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SELECTED ASPECTS OF THE PROGRAMME OF ACTIVITIES OF CEPAL
IN THE FIELD OF LONG-TERM ECONOMIC, DEMOGRAPHIC
AND SOCIAL PROJECTIONS, AND SUMMARY
OF MAIN FINDINGS AND CONCLUSIONS

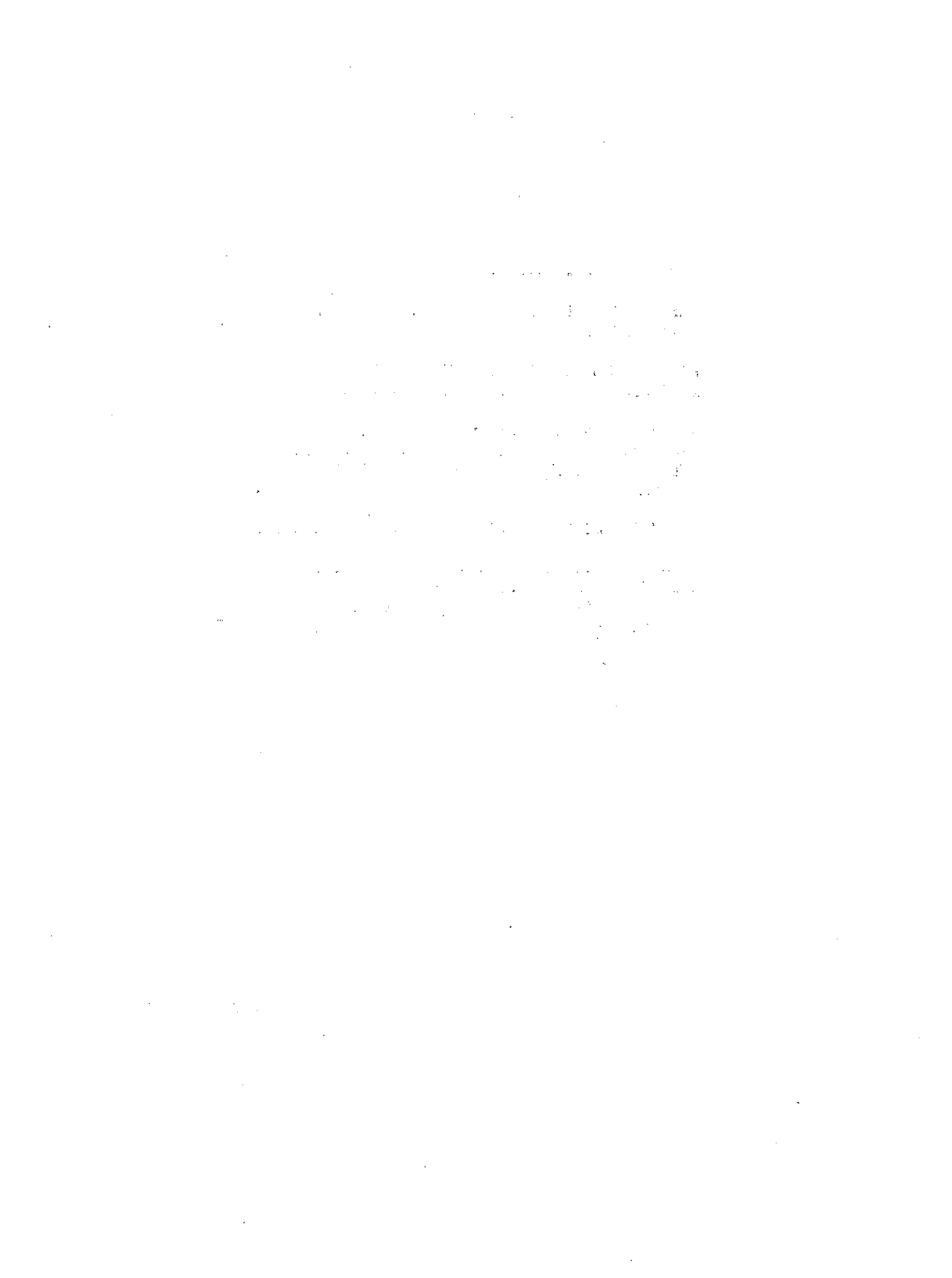
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I. INTRODUCTION

1. Programme of activities

This report presents the programme of activities of CEPAL in the field of long-term projections. It concentrates on the activities carried out during the last two years, the utilization of the results of research, and the work currently being performed.

The programme of work of CEPAL in the field of prospective studies envisages various projects which cover conceptual and qualitative analyses associated with global and specific subjects related to the economic and social development of the countries of the region and with some aspects of international policy, as well as other studies in which the conclusions are strongly based on quantitative projections. The projects to be described here are those in which the use of models on quantitative analysis is the characteristic feature of the research methodology employed.

The group of projects considered in the work programme may be related to the following activities:

- (a) Demographic projections: population and labour force.
- (b) Global and sectoral macroeconomic projections.
- (c) Projections on productivity and employment.
- (d) Economic and social model.

2. Main uses of quantitative prospective analyses

The main uses of the conclusions derived from the quantitative prospective studies are:

(a) To serve as a frame of reference for the economic and social prospective studies: both those of a global nature and specialized studies requiring general parameters of reference.

