

Economic Bulletin for Latin America

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UNITED NATIONS

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The ECLA secretariat assumes entire responsibility for the *Bulletin*. Its content — intended for the information both of public officials and of the general reader — was not submitted to the Commission's member Governments before publication.

EXPLANATION OF SYMBOLS

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

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

A minus sign (— 300) indicates a deficit or a decrease.

A stroke (/) indicates a crop year or a fiscal year, e.g., 1954/55.

“Tons” and “dollars” are metric tons and United States dollars, respectively, unless otherwise stated.

Minor discrepancies in totals and percentages are due to rounding.

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ECONOMIC BULLETIN FOR LATIN AMERICA



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ECONOMIC COMMISSION FOR LATIN AMERICA

Vol. II, No. 2, October 1957

UNITED NATIONS

LATIN AMERICA'S FOREIGN TRADE IN THE EARLY MONTHS OF 1957

The deterioration in the terms of trade for some of Latin America's primary export commodities, which has been observable ever since 1954, continued during the early months of 1957. The explanation lies, on the one hand, in the relative weakness of world market prices for these commodities, and, on the other, in the higher quotations for manufactured goods imported by Latin America. It would therefore seem that foreign exchange income in 1957, in so far as it depends on relative prices, will be affected by the aforesaid deterioration. In 1955 and 1956, this adverse circumstance was more than counterbalanced by an increase in the volume of exports, thanks to Latin America's larger output of exportable goods and the decidedly favourable economic situation in the major industrial countries. Unfortunately, the same does not seem to be true of 1957. In fact, half-way through the year the most representative indices suggested that the trend towards expansion in world economic activity had come to a halt; indeed, an actual contraction in foreign demand for many of Latin America's primary commodities has already been noted.

Furthermore, as a result of certain developments in the world economy, some long-standing and others of more recent date, new and complex elements have come to the fore affecting the evolution of Latin America's export trade. The technological progress of agriculture in European countries, together with certain measures of economic policy, has resulted in an increase in their domestic production of foodstuffs and agricultural raw materials, which has not only rendered the countries concerned relatively self-sufficient with respect to some items, but has also afforded them an opportunity of entering the market as exporters. This has had repercussions on sales prospects for Latin America's exportable surpluses. Moreover, in 1955 and 1956 the United States surplus disposal policy led to a readjustment of world prices for certain commodities, especially cotton, and a rerouting of trade in these products.

All this raises a question as to the future development of Latin America's foreign trade in general and its export trade in particular, since these are in fact determined by the absorption capacity of the major industrial countries. Hence, before a specific analysis of Latin America's foreign trade is embarked upon, a clear indication must be given of the evolution of the world economy during 1957 to date.

1. THE WORLD ECONOMIC SITUATION

In mid-1957 there was a break in the upward trend of such important indices of world economic activity as those of industrial output, building and the value of total exports. Strictly speaking, by the middle of 1957 these indices had in the main reached levels somewhat higher than those recorded for the corresponding period in 1956, but they showed no appreciable change in relation to the figures reached in the last quarter of 1956 and the first of 1957. This was most noticeable in the case of the indices of industrial production (manufacturing and mining), which during the two preceding years had risen almost uninterruptedly both in the United States and in western Europe.

This change of trend is deserving of more careful study. Towards the close of the second quarter of 1957, the gross national product of the United States was increasing at a distinctly low rate. Within the country's production as a whole, the manufacturing index was barely maintained at the same level as in previous months. This stability reflected, on the one hand, a slight expansion in the production of consumer goods — durable and non-durable — and, on the other, a contraction in important heavy industries, mining, building and petroleum extraction. The share of the United States in Latin America's trade is so large that the level of economic activity in the former country constitutes the most important of the factors determining demand for Latin American commodities. For this reason, stress must be laid on the fact that the economics situation prevailing in the United States implies for the moment no more than a period of readjustment in certain sectors of the internal economy. But one significant change has taken place. While in the two preceding years production increased to a relatively greater extent than final sales — that is, a policy of enlarging inventories was pursued — in the early months of 1957 the situation was reversed, so that producers and distributors have been operating with a smaller volume of stocks. This change has been particularly noticeable in such lines as metallurgy, and largely explains the marked contraction in demand for some raw materials, chiefly metals.

