of foreign expenditures involve control of imports, but the great deterioration in terms of trade of most of the raw material-producing countries during the course of the depression brought home to them the weakness of economies largely dependent upon the export of a comparatively small number of agricultural or mineral products and instilled in them a strong desire to diversify their activities—in particular, by the establishment of manufacturing industries which would simultaneously reduce the need to expend foreign exchange on imports and relieve the burden of rural poverty that had been so greatly aggravated by the collapse of farm prices. Foreign exchange control, having assumed this dual role of protecting currency reserves and influencing the allocation of resources, has tended to become a permanent part of government economic machinery in many of the less developed countries, especially in Latin America. This result was ensured where simple quantitative controls began to be replaced by more complex methods which, by means of variation in the prices at which foreign exchange was sold to different categories of users, soon became an important source of government revenue.

In the post-war period several countries which contented themselves with simple currency devaluations in the nineteen thirties have met balance of payments problems by the institution of more complex combinations of foreign exchange regulation and import control. As before, these devices have again exercised an appreciable influence upon the internal allocation of resources, resulting, in some cases, in the establishment of industries which, most probably, would not otherwise have come into being. This type of experience has

[39] Although in general, most under-developed countries find the availability of foreign exchange a limiting factor, tending to curb both the extent and the rate of industrial development, it should not be overlooked that in some instances special difficulties in making foreign payments have actually led to the adoption of autarkic policies in which local industrialization has played an important part.

tended to elevate exchange and import control into a position of some importance among the instruments available to governments to accelerate the rate of industrial growth.

Import and exchange control has also proved useful where industrialization is resulting not only in imports of an unusually large volume of capital equipment and a sizable volume of associated raw materials but also in a substantially higher import content in the goods consumed by local wage earners. In the absence of a commensurate inflow of foreign capital, only a strict control over the composition of imports in accordance with essentiality and the availability of foreign exchange is likely to prevent the consequent strain on the country's balance of payments from slowing down the rate of industrial growth. Even with an inflow of foreign capital, it may sometimes prove temporarily expedient to regulate imports in order to reduce the loss of developmental effect resulting from indiscriminate or too rapid leakage of purchasing power from the economy.

More frequently, exchange and import controls have been brought into play to combat the effects on the balance of payments of inflationary pressures generated by the industrialization process. In one sense this may seem anomalous, for any curb on the inflow of goods is likely to magnify rather than reduce the degree of internal inflation. In another sense, however, in view of the fact that inflationary forces, by tending to transfer incomes from wage earners to profit recipients, are likely to alter the pattern of demand, it may be possible, by means of import controls, to influence the composition of the flow of goods in such a way as to mitigate some of the socially undesirable effects of the inflation. It should be emphasized, however, that such import controls do nothing to remove the excess purchasing power which, not being spent on imports, remains in the hands of certain groups in the population, giving rise to increased domestic consumption of services or increased speculation in land; nor are they necessarily of assistance to export activities whose costs have been raised by the inflation.

In this connexion, it is pertinent to point out that many of the less developed countries lack effective internal means for reducing inflationary pressures by the more satisfactory methods of levying higher income and excise taxes or inducing greater savings. These methods would not only get directly at the sources of inflation but would at the same time enable the government to divert into industrial or allied fields funds which might otherwise not have been so used. Unfortunately, all too frequently, their tax systems do not lend themselves to the task of reducing excess purchasing power through fiscal policies, and as indicated above, their financial and banking systems are seldom organized in a way which would permit successful use of tighter credit or higher interest policies. Until these institutional deficiencies are made good, countries in this situation may have to use the administrative sector which is best developed, usually that concerned with foreign trade. Where this is the case there is a strong argument for a regular foreign exchange budget which would render unnecessary the unco-ordinated *ad hoc* decisions in this field which have been so characteristic of under-developed countries in recent years.

It has sometimes been argued that, as a general devaluation of the currency designed to restore the balance of payments by reducing imports and stimulating exports may tend, by increasing the local price of every import, to intensify the inflation and increase the cost of new industrial investment, a case might be made for selective devaluation achieved through a system of foreign exchange controls. Such a system would make provision for differential rates that permitted capital equipment, essential raw materials and strategic consumer goods which are in short supply to be imported at a much more favourable rate of exchange than other types of goods. Unless the local currency was cheapened for foreign purchasers, however, enterprises producing for export might be handicapped by the increase in local costs, in which case efforts to reduce foreign currency payments would be offset by a decline in foreign currency earnings. As suggested above, moreover, such a programme might be frustrated by the diversion of domestic investment to the production of items barred or made particularly costly by the exchange regulations.

That foreign exchange control needs to be supplemented by internal measures may be illustrated by a Peruvian example. In December 1948 the import policy in respect to chemical products and equipment was changed from a combination of stringent quantitative control and preferential exchange rate of 6.50 soles per dollar, which had been designed to provide the country with a small but low-priced supply of these goods, to a combination of more liberal entry at the much less favourable "certificate" rate of 18.5 soles per dollar. Despite the considerable increase in the sol cost of the imports, the effect of the increase in supply was to reduce domestic prices by 38 to 80 per cent, indicating clearly that the benefit of the earlier favourable exchange rate had been more than absorbed in profits accruing to importers and other dealers.[40]

Post-war developments in Argentina also contain examples of the difficulties of using import and foreign exchange controls as an industrializing force. Since mid-1944 preferential selling rates have in general been designed to reduce the peso cost of imported machinery, equipment and raw materials, while preferential buying rates have been designed to encourage the export of wholly or partly manufactured goods. In the rate revision made in October 1949, the devaluation of the peso for import purposes was in inverse relation to the importance of the import in question to

[40] An incidental effect of transferring the import of chemicals and equipment from the preferential to the certificate rate was the depreciation of the sol on the certificate market and hence a slight rise in the domestic price of all other imports bought through thls market. E. R. Schlesinger, *Multiple Exchange Rates and Economic Development* (Princeton University Press, 1952), pages 21 and 22.

the industrialization programme[41] while the exchange rate for fuel imports was not altered, thus maintaining the peso price of this essential industrial import. Though the reduction in the exchange rate for the peso for agricultural exports was accompanied by a lowering of the peso price of the major items by the Argentine Trade Promotion Institute (IAPI), exports of farm produce declined both in value and in volume in 1949 and in 1950, and in volume again in 1951, when a crop failure magnified the drop. A lower rate was available to foreigners for the acquisition of pesos for purchasing manufactures, but this did not fully offset the combined effect of increasing internal prices and renewed competition from exporters in Europe and elsewhere. One of the few activities that does seem to have benefited from exchange control is the iron and steel industry, which was granted a favourable rate for the import of iron ingots, wire and pipes and an unfavourable rate for the import of iron and steel manufactures. In 1951, imports of unworked iron amounted to almost 281,000 metric tons and of iron and steel manufactures to less than 18,000 tons, compared with figures of 28,400 and 102,200, respectively, in 1938; by 1951 local production of metals was well over twice the 1943 level.

In the case of Argentina's metal imports, protecting domestic industry seems to have been regarded as more important than importing cheaper capital goods — a dilemma which is likely to arise wherever the development of local secondary industry has advanced to the stage where it is capable of supplying an appreciable proportion of the country's capital equipment, even though only at a price above that of the corresponding imports.

Adjustments in the degree of protection may be effected not only by periodic revision of the various buying and selling rates, but also by changing the category in which specific commodities are placed for foreign trade purposes. Category changes are obviously less flexible and more limited in scope than rate changes, but in many instances appear to have been administratively simpler. However contrived, frequent alterations in the effective rate of exchange, except when they are designed to allow for the effects of domestic inflation, cannot but be unsettling to private traders and producers, increasing considerably the uncertainties which are a normal characteristic of less developed countries. One corollary to this is the tendency, previously mentioned in connexion with other risk-enhancing influences, for entrepreneurs to require expectation of an appreciably higher rate of profit to compensate for the added risk before they will venture into new undertakings, with a consequent slowing down in the rate of private industrial investment.

Another corollary is the opening the system affords for the application of undue or unfair pressure upon those in charge of administering it. This is a particularly serious danger in countries in which the quality of administration is an important determinant of the rate and success of industrial development. In a number of under-developed countries, indeed, the organization and operation of a system of import control and exchange allocation are likely to impose administrative burdens which, in relation to the available supply of trained personnel, may prove extremely heavy. Sales and production plans of importers, for example, may have to be checked in great detail in order to deflate requests for currency allotments that are frequently much larger than actually required.[42]

As far as its industrializing effect is concerned, exchange and import control, like most economic instruments designed for more than one purpose, has not always been used consistently. In general, the policy has been to grant foreign exchange to entrepreneurs who wish to import capital equipment and to withhold it from traders who would import the corresponding manufactured products—or to sell the requisite exchange much more cheaply to the former than to the latter—but this general principle has had to be modified in various ways in order to accommodate it to the realities of the domestic situation.

As pointed out above, an industry's need for foreign exchange does not end when its capital equipment has been imported: it often requires a regular flow of spare parts and accessories and, to a greater or lesser extent, of raw materials, components and semi-finished goods. Established industries, therefore, if they are to be kept running, tend to have a prior claim on the available foreign exchange resources. In the same way, every grant of foreign exchange for the importation of plant and machinery has to be decided in the knowledge that it creates and implicitly recognizes a subsequent high priority claim for exchange to purchase the wherewithal to maintain production and employment in the factory in question.

The priority given to the importation of capital goods is limited in another way. Very few of the under-developed countries produce all the consumer goods they require; those that have to be imported, whether raw or manufactured, are usually classified in some order of essentiality, and a varying proportion of them will qualify for an allocation of foreign exchange (or for a favourable rate for acquiring it). In spite of the cheap exchange (when this is granted) a deficiency in the local supply which is often the result of import control tends to force the price up, and in so far as these are essential consumer goods the result though benefiting local producers may be socially inequitable. A corollary to this is the tendency, especially apparent in countries in which inflationary pressures are strong, for the importation of mass consumer goods to be given both high priority and favourable rates of exchange. The effort to hold down the cost of living in the towns in this way is partly at the expense of local producers of these goods, frequently the farmers. In this way the production of wheat flour in Ecuador and of various meat

[41] In the words of the Minister of Finance in a communiqué issued at the time, for "goods (other than fuels, essential raw materials and popular consumer goods not produced in the country) the exchange rates have been established in accordance with the degree of industrialization, the coefficient of local production and the nature of the requirements which they satisfy, the higher rates [that is, the more devalued peso] being applicable to the goods which are more highly processed or which are produced in the country in adequate quantities or which meet non-essential or luxury requirements" (quoted in *The Review of the River Plate*, Buenos Aires, 7 October 1949, page 19).

[42] Cf. League of Nations, *Exchange Control* (Geneva, 1938), pages 38 and 39.

products in Peru has been severely handicapped by the policy of granting preferential exchange rates to importers of these items of general consumption. It should be noted, however, that other producers are likely to benefit if prices—and production costs—are successfully held down by this form of disguised subsidy.

The most common effect of import and exchange control, whether intended for this purpose or not, is to provide a form of protection to local manufacturers: imports are held off the market or if they are permitted at an unfavourable rate of exchange their local cost is raised. How much advantage the domestic producer can take of this protection depends, in part, on the extent to which the local product can be substituted for the imported product: the greater its complexity and the higher its quality and cost, the less likely it is that producers in the under-developed country will be able to benefit from the protection. This does not preclude the possibility of the local production of non-essential luxury goods, however, for even if the government exercises its control over foreign exchange in such a way as to prevent the importation of capital goods for the establishment of new, or the expansion of old, industries producing goods considered non-essential (and therefore barred from entry into the country) only intensive control over domestic investment would prevent transfer of existing equipment for use in the luxury industry, or having the equipment made locally or improvising by means of substitute machinery and alternative techniques of production. Such a procedure would in fact result in a double disadvantage: not only would resources be transferred to the less desirable use, but the new industry would probably be far less efficient than if it had been properly equipped with suitable (imported) plant in the first instance.

A cognate effect is illustrated by Brazilian experience in the nineteen thirties, when to protect industries producing such things as textiles, shoes, hats, sugar, matches and paper, which were depressed by "over-production", the Government prohibited the importation of new machinery and strictly controlled the importation of replacements. Whatever advantage this may have given to established factories in the short run was probably offset after a few years by the handicap resulting from the increased proportion of obsolete equipment.[43]

Foreign exchange restrictions, especially if they are subject to frequent change, may divert domestic resources in another way. Importers are likely to be tempted into forestalling the controls by acting in advance of possible restraints and importing larger quantities than they would under normal circumstances. Consumers may also endeavour to increase their stocks of items which may be scarcer or costlier in the near future. This behaviour also entails a double disadvantage, for not only does it tie up savings in excess inventories and thus reduce the flow of productive capital, but, by causing an undue increase of particular imports, it also aggravates the overseas payments problem.

[43] Cf. H. W. Spiegel, *The Brazilian Economy* (Blakiston Company, Philadelphia, 1949), page 214.

Foreign exchange control may also lead to a certain dissipation of resources by directing the flow of foreign trade in accordance not with price criteria but with currency criteria. Exports may be sold at a lower price in order to acquire a particular currency, and imports may be bought at a higher price (and not infrequently with appreciably longer delivery periods) because of the availability of the currency in question. In Brazil in 1934, for example, allocation of foreign exchange to domestic importers was subject not only to the priority of industrial raw materials and basic consumer necessities but also to a degree of preference accorded to countries in proportion to their purchases of Brazilian coffee. Devices of this nature reflect the way in which exchange control in the less developed countries, no less than in many of the industrial countries, tends to adapt itself to the fundamental disequilibria in world trade. This is not to argue that under the circumstances exchange controls may not be necessary, but in the present context it is important to bear in mind the extent to which they may result in a misdirection of resources that is likely to retard the whole process of industrial development.

Any extension of an internally induced balance of payments disequilibrium because of discouragement or postponement—accidental or deliberate—of measures aimed more directly at remedying it, such as the adoption of a definitely anti-inflationary fiscal and credit policy, or the more liberal importation of goods whose shortage is actually causing a bottleneck preventing the expansion of local production, is likely in the long run to result in the imputation of greater significance to balance of payments criteria in determining the direction of domestic investment than is in fact justified by the country's general economic circumstances. The government may tend to attach undue importance to industries which export part of their output or produce particular import-saving goods. In the effort to save foreign exchange, resources may be channelled into industries which are never likely to be able to meet competition, or into industries yielding a smaller increase in productivity, welfare or gross product than might have been obtained from other types of investment. Moreover, the newly created or expanded industries may claim protection of one kind or another long after the country's balance of payments position has been restored. Once invoked, in other words, control over foreign trade may tend to become self-perpetuating.

Some of these effects have recently been illustrated in South Africa where, despite the fact that the exchange and import regulations that were imposed in 1948 and 1949 were designed solely to protect the country's foreign exchange reserves with the least damage to the course of its economic development, the protective effect of import control stimulated manufacturing industry in general and non-essential industries in particular. At current prices, the rate of growth of manufacturing output between 1948 and 1953 was substantially in excess of that of the gross national product, and in real terms it remained steadily ahead of mining and agricultural output. The increase in the value of output in the specially protected industries was in general appreciably more rapid than that for manufacturing as a whole.

Until early in 1954, imports were restricted on the basis of currency area of origin as well as on a commodity basis; consequently industries competing with dollar imports (women's dresses, for example) tended to be more effectively protected than those in competition with soft currency imports. The extension of the local market which followed the cutting off of imports, on the other hand, tended to be of greatest advantage to industries which gain most from the economies of larger scale, usually the more highly capitalized industries. The inland industries, which at all times enjoy a certain degree of natural protection, tended to benefit less than the coastal establishments, which are normally more exposed to foreign competition.

The rapid development of some South African industries which were protected by import restrictions has probably been uneconomic. Thus, the production of perfumery and toilet preparations is said to have been handicapped by the small domestic market and the lack of suitable raw materials as well as by inefficient techniques; the productivity of the soap and chemical industries is also stated to have been reduced by the inadequacy of local raw materials.[44] One reason for the lower efficiency of the new and expanded industries has been their difficulty in obtaining modern plant and equipment. As suggested above, the less essential industries were generally barred from importing capital goods, and during the period of exchange stringency all applications for foreign exchange for this purpose were carefully screened. Even if permission to import was eventually granted, there was usually an appreciable delay, which in many cases was magnified by the tendency to concentrate demand on soft currency sources of supply that during the period under review were rarely able to give prompt delivery. As a result, much of South African industry emerged from this period of control with a greater proportion of obsolete machinery and high cost labour-intensive production methods than it might otherwise have had.

In Israel, where foreign exchange restrictions have been employed both to correct a balance of payments deficit and to implement internal economic policy, the resultant overvaluation of the currency has tended to aggravate the internal inflation which was at the root of the disequilibrium. Between them, the two factors probably militated against domestic manufacturing, local costs being unnecessarily high and the price of many imports unnecessarily low. In some instances, use of imported machinery costing scarce foreign exchange became less expensive than employment of local labour, which was relatively abundant. It was suggested by the commission that studied the situation in 1953, nevertheless, that one of the tests of a realistic exchange rate was its capacity for making the importation of goods less profitable than their domestic manufacture, at least if this was accompanied by an investment policy designed to exert a rapid and direct effect upon the balance of payments. In Israel's special position, emphasis on "the magnitude and selectivity of investment viewed from the standpoint of the balance of payments"[45] is understandable. One illustration of this is the encouragement of the local cement industry and the extensive use of cement in house construction even for purposes for which various other building materials obtainable from abroad would have been technically more satisfactory.

In Chile, exchange control and quantitative import restrictions have been in effect since 1932. As in other countries, the original purpose was to conserve foreign exchange, but in the course of the nineteen thirties the system was used increasingly for its protective effects—for the new industries producing woollen textiles, flat glass, electric light bulbs, calcium carbide, jute bags, for example—and from time to time also as a weapon in commercial negotiations with other countries. Since 1947 the policy in broad terms has been to bring foreign payments and receipts into general equilibrium by varying simultaneously the classification of imports between the prohibited, licensed and free categories, and the exchange rates at which the different import and export transactions may be effected. A complex scheme of multiple exchange rates was gradually developed which, as in other countries of the region, amounted to a system of taxation and subsidy. Though the rate structure is subject to frequent revision, in general preferential rates are granted for controlled imports of certain basic raw materials that are not produced in sufficient quantities in Chile—newsprint, tallow, cotton, gasoline, for example—and certain basic foodstuffs—sugar, rice and wheat, for example. Imports of agricultural machinery and certain other capital goods have in general been granted favourable rates as have also exports of manufactured products (along with the output of small mines and certain agricultural produce). However, the importation of capital goods, whether for the establishment of new industries or for the expansion of existing ones, has had a double hurdle to negotiate: before being sanctioned by the Foreign Trade Council, imports must be approved by a commission of the Ministry of Economy, which acts only on the advice of the Development Corporation and the Department of Manufacturing Industries.[46] The purpose for granting a favourable rate of exchange might therefore have been frustrated on occasions by the complexity of administrative procedures and the divergence between the criteria of suitability applied to new industrial investment by the various bodies and interests whose approval was required for its realization.

Where exchange and import controls have been designed and operated to reduce the disruptive effects of a sudden decline in export earnings such as most underdeveloped countries have experienced from time to time in the past, they are likely to facilitate industrialization. When it is fairly clear, for example, that the drop in export prices has been due to market forces outside the control of any one producing country and that a general devaluation of the currency of the country in question would therefore not restore its export income, import control may help to make the best use of foreign exchange while the special stringency continues. In this way the country's industrialization programme might be protected from the main impact of violent fluctuations in exchange resources. The continuation of import control so as to permit the accumulation of currency reserves that would help to mitigate the effects of possible future recessions in export earnings might similarly serve as a means of sustaining a more even rate of industrial growth.

Exchange control also affects capital movements and hence the flow of foreign investment into local industry. Since the days of the great depression, the entry of foreign capital has in general been encouraged by favourable rates of exchange, but the remittance of earnings and even more, the repatriation of capital have been subject from time to time to absolute or proportional

[44] United States Department of Commerce, *Union of South Africa: Survey of Manufacturing Industry*, Business Information Service, World Trade, Series 337 (Washington, D.C., December 1952), page 16.

[45] *Report of the Foreign Currency Commission* (Jerusalem, July 1953), page 15.

[46] The establishment of a new industry is subject to the prior approval of the same commission, acting on the advice of the Manufacturers' Association as well as the Development Corporation and the Department of Manufacturing Industries.

limitations. This problem is taken up in the next chapter;[47] in the present context, it is sufficient to point out that unless they are designed and administered very flexibly, restrictions and controls on the movement of industrial capital, however necessary from a balance of payments point of view, are likely to prove a serious obstacle to foreign investment.

Apart from its tendency to inhibit the inflow of capital, moreover, exchange control may result in a flight of domestic capital, especially if it is used instead of a more direct attack on the internal forces that may be causing depreciation of the currency. Manipulation of exchange rates may also tempt owners of capital to take advantage of changes by engaging in currency deals, exporting and repatriating funds which from the point of view of industrial development would be better used in domestic investment.

Customs duties

A more conventional instrument of encouragement to industry is the customs tariff. In most of the under-developed countries, customs duties perform a dual function: raising revenue and protecting domestic industries. In the pre-industrial stage of development, it is the first of these functions that is the more important. With the economic development of the country, however, the protective purpose has generally tended to predominate: the structure of the tariff has been altered by a relative increase in the tax on imported goods which compete with products of local industries and by a relative reduction in the tax on goods imported as equipment, raw materials or intermediate products for use by local industries. The two purposes are mutually incompatible, for complete protection—by a prohibitive rate of duty—would exclude imports and minimize customs revenue. The most appropriate tariff structure in any particular case obviously depends on the relative importance of revenue and protection, although in practice most protective tariffs retain revenue-raising duties in varying degree—on luxuries or on other goods for which domestic demand has a low price elasticity.

Transformation of the tariff structure took place in many of the less developed countries during the course of the depression from 1930 to 1932, when the world-wide fall in prices magnified considerably the competitive forces threatening some of their newly established industries. Protective elements had existed in many of these tariffs long before this, however, and in a number of countries the raising of duties, accentuating their protective aspect, had little more than symbolic significance, for this was the time when balance of payments crises gave rise to far more drastic restrictions on foreign trade than would have been effected by the new tariffs alone. For reasons suggested in the previous section, indeed, foreign exchange control and quantitative restrictions on imports have tended to replace the tariff as a protective device.

The traditional tendency for the customs tariff to be governed by slow-moving parliamentary procedures that is often regarded as one of its defects when compared with exchange and import controls may in fact be an advantage as far as industrial development is concerned. For the necessarily more arbitrary nature of much of exchange and import control gives rise to disruptive influences that tend to deter sound and steady industrial growth and offset to a varying degree whatever inducement to industrial investment is contained in the prospect of protection. Several of the less developed countries in which exchange restrictions have become a more or less normal instrument of government policy have indicated recently that they are beginning to regard these restrictions merely as an interim measure which they are prepared to abandon as soon as the necessary tariff revision has been effected.[48] In one or two of these countries the tariff has remained unchanged for twenty years or more so that where duties were prescribed in specific rather than *ad valorem* terms the rates have long ceased to exercise a significant effect upon the course of trade.

The chief justification usually made for the use of tariffs to protect a domestic activity is the "infant industry" argument. This is not the place for an exposition of this argument, but two points require emphasis because of their special relevance in the present context. The first is the fact that the industrialization of an under-developed country might invoke not only an "infant industry" argument but also an "infant country" argument. The second is the assumption in the traditional argument that the "infant" has a reasonable chance of growing up into self-reliant adulthood.

That newly established enterprises tend to be at a disadvantage in relation to older enterprises is usually true. The new establishment has to build up its labour force into an effective co-operative team, organize its raw material supply and the distribution of its product, overcome the technical snags which are all too common in a new plant, penetrate a market previously served by other producers, build up its credit and, in general, solve a variety of difficulties which are likely to inflate average unit costs of production appreciably above the level that might in due course be attained. In the less developed countries, furthermore, the competitive disadvantages arising in the operation of the new factory itself are augmented by those that flow from all the institutional and environmental deficiencies which, as indicated in chapter 2, commonly handicap the early stages of industrialization. Here the significance of these deficiencies lies in the fact that they all tend to raise production costs and hence to reduce the ability of a new establishment in an under-developed country to compete successfully with older firms in the more advanced countries.

[47] See also United Nations, *The International Flow of Private Capital, 1946-1952*, sales number 1954.II.D.1, especially pages 54 to 59.

[48] See the various annual reports on *Exchange Restrictions*, issued by the International Monetary Fund.

For present purposes the most important characteristic of these handicaps is their transience: the factory may overcome all its initial difficulties, its scale of production may expand with the economic development of the country, the external inadequacies may gradually disappear. In so far as its handicaps are of this temporary nature, a new industry is likely to have a sound claim to the protection of a customs duty which raises the price of competing imports to a level not far removed from its own unit cost of production.

A tariff of this nature might be of substantial assistance to industrial development. The prospect of protection might justify an industrial investment which would not be made in the face of unrestricted competition from foreign producers, while foreign firms with an established market in the country in question might meet a duty on their product by setting up production facilities within the tariff wall. Several industries in Australia and South Africa, for example, owe their origin to foreign investment induced by the tariff, while in Egypt the promulgation of a protective tariff in 1930 was a major influence in subsequent industrial growth.

The Egyptian tariff illustrates the dual rate principle: high duties on competing imports and low duties on the machinery and raw materials used by the industries in question. The duties on manufactures were increased on several occasions after 1930, but those on machinery and raw materials rose little if at all, and in 1950 they were abolished on a wide range of equipment and reduced to 3 or 4 per cent on the rest. The initial effect of the 1930 tariff was to stimulate production in established firms which had idle capacity. Between 1931 and 1934 the combined output of the cotton mills of Mehalla and Alexandria increased from 6 million pounds of yarn to 24 million and from 14 million square yards of cloth to 30 million. Domestic production accounted for only 3 per cent of the total consumption of cotton piece-goods in 1930, but, with the establishment of a number of new textile mills, it accounted for 24 per cent of a much larger consumption in 1936, 40 per cent in 1939 and 90 per cent in 1950, while imports which exceeded 30,000 metric tons in the nineteen twenties and amounted to almost 18,000 metric tons in 1938 had dropped to 1,800 metric tons by 1952. Gross production of cotton yarn, which had barely exceeded 2,000 metric tons in any year before 1930, rose to 7,000 tons per year in 1930-34, and an average of 22,000 tons in 1935-39; in the post-war years, 1946-50 output averaged 52,000 tons a year.

By 1939 several of the protected industries—sugar, alcohol, cigarettes and salt, for example—were capable of supplying the whole internal market, while several others—flour, cotton yarn, shoes, cement, soap, fezzes, furniture and matches, for example—were capable of providing more than three-fourths of domestic requirements. A few of the protected industries—cement, fertilizers, vegetable oils, soap, leather products, cigarettes and certain food-processing enterprises, for example—appear to have increased their efficiency to the degree necessary for successful competition with imports. Others, however—matches, varnishes, rubber, paper, ink and canned fruits and vegetables, for example—are still ranked among the high-cost producers because of relatively low efficiency, while some—sugar, confectionery and textiles, for example—are high-cost industries not because of inefficient production but because they are victims of government protection of the primary activities which produce their raw materials.[49]

[49] Cf. C. Issawi, *Egypt at Mid-Century* (Oxford, 1954).

Egyptian experience points to several tests of sound tariff policy. The first is that duties should be imposed selectively rather than generally, to provide relief from competition only to those industries which show prospects of ultimately being able to surmount the obstacles keeping their average costs high or otherwise retarding their development. Where there are idle factors of production, however, the case for protection becomes stronger. If, for example, because of the existence of under-employed manpower in the rural areas, the real cost to the community of increasing industrial output were relatively low and in consequence the ratio between money cost and real cost appreciably higher in industry than in agriculture, a uniform degree of customs protection accorded to all secondary industries that revealed potentialities for development would probably lead to a better utilization of domestic resources without any undue interference with the international division of labour.[50] In terms of the principle of comparative costs, moreover, the extremely low marginal productivity of labour in agriculture tends to make it advantageous for such a country to divert resources to other activities, including secondary industry, even in the relatively inefficient form of handicraft production, which might require a fairly high degree of protection from the competition of more highly mechanized concerns in industrial countries.[51]

A corollary to this and a second principle to emerge from the Egyptian experience is that protection of a secondary industry may be nullified by protection of the primary activities that provide it with raw materials. Such protection of inefficient industries whose output enters to any considerable extent, whether directly or indirectly, into the intake (and hence the expenses) of other industries is likely to contribute to a general inflation of costs. This poses a difficult problem for those among the less developed countries in which, as a matter of social policy, domestic agriculture, in which average productivity is relatively low, is protected against lower priced imports from countries where farming is on a larger scale, more highly mechanized and in general far more efficient.

In Brazil in 1931, for example, imported gasoline had to be mixed with a specified proportion of alcohol distilled by the local sugar industry; imported flour had to be mixed with up to 30 per cent of flour produced by local millers from domestic wheat to which 10 per cent of cassava or manioc flour, 5 per cent of corn flour and 3 per cent of rice flour had been added. This type of protection was extended to the coal industry, too, by making it mandatory for coal importers to buy domestic coal to the extent of 10 per cent of their imports (increased to 20 per cent in 1937). While local coal output rose substantially (by 66 per cent between 1932 and 1938) as a result, the requirement probably contributed to the even more rapid rise in the imports of fuel oil during this period.[52]

[50] This argument is developed in greater detail in the United Nations, *Economic Survey of Europe Since the War*, sales number 1953.II.E.4, pages 219 to 220.

[51] Cf. W. A. Lewis, "Economic Development with Unlimited Supplies of Labour" in *The Manchester School of Economic and Social Studies* (Manchester, England, May 1954).

[52] H. W. Spiegel, *The Brazilian Economy*, page 212.

Industries which have to depend upon high priced raw materials start with a severe handicap. Not only are they likely to require a considerable degree of protection against the competition of foreign imports, but almost inevitably they tend to aggravate the pyramiding of internal costs to the detriment of export activities and the balance of payments and, in the long run, of the rate of economic development too.

In Brazil, as in some other countries, rebates or exemptions from customs duties are conceded to various industries in respect of machinery and essential supplies unless it can be shown that these products could be provided from domestic sources. In the 1940 tariff, for example, exemptions were disallowed on such widely different imports as cotton processing machinery, paper and cardboard manufactures, electric meters and transformers, sodium bicarbonate and manila rope, a range of goods which throws interesting light on the extent to which the country was considered capable of providing for its own needs. Unless hedged around by minimum requirements in regard to efficiency and price, arrangements of this nature may tend to support uneconomic activities and thus retard sound industrial development.

This is in line with another lesson to be derived from the Egyptian example, namely the need to require greater efficiency in return for protection. This might be achieved by periodic review of the tariff structure or by a definite arrangement for the rate of duty to be steadily reduced year by year in order to spur the local industry into more strenuous efforts to increase productivity and lower its costs. The provision that was inserted into the 1934 tariff in Brazil authorizing the reduction of duties on goods, the internal price of which was deemed to have been raised excessively by monopolistic action,[53] scarcely meets the problem of using the tariff as an instrument for inducing greater efficiency in domestic manufacturing. It should be noted, in the case of Brazil, however, that the development of secondary industry, especially since 1939, has itself tended to remove or at least reduce, many of the environmental and other disadvantages which had previously made for low efficiency and high costs.

In India, protection of pioneer enterprises has also succeeded in producing a number of fully competitive industries. In the light of the fact that one of the criteria applied by the 1923 Fiscal Commission was that "the industry must be one which will eventually be able to face world competition without protection", it is interesting to note that customs duties on paper, steel and cotton textiles were withdrawn in 1947 and that on magnesium chloride in 1948. By 1953, sericulture and the match industry were the only activities still requiring the protection afforded to them before the Second World War. During the fifteen years that duty was payable on imported steel, it has been estimated that the output of the principal producer (Tata) involved domestic consumers in excess costs of about 110 million rupees; between 1948 and 1953, however, the availability of local steel saved consumers an estimated 400 million rupees a year on the cost of imported material. In cotton textiles India has changed from a net importer before the First World War to the world's largest exporter (1,109 million yards) in 1950.

The steel industry affords an example of successful protection in other countries, too. In South Africa, for example, the rise in costs in the local industry during and since the Second World War has been appreciably less than the rise in the price of imports, so that the industry, which was heavily protected after its establishment in the early nineteen thirties, has been providing the country with cheaper steel than it would otherwise have had. In Australia, where the steel industry has always enjoyed special protection, the relative decline in costs came earlier, with the currency devaluation and the deflationary policies of the 1930 to 1933 depression. By 1939, Australian steel was among the cheapest in the world: the rise in plant efficiency and the reduction in internal costs gave it a much stronger competitive position than tariff protection had given it. By contrast, though the Mexican steel industry is much older, low plant utilization and low operational efficiency have maintained domestic steel costs at a very high level: in 1950, for example, they were almost double the European level and two-thirds higher than costs in the United States. High tariffs are therefore still used to protect the local industry.

The importance of a periodic review of the tariff is enhanced by the inherent difficulty of selecting industries that merit the support of initial protection, especially in countries in which there is no large body of under-employed labour. This has to be done on the basis of an assessment of future competitiveness, which is a function not only of the economic and technical achievements of the industry in question but also of the changes that may take place in the demand for its product and in the relative costs of competing goods. If protection continues longer than is necessary or at a higher rate than is necessary, it may result in unduly high costs and profits, and by weakening the incentive to greater efficiency it may become increasingly detrimental to further economic development.

The transfer of factors of production to a new protected industry may result in an absolute and relative increase in their earnings. If the industry is inefficient, however, consumers will suffer a loss in real income, measurable in very approximate terms by the difference between the new high price of the product and what the price would have been if supplies had been imported from more efficient factories. Where this "excess cost" is greater than the nominal gain, the new industry may actually be bringing about a decline in total welfare. In one sense, such a tax on consumers would represent the price paid by the community for acquiring a developmental asset; as a communal investment its soundness would tend to be assessed by the rate at which the efficiency of the new industry improved and by the extent to which its product attained a higher quality or a lower cost. The criterion appropriate to governments, however, is not always a purely economic one: in some cases it may be based largely on social considerations, while in other cases the justification for protecting an industry may be a matter of national interest, security or prestige. In general, under these circumstances, direct subsidization of the industry might be preferable to customs protection, unless indeed the tax system itself was very regressive.

[53] The provision appears to have been invoked only once—when the duty on wheat was lowered 20 per cent in 1936.

Except in so far as they lead to productive use of idle factors or induce consumers to save that part of their income previously spent on the import in question, or in the more doubtful circumstances of a profitable and over-protected industry which might give rise to forced savings from overcharged consumers, high protective tariffs do not themselves create capital. Hence, the mere erection of an exclusive tariff wall is not sufficient in itself to bring about any industrial investment in an under-developed country; the necessary resources must be available before the infant industry that is to be protected can be brought into being. Purely protective tariffs cannot solve the basic problem of factor shortage, however useful they may be in encouraging those factors, once they are available, into specific industrial channels into which they might not otherwise have dared to venture.[54]

Nor can tariffs of themselves induce foreign capital to establish industries within an under-developed country. The primary requirement is a market and that may mean an average level of income appreciably higher than that existing in many such countries today. In this connexion, it is worth noting that, while the protection provided in 1930 for the Egyptian textile industry resulted in a fairly rapid expansion of those sections of the industry concerned with the cheaper grades of cotton piece-goods, it had relatively little effect upon production of the finer grades, the local market for which was very small. Although the country is one of the principal producers of high quality cotton, it was not until much later that the more expensive products began to be manufactured in any quantity. Given an adequate domestic market, however, an under-developed country may find it quite possible to devise a tariff which would encourage firms that previously exported their products to that market to establish local branches within the tariff wall.

When industrialization programmes are pursued by a large number of countries at the same time, there is a distinct possibility of "uneconomic" multiplication of new industries, a possibility that becomes even stronger when there are customs and other restrictions isolating the various factories from each other and from the world economy. If for any reason controls are lifted and protection reduced, these industries may find themselves unable to meet foreign competition. Under such circumstances a strong case might be made out for regional arrangements enabling a satisfactory degree of specialization to take place within an area that would offer a reasonable market. Tariff walls around small countries are unlikely to stimulate much sound industrial development, whereas in Central America and the Caribbean, in parts of Africa and the Middle East, for example, there would appear to be regions in which customs unions of a number of such countries might contribute a good deal towards the more effective utilization of local resources.

In summing up this discussion of the significance and limitations of the tariff as an instrument of industrial development, it should first be stressed that, in general, under-developed countries have a fundamental interest in free multilateral trade: not only are most of these countries extremely dependent upon their own export activities, but the very process of development rests upon the possibility of their acquiring the requisite capital goods through the medium of international exchange. Yet the principle of comparative costs upon which the free trade argument is based does not imply the permanence of any particular framework of international economic relations or of any particular pattern of international division of labour. The effects of historical accidents or initial advantages or particular trade policies may well be successfully countered by means of protective tariffs in the country in which they appear to constitute an obstacle to development. Tariffs cannot create any of the factors of production, but they may direct factors which are unemployed or underemployed or less productively employed into industries which by virtue of their direct and indirect effects succeed in raising the average productivity of labour, in diversifying the economy and in laying the foundations for subsequent industrial growth. If this is in fact achieved, then the burden of the tariff—measured by the "excess" costs which have to be met by users of the protected product—will be more than offset when the industry has raised its efficiency to a competitive level and has exerted its full developmental effects upon ancillary industries and upon the economic environment in general.

The place of industrialization in official plans and programmes

The attitude of government in many of the under-developed countries is likely to be better appreciated when it is realized that the disparity between the volume of factory goods available per capita in industrial countries and that available in less developed countries is far too great to be made up merely by an increase in trade. In the fairly prosperous years, 1926 to 1929, for example, in order to raise the average supply of factory goods available to each person in the less developed countries (containing two-thirds of the world's population) to only one-half of the average supply available per capita in the twenty-five most industrialized countries, the inflow of manufactures into the former would have had to increase about sixteen fold, or to twice the total annual value of all international trade at that time.[55] The conclusion that was inescapable at that time—that, for most of the under-developed countries, any major increase in the supply of factory goods would have to depend principally upon the growth of domestic manufacturing capacity—has not been altered

[54] Revenue tariffs, of course, which fulfil their function only in so far as they do not keep imports out, are part of the country's fiscal system and as such, and depending upon the price elasticity of demand for the product in question, may be used to contribute to public savings by way of budget surpluses.

[55] League of Nations, *Industrialization and Foreign Trade*, sales number 1945.II.A.10., page 33.

by any significant narrowing of the gap during the nineteen thirties and forties.

Yet, the principal aim of economic development policies—to raise average standards of living—is not likely to be achieved merely or even mainly by the establishment of secondary industries. Inappropriate, inefficient and high-cost industries, for example, may succeed in diversifying the economy only at the expense of a misdirection of factors and a consequent lowering of real incomes. Within the small domestic market that characterizes most under-developed countries, moreover, industrial enterprises may easily acquire monopolistic powers which are not usually economically or socially beneficial. The increased local demand for food and raw materials may raise prices and thus handicap or divert resources away from the export of primary products; and, coming at a time when imports are being enlarged by new demands for capital goods and, in varying degree, for fuel, raw materials and semi-finished goods as well, this may cause a deterioration in the balance of payments. Coupled with the increase in the rate of industrial investment, the rise in prices of both primary and secondary products may induce inflationary effects, especially if attitudes towards saving and facilities for saving do not undergo appropriate changes. In these circumstances the higher money profits accruing to most traders and certain manufacturers will tend to distort the pattern of demand, increasing the volume of luxury imports and, if the process goes far enough, bringing about a flight of capital. And finally, the more rapid the expansion of the factory system, the greater the required investment in various "overhead" assets and facilities; yet despite such efforts to prepare the physical environment, the movement of workers to industrial areas and factory occupations may give rise to a considerable amount of social disorganization with resultant losses in human welfare.

It is against this theoretical background of the possible results of hasty and ill-considered expansion of the manufacturing sector of the economy that practical industrialization plans should be assessed. Four key sets of considerations and criteria for sound policy suggest themselves: the degree to which the development of various sectors of the economy is balanced; the rate of industrial growth; the order in which various industries are established; and the extent of industrialization aimed at.

The three sectors of the economy whose balance is crucial to sound economic development are agriculture, secondary industry and the economic infrastructure of common services and facilities—water, power, transport and communications, in particular—upon which a specialized exchange economy so greatly depends. In most under-developed countries, agricultural output is the main determinant of the standard of living, and agricultural incomes constitute the main determinant of the size of the industrial market. Therein lies the importance of raising agricultural production prior to (in the case of exports) or at least parallel with (in the case of locally consumed products) the expansion of secondary industry. This increase in agricultural production has to be realized in the face of a rural labour force that is declining or at least increasing less rapidly; hence the importance of all those technical and organizational developments which may contribute to a rise in productivity. Certain overhead facilities—power, water, roads, housing and so on—are also essential to the growth of industry, especially in so far as its centripetal nature leads to its concentration in urban areas.

The need for keeping sectoral advances more or less in step is obviously an important brake on the speed at which industry itself can be expanded, but the rate of industrialization also depends on the country's resource endowment, on the availability of capital—internal or external—and on those qualities in the population which might be summed up as industrial maturity. In small countries and in countries which enjoy no great diversity of natural resources, the rate of industrial growth is likely to be strongly influenced not only by the limitations of the domestic market but also by external conditions as reflected through the balance of payments. In agrarian societies the pace may well be set by the social and psychological factors which govern the processes of personal and group adjustment to the new pattern of life which work in a factory and residence in an urban community involve.

Factors which limit the rate of possible industrial growth also tend to limit its ultimate extent. In particular, the greater the abundance and diversity of natural resources—water, fuel, minerals, soil and so on—the wider is the potential base for industrial development. The degree of possible industrialization is also affected by the country's historical and geographical position in relation to markets and sources of raw material and by the extent to which through trade it is able to participate in the international division of labour. In this respect, the comparative energy and ingenuity of its population will exert a considerable influence upon its ultimate competitive status in the industrial field.

Perhaps more important in the present context is the sequence in which new factories are established. The most appropriate order for the setting up of new industries can only be determined within the framework of a given economy: there are no generally valid criteria of suitability or urgency. By and large, however, if capital and skill requirements, locational pattern and size of plant are regarded as measurable indicators by which new industries can be judged, it would be those with the least need for capital and skill and those which can be economically organized in multiple small units that are likely to fit most readily into the pattern of factor availability and market distribution in the less developed countries.[56] Other things being equal, there-

[56] For an interesting analysis of these indicators as applied to a group of sixty-two different industries, chiefly in the United States, the United Kingdom, Australia, Canada, Hungary, Palestine, Romania and South Africa, see K. A. Bohr, "Investment Criteria for Manufacturing Industries in Under-developed Countries," in *The Review of Economics and Statistics* (Harvard University Press, Cambridge, Mass.), May 1954.

fore, in most under-developed countries it is labour-intensive rather than capital-intensive industries that would appear likely to possess the greatest relative competitive advantage, even when the productivity of labour is somewhat lower than in the more advanced countries.

Present competitiveness may in some instances be subordinated to prospective competitiveness as a criterion of suitability, and some weight would usually have to be given to the probable developmental potential of the industry, the extent to which it is likely to stimulate other economic activities being an important attribute. In some cases, industries which are closely related through product or process are best established at about the same time. Most industries, moreover, have more or less pre-determined external requirements, such as a certain rate of consumption of power and water and need for certain minimal transport facilities and workers' housing; under these circumstances it may be more realistic to assess the suitability not of individual factories but of such investment complexes as are technically appropriate.[57]

Another important determinant of priority is the availability of local raw materials, which is a significant advantage in many instances. The most appropriate product is usually one with as wide a local market as possible, but in some of the less developed countries, where there is a perennial balance of payments problem, great importance is often attached to export potentialities, or the capacity of new industries to produce substitutes for imported goods. The desirability of the industry on social or strategic grounds is also a significant determinant of priorities, and in some areas it is the contribution that the industry might make to stability of employment or earnings that is given particular weight. In most under-developed countries a certain advantage usually attaches to the industry that is capable of yielding a flow of goods in the shortest possible time.

Although these criteria of suitability are rarely likely to be met entirely, or to an equal extent, the relative weight to be assigned to each cannot be decided in abstract or general terms; the characteristics of alternative industries have to be assessed within the economic context of the country and the period in which the investment is to be made. Even if a very precise scale of suitability could be drawn up for the country and the time, the actual course of industrial investment would still have to be largely a matter of judgment rather than calculation, for several of the criteria relate to future rather than present attributes of the industries in question—their ultimate efficiency, their developmental effect and so on.

While, in principle, the governments of the less developed countries almost without exception tend to favour the domestic growth of secondary industry, in practice there is a good deal of diversity in the kind and extent of encouragement which is officially given to industrial development. At the one end of the scale are those governments which confine their support to legislation designed to provide a congenial atmosphere for private investment in manufacturing, while at the other end of the scale are those which assume exclusive responsibility for industrial investment and management. In between are the majority of governments, whose support, though perhaps extending to the actual operations of no more than one or two industrial establishments considered to be of particular national importance, tends to take the form of a wide range of legislative measures affecting not only tariff and fiscal policy but also the availability of credit, the organization of research and training, and the smooth functioning of the capital market and kindred institutions.

Some of the governments which rely on indirect legislative means for promoting industrial expansion base their abstention from more direct practical activities upon a belief that government organization is not the most appropriate for industry. Others are influenced by the fact—often more compelling—that in the less developed countries governments tend to find it difficult to maintain adequate standards of public administration quite apart from the operation of any industrial plants. Nevertheless, in some countries the weakness of public administration has its counterpart in the private economy and, to prevent development plans from being unduly delayed by the shortage of entrepreneurial ability and managerial skills in the private sector, governments have tended to step in, directly or through specially constituted public or semi-public corporations, to start and to operate manufacturing establishments of various types, especially in the field of so-called "basic" industries, which are considered to be of strategic importance to a programme of industrialization.[58]

In this way, government operations in the industrial field have been expanded considerably in recent years in several Asian countries. Here, finance has been as important a consideration as initiative, and in a number of cases mixed enterprises have been formed, using both public and private resources. The proportion of total investment set aside for secondary industry in official development plans, however, has not yet reached very high figures. In the investment programmes of eight countries of the region (Burma, Ceylon, Hong Kong, India, Malaya, Nepal, Pakistan and the Philippines), covering varying periods between 1950 and 1954, manufacturing was allocated some $622 million, compared with $657 million for electric power, $1,657 million for transport and communications, and $2,228 million for irrigation and agriculture. Though government invest-

[57] In this connexion it might be useful to potential investors to have at their disposal studies carried out by a government or international agency, indicating the changes in the pattern of demand likely to take place as industrial activities expand and average incomes rise.

[58] For a more detailed consideration of some of the factors influencing the type of organization appropriate to secondary industry see the *Report of the Seminar on Organization and Administration of Public Enterprises in the Industrial Field*, arranged by the United Nations Economic Commission for Asia and the Far East (mimeographed), and the various papers read on this occasion.

ment in industry may seem small in relation to other forms of public capital outlay, it is, except in India, substantially larger than private investment.

Thus, in Ceylon, where official policy is to encourage savings and induce private capital into industrial investment, recent manufacturing development has in fact been very largely in the hands of the Government. Of the investment postulated in its six-year plan (1951 to 1957) some 6 per cent was intended for secondary industry, including establishments producing cement, coconut oil, ceramics, caustic soda, DDT, paper and fertilizer (ammonium sulphate and superphosphate). Priority was to be given to those industries which use domestic raw materials or are likely to raise the productivity of agriculture. Apart from direct government investment, it was proposed to use a newly created Ceylon Development Corporation to initiate, sponsor or assist with financial, technical or managerial facilities, promising ventures in industry as well as in agriculture and commerce. Among the new industries whose establishment has been proposed are textiles and steel production.

Mainland China's first five-year plan (1953 to 1958) was much more heavily weighted towards secondary industry, with a trebling of capacity as the initial target, all to be carried out by the Government. Ten major capital goods projects were emphasized in the plan: a motor vehicle plant, a turbo-generator plant, and a shipyard—all new enterprises—and the rehabilitation and expansion of Japanese-built factories producing medium lathes, milling machinery, pneumatic tools and electric cables. The steel industry was also to be expanded. In addition there was to be a certain amount of investment in lighter industries: flour mills, a sugar refinery, a paper mill, a rubber factory, a pharmaceuticals plant, as well as a number of cotton mills.