(b) To provide information to the Committee for Development Planning for the preparation of its prospective documents. In the last two years documents have been prepared for the meetings at which the prospects for the next decade were discussed. At the present time work is being done

on a document intended to review, inter alia, with a CDP working group which will visit CEPAL in October, the region's prospects for the next decade.

(c) To provide the Preparatory Committee for the New International Development Strategy 1/, and especially the Latin American governments and the Latin American Group in New York which takes part in the work of the Committee, with information and elements to assist their decisions. Documents and notes have been prepared for this Group, the two main examples of which are attached 2/, and consultative meetings have been held with them.

(d) CEPAL, at its eighteenth session (La Paz, April, 1979), adopted resolution 386 (XVIII) on the preparations and contribution by CEPAL for the New Strategy in which among other recommendations to the governments and requests to the Secretariat it includes "That the Secretariat prepares a regional action programme aimed at instrumenting the implementation of the Strategy to be adopted by the General Assembly". This action programme will be considered at the nineteenth session of the Commission to be held in April 1981. The Secretariat is now working in the projections that will be used while preparing the basic documents for the Conference.

1/ See, for example, "The global objectives of the Latin American Development Strategy and the Programme of work of CEPAL in relation to the New IDS for the forthcoming decade" (E/CEPAL/L.198).

2/ "Long-term trends and prospects of the development of Latin America" (E/CEPAL/L.1076) and "Latin America and the New International Development Strategy: Goals and Objectives" (E/CEPAL/L.210).

II. DEMOGRAPHIC AND GLOBAL AND SECTORAL MACROECONOMIC PROJECTIONS

1. Demographic projections: population and labour force

These projections are a continuing task of CELADE. ^{3/} They include total population and the economically active population, by sex, age groups, and for the rural and urban areas. They are prepared for all Latin American countries in line with specific hypothesis for the main demographic variables.

The "component method" is used for projecting population by age and sex. Mortality, fertility and migration projections are based on trends analysis, the historical experience of other countries and probable prospects of change. Projections of the urban population are based on the assumption that its proportion of total population follows a logistic curve. Total labour force by age and sex is obtained by applying age-sex specific activity rates estimated by ILO to the population of the corresponding groups. Total urban and rural forces were obtained by projecting the global activity rates of each area and sex on the assumption that these will change according to the variation of the proportion of population of active age and the global activity rates of each sex.

The results of the research show that the rate of growth has accelerated in the past three decades to a peak at the beginning of this decade. In recent years a decline in the high rate of population growth has begun, and has become quite substantial in some countries. This is a result of the economic and social changes and transformations characteristics of this stage of Latin American development, and which arise at the same time as more favourable official and private attitudes to the adoption of population policies. It is estimated that the present population growth rate of 2.7% a year will gradually decline, with an accentuation of this trend towards the end of the century, though it will still remain relatively high, probably slightly over 2% a year. In this way, it may be expected that the population of the region will increase by more than 100 million in the next decade, from 360 million to 470 million; with a figure of around 580 million by the year 2000, according to available estimates.

^{3/} Latin American Demographic Centre

The spatial distribution of the population will continue to change rapidly, and both individual population centres and the structure of Latin American societies will acquire new features. The growth rate in the rural population will tend to fall, and in the demographically less dynamic countries the rural population will contract in absolute terms. By the year 2000, about 80% of the population of the region as a whole will be urban, and two-thirds of the total population will live in towns of over 20,000 inhabitants. In all the countries the rural population will make up less than half of the total, and the degree of urbanization will be still higher in the southern countries.

This growth in population and change in distribution will have serious economic, social and political repercussions. Firstly, there will be considerable expansion in potential and actual demand for goods and services, especially if efforts are made to achieve specific objectives in improving the living conditions of all sectors of society, and to reduce or eradicate situations of poverty and indigence within a reasonable period of time. Secondly, the spatial changes in the population will lead to profound changes in the shape, size and relative importance of the urban and rural strata of Latin American societies; in particular, growth in the urban population will exert strong pressure on the physical and social infrastructure. Thirdly, there will be a shift in the problems of unemployment and underemployment from the rural areas, with increased impact on underemployment and marginal or low-productivity occupations in the urban areas, to the extent that the development strategies and policies do not satisfactorily tackle these problems. Fourthly, it is also clear that this population increase would broaden and diversify the markets of the Latin American economies if success is achieved in promoting a dynamic process of absorption of the labour force in production, raising per capita income and improving income distribution.

The explosive growth which will be recorded in the economically active population undoubtedly represents an exceptional challenge for the development strategies and policies. Annual growth rates in the labour force of around 3% or even more, which are derived from the age structure of the

population and the greater participation of women -factors which will not be modified in the immediate future even if the decline in population growth is greater than expected- are extremely high, and give rise to an employment problem which is very difficult to solve and which is aggravated by the broad extent of present unemployment and underemployment of the active population.

A basic research programme is also in progress on the study of the interrelations between demographic and socio-economic variables. This last mentioned study has the subsequent aim of studying the possibility of some degree of endogenization of population variables and the conditions which could facilitate this, with a view to gaining better knowledge of the subject and aiding in the preparation of the economic and social model.