The agricultural and surplus disposal policy pursued by the United States since 1955 seems to have influenced prices and the direction of world trade in the case of specific commodities, especially cotton. It is forecast

that harvests in 1957 will reach much the same exceptionally high level as in the preceding year, which means that the efforts made to reduce them substantially will prove to have been unavailing. In the first place, the decrease in the area under cultivation amounted to only a little over 3 per cent of the whole, although the soil bank had financed an 8 per cent contraction. Secondly, the favourable weather conditions and bigger yields virtually offset the smaller sowings. Consequently, the effects of the agricultural surplus disposal policy on the world market will be much the same as in 1956, or even more pronounced if the surpluses accumulated are taken into account. According to some estimates, sales will amount to 1,600 million dollars during the fiscal year 1957/58.

The United States' balance-of-payments position, in its turn, reflects certain aspects of the current developments in the world economy. Up to the third quarter of 1956 the aggregate annual receipts accruing to countries trading with the United States from their trade and financial transactions with this latter, totalled some 1,500 million dollars. During the last quarter of that year the earnings in question were converted into outlays in favour of the United States to a value of 300 million dollars, rising to 500 million during the first quarter of 1957. This surplus in the United States' balance of payments, together with the credit balance shown by Germany, was reflected in a curtailment of many countries' reserves or in heavy disbursements on the part of the International Monetary Fund to cope with the situation.¹

Whatever the incidental factors that may have determined the course of events, there is at the present time a trend towards the consolidation of the United States' balance-of-payments surplus. If the economic activity of the United States were to continue expanding along the same lines as in 1955 and 1956, the shortage of dollars would be less acute, since presumably the United States demand for imports would remain high. In 1953 and 1954, the rest of the world as a whole benefited by a considerable inflow of dollars. But the present situation is different, and therefore any falling-off in sales to the United States might result in a loss of reserves or in heavier foreign commitments. Moreover, since 1953 exports from the United States have been increasing more than its imports. The former expanded in global figures by some 9,000 million dollars, and the latter by only 6,000 million. This deterioration in the other countries' aggregate trade balance with the United States was offset financially by a marked increment in United States private investment abroad and a much less significant increase in foreign aid and defence expenditure. The unreliability of these last two sources of compensatory funds is manifest. So far as the immediate future is concerned, a reduction of foreign aid is forecast for the fiscal year 1957/58.²

Broadly speaking, prevailing conditions on the European market seem to differ little from those described for the United States ; in most of the countries of Europe

¹ The countries concerned include Argentina, Belgium, Colombia, France, Japan, Mexico, Netherlands and the United Kingdom.

² See *The Financial Times*, London, 26 June 1957.

industrial activity is developing at high levels, which, however, in many instances do not appreciably exceed those registered for the last quarter of 1956. As regards trade with Latin America, certain price increases and specific balance-of-payments disequilibria are to be noted, which may to some extent affect such trade during the rest of the year.

Industrial production figures for the United Kingdom were slightly higher in the first quarter of 1957 than during the corresponding period of 1956, despite the 28 per cent decline in the manufacture of motor-cars. Building activities, on the other hand, expanded by 13 per cent. In Germany a vigorous upward trend was once again registered in industrial production, which increased by 9 per cent, whereas a relatively sharp falling-off was noted in the building industry. Industrial activity seems to have continued to develop satisfactorily in Belgium, France and other European countries, but by the middle of the year its levels were not much higher than in the first quarter.

With respect to the financial policy of the European countries towards the Latin American market, it may be emphasized that the United Kingdom is displaying increasingly keen interest in investing in the Latin American countries, and that Germany's satisfactory financial and balance-of-payments situation, in conjunction with its interest in placing capital in the countries of this region, is inducing it to invest there on a larger scale. This trend will probably become more marked in the near future, since Germany is planning to abolish current restrictions on capital exports. It should be pointed out that Japan is following in the footsteps of these two European countries ; Japanese investors are at present attaching more importance to Latin America than to southern Asia. Furthermore, Japan is concentrating more on exports of capital goods on medium-term credit terms.

To sum up, it does not look as if the world economic situation in 1957 — especially up to the middle of the year — is very much better than at the close of 1956. Thus world demand for imports seems likely to remain relatively stable. Nevertheless, demand for certain specific commodities — non-ferrous metals — has undergone a sharp decline, which has tended to depress the prices concerned. On the other hand, for other commodities, the relative inelasticity of world supply in face of slightly increasing demand has brought about a rise in world prices. At the same time, the slow but steady price increases registered in many industrial countries have raised the cost of Latin America's imports, and this trend seems to be gaining in intensity in the second half of 1957.