In Burma, since 1946 industrial investment has also been almost entirely in the hands of the Government. Sugar, textiles and building tiles are among the products of new government factories, and industries manufacturing paper, chemicals and iron and steel are among those specified in the country's 1953 to 1960 development programme.

Only about 8 per cent of the public investment provided for in India's five-year plan (1951 to 1956) was to go into secondary industry. Almost half of the sum involved was for a new iron and steel plant—the steel industry being one of the basic industries for which the Government has accepted a special responsibility. Though the development plan as such placed much more emphasis on agriculture, transport, power and social services than upon manufacturing, an Industries (Development and Regulation) Act promulgated just as the plan came into operation in 1951 set up a Central Advisory Council, for industry, one of whose main functions was to help dovetail private investment into the wider development plan. The Act gave the Government, through a Ministry of Production set up in 1952, considerable power to investigate, regulate and undertake the management of a large number of different industries. Under the Central Council a number of industrial "development councils" have since been established to assist in co-ordinating investment, distributing materials, training personnel, organizing research and raising efficiency.

The Government's plan was based on the assumption that a substantial volume of private investment in manufacturing—more than double the official amount—would take place simultaneously. These private investments were expected to cover a wide industrial field, including among the largest: petroleum refining (640 million rupees); metallurgy (iron and steel, 430 million rupees and aluminium 90 million); textiles (rayon, 151 million rupees and cotton 90 million); cement (154 million rupees) and chemicals (heavy chemicals 73 million rupees, pharmaceuticals 35 million and fertilizers 21 million).

Government initiative has been taken in several industries besides steel: fertilizers, electrical machinery, chemicals, aircraft, machine tools, locomotives and rolling-stock, shipbuilding, cables, radio and telephone equipment, pharmaceuticals, and prefabricated houses. Provincial authorities have also established or participated in manufacturing enterprises: in paper, cement, plywood and ceramics, among others. Apart from the immediate investment in industrial plant and equipment, a sizable fraction of the proposed expenditure under the heading of social services—health, education and housing, in particular—was directly related to the process of industrialization. In the first three years of the plan, for example, more than 58 million rupees was spent on subsidized housing for industrial workers.

In Taiwan, all the industrial enterprises built by the Japanese passed into the hands of the new Government in 1945, and shortage of capital in the private sector has prevented any subsequent disposal of these. Recent government policy has been to encourage industrial development in order to meet domestic requirements in defence supplies as well as in essential consumer goods, although the only industry to receive particular emphasis in the four-year development programme was that producing fertilizers—an indication of the importance attached to increasing agricultural output.

Among the official development plans for Asian countries, that of Pakistan allocated the greatest share (20 per cent)[59] of gross proposed expenditure to manufacturing industry. This is partly a reflection of the 1947 partition, which left in India most of the industrial establishments, even among those using raw materials from Pakistan. Under the six-year development plan (1951 to 1957) some 480 million rupees was earmarked for secondary industry, while the "two-year priority" portion of the plan called for the expenditure of 250 million rupees on establishments processing part of the country's own output of raw materials: jute and cotton mills, cement plants, vegetable oil mills, steel foundries and chemical and pharmaceutical factories. In the longer term plan, paper mills, sugar refineries, glass works and fertilizer factories were included, the emphasis again being on industries using domestic raw materials. Most of the funds set aside for these industries were intended to supplement the initiative and capital of private investors, the only industries reserved entirely for government ownership and management being those associated with defence and power, transport and communications equipment.

In the Philippines, the Government's development programme since 1948 has been concentrated largely on the agricultural sector: first, to raise export production and, later, to restore self-sufficiency in respect of food. In the industrial sector economic diversification has been sought chiefly through tax incentives and provision of credit and, incidentally, through import control. Among government investments in this latter field have been a fertilizer plant, a cement factory, a shipyard, a glass works and a ramie textile mill. Although the Government has ostensibly favoured industries that would earn or save dollars, be brought into production quickly, stimulate other industries, require little capital in relation to output, use mainly domestic materials or subsist on the internal market alone, it would appear that a good deal of recent investment has been in consumer goods industries using imported raw materials.

Official economic development policies in most African countries have placed little emphasis on industrialization. In areas in which the population lives in a pre-commercial

[59] Only 18 per cent if allowance is made for the fact that social service expenditure was planned to come from the ordinary annual budget.

society, a good deal of preliminary investment is required before the environment is suitable for extensive or rapid industrial growth. In the Non-Self-Governing Territories of Africa, post-war development plans have been based very largely on the assumption that secondary industry was a field for private rather than public investment. It was excluded entirely from the Belgian Congo programme of government expenditure and had, up to the end of 1952, accounted for a negligible proportion of total public development expenditure in French West Africa and French Equatorial Africa. In 1952, less than 2 per cent of government investment in French North Africa was devoted to industrial equipment. In the British dependencies transport and communications, agriculture and education, health and other social services have been the principal fields of investment.

In the Union of South Africa the bulk of industrial investment is in private hands. Apart from the activities of the Industrial Development Corporation, which are in fact only marginal, the Government's main device for encouraging secondary industry is a broadly protective tariff, with moderate duties, such as is common to many of the less developed countries. There is, however, a sizable volume of direct public investment in certain fields—iron and steel production, and the manufacture of DDT, rock phosphate fertilizer, oil from coal, and railway rolling-stock, in particular—in which the Government for one reason or another owns production facilities. Conscious of the wasting nature of its mineral resources, the Government has long been anxious to diversify the local economy. Far from trying to accelerate the rate of industrial expansion, however, traditional policy has involved the support of agriculture, even at the cost of higher prices and higher taxes, while in recent years the Government has been hard pressed to keep abreast of the demand for basic services—road and rail transport, electric power and water supply—for which it is largely responsible.

In Australia, too, the rapid post-war growth of secondary industry has not been the result of government stimulation. Indeed, recent government policy, through control of credit and capital issues, has been directed more towards selective discouragement of less essential industries. By means of special depreciation concessions for tax purposes, in fact, such encouragement as has been given has gone to the primary industries.

Although in most countries of Latin America the government has long sought to broaden the industrial base, there has so far been comparatively little detailed planning or programming of industrial development. In a number of countries, development corporations have been among the chief instruments for implementing government investment plans in secondary industry but, in most, private industrial investment—domestic and foreign—has been greater.

In Chile, secondary industry has been encouraged by tariff, tax and foreign exchange policies and, especially since 1939, by the investment policies of special institutions. In recent years, however, increasing concern has been shown over the failure of agricultural production to expand in keeping with the demand for food and raw materials. As a result, government policy has had to shift emphasis somewhat by providing for relatively greater investment in agriculture, including borrowing from the International Bank for Reconstruction and Development for this purpose.

In Argentina, there was a rapid growth of manufacturing industry during the Second World War, largely under private initiative but stimulated and guided by the Government, especially through the lending policy of the Banco de Credito Industrial Argentina (established in 1943). At the same time the price policy followed by the government purchasing agency (IAPI) in respect of agricultural produce, and the continued movement of labour into industry and other urban occupations were reflected in a decline in both agricultural output and rural incomes. Largely as a result of this, no increase in exports was possible and foreign exchange earnings remained below import requirements, internal demand for manufactured goods was insufficient to sustain the increasing capacity of local industry, and in the towns occasional rationing of certain items of food became necessary. Government policy began turning towards the support of primary activities in 1948, and in 1949 the Banco de Credito Industrial ceased lending to secondary industry except where the investment was part of the official programme or was judged to be in the national interest. As a result, the volume of private industrial investment declined markedly in 1950 and 1951. The second five-year plan (1953 to 1957) placed agriculture together with fuel and power, mining and the iron and steel, metallurgical and chemical industries in the highest priority. There were nine degrees of priority, and mechanical engineering and other manufacturing industries were placed in the fourth.[60] Though the plan provided for the expansion of several basic industries—iron and steel, heavy chemicals, cement, pulp and paper and motor vehicles in particular—partly through public corporations, partly through private concerns, and partly through mixed enterprises, it is the proposed increases in agricultural output—wheat 27 per cent above the 1947-51 average, linseed 62 per cent above and maize 154 per cent above—and in agricultural exports —meat 50 per cent above 1951 shipments and maize three times the average 1947-51 figure—that are most significant in the present context.[61]

In Turkey, the first industrialization policy was adopted in the nineteen twenties with the establishment of a Bank of Affairs to undertake both investment and administration in the industrial field (1924), the enactment of fiscal and other privileges for industrial entrepreneurs (1927), and the grant of tariff protection to secondary industry (1929). The process was accelerated in the nineteen thirties by more active state intervention, partly through the newly created Sümer (investment) Bank, which resulted in an appreciable diversion of resources into the industrial sector, with the textile, iron and steel, and paper and pulp industries receiving the bulk of the funds used in the Government's five-year development plan. The war-time and early post-war shortages of manufactures accentuated the importance of industry and of state investment and it was not until 1950 that, largely because of inflation and balance of payments difficulties, the Government began to assist agriculture—by price guarantees, credit, land reform and road building, for example—to make up some of the leeway. Simultaneously, with the formation of an Industrial Development Bank, government policy moved towards the encouragement of private investment in industry: public investment in industry was confined largely to the modernization of some of the government-owned factories. Of the increase in the gross national product between 1948 and 1952, 57 per cent was contributed by agriculture, as against a mere 9 per cent by manufacturing.[62]

In Yugoslavia, industrialization became a government policy in the nineteen thirties, partly as a result of agricultural depression and population pressure. There was comparatively little private industrial investment of domestic capital, however: most industrial capital was of government

[60] *Review of the River Plate*, 9 December 1952, pages 14 and 15.

[61] *Ibid.*, pages 34 and 35; issues of 30 December 1952, page 5, and 9 January 1953, page 5.

[62] Cf. United Nations, *Economic Survey of Europe in 1953*, sales number 1954.II.E.2., page 91. The relative contribution of agriculture to the increase in the gross national product was accentuated by the greater rise in agricultural prices.

or foreign origin. In the first five-year plan (1947 to 1951) worked out after the war, when the economy had been largely socialized, manufacturing (apart from the metallurgical industries) was allotted 20 per cent of total investment compared with only 7 per cent in agriculture. After 1948, the plan underwent some modification, but the "programme of key projects" worked out in that year continued to stress investment in basic industries. Some further modifications of the plan, in 1951, introduced a greater degree of decentralization. Over-all economic policy, with its accent on secondary industry, remained the same, however, and part of the 1951 scheme was the creation of a special fund for the financing of key industries. Investment in agriculture was on a smaller scale; combined with drought in 1950, 1952 and 1954, the effect of this was to reduce the contribution that this sector might have made by way of foreign exchange earnings or saving, to the industrialization programme.

In Poland, post-war policy has continued to stress the expansion of manufacturing. Both the three-year reconstruction plan (1946 to 1949) and the six-year development plan (1950 to 1955) postulated heavy investment in secondary industry, first in rebuilding and then in expansion. Between 1947 and 1951, while the proportion of the national income used for investment rose from 8 per cent to 19 per cent, the proportion of gross investment going into industry, including mining, rose from 32 per cent to nearly 43 per cent. In 1951, one-half of the gross national product was derived from secondary industry, including mining, and less than one-fifth from agriculture, including forestry.[63] In 1953 some modification was introduced into the last two years of the plan, the effect of which was to slow down the rate of industrialization: agricultural investment was increased at the expense of industrial investment, and within the industrial sector, light (consumer goods) industries benefited at the expense of heavy (capital goods) industries.

In Romania, post-war planning has also placed greatest emphasis on industrial expansion. Of the total investment under the five-year plan (1951 to 1955) some 44 per cent was intended for heavy industry and just over 9 per cent for light industry, compared with 10 per cent for agriculture.[64] Between 1950 and 1955, a two to threefold increase in output was planned for the metallurgical, machine-building, metal-working, chemical and textile industries, a somewhat smaller increase in the wood-working and ship-building industries and a somewhat larger increase in the food industry.[65] A slowing down of the rate of investment in producer goods industries was effected in 1953, however, in order to allow for the more rapid development of agriculture and a number of consumer goods industries.

Much the same course was followed in Bulgaria, where in 1951 engineering production was seven to eight times the 1939 level, chemical production four to five times that level and textile production not quite double.[66] Under the five-year plan (1949 to 1953) investment in heavy industry was almost five times that in light industry. As in Romania, however, there was a switch towards agriculture and consumer goods industries towards the end of the plan period.

It is difficult to make valid inter-country comparisons on the basis of plans and programmes which are by their nature subject to sudden modification and change; to obtain a clearer indication of the relative importance of secondary industry the actual course of development in the post-war period would have to be taken into account. This lies outside the scope of the present study.

[63] Cf. United Nations, *Economic Survey of Europe since the War.*

[64] *Ibid.*

[65] Cf. *The Planning of the Peoples' Economy of Romania* (Russian translation, ed. Vasiljev) (Moscow, 1951).

[66] United Nations, *Economic Survey of Europe since the War.*

In general, industrialization has probably played a larger part in the policies of the centrally planned economies than in those of countries which rely to a greater extent on private initiative and enterprise. Though the degree to which resources are controlled by government helps to determine the scope and effectiveness of official action in this field, however, it is not of itself necessarily a decisive factor, and, due allowance being made for differences in the underlying circumstances, the rate of industrial growth in some of the planned economies in recent years does not appear to have been markedly greater than that in Australia or Brazil or South Africa, for example, where it has been to a much larger extent the result of private investment decisions. In some of the under-developed countries—Turkey, for example, and to a lesser extent Burma—the pace of industrialization actually seems to have been quickened somewhat when government control over the development of manufacturing was relaxed in order to make greater use of private enterprise, both domestic and foreign, independently and in association with public capital. In Ceylon, as in Taiwan, the Government is said to be anxious to transfer some of its departmentally organized industrial undertakings to private ownership. Nevertheless, planned industrialization, centrally executed, has, by virtue of the control exercised over both consumption and investment, usually resulted in a telescoping of the development process, and in a more rapid transition from an agrarian to an industrial economy. Over a longer period, however, the rate of growth of the manufacturing sector, even in planned economies, has to be geared to the development of other sectors of the economy, if raw materials are not to grow scarce and consumption unduly restrained.

Other things being equal, large countries with greater and more diverse resources and potentially more extensive markets are likely to have a better prospect of industrializing than small countries, and secondary industry is therefore likely to feature more prominently in government plans and policies among the larger under-developed countries. More immediate matters, however, may determine the relative volume of direct government investment in industry during particular periods. Thus, in India, where the agrarian problem is pressing, a much lower proportion of government investment under the development plan is to go into manufacturing than is the case in Pakistan, a smaller country, which, though possessing a much lower industrial potential, has a less urgent rural situation.

In so far as government planning is concerned, however, the degree of industrialization already attained may offset the effect of size, for many of the larger under-developed countries—Brazil, for example—have already acquired a certain industrial stature which tends to make direct government investment in new manufacturing ventures less necessary and perhaps somewhat less effective than it may well be in smaller countries—Ceylon for example—which in industrial terms are less advanced.

In general, the governments of food-exporting countries (such as Australia or Burma) have greater latitude in the measures they can adopt to foster manufacturing industry than the governments of food-importing countries (such as India or the Philippines), whose first charge is likely to be agriculture. Even in the case of food exporters, however, the need for foreign exchange to support the importation of capital goods and raw materials tends to limit the extent to which resources can be diverted from agriculture to the detriment of the quantity or the cost of the produce available for export.

A country with a high density of population and low productivity of labour in agriculture, such as Egypt, may also find industrialization plans difficult to implement through the use of internal resources by government. In these circumstances the rate of development tends to depend much more upon the country's ability to borrow capital and to attract foreign enterprise. The relaxation of laws governing foreign investment which has recently taken place not only in Egypt but also in countries such as India, Israel and Turkey, probably reflects these conditions.

The various techniques for implementing an industrialization policy are not necessarily mutually exclusive, and in fact few countries rely solely on any one method. The choice varies with the economic circumstances of the country, its traditions, its institutions and the administrative strength of its government. Industrialization is not an end in itself: it is merely one means of raising standards of human welfare. Each country has therefore to make its own decision concerning the nature and rate of industrial growth—that is, the proportion of current resources it is prepared to invest and the direction in which investment is likely to yield the greatest flow of future satisfactions—and concerning the institutional means by which its plans are likely to be most effectively carried out.

Chapter 4

INTERNATIONAL MEASURES CONDUCIVE TO INDUSTRIALIZATION

The progress of secondary industry in any under-developed country depends for the most part upon internal economic conditions and policies, but no country, least of all an under-developed one, is independent of events outside and unaffected by them. External forces, indeed, are constantly helping to shape the course and influence the speed of the industrialization process, and in this section some consideration will be given first to the various ways in which actions in industrial countries are likely to affect the growth of industry in less developed countries and then to the possibility of action through international organizations.

The Role of Industrial Countries

The economic relationships between the industrial countries on the one hand and the under-developed countries on the other, find expression in the movement of the factors of production—particularly labour and capital—and of the various commodities which those factors produce. In the subsections that follow, commodity movements and factor movements will be briefly analysed in order to indicate the manner and extent of their effect upon the industrial growth of the less developed countries. The section concludes with a sketch of that combination of factor movements that has become known as technical assistance.

International trade

It was mentioned in the preceding chapter that, potentially, foreign trade is one of the chief instruments of industrialization in the hands of the under-developed countries. Its value for this purpose depends directly on the nature of the commodities exported, the volume of export earnings (and in recent years the currency in which they are realized), the stability of these export earnings, the nature of the commodities imported and the terms of trade, and indirectly on the inflow of capital and the degree of internal monetary stability.

Though, in general, the export activities of under-developed countries deal largely if not exclusively with primary products, they contribute to the industrialization of the country to the extent that they lead to the establishment of processing factories and in due course to the more or less complete fabrication of materials and to ancillary industries. Thus the trade in raw cotton tends to lead to the establishment of ginneries and the export of the less bulky cotton lint. The availability of cotton seed from the gins leads to the erection of oil presses and the establishment of mills producing feed cake. The availability of cotton lint leads to the construction of spinning mills and, weaving mills usually having been set up somewhat earlier, ultimately to the development of a more or less integrated cotton textile industry.

A similar pattern was followed in the growth of the large jute industry of India, though in recent years political events have reversed the historical succession in which manufacturing tends to follow agriculture. As the partition of the country in 1947 led to a substantial degree of separation of the sector producing raw materials from the sector producing finished textiles, the jute growing areas falling largely to Pakistan, India has made a considerable effort to increase the domestic cultivation of jute so as to keep the mills supplied with raw material from indigenous sources. Pakistan in the meantime has undertaken a corresponding investment in mills and other jute processing facilities.

Other primary activities originally directed towards export markets have in some countries formed the basis of associated secondary industries. In Chile, for example, the copper mines have long fed domestic smelters and in more recent years a substantial proportion of the total output has been refined locally. Since the war, a small but growing amount of this refined copper has been absorbed by fabricating plants which now provide much of the elementary material for the country's electrification programme.

The extent to which primary activity designed in the first instance to serve foreign markets is likely to lead to a local processing industry and then to secondary industries utilizing its product depends upon the proportion of weight lost by the material in the course of operations, relative freight rates to export markets, the size of the internal market for the more fully processed product, the technical feasibility of carrying on the secondary industries in question near the source of the raw material or at least in the under-developed country, as well as all the other economic determinants of the suitability of local manufacture. In general, however, the availability of local raw materials is an important advantage in the development of secondary industry and to this extent the growth of primary export activity may indirectly benefit the process of industrialization.

Two characteristics common to under-developed countries may also affect the impact that foreign trade may have upon the course of their industrialization. These are the comparatively low level of local wages and, in

part its corollary, the limited nature of the local market, both of which tend to magnify the importance of export markets for domestic industry. The possibility of selling abroad a significant proportion of its factory output played a significant part in the expansion of secondary industry in Japan, and the export of manufactures is beginning to influence the industrialization process in such countries as India and the Union of South Africa.

Nevertheless, the overwhelming bulk of exports from the less developed areas still consists of primary products, and the main function of export activities is not the stimulus they may give to local processing and manufacturing, but their more obvious purpose of earning foreign exchange. As indicated in the previous chapter, the growth of secondary industry is heavily dependent upon imports in most of the under-developed countries. Hence the rate and extent of industrial development are directly affected by the volume of export earnings, and anything that can be done to increase those earnings, whether through an expansion of the volume of exports or a rise in their unit price, will, by permitting an expansion of imports, help to reduce whatever restraint may be imposed upon the industrialization process by the balance of payments.

Industrial development is affected not only by the magnitude of export proceeds but also by their stability. Violent fluctuations in a country's ability to purchase imports are inevitably disruptive. The capacity of an under-developed country to absorb capital goods, for example, does not vary greatly from year to year, though it is likely to expand gradually during a period of economic development when the volume and efficiency of locally available factors of production undergo a steady increase. A sudden expansion in exchange earnings may result in excessive or ill-considered importation. In most cases the result will be a substantial increase in the proportion of consumer goods imports—some of a luxury nature—to satisfy the enhanced demand generated in the export sector, and in some cases this may be followed by the arrival of plant and equipment which cannot be effectively used. Conversely, and even more seriously, a sudden drop in exchange earnings is likely to result in the retardation or abandonment of development projects, a rise in unemployment in the exchange sector, the return of many workers from the affected industrial areas to the village economy and, in general, a considerable setback to industrial growth. If the balance of payments difficulties last unduly they may tend to foster autarkic policies, including industrialization at a much greater domestic sacrifice.

There is no need to dwell at any length on the problem of instability in export earnings; as one of the commonest economic afflictions of less developed countries, it has been adequately discussed elsewhere.[1] In the present context it is sufficient to point out that the faltering of an import programme associated with the industrialization of an under-developed country has its counterpart in a falling off in exports from the more advanced countries. Arrangements which help to stabilize, or at least prevent, the more extreme fluctuation of the foreign exchange earnings of the less developed countries are therefore in the interest of trade in both directions. In principle such arrangements might include compensatory movements of capital; in practice in the past, however, capital movements have accounted for only a very small fraction of the gross foreign exchange receipts of under-developed countries and, what is more, they have tended to fluctuate even more violently than export proceeds and usually in the same direction. Hence the main burden of stabilizing foreign exchange income would appear to rest on commodity schemes.

Acquiring foreign exchange is usually a much more difficult task than spending it, but even the latter presents certain problems if the industrialization programme is to gain the most from available resources. In general, an entrepreneur in an under-developed country is faced with the task of acquiring the most appropriate capital equipment for a specific industrial purpose and in a particular economic environment, from sources with which he is often quite unfamiliar. As many equipment-producing industries in industrial countries comprise small groups of firms practising a high degree of functional specialization, they are sometimes poorly organized from the point of view of catering for these very special requirements. It is often impossible to equip an entirely new factory by means of a co-ordinated set of requisitions addressed to a single producer; machines normally have to be bought one by one from different makers and the job of designing the factory component by component falls upon the industrialist in the under-developed country. Where the plant is large enough, a consulting engineer is customarily retained and the burden of dealing with various equipment producers and constructing an integrated factory unit from its multiple parts is left in his hands. In the case of the smaller plants that are common in less developed countries, however, the local industrialist often has to solve the problems himself with the aid of whatever expert advice he can obtain on the local scene. Even when consultants are retained, entrepreneurs in less developed countries tend to have too little confidence in such outside help to make the most effective use of it.

This type of problem does not lend itself to any easy immediate solution. In the long run, presumably, the demand for small integrated factories will be effective enough to be recognized and met, in some cases by a new group of specialist intermediaries combining the functions of buying agent and consulting engineer, in other cases by some modification of the organization of the equipment-producing industry resulting in the emergence of designers and manufacturers of complete plants for specific purposes and of various sizes. This, indeed, has already begun to happen: certain Japanese firms have recently been offering to sell in India and other

[1] See in particular United Nations, *Measures for International Economic Stability* (sales number 1951.II.A.2, *Instability in Export Markets of Under-developed Countries* (sales number 1952.II.A.1), and *Commodity Trade and Economic Development* (sales number 1954.II.B.1).

parts of south-eastern Asia complete, ready-to-assemble factories, each designed to produce one of a variety of common consumer goods.

This is too technical a question to be pursued here; it is mentioned merely in illustration of how industrial growth in less developed countries may be hampered or assisted by particular forms of organization and initiative in the advanced countries from which most of their capital goods have to be imported. There are other things affecting the accessibility of capital goods, however, which governments in industrial countries are often in a better position to influence or control.

Among these, delays in the production and delivery of plant have held up industrialization plans from time to time in the past, especially during the post-war period when reconstruction demands lay so heavily upon the capital goods industries of more advanced countries. Where exports from these countries come under government control, much can be done, at least on the administrative level, to facilitate the delivery of key items of equipment, such as power plant and transport material, lack of which so often constitutes a bottleneck in the industrialization programmes of less developed countries. When trade is carried on under a bilateral agreement, there is a special obligation on the two partners to expedite their respective exports. This has been made difficult on occasions in the post-war period when, because of the inconvertibility of some important currencies, orders for capital equipment have tended to concentrate on particular sources of supply.

It is often necessary for primary producing countries to sell their exports for inconvertible currencies; in the case of a number of commodities the hard currency markets are incapable of absorbing more than a small fraction of the output. In 1952 Cuba agreed to sell sugar to France against part payment in French francs, and shortly afterwards Nicaragua began to sell for west German marks, while many raw material producers find their chief markets in the sterling area. These problems run beyond the scope of the present study; here it is perhaps sufficient to point out that although the possibilities of direct government action are usually very limited, anything that helps to increase and speed up the export of plant and machinery required by under-developed countries—whether by relaxing export controls, sponsoring trade missions and exhibitions, adopting internal economic policies which are favourable to currency convertibility and multilateral trade or by any other means —may be expected to assist the industrialization process.

Much the same is true of the price structure of capital goods. A rise in the price of equipment relative to that of primary products exported by less developed countries is obviously inimical to their industrial growth. Commodity agreements may be able to prevent sudden falls in raw material prices; pursuit of an anti-inflationary policy and maintenance of a reasonable degree of competition between equipment producers in industrial countries may tend to prevent rapid increases in plant and machinery prices—beyond that it is likely to be difficult for any effective government action to be taken. Even if it were possible, any attempt to freeze the terms of trade of any country or group of countries would go a long way towards halting the process of economic change and development.

In this price situation there is an element of paradox, for while favourable terms of trade will provide funds for the importation of capital goods, the more profitable the production of primary materials the less necessary and the less attractive is investment in secondary industry likely to appear. High export prices often aggravate domestic inflation—as in some coffee producing countries in the recent past and in many raw material producing countries during the early months of the Korean hostilities, for example—and they hamper efforts to diversify the local economy by transferring resources to manufacturing. The latter problem is accentuated whenever the elasticity of raw material supply is higher when prices are rising than when prices are falling.

A field in which the industrial countries are usually better placed to take practical measures is the financing of equipment exports. While trade in ordinary consumer goods, which generally consists of a very large number of comparatively small consignments, can under normal circumstances be financed through the commercial banks and the bill market, exports of capital goods often involve a much smaller number of larger payments. The magnitude of individual contracts for factory installations is often such that special credit and insurance facilities are required to finance them. As neither the producer nor the commercial banks may be in a position to perform this function, it is a field in which special institutions—perhaps government-operated or government-sponsored—may be required. Several industrial countries—the United Kingdom and western Germany, for example—have established facilities for granting extended credit (up to five years in some instances) to foreign buyers of large capital items in approved transactions and for insuring the supplier or the lender against part of the risk of default on the debt. An interesting example of the use of such an export credit for industrial development is afforded by the Franco-Indonesian agreement of June 1954, under which 12,000 million francs are to be advanced for periods up to seven years, the capital goods to be accompanied by technicians to aid in installation and operation as well as the training of local Indonesian personnel.

One other point deserves mention in the present context. Commercial agreements which aim at a bilateral balancing of accounts usually tend to freeze the pattern of trade and probably tend to militate against the industrialization of the less developed partner.[2] The conditional selling of strategic capital goods, raw ma-

[2] This, of course, does not imply that trading arrangements which have the effect of stabilizing the price of important primary exports at satisfactory levels or of providing credit for the importation of capital goods at reasonable prices are not to be welcomed by under-developed countries in the course of industrialization.

terials or fuels – though presumably a legitimate weapon in commercial bargaining—may have unfavourable results when either partner refuses to sell certain commodities unless the buyer purchases certain others or unless the buyer supplies certain specific goods in exchange. Negotiated arrangements of this nature are probably inescapable in a world of currency restrictions and import controls, but it is important that their potentialities for distorting the pattern of industrial growth be clearly realized. Similarly, though tariff reductions usually tend to promote international integration, bilateral agreements between countries at disparate levels of development may have certain disadvantages for the less developed partner. For example, an agreement for steady lowering of duties by both, while possibly helping to stabilize export markets, is likely to reduce customs revenue—often an important source of government income—and may also make it harder to regulate imports in case of balance of payments difficulties. Moreover, if duties are lowered without reference to the position of local industries, the less developed country is foregoing use of the tariff as an industrializing instrument.

International migration

The impediment to industrial development which flows from the inadequacy of the qualifications of the local supply of labour in respect of knowledge, skill and entrepreneurial ability must be overcome largely by domestic action along the lines suggested in the preceding chapter. Acquisition of these factors of production from abroad, however, is likely to remain an important, if supplementary, means of meeting shortages and speeding up industrial growth.

The most common way of acquiring these factors from abroad is immigration, to which, indeed, must be ascribed a good deal of the industrial development of the New World. Most of this migration was an outflow from Europe but there are other illustrations of the stimulation of industry by immigrant groups—the Chinese in various countries of south-eastern Asia, the Indians on the east coast of Africa and the Japanese in Brazil, for example. In some cases the immigrants introduced completely new industries; in other cases they brought new techniques for use in established industries. Where the indigenous population was relatively small, as in Australia and Canada, immigration also provided a substantial proportion of the less skilled manpower required by expanding industries.

Where immigration has been on a considerable scale it has also exerted an indirect influence on industrial development by creating a demand for manufactured products, and factories have been established to cater for the particular needs of the new population group.

In most of the less developed and newly developed countries, immigration has tended to follow as well as influence the rhythm of local economic growth. During periods of expansion when there was an increase in the ratio of natural resources and capital to labour, immigration was usually encouraged; when for any reason the rate of growth slackened there was usually a tendency to limit the number of new entries, much greater care being taken to select candidates on the narrow basis of their assimilability or their potential capacity to contribute to the development of the new economy without any threat of domestic unemployment.

Of the immigration that has affected industrial development most in the present century, that which has been incidental to the process of foreign investment deserves special mention. In general, the establishment of foreign-owned enterprises has entailed the employment of personnel from the country of origin, at least in administrative and technical posts and in many cases in most of the positions for which specially trained or skilled workers were required. Many industrial workers brought into a country in this way have remained there permanently; others have trained indigenous workers for the job.

Recognition of the value of foreign-owned factories as training grounds for various industrial skills as well as managerial and administrative functions is implicit in the regulations which govern the establishment of such enterprises in many less developed countries.

> One of the recent statements made in this connexion was that of the Prime Minister of the Gold Coast, a country in which few if any of the foreign employees of industrial firms have settled permanently. Admitting that the number of Africans of senior technical, professional and managerial calibre would be extremely limited for some time to come, the Government is nevertheless determined to follow a policy by which an increasing number of experienced African workers will become available. Hence, "the degree of warmth with which any new enterprise will be welcomed will depend on the arrangements proposed for training and promotion of Africans".[3]

This valuable training function is not confined to in-plant facilities offered by foreign-owned factories with their qualified immigrant staff. Industrial countries have from time to time provided similar facilities in many domestic establishments to which trainees from less developed areas have been invited. The scale on which this exchange has taken place could probably be expanded, both on the private level by industrial firms with branches in under-developed countries and on the government level by scholarships or similar grants to selected young workers for courses in technical schools and apprenticeship in suitable factories.

While the immigration of workers associated with a specific plant has usually tended to make a greater direct contribution to the industrial growth of the underdeveloped country in which it is established than a comparable volume of individual immigration, the latter has been of much greater magnitude and is therefore likely to have had a more important total effect, not only through the use in industry of such skill, knowledge and energy as are embodied in the individual, but also through the less direct impact of personal instruction

[3] See the report on "Foreign investment in the Gold Coast" in *African World* (London), April 1954, page 27.

and example in the workshop and, as suggested above, the expansion of the domestic market.

Most under-developed countries have encouraged immigrants to bring with them at least their professional tools and equipment, if only by remitting customs duties on their entry; some have specifically stressed the desirability of the proper equipment of the immigrant. This was the attitude of Brazil, for example, when foreign building artisans were being recruited.

Emigration of unattached workers has probably undergone a relative increase in recent years, at least from Europe, where several of the countries that have long been important sources of immigrants—Spain, Portugal and Greece and, to a much smaller extent, the United Kingdom—have suffered in varying degrees from a chronic shortage of capital, though in Italy capital exports are actually favoured in cases in which they will definitely result in the emigration of a sufficient number of persons. In the post-war period, the majority of the refugees and displaced persons who have emigrated have possessed little or nothing in the way of physical or monetary capital. It should not be overlooked, however, that each emigrant represents the investment of a substantial amount of capital, equivalent in effect to what it would have cost to bring up and educate a worker of comparable ability and skill in the country of destination.

During the last three or four decades the international movement of labour and the international movement of capital have tended to originate from entirely different sources. The main exporters of capital rely very largely on the employment of local workers and materials in the country of destination. At most, the capital is accompanied by a nucleus of key persons who perform certain strategic functions—plant erection, technical and financial administration, management—and rarely expect to stay permanently in the country. In the same way, part of the international flow of capital in the post-war period—to Australia and Israel, for example—has been designed to finance the absorption of immigrants who had come from countries quite different from the source of the capital. The recently completed oil refinery built in Aden for a British company by a United States concern which employed workers recruited in Italy epitomizes this divorce between labour flow and capital flow.

In consequence of this separation, immigration now tends to be much more deliberately regulated in accordance with the over-all availability of capital on the one hand and the requirements of industrialization or more general economic development on the other. The recruitment of Italian workers for Belgian coal mines, Swiss hydroelectric construction and French beet fields in the post-war years[4] and of Mexican and West Indian workers for certain United States industries during the war[5] are examples of the controlled movement of labour aimed at relieving particular manpower shortages in specific branches of economic activity. More generally, most of the less developed countries in which there is an adequate or even abundant supply of unskilled labour, tend to restrict immigration to specially qualified groups or give preference to such groups as would be able immediately to play a constructive part in the country's industrial growth. Thus, when recruiting has been carried out in recent years for the purpose of obtaining specific types of skilled worker, the most fruitful fields have been the industrial countries—the Netherlands, Germany, Austria and Italy, in particular.

The same process is discernible in cases in which immigration laws have been relaxed in order to facilitate the entry or naturalization of workers with special qualifications.

This was the effect of law No. 818 of 18 September 1949 in Brazil. In Chile, where the employment code requires that at least 85 per cent of the workers in any enterprise must be of Chilean nationality, special exemptions are granted to specially qualified foreigners who could not be replaced by local employees.[6] In Colombia, the maximum proportion of foreign workers in any enterprise is 10 per cent in the case of ordinary unqualified personnel, but 20 per cent in the case of trained personnel in positions of responsibility or control; and special exemptions may be granted to foreigners capable of training local workers, to foreigners recruited as part of the country's immigration programme and in the case of certain concerns of national importance.[7] In Costa Rica there are comparable exemptions to the general regulation limiting the proportion of foreign employees and their wages.[8] In Cuba these proportions are fixed at a maximum of 50 per cent, but again exemption is allowed where technical or managerial personnel are not available locally.[9] This is also the case in the Dominican Republic, where the maximum proportion for foreign employees and wages is 25 per cent.[10] In Ecuador, where at least 80 per cent of the wage bill is reserved for nationals, there is also provision for the exemption of particular types of worker.[11] A number of other Latin American countries—including Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, El Salvador and Venezuela—have analogous laws that commonly exempt administrative and managerial personnel and in some cases technical personnel, too.

In countries which have immigration schemes, qualifications relating to education and training are usually supplemented by a number of other requirements—relating to health, age, marital status, and so on. In Brazil, for example, the age limit for immigrants admitted under the official programme is 40 years; in New Zealand assisted passages may be provided for single men and women of British origin who possess specified professional qualifications and are under 46 years of age.

[4] International Labour Organisation, "Post-war Migration of Italian Nationals to and from other European Countries", *Industry and Labour*, vol. xi, No. 1, January 1954 (Geneva), pages 46 and 47.

[5] Julia Henderson, "Foreign Labour in the United States during the War", *International Labour Review*, vol. LII, No. 6, December 1945 (Geneva), pages 609 to 631.

[6] Articles 115 and 116 of the Codigo del Trabajo of 1948.

[7] Articles 74 and 76 of the Codigo del Trabajo, Decree No. 2663 of August 1950; Law No. 161 of 24 December 1948.

[8] Article 13 of Law II of 27 August 1943 (Codigo del Trabajo).

[9] Article 2 of Decree No. 2583 of 8 November 1933 (Ley provisional de nacionalización del Trabajo).

[10] Codigo Trujillo del Trabajo, Law No. 2920 of 11 June 1951.

[11] Ley de Extranjeria, 20 February 1947.

It is rarely possible to assess in precise quantitative terms the contribution to the industrial development of the recipient country that has been made by any particular group of immigrants. It should be borne in mind that the majority of voluntary emigrants have probably been in possession of more than the average share of initiative, desire to succeed and willingness to work, as well as the more material qualifications referred to above.[12] Hence the immigrant's impact upon the new society and upon its general economic progress is likely to be more diffuse and less measurable than his more specific achievements within the field of industrial enterprise where his professional talents are chiefly exercised.

Migrations that have had considerable direct industrial significance may be traced far back in history. Early in the thirteenth century, Chinese artisans were producing silk and other materials in that part of Siberia inhabited by Kirghizes.[13] In the fifteenth and sixteenth centuries, printing, glass, silk, wool and other industries were introduced into France by German, Flemish and Italian immigrant groups,[14] and from France they were transmitted by other immigrants into Spain. In the middle of the sixteenth century nearly a thousand foreign families, from various parts of Europe, were engaged in establishing the metallurgical industry at Tula, south of Moscow,[15] just as a group of Walloon masters and journeymen were laying the foundations of the metallurgical industry of Sweden.[16] The exodus of Huguenots from France after the revocation of the Edict of Nantes caused a considerable diffusion of the industrial skills in which France was at that time pre-eminent: England, the Netherlands, Switzerland and Russia all gained new industries, especially in the textile category, while the origins of the wine industry of the Union of South Africa can be traced back to the same source.

In the seventeenth century with the opening up of the new world the process began of transferring European economic ideas and techniques of production by means of emigration to North and South America, Australia and New Zealand and to a smaller extent to parts of Africa and Asia. Canadian industrialization received a major stimulus with the arrival of Irish immigrants in the mid-nineteenth century. At the beginning of the twentieth century the advent of a large number of skilled workers—turners, boilermakers, smiths and other engineering artisans, in particular—from the United Kingdom facilitated a notable expansion of the metal-using industries, particularly in the railway equipment sector. Later, after the First World War, another wave of immigrants—most of British origin—affected the growth of Canadian industry and many of the establishments connected with chemicals, non-ferrous metals, electrical equipment, textiles (in Montreal) and ship building (on the St. Lawrence River) were founded during this period.[17]

In Latin America, the industrial development of such urban areas as Buenos Aires and São Paulo has been very largely the fruit of European immigration—from Italy, Spain, Portugal and Germany, in particular. Textile and furniture making in Mexico were activities initiated and expanded in the nineteenth century by French settlers;[18] later the textile industry was further developed by Spanish immigrants. One enterprising French immigrant is reported to have obtained a series of government concessions for the local production of explosives, tin bottle caps, electric lamps and flat and corrugated sheet iron.

In Brazil, the earliest investments in the textile industry were made by Italian immigrants—the group that was also responsible for much of the early development of the metallurgical industry, as well as shipyards and coal mines. Later the textile industry was expanded by Polish and German settlers, and the iron and steel industry by Belgians, and immigrants from Germany and Portugal were largely responsible for the development of tobacco manufacturing.[19] Lebanese and Syrian merchants also tended to enter secondary industry in Brazil, as they did in Colombia and certain other areas of Latin America. More recently, European refugees have played a not inconsiderable part in the post-war growth of Brazilian secondary industry, not only in assisting in the growth of new activities, such as the steel works at Volta Redonda, but also in raising productivity in older establishments.[20]

In Chile, it was the Swiss immigrants who first promoted a local textile industry, while beer brewing and papermaking were started by Germans. German, along with English and Spanish, settlers were also prominent in the early stages of various metal using industries. Printing and publishing, the manufacture of numerous chemicals and pharmaceuticals, glass-making and glazing, the production of ceramics, furniture and various household utensils, plastic goods as well as various branches of the food industry, including fish processing, all owe their progress, if not their origin, to the initiative of foreigners.[21] More recently immigrant labour has played a large part in the establishment and operation of the new iron and steel plant at Huachipato.

In Peru, breweries and sawmills as well as the spinning and weaving of cotton and wool were originally developed by Italian settlers. In Argentina, as in Brazil, the chemical industry and the production of synthetic fibres are largely the result of immigrant enterprise, as are also the textile establishments of Colombia and the Pacific coast. In Venezuela, most of the present industrial activities owe their origin to foreigners who had the experience, knowledge and initiative to undertake such tasks.

In the post-war period Australian industry has absorbed a considerable number of immigrants, including refugees, from Europe. At the end of 1950 there were some 10,000 of the latter in various branches of the metallurgical industry and several thousand in the wood industry, apart from those engaged in roads, railways and power station construction.[22]

In Lebanon, returning emigrants have been an important source of entrepreneurial skill. In Egypt a good deal of the country's industrial development in recent decades has sprung from the leadership of resident foreigners

[12] United Nations, *Immigration in Brazil* (mimeographed).
[13] L. P. Potapov, *Ocherki po Istorii Altaitsev* (Moscow, 1953), page 105.
[14] Pierre Brizon, *Histoire du Travail et des Travailleurs* (Bruxelles, 1926), pages 141 ff.
[15] S. F. Platonov, *Uchebnik' Russkoi Istorii Dlia Srednei Shkoly* (Kolomea, n.d.), page 216.
[16] Pierre Demeuse, *Images de la Suède* (Gembloux, 1950), page 78.
[17] Lloyd G. Reynolds, *The British Immigrant* (Toronto, 1935).
[18] August Génin, *Les Français au Mexique du XVIème siècle à nos jours* (Paris, 1933), page 355.
[19] *Einwanderungs und Kolonizationsamt, Bresilien* (Rio de Janeiro, 1949), pages 212 ff.
[20] One metallurgical plant, for example, after having recruited refugees to the extent of about one-fourth of its labour force, experienced a two or threefold increase in average output per worker. Cf. United Nations, *Immigration in Brazil*, page 96.
[21] United Nations, *Immigration in Chile*, page 67.
[22] International Federation of Agricultural Producers, Report of the fifth annual general meeting (Mexico City, 1951), addendum to document No. 15: Australian National Farmers' Union, "Promotion and Development of Immigration Schemes". No less than 70 per cent of the workers engaged on the Snowy Mountain hydroelectric project at the beginning of 1953 were immigrants (*The Times*, London, 27 January 1954).

–British, French, Greek and Italian. In India the system of "managing agencies" originated by British trading companies was initially one answer to the problem posed by the dearth of local entrepreneurial and managerial skills in the early days of industrial development.[23]

More recently, immigrants from Belgium and Holland established the diamond cutting industry in Israel and the Union of South Africa. Everywhere in tropical Africa it is the immigrant who has become the industrial entrepreneur; the indigenous economy has so far contributed comparatively little in this field.

Though population movements of the type that characterized the nineteenth century have declined greatly since the First World War, there is still a good deal of migration that is significant in terms of the industrial development of the country of destination. Compared with the indigenous populations of many of the under-developed countries, immigrant groups have generally had greater knowledge and skill, larger capital resources and a wider economic horizon, which has enabled them to transcend the limitations set by traditional patterns of occupation and investment in the community in which they faced the challenge of making good.[24] In general, therefore, although immigration tends to become less important as development proceeds and in any case is unlikely to regain the significance it had before the First World War, policies which facilitate purposeful movement of labour and skill and entrepreneurial ability from areas in which they are relatively plentiful to areas in which they are notably deficient will certainly remain in the interest of industrial development.

It is less certain whether emigration from under-developed countries—even from those in which the ratio of labour to land and to capital is unfavourable to industrial development—is likely to be in the interest of such development. For although it could help to relieve population pressure, voluntary and spontaneous emigration usually draws most of its recruits from the group that is likely to be most enterprising and economically most productive and it is therefore likely to influence the age and occupational structure of the population in a manner that would tend to retard rather than advance the process of economic diversification. Massive resettlement that involves the very old and the very young as well as those of working age might be more favourable to development, but would appear to be quite impracticable on political as well as humanitarian and economic grounds.

The international flow of capital

It was pointed out early in the preceding chapter that capital shortage was one of the principal impediments to industrialization in most under-developed countries. In the present section it is proposed to see how this capital shortage may be mitigated by the movement of funds from more advanced countries. This obviously implies no judgment whether or not the importation of foreign capital is desirable for any particular country or in any particular circumstances. The problem discussed in this section is concerned with the forces influencing the international flow of industrial capital, not with the criteria of desirability; the latter have to be decided by individual countries in the light of need, political philosophy, capacity for domestic saving and other relevant considerations.

In the present context, two questions must be answered: first, what are the relative merits of available techniques for transferring industrial capital; and second, how can various impediments to such transfers best be overcome. For the purpose of the first question, three types of capital movement are briefly considered: government borrowing, private borrowing and its counterpart, private portfolio investment, and direct equity investment. For the purpose of the second question, some of the forces militating against foreign investment in the secondary industries of under-developed countries are outlined and methods for avoiding them or at least reducing their effect suggested.

Irrespective of the method of transferring funds, the inflow of foreign industrial capital serves two immediate purposes: it provides the means for acquiring local factors for investment in secondary industry and it provides the exchange for acquiring necessary foreign factors of production, especially the plant and equipment upon the importation of which the industrialization of less developed countries so greatly depends.

A number of presently more advanced countries owe a good deal of their earlier industrial development to the influx of foreign capital. During the period from 1874 to 1897, for example, the extent of United States borrowing was such that current trade surpluses were insufficient to service the debt; it became necessary to utilize some of the foreign exchange resulting from new loans for paying interest and dividends on old loans. Canada underwent a similar experience during two of its phases of rapid industrial growth, from 1900 to 1913 and from 1920 to 1929. In these cases, the importance of foreign borrowing lay less in any single investment that was financed in this way than in the continuity of the inflowing stream of capital which removed the limitation that would otherwise have been imposed on the rate of industrial development by balance of payments considerations.

In many cases, foreign borrowing may also be the means of inducing more domestic capital to enter the industrial field, either in partnership with foreign capital or into local ancillary industries which the foreign enterprise has indirectly brought into being. In India, for example, in spite of the general dearth of capital for industrial purposes, local capital seems to have been willing to participate in a number of new ventures that

[23] It is possible, however, that at a later stage the system of managing agencies, because of its tendency to widen its field of control and perpetuate itself, has militated against the growth of local entrepreneurship.

[24] H. G. Aubrey, *Industrial Enterprise in Under-developed Countries* (National Bureau of Economic Research, New York, 1953).

United States investors have sponsored in recent years. This may reflect the fact that such enterprises have been in the hands of well-known firms with proved techniques—which is not always the case when local entrepreneurs try to raise capital for new industrial concerns.[25]

Techniques for transferring industrial capital

Perhaps the most obvious way for an under-developed country to augment its supply of industrial capital is to seek loans in countries where capital is more plentiful. Government borrowing from abroad has a long history. Indeed, in most of the less developed countries investment in communications and power and other basic facilities has been heavily dependent upon public borrowing from foreign sources. The financing of secondary industry by this means, however, is a comparatively recent innovation, reflecting increased government interest in the process of industrialization. Many post-war development plans provide on the investment side for establishing certain industrial enterprises and on the financing side for raising certain loans on foreign capital markets. These loans are designed primarily to meet the foreign exchange requirements of proposed investments and thus eliminate the need for exchange, import and investment controls, which, as indicated in the previous chapter, balance of payments considerations might otherwise dictate. In some cases governments may also be influenced by the fact that interest rates on foreign capital markets are usually substantially lower than those in under-developed countries, so that if foreign borrowing is possible it is likely to effect considerable savings in the cost of carrying out the investment programme.