2. Global and sectoral macroeconomic projections

The macroeconomic and sectoral model which is in full process of execution analyzes at the aggregate level economic growth and its implication for external trade, accumulation needs and domestic saving and external financing requirements. The principle parameters and exogenous variables of this model are under periodic review in order to take into account the new assumptions that can be deduced from national plans, programmes and policies and the analysis of new problems arising in relation to the aspects considered in the model.

This model was applied in 1978 and 1979 to 24 Latin American countries and thereby the results provide practically complete coverage of the countries of the region. The results obtained were one of the quantitative sources used in the documents prepared as inputs for the preparatory work of the New International Development Strategy. ^{4/}

The analysis examined three economic growth scenarios: one based on historical trends, one on moderate acceleration and the third on increasing acceleration. For the region as a whole these scenarios give economic growth rates ranging from 6.3% to 8% a year.

^{4/} The conclusions included synthetically in this document are described in detail in document "Latin America and the New International Development Strategy: Goals and Objectives" (E/CEPAL/L.210).

The scenario based on past trends (6.3%) represents a weighted average of the historical rates of growth in the gross domestic product recorded by each of the Latin American countries in the post-war period. The most dynamic scenario (8%) has been designed to examine first and foremost the requirements in terms of economic growth and transformation of production which would be implied by the Lima industrialization target 5/ and greater absorption of the labour force. In this context the "moderate acceleration" scenario falls in an intermediate position.

For the region as a whole this last scenario implies a growth rate in the gross product of about 7.5% a year. Consequently, it represents higher growth than the scenario based on long-term historical trends, for each of the countries considered, but as a whole would mean relative economic growth roughly equal to that recorded by Latin America in the first four years of the present decade. However, it should be emphasized that during that period growth was principally concentrated in two or three countries, while the scenario under consideration relates to a more rapid growth rate in all the countries.

Achievement of this growth target would require a high level of dynamism in investment, and the investment ratio in relation to the product would have to rise to over 25%. In principle, it is estimated that this would not represent an insurmountable obstacle, because the region has, especially in its boom period, provided evidence of its capacity to promote a very substantial investment process. Domestic saving would have to raise appreciably if -as would be desirable- external financing was limited to reasonable proportions vis-a-vis investment, the product and exports.

In this growth scenario, industrialization would acquire a relatively high level of dynamism. Its annual growth rate would be slightly over 8.5%. This implies a much more rapid and thoroughgoing process of industrialization than in the past. It will be necessary to include new activities with high technological content and major investment of capital in the essential intermediate products and capital goods branches.

5/ "Lima Declaration and Plan of Action on industrial development and co-operation", Second General Conference of the United Nations Industrial Development Organization, Lima, March 1975.

The agricultural sector will also have to expand more rapidly. The macro-economic projections drawn up on the basis of the historical ratios by country between the product of the agricultural sector and the gross domestic product indicate, for the region as a whole, an annual rate of about 4.2%.

Analysis of energy requirements is a problem of special concern, because of the major impact they have on the technological and economic policy strategies of the development process. Total energy consumption measured in terms of the use of primary sources increased over the post-war period at an average rate of about 5.5% a year; in other words, for the region as a whole energy requirements grew at the same rate as the domestic product. Much greater growth was recorded in commercial energy (almost 7% a year), because of the replacement of traditional sources.

As a result of the increases currently occurring in the real prices of hydrocarbons, which for the region as a whole make up more than 60% of total energy supplies, it is to be hoped that the elasticity of demand vis-a-vis the product will tend to fall and that deliberate policies will be drawn up to restrain energy consumption in specific sectors or for specific purposes. As a result, unless other styles or scenarios of development are conceived, it may be assumed that, despite any economies which may be achieved, energy needs will rise faster than in the past and will tend to double within 10 to 12 years under the economic growth hypothesis of 7.5% a year.

In most of the countries of the region, from the end of the last decade up to 1974, the volume of imports grew rapidly, and faster than the domestic product. This occurred in the context of structural changes in the direction of more open relations with foreign countries, a diversification of exports, greater use of external financing and active participation by the transnational corporations in the economies of the countries of the region. In contrast, in the last four years, as a result of the serious balance-of-payments problems in the non-oil-exporting countries, the dynamism of imports has fallen to the extent that absolute levels have dropped in some cases, particularly in the more important countries of the region.

/These prospective

These prospective studies examine the possible future trend of imports in the context of a dynamic process of growth, taking into account various factors concerning the characteristics of this process, especially its relations with the product and investment. In this way the value of imports of goods and services around 1990 at constant 1975 prices would be 2.6 times higher than the average recorded in recent years (1976-1978). The predominance of intermediate products and capital goods would continue, and the greatest relative increase would occur in imports of capital goods.