2. WORLD MARKET CONDITIONS FOR CERTAIN PRIMARY COMMODITIES

The trends noted in price levels for the main primary commodities are, of course, widely divergent. Except for the non-ferrous metals group, which is passing through a period of definite deterioration, fluctuations in prices for the other primary commodities have been relatively moderate and somewhat erratic. This applies especially to coffee, cacao, wheat, hides and beef. On the contrary,

prices for sugar, cotton and crude petroleum have followed clearly defined trends during 1957, either towards higher levels, as in the case of sugar and petroleum, or, where cotton is concerned, in the direction of relative stabilization.

As has been seen in earlier studies,³ the decline in cotton prices since 1955 is linked to world market sales of the large United States surpluses. Not only has the world price of cotton fallen, but a contraction has also taken place in the production and exports of certain Latin American countries, which have been to some extent displaced from their traditional markets. Actually the sale of United States surpluses has considerably augmented the world supply of cotton. In the farm year 1955/56, United States exports of this fibre amounted to 2.2 million bales, and it is estimated that they may reach 7.6 million in 1956/57. Thus this country is rapidly approaching the exceptional export levels of 1926/27 (11 million bales), when the world distribution of production of course followed a pattern very different from its structure at the present time. There seems little immediate prospect of any radical changes in the situation on the world cotton market, where, moreover, prices have so far become relatively stabilized in 1957.

The position of sugar on the world market improved perceptibly up to May 1957, but weakened in the subsequent months. Although the rise in sugar prices was partly due to the poorer harvests in some European countries in 1956, it was also largely attributable to heavier consumption and to the virtual disappearance of the large stocks accumulated in several of the major producer countries, which had constituted the dominant feature of the world market during the past few years. According to recent estimates, in the course of 1957 world supplies will amount to 6.7 million and requirements to approximately 6 million tons. Thus, the present relative balance between world supply and demand seems likely to be upset in the near future, and this in turn will bring prices down.⁴ Meanwhile, the United States has increased its aggregate quota of imports by 100,000 tons, of which 29,000 were allocated to Cuba, 4,900 to the Dominican Republic, 43,330 to Peru and 5,100 to Mexico.

The temporary blockage of the Suez Canal raised crude petroleum prices on account of the production losses, supply difficulties and heavier freight charges which this event entailed. These transient circumstances, however, did no more than intensify what was already an intrinsically predictable development, since price increases were regarded as inevitable in view of the gradual rise in production costs.⁵

The stability registered by coffee prices during the

³ See, for example, the *Economic Survey of Latin America, 1956* (E/CN.12/427), United Nations publication, Sales No. : 1957.II.G.1.

⁴ The fact that such a price decline was already registered in June and July bears witness to the trend indicated.

⁵ The rise in world market prices for crude petroleum took place in January 1957 and constituted the second over-all increase in the last 9 years. The preceding increment had been in force since June 1953. Apart from this, it should be noted that freight charges for this commodity substantially decreased in the second quarter of 1957.

last quarter of 1956 and the first of 1957 was followed in recent months by a downward movement which lowered them about 3 per cent, and which was chiefly due to an increase in supplies. At the present time, exportable production is estimated at 41.8 million bags as compared with 36.3 million in the trade year 1956/57. That of Brazil amounts to 18 million bags, while in the crop year 1956/57 it was 12.5 million. In Colombia, exportable surpluses have risen to 7.2 million bags as against 6.4 million in the preceding period. The producer countries of Central America have maintained the levels registered in the coffee year 1956/57. In Africa the trend towards an expansion of production is patent. It must be taken into account that in the first half of 1957 United States imports of African coffee were 50 per cent higher than during the corresponding period in 1956. Africa's production competes mainly with that of Brazil, and currently satisfies 15 per cent of total United States demand for coffee.

The price of cacao, severely depressed during the interval between mid-1955 and the first quarter of 1957, rose by more than 20 per cent in the second quarter. This development was apparently influenced by Brazil's minimum price policy.