The traditional method of government overseas borrowing, evolved during the nineteenth century and reflecting the underlying economic conditions of the period, is the issue of bonds on the capital market of one or other of the major industrial countries. Since the financial crisis of the early nineteen thirties and subsequent restrictions upon foreign lending imposed by the major capital exporting countries, however, the international capital market has operated on only a very limited scale and, so far as under-developed countries are concerned, access has been very difficult. In recent years loans floated by Israel in the United States and by some dependent territories in metropolitan markets are among the few examples of this type of financing. Israeli loans have been supported largely by political and other non-economic motivations, and in any event both they and the colonial loans have been for general development purposes in which secondary industry has played only a minor part.

With the breakdown of the international capital market, special lending institutions in advanced countries have tended to assume a more important role. In several instances in the post-war period consortia of banks—in the United States and in Switzerland, for example—have lent funds to governments of less developed countries for development purposes—chiefly for financing the construction of basic facilities. In the United Kingdom, both the Colonial Development Corporation and the Commonwealth Development Finance Company have been concerned with industrial lending to less developed countries. As the activities of the former have usually extended beyond the mere provision of funds, they are more appropriately discussed in the next section. The Commonwealth Development Finance Company, however, merits brief mention here since one of the reasons for its establishment in 1953 was the difficulty of financing industrial projects in less developed parts of the Commonwealth. Of its authorized capital of £15 million, rather more than half was to be taken up by no less than ninety-one different industrial, commercial, mining, shipping and financial houses and the remainder by the Bank of England; its borrowing powers were fixed at twice its issued capital. As a lender of last resort, it was intended to supplement other sources of industrial capital, providing only a part of the funds required by the approved borrower. During its first year of operation it invested about £5 million (mostly in secured debentures) in three major enterprises: electricity generation and cellulose pulp production in the Union of South Africa and natural gas development in Pakistan.

In France, two important sources of capital in recent years have been the Fonds d'investissement pour le développement économique et social des territoires d'outre-mer (FIDES) and the Caisse centrale de la France d'outre-mer. Between 30 April 1946 and 30 June 1954 credits granted by these two institutions to secondary industry in dependent and trust territories (excluding North Africa) totalled about 24.4 billion francs (about $72 million)—29 per cent to metallurgical industries, 26 per cent to food and agricultural industries, 14 per cent to wood industries, 9 per cent each to textile, pulp and paper, and vegetable oil industries, 1 per cent each to chemical and building material industries and the remainder to various other forms of manufacturing.[26] This was only a small proportion of total investment. As in some of the British dependencies, most capital used in manufacturing comes from private sources, and since economic development in many of these areas is still largely in the pre-commercial phase, much more investment in basic economic facilities is likely to be necessary before the rate and scope of industrialization become significant. Of the total public investment in North Africa in 1951 (about 136 billion francs or about $387 million), for example, rather less than one per cent was for manufacturing projects; of this over 90 per cent was in Algeria and about one-half of the funds probably came from local sources.[27] In the overseas territories in 1952, total public investment

[25] United States Department of Commerce, *Factors Limiting United States Investment Abroad* (Washington, 1953), page 104.

[26] Information derived from a communication from Professor Gaston Leduc.

[27] Commissariat Général du Plan de Modernisation et d'Equipement; *Cinq ans d'exécution du plan* (Paris, 1952), page 236.

exceeded 97 billion metropolitan francs (about $277 million); of this, moneys advanced by FIDES amounted to more than 55 billion francs ($157 million) of which only 12.5 million francs ($36,000) was devoted directly to secondary industry.[28] Public investment in the overseas departments (Guadeloupe, Guiana, Martinique and Réunion) was on a proportionately lower scale.

By far the largest of the institutions which supplement—and in respect of the under-developed countries in recent years have tended to replace—the international capital market is the Export-Import Bank of Washington. This was set up in 1934 as a government agency to finance transactions and projects which would directly or indirectly promote United States foreign trade. It is run on a commercial basis, and projects for which loans are requested "are judged in the light of their worthiness as to self-liquidation and their benefits to the recipient foreign economies in respect to dollar earnings or savings".[29] In 1954, the bank's lending authority was increased to $5 billion. Its loans have usually carried a rate of interest ranging from 3½ per cent to 6 per cent and have been for periods varying from twelve months to twenty years. They are made for specific purposes and generally directly to governments or government agencies or corporations, though credits may also be advanced to private foreign banks and corporations with the guarantee of the government concerned (and in recent years without guarantee) and to United States firms to assist in the execution of large projects on behalf of foreign governments or in the expansion or modernization of their foreign branches.

By the end of 1953, the bank had lent more than $5.2 billion, of which about 38 per cent had gone to under-developed countries. Of the loans made to the latter, about one-sixth had gone into secondary industry; the proportion was somewhat higher than this in Latin America and the Middle East, but substantially lower in Africa and Asia (see table 4).

The bank's activities in the industrial field follow various patterns. The "exporter credit" is made directly to the government or its agent (or to a private entity) in order to finance the importation of equipment or services from United States manufacturers who themselves must participate in the provision of credit. The "direct interest loan" is designed to help finance projects for which the bank also provides capital and operational techniques. The ordinary loan is intended to help finance the purchase of United States equipment in cases in which neither the suppliers nor other United States investors participate. Foreign investments may also be financed jointly with United States commercial banks which participate at their own risk, induced in some cases by the very fact that the Export-Import Bank is sponsoring the transaction. The bank may also use its resources to a limited extent and with Treasury consent to guarantee foreign loans made by private interests, and has in fact done so to an increasing extent in recent months.

Table 4. United States Export-Import Bank: Total[a] Credits Authorized to Under-developed Countries, February 1934 to 31 December 1953

(Millions of dollars)

Area	*Total loans*	*Manufacturing*[b]	*Manufacturing as percentage of total loans*
World total	5,269.4	2,233.3	42.4
Under-developed areas..	1,999.3	325.3	16.3
Latin America.....	1,348.9	268.7	19.9
Middle East.....	185.3	35.3	19.1
Africa.....	143.5	0.9	0.6
Asia.....	321.6	20.4	6.3

Source: Export-Import Bank of Washington. *17th Semi-Annual Report to Congress* for the period July to December 1953 (Washington, D.C.).

[a] Net (total authorizations minus cancellations).

[b] Including equipment and raw materials for manufacturing.

Until 1950 the bank's operations in under-developed areas were concentrated in Latin America, but in the past few years loans have been granted to under-developed countries in Africa, Asia and the Middle East. In the nineteen thirties, most of the loans were for financing public works and utilities and other improvements of the economic framework; in recent years, however, the proportion of loans for industrial purposes has been steadily growing. For instance, the bank has financed the construction of steel mills (Brazil, Chile, Mexico, Turkey), iron working establishments (Brazil, Mexico), cement plants (Brazil, Indonesia, Venezuela), sugar mills (Mexico) and chemical and fertilizer plants (Egypt, Israel, Mexico, Turkey). It has made loans to help modernize the textile industry in Brazil, Chile and Turkey, and has sponsored the local manufacture of a number of new products. In 1952 it granted a loan of $5 million to a group of private banking institutions in the Philippines for the general purpose of financing industrial development projects.

The disintegration of the international capital market which began in mid-1928 affected both government and private borrowing. Up to that point portfolio investment (purchase of securities, especially bonds or debentures, issued on the capital market) had been the most common method of transferring capital from those disposing of investible funds in more advanced countries to borrowers in less developed countries. The debt defaults of the nineteen thirties greatly reduced the acceptability of this type of transaction at a time when other considerations were accentuating some of its disadvantages.

[28] About 37,423 million francs were for "infrastructure"—roads, bridges, railroads, ports, etc.—7,824 million for agriculture, 2,113 million for electricity and 2,171 million for health. Commissariat Général du Plan de Modernisation et d'Equipement, *Rapport sur la réalisation du plan de modernisation et d'équipement de l'Union Française* (Paris, 1953), pages 304 and 305.

[29] United States Congress, House Committee on Foreign Affairs, Sub-Committee on Foreign Economic Policy, *The Mutual Security Act and Overseas Foreign Investment* (Washington, D.C., June 1953), page 58.

The rigidity of the service charge, for example, which in times of stable trade and prices permits fairly accurate foreign exchange budgeting—through planned expansion of exports, for instance—and in times of rising prices results in a decreasing real burden on the borrower, increased the real cost of the loan very substantially during the period of declining prices and low business activity. The balance of payments difficulties of many borrowing countries magnified the risks of the lender, while devaluation and currency inconvertibility raised the borrower's service costs (in terms of devalued currency) and complicated the problem of repayment. Increasing economic uncertainties magnified lenders' doubts about the effective and proper use of the funds they had advanced but over which they had no control. Added to these general disadvantages was another of more particular relevance in the present context: the fact that operation on the international capital market is economical only to larger and better known borrowers, so that even under favourable circumstances the necessarily small industrial enterprises of less developed countries are unlikely to find this source of funds very accessible or convenient.

An early revival of portfolio investment thus seems improbable though in the long run there are several forces working in its favour: continued need for foreign capital, increasing domestic entrepreneurial, managerial and technical skills, expansion in the size of industrial enterprises, the tendency to surround direct investors with rules and regulations they consider unduly restrictive and — a corollary to this — the preference shown by a number of under-developed countries for anonymous capital rather than capital associated with particular foreign firms. In these circumstances, industrial enterprises in less developed countries might in due course be able to draw on some of the funds held by institutions such as savings banks and insurance companies in more advanced countries. At the moment, the risk of such investment is too great for many institutions; they usually require some form of guarantee before shares, mortgage notes or debentures of foreign industries are accepted into their portfolios. In the United States, special legislation is often required before foreign securities may be purchased by the institutions in question.

Although, in absolute terms, portfolio investment has never been a very large source of capital for foreign industrial enterprises, its decline after the great depression brought about an increase in the relative importance of direct investment by which individuals or corporations in the creditor countries assumed a controlling interest in the firms whose stock or shares they owned.[30] Before the depression only about 3 per cent of total direct investment by United States and United Kingdom nationals in under-developed areas was in manufacturing enterprises. The collapse of primary prices enhanced the relative attractiveness of industrial investment, and the financial crisis of 1931, by precipitating exchange controls and higher protective tariffs, operated in the same direction. Exchange controls prevented the transfer of some of the funds held in under-developed countries by foreign investors, while in some instances higher customs duties induced foreign companies to establish assembly, if not manufacturing, facilities within the tariff wall. The trend towards direct investment which set in during the nineteen thirties continued during and after the war, and though in quantitative terms the over-all expansion of this form of capital export has never offset the decline in lending and portfolio investment, it is now by far the most important form in which foreign capital is available to secondary industry in less developed countries.

Apart from the more or less fortuitous circumstances which tended to favour direct investment in the early nineteen thirties, there have been several cogent reasons for its wider adoption. Perhaps most important, given the dearth of entrepreneurial, managerial and technical ability that characterizes most under-developed countries, is the fact that direct investment usually involves the transfer not only of capital but also of key personnel and technical knowledge and proficiency. Although both are motivated largely by a desire for profit, the foreign expert who is in direct charge of his investment is more likely to be able to achieve a productive combination and employment of resources than is the less experienced domestic entrepreneur working with capital borrowed from abroad. He is more likely to have the acumen and the means to carry out the preparatory investigation and research work that so often make the difference between a well-planned and an improvised establishment. A well-conducted factory, moreover, is an object lesson to local entrepreneur and wage earner alike, and in this respect a direct investment may be of considerable development value.

As implied in the discussion of foreign borrowing above, direct investment usually involves an equity interest rather than a debenture or bond. In so far as this means that an appreciably higher potential yield is required in order to encourage the foreign investor, it detracts from the advantages of direct investment. On the other hand its servicing—by dividends which are related to profits—generally imposes a much less rigid (even if on the average somewhat higher) burden upon the debtor country's balance of payments,[31] though even this burden has on occasion been heavy enough to cause various under-developed countries to place limits on the funds that foreign companies can transfer. Reinvestment of part of a company's profit within the under-developed economy—in enlargement or modernization or in some related industrial field—is more likely in the case of a direct investment, whether or not there are restrictions upon the transfer of funds. Between 1946 and 1951, for example, no less than three-quarters of all United States new direct foreign investment in

[30] In the United States a "controlling interest" is usually defined as the ownership of at least 25 per cent of the voting stock of the foreign concern.

[31] In the case of securities bearing fixed interest charges, "flexibility" might be achieved in an emergency through default or moratorium.

manufacturing industry was the result of the ploughing back of profits earned in foreign branches and subsidiaries. A direct investment, moreover, is more likely to result in a parallel importation of money and goods than is a borrowing operation and to that extent may avoid some of the inflationary effects which the new purchasing power might tend to occasion.

In spite of these advantages, the increase in direct industrial investment during the past twenty years has not been without criticism on the part of creditor countries and misgivings on the part of debtor countries. To the investor, it is the ease with which his enterprise can be nationalized and with which exchange controls can deny him any tangible benefit of its profitability that has been the chief cause for complaint. To an under-developed country the very presence of a foreign-owned industry has sometimes caused suspicion and fear of interference with domestic and foreign policies. Freedom from undue outside influence is often valued almost as highly as economic development, and the dislike of foreign enterprise has usually been accentuated in cases in which a noticeable proportion of the personnel has been alien, and when comparatively high profits have been earned. There has thus been a tendency to overlook the educative role of foreign personnel and of the efficient and successful operation of a new factory in the development process as well as the fact that pioneer industries may need to be more profitable because of the greater risks they incur. Failures and less profitable concerns are less likely to attract attention.

In order to offset the dangers of direct foreign investment—real and imagined—new forms of organization have been evolved in recent years. In general they have aimed at a double objective: to accelerate the rate at which technical knowledge and skills are passed on to local workers and to retain at least part, and perhaps the major part, of effective control in domestic hands. Most industrial firms that have been designed with these purposes in view have taken the form of "joint ventures" in which foreign investors, local investors and the government of the under-developed country have in varying degrees participated. While a joint venture of this nature may reduce the risk of expropriation that an entirely foreign firm might run and may also provide one or more partners, directors or senior officers who are familiar with local conditions, it is not without drawbacks: too high a proportion of indigenous personnel may reduce efficiency and increase costs appreciably, especially in the early stages, while political associations of a local directorate may tend in some countries to involve a company in non-economic difficulties. Nevertheless, joint ventures of various types are becoming more widely adopted both in Latin America and in the Far East.

Since 1944 in Mexico, for example, there has been legal provision for the association of domestic capital with foreign investment in any new manufacturing enterprise. In India a number of foreign companies have licensed Indian firms to manufacture their products, some financing the process, others confining themselves to setting up local subsidiaries to market the goods. Other companies have entered into agreement with the Government of India gradually to dispose of their shares in newly established factories to local investors. The screening process through which foreign capital gains admittance to India serves generally to ensure that the type of investment is in accord with what is regarded as the national interest. In Brazil, a 1949 agreement between the Western Electric International Company of the United States and the local Electromar provided for the use of patents, the training of personnel and technical assistance in the construction and operation of new Brazilian plants, without any investment of United States funds. In Egypt, the Mansfield Rubber Company of the United States has assumed technical responsibility for a new tire factory in return for a royalty on the use of patents, a fixed management fee and a share in profits.

The partnership principle has also extended to the governments of the less developed countries, especially where the industrialization programme has devolved, for one reason or another, upon public or semi-public bodies. In these cases, know-how and practical experience in operating an industry are likely to be just as important as capital.

The Government of Argentina, for instance, has entered into partnership with local investors and a United States concern—Henry J. Kaiser—to establish an automotive equipment factory; the United States firm is to provide about a third of the capital, supply all the plant and machinery and in due course undertake the management of the enterprise. In India, the Government has entered into partnership with foreign private capital in several manufacturing undertakings, and it envisages the use of this means of financing its projected iron and steel plant, the expansion of the Sindri fertilizer plant, and the construction of a factory to manufacture heavy electrical equipment.[32] In Israel, the Government operates the country's only potash plant in partnership with private foreign and domestic capital, and private foreign investors are also associated with the Government in the manufacturing of fertilizers and chemicals. In Egypt, a new steel mill is the result of a joint venture in which the Government shares ownership with foreign capital. Governments in the British dependencies have participated in several industrial projects financed partly by the Colonial Development Corporation. In the Union of South Africa, an industrial cellulose factory now under construction represents a partnership between the private firms of Courtaulds of the United Kingdom and Snia Viscosa of Italy, the Commonwealth Development Finance Company (the semi-public institution referred to above) and the local Industrial Development Corporation, which is a quasi-government organization. Similarly, in Mexico, the Nacional Financiera has participated with United States private business in the establishment of such important enterprises as the Viscosa Mexicana synthetic textile plant and the Altos Hornos steel plant.

Because they can take a broader view of investment priorities as a whole in an under-developed country, development corporations or other agencies of this nature may have an important role to play if, through government guarantee or otherwise, they can gain access to foreign capital, knowledge and skill. As a result of the wise channelling of such capital into developmental industries, the economy may well gain more —in terms of local levels of living—than it might have

[32] Government of India. Planning Commission, *Five-Year Plan, Progress Report for 1951-1952 and 1952-1953* (New Delhi, May 1953), page 82.

Table 5. United States Private Direct Investments: Distribution according to Book Value, 1953

Field of investment	Total (millions of dollars)	Percentage distribution				
		Canada and western Europe	Latin America	Western European dependencies	Other countries	All under-developed countries
Manufacturing	5,242	49	19	2	17	17
Petroleum	4,931	20	28	66	63	39
Mining and smelting	1,934	9	17	22	4	14
Public utilities	1,499	4	18	3	3	14
Trade	1,046	7	6	5	5	6
Agriculture	658	–	9	2	4	7
Other	994	10	3	–	3	3
TOTAL	16,304	100	100	100	100	100

Source: United States Department of Commerce, *Survey of Current Business*, November 1954 (Washington, D.C.).

gained by an equivalent amount of private foreign investment.

Factors affecting the movement of industrial capital

This section deals with movements of capital that have particular relevance to foreign investment in industrial enterprises in less developed countries, rather than with problems of capital transfer as such.[33] It should be borne in mind that most difficulties militating against domestic investment in secondary industry are likely to be even greater impediments to foreign industrial investment, which is generally more sensitive to uncertainties and unfavourable conditions and is more easily deterred or diverted from a given under-developed country. Under-developed countries, in other words, are competitors for foreign capital, and in so far as market forces prevail, investment is likely to be made in that field and in that country which, comparative risk being taken into account, appear to offer the highest prospective rate of return over a reasonable period of time. The under-developed country is in effect entering a competitive market as a buyer; it cannot dictate both the volume of capital and entrepreneurial ability it is proposing to absorb and the price and conditions it is prepared to offer.[34] Difference in potential reward is one of the principal reasons why in the international movement of private capital, most of the industrial investment has taken place in more advanced countries while investment in under-developed countries has been very largely in primary activities producing raw materials and foodstuffs for markets abroad.

During the post-war period 1946 to 1953, private direct investment by the United States averaged about $623 million a year, of which $104 million was in manufacturing enterprises. More than half of this manufacturing investment was in Canada and western Europe, while of the remaining $51 million per year average almost 80 per cent was in Latin America. At the end of 1953, manufacturing accounted for about one-sixth of all United States investment in under-developed countries compared with about one-half in more advanced countries (table 5).

In the light of these considerations it is significant that the average return on United States industrial investment in under-developed areas in 1947 and 1948 was actually lower than that obtained in economically advanced areas and that in none of the first four post-war years (1945 to 1948) was the average ratio of manufacturing earnings to book value of investment more than 2½ per cent greater in under-developed countries than in the United States itself.[35] Bearing in mind the disparity in risks, this difference seems hardly large enough to induce a much greater outflow of capital. Between 1948 and 1951, the difference in profitability between United States industrial capital invested in Latin America and that invested at home was somewhat larger but still less than 4 per cent on the average.[36] It is evident that manufacturing enterprises in under-developed countries are not all so much more profitable than those in industrial countries that the enhanced risk can be ignored.[37]

In these circumstances the type of industry most likely to attract a foreign manufacturer is one in which

[33] These have been examined most recently in United Nations, *The International Flow of Private Capital, 1946-1952* (sales number 1954.II.D.1.), and in the Economic and Social Council debate on this report; see Economic Committee of the Economic and Social Council, Eighteenth Session, *Summary Records* E/AC.6/SR.146 to 155.

[34] "Whatever the foreigner's faults may be, the fact remains that the Gold Coast needs him more than he needs the Gold Coast" was the advice recently given to one under-developed country in respect of its industrialization plans. W. A. Lewis, *Report on Industrialization and the Gold Coast* (Gold Coast Government, Accra, 1953).

[35] H. G. Dernburg, "Prospects for Long-Term Foreign Investment" in *Harvard Business Review*, No. 4, July 1950 (Cambridge, Mass.).

[36] United States Department of Commerce, *Balance of International Payments of the United States, 1949-51*, and *Survey of Current Business*, September 1952 (Washington, D.C.).

[37] Between 1950 and 1953 there was no significant difference between the ratio of earnings to value of manufacturing investment in Canada and Western Europe on the one hand and Latin America and other less developed countries on the other: in both cases the figure ranged from 13 to 17 per cent (*Survey of Current Business*, November 1954). These figures, as well as those quoted in the text, are suggestive rather than definitive; differences in accounting practices in the valuation of assets and in the treatment of overhead costs by branches and subsidiaries make precise comparisons between rates of return virtually impossible.

the under-developed country can support at least one factory of a size and efficiency likely to yield a profit not less than that which he might earn by exporting to the market in question. These conditions may first be fulfilled in the case of products in which the delay and cost and risk of transport are important: cement, tiles, bricks, glass and other materials used in the building industry; aerated drinks, china and pottery, light bulbs and furniture, and processed food, for example. Local production is also likely to be more advantageous if the end product is bulkier than the materials it is made of, whether or not those materials are found in the country. Thus, foreign manufacturing concerns sometimes find it profitable to set up local subsidiaries to assemble such items as automobiles, sewing machines and tractors from components produced for the most part in industrial countries.

Where the local market justifies it, foreign companies may set up local manufacturing facilities merely in order to come within a tariff wall or to avoid the effects of import controls which bar the finished product but permit imports of the necessary machinery and raw materials. Some of the foreign industrial investment which took place in Mexico in 1947 and 1948 was of this type. Sometimes local factories are established in order to qualify the product for patent rights or to produce a local brand name or more conveniently serve a larger region. A desire to sell in the south-eastern Asian market has probably been among the reasons for United States industrial investments in India in the post-war period.

In view of the restricted nature of the local market and the industrial immaturity of the economic and social environment in less developed countries, foreign investors in secondary industry tend to be particularly sensitive to signs of political instability. When some rich natural resources are to be exploited foreign capital is usually prepared to take much greater risks of such instability than when some ordinary manufacturing establishment for which the country can offer no special advantage is involved.

Foreign industrial capital is also likely to be more easily deterred by exchange controls and currency inconvertibility. Unlike many primary activities, most manufacturing carried on in less developed countries does not earn foreign exchange. For its imports, therefore, and for the right to transfer profit or repatriate capital, the industrial concern is dependent upon the allocation of foreign exchange granted by the authorities. Recognition of the deterrent effect of exchange restrictions is implicit in the fact that in a number of under-developed countries the relaxations that have taken place in recent years have been conditional and confined to specific industries deemed at the time to be of particular significance. There have also been a number of more general relaxations of exchange restrictions, designed to encourage a greater inflow of foreign capital: the free transfer of interest and dividends, even in convertible currencies, is now widely permitted, and several less developed countries now allow the repatriation of capital that has been invested in approved projects, even if this involves dollar expenditure.

Peru, for example, has allowed free inward and outward movement of capital throughout the post-war period and has in fact experienced a considerable net inflow. In 1950, Israel passed a law for the encouragement of foreign investments which accords special privileges in respect of capital movements connected with approved investments. In 1952, both Lebanon and Syria established free exchange markets for the movement of capital, and Egypt amended its 1947 law in order to facilitate the transfer of profits as well as to allow foreign shareholders to contribute up to 51 per cent of the capital of new enterprises. In 1953 Chile, where exchange control has been in operation since June 1931, made provision for special *ad hoc* agreements concerning the terms of servicing and repatriation of new foreign capital invested in export industries or in industries using more than 80 per cent local raw materials. In Turkey, liberalization of conditions for foreign capital, begun in 1951, culminated in the law of 1954 to encourage foreign investment, which not only abolished restrictions on the investment of capital and its earnings but also relaxed control over the employment of aliens and made provision for the Ministry of Finance to guarantee foreign loans to Turkish enterprises.

In this connexion, it is worth recording that under the Mutual Security Act guarantee programme, the United States as a capital exporter operates a system of government insurance under which foreign investors can purchase protection against the risks of confiscation, expropriation and currency inconvertibility. Turkey, as a recipient of Marshall plan aid, is the only under-developed country now covered but the scope of the measure is in the course of being extended.

Though mining investment is usually subject to the most stringent control, some of the conditions imposed by under-developed countries upon the entry and operation of foreign capital tend to affect manufacturing enterprises more severely than others. Barriers against the establishment of certain types of industry by foreign capital—"saturation laws" in many of the Latin American republics, the handicraft protection policy of India, the practice of "screening" for foreign exchange control or other purposes, or the principle of national reservation of basic industries accepted by several under-developed countries, for example—sometimes rule out just those manufacturing activities which might otherwise be most likely to attract investors from abroad. Where administrative action has to be taken, moreover, there is often room for informal pressure to be brought by other interests, including those anxious to avoid competition from a new enterprise.

It was mentioned above that insistence on financial participation by local investors in a new foreign enterprise might in certain circumstances be a deterrent to the entry of industrial capital. Insistence on the participation of local labour, however desirable from the point of view of education and training, might have a similar effect. For although foreign enterprises are usually quite prepared to employ indigenous labour (if only because it often tends to be more permanent and almost invariably costs very much less than that which is specially imported) some forms of joint ven-

ture require local representation in the upper technical, executive and administrative echelons of the staff, and this is much more difficult in a pre-industrial economy. In order to speed up the training process, laws specifying the minimum proportion of indigenous personnel that must be employed in each grade in any foreign-owned plant have been enacted in many under-developed countries in the post-war period. Rigid adherence to such requirements in a country in which skills are very scarce would obviously tend to discourage direct foreign investment. Relaxations and exemptions, which, as indicated in the preceding section, have been fairly common in recent years, suggest that it has been realized that, if strictly enforced, such measures may sometimes tend to defeat the development purpose they are intended to serve.

Nevertheless, policies written into law, well-publicized and closely adhered to, may well be preferable to arbitrary decisions that tend to result when individual cases are treated "on their merits". Thus, in the absence of clearly defined criteria of suitability, the screening process through which foreign capital has to pass before being admitted into a number of under-developed countries, such as India, may lend itself to delay and uncertainty which are themselves likely to dissuade potential investors from even making an application for admission.[38]

The intention of the government with regard to public ownership and operation of industry is, in these days of increased concern of governments in industrialization, also a matter of some importance to potential private investors. The absence at one time of a clear boundary between public and private industry is said to have been an obstacle to foreign investment in Turkey, for example.

The fear of expropriation being so potent a deterrent to foreign industrial investment, as indeed to other forms of foreign investment, several countries have recently enacted laws guaranteeing that specific industries will not be nationalized or that in the event of expropriation just and equitable compensation will be paid. Some countries—Burma and India, for example[39]—have written such a principle into their constitutions. In other cases, however, expropriation has taken more subtle forms, such as discriminatory tax or labour regulations designed to persuade foreign companies to sell out to local investors. The effect of such policies upon new foreign investment is obviously detrimental and therefore, from the point of view of development, self-defeating.

Apart from avoiding or eliminating the various impediments to foreign investment referred to above, several under-developed countries have recently taken more positive steps to encourage a greater inflow of capital, by granting exemption from customs duties on plant and equipment and raw materials or components required by a new foreign industry, for example, or by granting exclusive rights for specified periods or by the remission of certain local taxes.

Israel has established an investment centre to encourage, expedite and direct foreign investment in desired fields of development. In Colombia, where a census was taken of all foreign capital in the country in order to enable investors to establish the legality of their capital imports and to claim the benefits attaching thereto, foreign investment in manufacturing doubled between 1950 and 1953. In Puerto Rico, the Industrial Development Company, established during the war, assists foreign firms with information and advice on legal matters, labour recruitment, site selection, capital raising and other problems, and by direct contact with United States firms had by the end of 1953 brought about the establishment of more than a hundred foreign-owned factories.

Attempts have also been made to encourage foreign investment in secondary industry by publicizing opportunities. This has been done both by less developed countries—Puerto Rico and Southern Rhodesia, for instance—and by capital-exporting countries. In the United States, for example, a series of "investment guides" in preparation sets out as much as possible of the information likely to be required by investors contemplating the establishment of an industry abroad; among the countries so far covered are Colombia, India, Mexico, Pakistan, the Union of South Africa and Venezuela.

Bilateral treaties—such as those of "friendship, commerce and navigation" negotiated by the United States —are often designed to accord reciprocal "national" treatment for the investments of either country in the other and thus to stimulate the transfer of capital.

Where basic facilities are particularly inadequate the government may encourage foreign enterprises by laying out industrial estates, serviced by highway and railway, water and power networks, and containing factory buildings which may be leased to overseas manufacturers. This has been found particularly useful in the case of light industries, in which the need to commit large sums of money for constructing facilities that are available without direct cost or may be hired or purchased as required in more advanced countries, is likely to be a major deterrent to the foreign investor.

It was indicated in the previous chapter that double taxation is no longer a serious impediment to foreign industrial investment. If the fiscal system in economically advanced countries is to be used as an incentive to such investment, however, not only must such special tax obstacles be removed, but the over-all tax burden on industrial capital has to be made lighter when it is employed abroad than when it is employed at home. In so far as this is brought about by tax concessions, capital exporting countries are in a better position to act than capital importing countries. In the first place, the former are better able to absorb the resulting revenue loss, if only because such revenues do not hold as important a place in their total budgetary resources as they do in many less developed countries,

[38] United States Department of Commerce, *Factors limiting United States Investment Abroad.*

[39] Such a provision has also been proposed in the Gold Coast.

where foreign enterprises may constitute the bulk of the monetary (and thus readily taxable) economy. In the second place, capital exporting countries which use a tax credit system—Canada, the United Kingdom and the United States, for example—are more favourably placed to influence the effectiveness of income tax concessions offered to foreign investors by capital importing countries, for by crediting foreign taxes against the domestic tax liability imposed on foreign income, capital exporting countries collect from the investor only the excess of the domestic tax over the usually lower foreign tax; thus, tax concessions granted by the less developed country do not reduce the investor's total income tax burden but merely increase this excess.

The system of granting tax credits does not affect the benefit flowing from a remission of any indirect tax, nor does it affect concessions received by local subsidiaries which are not subject to tax in the foreign investor's homeland (except upon repatriation of profits through dividend distribution). Tax concessions granted by the capital importing country, however, may be objected to not only because of the difficulty that such a country would probably experience in sacrificing revenue but also because they are likely to invite competitive action by other countries that desire to attract foreign capital.

Previous United Nations publications have dealt with different types of tax incentives available to capital exporting countries;[40] here one or two recent proposals which seem germane to the problem of inducing a greater outflow of industrial capital will be mentioned. In the United Kingdom, for example, the Royal Commission on the Taxation of Profits and Income devoted part of its first report to this problem and recommended, *inter alia*, that the Government be authorized by statute to enter into special agreements with other countries "providing for the grant of credit by the United Kingdom against United Kingdom tax on overseas profits for such an amount of overseas tax as the other country certifies to have been spared to the taxpayer by virtue of specified tax concessions under the laws of that country".[41] This proposal was not incorporated by the Chancellor of the Exchequer in the Finance Act of 1953; nor have similar proposals, going as far as complete tax exemption of income from foreign investment, found official favour in the United States.[42] More limited proposals were contained in the President's budget message to Congress of 21 January 1954: a tax rate reduction for foreign income (confined to enterprises operating in the Western Hemisphere), postponement of tax liabilities on non-repatriated foreign income, relaxation of the rules governing the qualification of foreign income taxes for credit against United States income tax on foreign income and, through the abolition of the over-all limitation on such credit, an increase in the amount of foreign income eligible for credit. Of these proposals, however, only the last was accepted by Congress and incorporated in the Internal Revenue Code of 1954 (section 904).

It has also been suggested that tax concessions which are based on earnings and therefore effective only after a new enterprise has become profitable are likely to be much less of an inducement to foreign investment than the privilege of accelerated capital amortization might be, at least in cases in which investors were permitted to write off overseas assets against total income, from whatever source, taxable in the home country.[43] Rapid amortization, by reducing the risks of capital loss, has always been a powerful stimulus to investment.

It should be clear from the discussion of impediments and incentives in this section that to increase the international flow of industrial capital action is required from both the lending and the borrowing countries. But mere legislative or fiscal action may not be sufficient and it may be appropriate to quote the conclusions of the Economic and Social Council's Sub-Committee on Economic Development at its fourth session in May 1950.

> "A contract is not a climate and, accordingly, the promulgation of investment codes, principles of contract obligations and commercial policy or bilateral treaties will not substantially promote the flow of private foreign investment. The most important requirement for promoting the flow of private capital is good faith and confidence, a sense of welcome, a sense of co-operation and a favourable response of investors. It is the fruit of favourable experience of private investors and tangible economic results in under-developed countries that must be relied upon as the final assurance required by the investor to promote an accelerated flow of foreign capital. Time and increased familiarity by association are thus needed for a substantial acceleration of private investment."

Technical aid and other forms of assistance

Although the provision of capital, both financial and physical, constitutes one of the principal methods by which the more advanced countries are able to assist in the industrialization of under-developed countries, capital is not invariably the most urgent need. In many cases, indeed, lack of finance is not the basic impediment to the establishment of new industries; more important is the lack of technical knowledge. In the past, one of the major benefits flowing from the immigration of labour and capital has been the result of the accompanying "know-how". But the flow of "know-how" is not necessarily limited to that associated with the movement of capital and labour: there is a large field in which it could operate in conjunction with indigenous factors of production, contributing greatly to indus-

[40] See *The Effects of Taxation on Foreign Trade and Investment* (sales number 1950.XVI.1), chapter III, b; *Economic Development of Under-developed Countries; International Flow of Private Capital for the Economic Development of Under-developed Countries*, chapter 7 (mimeographed).

[41] Royal Commission on the Taxation of Profits and Income, *First Report, 1953* (HMSO, London), paragraph 58 and conclusion.

[42] See United Nations, *United States Income Taxation of Private United States Investment in Latin America* (sales number 1953.XVI.1), chapter IV.

[43] M. C. Conick, "Stimulating Private Investment Abroad", *Harvard Business Review* (Cambridge, Mass.), November-December 1953, page 104.

trial progress. This independent movement of "know-how" which in recent years has become known as "technical assistance", assumes greater importance as the relative magnitude of labour and capital movements declines.

In the industrial field, there are two common patterns of technical assistance: one involves lending engineers, technicians and other expert personnel to less developed countries; the other offers training facilities in more advanced countries to suitably qualified workers who cannot get such training in their own country. In this way, technical assistance may encompass training management personnel, improving production methods, raising standards of skill by on-the-job training, creating better labour-management relations, carrying out industrial surveys, equipping and organizing laboratories for investigation of the industrial potentialities of local resources, constructing pilot plants to demonstrate or adapt more efficient machinery, and so on over a wide range of projects designed to increase and diversify industrial production, improve techniques and raise productivity.

Although the scope for technical assistance in the field of secondary industry is thus a very wide one, only a small proportion of official technical assistance has actually been devoted to this purpose.

An early example of such assistance was the United Kingdom Colonial Development and Welfare Act of 1929, which made provision for up to £1 million to be spent yearly for "aiding and developing agriculture and industry in the colonies", beyond the limits imposed by their own revenues. The scope of the law was widened in 1940 when maximum financial assistance was raised to £5.5 million a year, and again in 1945 when a ten-year expenditure of £120 million was provided for. Of the grants made or promised between 1 April 1946 and 31 March 1953, only £322,416 (or not much more than 0.3 per cent of the total) was for industrial development proper, while of the loans granted or committed only £75,500 (or rather less than 5 per cent of the total) fell into this category.[44]

Most of this assistance was destined for pre-commercial economies, in which capacity to absorb industrial investment was severely limited and investment in other fields—roads, water supply, education, for example—was likely to be a prerequisite for subsequent industrial growth. Nevertheless, the proportion of the funds devoted directly to industrial purposes—0.4 per cent of the total—remains extremely small.

In 1948 another measure with potentially important consequences for the industrialization of dependent territories was passed by the United Kingdom. This brought into being the Colonial Development Corporation, designed to increase productivity and wealth by investment in projects with profit-making as well as developmental potentialities. In this case technical knowledge was to be accompanied by capital.

Thus when the Colonial Development Corporation built Northern Rhodesia's first cement works in 1950 it supplied almost £1 million of the £1.3 million share capital, the remainder coming from the local government. In Trinidad, the Corporation has co-operated with a private company in the establishment of the island's first cement plant; by the end of 1952, it had provided rather more than three-fourths of the paid-up capital. Another, and unprofitable, industrial venture was the erection of a cannery on the Grand Cayman Islands for the purpose of developing the turtle industry upon which the islanders are heavily dependent; by the end of 1952, this had involved the Corporation in an investment of about £109,000 and in 1953 the enterprise was closed down. In 1949, the Corporation joined with the Kenya Government in the operation of a ceramics and chemical plant which had been set up by the latter for emergency supplies during the war. In spite of a number of improvements and expansions effected during 1950, the concern met with various technical and market difficulties and by the end of 1952 only the refractories and oil hydrogenation sections were functioning, and even these were finding the competition of imports a considerable threat; during 1953 half of the equity interest in the hydrogenation plant was sold to a private firm. In Singapore, the Corporation has laid out the equivalent of an industrial township in which it is prepared to build approved factories for private investors. By the end of 1952, a textile mill and a refinery for edible oils had been erected with Corporation assistance and approved loans for factory construction amounted to almost £100,000. During 1953 a factory for rope and one for polish were established.

In Bechuanaland, the Corporation has attempted to stimulate cattle ranching by the establishment of a fattening and finishing farm and an abbatoir capable of handling a large proportion of the meat output of the whole territory. Investment by the end of 1952 amounted to almost £450,000. Another abattoir and freezing establishment was financed by the Corporation on the Falkland Islands; it encountered many difficulties—managerial and other—and was handed over to a local concern in 1953 at a substantial loss. In Nigeria an attempt to operate a sack factory, using imported jute at one stage and locally grown fibre at another, was abandoned in 1953 with a loss of some £145,000, in which the local marketing boards participated. A Nigerian sawmill financed jointly with three groups of private investors came into operation in 1953 with a capacity of 600,000 cubic feet a year, and though unprofitable initially seemed to hold promise of success. A larger timber milling establishment has been set up by the Corporation in British Guiana, again in co-operation with three private companies, one of which in this instance has undertaken the management of the industry. Of its gross sanctioned investment of more than £44 million to the end of 1952, the Colonial Development Corporation had advanced about £5 million, or rather less than 12 per cent, to various industrial projects.[45]

Irrespective of the commercial success of these ventures, their significance in the present context lies in the extent to which they are the means of introducing new industries or new techniques or new skills or new types of capital equipment into what are industrially some of the least developed countries.

The United States Technical Cooperation Administration came into being in 1950. Although the main fields of operation of this organization and its successors have been health, agriculture and education, a certain amount of technical and financial assistance has also been provided for industrial development, sometimes incidentally—as where factories producing DDT or penicillin or agricultural implements or fertilizers are designed as

[44] The five major fields of operation—education, medical and health services, agricultural and veterinary services, roads, and water supply and sanitation—absorbed more than two-thirds of the total. See House of Commons, *Colonial Development and Welfare Acts*, H of C 189 (London, June 1953), page 20.

[45] Colonial Development Corporation, *Report and Accounts for 1952*, House of Commons Papers, Session 1952/53 No. 158 (London, 1953).

part of a public health or agricultural programme—sometimes more deliberately as a direct part of the attempt to raise levels of living.

In the industrial sector, most assistance schemes have been designed to increase productivity in existing occupations and industries by helping to improve methods, raise quality and lower costs and prices. In some areas, however, techniques for the industrial use of previously unutilized agricultural by-products have been introduced, with consequent benefit to under-employed farm workers. Most of the work has been done in the sphere of small and medium scale industries—weaving, ceramics, leather, woodworking and so on—chiefly through technological and investment advisory centres (as in Brazil and Chile) and through technical field staffs competent to advise in such matters as choosing appropriate machinery, handling organizational problems and improving labour-management relations. In the case of more advanced workers or technicians, training is often provided in schools, universities or factories in the United States.

Assistance is given only upon request and the requesting government is expected to make its maximum contribution to the project, in the form of services or materials or funds. In some cases—Burma, Egypt, Indonesia and Jordan, for example—the services of private consultant firms have been made available to the government; in others, experts have been seconded to government departments as advisers in such matters as industrial safety and hygiene and labour administration.

In Mexico, the research staff of the Institute of Technological Research has received training in the problems of converting laboratory procedures into full-scale industrial operations. Conferences have been held preparatory to the organization of surveys of small-scale and handicrafts industries, in which an industrial engineer was assigned to advise on problems of plant management.[46]

In India, where in 1952 and 1953 the United States committed some $11 million (almost one-eighth of the estimated total cost) for a large community development programme, small-scale industries are being established in six areas for the production of tools, building materials and other supplies required for the whole project, which embraces some fifty-five areas containing about 11 million people.[47]

In Indonesia in 1953, thirteen United States technicians were employed in providing assistance in connexion with production, trade and labour problems in chemical, mechanical engineering and other industries while some fifty-three awards were made for training local personnel in various industrial fields. Small-scale industry has also been the recipient of assistance in Indonesia where about $1.25 million was committed in 1951 and 1952. Among the projects was a pilot central or "mother" factory producing refining clay and glaze for use in the surrounding cottage ceramics industry. In combination with the improvements brought about by the Ceramics Research and Training Institute, this has raised productivity and quality to such an extent that the local product can now compete successfully against imports.

In Pakistan, not only technical advice but also financial assistance to the extent of $7 million has been provided in the construction of an ammonium sulphate fertilizer factory which was linked to schemes for agricultural development. In Burma, technical aid is being provided for the development of several industries: food processing, textiles and cordage, paper, ceramics, glass and chemicals, among others.

A comparatively modest programme for raising the productivity of industrial labour was launched in Iran in the second half of 1950; training in job methods, safety, factory leadership and efficiency in a number of plants—textiles, armaments, chemicals and tobacco, among others—resulted in an appreciable increase in production in several instances. At the end of 1951, one United States expert and twelve local employees were continuing the work. Other schemes in Iran provided technical advice regarding the operation of a textile mill and a cement plant, the erection of certain factories and the establishment of co-operatives for several cottage and handicraft industries.

In 1953, there were twelve United States technicians in Egypt, two in Iraq, four in Israel, seven in Jordan and two in Lebanon, working in the field of industry, trade or labour. A number of training awards for local industrial personnel were also made in this region: ten in Egypt, twenty-six in Iran, two in Iraq, eight in Israel and one in Jordan.

In Colombia, an industrial survey carried out with United States assistance in 1951 resulted in the establishment of a *servicio*, or joint Colombia-United States agency within the appropriate government department, to aid both in improving methods in existing small factories and in initiating new industries. With the training of local technicians in domestic plants in the United States and other countries, the employment of United States staff to perform the educational and developmental functions of the *servicio* is likely to diminish.

In the Dominican Republic a survey of handicraft industries has been made as a preliminary to the encouragement of greater use of indigenous fibres, amber, and tortoise shell. Ecuador has also received assistance in respect of cottage industries, particularly the textile industry, in which improvements have been effected not only in the quality of the materials used and methods of production but also in the organization of marketing. In 1951, handicraft classes were started in nine schools and many of the local 27-inch looms were replaced by imported 54-inch models.

In Cuba, where most of the work has been done by private consultants, important progress has been made in the kenaf industry, in which a year's research has led to a new design for a de-fibring machine. This research was carried out under a contract with the Institute of Inter-American Affairs, which participates in industrial productivity *servicios* in several Latin American countries, where by surveys, advice and research, numerous improvements have been effected in small and medium-sized factories. In these cases, capital improvements suggested by the consultants are financed by the owners of the factory.

In several Latin American countries—Colombia, the Dominican Republic, El Salvador and Panama, for example—assistance has been requested for the establishment of small-scale industries, while in others, such as Brazil, Chile and El Salvador, productivity centres have been set up to deal chiefly with engineering techniques, production planning and control, plant layout, material handling, personnel practices and other subjects associated with reduction in costs and improved utilization of resources in industry. In 1953, there were some thirty-three United States technicians working in Latin America on various industrial and labour problems, and eighty local trainees had been awarded study grants to enable them to extend their knowledge and experience in these fields.

[46] Technical Cooperation Administration, *Proposed Program, Fiscal Year 1954*, part II (Washington, D.C., May 1953), page 132.

[47] Mutual Security Administration, *Second Report to Congress on the Mutual Security Program* (Washington, D.C., June 1952), page 27.

Table 6. United States Technical Assistance: Distribution of Expenditures, Fiscal Years 1952 and 1953

(Millions of dollars, except as indicated)

Area	1952			1953		
	Total	*Industrial projects*	*Industrial projects as per cent of total*	*Total*	*Industrial projects*	*Industrial projects as per cent of total*
Middle East and Africa	37.8	4.41[a]	11.7	51.4	4.20[a]	8.2
Southern and south-eastern Asia	85.7	15.18[a]	17.7	68.4	13.60[a]	19.9
Latin America	17.8	0.25[b]	1.4	21.6	1.53[b]	7.1
TOTAL, Technical Cooperation Administration programme	141.3	19.84[a]	14.0	141.4	19.33[a]	13.6
Additional economic aid	114.8[c]	15.90[a]	...	130.3[d]	23.76[a]	...

Source: Technical Cooperation Administration, *Proposed Program, Fiscal Year 1954*, parts I and II (Washington, May 1953).

[a] Including technical assistance in respect of trade and labour matters.

[b] Including technical assistance in respect of labour matters.

[c] Including $51.3 million undistributed by field of activity.

[d] Including $60.1 million undistributed by field of activity but excluding $16.5 million in wheat loans to Afghanistan and Pakistan.

By and large a greater proportion of United States technical assistance has been devoted to industrial projects than in the case of the British schemes. In 1952 and 1953, about 14 per cent of the total in money terms was spent on industrial aid (including a small proportion used for labour and trade matters related to industrial production). The industrial proportion was highest for the Asian countries (18 to 20 per cent) and lowest in Latin America (about 7 per cent in 1953 and less than 2 per cent in 1952). In 1953, 109 technicians (just over 8 per cent of the total) were working on industrial problems and training in various under-developed countries, while 185 local trainees (about 13 per cent of the total) had received grants for further study in one or another industrial subject.

In addition to the official programmes, a large number of non-governmental agencies organize, or participate in, technical assistance in under-developed countries. In the period from 1949 to 1951, for example, almost 2,500 projects were carried on by United States voluntary agencies whose technical assistance budgets ranged from $150,000 to $37 million annually. Not much of this effort was in the industrial field, though a number of the projects were connected with small-scale industries such as carpentry, tailoring and rug weaving, and others, through community development, made an indirect contribution to the growth of local manufacturing.[48]

[48] United States Department of State, *Guide to Technical Assistance Services of United States Voluntary Agencies Abroad.* Department of State Publication 4422, International Information and Cultural Series 21 (Washington, April 1952). American Council of Voluntary Agencies for Foreign Service, Inc., *The Role of Voluntary Agencies in Technical Assistance* (New York, May 1953), page 58. Edwin A. Bock, *Fifty Years of Technical Assistance,* Public Administration Clearing House (Chicago, 1954).