It is clear, therefore, that the external purchasing power of the Latin American countries will have to grow much more than in the past in order to satisfy this demand for imports of goods and services. This growth will depend on three principal sources: (i) volume and diversification of exports; (ii) evolution of the terms of trade; and (iii) possible extent of external investment and financing. Thus, for example, if it is assumed that the terms of trade will remain at their 1976 levels, and that the ratio between net external financing -equivalent to the deficit on the current account of the balance of payments- and the domestic product will remain similar during the next decade to that recorded by the countries during the present decade, then for the region as a whole revenue from exports of goods and services should increase at a rate similar to that of imports: 8% annually during the coming decade; while net external financing will represent an average 2.8% of the gross domestic product, and about one-fifth of exports by 1990. Obviously, export needs will be lower if there is more net external financing, which would be the case if the terms of trade improved. It has therefore been calculated that the required exports of goods and services will grow at 7% per year, if net external financing increases still further during the coming decade to reach 4.4% of the gross domestic product by 1990.

During this year calculations are being updated in order to be used in the basic documents requested to the Secretariat for the preparation of the regional programme of action for the implementation of the New IDS.

3. Projections on productivity and employment

During 1978 and 1979 a set of projections on productivity was prepared for the purpose of estimating employment problems. These projections constitute an extension of the sectoral macroeconomic model and of the demographic and labour force projections, since both the productivity and the employment estimates use as background data the value of global and per capita income, sectoral levels of production, and estimates of population growth and of the total rural and urban labour force.

An estimate of productivity for five sectors of the economy has been made for the majority of the Latin American countries. These are econometric estimates which use the data from the census years (1950, 1960 and 1970) for the countries considered and a group of developed market economic countries. Generally speaking, the procedure has been followed of correlating the evolution of productivity with that of the global per capita income of the economies, or with the global product per person employed. The incorporation of technical progress has also been used as an explanatory variable. The most appropriate specification has been selected sector by sector.

In all sectors it is seen that the increases in productivity are more sensitive to the increase in global per capita income at low levels of this variable. Likewise, in all sectors, technical progress plays an important role in the growth of productivity.

The application of this type of analysis in the scenarios described in connexion with the macroeconomic and sectoral studies shows that in all cases there should be a substantial increase in the product per employed person: a phenomenon which becomes more marked as the growth rate accelerates. This aspect is practically general for the different groups of countries, though it appears more intensively in the manufacturing sector than in the agricultural sector and the economy as a whole. This disparity in the growth of productivity between and within the economic sectors raises serious problems which will have to be taken into account when a policy is formulated to improve the distribution of income.

The greater dynamism of the economy, despite the rise in the productivity indexes, would be reflected in a higher level of absorption of the labour force, which, for the region as a whole, would actually correspond, for the scenario showing an annual growth of 7.4% in the gross product, to the increase in the economically active population. At the same time, this would not solve the problem of unemployment in a relatively short period, because of the extent of underemployment and open unemployment. Nevertheless, improved levels of productivity and income should be promoted for that segment of the population. The structure of employment would have to undergo substantial changes, not only as regards its sectoral distribution, but also as regards its breakdown in terms of the nature of the occupations and their degree of skill. This raises the question of the training needs of the economically active population, which must also be examined.

Naturally, the specifications used are far from fully satisfying many theoretical requisites. In the majority of cases they are used because of the lack of reliable background data on the endowment of capital and the levels of skills and remunerations of the manpower in the sectors. Moreover, they do not break down the sectors by types of techniques so as to be able to distinguish the production functions of the modern and traditional branches. However, both the research underway and the available data show that the general conclusions obtained as regards productivity and employment seem reliable except when there are profound changes in the current pattern of development.

/III. THE

III. THE ECONOMIC AND SOCIAL MODEL

1. Background

At the beginning of the last decade, the CEPAL Secretariat prepared an economic and social model known as the "styles of development" model. Its basic aim was to serve as a quantitative methodological instrument to contribute to the analysis of different socio-economic scenarios of the development of the Latin American countries. This model was applied in a first stage, on an experimental basis, to an economy with the structural characteristics of Brazil and is at present being used in a prospective study of Argentina (see the attached matrix of social accounting for Argentina).

The main features of this model are:

(a) It covers four economic sectors with two production techniques indentified by the participation in production in each of them, of fixed capital and employment. It also includes a sector for education with two activities: (i) basic and (ii) secondary and higher.

(b) The income generated in the sectors of production and in each of the techniques considered is classified in the following categories: (i) low wages, (ii) high wages, (iii) distributed profits, (iv) rents and interest, (v) taxes and (vi) gross savings of enterprises.

(c) It defines three population groups to which the income distributed flows. These are: rural, low urban and high urban.

(d) The demand for labour is divided into two categories: (i) skilled and (ii) unskilled, their composition depending on the sectors and techniques used.

(e) The supply of labour depends on the population of active age and on the rates of male and female participation, as well as on the objectives or hypotheses formulated regarding the education of the population.

(f) The demographic variables -fertility, mortality and migratory flows- are exogenous to the model.

/(g) In

(g) In the external sector, imports depend on the levels of production and final demand. Exports are exogenous by nature, as are the terms of trade. The accounting for the external debt and its servicing is also incorporated.

(h) Government accounts have been considerably simplified by including on the one hand tax and non-tax revenue and on the other consumption and investment expenditure.

(i) The enterprises are classified according to the ownership of their capital into: (i) national private enterprises; (ii) State enterprises and (iii) foreign enterprises.