It was previously pointed out that the most striking downward trend in world prices was to be noted in the non-ferrous metals group. Although all four of the metals which play a principal part in Latin American exports — copper, tin, lead and zinc — were affected by the depression, it was copper prices that suffered most, owing to the fact that the weakening of demand coincided with a considerable expansion of productive capacity in the chief exporter countries. During 1957 large-scale producers in the United States and some in Africa reduced their output, but without succeeding in checking the price decline. The most recent decrease, which took place at the beginning of September, brought United States market prices down to a level barely comparable with that of early 1953, when the United States abolished copper price controls. At the close of May 1957, world copper stocks were 49.5 per cent larger than in the same month in 1956, totalling 376,000 tons. During the first 5 months of 1957, deliveries of refined copper in the United States amounted to only 572,000 tons, a figure which compares unfavourably with the 692,000 tons delivered during the corresponding period in 1956. Nevertheless, the reduction in Africa's output during the second quarter of 1957, as well as the rise in the price of aluminium, may improve market prospects.

For the purpose of studying over-all price trends, the main primary commodities exported by Latin America were classified as shown in table 1. As can be seen, those from the River Plate countries — wheat, meat, wool and hides — displayed relatively slight fluctuations, and, in the aggregate, prices during the first half of 1957 differed little from those quoted in 1955 and 1956. The same cannot be said of the tropical agricultural commodities, viz., coffee, cacao, sugar and cotton. For them no common denominator can be established, since alongside the relatively moderate fluctuations in coffee prices, an increase in those of sugar and some degree of stability in those of cotton are to be noted.

Table 1
LATIN AMERICA : INDEX OF FOREIGN MARKET PRICES FOR PRIMARY EXPORT COMMODITIES
(1954 = 100)

	1955	1956	1956 1st quarter	1956 2nd quarter	1956 3rd quarter	1956 4th quarter	1957 1st quarter	1957 2nd quarter
Wheat	97.8	97.2	96.1	97.8	97.8	97.2	97.2	95.0
Wool	92.2	89.0	82.6	89.5	90.9	93.2	100.1	111.3
Hides	107.8	106.0	91.4	107.8	120.7	104.3	82.8	92.2
Meat	103.3	81.4	82.3	87.6	83.9	71.1	80.3	80.3
Group	97.4	93.1	88.6	94.4	96.0	93.3	94.7	95.4
Coffee	72.8	74.5	71.1	73.1	76.9	76.9	76.9	74.7
Cacao	65.0	45.8	46.9	44.0	47.6	44.5	39.9	48.8
Sugar	99.4	106.7	100.9	102.5	102.1	122.1	181.9	190.2
Cotton	96.1	81.3	82.9	86.0	77.7	78.7	76.1	77.1
Group	80.0	78.6	75.9	77.6	78.8	82.0	90.6	91.3
Copper	124.3	140.3	150.0	153.3	133.3	124.3	113.3	106.7
Tin	102.7	109.7	110.9	105.3	107.3	115.3	109.3	107.3
Lead	107.1	113.5	113.5	113.5	113.5	113.5	113.5	108.5
Zinc	114.3	125.0	125.0	125.0	125.0	125.0	125.0	111.6
Group	117.9	130.8	137.1	138.5	126.1	121.3	113.6	107.4
Crude petroleum	100.0	100.0	100.0	100.0	100.0	100.0	108.9	108.9
TOTAL	89.8	89.7	88.2	90.0	89.8	90.8	97.3	96.7

Source: ECLA.

The position of the non-ferrous metals and crude petroleum has already been discussed. It therefore only remains to give some idea of the situation as regards the over-all index. If petroleum, quotations for which remained stationary in 1955 and 1956, is excluded from the total index, the upward or downward fluctuations of the remaining twelve primary commodities tended to offset one another. Consequently, during those two years the over-all level of prices for Latin America's basic export commodities (excluding petroleum) remained virtually unchanged, but was approximately 10 per cent lower than in 1954 (see table 1). With minor variations, the same was true of prices during the first half of 1957, since the over-all index, if petroleum is excluded, displayed a marked degree of stability.

3. LATIN AMERICAN IMPORT PRICE LEVELS

The import price situation is in sharp contrast with that just described in relation to prices for Latin America's main exports of primary commodities.⁶ Wages and cost increases in the United States and several European countries — France, Belgium, Netherlands, etc. — were transferred to prices, thus intensifying the inflationary processes in the economies concerned. In the United States inflation is tending to increase at an estimated rate of 3-4 per cent annually — faster, that is, than the

⁶ In default of complete statistics for Latin America, the following analysis was based on the unit value indices for exports from the United States, Canada and European countries.

average rate at which prices are rising in the European countries. Such price increments in the industrial countries have been of an over-all nature, and have affected the manufactured products — capital goods, intermediate materials and durable consumer goods — which form the major part of Latin America's imports.