During the post-war period there has been a substantial flow of technical assistance from the Union of Soviet Socialist Republics to Bulgaria and Romania and more recently to mainland China. The development plans of these countries, indeed, with their great emphasis on heavy industry, have been dependent upon both capital equipment and expert advice from the Soviet Union.

In 1949, technical assistance schemes in eastern Europe were put on a formal basis with the establishment of a Council of Mutual Economic Assistance of which Czechoslovakia, eastern Germany, Hungary and Poland as well as Albania, Bulgaria, Romania and the Soviet Union, were members. The system of technical assistance worked out through the Council included exchanges of plans for industrial projects, research results in the industrial field, and patents and licences relating to industrial processes, as well as the provision of Soviet experts for assistance in planning, constructing and operating factories and the training in Soviet schools and plants of students and workers from the less developed members of the Council.

It is perhaps too early to assess the total effect of this technical aid upon the industrial growth of less developed countries. Given the lack of experience and the shortages in factors of production which distinguish most of these countries, there is every reason to suppose that assistance of this nature is a significant stimulus to industrial development, but a precise evaluation of results can be made only by analysing the economic progress of each recipient country. If the effectiveness of technical assistance is to be maximized, such evaluations should be made regularly and the lessons and conclusions compared.

The Role of International Organizations

Some of the functions which, it was suggested in the previous section, might be performed by the more advanced countries may also fall within the competence of international organizations. In certain circumstances, indeed, action on the international level might be preferable in political if not in economic terms to bilateral arrangements between industrialized and under-developed countries. Thus the provision of capital and technical assistance for industrial development may be usefully channelled through international organizations. In so far as they accumulate a considerable body of experience in the administration of funds and skills for the various special purposes comprehended in industrialization programmes, such organizations might offer the added advantage of a high degree of efficiency in transmitting aid.

Over and above any part that international organizations may play in organizing these direct aids to industrial development, they are often in a unique position to facilitate the exchange of ideas, to disseminate the lessons learned by individual countries in the course of their industrialization programmes and to engage in comparative research. Though a discussion of this last function lies outside the scope of this report, the facilities for organizing financial and technical assistance on an international basis are examined tentatively in the present section.

The provision of capital

The only international organization at present in a position to dispense funds for investment in secondary industry is the International Bank for Reconstruction and Development, and perhaps the best way of bringing out some of the problems involved in this field will be to trace the evolution of its ideas and policies in respect of loans to under-developed countries for industrial purposes.

Concerning the pattern of economic development, in its 1947/48 report the Bank expressed the opinion that:

> "The establishment or expansion of appropriate manufacturing and processing industries is an essential aspect of sound development in almost every case. It will normally be advisable, however, to lay initial stress on light consumer goods and processing industries which employ small amounts of capital equipment per worker and can often build upon traditional skills in the introduction of mechanized techniques. Furthermore, because they result in a relatively quick increase in the supply of goods, these industries stimulate further development by providing incentives for increased productive effort.
>
> "Until these earlier stages of industrialization have produced sufficiently broad home markets, there will generally be lacking the basis for creation of heavy industries, either to supply domestic needs at economic prices or to compete in world markets. This principle is, of course, subject to individual exceptions, especially where the world demand situation and the existence of the requisite natural resources make the establishment of some particular heavy industry economically justifiable."[49]

As light consumer goods industries were thought likely to attract private entrepreneurs and the Bank's role was to encourage and supplement rather than supplant private investment, the implication was that the Bank was not likely to play a very significant part in financing industrial enterprises in less developed countries. At this stage, only two loans had been granted to any under-developed country and both were to Chile —the first ($13.5 million) for hydroelectric development and the second ($2.5 million) for the importation of agricultural equipment.

In its 1948/49 report, while agreeing that:

> ". . . Private international investments tend at present to be concentrated in a relatively few countries and industries, particularly the raw material and foodstuff export industries; investments in production for the domestic markets of the under-developed countries are less favoured"

the Bank also considered that:

> ". . . the extent to which an under-developed country can take advantage of the technical knowledge and managerial competence of industry in the more advanced countries depends largely on the incentives it is able to provide for the private enterprises which have that knowledge and competence to utilize them in practical operation within the country. In this field the scope of useful activity by public agencies is apt to be limited."[50]

In any case there remained a vast field of investment in basic economic facilities—communications, water supply, power and so on—which though essential to industrial development were for one reason or another seldom likely to attract private capital. This type of investment might therefore be expected to have a more urgent claim on the limited resources of the Bank; in most under-developed countries considerable expansion and improvement of these facilities is a prerequisite for industrial development.

This reasoning is borne out by the actual lending programmes of the Bank during this period. Apart from the loan for hydroelectric development to Chile in 1948, the Bank's lending to under-developed countries in 1949 amounted to $148.1 million, of which Mexico received $34.1 million for electric power development, Brazil $75 million for power and telephone facilities, and India $34 million for the importation of railway equipment. The remainder of $5 million was granted to Colombia for the importation of agricultural machinery. In 1950 a further $97.5 million was advanced to under-developed countries: $72 million for electric power development in Brazil, El Salvador, India and

[49] International Bank for Reconstruction and Development, *Third Annual Report, 1947-1948* (Washington, D.C., 1948), page 17.

[50] International Bank for Reconstruction and Development, *Fourth Annual Report, 1948-1949* (Washington, D.C., 1949), pages 11 and 14.

Mexico, the remainder for agricultural purposes.[51] In 1951, loans to under-developed countries totalled $194.6 million: $84.1 million for electric power development in Brazil, Colombia, the Union of South Africa and Uruguay; $66.4 million for communications, including telephones, railways, highways and ports, in Colombia, Ethiopia, Nicaragua, Thailand, Turkey, the Union of South Africa and Uruguay; and $23.1 million for agricultural purposes in Nicaragua, Thailand and Turkey. The remaining $21 million was granted to three special institutions through which for the first time Bank funds might be channelled into industrial enterprises—a Development Bank ($2 million) in Ethiopia, an Industrial Development Bank ($9 million) in Turkey and a consortium of financial bodies ($10 million) in Mexico. In 1952, loans to less developed countries amounted to $229.2 million. Again, the largest category was power ($110.3 million) for which advances were made to Brazil, Colombia, Mexico, Southern Rhodesia and Turkey; $39.7 million was designed for railway development in Brazil and Pakistan, $8.9 million for agricultural uses in Nicaragua, Pakistan and Paraguay and $1.3 million for water development in Chile. The remainder took the form of general development loans—$40 million to the Belgian Congo and $28 million to Yugoslavia—a part of which may have been devoted to industrial investment. Another industrial loan, not included in the above, was for the equivalent of $854,000 to Iceland to finance the construction of a fertilizer plant with a capacity of 18,000 tons per annum, designed to assist in the development of the country's agriculture.

In reviewing its lending programme between 1947 and 1952, the Bank suggested some of the reasons why its

> ". . . lending for industry has not been comparable in amount to its financing for other purposes. The requirement of the Bank's charter that loans to private borrowers be government guaranteed has, as a practical matter, limited the extent to which the Bank can make loans direct to industry. In many countries, moreover, the very lack of transportation, power and other basic facilities, such as the Bank is trying to provide, means that industrialization must begin with many relatively small enterprises. It is difficult, at a distance, to assess the merits and feasibility of such enterprises . . ."[52]

In 1953, however, the largest single loan to under-developed countries and the first to be made directly to a private concern was for $31.5 million to the iron and steel industry in India. This was to finance the importation of equipment and services required in a five-year programme for expanding production from 350,000 to 700,000 tons of finished steel and from 160,000 to 400,000 tons of foundry iron. A second general development loan of $30 million to Yugoslavia also resulted in the flow of Bank funds into secondary industry; the Pancevo glass factory, the Blazuj plywood mill, the Sisak seamless pipe works and the Zenica steel mill were among the recipients. The rest of the year's advances to less developed countries ($124.3 million in all) were for more conventional uses: $39 million for railway development in Colombia and Northern Rhodesia, $19.5 million for a multi-purpose power project in India, $3 million for highway construction in Brazil and $1.3 million for the importation of agricultural equipment in Peru.

Table 7. Loans to Under-developed Countries Authorized by the International Bank for Reconstruction and Development to 30 June 1954

Purpose	*Number of loans*	*Amount (millions of dollars)*	*Per cent of total*
Electric power[a]	24	475.0	47.5
Railways	10	184.5	18.5
General development	3	98.0	9.8
Agriculture[b]	15	69.5	7.0
Highways[c]	7	54.4	5.4
Secondary industry	2	51.5	5.1
Banks[d]	4	30.0	3.0
Ports	3	20.7	2.1
Natural gas	1	14.0	1.4
Telecommunications[e]	1	1.5	0.1
Water development	1	1.3	0.1
TOTAL, ABOVE ITEMS	53	1,000.4	100.0
PER CENT OF TOTAL BANK LOANS		52.1	

Source: Annual reports of the International Bank for Reconstruction and Development.

[a] Two of these loans included funds for telecommunications investment; two others were for multi-purpose projects in which part of the investment was for agricultural purposes.

[b] Not including the appropriate part of two electric power development loans; one other loan was designed for the importation of roadmaking equipment as well as agricultural equipment.

[c] Not including the appropriate part of one agricultural loan.

[d] Gross figure; at the time of its expiry (30 June 1952) only $532,000 of the $10 million advanced to the Mexican consortium of banks had been used.

[e] Not including the appropriate part of two electric power development loans.

The only purely industrial loan during the 1954 fiscal year was one of $20 million to Chile for paper and pulp mills to utilize the country's forest resources more effectively. A second loan, of $9 million, was made to the Industrial Development Bank of Turkey for financing the foreign exchange costs of local manufacturing investments. For the rest, the year's total advances of about $193 million to under-developed countries were distributed among projects designed to provide or improve basic facilities: $66.54 million for electric power development in Brazil, Nicaragua and the Union of South Africa; $50 million for railway development in Brazil, French West Africa, and the Union of South Africa; $26.35 million for highway development in Colombia, Ecuador and Nicaragua; $14 million for the development of natural gas in Pakistan; $3.8 million for port development in Turkey; and $3.19 million for agricultural development in Panama and Peru.

By 30 June 1954, just over one-half of the loans made by the Bank had gone to less developed countries. At least three-fourths of the loans to less developed coun-

[51] Agricultural machinery imports into India, $10 million; flood control in Iraq, $12.8 million; and forestry in Yugoslavia, $2.7 million.

[52] International Bank for Reconstruction and Development, *Seventh Annual Report, 1951-1952* (Washington, D.C.), page 10.

tries had been destined for investments in electric power or communications. The only funds for the development of manufacturing proper were those advanced to the iron and steel industry in India[53] and the pulp and paper industry in Chile and those channelled through the development banks of Ethiopia and Turkey, and through the development loan to Yugoslavia—not much more than 8 per cent of the total sum lent by the Bank to under-developed countries.

Since the number of projects of the same nature as the iron and steel expansion scheme in India is likely to be very small, for present purposes perhaps the most interesting of the Bank's loans has been the Turkish one, in which the actual task of making the final investment has rested on an indigenous institution. As the Bank itself recognizes, it is not in a good position to evaluate small industrial projects in particular underdeveloped countries, whereas it is much better placed to advise and assist some central investment institution which could more effectively decide the credit worthiness and development potential of prospective industrial borrowers. The machinery for this type of investment has to be fairly simple and its main object the stimulation of domestic capital, to be achieved partly by granting access to Bank credits for the foreign exchange requirements of specific approved investments.

In the case of Turkey, the Industrial Development Bank, established in 1950 with private capital of 12.5 million Turkish liras, was promised an equal amount on loan from the central bank and access to double that amount ($9 million) from the International Bank for Reconstruction and Development.[54] In the first fifteen months of operation, approved loans amounted to LT22 million; five projects—including a cotton spinning and oil seed plant and three cotton textile mills—were able to obtain Bank loans for their foreign exchange requirements to the extent of $1.9 million. During the year 1952/53, fourteen more loans were negotiated—by wool processing, food processing, brick and tile making and pharmaceutical producing establishments, among others—and Bank advances to meet foreign exchange requirements rose to $5.8 million. The Industrial Development Bank's loans at this stage amounted to the equivalent of about $30 million. Though the share of the International Bank for Reconstruction and Development in this industrial investment was thus barely one-fifth of the total, it performed the key function of financing the import segment of the capital requirements of the new establishments. Indeed the cumulative effect of the Bank's advances was even greater than this, for the borrowers were actually utilizing funds of their own to an extent almost equivalent to the credit provided by the Industrial Development Bank. The success of this institution is reflected in the fact that in 1954 it was able to negotiate a second Bank loan of $9 million, raise a further LT 12.5 million from 287 local shareholders and borrow LT 6.23 million from local banks. By mid-1954 some $35 million had been advanced to 221 industrial borrowers and the aggregate resultant investment was well over twice this figure.

In contrast to this Turkish experience was the experiment in Mexico, in which a consortium of eight commercial banks and the Nacional Financiera was created in October 1950 to administer a line of credit from the Bank to small and medium sized industrial enterprises. The consortium was required to screen all applications, pass them on to the Bank and then, if the latter approved, participate (in groups of at least five members) in the resultant loan, which was intended to be in the range of $25,000 to $1 million, of a five-year tenor, costing the borrower 6 per cent per annum—consisting of 3½ per cent for the Bank, ½ per cent for Nacional Financiera for its guarantee and 2 per cent for the administering banks. Although applications for more than $3.3 million were originally made, most of them were withdrawn before action was taken and altogether less than $300,000 of the $10 million credit was utilized. This may in part have reflected the procedural difficulties and complications of operating so loose an organization as a consortium of competitive banks, but it is probable that the offer of foreign exchange credits was much less attractive in a country in which the currency was in any case freely convertible, especially in view of the fact that the borrower was required to accept the risk of peso devaluation, at least during the first half of the term of the loan.[55] Moreover, the local banks were in a position to extend medium term peso credits to industrial applicants during this period of the Bank's experiment—an operation less risky for the borrower and more profitable for the banks and very much simpler than the rather elaborate mechanism of the consortium.

A third venture of the Bank into the field of industrial finance through the medium of some especially contrived national institutions was its support of the Development Bank of Ethiopia, which was set up in 1951 "to assist in the development of industrial and agricultural production in Ethiopia and to stimulate the use of private capital for productive purposes".[56] Under a loan agreement with the Ethiopian Government the Bank advanced to this Development Bank the equivalent of US $2 million to cover the foreign exchange requirements of approved investment projects. Of the 137 loan contracts actually concluded by the Development Bank to 31 March 1952 (i.e., in 10½ months) seventeen were for industrial projects, in-

[53] As a result of the expert advice provided in connexion with this loan, it was decided to modernize two blast furnaces that might otherwise have been abandoned. This involved the construction of an additional coke oven, and the loan was increased to accommodate the extension of the investment programme. This is an interesting example of the technical assistance which often accompanies Bank finance.

[54] Later, in August 1951, the Industrial Development Bank was also authorized to make loans from the Economic Cooperation Administration counterpart funds of the Turkish Government totalling LT 54.5 million.

[55] There were arrangements whereby he could insure against devaluation during the second half.

[56] Gerald M. Alter "Development Loans to Private Enterprises in Under-developed Countries," *Mobilization of Domestic Capital: Report and Documents of the Second Working Party of Experts* (United Nations publication 1953.II.F.4).

volving 384,400 Ethiopian dollars, or about two-thirds of the funds committed. The projects included four sawmills, four flour mills, two brick yards, a paint factory, a grain cleaning establishment, a glass factory, a soft-drink bottling plant and a blacksmith shop. All were small-scale enterprises; and as the new equipment, though of foreign origin in most cases, was usually purchased from stock already in the country, their borrowing was confined largely to local currency and made little or no demand on the Bank loan. The limited achievement of the Development Bank in its first year of operation must be assessed within the context of the under-developed Ethiopian economy. It should also be borne in mind that the approved projects entailed an investment of two to three times the amount of the credit granted; indeed, the impediment to industrial development during this period was not shortage of capital but rather lack of "clearly located and demonstrable investment opportunities".[57] By the end of June, 1954, the Development Bank had lent Eth $6.5 million, a sizable proportion of which was for industrial plants processing agricultural products. After three years of operation about one-half of the Bank loan of US $2 million had been disbursed to meet the foreign currency requirements of the new industrial investments. At a later stage of development, when more exploration work has been done and the economic environment is more favourable, the demand for investible funds and for foreign exchange, in particular, may well be much greater.

There would appear to be considerable scope for collaboration between the Bank and development institutions in less developed countries, for in helping to meet part of the foreign exchange component of specific industrial investments, the Bank, by using its resources at the strategic point where investment projects are apt to encounter particular difficulty in many less developed countries, would be doing a good deal to encourage the use of local capital in the industrial field. This is one of the principal objects of the newly formed Industrial Credit and Investment Corporation of India to which the Bank is to lend $10 million. The Government of India is to lend 75 million rupees ($15.75 million) and of the Corporation's initial capital of 50 million rupees ($10.5 million) from private investors, 70 per cent is to come from India, 20 per cent from the United Kingdom and 10 per cent from the United States. In due course the Corporation is expected to sell its industrial loans and share holdings to other investors and thus expand the local capital market and free its own funds for further investment. It is hoped to stimulate local industrial investment in Colombia and other Latin American countries by the formation of similar institutions, with the Bank providing the key foreign exchange element of the capital.

In addition to procedural difficulties which tend to derogate from the Bank's usefulness as a source of funds for comparatively small and risky industrial ventures in under-developed countries, two other circumstances indicate that certain types of industrial financing lie beyond the purpose and function of the Bank. One problem arises when balance of payments or internal transfer conditions render it difficult for an under-developed country to pay even the minimum rate that an institution such as the Bank—which raises a large part of its funds by the sale of its bonds to private investors—is forced to charge. Another difficulty is presented by the nature and magnitude of the risk that is associated with some forms of manufacturing enterprise when the economic environment is unfavourable. In these circumstances a non-self-liquidating project which might contribute appreciably towards increasing industrial efficiency might become feasible only if there were a source of funds at lower cost; while many industrial enterprises are themselves not suitable for loan financing at all. This last point raises a basic difficulty: the Bank is not intended to engage in equity financing, yet so far as industrial enterprises are concerned this is generally the most appropriate source of capital, especially in less developed countries where, as previously indicated, risks are likely to be high.

In the context of the present section a further consideration is involved. In terms of the amount of capital any international lending institution is likely to have at its disposal, its operations, however effective, are not likely to satisfy more than a minute fraction of the total need for industrial finance in the under-developed countries. Hence it is desirable that the financing operations of such an institution be designed to stimulate not only the use of domestic capital but also the flow of private foreign capital. To this end, the international institution may find it expedient to participate with private investors from more advanced countries not only in the provision of loan capital, which the Bank now does, but also in the provision of equity capital. It might also be possible for the funds at the disposal of the institution to be turned over fairly rapidly through the continued sale of its equity interest in those industrial enterprises in the establishment of which it has participated.

Considerations of this nature have given rise to various proposals regarding the creation of one or more new international bodies to help meet the capital needs of less developed countries. This is not the place for a discussion of these proposals; of the three institutions that have recently been suggested—an International Development Authority,[58] an International Finance Corporation[59] and a Special United Nations Fund for Economic Development[60]—only the International Finance Corporation is likely to be concerned with industrial

[57] *Ibid.*

[58] See United Nations, *Measures for the Economic Development of Under-developed Countries* (sales number 1951.II.B.2), pages 82 to 88.

[59] See United Nations, *Report of the International Bank for Reconstruction and Development on the question of creating an International Finance Corporation* (1952, 1953, 1954), which contain a useful appraisal by the Bank of its own position in respect of its lending policy and limitations inherent in its constitution and purpose.

[60] See United Nations, *Report on a Special United Nations Fund for Economic Development* (sales number 1953.II.B.1) and the report on the subject prepared for the General Assembly by Mr. Raymond Scheyven (mimeographed).

capital. In the light of the experience of the Bank, such an institution might well fulfil a useful function in increasing the volume of direct industrial investment of an equity nature in less developed countries. The other two proposals would appear to have a much less direct relevance to industrialization, though funds flowing into under-developed countries from these sources would undoubtedly improve the economic environment and to that extent reduce the risks and widen the field for investment in secondary industry.

That such schemes are being debated at all is perhaps in itself the most important fact in the present context; it is symptomatic of the new awareness of the economic interdependence of countries and the responsibility that lies upon those that are economically more advanced to assist in the process of raising living standards in those that are less developed. This takes the question far beyond the limits of the present discussion of the movement of industrial capital, but it suggests that at some future date the flow of private funds may be stimulated and supplemented to a greater extent than at present by the movement of official funds organized on an international basis.

Technical assistance

Just as the flow of capital into industrial projects in less developed countries may, for certain purposes, be conveniently channelled through international agencies, so too may the provision of technical aid. Assistance by international institutions in the general field of industrial development has in fact been going on ever since the International Labour Organisation (ILO), soon after its inception in 1919, started sending out experts to advise on labour legislation, industrial relations, employment service operation, vocational and technical training and so on.[61] In the United Nations, technical assistance in the field of manufacturing dates back to 1948 when the report of a survey mission to Haiti[62] contained advice on the possibility of developing secondary industries.

United Nations assistance for economic development was placed on a formal basis in December 1948 when the General Assembly allocated $288,000 of the regular 1949 budget specifically for this purpose. Specific allocations for technical assistance for economic development have become a regular feature of the annual budget: $539,000 in 1950 and $479,400 in 1951 and similar amounts in subsequent years. In 1949, however, in order to enlarge the scope of this assistance the General Assembly made provision for an expanded programme in which all the specialized agencies might participate. This expanded programme has been financed from the voluntary annual contributions of governments that are members either of the United Nations or of one of its specialized agencies.

The general principles upon which assistance is based in this enlarged scheme are the same as those underlying the regular programme. In providing aid, the participating organizations are directed primarily to assist under-developed countries "to strengthen their national economies through the development of their industries and agriculture . . ." Technical assistance is to be rendered only in agreement with the governments concerned, on the basis of requests received from them, and only through official channels; moreover, the recipient country is expected to perform as much of the preliminary work as possible so that the nature and scope of the problem involved may be defined.[63]

During the first four years of operation, little of the assistance provided under these programmes has been requested specifically for industrial purposes. Of the $18 million disbursed directly on projects[64] under the expanded programme in 1953, for example, only about 5 per cent was for assistance in the field of manufacturing, processing and mining (table 8). Even if allowance is made for the fact that a further amount—rather less than 2 per cent of the total—was spent on projects connected with cottage industries and handicrafts, it is evident that secondary industry as a whole could not have received much more than 5 per cent of the assistance in a direct form. The proportion (including mining) was highest in Asia and the Far East (9 per cent) compared with 6 per cent in the Middle East, 5 per cent in Europe, 3 per cent in Latin America and an almost negligible amount in Africa. In the approved programme for 1954, the proportions were much the same—slightly higher in Europe and Latin America, and slightly lower in the Middle East and Asia and the Far East.

Among the direct industrial activities for which the United Nations has been able to provide technical assistance has been the construction of factories for the production of DDT in Ceylon, Egypt, India and Pakistan. A similar project is a penicillin factory in India which has been designed to serve the whole region. In the chemical field in India, three experts—in management, instrument control and maintenance and coke oven construction—have been provided for the Sindri fertilizer plant; an adviser has been provided in connexion with plans to expand the soda ash, glass and soap industries, and another in connexion with the erection of new carbon black plants.

In the ceramics industry, an expert has been sent to Ceylon to help with the staffing and operation of a new factory; and another has advised India on the development of facilities for producing high voltage insulators. India has also been aided by a specialist in the cutting of quartz crystals for frequency control in electronic apparatus.

Indonesia has received help in the modernization of its surgical instruments industry, and India in the expansion of its optical instruments industry. Both Pakistan and Taiwan have been helped in respect of iron and steel casting and forging; Indonesia and several Latin American countries have been helped—partly by the setting up of a personnel training programme—in the establishment of motor repair shops, while India has received expert advice on the making of moulds in the plastics and glass industries.

Technical assistance in the salt industry in Ceylon resulted in a 50 per cent increase in production in 1953, along

[61] See United Nations, *United Nations Technical Assistance* (mimeographed), 12 January 1953, page 7.

[62] *Mission to Haiti* (sales number 1949.II.B.2).

[63] Economic and Social Council, *Official Records, Supplement 1*, resolution 222 (IX); General Assembly resolution 304 (IV).

[64] That is, excluding the $5 million spent on administration and other indirect costs.

with a rise in quality and a drop in price. Ceylon has also been helped in setting up a sugar refinery to handle the local output of cane, in rehabilitating its cigar industry, and in raising the productivity of its cement industry, in which a United Nations expert worked as the manager of a government-owned plant. Material surveys and advice on location have also assisted the cement industry in Honduras, Pakistan and Peru, and the sugar industry in Bolivia. Production of building materials has been helped by experts in Burma and the Gold Coast. In Chile and India, assistance is being provided in connexion with the plywood industry, and saw-milling is being assisted in British Guiana. Paper and pulp and wood products industries are also being assisted by the work of experts appointed for the Latin American region as a whole.

In Bolivia, an expert has been supervising a number of pilot plants for tin smelting and in Peru an expert is to advise on the industrial development of Cuzco province and assist in the establishment of a fertilizer plant. In 1952, a regional meeting of experts was convened at Bogotá to discuss technical problems connected with the iron and steel industry, and an expert working group is preparing the proceedings of the conference for publication. In 1953, an industrial economist was assigned to co-ordinate the assistance being given in this field in the Latin American region.

In Burma in 1953, there were no fewer than eleven experts concerned with the rehabilitation and improvement of various cottage industries: village pottery and ceramics, textile printing, power loom weaving, paper making, metal plating and anodizing, enamelled ware, and so on. The production and marketing of handicraft products have also been studied by experts sent to India.

In Indonesia, help has been provided in the mechanization and modernization of a number of small-scale industries, including ceramics, glass, leather and building materials. In this, newly established training institutes, research laboratories and pilot plants have all played a part.

In Burma, similar problems are being approached by co-operative organization, based, in the textile industry, for example, on central power loom units and weavers' servicing centres. In Ceylon, a mechanized woodworking shop has been set up to develop carpentry, and the production of brooms and other wooden utensils is being undertaken in several rural handicraft centres. Handicraft industries have also been assisted by classes in mat weaving, soap making, needlework, weaving, pottery, brick making and cane and basket work. A cotton spinning plant is being established to supply yarn to the local hand loom industry, and new handicraft activities are being encouraged in fields in which local raw materials are available: bamboo, coir, grass and reeds, paper, wood and scrap steel. In 1953, a ceramics expert helped to establish training and demonstration centres for the cottage industry in Ecuador, while in Haiti an expert in small-scale industries has been working since 1952 on plants to serve rural communities—in the production of fertilizers, for example—and three other experts have been introducing new and improved techniques into the pottery, sisal and leather sectors of the island's handicraft industry. Assistance is being given to Paraguay in the development of small-scale factory and cottage industries.

Handicraft industries have also been helped in India both in respect of new techniques, designs and methods and in respect of new types of activity—for off-season employment among plantation workers, for example. Experts have also been engaged in similar work in El Salvador, Liberia and Malaya, and in Pakistan, where an effort has been made to design machinery for the production of small metal goods. Two students from Indonesia have been awarded fellowships for furthering their knowledge of small-scale industries by training abroad.

Other fellowships designed to extend training in the general field of industrial development have been awarded to students from Liberia (1), Burma (1), Ceylon (3), and India (6), while eight awards were made in 1953 for personnel from Taiwan to study fertilizer manufacture, sugar technology and industrial development in general.

Of the fellows and scholars appointed under the expanded programme in 1953, less than 4 per cent were planning to extend their training and experience in the field of industrial development. This was only half the proportion in this field in 1952, but double the percentage in the regular United Nations technical assistance programme in 1953. Almost 7 per cent of the trainees under the expanded programme in 1953 were in the field of co-operatives and handicrafts—a large increase over the 1952 percentage.

That so small a part of technical assistance has gone directly into industrial development probably reflects two conditions. In the first place, countries in the pre-industrial phase of development are seldom in a position to take full advantage of aid in this field; there are many more urgent tasks in which technical assistance is likely to be of more immediate benefit. In the second place, in many under-developed areas where secondary industry has been established, it is largely in the hands of private entrepreneurs and therefore lies outside the direct range of aid provided to governments.

Thus, in several regions, a higher proportion of technical assistance has been requested in fields which closely concern the government but affect the course of industrial development only indirectly. In the 1953 expanded programme, rather more than 4 per cent of all direct costs were absorbed by vocational training schemes, more than 2 per cent by technical education, almost 2 per cent by advice and guidance in the field of industrial relations and labour legislation and almost one per cent by projects designed to increase productivity. Altogether, about 9 per cent of all direct expenditure went into these associated fields in 1953; and about 8 per cent in 1954. More than 13 per cent of all expenditure in Africa in 1953 was for technical education and more than 18 per cent of the expenditure in Europe was for vocational training. Quantitatively, vocational training was also the most important item in Latin America (nearly 7 per cent of the total) in 1953 and in Africa in the 1954 programme (9 per cent of the total).

In the field of industrial labour, the expanded programme of United Nations technical assistance has been administered largely by the International Labour Organisation. Vocational training schemes have been set up in a number of countries: in Burma, Bolivia and Ceylon for various supervisory personnel, in the Gambia chiefly for supervisors in boatbuilding, engineering and woodworking plants and motor vehicle maintenance depots, in the Gold Coast for supervisors in government workshops, in Egypt for in-training instructors in several engineering fields and for the blind, in India for supervisors in about twenty textile mills, in Brazil for mechanics, cabinet makers, diesel engineers, metallurgists and printers as well as for instructors in various industrial fields, in Ecuador for boat builders.

A large training scheme is under way in Yugoslavia, where by mid-September 1953, nineteen foremen-instructors

Table 8. United Nations Expanded Programme of Technical Assistance: Distribution of Direct Project Costs, 1953 and 1954[a]

Field of activity	Africa	Asia and the Far East	Europe	Latin America	Middle East	Inter-regional	Total
			AMOUNT (thousands of United States dollars)				
Manufacturing, processing, mining:							
1953	–	252.2	77.2	99.6	198.1	266.1	893.2
1954	–	151.2	161.9	121.4	145.1	243.8	823.4
Cottage industries and handicrafts:							
1953	3.3	246.0	–	22.9	10.3	–	282.5
1954	9.7	253.0	–	35.6	19.2	–	317.5
Productivity centres, etc.:							
1953	–	53.4	–	–	78.2	–	131.6
1954	30.8	100.4	4.3	–	29.9	37.6	203.0
Industrial relations, labour legislation, etc.:							
1953	–	130.8	9.5	106.4	41.8	5.8	294.3
1954	11.2	66.1	11.1	92.0	9.4	–	189.8
Technical education and training:							
1953	220.3	–	–	89.2	90.0	–	399.4
1954	22.1	–	–	97.0	81.1	–	200.2
Vocational training:							
1953	9.2	121.5	279.8	317.2	36.3	–	764.0
1954	176.7	165.2	224.9	174.3	53.1	–	794.2
TOTAL, ABOVE ITEMS:							
1953	232.7	803.8	366.5	635.3	454.7	271.9	2,764.9
1954	250.5	735.8	402.2	520.3	337.8	281.4	2,528.1
TOTAL, DIRECT PROJECT COSTS:							
1953	1,682.2	5,725.7[b]	1,522.4	4,787.3[c]	3,382.2[d]	718.3[e]	17,818.1[f]
1954	1,957.5	6,020.7	1,438.9	4,368.0	3,085.7	710.8	17,581.5[g]
			PER CENT OF TOTAL				
Manufacturing, processing, mining:							
1953	–	4.4	5.1	2.1	5.9	37.1	5.0
1954	–	2.5	11.2	2.8	4.7	34.2	4.7
Cottage industries and handicrafts:							
1953	0.2	4.3	–	0.5	0.3	–	1.6
1954	0.5	4.2	–	0.8	0.6	–	1.8
Productivity centres, etc.:							
1953	–	0.9	–	–	2.3	–	0.7
1954	1.6	1.7	0.3	–	1.0	5.3	1.2
Industrial relations, labour legislation, etc.:							
1953	–	2.3	0.6	2.2	1.2	0.8	1.7
1954	0.6	1.1	0.8	2.1	0.3	–	1.1
Technical education and training:							
1953	13.1	–	–	1.9	2.7	–	2.2
1954	1.1	–	–	2.2	2.7	–	1.1
Vocational training:							
1953	0.5	2.1	18.4	6.6	1.1	–	4.3
1954	9.0	2.8	15.6	4.0	1.7	–	4.5
TOTAL, ABOVE ITEMS:							
1953	13.8	14.0	24.1	13.3	13.5	37.9	15.5
1954	12.8	12.3	27.9	11.9	11.0	39.5	14.4

Source: United Nations, Economic and Social Council, *Official Records*: Eighteenth Session, *Supplement No. 4, Sixth Report of the Technical Assistance Board to the Technical Assistance Committee*, 1954.

[a] Approved programme for 1954.

[b] Including $251,322 for United Nations Technical Assistance Administration fellowship costs.

[c] Including $170,941 for United Nations Technical Assistance Administration fellowship costs.

[d] Including $193,346 for United Nations Technical Assistance Administration fellowship costs for the Middle East, African and European regions. Since the amounts for the last two regions are relatively small in comparison with that of the first one, they are grouped as one sum under the Middle East.

[e] Including $6,985 for United Nations Technical Assistance Administration fellowship costs.

[f] Exclusive of indirect project costs ($2,780,000) and central administrative costs ($2,212,000).

[g] Exclusive of indirect project costs ($2,736,300) and central administrative costs ($1,861,900).

Table 9. United Nations Technical Assistance, Expanded and Regular Programmes: Fellows or Scholars Appointed during 1952 and 1953

(Number)

Field of activity	Expanded programme				Regular programme			
	1952		1953		1952		1953	
	Number	Per cent	Number	Per cent	Number	Per cent	Number	Per cent
Industrial development	156	7.3	42	3.5	36	3.2	16	1.7
Co-operatives, handicrafts	8	0.4	81	6.8	3	0.3	1	0.1
Labour legislation	16	0.8	5	0.4	21	1.9	5	0.5
Employment services	24	1.1	5	0.4	2	0.2	–	–
Labour inspection, safety and hygiene	46	2.2	6	0.5	3	0.3	1	0.1
Vocational training	326[a]	15.3	289	24.2	–	–	–	–
Technical education	55	2.6	...	...	...	...	...	...
TOTAL, ABOVE	631	29.7	428	35.8	65	5.8	23	2.5
TOTAL, ALL FELLOWS AND SCHOLARS	2,127	100.0	1,196	100.0	1,124	100.0	922	100.0

Source: United Nations, Economic and Social Council, *Official Records*, Sixteenth Session, *Supplement No. 10* and Eighteenth Session, *Supplement No. 4*, fifth and sixth reports of the Technical Assistance Board to the Technical Assistance Committee (1953 and 1954).

[a] Including 180 foremen-trainees.

from a number of more advanced countries were engaged in training local workers for skilled and supervisory positions in such industries as electrical and agricultural machinery manufacture. Under the same scheme some 306 engineers, foremen, technicians and skilled workers had been sent abroad for further training. Among the benefits already reported from this assistance are improvements in the quality of products, economies in material and power, better use of equipment and workers' time and greater safety in the factories.[65]

Manpower surveys have been carried out in Egypt, Venezuela and Burma and vocational training surveys in Indonesia and Ceylon. Training centres have been established in various places: for vocational courses in Indonesia, for instructors in Malaya where a junior trades school has also been set up. Advice has been given in regard to improving the quality of industrial instruction provided in government training centres in India and in technical schools in Ceylon. In India, three specialists—in civil, mechanical and hydraulic engineering—worked and taught (under United Nations Educational, Scientific and Cultural Organization auspices) in the Institute of Technology in 1952 and 1953, and they were reinforced by an electrical and an industrial engineer in 1954. Liberia has been assisted in the teaching of science subjects in the ordinary schools. In Ecuador two ILO experts and two UNESCO experts helped in the reorganization of the Central Technical College in 1952 and 1953, while in 1954 a survey was made of trade school facilities in the field of motor mechanics and electrical and machine shop training. A long-term programme in Guatemala, which has involved seven UNESCO experts between 1951 and 1954, is designed to expand and improve technical education, especially in the field of machine shop practice, carpentry, textiles and electrical engineering. Another UNESCO expert has advised Haiti concerning the extension of vocational schools in the rural areas.

On the subject of industrial relations, advice in regard to legislation has been given to Burma and Indonesia; fellowships for overseas study have been awarded to officials from Chile (1), Egypt (2), Gold Coast (1), India (13), Pakistan (1) and Venezuela (1); help has been given to Burma in connexion with the organization of factory inspection; and in Pakistan in 1953 a course on industrial relations was given to some twenty-three students of whom two were from private industry and the remainder from government service.

In Indonesia, assistance has been provided in the field of job analysis, partly for statistical purposes, and in part to raise productivity and to improve the work of the employment service in the task of personnel selection and placement. Methods of improving the organization and operation of the employment service have also been recommended to Ceylon and to Peru. In Burma, a wage council has been set up in the cigar industry, from which it hoped to obtain useful experience in the operation of wage regulating machinery. Indonesia is also being advised in respect of wage policy, particularly in nationalized industries, and in 1953 was aided in establishing an industrial hygiene centre dealing with problems of factory health and safety, among other items. These problems were also dealt with by two experts in Guatemala in 1952 and 1953.

Promising results in the field of industrial productivity have been achieved in India, where demonstrations in a number of textile and engineering factories have raised per capita output substantially. Productivity centres are being established for the continuation of the work in India and also in Egypt.

Several research projects in the industrial field are also being undertaken in Egypt under the auspices of the United Nations Educational, Scientific and Cultural Organization. An industrial chemist is helping to plan a laboratory and a programme of work, another expert is helping in the establishment of a scientific instruments centre in which the production, repair and maintenance of electrical, electronic, mechanical and optical apparatus can be carried out both for industry and for the schools, and three other experts are helping to set up a scientific and technical documentation centre which will serve the cause of research throughout the region. Similar documentation centres have been established in India, Mexico and Uruguay with the aid of UNESCO experts who commenced work in 1951. Another research project sponsored by UNESCO in India has been in the textile industry in which an expert has been engaged both in work on a number of technical problems and in the training of additional research personnel. In Ceylon, the United Nations has assisted in the establishment of a technological institute, and a chemist and mechanical engineer have been attached to the Department of Industry as technical advisers on industrial problems. In Brazil, two experts are helping with the research in industrial chemistry being carried on at the Institute

[65] For additional information see International Labour Office, General Progress Report, *Work Done under Selected Projects*, (Geneva, November 1953), pages 8 and 9.

Oswaldo Cruz, and another has been engaged in preliminary work on the production of paper cellulose in the National Institute of Technology. In 1953, three experts were appointed to prepare a programme for an Institute of Technological Research that would operate on a regional basis in Latin America.

Altogether about one-seventh of all direct expenditure on technical assistance was absorbed by manufacturing, processing and mining, cottage industries and handicrafts and associated fields of activity (productivity, industrial relations, technical and vocational training) and the proportion was about the same in all the under-developed regions. So far as the number of trainees is concerned, however, these categories were relatively more important, accounting for about one-third of all fellows and scholars appointed under the expanded programme (table 9). There was an increase between 1952 and 1953 in the proportion of persons awarded scholarships for the purpose of acquiring knowledge and skill in vocational training and co-operative and handicraft activities, fields in which there were very few awards under the smaller regular United Nations programme. The total number of trainees in the field of industry and associated labour problems was 696 in 1952 and 451 in 1953—between a fifth and a fourth of the aggregate in each of these years.

Another internationally organized scheme for the exchange of technical aid is the Colombo Plan, which has been in operation in South East Asia since 1951. Most of the countries of the region, as well as Australia, Canada, New Zealand, the United Kingdom and, since 1954, Japan, are members of the organization; the United States has also associated itself with its operations. So far these have concerned manufacturing activities to only a minor extent, though among the projects organized through the plan there have been a few directly affecting industry and rather more of indirect importance to industry.

Pakistan, for example, is being assisted in the construction of two cement plants and a pipe factory; $5.5 million out of $19 million provided by Canada is being used on one of the cement plants and £NZ500,000 (out of £750,000) by New Zealand for the other, while £A200,000 of the £A3.7 million provided by Australia is going towards the pipe factory. The immediate purpose of these new industries is resettlement and irrigation of certain agricultural areas.[66] In India, up to $2 million of the $29 million provided by Canada is being used to purchase boilers for a locomotive works, in much the same way as $17 million was provided by the United States (in its 1952 and 1953 technical assistance programmes) for the purchase of steel for use in an agricultural implement factory. Of the Canadian aid, $5 million has been provided in copper and aluminium for use in India's cable and wire industry. Canada is also helping Ceylon in the erection and equipment of a fish reduction plant and fifteen agricultural maintenance workshops. New Zealand has contributed some 200,000 rupees' worth of cheese making equipment to the dairy industry of Nepal, and Australia is helping Pakistan in the establishment of five cold storage plants.

By 30 June 1953, twenty of the 177 experts sent into member countries in the region, and eighty-one of the 1,145 trainees selected from them had been concerned with industry and trade (see tables 10 and 11). Not all the technical assistance came from more advanced countries. India provided three of the experts and accepted twenty-two of the trainees and Pakistan also accepted two trainees.

[66] Consultative Committee on Economic Development in South East Asia, *The Colombo Plan, Second Annual Report*, Cmd 9016 (London, December 1953).

Table 10. Technical Assistance under the Colombo Plan: Experts and Trainees exchanged to 30 June 1953, by Donor Country

(Number)

Donor country	Experts		Trainees	
	Total	Industry and trade	Total	Industry and trade
Australia	44	1	402	21
Canada	31	–	118	3
Ceylon	–	–	3	–
India	5	3	98	22
New Zealand	19	1	140	11
Pakistan	–	–	3	2
United Kingdom	78	15	381	22
TOTAL	177	20	1,145	81

Source: Consultative Committee on Economic Development in South East Asia, *The Colombo Plan, Second Annual Report*, Cmd 9016 (London, December 1953), page 108.

"In most cases the training is designed to widen the trainee's experience and so to make him more proficient when he returns home in the job which he was previously doing. In other cases, the aim is to give trainees the experience necessary to enable them to staff new projects in their own countries, and to develop the sort of training facilities which at present can only be obtained abroad."[67] In the field of manufacturing, the United Kingdom has given training to eight men in the iron and steel industry and has provided facilities for a number of technicians to man the new industries which are being established in Ceylon. Australia has offered to provide equipment for a model bakery in Ceylon to be staffed by three nationals of Ceylon who have spent several months gaining experience in Australia.

Several countries participating in the Colombo Plan have supplied equipment for technical schools which have a close bearing on industrial development. The United Kingdom, for example, has proposed to supply, at an estimated cost of £136,000, the entire equipment for eight new technical schools and to add to the equipment at the school already established in Karachi. Similarly, Ceylon has decided to equip secondary schools with workshops in order to combine handicraft and practical training with normal academic education, and has requested equipment for 100 workshops for teaching carpentry, metal work, lacquer work and weaving. Australia has agreed to supply, at a cost of £A19,300, woodworking equipment for fifty of these workshops and light metal working equipment for another twenty. The United Kingdom has also agreed to provide workshop equipment and has already supplied £35,000 worth of tools and equipment to the Indian Institute of Technology at Kharagpur and has offered to equip a textile training centre in Pakistan at an estimated cost of £140,000.[68] Canada is assisting Ceylon, to the extent of $500,000, with the building and equipping of a school of practical technology. Indonesia has received aid from three Australian experts in the establishment of a printing trade school in Djakarta, and from New Zealand, to the extent of £NZ128,000, in the erection of a trade school at Malang. The United Kingdom has provided India with thirteen experts to help with the organization and operation of the Chittaranjan locomotive works.

[67] *Ibid.*, page 103.
[68] *Ibid.*, page 104.

Table 11. Technical Assistance under the Colombo Plan: Experts and Trainees exchanged to 30 June 1953, by Recipient Country

(Number)

Recipient country	Experts		Trainees	
	Total	Industry and trade	Total	Industry and trade
Brunei	–	–	2	–
Burma	–	–	7	1
Ceylon	69	10	268	35
India	39	3	352	13
Indonesia	–	–	76	4
Malaya	17	–	65	8
Nepal	–	–	10	–
North Borneo	4	1	11	–
Pakistan	45	6	281	19
Philippines	–	–	28	1
Sarawak	2	–	12	–
Singapore	1	–	16	–
Thailand	–	–	17	–
TOTAL	177	20	1,145	81

Source: Consultative Committee on Economic Development in South East Asia, *The Colombo Plan, Second Annual Report*, page 107.

As in the case of technical aid organized bilaterally, little has yet been done to assess the value of the programmes of the United Nations and Colombo Plan in the industrial field. It may be expected that the experience gained over several years of operation will increase the effectiveness of assistance administered internationally, not least in helping to overcome difficulties commonly encountered in the early stages of industrialization when technical knowledge and skilled personnel of all grades are likely to be very scarce. It is clear from the foregoing that the work covers a wide field within the general framework of industrial development. The degree of success, therefore, is likely to be unequal: certain types of projects may be much more effective in some countries than in others and certain methods of rendering assistance more useful than others; surveys may be very valuable in certain fields, expert advice to governments in others; the establishment of new institutions and facilities may be required in some instances, consultation or instruction in others; the training of local personnel may sometimes be the most useful contribution that this type of technical assistance can make, sometimes the creation of specific production facilities may be more important.

In the programmes of both the United Nations and the Colombo Plan, assistance is directed primarily to projects which are expected to result in a fairly rapid increase in the production and availability first of food, then of other essential commodities. Enlargement of technical knowledge and raising productivity in the industrial sector have a lower priority. Nevertheless, in all cases weight is given to local acceptance, to the practicability of schemes, to their integration with wider development programmes and to the extent to which they are likely to stimulate other economic activities, and in these respects the relative importance of manufacturing as a field for technical aid differs considerably from one under-developed country to another.

Three requirements appear important if maximum advantage is to be derived from a continuing programme of technical assistance. First, the requesting countries should be well aware of their own needs; in the present context this means that they should be fully cognizant of the various obstacles which stand in the way of local industrial development. Second, the appropriate authorities in the requesting countries should co-operate whole-heartedly with the persons and agencies through which assistance is being given. This raises procedural and other problems in countries in which most industrial enterprises are financed and conducted on a private basis. And third, a certain amount of follow-up work should be done so that a fairly broad and regular appraisal can be made of the relative effectiveness of different types of assistance. Some assessment of results seems particularly desirable in the early years of the programme when many of the techniques of assistance are necessarily of an experimental nature.

Chapter 5

SOME IMPLICATIONS OF THE INDUSTRIALIZATION PROCESS

In this final chapter, consideration is given to some of the implications and manifestations of industrial growth. Within the compass of the present study it is obviously impossible to do more than select one or two of the results that, in the light of resolution 461 (XV), appear to be most relevant, and even these will have to be treated very cursorily. The emphasis will be on phenomena that accompany the industrialization process, changing the nature of the country's economic organization or of its money flow or of its trade pattern, or posing problems of physical, economic and social adjustment. An awareness of these consequences of industrial development, by making it possible to anticipate points of friction and adjust the speed or direction of investment or adopt remedial measures, will help to increase the effectiveness of the process in achieving its real object, namely, to raise levels of living and increase human welfare.

Three sets of such phenomena are reviewed briefly in this chapter: (1) certain internal structural implications of industrialization; (2) changes in the pattern of foreign trade; and (3) some of the social consequences of the process.

Internal Structural Changes

One of the first manifestations of the industrialization process is an increase in the number of persons engaged in secondary industry. At certain stages the rate of increase may exceed that of the working force as a whole, thus bringing about a change in the country's occupational structure. In so far as it is revealed in census enumerations, this occurred in Australia between 1931 and 1951, for example; in Brazil between 1940 and 1950, in Canada between 1936 and 1951, in Egypt between 1937 and 1947, in Mexico between 1921 and 1930, in Poland between 1921 and 1931, and in South Africa between 1911 and 1921. It is most likely to occur during the initial phase of industrial development, when even small absolute increases in factory employment result in large proportionate gains, and during periods of particularly rapid industrialization, when factories are not only absorbing the equivalent of the natural increase of their own employees but also drawing labour from other occupational groups.