The model operates in principle, by establishing the level and composition of demand for each of the social groups considered, the goals or objectives of education, government expenditure and exports. The fundamental conclusions which can be drawn from the applications made of this model and which seem to be valid on a general basis include the following:

(a) The continuation of high growth rates of the consumption of the different social groups, according to prevailing patterns, requires high rates of economic growth in the domestic product and has implications for the structure of production and the growing share of highly capital-intensive techniques. For example, if the consumption of the high-income groups grows at a per capita rate of 3.4% and that of the rest of the groups at only 2.5% per capita, while exports grow at an annual rate of 7% and are diversified, annual global growth of around 7% would be required to meet this demand, while at the same time, significantly raising the investment coefficient.

(b) The production of the branches which use modern techniques, taken together, would increase by slightly over 8% in the case used as an illustration, while total production using traditional techniques would increase by approximately 5.5% annually.

(c) The increase in the participation of the modern sector signifies rapid rates of increase of the product per employed person for the economy as a whole. In these circumstances, the demand for work would be inadequate to meet specific employment objectives for one or two decades.

/(d) The

(d) The problem of unemployment would move from the country to the city and the degree of employment would not improve, especially in the case of economies like Brazil, where the labour force is growing considerably.

(e) Unless deliberate policies are applied, income distribution will tend to maintain its high level of concentration and even deteriorate further.

(f) To illustrate the characteristics of income distribution, three social groups were defined, fundamentally based on the level of skills of the active population and the modern or traditional nature of the branch of production where employment is found. These are:

- (i) Low income group. This comprises that part of the population where incomes are limited by the low productivity of their occupations. The majority of this group is in agriculture and includes unskilled workers and own-account workers employed in traditional agriculture, as well as unskilled workers in modern agriculture. It also includes unskilled workers and own-account workers in the traditional branches of urban services. In the base year, this group accounted for over 50% of income-recipients.
- (ii) The intermediate income group, covers one-third of income-recipients and is made up of unskilled and semi-skilled workers and artisan-type workers in the industrial sector and the modern branches of the services sector. In this group the levels of the product per employed person are relatively high and wages and salaries are protected to some extent by institutional factors.
- (iii) The high income group comprises the most highly skilled workers, professionals and entrepreneurs from all sectors of the economy. Together, they account for around 10% of income-recipients. An appreciable part of the total income of this group comes from ownership of capital.

Under the initial conditions, the average incomes of the intermediate and high income group were respectively, 3 and 16 times greater than the average income of the low income group. Consequently, the high income group received around one-third of total income; the intermediate group,

/likewise around

likewise, around one-third and the low income group only 15%. Changes in the process of production and education modify the percentages of the population in each group in the long-term (20 to 30 years). They reduce the percentage of the population in the low income group, significantly increase the percentage accounted for by the middle income population, and also increase the high income group to some extent. However, the relation between the average incomes in each group does not change significantly. It should be noted that these conclusions depend largely on the hypothesis that the share of wages and profits in the sectoral value added for each sector remains constant, as does the relation between the wages of skilled and unskilled workers.

(g) Another aspect of special interest which illustrates the application of this model is the compatibility between the levels of consumption and the incomes generated in the production system for each social group.

In the context of the functioning of the model and of the assumptions used, the consumption expenditure of the rural and low urban groups is significantly greater than the income corresponding to them. This reveals the magnitude of the "transfers" of income which these groups would require, or the deliberate policies which would have to be promoted in order to increase their productivity or improve the distribution of income.

(h) The applications made of this model bring out the well-known fact of the tendency towards external imbalance of the prevailing style of economic development, which takes the form of an increase in external indebtedness and its financial servicing. It also reveals the predominance which foreign private enterprise would acquire if the trends of recent years were to continue.

2. Review of the "styles of development" model and basic studies for the preparation of a new economic and social model

Application of the model to Argentina.

A model with similar characteristics to that described in the foregoing paragraphs has been applied in the study of long-term development strategies in the Argentinian economy. This study had been interrupted for lack of resources but has now been resumed. In this case it was possible to obtain ample statistical data which make it possible to prepare social accounting matrixes and carry out the basic studies for the analysis and identification of the functional relations of the model more satisfactorily. The social accounting matrix for 1970, which is the base year for the research, is attached. The model was calibrated for each of the years of the period 1970-1976, introducing the adjustments which were considered appropriate when its results were compared with actual data. Thus, matrixes similar to that of the base year, derived from the application of the model, are available for each of these years.

This study of Argentina is particularly important because of the special characteristics of this country in the Latin American context. This is an economy whose growth rate is comparatively low, while its level of industrialization is one of the highest in Latin America, as is the entrepreneurial organization of its agricultural activities; personal and family income distribution is also less unbalanced than in other Latin American countries and its position is more favourable as regards poverty situations and levels of employment.

The basic research made it possible to assess to what extent the assumptions of productive and social heterogeneity on which the model was based were applicable to the case of Argentina. To illustrate this, some of the results obtained in the field of production techniques, ownership of capital and level of labour skills and the assumptions derived from them for use in the trend scenario will be given here.