To obtain some idea of the approximate magnitude of these increments, it will suffice to examine table 2, which shows, by quarters, for 1955, 1956 and the first 3 months of 1957, price indices in the United States, Canada and five of the industrialized countries of Europe.

The average rise in prices in the countries mentioned slightly exceeded 3 per cent, this figure being principally determined by the higher quotations registered in the United States. In Canada, the upward movement was almost imperceptible during the first quarter of 1957, after the fairly considerable increments recorded during 1956. In Europe, on the other hand, where prices rose but little during the latter year, their rate of growth became more rapid in 1957, and within the space of 3 months prices increased on an average by 2 per cent. If, however, from the index given in table 2 prices for Germany are excluded, those corresponding to the other European countries covered in the table rose in the aggregate by about 3 per cent.⁷

⁷ In France a 20 per cent devaluation has just been decreed, which is intended, in combination with other measures, to meet balance-of-payments difficulties and promote exports. The United Kingdom in its turn has raised the bank discount rate by two points.

Table 2
INDICES OF F.O.B. EXPORT PRICES IN COUNTRIES SUPPLYING
LATIN AMERICA
(1954 = 100)

	<i>United States</i>	<i>Canada</i>	<i>Europe^a</i>	<i>Total</i>
1955 I	100.0	100.8	100.5	100.1
II	101.0	102.0	101.3	101.1
III	101.0	101.9	102.0	101.3
IV	102.0	101.6	103.0	102.3
1956 I	105.0	191.5	104.4	104.8
II	105.0	104.4	105.3	105.1
III	104.0	105.6	105.7	104.5
IV	105.0	107.0	105.8	105.3
1957 I	109.1	107.9	107.8	108.8

Source: OEEC, *Statistical Bulletin and Survey of Current Business*.

Note: The total index was weighted by each country's relative share in Latin America's total imports.

^a Including the Federal Republic of Germany, France, Netherlands, Sweden and the United Kingdom.

It must further be pointed out that the upward trend in prices revealed by these indices only partly reflects the increase in the financial burden represented by imports for all the Latin American countries, since increments in freight and other import costs are not taken into account. For example, for countries which purchase large quantities of fuel from abroad, the rise in import prices during the first quarter of 1957 must have been considerably sharper than is suggested by the figures in table 2, since during that period petroleum prices and freight costs underwent a relatively marked increase. It should be noted that midway through the second half of the year petroleum freight charges dropped substantially, and this has no doubt eased the balance-of-payments situation of those Latin American countries which import oil on a large scale.

4. THE TERMS OF TRADE BY COMMODITIES

Although the lack of certain basic statistical data precludes an exact appraisal of the evolution of the terms of trade for Latin America as a whole during the first part of 1957, the behaviour of export prices by commodities and over-all import prices as described above undoubtedly indicates a further deterioration. The same inference is suggested by a comparison of price indices for Latin America's primary export commodities with those registered for exports from the industrialized countries that provide the region with the bulk of its imports. The results of this comparison are given in table 3, which, within its limits, shows the terms of trade for the principal primary commodities which go to make up Latin America's exports.

As can be seen in this table and in figure I, during the first quarter of 1957 the terms of trade for most of the commodities under consideration — with the exception of wool, sugar and crude petroleum — fell

below their 1955 and 1956 levels. It should be noted, furthermore, that for many primary commodities relative prices also deteriorated in relation to 1954, most intensively in the case of hides (24 per cent), wool (26 per cent), coffee (29 per cent), cacao (63 per cent) and cotton (30 per cent). In reality, for Latin America as a whole, the downward movement began in 1954, as has been pointed out in previous ECLA studies.⁸ In 1955 and 1956, however, total foreign exchange income was not affected, thanks to the increase in the quantum of exports. In other words, the decreases of 7 per cent and 3 per cent in the terms of trade for 1955 and 1956 were more than offset by the 6.5 per cent and 7.2 per cent increments in the quantum of total exports of goods and services.