The relative expansion of the industrial labour force is normally at the expense of agriculture, although at a later stage of development it may also affect other occupations—personal and domestic service, for example. As industrialization progresses and income levels rise, however, the pattern of demand changes, the ramifications of transport and commerce, and financial, professional and cultural services grow more complex, and the increase in factory employment may begin to fall behind that in these other occupations. The rate of growth of factory employment is related to the expansion of industrial output but it also depends, in part, on the type of industries being established and on the rate of investment in mechanical labour-saving equipment.[1] Thus, at certain phases of the industrialization process, the proportion of workers in factory employment may remain fairly constant; the structural change takes the form of a decline in the proportion in primary activities and an increase in the proportion in commerce, transport and service activities.

Although there may be no exact correlation between the rate of industrial development and the change in occupational distribution,[2] there would appear to be a fairly general tendency for the relative importance of agricultural employment to decline and that of factory employment and services to increase. Between 1870 and 1930, for example, the proportion of the working population engaged in agriculture declined from 54 to 23 per cent in the United States, from 42 to 25 per cent in France, from 85 to 51 per cent in Japan; in Germany there was a decrease from 39 to 22 per cent between 1880 and 1930 and in the United Kingdom, where industrial development had proceeded furthest in the nineteenth century, from 15 per cent in 1870 to a mere 7 per cent in 1920. Even before the First World War, employment outside of farming and manufacturing in such relatively under-developed countries as Australia,

[1] For statistical purposes, the degree of organizational specialization is also significant: in so far as specialist commercial or financial concerns take over functions previously performed within a factory, for example, the industrial classification of the working population records a relative gain by these categories and a relative loss by the industrial category.

[2] Cf. P. T. Bauer and B. S. Yamey, "Economic Progress and Occupational Distribution" in the *Economic Journal* (London, England), December 1951, in which the authors, pointing to the large volume of services carried on even in primitive "agricultural" communities, maintain that observed correlations are "more in the nature of statistical accidents".

Table 12. Industrial Distribution of the Working Population[a]

(Percentage of working population in different sectors)

Country	1909			1919			1931			1938			1949		
	Primary	Secondary	Other	Primary	Secondary	Other	Primary	Secondary	Other	Primary	Secondary	Other	Primary	Secondary	Other
Australia	30	28	42	26	31	43	23	19	58	...	...	...	17	25	58
Brazil	...	...	...	...	...	...	...	...	...	70	10	20	61	13	26
Canada	37	27	36	37	27	36	...	...	...	28	21	51	23	25	52
Chile	...	...	...	41	24	35	40	20	40	41	17	42	...	...	...
Egypt[b]	...	...	...	69	8	22	...	...	...	71	8	21	66	11	24
India[c]	72	12	16	72	11	16	67	10	22	...	...	...	...	...	...
Japan[d]	...	...	...	...	...	...	51	19	30	...	...	...	49	15	35
Mexico[e]	...	...	...	64	11	25	69	13	18	67	9	24	61	39	
New Zealand	29	30	41	29	27	44	...	...	...	27	24	49	...	...	...
Philippines	...	...	...	...	...	...	...	...	...	74	10	17	66	8	26
Poland[e]	...	...	...	77	9	15	66	16	18	...	...	...	...	...	...
Turkey[e, f]	...	...	...	...	...	...	...	...	...	82	8	10	85	7	7
Union of South Africa[g]	29	14	57	31	19	50	...	...	...	25	18	57	25	15	60

Source: League of Nations, *Statistical Yearbook;* International Labour Organisation, *Yearbook of Labour Statistics;* United Nations, *Demographic Yearbook.*

[a] The figures are for census years within two years of those specified.

[b] Mining is included with secondary occupations in the 1917 census.

[c] Occupational classification.

[d] Occupational classification in 1931.

[e] Excluding Upper Silesia and certain districts of Wilno.

[f] The 1938 figures represent the 1935 census.

[g] European population only; occupational classification in the 1936 census.

Canada, New Zealand and South Africa,[3] accounted for more than one-third of the total working population, and by 1951, for more than half of it, while the proportion engaged in agriculture had fallen to less than one-fourth. In Australia and Canada, indeed, as in most of the older industrial countries, there are now more people engaged in manufacturing than in farming (table 12).

This relative growth in the non-agricultural population which has characterized the industrialization process in all under-developed countries brings with it many significant economic, social, psychological and political changes. Some of these are dealt with in the final section of this chapter; in the present section only one or two of the economic implications are referred to briefly.

For example, the expansion of secondary industry usually results in a relative increase in the number of wage earners, compared with subsistence workers and self-employed persons. The effect of this is most noticeable in those under-developed countries in which mining has not attained any great importance and in which agriculture is not organized to any extent on a plantation basis. Unless the industrialization process is accompanied by a considerable degree of inflation, any increase in the number of employees is reflected in a rise in the proportion of the national income distributed as wages and salaries.

In 1950, for example, the proportion of the national income accruing as wages and salaries ranged from under 30 per cent in such countries as Uganda and Mexico, between 30 and 40 per cent in Kenya, the Belgian Congo and Peru, between 44 and 50 per cent in Japan, Chile, New Zealand, Australia and Ireland, between 51 and 60 per cent in many western European countries as well as Colombia, Southern Rhodesia and Canada, to over 60 per cent in such diverse countries as Puerto Rico, Finland, Cuba, the United Kingdom and the United States.

Although industrialization contributes to diversification of the economy, reducing its dependence upon a small number of export activities, the growth of a wage-earning class creates other hazards. National income may, on the average, be somewhat less affected by vagaries of the weather or by price fluctuations on raw material markets overseas, but it is likely to become more dependent upon sound internal economic policy and, in particular, upon the appropriate relationship between domestic consumption and investment, which will probably continue to be strongly influenced by variations in the country's export earnings.

In the course of the hundred years that preceded the Second World War, agriculture and manufacturing more or less changed places as contributors to the national product of the United States: the share from agriculture fell from 35 per cent to 12 per cent of the total while the share from manufacturing rose from 10 per cent to 30 per cent of the total.[4] Changes of this nature have been taking place in many of the less developed countries in more recent years. In Australia, Canada and Japan, manufacturing was contributing about one-fourth of the net domestic product before the Second World War; in Chile, Israel, New Zealand and South Africa manufacturing now contributes more than

[3] European population only.

[4] R. F. Martin, *National Income in the United States, 1799-1939* (Washington, D.C., 1948).

Table 13. Percentage of Net Domestic Product Contributed by Manufacturing, 1938, 1939 and 1949 to 1952

Country	1938	1939	1949	1950	1951	1952
United Kingdom[a]	...	...	35.7	36.2	36.9	35.8
United States[b]	22.4	24.8	29.3	31.2	32.0	31.1
Norway	23.7	24.7	30.0	30.5	30.5	29.5
Canada	24.0	...	29.2	29.9	29.4	29.2
Japan	24.1	...	26.9	25.7	25.6	22.8
Israel[c]	...	...	...	24.3	...	...
Chile	...	19.9[d]	23.3	23.3	...	...
Union of South Africa[e]	17.7	17.6	22.0	22.7	25.1	25.0
Greece[f]	...	...	19.8	21.0	20.4	19.5
Guatemala	...	...	...	20.5[g]	...	...
New Zealand	...	...	23.4	20.4	22.4	...
Mexico	...	15.7	17.4	18.3	...	...
Colombia	...	....	16.0	16.5	...	...
Cyprus	...	...	...	15.5	...	...
British Guiana	...	...	15.8	15.4	13.2	...
India[h]	...	...	15.9	15.3	...	...
Nicaragua	...	...	...	14.1	...	...
Southern Rhodesia	...	...	13.6	14.7	...	...
Puerto Rico[i]	...	11.4	12.4	13.3	11.8	...
Panama	...	...	...	13.2	...	...
Thailand	9.9	...	11.5	12.7	...	...
Philippines	...	...	11.6	12.0	13.5	13.5
Peru	...	...	13.2	11.4	10.6	11.2
Egypt	...	8.0	...	11.0	...	...
Kenya[j]	...	...	9.4	10.8	9.7	10.7
Korea	...	...	10.3	...	...	10.5
Turkey	11.6	...	11.2	10.0	...	...
British Honduras	...	...	8.8[k]	...	...	...
Honduras	10.4	10.4	8.7	8.6	8.6	9.5
Bolivia[l]	...	...	3.7	4.0	...	...
Nigeria[m]	...	...	...	1.8	...	...

Source: United Nations, *Monthly Bulletin of Statistics*, January 1954; *Statistics of National Income and Expenditure*, series H, Nos. 5 and 6. For Egypt: Mahmoud Amin Anis, "The National Income of Egypt" in *L'Egypte contemporaine* (Cairo), January 1953; for Turkey: Government Statistical Office, *Turkiye Milli Geliri* (Ankara, 1954).

[a] Before stock valuation adjustment.
[b] The figures on which the percentages are based do not include profits on public enterprises.
[c] Including mining and public utilities.
[d] 1940.
[e] Privately owned factories only; including construction.
[f] Income from ocean shipping is not included in net domestic product.
[g] July 1949 to June 1950.
[h] Including construction.
[i] Including mining.
[j] Excluding certain processing industries.
[k] 1946.
[l] Unofficial estimates.
[m] Including public utilities, postal and communication services.

one-fifth, while there are many under-developed countries in which the expansion of industry since the depression of the nineteen thirties has raised the contribution from this sector to between 10 per cent and 20 per cent of the national product (table 13).

The changing composition of the national product and the changing distribution of the national income call for constant adjustments in economic policy. The spread of wage earning makes possible a gradual switch from indirect taxation to direct taxation; tariffs require revision in the light of the changing pattern of imports; public investment has to be geared in magnitude and direction to the new distribution of population both by region and by activity, especially in countries in which the government is responsible for transport and power facilities and water supplies. The changing structure of the economy often tends to make it more difficult to synchronize the budget as a whole and capital expenditure in particular with the more diversified pattern of private consumption and investment. Comparable adjustments are usually necessary in other fields also: new legislation may be required to cope with new problems in the field of factory safety, public health, and protection against unemployment, dependence in old age, incapacity and the various other contingencies of the industrial system; the content and organization of education usually require periodic revision if schools are to serve the new society adequately; machinery may be needed to assist in the redeployment of labour.

These matters, important as they are, lie beyond the scope of the present study. In general, they can best be analysed within the framework of individual countries, even though there are many considerations which are applicable to all under-developed countries in greater or lesser degree. There is one other topic, however, which merits a brief comment: changes in the

geographic pattern of activities which accompany and flow from the process of industrialization.

Within each country the location of a particular industry depends upon the effective source of its raw materials (particularly that which loses most weight in the course of manufacture), upon the position of the market or markets for its product, upon the available network of power and transport facilities and to a lesser extent upon climatic factors, upon the source of suitable labour, and, in a mutually determined relationship, upon the location of ancillary and complementary industries and services. Though influenced in various areas and at various times by schemes for regional development and by the growth of more widely dispersed small-scale industries, the factory system has usually been accompanied by powerful centripetal forces drawing new establishments into previously existing urban areas or creating new urban aggregations. Hence in many countries industrialization has been among the principal causes of the growth of cities.

In the under-developed countries the forces that tend to bring about or accentuate the concentration of population that is characteristic of urban areas depend less on the size of individual factories than on the fact that only in urban areas does there exist a technical and economic environment suitable for the establishment of factories, small or large. In very few of the less developed countries are there urban concentrations that

Table 14. Urbanization of the Population[a]

(Percentage of the total population living in urban areas)

Country	*1912*	*1921*	*1931*	*1936*	*1941*	*1946*	*1950*
Argentina[b]	53	...	...	...	...	63	...
Australia[c]	...	...	64	...	...	69	...
Bolivia[d]	27	...	...	...	...	...	34
Brazil	...	...	...	...	31	...	37
Bulgaria[e]	19	20	...	21	...	25	...
Burma	...	...	10	...	...	...	...
Canada[f]	45	50	54	...	54	...	57
Ceylon	13	14	14	...	...	15	...
Chile	...	...	49	...	52	...	...
Colombia	...	...	...	29	...	...	...
Cuba[b]	...	45	47	...	50	...	...
Ecuador[g]	...	...	...	...	...	...	30
Egypt[h]	...	...	...	25	...	30	...
Greece[i]	33	36	...	...	47	...	...
India[j]	...	...	11	...	13	...	17
Iran[k]	...	...	...	...	...	...	20
Israel[l]	...	...	83	...	...	84	78
Jamaica[b]	...	...	...	...	18	...	...
Mexico[b]	...	...	34	...	35	...	...
New Zealand[m]	48	54	...	57	...	...	61
Paraguay[n]	...	...	...	...	...	...	36
Peru[o]	...	...	...	...	35	...	...
Philippines	...	...	...	...	23	24	...
Poland[p]	...	...	37	...	...	31	36
Portugal	25	...	...	...	31	...	...
Puerto Rico[q]	20	22	28	30	...	...	41
Southern Rhodesia[r]	...	...	...	...	...	55	...
Spain	35	38	43	...	49	...	61
Turkey[s]	...	24	...	24	24	25	25
Union of South Africa	25	25	...	31	...	...	42
Venezuela[t]	...	...	...	35	39	...	50

Source: United Nations, *Demographic Yearbook*, 1952; replies to United Nations questionnaires; for Mexico: Dirección General de Estadística, *Séptimo Censo General de Población*, Resumen General (Mexico, D.F., 1953), page 26.

[a] The figures are based on census enumerations made within two years of the year specified.

[b] *De jure* population.

[c] Excluding migratory population and full-blooded aborigines.

[d] Adjusted for under-enumeration; the first figure relates to 1900.

[e] Prior to 1946, excluding Southern Dobruja.

[f] Excluding Newfoundland; *de jure* population.

[g] Excluding a few rural parishes for which data are not available; *de jure* population.

[h] Excluding nomads.

[i] Excluding the Dodecanese Islands; the first figure relates to 1907.

[j] Pre-partition India in 1931 and 1941; in 1951 excluding Jammu-Kashmir and the tribal areas of Assam.

[k] Estimated.

[l] In 1931 the Jewish population of Palestine; 1948 and 1951, excluding persons in immigrant reception centres.

[m] Excluding migratory population.

[n] Excluding jungle population and unclassified.

[o] Excluding jungle inhabitants; unadjusted for under-enumeration.

[p] Pre-war boundaries in 1931.

[q] Including United States forces; *de jure* population.

[r] European population.

[s] Prior to 1946, excluding Hatay; the first figure relates to 1927.

[t] Excluding tribal Indians.

owe their existence solely or even mainly to secondary industry. In most cases the urban areas have their origin in primary or distributive activities: they are mining towns or ports or other transport nodes. When factories are established, however, they greatly accelerate the rate of urban growth, and in the industrial phase of economic development they are undoubtedly the major urbanizing force.

It is significant that in several of the then less developed countries—Argentina, Australia, Canada and New Zealand, for example – about half of the population was living in urban areas even before the First World War. By the outbreak of the Second World War, Chile, Cuba, Palestine and Spain had been added to this group. During this period, many countries with a predominantly rural population also experienced a rapid increase in city growth (see table 14).

This is not the place for a discussion of the urbanization process, even to the extent that it reflects the growth of manufacturing industries. Two problems should be mentioned, however, because of their particular relevance to this study: (1) the additional cost that urban development entails and (2) the sectoral disparities which tend to emerge with such urban concentration.

Except in so far as existing facilities are under-utilized, the establishment of a factory in an urban area automatically creates a need for a parallel investment in public utilities, roads and means of transport, workers' accommodation, sanitation, schools, hospitals and recreational facilities. As these investments are often made by different agencies—private builders, central government or local authority—there may be a danger that total capital requirements, never being seen as an aggregate, will be underestimated, particularly in respect of their foreign exchange content. And if the necessary associated investments are not made, or lag far behind, as they might tend to do during a period of rapid industrialization, then there may be the opposite danger of deterioration in the urban environment, overtaxing of facilities, creation of slum conditions and the consequent reduction in the level of living. Considerations of this nature obviously set a limit to the feasible rate of industrial development.

The second problem that arises when new industries are established largely in existing urban areas is the resultant increase in the gap in economic development between urban and rural sectors of the country. Many under-developed countries are now characterized by this type of gap: their major urban areas resemble, and in many ways are more closely associated with, the towns and cities of more advanced countries than their own rural hinterland. In many cases, the low per capita standards that distinguish these countries reflect the under-developed nature of the rural areas where most of the population resides, rather than these more developed urban areas, where the rest of the population reap the advantages of a much higher degree of specialization and a much higher per capita level of capital investment.

In these circumstances, industrialization, in so far as it tends to be concentrated in urban areas, magnifies the disparity between the sectors, raising the degree of development of those parts of the economy which are already furthest advanced, and leaving the remainder—the least developed parts—more or less untouched. Where new industry draws from the rural sector its raw materials and the food required by its workers, it may aid in the development process by furthering the commercialization of farming; where its needs are met largely by imports, its developmental effect is likely to be confined in the main to the extent to which it draws its labour from the rural sector. Unless this results in the permanent transfer of workers from less productive to more productive activities, however, it may induce merely a temporary migration of able-bodied males, and thus disrupt the social structure in the rural sector, as it has done in parts of Africa, increasing the difficulties of economic development in the most backward parts of the economy and thereby retarding their industrialization.

Changes in the Pattern of Foreign Trade

The most obvious effect of the growth of domestic industries is a reduction in imports of the type of goods that the new industries produce. The effect of his upon the country's foreign trade is usually offset to a greater or less extent, however, by an increase in imports of capital equipment—required to establish the new industries in the first instance—and of spare parts and replacements for maintenance, plus varying proportions of the raw materials, fuel and semi-finished goods and components which constitute the input of the new industries, and various types of capital goods and plant required for the creation of the economic framework in which industries can function, as well as a range of consumer goods to meet the new demands of workers building the infrastructure and operating the new factories.

Whether the forces making for an increase in total imports are greater than those tending to curb imports is a question which cannot be answered in advance, but the weight of evidence appears to show that, at least in the absence of restrictive commercial policies and currency disorders, imports of manufactures tend to be stimulated by the industrial growth of the less developed countries.[5] The increase in demand that follows industrialization springs chiefly from a rise in wealth

[5] League of Nations, *Industrialisation and Foreign Trade* (Geneva, 1945), page 91.

and therefore the range of imports tends to be more diversified than before, oriented towards capital goods and higher quality consumer goods which domestic industry cannot yet produce.

As far as the over-all volume of imports into the industrializing country is concerned, the main determinant is capacity to import. This is a function of foreign exchange receipts, which in turn depend primarily upon commodity export earnings, supplemented—to a comparatively small extent in most under-developed countries—by receipts from invisible exports and foreign investment. Commodity export earnings are the product of the quantity of exports and the price realized on overseas markets. The latter lies largely outside of the control of any particular under-developed country; the quantity of exports, by contrast, depends to a large extent upon the resources devoted to the export activities in question. And it is at this point that the growth of secondary industries tends to exert its strongest influence, by competing for factors of production which might otherwise be employed in export activities. Moreover, in countries in which industrialization programmes have been given high priority and exports consist very largely of primary products, there is often a tendency to neglect or discriminate against these export activities, with the result that the capacity to import is curtailed at a time when the demand for imports is rising.

Certain features in the situation tend to accentuate this gap between the demand for imports and the wherewithal to pay for them. In so far as industrialization and the development process with which it is associated result in a rising level of living, the demand for manufactures is likely to increase more rapidly than the national product and hence stimulate a larger inflow of imports, at least in the first instance. On the other hand, in so far as the under-developed countries' exports consist of food and raw materials, they face a less elastic demand and—irrespective of any difficulty there may be in expanding physical output—there may be considerable difficulty in ensuring a steadily rising foreign exchange income for the whole group of industrializing countries. This in itself may necessitate changes in the composition of their imports—away from goods for which substitutes can be produced domestically and towards goods that are required to maintain the process of economic growth.

For an individual under-developed country supplying a small fraction of the total demand for one or two primary products, it may be somewhat easier to expand sales and hence foreign exchange income, thereby slowing down the change in the pattern of trade. Against this, however, must be set the tendency of many industrial countries to support, for strategic or social or other, often non-economic, reasons, the domestic production of various primary materials; this obviously operates against expansion of the traditional exports of the less-developed countries. Nor should it be overlooked that the industrialization process in one under-developed country may influence the pattern of trade not only with its more advanced commercial partners to which it exported primary products and from which it imported manufactures, but also with third markets. In an under-developed country in which population density is particularly high, for example, industrialization is likely to bring about a growing dependence upon imports of food and raw materials which would have to be financed to an increasing extent by the export of manufactures with a high labour content. An expansion of such exports, especially from countries in which money wages were low compared with the productivity of the labour, would have considerable effect upon the established pattern of world trade.

Where the industrialization process is the main cause of external disequilibrium, it may be merely a temporary phase or symptomatic of more deep-seated maladjustments. Its persistence is likely to depend chiefly on the rate of development, the nature of exports, the inflow of foreign capital and the degree of internal inflation. In this respect, the experience of some Latin American countries, such as Argentina and Chile, seems to have differed appreciably from that of Commonwealth countries such as Australia and South Africa. This opens up a field in which further research is necessary.[6]

The first step towards an answer might be a thorough analysis of the influence of industrial development upon the course of import trade, but this lies outside the scope of the present study; it would have to be conducted on the country level in the first instance and even then would present numerous difficulties. For not only is it impossible to predict what the volume or composition of imports would have been in the absence of industrialization, but the import trade is also affected by a number of other influences, notably the progress and status of export activities and changes in the terms of trade, as well as by regulation of imports through customs duties, differential exchange rates and quantitative controls, which became increasingly important after the depression of 1930 to 1932. Although these difficulties rule out any attempt to generalize about the precise relationship between industrial growth and changes in the composition of exports and imports, a brief examination of the structure of foreign trade in one or two countries that have undergone a certain amount of industrialization in recent years may be instructive, if only to indicate the type of changes that have taken place and the nature of the problem that these changes pose to the trading partners of industrializing countries. The remainder of this section, therefore, is devoted to a preliminary analysis of changes in the exports and imports, first of three Latin American countries—Argentina, Brazil and Mexico—and then of two Commonwealth countries—Australia and the Union of South Africa.

[6] Cf. Economic Commission for Latin America, *Theoretical and Practical Problems of Economic Growth*, sales number 1952.II.G.1.

As far as exports are concerned, recent trends in the three Latin American countries have diverged markedly. Between 1940 and 1948 in Argentina, the quantum of exports did not rise much above three-fourths of the figure for the pre-depression period 1925 to 1929, though there was a considerable growth of manufacturing during these years. In Mexico, the industrial development of the nineteen forties was accompanied by a somewhat greater recovery in the volume of exports, though the levels reached in the nineteen twenties were not regained. In Brazil, on the other hand, the volume of exports reached record figures in the years 1945 to 1949 and, since with the rise in world demand for coffee the country's terms of trade had grown more favourable than during the nineteen thirties, its capacity to import expanded considerably, exceeding even the level of 1925 to 1929, when coffee and cotton prices were appreciably higher. Industrial production during the post-war period was about three times the 1920-24 rate.

In two of these three countries, there was a substantial decline in the relative volume of imports during the decades under review. In Argentina, for example, the per capita level of imports in 1945-48 was less than half the 1910-14 level—lower than at any time except during the two world wars. Despite the rise in export earnings in Brazil, the per capita level of imports in 1945-49, though above that of the decade 1930-39, was not much more than three-fourths of the 1925-29 level and less than one-half of that obtaining just before the First World War. In Mexico, on the other hand, per capita imports in the post-war period have been at a much higher level—some 20 to 25 per cent above that of the peak period 1925 to 1929—corresponding to the greater availability of foreign exchange during recent years. In all three countries the decline in export earnings during the depression caused the per capita volume of imports to drop by about 50 per cent between 1925-29 and 1930-34.

As a proportion of the total supply of goods (production plus imports minus exports), imports declined from 60 per cent in 1926 to 34 per cent in 1948 in Argentina, from 62 per cent in 1925 to 29 per cent in 1949 in Brazil, and from 40 per cent in 1925 to 29 per cent in 1948 in Mexico. On the average at the end of the nineteen forties, in other words, imports still accounted for about one-third of the available supply of goods in these three countries. The proportion, however, varied considerably from one group of commodities to another. In the field of manufactures, for example, all three countries could supply from their own factories most domestic requirements of many ordinary consumer goods, particularly manufactured foodstuffs and textiles.

In Argentina, imports of foodstuffs and tobacco declined by about a third between 1925-29 and 1935-39 (table 15), while imports in 1950-52 were only about a third of those in the late nineteen thirties (table 18). Imports of textiles (fibres and manufactures) in the early post-war years were about one-third of those of 1925-29, and there was a further sharp decline in 1950-52 (see table 18). In Brazil, imports of foodstuffs were about 12 per cent lower in 1945-49 than in 1925-29, partly a reflection of government encouragement of domestic wheat production. Even before the war, the Brazilian cotton industry was able to meet most internal requirements, and imports were less than a fifth of the pre-depression level. The increase in textile imports in the early post-war years reflected the higher standard of living as well as the backlog of war-time demand—chiefly for woollen and linen fabrics.

Imports of chemicals and pharmaceuticals, and wood-pulp, paper and cardboard, on the other hand, have been maintained at a high level, being appreciably greater in the post-war period than during the pre-depression boom. In these cases, however, the rise in imports was sometimes less than the rise in consumption, for local production was also increasing. In Mexico, for example, the larger paper imports accounted for only a third of total consumption in 1950, compared with a half in 1939; the proportion of chemicals provided by imports dropped from 85 per cent in 1940 to 76 per cent in 1950, while consumption had increased eightfold and exports between threefold and fourfold.

In Argentina, imports of fuels and lubricants were also fairly well maintained at about 23 per cent below the 1925-29 level during the nineteen thirties, 19 per cent below in the early post-war years, 26 per cent above in 1947 and at a substantially higher level in 1950-52. Petroleum imports supply about 60 per cent of total domestic demand, which for some time has been restricted by rationing. The demand for imported coal comes not only from power stations but also from an expanding iron and steel and metallurgical industry. Capital goods imports on the whole were appreciably lower: between half and two-thirds of the 1925-29 level from 1930 to 1939, approximately half in the immediate post-war period and after a rise in 1948 rather less than the pre-war level during the years 1950-52. The largest decline in this last period was registered in the category of transport and communication equipment, but there was also a major drop in imports of miscellaneous industrial equipment.

In Brazil, imports of fuel and lubricants were also well maintained: in 1935-39 they actually exceeded the 1925-29 rate, in 1945-49 were almost double it (table 16), and in 1950-52 had risen by a further 60 per cent (table 18). The increase was confined largely to petroleum and its products, which, for technical reasons as well as cost, have gradually been replacing coal. Imports of capital goods were somewhat lower, but better maintained than in Argentina: they were 19 per cent above the 1925-29 level in 1945-49 and had increased a further 50 per cent by 1950-52. They accounted for just over 28 per cent of all expenditure on imports in 1939, substantially less than that during the war, 34 per cent in 1947 and nearly 38 per cent in 1951 when import policy was liberalized. Between 1925-29 and 1935-39, industrial production increased by 60 per cent while the country's capacity to import declined by 32 per cent and the actual volume of imports by 27 per cent. If the post-war period 1945-49 is compared with the pre-depression period 1925-29, industrial production is seen to have been three times as great, the capacity to import 7 per cent higher and actual imports 8 per cent higher. As indicated above, it is the capacity to import rather than the degree of industrialization that appears to have exercised the decisive influence on the course of import trade. In spite of the growth of local industry, between 1925-29 and 1950-52 there was a fairly steady increase in the proportion of total import expenditure devoted to manufactured goods—from little over 50 per cent to nearly 59 per cent. The proportion devoted to raw materials was much the same in 1950-52 (27 per cent) as in 1925-29, the main decline being in the category of foodstuffs, which accounted for 25 per cent of total expenditure in 1910-14, 22 per cent in 1925-29, 19 per cent in 1945-49 and 14 per cent in 1950-52. Textile production and food processing, which contribute about 60 per cent of Brazil's industrial output, are not heavily dependent upon imported raw materials, at least in quantitative terms; dyestuffs and chemicals, soda ash, certain wools, tin and tinplate are their chief requirements. The growth of the domestic iron and steel industry has considerably reduced the need for imported metals and metal goods. Chemicals in general, and paper making materials and cement, on the other hand, are still imported in large quantities. Of the country's imports of food in recent years, wheat has accounted for about 60 per cent—a proportion which may continue to rise as the process of industrialization is accompanied by urbanization and increased consumption of bread.

Table 15. Argentina: Indices of Population, Production and Foreign Trade, 1910-14 to 1945-48

(1925-29 average = 100, except as indicated)

Item	*1910–14*	*1915–19*	*1920–24*	*1925–29*	*1930–34*	*1935–39*	*1940–44*	*1945–48*	*1948*
Population growth	66	78	89	100	113	128	139	147	151
Production (valued at 1935 prices):									
Total (1925–29 = 100)	...	...	...	100	99	123	158	167	176
Manufacturing (1935–39 = 100)	...	...	...	...	...	100	141	162	170
Agricultural (1935–39 = 100)	...	...	...	...	...	100	117	104	113
Quantum of exports	56	58	77	100	92	89	68	76	75
Quantum of imports	76	43	70	100	68	77	42	83	127
Per capita volume of imports	115	55	79	100	61	60	30	56	85
Imports of non-durable goods:									
Total	...	...	...	100	78	87	51	75[a]	113[b]
Foodstuffs and tobacco	...	...	...	100	80	66	54	60[a]	58[b]
Textile fibres and manufactures	...	...	...	100	83	91	39	32[a]	58[b]
Chemicals and pharmaceutics	...	...	...	100	92	114	99	119[a]	158[b]
Wood-pulp, paper and cardboard	...	...	...	100	95	115	97	146[a]	189[b]
Fuel and lubricants	...	...	...	100	78	77	39	81[a]	126[b]
Imports of durable goods	...	...	...	100	47	64	20	51[a]	105[b]
Imports of capital goods	...	...	...	100	49	65	20	53[a]	109[b]

Source: United Nations, *Economic Survey of Latin America, 1949*, sales number 1951. II.G.1.

[a] 1945.

[b] 1947.

Table 16. Brazil: Indices of Population, Production and Foreign Trade, 1910-14 to 1945-49

(1925-29 average = 100)

Item	1910–14	1915–19	1920–24	1925–29	1930–34	1935–39	1940–44	1945–49
Population growth	73	84	94	100	106	115	128	142
Production (valued at 1939 prices):								
Total	...	...	92	100	119	149	178	214
Agricultural	...	...	91	100	121	142	143	156
Industrial	...	...	94	100	118	160	229	298
Capacity to import	...	53	67	100	66	68	71	107
Terms of trade	...	55	66	100	61	45	53	62
Quantum of exports	77	95	99	100	110	152	134	170
Quantum of imports	120[a]	41	61	100	52	73	62	108
Per capita volume of imports	164	48	65	100	48	63	48	77
Imports:								
Capital goods	...	...	...	100	41	73	48	119
Motor vehicles	...	...	...	100	15	31	27	98
Textiles	...	...	...	100	14	18	16	46
Chemicals and pharmaceuticals	...	...	...	100	83	186	197	320
Paper, wood-pulp and cardboard	...	...	...	100	92	135	104	143
Fuel and lubricants	...	...	...	100	84	104	87	192
Foodstuffs	...	...	...	100	69	72	72	88

Source: United Nations, *Economic Survey of Latin America, 1949.*

[a] 1913.

In Mexico, there was a general decline in imports in the early nineteen thirties, and, except in the case of iron, steel and cement, and transport and communication equipment, the pre-depression level had not been regained before the Second World War. Thereafter, however, there was a general and substantial increase; the only large category of goods in which imports in the early post-war period (1945-48) were below those of 1925-29 was that of metals (excluding iron and steel) and metal manufactures. Imports of agricultural machinery, transport and communication equipment, iron, steel and cement in 1945-48 were about five times the 1925-29 level, while those of machinery and equipment and capital goods in general were about double (table 17). By 1950, however, domestic cement capacity had more than trebled, and small amounts were becoming available for export. Somewhat smaller increases marked the imports of rubber and rubber manufactures and fuel and lubricants. In the case of the latter, as in other countries, petroleum and its products were the most important; the domestic industry was unable to supply all types of refinery distillates, and in some areas imported fuels were cheaper. Imports of capital goods continued to increase and in 1950-52 were 17 per cent above the 1947-49 level, the only group within this category to show a decline being transport and communication equipment. In contrast to the rising trend which set in after the depression, there was a substantial drop in imports of textile yarns (including rayon) in the post-war period, indicative of the growth of the local spinning industry as well as of government restrictions on importation of wool. A considerable expansion of food imports—the 1950-52 level was about four times that of 1937-39—reflects in large measure the increase in wheat consumption which as in Brazil has accompanied the townward movement of population that characterizes industrial development. Imports of sugar, wines and spirits, fats and oils and various preserved foods have decreased considerably as a result of the growth of domestic capacity in these industries. Imports of consumer goods in the early post-war years were running at about double the pre-war rate, and in spite of a setback in 1948, following the imposition of increased duties and controls (and a devaluation of the peso) continued to rise, the 1950-52 rate being about a fourth higher than that of 1947-49.

The growth of secondary industry has been marked by an appreciable increase in value of imports of raw materials: between 1937-39 and 1950-52 there was a 58 per cent expansion in Brazil and Mexico and a 13 per cent expansion in Argentina (table 18). Metals, chemicals, wood-pulp and (except in Brazil) rubber all showed substantial increases. In Brazil, imports of chemicals—chiefly caustic soda, sulphur and other industrial raw materials—were more than three times the pre-depression level in 1945-49 and there was a further increase of about 30 per cent by 1950-52. Nevertheless, in terms of value at constant prices, raw materials constituted a smaller proportion of total imports in 1950-52 than in 1937-39 in both Brazil and Mexico (table 19). In Argentina, by contrast, almost 31 per cent of all imports in 1950-52 were raw materials, compared with rather less than 25 per cent in 1947-49 and just under 20 per cent in 1937-39.

Argentina differed from Brazil and Mexico in respect of consumer goods imports, too. Over the three periods 1937-39, 1947-49 and 1950-52, there was a steady and substantial increase in Brazil and Mexico, but a steady and substantial decrease in Argentina (table 19), even though the rise in manufacturing output was of the same order of magnitude in the three countries. Much the same could be said of imports of capital goods: a steady and substantial increase in the case of Brazil and Mexico, but in the case of Argentina the rise between 1937-39 and 1947-49 was followed by a sharp decline, and 1950-52 imports were actually less than those of 1937-39. In all three countries, the proportion of total imports accounted for by capital goods was at a maximum in 1947-49: 51 per cent in Mexico, 44 per cent in Argentina and 41 per cent in Brazil.

The relative importance of consumer goods imports was lower in the post-war period than in the pre-war period in all three countries: in Argentina, however, it dropped markedly between 1947-49 and 1950-52, whereas in Brazil and Mexico it was more or less constant. As a result, consumer goods constituted a mere 12 per cent of total imports in Argentina in 1950-52, compared with almost 30 per cent in Mexico and 35 per cent in Brazil.

In Latin America as a whole, consumer goods, which accounted for almost one-half of total imports before

Table 17. Mexico: Indices of Population, Production and Foreign Trade, 1910-14 to 1945-48

(1925-29 average = 100)

Item	1910–14	1915–19	1920–24	1925–29	1930–34	1935–39	1940–44	1945–48	1948
Population growth	96	93	93	100	109	120	132	147	152
Production (valued at 1937 prices):									
Total	...	...	...	100	92	112	134	151	156
Manufacturing	63	53	73	100	108	153	204	236	231
Quantum of exports	39[a]	62[b]	114	100	73	89	80	88	94
Quantum of imports	88[a]	42[b]	80	100	55	74	89	179	164
Per capita volume of imports	92	45	86	100	50	62	68	122	108
Imports:									
Capital goods	...	...	...	100	55	76	80	226	215
Machinery and equipment	...	...	...	100	50	62	63	194	205
Agricultural machinery and supplies	...	...	...	100	54	81	140	471	702
Transportation and communication equipment	...	...	...	100	86	153	134	460	374
Iron, steel and cement	...	...	...	100	94	148	242	515	253
Other products	...	...	...	100	50	62	63	124	106
Consumer goods:									
Textile fibres and manufactures	...	...	...	100	66	78	100	134	106
Foodstuffs, beverages and tobacco	...	...	...	100	47	41	107	169	95
Chemicals and pharmaceuticals	...	...	...	100	70	92	115	184	228
Wood-pulp, paper and cardboard	...	...	...	100	52	93	126	174	154
Metals and manufactures	...	...	...	100	43	55	51	74	66
Rubber and manufactures	...	...	...	100	57	69	70	165	196
Fuel and lubricants	...	...	...	100	70	59	82	185	227
Miscellaneous	...	...	...	100	49	60	87	164	147

Source: United Nations, *Economic Survey of Latin America, 1949.*

[a] 1910–12.
[b] 1918–19.

the depression of the nineteen thirties, accounted for about a third in the post-war period 1946-52. The other major categories of imports all increased in relative importance: capital goods from 33 to nearly 39 per cent, raw materials from 13 to nearly 18 per cent and fuels from 6 to nearly 11 per cent of the total. In relation to total domestic consumption in the region, imports during the post-war period contributed about 2 per cent in the case of fuels, 3 per cent in the case of raw materials, 6 per cent in the case of consumer goods and almost 35 per cent in the case of capital goods. Except in the case of fuels, these proportions were all lower than in the pre-depression period, substantially so in the case of capital goods, in which imports had provided over 52 per cent of the total, and consumer goods, in which imports had provided almost 12 per cent of the total.[7]

In Argentina, Brazil and Mexico, the pattern of imports in recent years has been greatly influenced by the use of quantitative and exchange controls which, in general, have tended to exclude goods deemed less essential or obtainable from domestic sources. Policies exercising a comparable influence upon foreign trade have been largely absent from Australia and the Union of South Africa (at least until 1949) but several of the changes noted in the import pattern of Argentina, Brazil and Mexico are to be found in these countries too.

In the Union of South Africa, for example, in terms of value at current prices almost one half of all private imports in the period 1915-18 were foodstuffs or manufactured textiles (table 20); in 1937-39 not much more than one-fourth belonged to these two categories, though under the combined influence of drought and the backlog of wartime demand the proportion rose to about a third in 1946-49. Manufactured foodstuffs and tobacco constituted 1.3 per cent of all imports in 1946-49—about one-half of the proportion in 1926-28. Metal manufactures—largely capital goods—constituted the largest single category of imports in 1937-39, amounting to just over one-fourth of the total in current prices, more than double the proportion during the period 1915-18. During the same interval, the proportion of import expenditure devoted to vehicles increased almost fourfold, to nearly 11 per cent of the total, while that of imports of petroleum and petroleum products doubled, to nearly 5 per cent of the total. Imports of raw materials of a vegetable or agricultural nature increased in importance, from less than 3 per cent of total expenditure in 1915-18 and 1926-28 to more than 6 per cent in 1946-49. This is partly a reflection of the growth of the rubber industry and to a lesser extent certain types of textile manufacturing. In contrast to Latin American experience, however, imports of chemicals and paper and wood showed a declining trend in relative importance. If these products are also regarded as raw materials, the importance of this category as a whole remained more or less constant during the period, accounting for between a fifth and a fourth of total expenditure on imports. Imports of capital goods, which constituted about a fifth of the total in 1915-18 and a third of the total in 1926-28, rose to about 40 per cent in 1937-39, declining somewhat to about 36 per cent in 1947-49. At this stage, it should be recalled, the country, though still without an integrated textile industry and therefore heavily dependent upon imported fabrics and yarn, was producing about 600,000 tons of steel a year.

Although the general structure of imports into Australia changed comparatively little during the period under review, there were several interesting changes in the relative significance of various categories of imports. Consumer goods, which accounted for about 44 per cent of the total

[7] Economic Commission for Latin America, *Preliminary Study of the Technique of Programming Economic Development*, (mimeographed), page 34.

Table 18. Argentina, Brazil and Mexico: Selected Imports, 1937-39 to 1950-52

Imports	1947–49 average (millions of dollars at 1948 prices)			Indices of value at 1948 prices (1947–49 = 100)					
				1937–39			1950–52		
	Argentina	Brazil	Mexico	Argentina	Brazil	Mexico	Argentina	Brazil	Mexico
ALL IMPORTS	1,402	1,224	548	95	71	48	72	148	120
Consumer goods:									
Foodstuffs	69	244	57	173	83	43	59	157	171
Textiles	99	...	16	192	...	57	21	...	57
Pharmaceutical products	...	23	15	...	70	40	...	295	165
Motor vehicles	27	53	22	129	35	56	48	125	109
Domestic appliances	32	50	11	95	37	68	43	119	87
TOTAL	297	428	158	180	85	53	41	148	124
Raw materials:									
Textile fibres	...	...	10	...	...	83	...	...	106
Yarns	60	16	8	68	102	97	54	125	43
Sacks	23	...	...	161	...	...	96	...	...
Wood-pulp and paper	56	33	7	81	65	101	90	151	156
Chemicals	76	56	33	67	77	50	108	175	133
Rubber	8	...	6	81	...	39	123	...	129
Metals	27	25	3	94	117	88	101	121	127
TOTAL	343	151	90	77	95	80	89	150	127
Fuels	148	147	21	74	60	29	131	159	108
Capital goods:									
Building materials	57	37	19	76	55	67	87	127	122
Agricultural machinery	21	15	18	90	74	29	119	169	132
Transport and communication equipment	152	171	65	74	49	35	28	144	99
Industrial machinery and equipment	201	188	134	52	48	30	56	158	108
Other materials and equipment	182	87	44	74	78	45	85	116	115
TOTAL	612	498	279	69	55	36	63	144	117

Source: United Nations, *Economic Survey of Latin America, 1951-52*, sales number: 1953.II.G.3.

by value in 1914/15-1916/17 dropped to 33 per cent in 1924/25-1926/27 and remained slightly below this in the mid-nineteen thirties and the post-war period 1948/49-1950/51 (table 21). Capital goods, which accounted for about 35 per cent of the total during the First World War, increased to 41 per cent in the mid-nineteen twenties and remained at this level in the mid-nineteen thirties, dropping back slightly in the post-war period. Raw materials (including semi-manufactures destined for industrial use) absorbed a gradually rising proportion of total import expenditure: from 18 per cent in 1914/15-1916/17 to 22 per cent in 1948/49-1950/51. Petroleum imports showed the greatest relative increase: from about 3 per cent of total import expenditure in 1914/15-1916/17 to more than 9 per cent in 1948/49-1950/51. Within these broad groups, the most decisive changes were: (1) in manufactured foodstuffs, which declined by more than two-thirds during the period under review; (2) in raw materials, which doubled, and (3) in transportation equipment, which trebled. There was a substantial decline in the relative importance of completely manufactured goods, particularly in the last phase, between 1934/35-1936/37 and 1948/49-1950/51, during which domestic secondary industry underwent a considerable expansion. In the period 1948/49-1950/51, however, the results of pent-up war-time demand, a rise in income levels and an influx of new immigrants became evident in a reversal of the pre-war trend for the relative importance of consumer goods to decrease and that of capital goods to increase. In this post-war period, in fact, manufactured consumer goods (other than foodstuffs) accounted for a higher proportion of total import expenditure than during the mid-nineteen thirties or mid-nineteen twenties, while the proportion of producer goods (other than transport equipment) was appreciably lower than even the figure during the First World War. It should be borne in mind, however, that at this time Australia was producing more than 1.25 million tons of steel a year and that a domestic machine building industry had been established.

In general, the process of industrialization in these countries over the period 1910 to 1950 has been accompanied by an increase in total imports. Phases of declining imports seem in most cases to have been connected with a diminution in capacity to import due chiefly to a decline in exports. In some instances the decline in exports can be attributed directly to the diversion of resources from export activities to manufacturing, in line with the government industrialization policy; in other instances it was due to market forces outside the control of the exporting country. Characteristic changes in the composition of imports have been a rise in relative expenditure on capital goods, raw and semi-finished materials and fuels (especially petroleum) and a decline in relative expenditure on manufactured consumer goods (especially foodstuffs and ordinary types of textiles). These changes have been accentuated when balance of payments difficulties have led to adoption of import and exchange controls, and have been smaller whenever an increase in purchasing power—whether resulting from a previous inability to spend, or from rising standards of living or from an influx of immigrants or foreign capital—has magnified the demand for imported consumer goods.

Although the five countries upon which these generalizations are based are now among the most advanced in the group of less developed countries, their increas-

Table 19. Argentina, Brazil and Mexico: Value of Imports by Category, 1937-39 to 1950-52

Category	Average annual value (millions of dollars at 1948 prices)									Value of each category as a percentage of total imports								
	1937–39			1947–49			1950–52[a]			1937–39			1947–49			1950–52[a]		
	Argentina	Brazil	Mexico	Argentina	Brazil	Mexico	Argentina	Brazil	Mexico	Argentina	Brazil	Mexico	Argentina	Brazil	Mexico	Argentina	Brazil	Mexico
TOTAL	1,330	855	262	1,402	1,236	548	1,002	1,808	659	100	100	100	100	100	100	100	100	100
Consumer goods	535	362	84	297	428	158	121	633	196	40	42	32	21	35	29	12	35	30
Raw materials	265	143	72	343	151	90	306	226	114	20	17	28	25	12	16	31	13	17
Fuel and lubricants	109	87	6	148	147	21	193	233	22	8	10	2	11	12	4	19	13	3
Capital goods	422	272	100	612	498	279	383	716	327	32	32	38	44	41	51	38	40	50

Source: United Nations, *Economic Survey of Latin America, 1951-52.*

[a] 1952 figure was provisional.

Table 20. Union of South Africa: Commodity Imports on Private Account, by Category, 1915-18 to 1946-49

Category	Average annual value (thousands of South African pounds at current prices)				Value of each category as a percentage of total imports			
	1915–18	1926–29	1937–39	1946–49	1915–18	1926–29	1937–39	1946–49
TOTAL (including unspecified)	37,187	70,350	88,660	275,109	100.0	100.0	100.0	100.0
Foodstuffs	4,917	7,335	4,845	19,957	13.2	10.4	5.5	7.3
Raw and semi-manufactured	4,020	5,591	3,437	16,287	10.8	7.9	3.9	5.9
Manufactured	897	1,744	1,408	3,670	2.4	2.5	1.6	1.3
Raw and semi-manufactured materials	3,257	6,933	10,043	33,486	8.8	9.9	11.3	12.2
Agricultural	933	1,777	4,503	17,676	2.5	2.5	5.1	6.4
Mineral	2,324	5,156	5,540	15,810	6.3	7.3	6.2	5.7
Manufactures	27,971	53,058	69,522	206,085	75.2	75.4	78.4	74.9
Beverages and tobacco	588	650	774	1,437	1.6	0.9	0.9	0.5
Textiles	13,325	19,008	19,397	69,334	35.8	27.0	21.9	25.2
Metal manufactures	4,356	12,477	22,521	61,624	11.7	17.7	25.4	22.4
Vehicles	1,039	6,497	9,631	28,633	2.8	9.2	10.9	10.4
Chemicals	2,481	3,480	5,033	9,416	6.7	4.9	5.7	3.4
Wood and paper	2,169	3,844	4,893	15,670	5.8	5.5	5.5	5.7
Others	4,013	7,102	7,273	19,971	10.8	10.1	8.2	7.3
Petroleum and petroleum products	892	2,792	4,155	13,204	2.4	4.0	4.7	4.8

Source: Compiled by the United Nations Bureau of Economic Affairs, Economic Development Branch, from official statistics.