/As regards

As regards the techniques used in the different branches of production, the criteria used to define them were not homogeneous and depended on the nature of the activity. In the case of agriculture, for example, data on land productivity for different regions was available. On the basis of the distribution of land productivity, the first technology was defined as that whose productivity was over the seventh decile.

In the various sectors of industry, the product per person employed was analysed, working at the level of ISIC to five digits. It was seen that in the majority of branches (ISIC, two digits) there were appreciable differences in manpower productivity, which reinforced the advisability of separation into two techniques. The consultation of specific studies at the level of sub-branches, sectors and establishments made it possible to observe the existence of a strong correlation between productivity levels and the amount of capital per person employed. For each of the two industrial sectors of the model, therefore, the techniques were divided at the level of the branch, using the average productivity of the branch as the dividing-line. Similar conclusions and criteria are applicable to the services sector.

In construction, the separation of techniques was estimated on the basis of information obtained from professionals, public bodies and entrepreneurial organizations in the sector.

Generally speaking, all the sectors displayed technical heterogeneity which, although appreciable, is less than in other Latin American countries. By way of example, the relation between the average productivities of the two techniques for the sectors considered is the following: for the agricultural and consumer goods sectors the ratio is nearly 2, while it is 2.5 in the intermediate and capital goods industry and 1.5 in the services sector.

The breakdown of capital according to whether it was of public, national private or foreign ownership was in response to the desire to investigate the possible behaviour of the different types of owners of capital in the use of technology and their influence on production and on income distribution.

The participation in ownership of these three agents was studied by sector for the period 1970-1976 in order to establish assumptions regarding trends in capital ownership. An analysis was then made of the relations between rates of profit in public, national private and foreign enterprises.

The research made it possible to establish that from 1959 onwards approximately 65% of foreign investment was channelled towards five branches of manufacturing: motor-vehicles, big packing plants, tobacco, petroleum products and chemicals. The sales of the foreign enterprises included among the country's principal hundred units, assessed on the basis of their invoices, accounted for around 10% of the total of this group, the figure rising to around 20% if the analysis is limited to the manufacturing sector. On the basis of these and other data, assumptions were made as to the share of foreign sales in the different sectors.

It was observed that the foreign enterprises in all cases use high-productivity techniques.

The share of the public enterprises was established using similar criteria, with the extra feature that maximum rates were considered for their percentage share in total and sectoral sales. At all events, however, these percentages were always lower than those of the foreign enterprises. Owing to the nature of the services supplied by the public enterprises, their share in capital was three times greater than their share of sales.

The research showed that the rates of profit with respect to capital of foreign enterprises were approximately double those of national private enterprises and far higher than those of the public enterprises. However, in the latter case it should be recalled that their tariffs are usually subsidized especially in the services sector, so that the comparison is less relevant.

/The estimate

The estimate of employment by sector and techniques, according to the degree of skill, was made according to figures provided by the Economic Planning Institute on skilled employment by sector and in accordance with other research and information on the composition of employment and its remuneration. Generally speaking, both, at the level of sectors and of techniques there is good correlation between average productivity and the proportion of skilled persons in total employment.

The relation between skilled and unskilled wages, and between wages in either of the two classes for the two techniques, was estimated on a rather weak statistical basis. The differences are greater in agriculture than in the other sectors. In this sector it has been assumed that skilled wages are six times those of unskilled wages, whereas in the urban sectors the ratio is four to one. In any case, the tendency of the system to increase the ratio between skilled and unskilled workers is apparently accompanied by a reduction in wage differences, which may be attributed in the case of Argentina, to the smaller pressure from unemployment in comparison with other Latin American countries and to institutional factors connected with the organization of the trade unions.

Second version of the styles of development model.

The experience and knowledge derived from the applications made of the first styles of development model demonstrated the need to expand and modify certain areas and take advantage of the greater availability of statistical data in the last few years. A new model was therefore prepared the distinctive characteristics of which are evident if the social accounting

/matrix.for

matrix for Venezuela (see annex) is compared with that for Argentina. Among the fundamental changes which have been introduced, the following may be mentioned:

(a) The economic sectors have been extended and more precisely specified. Ten economic sectors are now considered and two production techniques specified. In this way, greater knowledge can be gained of the effects on the production system of different development scenarios, as expressed in the levels and structure of consumption of the different social groups considered;

(b) More information has been available for determining the two production techniques. In the agricultural sector entrepreneurial and peasant agriculture are specified, and in the industrial sector the manufacturing and artisan-type sectors: the former comprises large, medium-sized and small enterprises employing 5 or more employees and the latter enterprises employing less than 5 persons or family units. In the mining, construction and basic services sectors, research carried out by CENDES^{6/}, the Ministry of Public Works and the Central Bank of Venezuela showed that from the practical point of view it was possible to consider a single technique, owing to the relative homogeneity observed in the majority of these activities. However, it would seem useful for the future to introduce greater sectoral breakdown in order to consider the heterogeneity which exists in some branches such as freight and passenger transport. In the services sector, in addition to the branches which use modern and traditional techniques, account was taken of a group of informal activities such as street-vending and domestic service;

(c) The value added is distributed over the wages and salaries of different occupational categories, taxes, remuneration from capital holdings and gross savings of enterprises, fundamentally made up of provision for depreciation, stocks and undistributed profits;

^{6/} Center for Development Studies of the Central University of Venezuela.