It is worth noting that the growth of the export quantum reflected a change of policy on the part of some of the Latin American countries — principally Argentina, Brazil and Chile — in the direction of increased attention to the export sector. At the same time, this tendency coincided with intensive activity in the great industrial countries, whose demand for raw materials in general expanded during the years in question. As the world economic situation is no longer so favourable and has shown signs of changing in mid-1957, serious doubts arise as to Latin America's prospects of offsetting the deterioration of its terms of trade by an expansion of exports.

Enough data are not yet available for a direct and convincing evaluation of the present situation as regards foreign exchange income — including movements of capital — in Latin America as a whole. Yet movements of monetary reserves constitute an indirect and approxi-

⁸ See, for example, the *Economic Survey of Latin America, 1955*. (E/CN.12/421/Rev.1), United Nations publication, Sales No. : 1956.II.G.1, and the *Economic Survey of Latin America, 1956*.

Figure I

LATIN AMERICA : TERMS OF TRADE FOR BASIC EXPORT PRODUCTS

(1954 = 100)

(NATURAL SCALE)

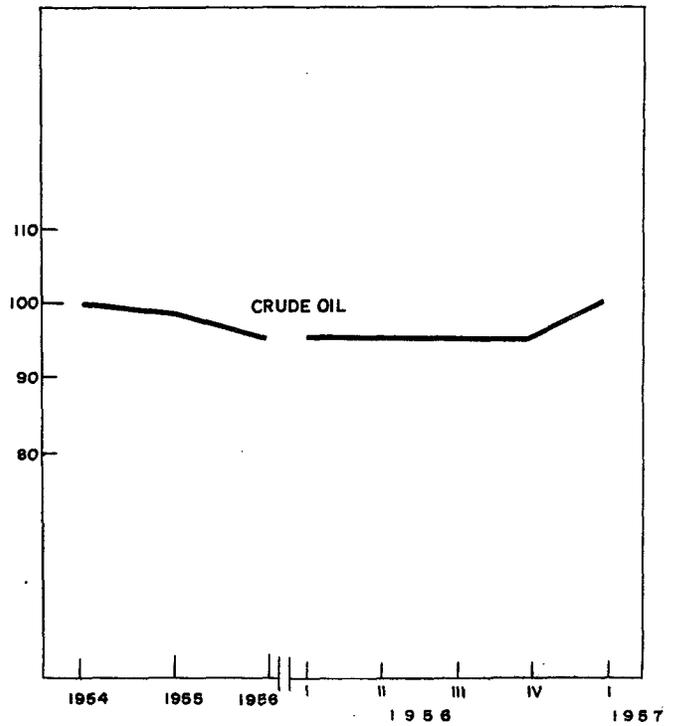
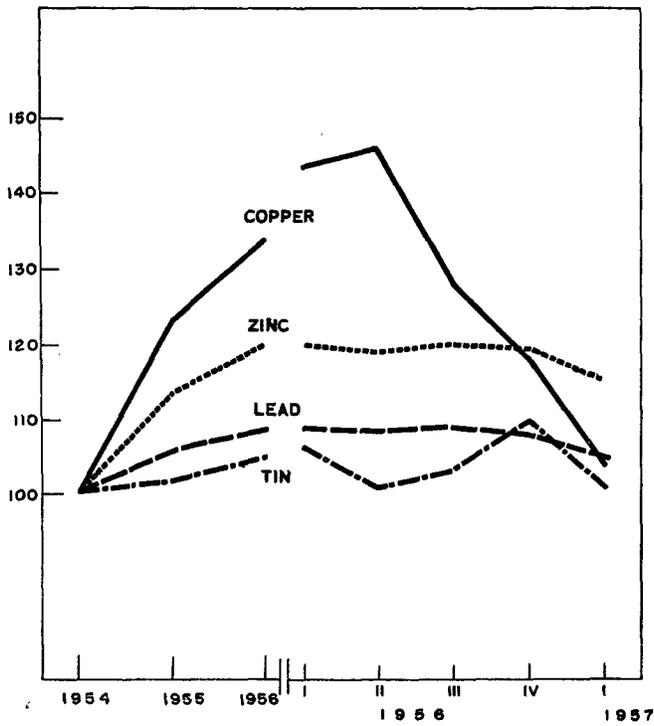
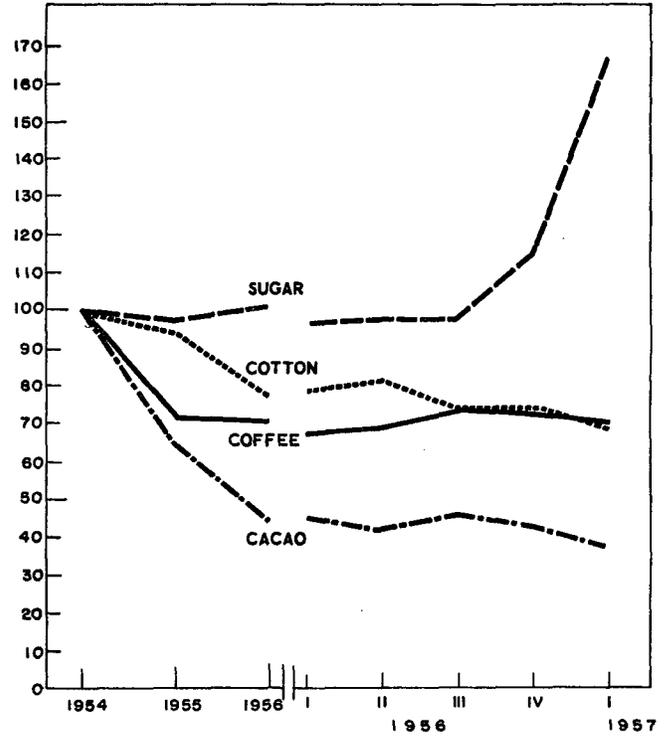
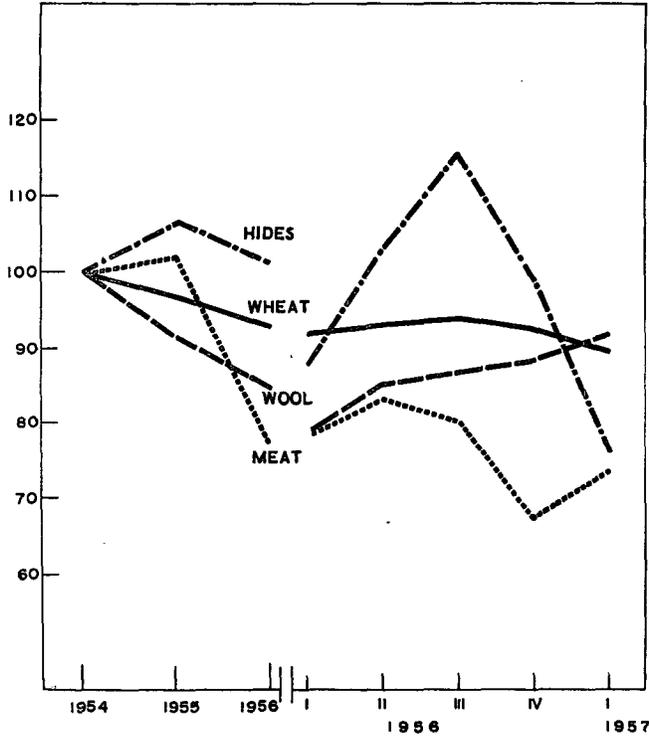