Table 21. Australia: Value of Commodity Imports, by Category, 1914/15–1916/17 to 1948/49–1950/51

Category	Average annual value (thousands of Australian pounds at current prices)				Value of each category as a percentage of total imports			
	1914/15–1916/17	1924/25–1926/27	1934/35–1936/37	1948/49–1950/51	1914/15–1916/17	1924/25–1926/27	1934/35–1936/37	1948/49–1950/51
TOTAL	72,727	157,833	84,004	565,730	100.0	100.0	100.0	100.0
Foodstuffs	10,759	12,262	6,051	29,420	14.8	7.7	7.2	5.3
Raw	670	1,288	1,039	6,860	0.9	0.8	1.2	1.2
Manufactured	10,089	10,974	5,012	22,560	13.9	6.9	6.0	4.1
Petroleum	2,232	9,314	6,028	50,960	3.1	5.9	7.2	9.2
Raw materials	2,183	6,333	4,028	33,240	3.0	4.1	5.0	6.0
Semi-manufactures	10,790	25,255	13,248	87,390	14.9	16.0	15.7	15.8
For consumer goods industries	984	1,762	1,010	10,600	1.4	1.1	1.2	1.9
For producer goods industries	6,961	18,760	8,846	61,160	9.6	11.9	10.5	11.0
Indeterminate	2,845	4,733	3,392	15,630	3.9	3.0	4.0	2.9
Fully manufactured goods	42,841	87,989	46,373	268,760	58.0	54.0	55.3	48.3
Consumer goods	18,224	34,446	15,522	129,100	25.1	21.8	18.5	23.2
Producer goods	19,716	43,246	24,343	106,100	26.2	27.4	29.0	19.1
Indeterminate	4,901	10,297	6,508	33,560	6.7	6.5	7.8	6.0
Transportation equipment	3,862	16,034	7,211	94,100	5.3	10.2	8.6	16.9

Source: Compiled by the United Nations Bureau of Economic Affairs, Economic Development Branch, from official statistics.

ing degree of industrialization has not yet caused any major change in the structure of their exports. In general these still consist overwhelmingly of raw and semi-manufactured materials and foodstuffs.

In Australia, for example, manufactured goods (excluding foodstuffs) constituted less than four per cent of all exports in the period 1948/49-1950/51: though this was a somewhat higher proportion than those recorded in the inter-war period, it was not much above that obtaining during the First World War (table 22). Semi-manufactures—chiefly refined metals and prepared wool tops—have tended to become relatively less important and in the post-war period accounted for less than a sixth of all exports, compared with between a fifth and a fourth in the inter-war period and more than a third during the First World War. Manufactured foodstuffs rose in relative importance in the mid-nineteen thirties but declined again to their previous proportion—about a fifth of the total—in the post-war period. Throughout the period under review, raw wool remained the largest single export, accounting for 26 per cent of the total during the First World War, 37 per cent during the mid-nineteen twenties, 34 per cent in the mid-thirties and no less than 47 per cent during the post-war boom of 1948/49-1950/51.

In Brazil, also, exports are still composed almost exclusively of primary products, chiefly cotton and coffee. At no time before the Second World War did manufactured goods account for as much as 0.5 per cent of total exports (table 23). During the war, however, expanding Brazilian industrial capacity, combined with the inability of Europe to supply its traditional markets, opened the way to larger

Table 22. Australia: Categories of Exports, 1914/15–1916/17 to 1948/49–1950/51

(Percentage of total exports, by current value, except as indicated)

Category	*1914/15–1916/17*	*1924/25–1926/27*	*1934/35–1936/37*	*1948/49–1950/51*
TOTAL (thousands of Australian pounds)	74,985	148,933	134,131	712,730
Foodstuffs	30.3	36.8	38.3	31.8
Raw	10.4	17.6	13.7	12.8
Manufactured	19.9	19.2	24.6	19.0
Raw materials	31.9	40.7	36.1	48.9
Wool	26.2	37.0	33.7	47.2
Other	5.7	3.7	2.4	1.7
Semi-manufactures	34.5	20.7	23.0	15.4
Producer goods	13.7	11.2	9.6	11.0
Consumer goods	20.8	9.5	13.4	4.4
Fully manufactured goods	3.2	1.7	2.5	3.6
Consumer goods	0.8	0.7	1.0	1.6
Producer goods	1.8	0.8	1.3	1.8
Indeterminate	0.6	0.2	0.3	0.3

Source: Compiled by the United Nations Bureau of Economic Affairs, Economic Development Branch, from official trade statistics.

Table 23. Brazil: Selected Categories of Exports, 1929 to 1949-51

(Percentage of total exports, by current value, except as indicated)

Category	*1929*	*1930–32*	*1933–35*	*1936–38*	*1946–48*	*1949–51*
TOTAL EXPORTS	94,831[a]	50,640[a]	34,681[a]	39,148[a]	20,569[b]	25,860[b]
Coffee	78.10[c]	77.00[c]	73.40[c]	55.00[c]	37.60	60.50
Cotton	4.80[d]	2.90[d]	10.40[d]	20.30[d]	16.30	11.60
All manufactures	0.21	0.43	0.26	0.39	5.98	1.50
Manufactures of animal origin	0.01	0.05	0.01	0.02	0.03	–
Manufactures of vegetable origin	0.14	0.24	0.11	0.07	0.33	0.09
Manufactures of mineral origin	–	–	–	0.01	0.26	0.13
Textiles	–	0.05	0.10	0.16	4.42	0.89
Chemicals and pharmaceuticals	•	•	•	•	0.44	0.27
Machinery, instruments, arms, apparatus, etc.	0.02	0.02	–	0.02	0.20	0.07
Vehicles and accessories	–	–	–	–	0.13	–
Miscellaneous articles	0.03	0.07	0.05	0.11	0.17	0.03

Source: Serviço de Estatística Econômica e Financeira, Tesouro Nacional, Ministério de Fazenda, *Comércio Exterior do Brasil* for 1937-38, 1947-48 and 1952 (Rio de Janeiro).

[a] Value in thousands of gold reis.

[b] Value in millions of cruzeiros.

[c] Including cereals, vegetables, fruits, nuts, sugar and cocoa.

[d] Including other textile raw materials (wool and synthetic).

• Included in "miscellaneous articles".

exports. These forces operated for some time after the war: indeed, during the period 1946-48, opportunities for exporting were favourable enough to raise the ratio of manufactures to total exports to about 6 per cent. The principal industrial export (three-fourths of the total) was cotton textiles, though chemicals and pharmaceuticals also played a part in the increase. As European goods became available and the pent-up war-time demand lessened, Brazilian exports of manufactured products declined rapidly: by 1949-51 to 1.5 per cent of the total. In the twenty years from 1925-29 to 1945-49, population grew by some 42 per cent and agricultural output by about 56 per cent, while total exports increased by about 70 per cent.

Mexican exports have undergone a broadly similar series of changes in composition. Only in the nineteen thirties, with the decline of petroleum exports, did exports of manufactured goods begin to exceed one per cent of the total (table 24). In the period 1934-36, textiles and chemicals each contributed about a third of all exports of manufactures. The textile proportion increased slightly before 1939 but it was not until the Second World War that textiles began to assume an important place among Mexican exports. Exports of other manufactures also expanded greatly during and immediately after the war. In 1946-47, indeed, manufactured goods accounted for almost one-fourth of all exports. Of this group textiles contributed more than 60 per cent, food, drink and tobacco about 11 per cent and chemicals about 6 per cent. Valued at 1937 prices, exports of manufactures in 1945-48 averaged some fifteen times higher than those of 1925-29; the textile category was some fifty-four times greater.[8] This record level of exports was not maintained, however, when European products began competing more seriously on third markets. In 1949-50, manufactures dropped back to little more than 10 per cent of all exports; textiles accounted for 40 per cent of the group, food, drink and tobacco for about 29 per cent and chemicals for about 9 per cent.

Until the Second World War not less than 94 per cent of the annual exports from the Union of South Africa (other than gold) consisted of primary products. During the period from 1914 to 1918, when manufactures comprised rather less than five per cent of all exports, almost half of them consisted of foods, beverages and cigarettes; the only other groups of significance were chemicals, paints and explosives, and footwear and clothing, but these together accounted for no more than one per cent of all exports (table 25). Manufactured goods were even less significant during the nineteen twenties; apart from food and tobacco, chemicals and paint and building materials were the only categories to contribute more than 0.3 per cent of all exports during the period 1926-29. In the nineteen thirties, with the establishment of a diamond cutting industry, cut and polished diamonds became the country's leading manufactured export (1.3 per cent of the total in 1937-39) while expansion of the cement industry brought exports of manufactured building materials to second place (0.7 per cent), followed by foods (0.6 per cent) and beverages (0.5 per cent). Between them these four groups accounted for about 55 per cent of all manufactured exports. As a result of war-time expansion of secondary industry and the absence from African and other markets of many traditional European suppliers, exports of manufactured goods increased greatly. In 1946 they accounted for almost one-third of the total (excluding gold bullion and specie), the most important groups being the following: cut diamonds (22 per cent of all manufactures); foodstuffs (12 per cent); footwear (11 per cent); metals and metal manufactures other than machinery (10 per cent); chemicals and paints (8 per cent); beverages (7 per cent); and clothing (6 per cent). With the recovery of European industry, South African exporters lost part of the newly won market, but the decline was not so steep as it was in Latin America: manufactures constituted 30 per cent of all exports (excluding gold and specie) in 1947, and 28 per cent in 1948. The only categories of goods to show a marked change in relative importance in these two years were foodstuffs, machinery and transportation equipment, which became appreciably more significant (rising from 18 per cent of all manufactures to 33 per cent) and footwear, chemicals, paints, and cut diamonds, which became appreciably less significant (dropping from 41 per cent of all manufactures to 25 per cent). In 1949, the structure of exports was distorted somewhat by the decision to dispose of 40 per cent of the country's gold output in manufactured form so as to benefit from the premium offered by the free market. Over the period 1946 to 1949, manufactures averaged 28 per cent of all exports (excluding gold). Foodstuffs constituted the largest single group, 4.6 per cent of the total, with cut diamonds a close second (4.4 per cent) and textiles and footwear third (4.2 per cent). The various classes of machinery and metal manufactures together contributed 4.8 per cent of all exports, while chemicals and paints, beverages and rubber goods accounted for significant proportions. There had thus been a considerable diversification of the country's exports as a result of its industrial growth.

[8] United Nations, *Economic Survey of Latin America, 1949*; sales number: 1951.II.G.1., page 432.

Table 24. Mexico: Exports of Manufactured Goods, by Category, 1928-29 to 1949-50

(Percentage of total exports, by current value, except as indicated)

Category	*1928–29*	*1934–36*	*1937–39*	*1946–47*	*1949–50*
TOTAL EXPORTS (millions of pesos)	591.5	723.1	881.6	2,038.6	3,891.2
All manufactures[a]	0.44	1.28	1.39	22.77	10.27
Food, beverages and tobacco	0.02	0.08	0.05	2.52	2.94
Wood and paper[b]	0.02	0.02	0.04	0.36	0.16
Textiles	0.27	0.43	0.53	13.89	4.14
Chemicals, pharmaceuticals, paints, etc.	0.03	0.41	0.34	1.31	0.91
Metal manufactures[c]	0.02	0.11	0.07	0.44	0.20
Machinery, vehicles, etc.	[d]	0.10	0.08	0.46	0.40
Ceramics, glass, stone, etc.	0.03	0.05	0.04	0.48	0.19
Others	0.06	0.07	0.13	3.31	1.32

Source: Secretaría de la Economía Nacional, Dirección General de Estadística, *Anuario Estadístico del Comercio Exterior de los Estados Unidos Mexicanos*, 1929, 1939 and 1949-50 (Mexico, D.F.).

[a] Total, computed from absolute figures, may differ from sum of percentages owing to rounding.

[b] Excluding books and printed matter, which are included in "Others".

[c] Including manufactures of precious metals.

[d] Included in "Metal manufactures" and "Others".

Table 25. Union of South Africa: Exports[a] of Manufactured Goods, by Category, 1914-18 to 1946-49

(Percentage of total exports, by current value, except as indicated)

Category	1914–18	1926–29	1937–39	1946–49
TOTAL EXPORTS[a] (thousands of South African pounds)	25,929	73,727	74,795	110,765
All manufactures	4.84	2.84	5.31	28.31
Foodstuffs	0.85	0.54	0.55	4.56
Beverages	0.68	0.18	0.50	1.75
Tobacco	0.57	0.35	0.03	0.39
Textiles and footwear	0.20	0.19	0.37	4.20
Yarns and fabrics	–	–	–	0.06
Clothing	0.07	0.06	0.23	1.66
Other textiles	0.03	0.05	0.04	0.68
Footwear	0.10	0.08	0.10	1.80
Agricultural machinery and implements	–	0.05	0.10	0.31
Industrial, mining and construction machinery, and scientific instruments	0.08	0.01	0.03	1.47
Electrical machinery	–	–	0.08	0.28
Other metal manufactures	0.17	0.15	0.27	2.72
Transportation equipment	0.01	0.06	0.33	1.30
Building materials	0.01	0.31	0.66	0.50
Chemicals, paints, etc.	0.24	0.33	0.18	1.85
Diamonds (cut and polished)	–	–	1.25	4.44
Other manufactures[b]	2.04	0.68	0.97	4.53

Source: Department of Customs and Excise, *Annual Statement of the Trade and Shipping of the Union of South Africa and the Territory of South West Africa*, for the years specified (Pretoria).

[a] Exports of produce excluding gold bullion and specie, including ship's stores for the years 1914, 1915, 1916 and 1946-49; and including exports to South West Africa for the years 1914-18 and 1946-49.

[b] Including in descending order, rubber products, wood products, books and paper, dynamite, soap and candles, and jewellery.

The greater and seemingly more permanent increase in the proportion of manufactures in exports from the Union of South Africa reflects a number of circumstances which distinguish this country from Australia on the one hand and the Latin American countries on the other. In the first place there is an element of statistical illusion in the contrast, for in the post-war period under review South African primary exports increased relatively less in money terms than did those of the other countries. Apart from this influence on the proportion of manufactured goods, however, there are some more substantial—and in the present context more significant—reasons for the difference. Perhaps the most important lies in the fact that inflationary forces have been appreciably less than in Australia and most of the Latin American countries.[9] As a result South African industries have been in a better position to compete with European industries in third markets. Furthermore, in the developing but pre-industrial countries of Africa the Union of South Africa has probably had a market better suited to its manufacturing potential than are the markets within the commercial range of Australia, Argentina, Brazil and Mexico.

This brief analysis does not provide grounds for any very firm conclusions, but it would appear by no means certain that industrial development in the less developed countries will result in an expansion of international trade. The favourable conditions postulated in the League of Nations study referred to at the beginning of this section—absence of restrictive commercial policies and currency problems—have become less and less general since the depression of 1930 to 1932. Not only have industrial countries had to adapt their export industries to changes in the demand pattern of industrializing countries,[10] but the total volume of their exports to certain of these countries has tended to decline. As indicated at the start of this chapter, this is a field in which a good deal more research is required.

Future trends in this area of international trade depend not only upon the income elasticity of imports into the industrial countries and upon the trade policies that these countries pursue, but also—and very significantly in the context of the present study—upon the methods adopted by under-developed countries to encourage their own industrial growth. Where these methods tend to reduce a country's capacity to import—whether by diverting resources away from export activities through undue protection or subsidizing of local industry, or by other devices which induce cost inflation and thereby impair the competitive position of exports, or by the imposition of exchange and import restrictions—foreign trade is likely to diminish. When industrialization is promoted without damage to import capacity, on the other hand, the resultant increase in factor productivity and in living standards is likely to bring about an expansion of foreign trade.

[9] In 1953, the average retail price index was double the pre-war level in the Union of South Africa, 2.5 to three times the pre-war level in Australia and between five and seven times the pre-war level in Argentina, Brazil and Mexico.

[10] In the United Kingdom, for example, engineering goods constituted 26 per cent of all exports in 1938, 38 per cent in 1948 and 41 per cent in 1952.

Changes in Social Structure and Family Systems

Throughout this study it has been assumed that the ultimate objective of any industrialization programme is the raising of levels of living: the provision of higher standards of nutrition, housing and health, of a larger per capita volume of manufactured goods and of greater leisure. The actual process of industrialization, however, involves profound changes in the pattern of living and, like all changes, these call for considerable social adjustment and adaptation. The ease with which these adjustments are made is a function of a number of variables, such as the level of living in the agrarian society, density of population, type of industries established, and speed with which they result in greater production, the equity of the fiscal system, adequacy of education, the type and layout of factories and workers' houses, and the nature and strength of the pre-industrial culture. Social changes of this type, however, are inevitably unsettling, often protracted and usually accompanied by frictions which derogate to a greater or lesser extent from the many social and economic advantages which may be expected to flow from the growth of secondary industry.

The soundness of an industrialization programme, therefore, depends not only upon the selection of industries, the method of financing them, their efficiency and the rate of development but also upon a full recognition of the problems raised by this social transition. That is why in this final section attention is focused on some of the less desirable social changes that may attend the industrialization process.[11] At the outset, however, it is well to point out that many so-called consequences of industrialization turn out to be not the consequences of industrialization itself, but rather of the preservation—or attempted preservation—of pre-industrial ways of life in an alien and inappropriate environment. Thus, child labour in factories may be regarded as a continuation of the much less harmful rural custom of child labour on the farm; and urban slums often reveal a carry-over to cities of rural methods of house construction, refuse disposal, use of water, and so on. In fact, many—perhaps most—of the undesirable social consequences of industrialization are more properly regarded as results of failure to deal with the problems of social transition that inevitably arise from so basic a change in economic and social organization. Those among them that constitute social evils, in other words, are not, generally speaking, necessary or inescapable consequences of industrialization itself; given appropriate measures, they can be mitigated if not avoided. Some of them, moreover, are actually related less to the growth of secondary industry itself than to one or another of the many political, cultural, legal or intellectual changes that tend to accompany that growth. Thus, loss of traditional forms of social control, and emergence of anti-social behaviour, often considered to be among the direct results of industrialization, are also known to occur simply with the introduction of a system of law which undermines the authority of the elders in a pre-industrial community.

In many instances, therefore, the undesirable social consequences of industrial development reflect incongruities between the demands of industrialization and the established ways of pre-industrial societies. Although it is an assumption underlying this concluding section that many of these incongruities can be avoided, nevertheless, it has to be recognized that there is always danger of conflict between the needs of industry and the needs of the human beings who operate the factories and consume the products. Hence, the social policy that lies behind an industrialization programme has to assume part of the responsibility for minimizing the points of conflict.

It should be borne in mind throughout the following analysis that although there are certain common features among industrializing communities there is no pre-determined pattern of social evolution or adjustment. While the history of social disruption that marked the growth of industry in western Europe in the nineteenth century may not be repeated, there are, however, some unfavourable circumstances which are likely to pose serious questions in many under-developed countries of the mid-twentieth century, aggravating social problems and making it more difficult to solve them. Among these circumstances are size of population and its comparative economic immaturity, the fact that many countries are industrializing simultaneously or have already industrialized, and the widespread desire to speed up the process very considerably.

In western Europe, the total size of the community originally affected by the spread of the factory system and the accompanying social change was very much smaller than the demographic dimensions of the contemporary world in Asia, Latin America and Africa. The population of Great Britain at the beginning of the nineteenth century—that is, at the central point of western industrialization—was hardly more than three per cent of the present population of India alone. The multitudes that congregate in and around the cities of many of the under-developed countries today, technically living in an urban environment but socially and culturally still to a large extent peasants, by the sheer magnitude of their numbers pose social problems that the industrializing countries of Europe did not have to face. Although these present-day concentrations of population cannot by any means be attributed wholly to

[11] It has been deemed unnecessary to enumerate or discuss the various advantageous social changes which may be expected to flow from successful development of secondary industry. The possibility of achieving higher incomes, a higher level of education, better housing and public health facilities, a wider range of communal amenities and all the other social gains which may accrue not only in the new urban areas but also in due course to the countryside is assumed to be a major motivating force behind the industrialization plans and programmes of the under-developed areas rather than their consequence.

the needs or the attractions of urban industry, they greatly complicate the social effects of industrialization, and it is in this connexion that the problem must be viewed.

Another important difference between past and present is the fact that, in European history, the industrial revolution was a cumulative process, spread over many decades, during which the whole social system gradually changed. It was preceded or accompanied by revolutions in agriculture, commerce, political systems and values, science, art and religion. In contemporary under-developed areas where rapid industrial expansion is induced, parallel changes in other sectors and other aspects of national life may lag far behind and fail to provide a basis for an integrated process of social and economic development. The result is apt to be a situation—found today in many areas of Asia, Latin America and Africa, as well as in parts of Europe—in which modern urban industrial societies exist side by side with traditional rural societies but show few signs of close integration with them. This contrast has been accentuated in some countries by the fact that the industrial sector was established by representatives of a foreign culture, or closely modelled upon a foreign culture. The existence of a gulf between the modern industrial society and the traditional agrarian society may have important social repercussions for both sides, particularly at points of contact, when elements of the rural population move towards the cities or when the products of the factory begin to reach into the countryside.

While considerations of this kind suggest that the social problems of industrialization in under-developed countries today may be even more complex and extensive than those experienced in the initial phases of European industrialization, it should be noted that awareness of these problems and experience in dealing with them by planned governmental action are also greater and more extensive. Moreover, there are wide variations between countries that are now industrializing, not only in regard to natural resources and cultural background, but also in the degree to which development has been taking place in other sectors of society and in the degree of conscious effort at control of the process and its consequences. The social effects resulting from the establishment by foreign capital and management of oil refineries in sparsely settled areas are likely to differ in important respects from those of the establishment of sugar refineries in densely populated agricultural areas. The factory system may cause rural depopulation in certain parts of Africa, while in parts of Asia it is extremely difficult to absorb into industry the natural increase of the rural population, at least in the short run. In some regions, modernization in all spheres is wholly western in pattern and purpose, while in others —Japan, for example—western industrialism developed in a social system which retained many of its traditional features and values.

In the light of these remarks, it should be clear that the effects of industrialization that are described below, in connexion with rural society, urban society and the family, are neither universal and necessary consequences of industrialization nor its exclusive and only consequences. Rather than seek to cover the whole range of social situations in under-developed countries, an attempt has been made to concentrate on those potential effects of industrialization that raise questions of social policy and call for social action.

In most of the less developed countries, large sections of the agricultural community have experienced many of the effects of industrialism long before any attempt has been made to encourage local industrialization. The arrival of factory-made goods for mass consumption and the demand for various cash crops for export markets have already had repercussions on the social organization of rural populations. Parts of Africa, like many other peasant areas of the world, have already become "prosperous or miserable according to the prices of vegetable oil, coffee, cocoa or timber in New York, Liverpool, Havre, Rotterdam or Hamburg. In less than half a century the closed system of family economy has broken into pieces under the pressure of circumstances. The small enterprise of production and consumption which was adequate to the needs of the members of the family has disappeared almost everywhere, having been drawn *par force* into a system of specialization."[12] Moreover, while in many industrial countries systems of social security have been introduced for urban workers, the small peasant producer of export crops has been largely left unprotected to face the vagaries of the world market.

Local industrialization gives an added impetus to the "commercialization of services which were formerly carried out within the subsistence economy as social duties".[13] Customs of mutual aid and communal co-operation, even among kinfolk, tend to be undermined by the penetration of the exchange system upon which development of secondary industry necessarily depends. With increased competition and individualism, a decline in communal spirit and village solidarity seems on occasion to have been part of the social price paid for expansion of industry. In some areas the price of industrialization, at least in the eyes of some observers, has already become much greater. With the growth of manufacturing activities in parts of Asia, for example, it is reported that

> "... the village, which was the basic economic and cultural unit of these people, came under the disrupting forces of technology. Its self-sufficiency disappeared and it became tied up with the city, the nation and the outside world. Village industries, such as spinning and weaving, pottery, brassware, oil pressing, vegetable dyes, lacquer work, etc., languished; machine-made goods, such as aluminium ware, kerosene, textiles and synthetic dyes, took their place. A superfluity of cheap manufactures displaced the craftsman, depriving the group of his hereditary skill. The rooting of the farmer to his soil and

[12] Henri Labouret, *Paysans d'Afrique Occidentale*, (Paris, 1941), page 288.

[13] Darryll Forde, "The conditions of social development in West Africa", *Civilizations*, vol. III, No. 4 (Brussels, 1953), page 480.

of the craftsman to his hereditary calling had produced a sense of social solidarity, an *esprit de corps*. But with the disruption of the ecological balance, all this disappeared, rendering the populace mobile, restless, shiftless. The village, which was formerly a family, became transformed into an adjunct of the factory, a mob."[14]

The threat to traditional handicraft and cottage industries implicit in the growth of mechanized factories was pointed out in chapter 3 above. In the present context, it is the social and cultural results of this, rather than such economic effects as increased rural unemployment or increased pressure on the land[15] that bear emphasis. Loss of customary occupations, combined with the breakdown of mutual aid and communal co-operation, does a good deal to disrupt rural society, bringing about a general decline in village custom and tradition and thereby reducing the satisfaction obtained by the individual from life in rural areas. According to one observer:

"This crumbling and shrinking of village life is of the utmost importance: all the village festivals and ceremonies gave color and bloom to the peasants' life, took the place of the numerous material comforts of the city dwellers, prevented the villager from feeling poor, kept strong his social ties with his fellow villagers, filled his life, strengthened his sense of social standing, and gave him a fixed place in the world. With the weakening and falling off of all this, the village becomes poorer, emptier. A tie, a support, a content of the individual life has been taken away, and nothing of equal value has been put in its place."[16]

While there are substantial differences in the ways in which agrarian societies and peasant groups react to the penetration of industrial economy, the effects are widespread and always disruptive of customary forms of economic activity. In China, where traditional industries are widely diffused among the villages, the impact of modern industry and commerce in recent decades has tended to wipe out certain occupations, such as hand spinning and weaving of cotton, as well as the silk industry, on which many peasant farmers depended for a substantial proportion of their income. In some parts of Africa, even before the growth of local manufacturing, preference for imported textiles had led to a complete disappearance of domestic weaving. Similarly, indigenous smithwork and pottery have declined, unable to compete with European imports. "The collapse of the indigenous handicrafts is so advanced in some areas that governments have had to take special measures in this respect and establish special vocational schools in order to preserve them."[17]

Still more serious effects are reported from countries, like those of the Middle East, where the pre-industrial economic system had evolved forms of production and trade based on a greater degree of differentiation of labour and skill and of specialization in crafts and services. Manpower ousted from traditional arts and crafts cannot always be easily absorbed into the local factories, especially where cottage activities have attained a high standard of craftsmanship and evolved a social system and work pattern favouring the independent producer, and where therefore the social customs and working habits of the artisan make him particularly indisposed and unadaptable to factory work and discipline.

In Mexico, for instance, handicraft skills are considered to be less applicable in modern industry than the working abilities of much less specialized peasant labour. Such skills may be indirectly useful "but any advantage of this nature tends to be offset by the informal work habits to which handicraft workers have been accustomed. Because of their past experience they may be much more difficult to fit into a modern manufacturing plant than workers without any previous manufacturing experience at all."[18]

In so far as factory products that combat disease, improve health and lower mortality rates penetrate into the villages more rapidly than urban ideas of family limitation, industrialization tends to aggravate the rural problem not only by undermining traditional handicraft occupations but also by increasing the rate of population growth. The effects of increasing population pressure have been particularly widespread in Asia, where in several countries rural under-employment and food shortages are the major economic problems,[19] but similar results have flowed from industrial development in other areas. In French Morocco, for example, recent expansion of the population has caused excessive fragmentation of the land, together with food shortages and a decline of family farming below the subsistence level, and is among the chief causes of the exodus of rural masses to the cities.[20] Thus, while in many countries it is hoped to use industrialization as a means of drawing off surplus rural population and increasing the output of food, products of industry—like germicides, insecticides and metal pipes—tend, paradoxically, to aggravate the situation at least until the cultural behaviour of the community evolves in a manner more appropriate to an industrial environment.

Where the ratio of population to land is more favourable—as in central and southern Africa, for example—

[14] Kewal Motwani, "The Impact of Modern Technology on the Social Structures of South Asia," *International Social Science Bulletin*, vol. III, No. 4 (Paris, 1951), page 785.

[15] The steady decline, over several decades, in the average per capita area cultivated in India, is attributable in part to this reason. With the ousting of customary handicrafts, the Indian artisans "lost several of their old rights . . . and as a result of the improvement of transport and the competition of cheap machine-made goods they have often lost, not only their former perquisites, but their actual employment. Since industrialization in the cities did not proceed rapidly enough to absorb those deprived of their customary occupations, they were driven to agricultural work." (B. K. Madan: "The Economics of the Indian Village and its Implications in Social Structure," *International Social Science Bulletin*, vol. III, No. 4, 1951, page 817 ff).

[16] J. H. Boeke, *The Interests of the Voiceless Far East, Introduction to Oriental Economics*, (Leyden, 1948), page 17 ff,

[17] Henri Labouret, *Paysans d'Afrique Occidentale*, page 288.

[18] Sanford A. Mosk, *Industrial Revolution in Mexico* (University of California Press, Berkeley, 1950), page 263.

[19] Cf. Kingsley Davis, *The Population of India and Pakistan* (Princeton University Press, Princeton, New Jersey, 1951), page 217 ff.

[20] Robert Montagne, "Naissance et développement du prolétariat marocain," *Industrialisation de l'Afrique du nord* (Paris, 1952), page 203 ff.

the effects of industrial development may be quite different, though no less disruptive of the existing (agrarian) social order. The migration of a large proportion of the able-bodied males from the rural, tribal areas to wage-earning occupations in urban industries frequently leaves the family system unbalanced and incapable of properly carrying out its conventional social and economic tasks, including the production of food. In Northern Rhodesia, for instance, "the disproportionate withdrawal of young men has upset the old balance of primitive agriculture, without creating a sufficient new market to revolutionize it, and to give rise to a new equilibrium. . . With only about 20 per cent of the young men under thirty-five to assist them, 80 per cent or so of the rest of the population cannot feed itself adequately as before, unless agricultural methods are radically changed. There have been slight changes of method; but there has been no agricultural revolution. . . The result is increasing hunger."[21]

These arguments, of course, do not constitute a plea for halting the industrialization process in the interest of maintaining the traditional rural society. On the contrary, although social customs in the agrarian sector of many under-developed countries usually represent the result of lengthy adjustment to environment and are often commendable from a cultural point of view, they not infrequently act as a brake on economic development. Even where there is social justification for traditional practices, as in the case of mutual aid, for example, it may be outweighed by economic disadvantages. In some cases, peasants have been glad to renounce some of the older forms of community co-operation, regarded as inefficient, expensive (in the outlay of food and drink required), and undependable, however colourful and festive. In this connexion it is worth noting that a study of the comparative efficiency of hired versus communal labour in house construction in a Mexican village has shown that "the system of voluntary communal labour costs more than six times as much as help hired in efficient units".[22]

In the urban environment, manufacturing industry may often be a stabilizing influence, creating regular employment in place of the irregularities of tribal agriculture, new loyalties to new communities, and new skills and a new pride of work. It may make possible the building up of social amenities such as schools, libraries and cinemas, which are an integrating force. Moreover, in so far as it serves the local market, it is likely to be more favourably disposed towards higher wages than export activities usually are.

The point to be stressed in the present context is that the social consequences of industrialization are not confined to the factory or even to the urban area but extend deep into the rural community. A sound industrialization policy must embrace measures to ease the burden of transition in the agrarian society which is thus affected. In some areas, indeed, the task of limiting the social costs in the agrarian community may exercise a major influence upon the nature of the programme of industrial development, slowing down the pace of industrialization to that at which parallel agricultural development and rural adjustment can be achieved.

While rural areas are thus profoundly affected by the industrialization process, it is in urban areas that its social consequences are most direct and obvious. For although, as indicated in the preceding section, secondary industry is not always the *raison d'être* of towns and cities, it is one of the principal urbanizing forces, and the concentration of factory labour constitutes one of the principal causes of urban social problems. This is not to say that overcrowding, slum conditions and squalor, unemployment, poverty and destitution, delinquency and crime, various forms of labour exploitation, lack of sanitary arrangements, ill health, and all the other well-known characteristics often associated with rapid urbanization are inherent in the industrialization process. On the contrary, increased production from economically sound industrial expansion is often the chief hope for the prevention or amelioration of such conditions. Where urban deterioration sets in or improvement is unduly slow, it is often a measure of the disparity between the pace of technological and industrial change and the pace of social change. The lag in social change and the resultant worsening of the problems of transition usually reflect the failure of a community to develop new institutions, organizations, habits and ways of life—in respect of the provision of security, personal status, social acceptance, moral controls of behaviour, leadership, forms of recreation and so on—to replace those associated with the extended family or local community which are no longer appropriate to an industrial society.

As suggested above, moreover, the so-called "social consequences of industrialization" are, in many cases, little more than a transfer to the urban industrial environment (by population movement) of problems of destitution and need that had previously existed in the rural environment, where, being less concentrated, they were usually less noticeable. Where stagnant and depressed agricultural communities force into the industrial centres uprooted peasants and tribesmen in numbers far beyond available opportunities for gainful employment, urban growth tends to reflect not the expansion of industry but the wretchedness of agricultural conditions and the high incidence of under-employment in rural areas. In countries with rapidly increasing rural population, this disproportion between employment opportunities and labour supply in the industrial areas, increasing constantly through new influxes from the country, has exercised a depressing effect on urban levels of living, to the extent that in some cases the newcomer to the town has merely substituted urban misery for rural poverty.

[21] Godfrey Wilson, *An Essay on the Economics of Detribalization in Northern Rhodesia*, part I, (Rhodes-Livingston Institute, Livingston, Northern Rhodesia, 1941), page 50 ff.

[22] George M. Foster, "A Primitive Mexican Economy", *Monographs of the American Ethnological Society*, No. 5, (New York, 1942).

Even when there are employment opportunities, industrial workers of peasant origin often fail to become integrated and assimilated into modern urban society and the stream of urban life; instead they tend to form a sub-culture of low status, living separately in special quarters and pursuing a mode of life that is half urban, half rural. In Latin America, for example, the composition of the city since colonial times has been characterized by concentration, on the one hand, of landowners, professionals and officials, and, on the other hand, of former peasants and descendants of peasants living in an entirely different urban environment. Despite the new economic opportunities opened up by the process of industrialization, this traditional dichotomy has not been removed. "Thus . . . we find the modern status system to include two rather clearly defined groups: the one close to the hinterland in habits and outlook, the other a participant in the general undifferentiated culture of the Western metropolis."[23]

A two-class configuration of the urban community may be even more pronounced in countries where a large proportion of the population is prevented by racial or other barriers from full participation in the advantages of urban culture. In southern Africa, for example, indigenous industrial workers constitute a distinct group, living in separate dormitory townships, integrated in the urban society in respect of employment but because of customary and legal obstacles and markedly lower average incomes quite separate in their social system and activities. In many cases they retain their tribal characteristics as well as their rights and interest in land and cattle in their rural places of origin, which are often hundreds of miles from the industrial centre.

Where industrialization has been rapid, whether in pre-existing towns or in previously rural districts, social dangers are likely to be greatest, particularly if the process of growth has involved the massing of factories without consideration of other than purely industrial needs. Under these circumstances urban development tends to become subordinated to and dominated by the immediate requirements of the factories. The integration of the amorphous masses of labour into organized communities through which they can enjoy the benefits of urban civilization will then be handicapped both by the rural heritage of the workers and by the social and cultural poverty of the factory environment. Under these circumstances, the growth of slums is almost inevitable.

The subordination of the elementary needs of the family and the community to the manpower requirements and technical exigencies of the factory system finds physical expression in barracks systems, factory dormitories and compounds and workers' tenements, workshop-sleeping and street-sleeping, and in numerous variants of shanty-towns, bidonvilles and "native locations". Bad housing contributes to the disruption of the worker's family life and augments the losses which the traditional family system sustains in the course of adaptation to the industrial environment. Connected with bad housing, both as cause and effect, is the shiftlessness of a large proportion of many new urban populations. Where housing conditions are unsuited to family life, the peasant is discouraged from bringing his family into the industrial area and thus prevented from severing his ties with his former community.

Often associated with transient urban residence, therefore, is a disproportion of the sexes. In some cities of India, for example, the ratio is close to two males to every female, while an even greater disproportion is found in parts of Africa, where the employment of migrant labour and the practice of social segregation tend to prevent African workers from settling in the urban areas with their families. Thus, in the mining and industrial centre of Johannesburg before the Second World War men outnumbered women in the African population by four to one. With such excesses of males over females, extensive prostitution, clandestine or open, and commercially organized vice tend to become common features.

A related problem of almost universal concern is the general spread of crime and delinquency and other symptoms of the breakdown of social mores which is a frequent concomitant of urban growth under rapid industrialization. In the expanding cities of Brazil, for instance, "more than any other stratum the city proletariat is subject to the phenomenon of social and personal disorganization, not merely because of deplorable conditions under which its members live, but also because they consist largely of rural masses who have been attracted by industrialization and who suffer all the consequences of a maladjustment brought about by a rapid change in the cultural environment".[24]

The heavy incidence of crime and delinquency in towns and cities of new industrial growth is related, in the first instance, to the disruption of the traditional family system and the consequent weakening of family authority and control over individual members. The individual tends to lose the older controls before he has acquired the new and more personal moral codes and controls, under the impersonal sanction of the law, which characterize urban societies. First-generation children who repudiate their parents as peasants and reject traditional familial authority before they have had an adequate opportunity to acquire the values and controls appropriate to the urban industrial environment are apt to show a particular propensity for anti-social and criminal behaviour. Similar and particularly acute forms of social disorganization may occur in areas where the effects of the rapid growth of industrial centres are reinforced and aggravated by the simultaneous disintegra-

[23] Theodore Caplow, "The Modern Latin American City", in *Acculturation in the Americas, Proceedings and Selected Papers of the XXIX-th International Congress of Americanists*, edited by Sol Tax, (Chicago, University of Chicago Press, 1952), page 259 ff.

[24] Antonio Candido, "The Brazilian Family", *Brazil—Portrait of Half a Continent*, edited by T. Lynn Smith and Alexander Marchant (New York, 1951), page 307.

tion of traditional tribal systems. In such a situation conflicts among the heterogeneous norms of different tribal groups, brought into new and close contact within factory and town, as well as conflicts between tribal norms and those belonging to the alien urban pattern, may result in a state of moral confusion and social anomie.

Another set of social problems which may deeply affect the industrial community arises from working conditions and employer-employee relations. Levels of wages that are inadequate to maintain family life, long hours of work, women's night work, industrial home work, sweatshop methods and child labour have been common in the early stages of industrial expansion in nearly all countries. In spite of improvements introduced through protective social legislation, as well as through humanitarian policies adopted by some employers, this type of problem is still found in many countries, particularly in industrializing areas in which population density is high or rural conditions poor.[25] As countries grow wealthier, the income of adult workers tends to increase, and it ceases to be a matter of economic necessity for wives to work in factory night shifts or for children to be sent out to earn supplementary wages. In many of the less developed countries, however, poverty is still a compelling force inducing these and other socially undesirable forms of industrial labour, notwithstanding laws and regulations to the contrary, especially where factories are small in size but large in number, public administration weak and the cost of adequate policing and inspection disproportionately high.

In this connexion it is pertinent to point out two conflicting tendencies in labour relations in newly industrialized areas. On the one hand, industrial enterprises in the under-developed countries tend to be "confronted with a situation where the standards of labour's rights and privileges are set by conditions in the most advanced countries". These standards may not always be tenable in a poor and rapidly changing economy in which industrial development depends largely upon the country's capacity to restrain consumption and upon maintenance of a high degree of mobility and flexibility in the use of labour and other resources. The resultant divergence between objectives "is apt to create tensions and disturbances of a special order, calling for remedies that were not required during the early stages of industrialization of the countries now advanced".[26]

On the other hand, workers in many under-developed countries, as in the early stages of the industrial revolution in Europe, are mostly unorganized and unaware of their rights, and thus unable to protect themselves against deprivations and inequities. Workers of peasant origin may not readily seek to join labour organizations that are alien to their traditional kinds of social affiliation, while in some cases the growth of labour organizations is actually inhibited by legal or *de facto* restrictions. Even where no restrictions exist, unions are, as a rule, organized on a craft basis so that whatever benefits they are able to obtain for members tend to be confined to a rather limited group of skilled craftsmen, and do not necessarily extend to the mass of labourers recently absorbed into the industrial system. Thus, although growth of trade unionism on an effective mass basis provides a valuable form of association in the new particularist environment of the industrial area, it may occasionally involve conflict, not only between employers and employees, but also between skilled and unskilled workers.

In so far as industrialization breaks up the extended family and uproots workers from their traditional communities, it hastens the decay of those devices of self-help and mutual aid which, within the limits permitted by the generally low standards of living in the rural society, offer some protection to all members of the group, irrespective of their ability. In the new industrial society the urban worker who is crippled, unemployed, or too old to work may have no tie with any group that feels a direct responsibility for his welfare. At the same time, the instability of the urban family results in increasing numbers of deserted mothers and abandoned children. In many cases, begging becomes their only means of livelihood. In south and south-eastern Asia, for example, "there are vast numbers of persons disabled by disease and malnutrition, many of them without the customary claims on family or village," and "for whose sustenance the modern economy fails to provide".[27] The problem is similar, though usually on a smaller scale, in most of the other areas undergoing industrialization.

The decline of the traditional social security arrangements is more obvious in cities but, as indicated above, it also affects the countryside. In rural Nyasaland, for example, the depopulation of villages by emigration of men has resulted in a lessening of communal and family solidarity and in an "increasing need to assist the traditional structure of African society to care for the helpless, the aged, the blind, the infirm and orphaned children".[28]

In some areas, there has been a spontaneous development of new forms of mutual aid. In parts of West Africa, for example, migrants from a given tribe or locality working in the same industrial area have formed "unions", supported by voluntary contributions, designed both to help one another and to carry out improvements in the home communities. Although such enterprises indicate that people undergoing economic change are not always simply passive but are sometimes capable of constructive adaptation to the emerg-

[25] For a more detailed discussion of labour problems associated with industrialization, see the United Nations *Preliminary Report on the World Social Situation* (sales number 1952.IV.11), chapter 7, as well as relevant sections of chapters 10, 11 and 12.

[26] H. W. Spiegel, *The Brazilian Economy—Chronic Inflation and Sporadic Industrialization*, (Philadelphia, 1949), page ix.

[27] United Nations, *Preliminary Report on the World Social Situation*, page 178.

[28] Cf. United Nations, *Special Study on Social Conditions in Non-Self-Governing Territories*, (New York, 1953), page 115.

ing industrial society, yet, in general, the new needs of the individual require the development of social security and social assistance measures supported by the whole community. Such measures are in fact being increasingly applied, at least in the larger cities and among the workers in special industries, but in most under-developed countries there is a long hiatus between decay of the traditional system under the impact of industrializing forces and effective substitution of new forms of assistance. It is during this period that social conditions tend to be worst.

Moreover, the governments involved "face a fundamental problem regarding the extent to which their limited facilities and financial resources should be devoted to the relief of the destitute, who represent but a fringe of a vast population that is always on the edge of destitution, and the extent to which these facilities and resources should be devoted to preventive health measures and measures for raising general standards of living".[29]

The increase in individual economic and social insecurity is only one of the consequences of the change which the process of industrialization invariably induces in the traditional family system, which in most pre-industrial societies tends to immobilize the individual within an intricate network of family and kinship ties and make his occupational activities and interests subordinate to his family and kinship roles. In western Europe the spread of the industrial system was invariably associated with the liberation of the individual from such ties and the reshaping of the family group to a size and form more likely to give it the mobility required of industrial labour. Family systems affected by contemporary industrial revolutions are generally following a similar trend, leading to emancipation of the conjugal unit (that is, the family consisting only of parents and minor children).

Thus, in Brazil:[30]

> "Urbanization is the decisive factor in the evolution of the family . . . it developed principally during the present century, augmented successively by each industrial development. Not only have enormous masses of rural workers and the inhabitants of small cities migrated to larger centres, but also the urban material and non-material culture traits have diffused over extensive areas. By imposing the participation of the woman in the work of the factory, the store and the office, urbanization disrupts the traditional sequestration of the Brazilian family, rich and poor, and alters in a decisive manner the status of women, bringing it ever nearer that of men . . . As a system of prestige and retribution, kinship beyond the conjugal group no longer exists . . . The ancient respect is no longer paid to aunts and uncles . . . while the hierarchy of relationships among brothers and sisters has almost entirely disappeared, with the decrease in the size of the family and the vanishing of familial leadership."

In China, the decay of the family-centred social organization and of the practices and values of the extended family system among both educated and working classes in cities was much in evidence during the nineteen thirties.[31] A parallel development is reported in India, where "the expansion of towns and the diversification of the employment opportunities, the rise of the new trades and the decline of the old ones, have been breaking the hold of the joint family . . . Significant among the effects . . . are the rise in the age of marriage, the improved status of women, the decline in the despotism of the joint family ruler . . . and, in general, the increasing reorientation of the alignment of family relations from mother and son to husband and wife".[32]

In the countries of the Middle East, the eclipse of the patriarchal family is described as a common occurrence among the town populations.[33] An evolution towards the conjugal family, emancipated from dependence upon a wider kinship organization, has also been noted among African urban populations.[34]

While the direction of trend is clearly marked, the emergence of the new family type is complicated in many countries by the accompanying phenomena of disruption and instability. Family disorganization indeed is a regular feature of proletarian life in many cities.

It is reported, for example, that in Morocco, "the abuse of divorce, the practice of temporary unions, the misconduct of women, the instability of men caused by their restless searches for better jobs, result in an extraordinary weakening of the marital bond. The venereal diseases spread so profusely that all preventive work becomes impossible. High fertility is resented. There are few workers' homes with three children".[35] In many parts of central and southern Africa "the form of marriage is changed by the new impersonal organization of society and divested of much of its old economic significance . . . The disproportion of the sexes in town makes sexual unions most unstable. It encourages prostitution, temporary concubinage and frequent divorce, while in the absence of any new civil marriage procedure, the line between concubinage and marriage is often vague".[36] Desertion, adultery, divorce, illegitimacy and the neglect of children are common.[37]

With the weakening of the larger family bond many of the functions fulfilled by the family in almost all pre-industrial societies—providing social security and education, however rudimentary, and conferring status, for example—tend to fall increasingly upon the State.

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[29] United Nations, *Preliminary Report on the World Social Situation*, page 179.

[30] Antonio Candido, "The Brazilian Family", *op. cit.*, page 308 ff.

[31] Cf. Ch'eng-K'un Cheng, "The Chinese Large Family System and Its Disorganization", *Social Forces*, 17 (Baltimore, 1939), page 538 ff.; Francis L. K. Hsu, "The Family in China", *The Family: Its Function and Destiny* (New York, 1949) page 73 ff.; Marion J. Levy, *The Family Revolution in Modern China* (Harvard University Press, Cambridge, 1949), page 273 ff.

[32] B. K. Madan, "The Economics of the Indian Village and its Implications in Social Structure", *op. cit.*, page 817.

[33] Kazem El Daghestani, "The Evolution of the Moslem Family in the Middle Eastern Countries", *International Social Science Bulletin*, vol. V, No. 4 (Paris, 1953), page 683.

[34] Lucy P. Mair, "African Marriage and Social Change", *Survey of African Marriage and Family Life*, edited by Arthur Phillips (Oxford University Press, 1953), pages 28 ff, 149 ff.

[35] Robert Montagne, *op. cit.*, page 217.

[36] Godfrey Wilson, *op. cit.*, part II, page 80.

[37] Cf. K. A. Busia, *Report on a Social Survey of Sakondi-Takoradi* (London, 1950), page 29 ff; Eileen Jensen Krige, "Changing Conditions in Marital and Parental Duties among Urbanised Natives", *Africa*, vol. IX (Oxford University Press, London), pages 1 to 23; Arthur Phillips, ed.: *Survey of African Marriage and Family Life* (New York, Oxford University Press, 1953), *passim*.

In modern industrialized societies, the status of the worker is not merely a reflection of his position on the occupational ladder or the wage scale. It is supported by a whole system of allocations and rewards accruing to him in the form of social services, educational facilities and other amenities of life, both in his occupational capacity and by virtue of his membership in the society. It rests also upon the exercise of his political rights, upon the place which labour, as an organized group or social class, occupies in the national society, and upon the influence which workers can exert through their professional and other organizations. The modern industrial worker is not merely a factor of production in the industrial system, but a participant in it. In newly industrialized societies, in contrast, the industrial worker may fail to gain a comparable place in the social structure; newcomers to industry, divested of their traditional social roles, may be absorbed by the industrial system not as social persons, but largely as a market commodity. Industrialization, under these circumstances, leads to the formation of human aggregates which, as indicated above, are no longer kept together by ties of family or community, but have not yet evolved new forms of social organization fitting them for full participation in urban society.