(d) Six social groups, mainly relating to the economic activity and levels of skills of the recipient, are specified. The activities and levels selected are:

- (i) subsistence agricultural activities;
- (ii) non-agricultural subsistence activities and unskilled activities in the agricultural sector;
- (iii) unskilled activities in the non-agricultural sectors;
- (iv) skilled activities and small entrepreneurs;
- (v) technicians;
- (vi) professionals and large-scale entrepreneurs.

(e) The government's activities are classified as: (i) public administration and defence; (ii) education and (iii) health and other social services. A cost structure is specified for each of these items and capital expenditure considered. Lastly, income is divided into tax-revenue and non-tax revenue.

A complete analytical formulation is available of this model (see annex) which is currently being applied to Venezuela for some years of the last decade in order to compare the solutions with real data and introduce the adjustments considered necessary.

Basic studies relating to the preparation of a new economic and social model.

The experience of the application of the styles of development model, particularly the studies being carried out in connexion with Argentina and Venezuela, provide valuable background elements of a conceptual and methodological nature for the preparation of a new economic and social model which permits a more accurate review of the implications of different development strategies and particularly the problems relating to the eradication poverty, employment and the improvement of income distribution.

The incorporation of Venezuela in these studies is essentially in response to two aspects. On the one hand this is an oil-producing country which has set itself the task of speeding up its industrialization process and which presents a different structure as regards production and technology from that prevailing in other Latin American countries; on the

/other hand

other hand, there is also the favourable fact that there is more statistical and technical information which has been accumulating as a result of the prospective studies mainly carried out in CENDES.

As has been reported on other occasions, the project on which work is being done consists essentially of constructing a global analytical model to cover different economic and social areas and at the same time facilitate the extension of analysis in each, as the Secretariat's economic and social studies require, while maintaining the necessary links with the overall scheme.

The global model will consist of different component sections which may be considered as submodels and which refer to the following aspects: (i) intersectoral macroeconomic analysis with the identification of two production technologies; (ii) demographic aspects; (iii) education; (iv) labour force and demand for employment; (v) income distribution; (vi) government accounts and (vii) external trade and the balance of payments.

Various basic studies are being carried out with these aims in order to obtain the required information and review the functional relations within each submodel and the relations and links between the different submodels considered. An aspect of a general nature which is a matter of concern as regards the first and second versions of the styles of development model is the fact that in these models numerous economic and social variables are introduced in an exogenous manner into the simulation and numerical experimentation analyses, although in many cases it would be desirable to express them as functions of other variables included in the model.

Among the most important basic aspects which are being considered in the construction of the new model the following should be noted:

(a) Improvement of sectoral specification so that the model can analyse more accurately the productive and technological implications of different profiles of social consumption in relation to the development strategies;

/(b) More

(b) More accurate definition of the technological aspects of the different branches of production. This requires special research, since the lack of information represents a serious obstacle in this regard;

(c) Continuation of the basic studies to review the possibilities of incorporating the demographic variables in an endogenous manner.

In this regard, research continues, mainly in CELADE, on the links between fertility rates and education, the family income level, the degree of industrialization and the urban or rural location of the family. Obvious associations and a high degree of correlation with the demographic variable are noted in this respect. Similar studies are being made regarding factors which can explain life expectancy and mortality more satisfactorily. Projections have also been made of the Latin American population on the basis of correlations between the rate of fertility and average incomes of the different social groups. However, there are still aspects which have not been sufficiently verified to permit even partial incorporation of the demographic submodel on an endogenous basis;

(d) Rural-urban migrations have generally been introduced in earlier models as exogenous variables. Detailed studies are being made on the factors which determine these population movements in several Latin American countries. Among other aspects, a relatively high correlation has been observed between the distribution of rural emigration and the growth rates of employment in the urban centres which attract such migrants;

(e) It is essential to go more deeply into the analysis of the demand for labour according to the different occupational categories and their relations with economic growth. It is hoped to make progress in this task in joint studies agreed upon with PREALC;

(f) Substantial progress is being made in the studies on the personal and family distribution of income in different Latin American countries. It has been noted that the high level of concentration has been maintained and in some cases has even increased with the process of economic growth. ^{7/} At the same time, various preliminary studies would seem to indicate that while the percentage of the population situated below certain absolute

^{7/} "Latin America on the threshold of the 1980s," E/CEPAL/G.1106, November 1979.

poverty lines has tended to fall, the volume of the population in this situation has been maintained and is even increasing. The high level of concentration which continues to be registered in income distribution despite the rise in average per capita incomes as a result of global economic growth and despite the reduction registered in the agricultural population would seem to be explained by the high percentage of occupation in informal or marginal activities in urban areas;

(g) Lastly, mention should also be made in this partial description of the basic studies to the ongoing revision and reformulation of energy projections to estimate the demand in the context of the new conditions of supply and prices, and to make progress in the review of alternative sources.