Table 3
LATIN AMERICA : TERMS OF TRADE FOR PRIMARY EXPORT COMMODITIES ^a
(1954 = 100)

	1955	1956	1956 1st quarter	1956 2nd quarter	1956 3rd quarter	1956 4th quarter	1957 1st quarter
Wheat	96.6	92.7	91.7	93.0	93.6	92.3	89.3
Wool	91.1	84.8	78.8	85.2	87.0	88.5	92.0
Hides	106.5	101.0	87.2	102.6	115.5	99.0	76.1
Meat	102.1	77.6	78.5	83.3	80.3	67.5	73.8
Coffee	71.9	71.0	67.8	69.5	73.6	73.0	70.7
Cacao	64.2	43.7	44.7	41.9	45.6	42.3	36.7
Sugar	98.2	101.7	96.3	97.5	97.7	115.9	167.2
Cotton	95.0	77.5	79.1	81.8	74.3	74.7	69.9
Copper	122.8	133.7	143.1	145.9	127.6	118.0	104.1
Tin	101.5	104.6	105.8	100.2	102.7	109.5	100.5
Lead	105.8	108.2	108.3	108.0	108.6	107.8	104.3
Zinc	112.9	119.2	119.3	118.9	119.6	118.7	114.9
Crude petroleum	98.8	95.3	95.4	95.1	95.0	95.0	100.1

Source: ECLA.