The evolution of such new forms of social organization may be facilitated by social legislation which defines the worker's status in the society, and by a nationwide expansion of social services and educational facilities, without which mobility may tend to degenerate into shiftlessness, and pre-existing closed class systems with their inherent antagonisms and conflict may be imbedded in the new situation. In the last resort, however, the decisive factor in the making of a new society is the participation of the people themselves in the processes of social reconstruction.

In many of the less developed countries a major difficulty in such popular participation in social change arises from the fact that members of the pre-industrial society are poorly equipped with the mechanisms that play a major part in social change. For example, modern industrial society is to a considerable extent an "associational" society: it involves an intricate framework of associations and groups, organized to foster, directly or through the government, special interests and purposes—professional, welfare, economic, political, artistic, religious and so on. Of particular interest in the present context are social reform movements organized for the deliberate purpose of introducing changes. There is a notable absence of such associations in most pre-industrial societies, where organized human relationships are limited largely to those defined by the structure of the family and local community.

The expansion of associations in a given area is almost synonymous with the growth of a new social structure in which particularistic ties are supplanted by the affiliation of individuals and local groups with wider collectivities. A distinctive feature of these associations —co-operatives, mutual-aid societies and trade unions, for example—in societies that are changing from a pre-industrial to an industrial structure is that, whatever their professed purpose, they readily expand or integrate into a movement of general social reform, with interest diffused over almost every aspect of social life in which changes are considered desirable or urgent. They play an important part in establishing new social standards on a nationwide basis, in reorienting individuals and in restructuring local communities. Thus, the part played by the trade union in a nascent industrial society is by no means limited to increasing the bargaining power of workers and assisting them to obtain higher material rewards. "The appeal of the union lies in its diagnosis of individual weakness. The loyalty it receives is correlative to the sense of its members that by themselves they are isolated, unsupported, protected by no neighbourly morality from the impersonal sway of market forces, and the arbitrary power of management. The union is part of the fabric they construct, in order to restore themselves to a status in a community".[38]

When stable forms of social and family organization are established in the new industrial system, the government may be able to relinquish part of its responsibility —for the organization of cultural and recreational facilities, for example, and for such other functions as are likely to be more effectively carried on by private groups and voluntary associations. In the present context, however, it is important to bear in mind that during the process of transition, when the pre-industrial family and social structure is breaking down because of its inadequacy in the new environment of disciplined factory wage employment and impersonal urban community life, a special burden must be borne by the government. If the object of increasing human welfare is to be achieved, the creation of appropriate institutions to ease this social transition is as much a part of the process of sound industrialization and integrated development as is the erection of the factories themselves.

[38] E. H. Phelps Brown, *Economic Growth and Human Welfare* (Delhi, 1953), page 33 ff.

APPENDIX A

Recent Progress of Industrialization in Certain Developing and Under-developed Countries[1]

In this appendix an attempt is made to sketch the nature and extent of the industrial development that has taken place in recent years in several countries which before the First World War ranked among the less developed. In doing this it has become clear that, in most of these countries, official measurement of industrial progress is inadequate, not only for the needs of the present brief statistical review, but also, and more important, for the use of those, either in the government or outside it, who follow the course of secondary industry for the purpose of economic analysis. Something was said, in chapter 2, about the way lack of critical information tends to increase risks and handicap enterprise; in the present context it is sufficient to emphasize that this lack is a serious obstacle to forming and carrying out sound economic policies, particularly if these include more rapid industrialization.[2]

The countries on which this statistical review is based are those whose industrial experience during recent decades provided much of the material for the foregoing study. They were selected not because they are now representative of under-developed countries—the fact that they have undergone a measurable amount of industrialization distinguishes them from less developed countries—but in the hope that an examination of their industrial development may help to throw some light on the nature of the industrialization process.

The three major external determinants of economic trends in the less developed countries during the period under review were the First World War, the depression from 1930 to 1932 and the Second World War. Each of these events had a considerable impact upon the growth of secondary industry in these countries and thus they provide convenient points of reference for a brief discussion of the course of industrial development in each of the four decades between 1911 and 1950. The discussion is largely in descriptive terms, backed by measurement wherever the available statistics permit.

From 1911 to 1920

Few countries outside of Europe and North America had attained any degree of industrial development before the outbreak of the First World War. All, in fact, were under-developed in the sense that primary activities, especially agriculture, dominated economic life, each depended very greatly upon the export of a small range of raw materials and, except in areas where European immigrants were concentrated, average per capita incomes tended to be very low. By and large, such secondary industry as had been established was of a rudimentary nature, organized for the most part on a small scale and concerned chiefly with production of elementary consumer goods. In general, factories were lightly equipped, making extensive use of manual labour and employing little in the way of imported raw materials. The only industries organized on anything approaching the European or North American scale were food processing and textile manufacturing; these were largely confined to one or two locations. In several countries, industry was organized predominantly on a handicraft or cottage basis, with the family as the production unit. In India the total output of these cottage industries has been estimated at more than five times that of the larger factory enterprises.

Only two of these countries had begun to produce steel: in Australia, the Eskbank Iron Works poured its first steel in 1900 and by 1914 production of pig-iron had reached 75,000 tons; in India, the Tata Iron and Steel Company poured its first steel in 1912 and by 1914 production of pig-iron had reached 235,000 tons. The proportion of the industrial labour force engaged in producing finished capital goods (in the stone and clay, metal and engineering, implements and machinery industries) ranged from less than 10 per cent—in the Philippines, Argentina, India and New Zealand—to between 25 and 33 per cent—in Canada, the Union of South Africa and Australia. For the most part these producer goods industries were not highly mechanized, and labour productivity (as measured by average net output per worker) was not notably higher than in industries producing finished consumer goods. The engineering industry in most of these countries was devoted more to repair and maintenance activities than to production of new commodities.

The effect of the war varied from country to country. In general, the decrease in supplies from Europe, combined with a substantial rise in prices (and in some cases volume, too), of most primary products exported by the less developed countries[3] provided a considerable

[1] The countries on which this historical review is based are Argentina, Australia, Brazil, Canada, Chile, Egypt, India (including Pakistan before 1948), Indonesia (Netherlands East Indies before 1950), Mexico, New Zealand, the Philippines, Southern Rhodesia, Turkey and the Union of South Africa.

[2] Cf. the analysis of industrial censuses by the United Nations Statistical Office, *Studies in Methods: Industrial Census and Related Enquiries*, sales number 1953.XVII.II.

[3] An important exception to this generalization was Chile, whose exports of nitrates were adversely affected by the invention in 1913 of a technique for synthesizing ammonia; however, any serious decline in foreign exchange earnings was prevented by expansion of copper mining.

stimulus to local industrial production. However, in some countries—Australia and Canada,[4] for example—the withdrawal of manpower for military purposes meant that full advantage could not be taken of the economic situation, while in others, including most of the smaller countries, the industrial organization was insufficiently advanced and the economic framework too primitive to permit rapid expansion. In some countries, existing industries benefited most from the increased demand and reduced competition; in other countries new industries were started, including even some heavier types, and there was an appreciable amount of diversification; in all of them, however, it was the import-replacing consumer goods industries which made the greatest progress.

The end of the war brought a reaction in most countries. Not only did imports become more freely available, but in general price was lower and quality higher than in the case of competing domestic products. In some countries the effect of this was to build up a prejudice against local manufactures which was not overcome for many years; indeed, even when the price of a domestic product had declined appreciably below that of the rival imported product, the latter continued in many instances to possess prestige value which maintained its competitive power.

In general, therefore, the years immediately following the war saw the failure of many of the local firms. However, a significant proportion of the new industries continued to operate and, more important, in some countries many of the lessons of the war period began to be reflected in practical measures. The shortage of skilled labour experienced during the war gave rise to new attempts to encourage immigration and improve facilities for technical training. The poor quality evident in products of older as well as newer factories focused attention on the need for minimum standards. Rapid expansion of industry in some areas had placed considerable strain on transport and power facilities; therefore, in several countries a good deal of reorganization and investment in utilities was carried out during the post-war years. In general, one of the consequences of the war was a wider appreciation of the importance of secondary industry in the less developed economies, and in some cases this was reflected in greater government concern and assistance—by tariff protection and the organization of credit institutions, for example.

In India, industrial employment was 44 per cent higher in 1921 than it had been in 1911 though the population had increased by little more than 4 per cent, while in New Zealand a similar gain in employment was recorded between 1915 and 1920, during which period population grew by about 11 per cent. Indian steel output had doubled during the four years of the war.

From 1921 to 1930

By and large, the period of the nineteen twenties was one of consolidation. The decade opened with a fairly widely felt slump, which spread from the industrial countries to the under-developed countries upon exhaustion of the backlog of war-time demand and the renewal of large-scale exports from Europe. In a number of cases this served to enhance some of the tendencies to support local industrialization by practical measures already referred to. Tariff protection was introduced in India (1923) and the Union of South Africa (1925), and extended and increased in Australia, while in Turkey systematic industrialization was started with the establishment of the Bank of Affairs in 1924 and the Bank of Turkey in 1925. As a result of this type of action there was a fairly steady expansion of industrial output and employment in several under-developed areas, not so rapid, but usually more solidly based, than during the war.

In Australia, industrial employment was a third higher in 1928 than it had been just before the war, though population had increased somewhat less. In Canada, there was a 10 per cent gain between 1920 and 1929, compared with about 14 per cent in New Zealand, increases that were both slightly below the rate of population growth. In the Union of South Africa, the increase in industrial employment was substantially greater: 76 per cent between 1916 and 1928, compared with a 20 per cent increase in population. As a result of the mechanization that took place during this period, output generally rose more rapidly than employment. In Canada, where installed motive power doubled between 1917 and 1929, there was a 77 per cent increase in real net output between 1920 and 1929. In Australia, in 1928, motive power was 71 per cent higher and net output 56 per cent higher than in 1913. In New Zealand the growth between 1921 and 1929 was 40 per cent in installed power and 80 per cent in output. There was a threefold increase in South African output and power between 1916 and 1929.

In Chile, depression in the nitrate mines, combined with the effects of renewed competition from imports, damped industrial progress; it was not until the second half of the nineteen twenties that, under stimulus of enlarged copper exports and a considerable inflow of foreign capital, the expansion of secondary industry was resumed. During this period, however, the foundation was laid for much of the country's subsequent industrialization, particularly in the field of textiles, foodstuffs and chemicals. Net industrial output per capita, however, remained very low—of the same order of magnitude as that of Mexico, about one-fifth of the New Zealand figure and a tenth of that of Canada.

In Egypt, despite the industrial lending of the newly established Bank Misr and the inflow of some Belgian

[4] In Canada, there was actually a decline in industrial employment between 1913 and 1920; in Australia, production was increased largely through use of more power; between 1914 and 1919 installed mechanized equipment expanded from 412,000 to 610,000 horsepower.

and Swiss capital into the production of construction materials, manufacturing showed little progress during the nineteen twenties: the local market was comparatively small and the competition of imported goods too keen. The industrial labour force constituted less than 2 per cent of the total population, and more than two-thirds of it was engaged in producing finished consumer goods.

There appears to have been little structural change in secondary industry in the under-developed countries during the period, at least in so far as this can be measured by the relative volume of resources devoted to the production of producer goods or consumer goods. The two broad categories of industry had thus grown at more or less the same pace. Even in Australia, where the war had stimulated the expansion of heavy industry, based to a large extent on the steel plant established at Newcastle in 1914, which had reached an output of 164,000 tons by 1918, there was no notable increase in the proportion of either labour or capital engaged in manufacturing finished producer goods: it remained between a fourth and a third of the total in secondary industry in each case.

The relative growth of capital goods industries was more noticeable in India, but even here the proportion of the industrial labour force employed in industries making finished producer goods was only 13 per cent in 1921 (compared with 8 per cent in 1911). It is significant that the steel industry was the first to benefit from the policy of discriminating protection introduced early in this decade. With the population increasing by about 2 million persons each year, employment in factories was rising by less than 30,000 a year.

In general, industry in the less developed countries continued to be concerned chiefly with production of consumer goods. Apart from the output of processed materials, most of which were in fact used either in construction or in the light industries, the proportion of the total net output of manufacturing industry contributed by factories making finished consumer goods was 29 per cent in Canada, 43 per cent in Australia, 47 per cent in the Union of South Africa, 53 per cent in New Zealand, 61 per cent in Chile, 74 per cent in Brazil and 76 per cent in India. These figures provide a rough measure of the relative industrial maturity of these countries at the end of the decade.

From 1931 to 1940

The depression with which this period opened was characterized by a fall in prices much sharper for primary products than for manufactured goods. Consequently, it caused a considerable deterioration in the terms of trade as well as a major decline in the export earnings of most of the less developed countries. One of the first results of this decline was a serious contraction in domestic purchasing power and a considerable decrease, or stopping of, the influx of foreign capital. This in turn caused a substantial drop in industrial activity: in New Zealand factory employment dropped by 16 per cent between 1929 and 1933, in Canada by 30 per cent and in Australia (between 1929 and 1932) by 25 per cent. Industrial output dropped by similar proportions.[5] The competition of lower priced goods from overseas grew rapidly more severe.

The full effects of this situation were not allowed to work themselves out upon local industrial activity, for in most of the less developed countries the balance of payments crisis which reflected the disparate drop in export and import prices made necessary monetary action, and this soon had an influence on the course of secondary industry. Many under-developed countries devalued their currency substantially more than did industrial countries; many imposed stringent import controls, and quite a number began experimenting with multiple exchange rates. The general effect of these monetary measures was to protect domestic industry against foreign competition and to inaugurate a period in which self-sufficiency was one of the main desiderata of economic policy.

As a result, the decade saw considerable expansion of secondary industry in many of the under-developed countries, much of it of a high cost variety, unable to compete with overseas products at the prices then ruling. Several of the less developed countries undertook textile production for the first time: aggregate cotton spinning capacity in the under-developed countries increased by 19 per cent between 1929 and 1937.[6] In the ten years from 1928/29 to 1938/39 better utilization of this capacity resulted in an increase of 90 per cent in raw cotton consumption. Other light industries — rubber, leather and wood-working, for example — also experienced a fairly widespread increase, while in some countries there was a notable expansion of heavy industry.

In Argentina, in 1937 both the number of industrial establishments and the installed motive power were 10 per cent above the 1914 level, while gross industrial employment, which had been rising more steadily, though not quite so rapidly as the population, stood at 535,000 in 1937 — almost two-thirds higher than in 1914. In Australia, the horsepower installed in factories in 1938/39 was double the figure ten years before; population had increased by less than an eighth, while the number of workers was one-fourth greater and the net output at constant prices more than a third greater. In Brazil, the number of factories in 1940 was more than three times that of twenty years before, while the number of workers had more than doubled, though population growth was less than one-third. In Canada, there were nearly 25,000 establishments in 1939, one-eighth

[5] Except in the Union of South Africa, where gold mining tended to stabilize the domestic market. Industrial employment declined by 11 per cent between 1928/29 and 1932/33, but gross output at constant prices dropped only 2 per cent, and because of the disproportionate fall in raw material prices, net output was actually 5 per cent higher. The average productivity of labour had thus risen by about 19 per cent, reflecting an increase of 10 per cent in the horsepower of installed machines as well as the absence of the least efficient members of the working force.

[6] See appendix B, table XIII.

more than ten years earlier; employment at 658,000 was 40 per cent greater than in 1933 (about one-fifth of the average increment in population had been entering secondary industry); installed motive power at 5 million horsepower was 22 per cent greater, and value added, at constant prices, some 50 per cent greater. In Chile, the number of factory employees of all types increased by more than one-third between 1928 and 1937, though population had risen by a mere 6 per cent, while earnings in secondary industry (at constant prices) were more than 50 per cent greater; the number of factories doubled between 1928 and 1937, with a particular expansion in the textile, paper, chemical, glass and cement industries. It was during this period that manufacturing became the leading contributor to the net national product.

In Egypt, the number of industrial establishments, many of which continued to be small handicraft units, increased by about one-fourth between 1927 and 1937 and the number of workers by a slightly larger proportion. In India, the number of factories employing twenty or more workers (or ten or more with power) rose by rather more than one-fourth between 1934 and 1940 and the number of employees by rather less than one-fourth. In Egypt, something of the order of 3 per cent of the annual increment in population was being absorbed in secondary industry; in India, the proportion was not much higher than one per cent.

In Indonesia, there was a substantial increase in the number of large establishments (employing fifty or more persons), in which the labour force more than doubled between 1930 and 1940. In Mexico, between 1934 and 1939 the increase in factories with an annual output of 10,000 pesos or more amounted to almost 90 per cent, while the number of industrial workers rose by about a fourth and real net output by almost a half. In New Zealand, a 25 per cent increase in the number of establishments between 1933 and 1939 was accompanied by a slight decline in the average productivity of labour, although the recovery in raw material prices resulted in an increase in gross output of almost the same proportion as the increase in employment (50 per cent).

In Turkey, the years 1934 to 1938 were marked by considerable investment undertaken by the Government in industry in accordance with a plan which aimed at expanding both producer and consumer goods industries, including textiles, paper and sugar as well as several metallurgical enterprises. The number of workers employed in 1939 was half again as many as in 1933, and though the number of establishments was no greater, real gross output was more than 80 per cent higher.

In the Union of South Africa, the most notable industrial event of the decade was the firing in 1934 of the first blast furnace of the new iron and steel plant constructed on behalf of the Government by technicians from Germany and England. Between 1933 and 1939, the total number of factories increased by about a third and employment by more than 80 per cent, while real net output more than doubled. The increase in labour productivity reflected the growth in mechanization: net installed motive power expanded by almost 90 per cent during this period.

In the decade 1929 to 1939 crude steel production outside of Europe, Japan, Soviet Asia and North America increased from little over 1.2 million metric tons to more than 3.4 million. This reflected new facilities not only in South Africa but also in Manchuria, Korea and Argentina, as well as considerable expansion in Australia, Brazil and India. Output in the under-developed countries as a whole rose from little over one per cent of the world total in 1929 to nearly 3 per cent in 1939.[7]

Argentina and the Union of South Africa were among the few countries in which there was an appreciable relative increase in the importance of producer goods industries during this period. By and large the production of finished consumer goods accounted for the bulk of industrial employment and output in the countries under discussion: over 60 per cent of the total in Egypt, India and Brazil, between 50 and 60 per cent in New Zealand, Argentina and Australia, between 40 and 50 per cent in Chile and Canada and 37 to 38 per cent in the Union of South Africa and Southern Rhodesia, where no significant textile industry had yet developed. There was no general tendency for productivity to be higher in the producer goods industries (which are usually more heavily capitalized); except in Brazil and Canada, indeed, productivity tended to be higher in the consumer goods industries, perhaps because on the whole they were better established and able to produce on a relatively larger scale.

As far as secondary industry was concerned, the effect of the depression of the early nineteen thirties was relatively most severe in those under-developed countries in which manufacturing was most advanced. In countries where the industrial structure was more rudimentary, the depression may actually have stimulated manufacturing, since the collapse of agricultural prices – and with them foreign exchange earnings – forced several of the latter group of countries to devote a much higher proportion of their resources to the expansion of secondary industries. In spite of this, however, it may be inferred from table VII that at the end of the decade there was still a considerable difference in net per capita output from one under-developed country to another. In general, the rate at which industry absorbed the increment in population during this period was highest in countries in which the manufacturing sector was relatively the most advanced – 30 per cent of the increment in Canada, 17 per cent in Australia, 14 per cent in New Zealand and 12 per cent in Chile, compared with 3 per cent in Egypt, 2 per cent in Mexico and one per cent in India.

[7] See appendix B, table XXIII.

From 1941 to 1950

The effect of the Second World War upon the industrial growth of the under-developed countries was much greater than that of the First World War. Hostilities lasted longer, the demand for raw materials to supply mechanized military forces was much more intense, the cutting off of supplies of manufactures from Europe was more complete, the damage done to the European industrial potential was much greater and many of the less developed countries were better placed, from an industrial standpoint, to benefit from the need and opportunity to supply their own demand for manufactured goods, and in some cases to enter the export trade too. In many instances industries that had been established in the nineteen twenties and had attained a fairly high degree of maturity by the thirties were in a state more sensitive to economic stimulation than any industries had been during the First World War. Because of the higher degree of mechanization, shortages of industrial labour were less of a handicap, and although capital equipment was more difficult to import, some of the less developed countries were now in a position to produce a certain amount of their own.

Moreover, quite apart from the nature and magnitude of the direct economic stimulus, the governments of many under-developed countries were in a better position to promote industrial development, and in various ways more extensive assistance was in fact given to manufacturing enterprises. Financial and educational institutions had been improved by experience, while in several countries legislative measures and administrative machinery which had been devised during the previous twenty years were soon used to assist and protect national industries. In addition, several of the less developed countries received substantial foreign aid, both financial and technical, in order to increase the production of strategic goods and materials.

Except in those countries of North Africa and south-eastern Asia that were exposed to the physical destruction of the war itself, conditions tended to favour industrial growth in most of the under-developed countries. As a result there was a general upsurge of manufacturing activity, new industries being established and older ones being expanded. While in most countries the main expansion was in consumer goods industries replacing imports, in some there was comparable progress in the metal and engineering industry. Canada and Australia, indeed, reached a new level of industrial maturity and became significant producers and exporters of machines, machine tools and other heavy capital goods.

In Argentina, the number of industrial workers practically doubled between 1937 and 1946, though the population increased by less than one-fourth. Installed motive power was more than 80 per cent higher in 1946 than in 1937, while at 1937 prices net manufacturing output was three times as great — indicating a substantial rise in average productivity. Steel output, which was a mere 20,000 tons in 1939, was six times that amount in 1946, and continued to expand, reaching 250,000 tons in 1951. In Brazil, industrial employment almost doubled between 1940 and 1950, although total population rose by only one-fourth. Gross factory output at constant prices increased by about 70 per cent and value added, by about 80 per cent, raw material prices having risen by less than other costs. Steel production, which stood at 141,000 tons in 1940, had reached an annual rate of almost six times this figure by the end of 1950. In Chile, it is probable that net real factory output doubled between 1942 and 1948, though the working force expanded by no more than 40 per cent. The chemical industry underwent a considerable increase, and a textile spinning industry was among the post-war investments. Steel production commenced in 1946 and, with the opening of the new plant at Huachipato, had risen to 178,000 tons by 1951. Mechanization continued throughout the period, and between 1940 and 1949 the average amount of installed power available to each industrial worker rose by about 10 per cent. In Mexico, there was a doubling of industrial employment between 1935 and 1945 and a doubling of real net output between 1939 and 1948.

For Egypt, as a supply depot for military material, the war proved an important stimulus. With the greater utilization of existing capacity and a considerable expansion in the number of establishments, industrial employment doubled between 1937 and 1945, while real net output in 1950 was about 140 per cent above the 1939 level. During this period the country became self-sufficient in a number of consumer goods and capable of providing the bulk of its requirements of several others. Though the production of capital goods did not keep pace with this expansion, there was a marked increase in the output of various metallurgical industries, climaxed by the establishment of a motor car assembly plant. Although manufacturing occupied only 6 per cent of the total working population, it accounted for about 11 per cent of the net national product.

Owing to its use of a large proportion of its national income for military preparedness, Turkey experienced more of the inhibiting effects of the war, so that it was not until after 1945 that the major expansion of its industry took place, partly under the stimulus of renewed foreign investment and partly under a policy which gave greater encouragement to private initiative. In 1950, gross manufacturing output, at 1939 prices, was more than 70 per cent above the 1939 level. Steel production, which had stood at about 38,000 tons in 1940, had reached 135,000 tons by 1951.

In the Union of South Africa, expansion of the steel industry also epitomized the growth of manufacturing activities in general: from 368,000 tons in 1939, annual steel output exceeded one million tons for the first time in 1951. Before the war secondary industry rarely absorbed more than 5 per cent of all new investment (excluding inventories) each year; during the period 1942-1945, however, the average proportion of new invest-

ment going into secondary industry was nearly 20 per cent of the total and in the post-war period, when mining and public investment increased greatly, industry continued to absorb 10 to 14 per cent of the total.[8] Part of this new investment represented increased mechanization: net installed motive power in 1950 was almost two and a half times the 1939 figure. There was also a 44 per cent increase in the number of factories. During the war net real output expanded at much the same rate as the labour force, but there was an appreciable gain in productivity after 1946.

War-time shortages of consumer goods and post-war immigration were among the chief stimuli of industrial development in Southern Rhodesia. Between 1938 and 1951 there was a 130 per cent increase in the number of establishments and no less than a fourfold increase in factory employment and in net real output.

In India also, the war stimulated industrial activity to a marked degree: between 1939 and 1945 a 50 per cent expansion in the working force occurred in the larger factories (employing twenty or more persons and mechanical power) and the country became self-sufficient in respect of such manufactured goods as refined sugar, soap, matches, salt and cotton textiles. Steel production, which was little more than one million tons in 1939, exceeded 1.5 million tons in 1951, and the output of various other intermediate producer goods — cement, aluminium, ferroalloys, caustic soda, soda ash and fertilizer, for example — also increased substantially. Manufactured goods — rayon fabrics, sewing machines, batteries, fans, matches and pharmaceuticals, for example — began to appear among the country's exports, and in 1950 India was actually the world's largest exporter of cotton textiles.

In Indonesia, employment in factories with at least fifty workers or using mechanical equipment was some 70 per cent higher in 1950 than in 1940. This was a greater relative increase than in New Zealand, where the expansion of industrial employment between 1939 and 1951 was of the order of 47 per cent — compared with a 55 per cent increase in real net output. The rise in productivity in New Zealand was partly the result of greater mechanization: installed motive power increased by about 50 per cent between 1943 and 1950.

From table VIII it can be seen that the rate of industrialization, as measured by the extent to which the increment of population was absorbed into secondary industry, was generally higher in the nineteen forties than during any of the earlier decades. Some of the highest rates of absorption — 32 per cent of the population increment in Australia, 21 per cent in Canada, 18 per cent in Argentina and South Africa, 15 per cent in New Zealand — were recorded in this period. Much lower rates of industrial absorption were registered in the countries with the largest population increments: India with 5 per cent, Brazil with 6 per cent, Turkey with 2 per cent and Mexico with 3 per cent, for example. Even these rates, however, were generally higher than those recorded earlier. In general and within limits, the higher the degree of industrialization the greater is the absorptive power of industry likely to be: to that extent industrial development tends to feed on itself, becoming to a certain extent a self-generating process.

Since, in general, there was a larger proportional expansion in those countries in which average per capita production of manufactures was lowest, the industrial expansion of the nineteen forties did a little to close the gap in per capita net output between the most industrialized and the least industrialized of the countries upon which this statistical review is based. Nevertheless, there remained a considerable disparity between the now industrially developed countries of Canada, Australia and New Zealand and such industrially underdeveloped countries as Egypt, India, Southern Rhodesia and Mexico.

Crude data such as are brought together in table VII must be interpreted cautiously if used to compare the relative extent of industrialization. Differences in price structures and levels are only imperfectly smoothed out by exchange conversions, especially where the exchange rates are controlled and in some cases fixed more or less arbitrarily according to the purpose of the transaction. Moreover, national averages, though they may bring out disparities between countries, tend to hide internal disparities which, as indicated in chapter 2 of this study, are fairly common in under-developed countries. Although the industrial areas of India, Brazil or the Union of South Africa are comparable in many respects to those of Australia or Canada, for example, national averages of per capita industrial production do not show this, for in India, Brazil and South Africa a much larger proportion of the population lives outside the industrial sector of the economy, in the villages and the subsistence areas.

Furthermore, the crude figures also tend to obscure differences in the nature of the industrial structure. The high average manufacturing output of New Zealand, for example, is based on the development of consumer goods industries, particularly those concerned with the processing and preparation of farm crops, to a much greater extent than is the much lower average output of Chile or Mexico. Within the limits set by the resource endowment of the country, New Zealand has reached a fairly high degree of industrial development, though in another sense its industrial structure is not in fact as "advanced" as that of the Union of South Africa, for example, which actually has a lower per capita output but a more diversified pattern of industry, with a higher proportion of workers engaged in the manufacture of producer goods.

Although in the course of the period under review consumer goods industries have tended to lose ground to other types of secondary industry in most of the less developed countries, they have continued to predom-

[8] Cf. South African Reserve Bank, *Quarterly Bulletin of Statistics* (Pretoria), December 1951, page 21.

inate. In Egypt, the Philippines, Brazil and India, for example, 60 to 80 per cent of all industrial employment is still in industries producing simple manufactures for consumers, while in Argentina, New Zealand, Southern Rhodesia and Chile the corresponding proportion ranges from 45 to 60 per cent. As indicated in table VI, factories such as sawmills, tanneries, pulp and paper mills, and chemical plants, producing industrial materials, account for between 17 and 25 per cent of all workers employed in secondary industry in most of the under-developed countries under review. As this group of industries accounts for a somewhat higher proportion of total industrial output, the implication is that labour is slightly more productive in this field than in the manufacture of finished goods.

The statistical tables which follow present data upon which much of the foregoing review has been based. In table I the number of industrial establishments or factories is given for various census years in the under-developed countries that have been discussed. Table II gives data on the labour employed in these factories, while table III shows the amount of power installed. Table IV sets out the gross value of industrial production, and table V the net value or, where this was not obtainable, the value added in the course of production. Table VI subdivides employment and net output into three broad industrial classifications: finished consumer goods, other finished goods, and semi-finished and industrial materials. Table VII presents net industrial output in terms of a single standard — United States dollars per head of population. Table VIII seeks to relate the growth in the industrial labour force with the growth in total population. In order to present industrial employment and the industrial wage bill in a clearer perspective, in table IX they are compared with total population and national income.

Table I. Number of Industrial Establishments[a]

(Thousands)

Country	1915	1920	1928	1933	1938	1944	1947	1951
Argentina [b]	40.2	...	...	36.4	44.3	58.7	83.9	...
Australia [c]	15.5	...	22.9	21.7	26.9	27.7	40.1	45.8
Brazil [d]	...	13.0	...	...	41.0	...	...	78.4
Canada [e]	21.8	22.5	22.2	23.8	24.8	28.5	35.8	37.0
Chile [f]	4.3	...	8.5	...	19.0	...	...	...
Egypt [g]	...	...	62.5	...	92.0	129.2	133.6	124.6
India [h]	4.3	7.1	7.2	...	10.5	...	14.6	27.8
Indonesia [i]	...	...	3.7	4.3	5.6	...	...	8.5
Mexico [j]	...	...	48.1	6.9	12.8	30.5	...	...
New Zealand [k]	3.6	3.9	5.0	4.8	6.0	6.1	7.9	8.5
Philippines [l]	...	5.2	...	...	139.4	...	29.5	...
Southern Rhodesia [m]	...	...	...	...	0.29	0.33	0.44	0.72
Turkey [n]	...	...	61.5	1.4	1.2	...	...	82.0
Union of South Africa [o]	5.3	7.0	7.4	7.7	10.3	10.7	11.9	15.7

Source: National censuses of manufacturing industries, except as noted below.

[a] Excluding public utilities and mining, building and transportation enterprises, except where indicated. Each factory, mill, plant or workshop ranks as an establishment, regardless of the ownership, organization or location, except where indicated. The figures are for census years within two years of the one specified.

[b] *La Actividad Industrial Argentina desde 1937 a 1949*, and *Servicio Estadístico Oficial de la República Argentina* (Buenos Aires, 1950).

[c] *Official Yearbook of Australia* from 1915 to 1951 and the *Quarterly Summary of Australian Statistics* (Canberra, December 1953). Establishment: factory, workshop or mill in which four or more persons are employed or power is used. Data include private industries as well as central, state and local government undertakings and railway workshops; also building and contracting, heat, light and power. Years ending in June.

[d] Establishment: registered firm which undertakes industrial work.

[e] Newfoundland was included for the first time in 1949. Fish processing in Newfoundland, excluded in 1949, was included in 1951.

[f] Figures in column one (1913) and column three (1927) are estimated, and are considered by the *Dirección General de Estadística* to be unreliable and not entirely comparable to the 1937 data.

[g] The figures include handicraft establishments and small workshops, which account for a substantial proportion of the total. Data from 1937 to 1951 inclusive are from National Bank of Egypt, *Economic Bulletin*, vol. VI, No. 1 (Cairo, 1953). The census figure for 1937 was 79,000.

[h] The first figure is for 1911. For that year the Industrial Census included only establishments employing twenty or more persons, although that for 1921 covered those employing ten or more. For comparability only establishments employing twenty or more are included in the 1921 figure. Data from *Census Report*, vol. I (Delhi, 1921), page 266. 1929 to 1950: including public utilities. Data from *Indian Labour Yearbook*, 1950-51 and 1951-52 (Government of India Press, Delhi). 1929, 1939 and 1947: factories using power and employing twenty workers or more. 1950: factories using power and employing ten workers or more as well as those not using power but employing twenty workers or more. Until 1946 these statistics covered the provinces of pre-partition British India. For subsequent years data relate to the corresponding nine part A States of the Indian Union, the centrally administered areas of Delhi and Coorg, and the Andaman and Nicobar Islands, although with the merger of certain former princely States, the coverage has been gradually extended.

[i] Registered industrial establishments using mechanical aids or employing at least fifty workers. 1930 and 1934: data from *Statistical Pocket Book of Indonesia, 1941* (Central Bureau of Statistics, Djakarta, February 1947); 1940 and 1951: Java Bank, *Report for the Financial Year, 1952-1953* (Djakarta), page 177.

[j] 1930: heavily weighted by factories and workshops whose annual production was valued at less than 500 pesos—factories

(*Footnotes continued on page 134*)

(*Footnotes to table I, continued*)

with an annual output of less than 500 pesos, 20,992; with an annual output between 500 and 5,000 pesos, 17,612; with an annual output between 5,000 and 20,000 pesos, 5,696; larger establishments, 3,800 (*Primer Censo Industrial de 1930*, vol. I, page 87, Mexico, D.F.). 1934: *Resumen General del Censo Industrial de 1935*, page 10 (Mexico, D.F.). 1934, 1940 and 1945: establishments whose output was valued at 10,000 pesos or more. Establishment: factory or plant for transformation or mill for industrial exploitation which was in operation for at least part of the year.

[k] Up to and including 1949/50: registered factories engaged in the manufacture, repair or treatment of articles and employing at least two hands (including the working proprietor) or using mechanical power; excluding bakeries, cake and pastry kitchens, boot repairers, watch repairers, dressmakers, electrical and radio repair and servicing shops, garage and service stations with less than two mechanics and all one-man factories, as well as certain government workshops conducted in the Department of Posts and Telegraphs, Ministry of Works, Railways, etc. 1951/52: based on United Nations standard industrial classification, and hence not fully comparable with preceding data. Fiscal years ending 31 March.

[l] 1918: establishments which produced manufactured goods worth 1,000 pesos or more, but excluding rice and sugar mills. Data from *Census of the Philippine Islands*, vol. IV, part I, page 197 (Manila). 1939: 1948 census of manufactures shows that out of the 139,407 industrial firms reported in 1939, some 118,890 or 85.3 per cent had an annual output valued at less than 100 pesos each, and data must therefore have referred to unlicensed household or cottage industries. 1948: all licensed operators or establishments engaged in the production of finished or semi-finished goods, but excluding sawmilling.

[m] Manufacturing or repairing factory or workshop, whether private or public, which (*a*) employs six or more persons, irrespective of race, including the proprietor or manager or other person in charge thereof, or (*b*) uses any form of motive power, or (*c*) uses a boiler for steam heating purposes. Domestic industries such as dressmaking, tailoring, etc., and decorators, jobbing carpenters, etc. working on their own account are excluded. Data from *Official Yearbook of Southern Rhodesia for 1950* (Salisbury), and Federation of Rhodesia and Nyasaland, *Monthly Digest of Statistics* (Salisbury, August 1954).

[n] Data from: *Census for Turkey* and *Rakamlarla Turkiye, Celt. II, 1949* (Central Statistical Office, Ankara). 1927: data include handicraft workers. 1933 and 1939: "establishment" is defined as a factory or workshop employing a minimum of five persons and possessing 5 horsepower in motive power or employing a minimum of ten persons without installed motive power. 1950: there were 1,852 establishments using 10 horsepower or more, and 79,210 using less than 10 horsepower or not using any motive power. Villages with population of 500 or less were excluded (*The 1950 Census of Business and Manufacturing*, Central Statistical Office, Ankara).

[o] Fiscal years. Includes private industries, central and local government undertakings, and railway workshops. The census returns cover at least a part of each of the years concerned, 1916/17, 1928/29, etc. "Factory" is an establishment employing three or more hands, including the proprietor or manager, or other person in charge thereof; or employing any form of motive power, excluding manual labour; or employing any boiler for steam heating purposes; and engaged upon any work of production or upon any other industrial process, excluding mining and quarrying, but including heat, light and power.

Table II. Employment in Industrial Establishments[a]

(Thousands)

Country	1915	1920	1928	1933	1938	1944	1947	1951
Argentina:[b]								
Total industrial	323	...	...	459	540	821	1,057	...
Workers	...	...	...	...	461	691	864	898
Australia[c]	337	...	451	337	565	767	890	978
Brazil[d]	...	309	...	...	835	...	...	1,283
Canada[e]	607	599	667	469	658	1,223	1,172	1,258
Chile:[f]								
Employees	...	...	7	...	13	14	21	...
Workers	45	...	86	...	117	113	155	...
Egypt[g]	...	...	188	...	274	458	578	659
India[h]	900	1,303	1,455	...	1,751	2,643	2,275	2,537
Indonesia[i]	...	...	153	155	324	...	...	551
Mexico:[j]								
Employees	...	...	56	25	36	440	...	...
Workers	...	...	261	193	234			
New Zealand[k]	46	67	76	65	97	112	138	144
Philippines[l]	...	65	...	...	399	...	171	...
Southern Rhodesia[m]	...	...	...	...	18	26	40	68
Turkey[n]	...	...	223	46	70	...	...	354
Union of South Africa[m]	124	180	218	193	353	451	559	779

Source: See table I. See also notes in table I for definition of "industrial establishment" and other explanatory data.

[a] Except where indicated, the figures relate to a census year within two years of the one specified.

[b] "Workers" are labourers actually engaged in industrial occupations; "total industrial" includes administrative personnel, except proprietors.

[c] Data from *Official Yearbooks of the Commonwealth of Australia*. All persons engaged in the manufacturing activities of a factory, including proprietors who work in their own business and "outworkers" are counted as factory employees, while all those who are engaged in selling and distributing, such as salesmen, travellers, collectors, carters engaged solely in outward delivery of manufactured goods and retailing storemen, are excluded. All figures include mining, quarrying, light, heat and power. Prior to 1928/29 data give average number engaged over the period worked, which for many factories was less than a full year; commencing with 1928/29 data give equivalent average number engaged over a full year.

[d] 1920: includes proprietors, partners, administrators, engineers, technical employees, copyists, stenographers, salesmen, other non-wage-earning employees as well as wage-earning workers or labourers. 1940 and 1950: includes administrators, proprietors and clerical employees as well as workers, whether working full-time or part-time, or absent on vacation or away for other reasons. Of the 1950 total, 1,075,956 were "workers".

[e] Data include salaried employees and wage-earners. 1929: method of enumeration gave a somewhat higher figure than that obtained in other years.

[f] The 1913 figure is estimated. Data after 1937 from Dirección General de Estadística, *Industrias* (Santiago). Employee: monthly salary earner; worker, weekly wage earner.

[g] "Employees" comprise administrative, technical and clerical employees, salesmen and skilled and unskilled workers and labourers. 1937 to 1951: data from National Bank of Egypt, *Economic Bulletin*, vol. VI, No. 1 (Cairo, 1953). The 1937 census figure was 241,600; this was used in table VI because its industrial composition was known.

[h] First figure is for 1911. Data for 1911 and 1921 include directors, supervisors, clerical staff, skilled and unskilled labourers; for 1929 to 1951: average daily number of workers employed, excluding clerical employees.

[i] Employment in registered factories only.

[j] "Employees" include directors and administrative workers; "workers" include manual and production workers and apprentices but exclude outworkers. The totals for workers were obtained by averaging the number working on the last working day of each month, except in 1935 when the figure relates to employment on 10 August.

[k] Except in 1915/16, when only productive employees were counted, these figures cover all persons engaged in private manufacturing activities including proprietors actively involved in their own businesses but excluding persons engaged in selling and distribution.

[l] Figure for 1918 is monthly average of labourers engaged in manufacturing industry; for 1939 includes handicraft workers. 1948: includes unpaid persons, 80,874; executives, managers, supervisors, etc., 3,556; office employees, 9,013; and other employees, 77,513.

[m] The figures include administrative, technical, clerical and manual workers, European and non-European.

[n] The figure for 1927 includes handicraft workers; for 1939 the number is estimated (converted from 19,923,000 working days, by assuming 286 working days per worker per year). Data for 1950 include proprietors and partners, unpaid family workers, and the average number of paid employees on the payroll at the end of January, April, July and October, but exclude those engaged in home industry, industrial activities of the Ministry of National Defence and of trade schools and prisons, activities of the gas and power plants, repair activities of state, local and municipal transport services and slaughter-houses, as well as travelling tradesmen, peddlers and craftsmen.

Table III. Motive Power in Manufacturing Industry[a]

(Installed power, in units of a thousand horsepower)

Country	1915	1920	1928	1933	1938	1944	1947	1950
Argentina[b]	634	...	...	600	698	1,090	1,271	...
Australia[c]	442	...	754	810	1,479	2,066	2,745	2,965
Canada[d]	1,659	2,069	3,856	4,135	5,045	6,468	6,784	8,159
New Zealand[d]	...	145	203	217	...	345	426	520
Union of South Africa[e]	117	132	276	303	566	853	1,026	1,325

[a] Excluding public utilities and other central generating stations, mining, building and transportation. See table I for source and notes. Figures relate to the census year within two years of the one specified.

[b] Rated horsepower of electric motors, whether using purchased or factory-generated power, but excluding prime movers.

[c] Rated horsepower of engines and motors ordinarily in use, including gas works.

[d] Data are gross figures representing the indicated power of engines installed and not the amount actually used. They include turbines, petton wheels, and other engines used in the generation of electric current by other than central stations.

[e] Net rated power installed, excluding prime movers.

Table IV. Gross Value of Industrial Output[a]

(Millions of the national currency)

Country	1915	1920	1928	1933	1938	1944	1947	1951
Argentina:[b]								
At current prices	1,652	...	...	2,662	*3,665*	...	13,750	...
At constant prices	...	...	...	3,132	*3,665*	...	6,642	...
Australia:[c]								
At current prices	162	...	420	282	*500*	892	1,425	2,151
At constant prices	238	...	375	306	*500*	646	792	860
Brazil:								
At current prices	...	282	...	...	*15,643*	...	104,815	...
At constant prices	...	...	...	...	*15,643*	...	26,670	...
Canada:								
At current prices	2,821	3,707	3,883	1,954	*3,475*	9,074	12,480	16,392
At constant prices	1,945	1,872	3,209	2,147	*3,475*	7,201	6,367	6,887
Chile:[d]								
At current prices	...	...	1,477	...	...	*8,671*	35,238	...
At constant prices	...	...	5,451	...	...	*8,671*	16,941	...
Mexico:								
Series A:								
At current prices	...	...	820	986	*1,888*	5,571	...	...
At constant prices	...	...	1,005	1,338	*1,888*	3,074	...	...
Series B:[e]								
At current prices	...	...	...	...	*2,421*	7,583	10,161	16,794
At constant prices	...	...	...	...	*2,421*	3,889	4,269	5,453
New Zealand:								
At current prices	41	75	85	60	*107*	155	117	379
At constant prices	51	56	90	72	*107*	106	174	185
Philippines:								
At current prices	...	224	...	...	...	...	945	...
At constant prices	...	...	...	...	...	...	...	...
Turkey:								
At current prices	...	...	420	144	*304*	...	...	2,319
At constant prices	...	...	...	167	*304*	...	...	526
Union of South Africa:								
At current prices	40	98	113	91	*200*	331	492	964
At constant prices	32	78	93	91	*200*	248	305	511

[a] Excluding output of public utilities and mining, building and transportation activities. The "constant price" figure has in each case been derived by deflating the current value by means of the wholesale price index for "finished goods" where available, otherwise that for "all commodities". Figures in italics represent the base year. See table I for source, definitions and other interpretive notes. Figures relate to the census year within two years of the one specified.

[b] For 1946: gross sales (including profit) therefore, not comparable with earlier figures.

[c] Including the gross value of work done (such as repairs) as well as that of goods produced. Figure for 1951/52 is provisional.

[d] 1942 and 1949: incomplete coverage. Data from Dirección General de Estadística, *Industrias*, 1942 and 1949 (Santiago).

[e] Including the generation of electricity. Data from Combined Mexican Working Party, *The Economic Development of Mexico* (Johns Hopkins Press, Baltimore, 1953).

Table V. Net Industrial Production[a]

(Millions of the national currency)

Country	1915	1920	1928	1933	1938	1944	1947	1951
Argentina:								
At current prices	643	...	...	1,057	*1,066*	2,094	6,992	...
At constant prices	...	...	...	1,243	*1,066*	1,176	3,378	...
Australia:								
At current prices	65	...	168	111	*203*	366	569	844
At constant prices	96	...	150	121	*203*	265	316	337
Brazil (value added):								
At current prices	...	...	...	...	*6,957*	...	...	49,235
At constant prices	...	...	...	...	*6,957*	...	...	12,528
Canada:[b]								
At current prices	1,281	1,621	1,755	920	*1,531*	4,016	5,331	6,941
At constant prices	884	819	1,451	1,011	*1,531*	3,187	2,720	2,916
Chile:[c]								
At current prices	...	...	663	...	...	*3,802*	...	16,192
At constant prices	...	...	2,446	...	...	*3,802*	...	7,784
Egypt:[d]								
At current prices	...	...	...	...	*13*	46	54	105
At constant prices	...	...	...	...	*13*	20	18	31
India (value added):[e]								
At current prices	...	...	...	...	...	...	*2,422*	2,727
At constant prices	...	...	...	...	...	...	*2,422*	2,190
Mexico:[f]								
At current prices	...	...	508	442	*889*	...	5,169	6,965
At constant prices	...	...	622	600	*889*	...	1,965	2,206
New Zealand (value added):								
At current prices	12	23	30	22	*37*	59	106	117
At constant prices	15	17	31	26	*37*	41	58	57
Southern Rhodesia (value added):								
At current prices	...	...	...	...	*2.3*	4.4	7.7	22.9
At constant prices	...	...	...	...	*2.3*	3.6	5.4	9.2
Turkey:								
At current prices	...	...	...	...	190	...	*832*	977
At constant prices	...	...	...	...	617	...	*832*	925
Union of South Africa:								
At current prices	17	38	51	44	*92*	155	225	402
At constant prices	14	22	42	44	*92*	116	140	214

[a] Value added: gross value minus cost of materials and containers. Net production: value added minus fuel, purchased power and contract work. See table IV for explanations and table I for sources and interpretive notes. Figures in italics represent the base year. Data relate to the census year within two years of the one specified.

[b] For 1917 and 1920 data include the cost of electricity used in production; the remaining figures represent net production.

[c] For 1928, value added; for 1942 and 1949, net production.

[d] Data from Mohamoud Amin Anis, "The National Income of Egypt, 1950" in *L'Egypte contemporaine* (Cairo, 1953), page 30.

[e] Data from Government of India, *Census of Manufactures, 1947-1949* (New Delhi).

[f] For 1929, 1934 and 1939, value added.