ARGENTINA: SOCIAL ACCOUNTING MATRIX, 1970

(Millions of pesos at 1970 prices)

	Agricultural sector		Consumer goods sector		Intermediate and capital goods sector		Education sector		Services sector		Total intermediate demand	Families				Government	Enterprises	Gross investment				Exports	Total final demand	Total			
	High technology	Low technology	High technology	Low technology	High technology	Low technology	Basic education	Secondary and higher education	High technology	Low technology		Rural	Low urban	High urban	Total			Government	Enterprises	Government	Families				Total		
																					Rural					Low urban	High urban
Agricultural sector	761.1	528.9	5 915.6	3 185.4	58.9	36.1	-	-	2.8	4.2	10 493.0	2 146.0	2 759.3	1 532.7	6 438.0	50.0						2 179.0	8 667.0	19 160.0			
Consumer goods industry	643.7	447.3	5 270.2	2 837.8	3 649.3	2 236.7	-	-	460.4	690.6	16 237.0	2 593.3	13 341.7	12 353.0	28 288.0	511.0						3 277.0	32 076.0	48 313.0			
Intermediate and capital goods industry	1 532.2	1 064.8	5 671.9	3 054.1	12 202.8	7 479.2	174.4	26.6	891.6	1 337.4	33 435.0	564.1	4 355.3	13 523.6	18 443.0	479.0	10 184.0	3 230.0	134.9	1 125.4	2 432.7	17 107.0	2 053.0	38 082.0	71 517.0		
Education	-	-	-	-	-	-	-	-	-	-	0.0	-	-	778.0	778.0	2 510						-	3 288.0	3 288.0			
Services	1 527.5	1 061.5	4 641.7	2 499.3	5 713.3	3 501.7	-	-	1 122.8	1 684.2	21 751.0	1 079.4	4 443.3	6 090.3	11 613.0	42.0						492.0	12 147.0	33 898.0			
Subtotal	4 464.5	3 102.5	21 499.4	11 576.6	21 624.3	13 253.7	174.4	26.6	2 477.6	3 716.4	81 916.0	6 382.8	24 899.6	34 277.6	65 560.0	3 592.0	10 184.0	3 230.0	134.9	1 125.4	2 432.7	17 107.0	8 001.0	94 260.0	176 176.0		
Imports																											
Agricultural sector	15.9	9.0	212.0	114.5	148.3	90.6					590.3		0.1	0.7	0.8	95.5								686.6			
Consumer goods	-	-	106.0	57.3	-	-					163.3													163.3			
Intermediate goods	16.0	9.1	106.0	57.2	2 323.9	1 420.2					4 224.4		4.0	605.6	609.6	89.5	1 672.0					1 672.0		6 595.5			
Education	-	-	-	-	-	-					-													-			
Services	-	-	-	-	-	-					-			79.6	79.6									79.6			
Total imports	31.9	18.1	424.0	229.0	2 472.2	1 510.8	-	-	118.6	173.4	4 978.0		4.1	685.9	690.0	185.0	1 672.0	-	-	-	-	1 672.0		7 525.0			
Total inputs	4 496.4	3 120.6	21 923.4	11 805.6	24 096.5	14 764.5	174.4	26.6	2 596.2	3 889.8	86 894.0																
Rural group	Unskilled income	1 303.2	719.2	-	120.0	-	-	-	-	327.4	2 469.8																
	Skilled income	1 299.0	251.3	-	98.9	-	-	-	-	95.6	1 831.4																
	Distributed profits	341.7	2 903.3	-	-	-	-	-	-	-	3 245.0																
	Transfer payments															427.8											
Low urban group	Unskilled income			1 270.7	791.4	2 861.3	3 738.6	92.6	7.7	2 038.7	1 265.1	12 066.1				3 168.3											
	Skilled income			410.8	68.9	1 277.5	389.8	377.4	167.9	537.3	90.5	3 320.1				383.4											
	Distributed profits				429.2		403.5				3 148.5	3 981.2															
	Transfer payments															2 432.6											
High urban group	Unskilled income																										
	Skilled income			1 731.5	582.8	5 110.7	1 904.8	1 509.6	671.5	2 149.6	743.8	14 409.3				1 533.8											
	Distributed profits	2 689.0		2 729.3	1 716.6	3 910.7	3 630.9	120.0	29.9	2 885.2	7 598.3	25 309.9															
	Transfer payments															711.3											
Government	700.3	151.2	2 887.8	813.2	3 349.6	1 108.2	76.5	33.8	2 851.6	2 232.9	14 205.1	423.7	878.3	2 475.0	3 777.0	391.3								18 373.4			
Payment for external factors	30.0		297.0		2 625.9						400.0				3 352.9									3 791.7			
Gross savings	444.8	710.0	152.9	483.0	1 108.5	1 149.6	-	-	100.6	946.9	5 096.3	1 167.5	-430.3	4 520.8	5 258.0	5 109.1						3 315.7		18 779.0			
Total	11 304.4	7 855.6	31 403.4	16 909.6	44 340.5	27 176.5	2 350.5	937.4	13 559.2	20 338.8	176 176.0	7 974.0	25 351.7	41 959.3	75 285.0	18 373.4	11 856.0	3 230.0	134.9	1 125.4	2 432.7	18 779.0	11 316.7				