Table VI. Structure of Secondary Industry[a]

(Percentage of total)

Country and industry	1915		1925		1936		1948	
	Employment	Net output	Employment	Net output	Employment	Net output	Employment	Net output
Argentina:								
A	88	88	...	...	56	57	49	54
B	9	8	...	...	25	22	30	24
C	3	4	...	...	19	20	22	22
Australia:								
A	46	43	45	43	50	53	40	37
B	31	35	33	34	31	26	42	42
C	23	22	21	23	19	21	19	21
Brazil:[b]								
A	73	74	...	...	64	62	64	59
B	17	10	...	...	12	15	13	19
C	13	16	...	...	23	23	23	22
Canada:[c]								
A	32	33	41	35	43	37	35	28
B	33	37	31	33	30	34	36	37
C	35	30	28	31	27	28	30	35
Chile:[d]								
A	54	...	53	61	46	...	47	52
B	14	...	14	11	16	...	16	12
C	32	...	33	29	38	...	37	36
Egypt:								
A	...	...	66	...	67	...	79	75
B	...	...	21	...	20	...	11	6
C	...	...	13	...	12	...	10	20
India:[e]								
A	82	...	76	...	67	...	58	60
B	8	...	13	...	15	...	16	22
C	10	...	11	...	18	...	26	18
New Zealand:[f]								
A	57	52	53	53	55	55	48	41
B	17	17	18	15	19	15	31	34
C	25	30	28	32	25	29	19	23
Philippines:[g]								
A	67	68	...	...	...	...	76	68
B	10	6	...	...	...	...	7	4
C	23	26	...	...	...	...	18	28
Southern Rhodesia:								
A	...	...	...	...	37	50	48	52
B	...	...	...	...	37	19	34	30
C	...	...	...	...	26	20	18	18
Union of South Africa:								
A	44	43	44	47	38	39	37	40
B	39	35	39	30	49	43	46	40
C	17	21	17	23	13	19	17	20

Source: Official industrial censuses and statistics.

[a] For interpretive notes consult tables I, II, IV and V. Figures relate to a census year within two years of the one specified. Categories of industry: A: Finished consumer goods; includes food, textiles, tobacco, furniture, jewellery and plate, musical instruments, toys and leather. B: Other finished goods; includes stone and clay, metal and engineering, implements, tools and instruments, vehicles and boats, rubber goods, and plastic goods. C: Intermediate materials; includes wood, paper, chemicals, leather and certain other semi-finished materials.

[b] Figures in the column for 1915 are for 1919; those in the column for 1936 represent 1939.

[c] Figures in the column for 1948 represent 1951.

[d] Figures in the column for 1925 represent 1928.

[e] Figures in the column for 1915 are for 1911; those in the column for 1925 represent 1921.

[f] Figures in the column for 1915 are for 1911.

[g] Figures in the column for 1915 are for 1918.

Table VII. Average Net per Capita Output of Manufactured Goods[a]

(Values in current United States dollars)

Country	1915	1920	1928	1933	1938	1944	1947	1951
Argentina	84	...	...	21	24	35	105	...
Australia	65	...	127	62	113	162	223	269
Brazil	...	...	...	...	9	...	52	...
Canada	...	165	174	80	132	298	384	471
Chile	...	...	18	...	...	30	93	...
Egypt	...	...	...	...	4	11	12	15
India	...	...	...	...	...	...	3	2
Mexico	...	...	14	7	8	22	38	31
New Zealand	49	68	98	47	85	117	188	169
Southern Rhodesia	...	...	...	...	8	11	17	29
Turkey	...	...	...	...	...	...	...	15
Union of South Africa	13	23	29	22	42	57	78	90

Source: Output data derived from table V, using the official rate of exchange, with population figures from the United Nations, *Demographic Yearbook*, 1951, from the United Nations, *Statistical Yearbook, 1953*, and from the League of Nations, *International Statistical Yearbook*.

[a] Where the rate of exchange has fluctuated in the course of the given year, an average figure has been used. For interpretive notes, see tables I, IV and V. Figures relate to a census year within two years of the one specified.

Table VIII. Coefficient of Industrial Absorption of the Population[a]

Country and period	Annual increment[b] in Population (thousands)	Annual increment[b] in Industrial employment (thousands)	Ratio of industrial employment increment to population increment (per cent)
Argentina:			
1914-37	212	9.2	4.3
1937-46	323	57.0	17.7
Australia:			
1913-28	93	7.6	8.2
1928-38	67	11.4	17.1
1938-50	105	33.0	31.5
Brazil:			
1920-40	536	18.0	3.4
1940-50	1,077	61.0	5.7
Canada:			
1913-20	226	—1.0	—0.4
1933-39	105	31.5	29.9
1939-50	231	48.0	20.8
Chile:			
1927-37	31	3.8	12.3
1937-49	88	3.8	4.3
Egypt:			
1927-37	161	4.9	3.0
1937-48	324	30.0	9.3
India:			
1911-21	1,200	40.0	3.3
1921-39	3,302	25.0	0.8
1939-45	3,365	150.0	4.5
1946-48	3,072	22.8	0.7
Mexico:			
1930-45	314	8.0	2.5
New Zealand:			
1915-28	29	2.3	8.1
1928-38	15	2.1	13.8
1938-49	25	3.7	14.7
Philippines:			
1918-48	294	3.5	1.2
Southern Rhodesia:			
1938-50	62	3.7	6.0
Turkey:			
1927-50	358	5.7	1.6
Union of South Africa:			
1916-28	110	8.0	7.3
1928-38	223	13.5	6.1
1938-49	186	33.0	17.8

Source: United Nations, *Demographic Yearbook*, 1951; League of Nations, *International Statistical Yearbook*; International Labour Office, *Yearbook of Labour Statistics*.

[a] See tables I and II for interpretive notes.

[b] Approximate arithmetic averages.

Table IX. Employment and Wage Bill in Secondary Industry

Country and year	Total population (thousands)	Persons employed in industry [a] (thousands)	Persons employed in industry [a] (as percentage of total population)	National income at current prices (millions of national currency)	Industrial wage bill at current prices (millions of national currency)	Industrial wage bill at current prices (as percentage of national income)
Argentina (1948)	16,306	1,142	7.0	37,903	4,569	12.1
Australia (1950/51)	8,308	969	11.7	3,130	483	15.4
Brazil (1950)	51,976	1,283	2.5	204,000	10,582	5.2
Canada (1951)	14,009	1,285	9.0	17,128	3,276	19.0
Chile (1949)	5,712	176	3.1	93,800	5,617	6.0
Egypt (1951)	20,909	659	3.2	...	...	...
India (1950)	358,000	2,504	0.7	87,300 [b]	1,685	1.9
Indonesia (1951)	76,500	551	0.7	70,015	...	...
Mexico (1945)	22,233	440	2.0	18,522	773	4.2
New Zealand (1950/51)	1,933	142	7.3	612	70	11.4
Philippines (1948)	19,134	171	0.9	5,713	82	1.4
Southern Rhodesia (1952)	2,233	68	3.0	118	12	10.2
Turkey (1950)	20,935	354	1.7	8,229	249	3.0
Union of South Africa (1950/51)	12,550	779	6.2	1,124	206	18.4

Source: United Nations, *Demographic Yearbook*, 1951 and 1953; United Nations, *Statistics of National Income and Expenditure*, series H, numbers 4 and 5; and *National Income and its Distribution in Under-developed Countries*, 1951, series E, No. 3; and national industrial censuses.

[a] See table II for definitions, coverage and other explanatory notes.

[b] 1948/49.

APPENDIX B

The Present Status of Secondary Industry in Under-developed Countries

The under-developed areas of Africa, Asia and Latin America contain two-thirds of the world's population. In spite of the fact that the general impression to emerge from appendix A is one of appreciable, if somewhat erratic, industrial growth, the contribution of these under-developed areas to the world's production of manufactured goods remains small. Even in the case of cotton textiles — a labour-intensive industry with fairly modest capital requirements, standardized machinery and readily available raw materials, serving a demand that is urgent and generally inelastic, often a pioneer in the industrialization process — under-developed countries accounted for only about one-sixth of world output before the Second World War (see table X). The proportion increased to about one-fourth during the war, when production in Europe, Japan and the Union of Soviet Socialist Republics declined. As economic recovery progressed in war-damaged countries, the proportion began falling again; from 1949 to 1951 not much more than one-fifth of world output of cotton fabrics was contributed by under-developed countries. India alone accounted for well over half of the production of the under-developed countries, excluding China.

If growth of cotton weaving is measured by the number of power looms installed, less developed countries show not inconsiderable progress since 1930, when they accounted for little more than 11 per cent of the total (see table XI). Nevertheless, in 1952 only some 19 per cent of all power looms in place and some 12 per cent of automatic looms were in under-developed countries: 54 per cent of these were in Asia, 33 per cent in Latin America, 7 per cent in eastern Europe, 5 per cent in the Middle East and one per cent in Africa. In addition to power looms, however, a large but indeterminate number of hand looms are known still to be in operation in many parts of Asia and, on a much smaller scale, in parts of Africa and the Middle East.[1]

Cotton spinning, relatively less important in under-developed countries before the war, has expanded somewhat more than weaving. As production in western Europe and Japan had not regained pre-war levels, the proportion of world output originating in under-developed countries remained substantially higher in post-war years, 1946-51, accounting for almost one-fourth of the total (see table XII).

The number of cotton spindles in the world was smaller in 1952 than before the war, when in turn it was smaller than in 1929 (see table XIII). The number in under-developed countries, by contrast, had increased by about 50 per cent. Nevertheless, even in 1952, spindles installed in under-developed countries amounted to less than one-fifth of the world total.

The major producers of cotton textiles among under-developed countries — Brazil, China, India and Mexico, in particular — are in general those in which the industry has had the longest history, though in some of the smaller countries — Egypt, Peru and Turkey, for example — the industry also dates far back in time. In Yugoslavia more workers are employed in the cotton industry than in any other; in 1952 there were 359,000 spindles with 100,000 more under construction. The first mill in Afghanistan (15,000 spindles and 550 looms) was opened in 1944; in the Union of South Africa the industry was started in 1946; in Iran in 1947; in Burma, in a government-owned plant, in 1951; and in Indonesia, also under government auspices, in 1953.

The major increase in cotton looms in less developed countries in recent years has been in automatic types, hence between 1936 and 1952 the growth in weaving capacity was greater than the increase in the number of looms might indicate; the new additions were more productive than the older plants. Of the increase of 20,000 looms installed in the Middle East, 9,200 were automatic; of the 50,000 increase in Latin America almost 46,000 were automatic; of the increase of 21,000 in Asia, no less than 19,000 were automatic.

In general, spindles in under-developed countries are not designed to spin long-staple Egyptian-type cotton; they are ring spindles best suited for the production of yarns of average or under-average quality. The yarn serves not only the weaving mills but also the hand looms in the cottage industry, which, as indicated above, absorb an appreciable part of the total output in several countries. This is one of the reasons why under-developed countries, with a spindle capacity of rather less than one-fifth of the world total, have consumed almost one-third of the world's raw cotton intake in the post-war period (see table XIV).

The under-developed countries play a much smaller part in the wool industry than they do in cotton (see table XV). Although it is also a labour-intensive activity, the manufacture of wool yarn and woollen and worsted fabrics is a more skilled operation, less susceptible to mechanization and better suited to small-scale than to mass production. Moreover, the demand for textiles in less developed countries is directed to cotton more than to any other material. Nevertheless, in countries with a temperate climate and an indigenous supply of wool of sufficiently high grade, a woollen textile industry has been developed. In Argentina, for

[1] In 1927, the official estimate of hand looms operating in India alone was 2.5 million, or almost as many as the number of power looms in operation throughout the world.

example, where the industry is more than sixty years old, over half a million spindles were in place in 1952. Uruguay had seven mills for combed yarn and six for carded yarn in 1950, and Brazil, Paraguay and Peru also had expanding wool industries. In Turkey, the industry — partly government-owned — comprised 54,000 spindles and 1,600 looms in 1950 and was capable of meeting five-sixths of total domestic demand at current prices. The Egyptian woollen industry is largely a post-war growth; three-fourths of it is designed to produce worsted goods sufficient in quantity, if not in quality, to meet the whole of the internal market. The Union of South Africa was the only major raw wool producer with no textile industry before the war; since its establishment in 1946, however, manufacturing has expanded rapidly and in 1953 capacity in the worsted cloth and knitting yarn sections was estimated to be capable of satisfying the entire domestic demand.

Despite the post-war expansion of the woollen industry, under-developed countries contributed no more than 7 per cent of the world output of wool yarn up to 1951 (see table XVI). There would seem to be little prospect of a very great increase in this proportion in the immediate future even though the output of the major raw wool producing countries may increase.

The probability of increase seems much greater in the newer rayon industry. This is partly because of technological advances which have standardized production methods in recent years, and also because cotton machinery can be used to weave rayon, whether pure or in cotton mixtures. Moreover, apart from the probability that the demand for rayon will be greater than that for wool in under-developed areas, post-war price movements have tended to favour rayon.

The output of rayon staple fibre and filament yarn has expanded both because of increases in the few under-developed countries — Argentina, Brazil, Romania and Turkey — that were in production before the war and because of the establishment of facilities in various other countries, especially in Latin America, during the post-war period. In spite of this expansion, however, the capacity of producers in less developed countries in 1953 was only 5 per cent of the world total (see table XVII).

Actual production of rayon fabrics in less developed countries amounted to an even smaller proportion of the world total in the post-war period (table XVIII).

Although the under-developed countries still account for a comparatively small fraction of world textile output, a certain geographical redistribution of the industry is undoubtedly taking place. This is most clearly evident in the cotton section of the industry, in which output and capacity, though not regaining pre-war levels in older industrial areas, have increased markedly in less developed countries.[2] India emerged from the war as the world's largest exporter of cotton cloth, operating, in addition to its cottage industry, about 7 per cent of all power looms.

There appears to be much less tendency for other consumer goods industries to expand more rapidly in under-developed countries than in industrially advanced countries. In the case of footwear, for example, under-developed countries still account for less than 5 per cent of world production (see table XIX).

The proportion of world cigarette production originating in less developed countries appears to have been lower in recent years than it was before the war, when it was about a fifth of the total (see table XX).

In general, the production of capital goods presents less developed countries with greater problems than the production of consumer goods; the inadequacy of the market, the shortage of capital, the difficulty of obtaining suitable plant and sufficient skilled labour are all magnified in this type of activity. By and large, therefore, the contribution of less developed countries to the world's output of capital goods is relatively smaller than in the case of most consumer goods.

Nevertheless there are some types of capital goods for which the standardized nature of production and demand, the availability of raw materials and the high cost of transport tend to favour local manufacture. Among these, cement is a prominent example, and there are now few countries in the world that do not produce at least a part of their own cement requirements, while most of the larger under-developed countries are self-sufficient in this respect. Since 1951, cement plants have come into operation for the first time in Afghanistan, Angola, Ceylon, El Salvador, Jordan, Malaya, Mozambique, Northern Rhodesia, Uganda and other comparatively small countries, while a large producer such as India has laid plans for doubling its 1950 output (to 5.3 million tons) by 1956. In Turkey, fifteen new plants are planned, to raise production to nearly 2 million tons a year, or four times the 1952 figure.

Between 1946 and 1951, however, the rapid expansion of cement production in less developed countries was paralleled by the recovery and growth of production in industrial countries; the proportion of the world output in less developed countries remained at about one-seventh of the total (see table XXI).

Very few under-developed countries have entered the field of pig-iron production—a reflection of limitations in both markets and resources. Although several of these countries—Argentina, Chile, Israel, Southern Rhodesia —began producing during and after the war while several of the older producers increased capacity substantially, the combined contribution of under-developed countries to world pig-iron output has remained below 5 per cent in the post-war period (see table XXII).

In the case of steel production, the predominance of the industrial countries is even greater. In spite of a

[2] At the same time there has been a parallel movement from high wage areas to lower wage areas within individual countries, as exemplified by the southward migration of the industry in the United States.

trebling of steel making capacity in under-developed regions between 1938 and 1951, their total contribution to world output had not reached 4 per cent (see table XXIII). The expansion of capacity in the United States alone in the period from 1950 to 1953 was equivalent to no less than four times the gross capacity in under-developed regions.

Production of sulphuric acid and other heavy chemicals is similarly concentrated in industrial countries and in general the proportion of the world output of producer goods originating in less developed countries is not only very small but has shown no very marked increase in recent years. The rate of growth in output has been at least as great in industrial countries as a group as it has been in under-developed countries as a group.

Unfortunately it is not possible to translate these general conclusions into precise statistical terms; the inadequacy of production data from most of the less developed countries precludes it. A rough confirmation is obtainable, however, from the indices of manufacturing production, which suggest that the rate of industrial growth was appreciably higher in the United States and Canada, and probably in the Union of Soviet Socialist Republics, than in the under-developed countries as a group (see table XXIV).[3] These three large industrial countries, together accounting for two-thirds or more of the world's manufacturing production, continue to develop in a dynamic manner and would at present seem to be in a better position than most of the lower income countries of Latin America, the Middle East, Africa or Asia to undertake rapid industrial expansion. Hence the disparity between industrially advanced countries and under-developed countries, expressed by the difference in average per capita industrial output, can scarcely be expected to diminish very greatly in the immediately foreseeable future, however rapid the rate of industrialization achieved in the under-developed countries.

[3] On the one hand, because it does not adequately measure changes in total output resulting from industrial diversification, the index of manufacturing production in less developed countries probably understates the actual rate of increase. On the other hand, it is probably over-weighted by oil refinery output —a figure which is more readily available than most other production data—and to the extent that this has increased more rapidly than industrial output in general, the index is likely to overstate the actual rate of growth.

Table X. Production of Cotton Fabrics[a]

(Millions of linear yards, millions of square yards, or thousands of quintals)[b]

Area	Average annual output		
	1936 to 1938	1946 to 1948	1949 to 1951
Industrial countries:			
Northern America[c]	8,898	9,775	9,821
Western Europe[d]	9,723	5,793	8,787
Eastern Europe[e]	662	584	830
USSR	3,764	2,054	4,885
Australia and Japan	3,873	629	1,585
TOTAL, INDUSTRIAL COUNTRIES	26,920	18,835	25,908
Under-developed countries:			
Latin America[f]	1,536	2,247	2,320
Eastern Europe[g]	100	153	169
Middle East[h]	154	274	320
Africa[i]	12	30	40
South East Asia[j]	4,012	4,119	4,028
TOTAL, UNDER-DEVELOPED COUNTRIES	5,814	6,823	6,877
TOTAL, ABOVE	32,734	25,658	32,785
Under-developed countries, per cent of total	18	27	21

Source: United Nations, *Statistical Yearbook, 1952* (sales number 1952.XVII.1) and *Economic Survey of Europe in 1953* (1954.II.E.2); Cotton Board, *International Cotton Textile Industry Conference, 1952* (Manchester, 1952).

[a] Including some "mixed" fabrics (combined with wool or rayon).

[b] An approximate equivalence is assumed between a million linear yards, a million square yards and a thousand quintals.

[c] Canada and the United States.

[d] Austria, Belgium, Denmark, Finland, France, western Germany, Greece, Ireland, Italy, Norway, Portugal, Sweden and the United Kingdom. French production, 1946 to 1948, assumed to be a billion yards a year.

[e] Poland and Hungary. Hungarian production, 1949 to 1951, assumed to be 150 million yards a year.

[f] Argentina, Bolivia, Brazil, Chile, Colombia Dominican Republic, Ecuador, El Salvador, Mexico, Nicaragua, Peru, Venezuela. The following annual production was assumed for the period 1949 to 1951: El Salvador 25 million, Nicaragua 5 million, Peru 75 million yards. Output in Argentina 1946 to 1948, was assumed to be 300 million yards a year.

[g] Yugoslavia, where 1936 to 1938 production was assumed to be 100 million yards a year.

[h] Egypt, Iran, Lebanon, Syria, Turkey. Average production in Iran, 1946 to 1948, was assumed to be 65 million yards a year.

[i] Belgian Congo, where 1946 to 1948 output was assumed to be 30 million yards a year.

[j] Burma, Ceylon, India, Pakistan, the Philippines. Burmese production, 1946 to 1951, assumed to be 2 million yards a year.

Table XI. Number of Cotton Power Looms

(Number in place)

Country or region	1930 total	31 December 1936		31 July 1952	
		Total	Automatic looms[a]	Total	Automatic looms[a]
WORLD TOTAL	3,115,404	3,069,905	726,212	2,730,382	900,093
Under-developed areas:					
Number of looms	356,767	427,912	38,988	531,289	105,200
Percentage of total	11	14	5	19	12
Latin America:					
Argentina	1,455	3,646	1,976	14,239	9,093
Bolivia	400	246	—	750	—
Brazil	79,946	80,903	6,657	100,146	29,976
Chile	400	1,300	480	5,012	2,802
Colombia	3,686	2,285	518	6,445	1,846
Costa Rica	40	97	...	...	...
Cuba	...	...	—	2,458	2,458
Ecuador	1,218	1,224	—	1,454	—
El Salvador	150	235	—	900	—
Guatemala	125	186	...	...	...
Mexico	31,440	29,925	785	34,132	7,544
Paraguay	...	...	—	511	427
Peru	3,220	4,446	1,223	5,675	1,651
Uruguay	114	244	76	1,300	1,280
Venezuela	1,417	1,729	300	3,215	634
Other countries	...	...	...	225	...
TOTAL, LATIN AMERICA	123,611	126,466	12,015	176,462	57,711
Eastern Europe:					
Bulgaria	1,277	3,459	—	6,000	...
Romania	5,810	14,500	—	15,000	...
Yugoslavia	11,747	11,604	5,143	13,766	6,101
TOTAL, EASTERN EUROPE	18,834	29,563	5,143	34,766	...
Middle East:					
Egypt	1,234	3,279	—	13,729	5,171
Iran	300[b]	800	—	2,700	640
Israel	...	116	—	487	238
Lebanon	...	...	—	1,250	—
Syria	...	...	—	1,642	—
Turkey	1,220	1,858	—	6,150	3,356
TOTAL, MIDDLE EAST	2,754	6,053	—	25,958	9,405
Africa:					
Algeria	...	...	...	700	96
Belgian Congo	...	...	...	2,000	—
Morocco, French	...	...	...	896	—
Southern Rhodesia	...	...	...	438	337
Union of South Africa	...	...	...	1,684	668
Other countries	...	...	...	1,543	...
TOTAL, AFRICA	...	...	...	7,261	1,101
Asia:					
Ceylon	538	[c]	[c]	...	...
China	29,582	59,786	17,645	64,000	19,000
Hong Kong	...	...	—	10,500	10,060
India	179,682[d]	201,548[d]	4,185[d]	198,473	9,313
Korea	1,766	4,496	—	3,613	1,234
Pakistan	[c]	[c]	—	9,584	1,335
Thailand	...	...	...	672	...
TOTAL, ASIA	211,568	265,830	21,830	286,842	40,942

Source: International Federation of Master Cotton Spinners' and Manufacturers' Associations, *International Cotton Bulletin*, No. 30, vol. VIII, 2 January 1930; No. 60, vol. XV, 4 July 1937 (Manchester) and *International Cotton Loom Statistics*, April 1953; International Labour Organisation, *The World Textile Industry*, vol. II, Studies and Reports, series B, No. 27 (London, 1937).

[a] Including automatic attachments.

[b] 1933.

[c] Included in "India".

[d] British India.

Table XII. Production of Cotton Yarn

(Thousands of metric tons)

Area	Average annual output 1936 to 1938	1946 to 1948	1949 to 1951
Industrial countries:			
Northern America[a]	1,468	1,792	1,835
Western Europe[b]	1,469	1,044	1,436
Eastern Europe[c]	148	124	168
Australia and Japan	645	113	256
TOTAL, INDUSTRIAL COUNTRIES	3,730	3,073	3,695
Under-developed countries:			
Latin America[d]	35	78	91
Eastern Europe[e]	—	11	28
Middle East[f]	36	66	69
Africa[g]	—	1	1
South East Asia[h]	532	743	837
TOTAL, UNDER-DEVELOPED COUNTRIES	603	898	1,026
TOTAL, ABOVE	4,333	3,972	4,721
Under-developed countries, per cent of total	14	23	22

Source: United Nations, *Statistical Yearbook, 1952*; Cotton Board, *Quarterly Statistical Bulletin*, September 1952 (Manchester).

[a] Canada and the United States.

[b] Austria, Belgium, Denmark, Finland, France, western Germany, Greece, Italy, the Netherlands, Norway, Portugal, Spain, Sweden and the United Kingdom. Average output, 1936 to 1938, was assumed to be 250,000 metric tons a year in western Germany and 50,000 metric tons a year in Spain.

[c] Czechoslovakia and Poland.

[d] Argentina, Chile, Colombia, Mexico and Venezuela.

[e] Yugoslavia.

[f] Egypt, Lebanon, Syria and Turkey.

[g] Southern Rhodesia.

[h] Ceylon, India, Pakistan and the Philippines.

Table XIII. Number of Cotton Spindles

(Thousands)

Country or region	1932	1936	1952
WORLD TOTAL	165,104 [a]	150,960 [b]	127,869
Under-developed areas:			
Number of spindles...	16,385	19,524	24,622
Percentage of total....	10	13	19
Latin America:			
Argentina.....	43	159	593
Bolivia.....	6 [a]	32	...
Brazil.....	2,610	2,714 [b]	3,231
Chile.....	...	...	185
Colombia.....	40	55	382
Ecuador.....	40	40	76
El Salvador.....	...	...	47
Guatemala.....	5	12	...
Mexico.....	840 [a]	865 [b]	1,104
Paraguay.....	...	...	10
Peru.....	86	123	154
Venezuela.....	47	47	67
Other countries.....	...	...	93
TOTAL, LATIN AMERICA	3,717	4,047	5,942
Eastern Europe:			
Bulgaria.....	10	34	230
Romania.....	34	35	235
Yugoslavia.....	146	163 [b]	359
TOTAL, EASTERN EUROPE	190	232	824
Middle East:			
Egypt.....	87	97	513
Iran.....	40	40	160
Israel.....	...	12 [c]	45
Lebanon.....	...	14 [c]	54 [d]
Syria.....	...	10 [c]	65 [d]
Turkey.....	101	104	383
Other countries.....	...	...	86
TOTAL, MIDDLE EAST	228	277	1,306
Africa:			
Belgian Congo.....	...	...	44
Union of South Africa.	...	...	123
Other countries.....	...	...	65
TOTAL, AFRICA	...	...	232
Asia:			
Ceylon.....	20	20	...
China.....	3,526 [a]	5,071	4,351
Hong Kong.....	...	...	199
India.....	8,704 [a] [e]	9,877 [b] [e]	11,241
Korea.....	...	...	99
Pakistan.....	[e]	[e]	337
Thailand.....	...	...	35
Other countries.....	...	...	56 [d]
TOTAL, ASIA	12,250	14,968	16,318

Source: International Federation of Master Cotton Spinners' and Manufacturers' Associations, Manchester, *International Cotton Bulletin*, Nos. 27, 30, 61, 71, 75; International Labour Organisation, *The World Textile Industry*, vol. II, Studies and Reports, series B, No. 27; United Nations, *Review of Economic Conditions in the Middle East, 1951-52*, Supplement to World Economic Report (sales number 1953.II.C.1).

[a] 1929.

[b] 1937.

[c] Pre-war.

[d] 1951.

[e] British India.

Table XIV. Consumption[a] of Raw Cotton

(Thousands of bales)

Country or region	1938/39	1948/49	1949/50	1950/51	1951/52
WORLD TOTAL	30,574	28,249	29,403	32,994	32,185
Under-developed areas:					
Consumption	8,734	9,688	9,772	9,347	10,054
Percentage of total	29	34	33	28	31
Latin America:					
Argentina	150	407	415	435	470
Brazil	642	825	825	870	800
Chile	20	67	83	66	66
Colombia	55	114	111	120	115
Cuba	10	20	27	31	26
Ecuador	10	17	13	19	19
El Salvador	5	12	13	14	12
Guatemala	4	13	14	12	11
Mexico	245	315	310	335	320
Peru	30	65	61	58	55
Uruguay	1	19	21	26	24
Venezuela	11	22	13	15	16
Other countries	7	21	19	31	37
TOTAL, LATIN AMERICA	1,190	1,917	1,925	2,032	1,971
Eastern Europe:					
Yugoslavia	92	155	163	140	120
Middle East:					
Egypt	121	233	239	281	312
Iran	97	65	60	45	69
Israel	—	13	14	12	9
Lebanon	[b]	[b]	17	14	20
Syria	25	39	25	35	40
Turkey	135	195	207	210	210
TOTAL, MIDDLE EAST	378	545	562	597	660
Africa:					
Belgian Congo	7	28	27	35	30
French West Africa	13	15	15	12	12
Nigeria	10	15	15	15	15
Union of South Africa	1	23	25	29	35
Other countries	3	16	20	25	31
TOTAL, AFRICA	34	97	102	116	118
Asia:					
China	3,295	2,950	2,300	2,850	3,100
Hong Kong	—	18	75	127	162
India	3,436	3,730	3,250	3,150	3,520
Indochina	60	15	15	21	31
Indonesia	2	4	8	15	17
Korea	240	137	200	115	130
Pakistan	[c]	90	145	150	180
Philippines	2	4	7	10	9
Thailand	5	26	20	24	36
TOTAL, ASIA	7,040	6,974	6,020	6,462	7,185

Source: International Federation of Master Cotton Spinners' and Manufacturers' Associations, Manchester, *International Cotton Bulletin*, Nos. 31, 77, 81; International Cotton Advisory Committee, *Cotton Quarterly Statistical Bulletin*, June 1953 (Washington, D. C.).

[a] Chiefly mill consumption, but including small amounts of non-commercial and household consumption.

[b] Included with Syria.

[c] Included with India.

Table XV. Consumption of Virgin Wool in Wool Textile Industries

(Millions of pounds, clean basis)

Area	1928	1934-38	1948	1949	1950	1951	1952	1953[a]
WORLD TOTAL	...	2,073	2,574	2,449	2,681	2,274	2,336	2,597
Under-developed areas:								
Consumption	50.1	99	206	208	197	195	194	...
Percentage of total	...	5	8	8	7	9	8	...
Argentina [b]	11 [c]	36 [d]	60 [d]	70 [d]	75 [d]	70 [d]	65 [d]	55 [d]
Australia [b]	19	35	77	71	62	58	49	50
New Zealand	4.1 [b]	4	7	6	7	6	7 [a]	...
Turkey	14.7 [c]	20	45	40	35	35	35 [a]	...
Union of South Africa	...	1	9	11	7	9	8 [a]	...
Uruguay [b]	1.3 [c]	3 [d]	8 [d]	10 [d]	11 [d]	17 [d]	30 [d]	36 [d]

Source: Commonwealth Economic Committee, *World Consumption of Wool*, 1938 and 1950-1953, supplements to *Wool Intelligence* (London, 1939 and 1954).

[a] Provisional.

[b] Twelve months ending in year shown (31 March for New Zealand, 30 June for Australia, 30 September for Argentina and Uruguay).

[c] Converted from greasy wool or actual weight on the assumption that scoured wool weighs half as much as greasy wool.

[d] Unofficial estimates based on available supplies (domestic production of wool plus imports minus exports, converted to a clean basis by appropriate conversion factors) and also on the production of wool manufactures.

Table XVI. Production of Wool Yarn

(Thousands of metric tons)

Area	Average annual output			
	1936 to 1938	1946 to 1948	1949 to 1951	1952
Industrial countries:				
Northern America[a]	267	383	340	319
Western Europe[b]	546	473	581	520
Eastern Europe[c]	66	92	84	...
Oceania and Japan[d]	76	35	58	86
TOTAL, INDUSTRIAL COUNTRIES	955	983	1,063	...
Under-developed countries:				
Latin America[e]	12	39	44	...
Eastern Europe (Yugoslavia)	6	10	13	10
Middle East[f]	3	8	11	9.5[g]
Africa[h]	—	1	10	...
South East Asia (Pakistan)	—	1	1	...
TOTAL, UNDER-DEVELOPED COUNTRIES	21	59	79	...
TOTAL, ABOVE	976	1,042	1,142	...
Under-developed countries, per cent of total	2	6	7	...

Source: United Nations, *Statistical Yearbook, 1952: Results of the Fifth Wool Questionnaire*, issued jointly by the Commonwealth Economic Committee and the International Wool Textile Organization (London, June 1952); Commonwealth Economic Committee, *World Consumption of Wool*, 1949 and 1950-53, supplements to *Wool Intelligence* (London, 1950 and 1954).

[a] Canada and the United States.

[b] Austria, Belgium, Denmark, Finland, France, western Germany, Greece, Ireland, the Netherlands, Norway, Portugal, Spain, Sweden and the United Kingdom. Average annual production, 1936 to 1938, was assumed to be 100,000 metric tons in western Germany, 5,000 tons in Portugal and 13,000 tons in Sweden.

[c] Czechoslovakia, Hungary and Poland.

[d] Australia, Japan and New Zealand.

[e] Argentina, Brazil, Chile, Peru and Uruguay. Average output, 1949 to 1951, in Argentina was assumed to be 28,000 metric tons a year.

[f] Egypt and Turkey.

[g] Turkey only; average annual output 1949 to 1951, 7,000 metric tons.

[h] Algeria, French Morocco and the Union of South Africa.

Table XVII. Production of Rayon[a]

(Millions of pounds)

Country or region	*1930*	*1937*	*1945*	*1948*	*1952*	*1953 (capacity)*
WORLD TOTAL	457.4	1,822.4	1,405.7	2,454.7	3,584.9	5,623.6
Under-developed countries:						
Production	0.6	10.9	39.9	57.7	171.5	267.6
Percentage of total	—	1	3	2	5	5
Latin America:						
Argentina	...	1.9	9.5	10.4	18.2	39.3
Brazil	0.6	7.3	21.5	25.8	54.0	60.0
Chile	...	...	1.8	3.6	12.8	12.8
Colombia	...	0.2[b]	2.2	2.6	19.8	23.3
Mexico	...	...	0.4	10.0	30.9	53.2
Peru	...	...	—	0.7	2.2	2.9
Uruguay	...	...	...	—	2.5	2.5
Venezuela	...	...	...	...	8.5	17.5
TOTAL, LATIN AMERICA	0.6	9.3	35.4	54.1	148.9	211.5
Eastern Europe:						
Romania	...	1.3	4.0	3.0	4.0	10.0
Middle East:						
Egypt	...	...	...	—	9.5	15.8
Turkey	...	0.3[c]	0.6	0.6	1.1	1.9
TOTAL, MIDDLE EAST	...	0.3	0.6	0.7	10.6	17.7
Asia:						
India	...	...	...	...	8.1	28.4

Source: Textile Economics Bureau, Inc., *Rayon Organon*, June 1948, *Textile Organon*, June 1952 and June 1953 (New York).

[a] Staple fibre and filament yarn.
[b] 1939.
[c] 1938.

Table XVIII. Production of Rayon Fabrics[a]

(Millions of pounds)

Area	Average annual output		
	1936 to 1938	1946 to 1948	1949 to 1951
Industrial countries:			
Northern America [b]	358	532	588
Western Europe [c]	198	174	274
Australia and Japan	339	19	129
TOTAL, INDUSTRIAL COUNTRIES	895	725	991
Under-developed countries:			
Latin America [d]	1	12	17
Eastern Europe (Yugoslavia)	—	2	3
Middle East [e]	—	2	10
TOTAL, UNDER-DEVELOPED COUNTRIES	1	16	30
TOTAL, ABOVE	896	741	1,021
Under-developed countries, per cent of total	—	2	3

Source: United Nations, *Statistical Yearbook, 1952.*

[a] Including certain mixed fabrics in many cases.

[b] Canada and the United States. Average United States output in the period 1936 to 1938 was assumed to be 349 million pounds a year.

[c] Austria, Belgium, Denmark, Finland, France, Greece, Ireland, Norway, Portugal, Sweden and the United Kingdom.

[d] Chile, Colombia, Mexico and Venezuela.

[e] Egypt and Syria.

Table XIX. Production of Footwear[a]

(Millions of pairs)

Area	Average annual output		
	1936 to 1938	1946 to 1948	1949 to 1951
Industrial countries:			
Northern America [b]	428.7	534.7	520.2
Western Europe [c]	476.1	363.2	442.6
Eastern Europe [d]	56.5	52.1	57.6
USSR	279.0	158.0	337.3
Oceania and Japan [e]	29.5	33.8	34.3
TOTAL, INDUSTRIAL COUNTRIES	1,269.9	1,141.9	1,392.0
Under-developed countries:			
Latin America [f]	25.6	32.0	28.4
Eastern Europe [g]	5.0	5.7	9.9
Africa [h]	11.7	15.9	17.4
South East Asia [i]	5.0	5.3	5.2
TOTAL, UNDER-DEVELOPED COUNTRIES	47.3	59.0	60.9
TOTAL, ABOVE	1,317.2	1,200.9	1,452.8
Under-developed countries, per cent of total	4	5	4

Source: United Nations, *Statistical Yearbook, 1952; Economic Survey of Europe in 1953.*

[a] Boots, shoes, slippers, sandals, sports shoes with leather, rubber or other soles, but excluding footwear with rubber uppers.

[b] Canada and the United States.

[c] Austria, Belgium, Denmark, Finland, France, western Germany, Greece, Iceland, Ireland, Netherlands, Norway, Portugal, Spain, Sweden, United Kingdom. Average annual output, 1936 to 1938, assumed to be 100 million pairs in western Germany and 16 million pairs in Spain.

[d] Czechoslovakia and Poland. Average output, 1949 to 1951, in Czechoslovakia assumed to be 50 million pairs a year.

[e] Australia, Japan and New Zealand.

[f] Argentina, Bolivia, Chile, Colombia, Dominican Republic, Ecuador, Honduras, Mexico, Peru, Venezuela. Combined average output, 1936 to 1938, for Colombia, Ecuador, Peru and Venezuela assumed to be 4 million pairs a year.

[g] Yugoslavia, where average output, 1936 to 1938, was assumed to be 5 million pairs a year.

[h] Algeria, Angola, Belgian Congo, Canary Islands, Ethiopia, French Morocco, Mozambique, Union of South Africa. Average output, 1936 to 1938, for the region (excluding the Union of South Africa) assumed to be 900,000 pairs a year.

[i] Ceylon and India, where combined average output, 1936 to 1938, was assumed to be 5 million pairs a year.

Table XX. Production of Cigarettes

(Billions of units)

Area	Average annual output		
	1936 to 1938	1946 to 1948	1949 to 1951
Industrial countries:			
Northern America [a]	173.8	384.6	405.1
Western Europe [b]	199.7	129.1	278.8
Eastern Europe [c]	21.5	24.3	40.6
Oceania and Japan [d]	46.0	26.6	69.4
TOTAL, INDUSTRIAL COUNTRIES	441.0	564.5	794.0
Under-developed countries:			
Latin America [e]	43.2	61.8	69.6
Eastern Europe (Yugoslavia)	4.8	13.8	22.2
Middle East [f]	14.1	20.7	24.2
Africa [g]	6.5	13.7	16.0
South East Asia [h]	24.3	24.7	35.2
TOTAL, UNDER-DEVELOPED COUNTRIES	92.8	134.6	167.2
TOTAL, ABOVE	533.8	699.2	961.1
Under-developed countries, per cent of total	21	19	17

Source: United Nations, *Statistical Yearbook, 1952.*

[a] Canada and the United States.

[b] Austria, Belgium, Denmark, Finland, France, western Germany, Greece, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom. The following assumed annual outputs were included: Belgium 1936 to 1938 average, 7.0 billion, western Germany 1936 to 1938 average, 26.7 billion, United Kingdom 1949 to 1951 average, 100.0 billion.

[c] Czechoslovakia, Hungary and Poland. Average output in 1949 to 1951 in Czechoslovakia assumed to be 11.0 billion a year.

[d] Australia, Japan and New Zealand.

[e] Argentina, Brazil, Chile, Colombia, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Jamaica, Paraguay, Peru, Puerto Rico and Venezuela. The following assumed annual outputs were included: 1936 to 1938 average for El Salvador 0.3 billion, for Colombia 5.0 billion, for Paraguay 0.2 billion, for Peru 1.0 billion; 1946 to 1948 average for Brazil 15.0 billion; 1949 to 1951 average for El Salvador 0.5 billion, for Brazil 16.0 billion.

[f] Jordan, Iran, Lebanon, Syria, Turkey. Average annual output, 1936 to 1938, of 3.0 billion assumed for Iran, 0.1 billion for Jordan, and 0.7 billion for Syria.

[g] Angola, French Morocco, Mozambique, Nigeria, Tanganyika, Uganda, Union of South Africa. Average annual output, 1936 to 1938, of 0.4 billion assumed for Nigeria and of 1.0 billion for Uganda.

[h] Ceylon, India, Philippines and Thailand. Average annual output, 1936 to 1938, of 20.0 billion assumed for India and 1.0 billion for Thailand.

Table XXI. Production of Cement

(Millions of metric tons)

Area	Average annual output		
	1936 to 1938	1946 to 1948	1949 to 1951
Industrial countries:			
Northern America [a]	20.2	33.8	41.5
Western Europe [b]	35.6	29.7	48.7
Eastern Europe [c]	2.9	3.1	4.6
USSR	5.5	3.3	12.2
Oceania and Japan [d]	6.8	2.5	6.1
TOTAL, INDUSTRIAL COUNTRIES	71.1	72.3	113.2
Under-developed countries:			
Latin America [e]	2.6	4.6	6.7
Eastern Europe [f]	1.1	1.3	1.9
Middle East [g]	1.0	1.5	2.1
Africa [h]	1.2	1.9	2.9
South East Asia [i]	1.8	2.2	3.8
TOTAL, UNDER-DEVELOPED COUNTRIES	7.7	11.6	17.4
TOTAL, ABOVE	78.7	83.8	130.5
Under-developed countries, per cent of total	10	14	13

Source: United Nations, *Statistical Yearbook, 1952* and *Economic Survey of Europe since the War* (sales number 1953.II.E.4).

[a] Canada and the United States.

[b] Austria, Belgium, Denmark, Finland, France, western Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Saar, Spain, Sweden, Switzerland and United Kingdom. Average annual output, 1936 to 1938, of 10 million tons assumed for western Germany and of 1.5 million tons for Spain.

[c] Czechoslovakia, Hungary and Poland. Average output in Hungary assumed to be 400,000 tons a year during the period 1949 to 1951.

[d] Australia, Japan and New Zealand.

[e] Argentina, Brazil, Chile, Colombia, Cuba, Ecuador, Guatemala, Mexico, Peru and Venezuela.

[f] Romania and Yugoslavia.

[g] Egypt, Israel, Lebanon, Syria and Turkey.

[h] Algeria, Belgian Congo, French Morocco, Mozambique, Southern Rhodesia, Tunisia, Union of South Africa.

[i] India, Indochina, Indonesia, Pakistan, Philippines and Thailand. Average output, 1949 to 1951, in Indonesia assumed to be 80,000 tons a year.

Table XXII. Production of Pig-Iron

(Thousands of metric tons)

Area	Average annual output		
	1936 to 1938	1946 to 1948	1949 to 1951
Industrial countries:			
Northern America[a]	30,447	51,183	60,558
Western Europe[b]	36,487	24,160	39,451
Eastern Europe[c]	2,441	2,573	4,009
USSR	14,480	10,000	22,233
Oceania and Japan[d]	3,272	1,584	3,551
TOTAL, INDUSTRIAL COUNTRIES	87,127	89,500	129,802
Under-developed countries:			
Latin America[e]	191	810	1,029
Eastern Europe[f]	172	266	550
Middle East[g]	—	93	131
Africa[h]	257	622	779
South East Asia[i]	2,366	1,501	2,536
TOTAL, UNDER-DEVELOPED COUNTRIES	2,986	3,292	5,025
TOTAL, ABOVE	90,113	92,792	134,827
Under-developed countries, per cent of total	3	4	4

Source: United Nations, *Statistical Yearbook, 1952* and *Economic Survey of Europe in 1953.*

[a] Canada and the United States.

[b] Austria, Belgium, Denmark, Finland, France, western Germany, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden and United Kingdom. Average production, 1936 to 1938, in western Germany was assumed to be 12 million tons a year.

[c] Czechoslovakia, Hungary and Poland.

[d] Australia and Japan.

[e] Brazil, Chile and Mexico.

[f] Romania and Yugoslavia.

[g] Israel and Turkey.

[h] Southern Rhodesia and the Union of South Africa.

[i] China and India.

Table XXIII. Production of Crude Steel

(Thousands of metric tons)

Area	Average annual output		
	1936 to 1938	1946 to 1948	1949 to 1951
Industrial countries:			
Northern America[a]	44,150	75,178	87,772
Western Europe[b]	46,643	33,098	51,848
Eastern Europe[c]	3,882	3,539	6,539
USSR	17,347	13,300	31,067
Oceania and Japan[d]	6,877	2,364	6,125
TOTAL, INDUSTRIAL COUNTRIES	118,899	127,479	183,351
Under-developed countries:			
Latin America[e]	161	836	1,416
Eastern Europe[f]	419	520	965
Middle East[g]	—	91	133
Africa[h]	277	579	834
South East Asia[i]	1,281	1,314	1,983
TOTAL, UNDER-DEVELOPED COUNTRIES	2,138	3,340	5,331
TOTAL, ABOVE	121,037	130,819	188,682
Under-developed countries, per cent of total	2	3	3

Source: United Nations, *Statistical Yearbook, 1952* and *Economic Survey of Europe in 1953.*

[a] Canada and the United States.

[b] Austria, Belgium, Denmark, Finland, France, western Germany, Italy, Luxembourg, Netherlands, Norway, Spain, Sweden, United Kingdom. Average output, 1936 to 1938, in western Germany was assumed to be 16 million tons a year.

[c] Czechoslovakia, Hungary and Poland.

[d] Australia and Japan.

[e] Argentina, Brazil, Chile and Mexico.

[f] Romania and Yugoslavia.

[g] Egypt and Turkey.

[h] Southern Rhodesia and the Union of South Africa.

[i] China and India.

Table XXIV. Indices of Manufacturing Production

(1948 = 100)

Country and region	1937	1938	1949	1950	1951	1952	1953
WORLD TOTAL [a]	77	69	102	116	126	129	139
Industrial countries:							
Canada	51	47	101	106	112	114	122
United States	58	45	94	110	117	121	132
Western Europe	108	106	114	127	141	141	150
Eastern Europe: [b]							
Czechoslovakia	97	...	116	134	154	182	...
Eastern Germany	...	...	120	151	184	212	231 [c]
Hungary	...	...	142	192	250	309	...
Poland	69	74	123	155	193	231	267 [c]
USSR [b]	58	65	119	147	170	191	211
New Zealand	63	65	106	111	119	118	...
Japan [d]	249	274	131	156	219	244	299
TOTAL, INDUSTRIAL COUNTRIES [a]	77	69	101	116	126	129	140
Under-developed countries:							
Latin America	58	59	103	110	118	120	120
Argentina	56	...	96	99	102	94	92
Chile [e]	65	67	104	100	119	133	142
Mexico	67	68	110	122	133	134	138
Guatemala [f]	...	...	104	106	105	110	108
Eastern Europe: [b]							
Bulgaria	...	...	128	156	187	221	...
Romania	...	...	141	194	250	308	...
Yugoslavia [g]	59	63	112	115	111	111	122
Middle East:							
Turkey	...	66	113	112	122	131	...
Africa:							
Algeria	...	...	94	108	131	130	129
Southern Rhodesia	...	35	113	132	149	153	...
Union of South Africa [h]	...	49	114	122	137	155	...
South East Asia:							
India [i]	84	89	98	97	108	118	124
TOTAL, UNDER-DEVELOPED COUNTRIES [j]	64	66	105	111	119	124	127

Source: Statistical Office of the United Nations; *Statistical Yearbook, 1953*; for eastern Europe, *Economic Survey of Europe since the War* and *Economic Survey of Europe in 1953*.

[a] Excluding China, eastern Europe and the Union of Soviet Socialist Republics.

[b] Including mining, electricity and manufactured gas. The indices relating to the Soviet Union and eastern European countries are not strictly comparable with the others in the table since they are based on gross value and not on value added.

[c] Provisional.

[d] 1937 and 1938 weighted by value added in 1936; 1948 to 1953 weighted by value added in 1950.

[e] Including manufactured gas; 1937 and 1938 weighted by gross value of output in 1927 to 1929; 1946 to 1953 weighted by value added in 1936 to 1938.

[f] Including electricity and manufactured gas.

[g] General.

[h] Data from Standard Bank, supplement to the *Review*, May 1953 (London). The first figure (1938) represents 1939 production; the 1951 and 1952 figures are provisional.

[i] Including mining, electricity and manufactured gas in 1937 and 1938; including mining and gas after 1946 and weighted by value added in 1946.

[j] Excluding eastern Europe.