^a The terms of trade given here are those resulting from the price indices for Latin America's basic export commodities, as shown in table 1, and the price indices for exports from the United States, Canada and Europe, as presented in table 2. They are consequently not identical with the relationships which would result from applying official Latin American import and export values.

mate means of approach to the subject. In the first six months of 1956 Latin America's total monetary reserves increased by 268 million dollars. During the first five months of 1957, on the other hand, the corresponding increment amounted to only 101 million. But both these figures were influenced by the special position of Venezuela's reserves. In fact, if these are excluded, a rise of 186 million dollars and a reduction of 75 million result for the periods indicated in 1956 and 1957 respectively.

5. TRADE VALUES

Total Latin American trade values during the first quarter of 1957 show increases of slightly more than 110 million dollars (5 per cent) for exports and of 310 million (17 per cent) for imports over the respective figures for the corresponding period of 1956. Furthermore, the total value of exports and imports in the first quarter of 1957 surpassed that of any three-month period in the previous year. With regard to imports, the rise in value corresponds to an increment in volume since their prices did not increase by more than 3 per cent during the period in question.⁹ Although higher freight charges account for 5 per cent of the over-all increase, the rise in value of total imports presupposes an expansion of over 10 per cent in the volume of purchases abroad.

It can be confidently stated that the volume of Latin American exports also increased, although on a smaller scale, in spite of the fact that the export value figures

conceal many very important discrepancies which are due to the divergent and, at times, contradictory tendencies displayed by the external prices and volume of the principal exports.

In order to show the differences in current export value more clearly, countries with similar types of exports have been grouped together (see table 4).

In the first place it may be observed that the only group of countries whose exports declined was that comprising Mexico and Peru which together registered a drop of 23 per cent during the first three months of 1957 as against the figure for the corresponding period in 1956. The exports from this group during the early months of 1956 consisted largely of cotton. This item was unusually large, as Mexico thereby hoped to forestall any adverse effects of the United States' surplus disposal policy. In spite of these exceptionally large sales, however, the joint exports of this group are estimated to have dropped by more than 5 per cent.

In the second place, it should be pointed out that the group of countries — numerically in the majority — which export mainly tropical agricultural commodities, recorded an increment in value of some 4 per cent only. In view of world market prices for their principal exports — coffee, cacao, sugar and cotton — it is more than likely that this increment was primarily a reflection of price behaviour and not an indication of any over-all expansion in the volume of sales abroad.

The group of countries exporting forest products and agricultural and livestock commodities from the temperate zones recorded an appreciable increase, thus maintaining the upward trend begun during the last quarter of 1956. This increase may be attributed princi-

⁹ The index of unit value for Latin American imports is based on the corresponding weighted index for exports from the United States, Canada and 5 European countries. See table 2, footnote ^a. Note table 5, p. 238.

Table 4
LATIN AMERICA : CURRENT VALUE OF EXPORTS, BY GROUPS OF COUNTRIES
(Millions of dollars)

Group of countries	1956				1957 1st quarter	Variations between first quarters	
	1st quarter	2nd quarter	3rd quarter	4th quarter		Millions of dollars	Percentage
Exporters of tropical agricultural commodities ^a . . .	891.8	906.3	831.2	778.1	925.3	33.5	3.8
Exporters of temperate-climate agricultural commodities and forest products ^b	301.0	274.3	274.0	342.3	343.2	42.8	14.2
Exporters of minerals ^c	119.5	184.7	154.1	195.0	143.5	24.0	20.0
Exporters of more highly diversified commodities ^a	328.9	256.3	288.9	302.5	252.8	-76.1	-23.1
Venezuela	510.1	510.4	535.3	567.2	597.6	87.5	17.2
Total for Latin America	2,151.3	2,132.0	2,083.5	2,185.7	2,263.0	111.7	5.2

Source: ECLA, on the basis of official statistics.

^a Including Brazil, Colombia, Costa Rica, Cuba, Dominican Republic, Ecuador, El Salvador, Guatemala, Haiti, Honduras, Nicaragua and Panama.

^b Including Argentina, Paraguay, and Uruguay.

^c Including Bolivia and Chile.

^d Including Mexico and Peru.

pally to the volume of exports, in view of the price trends for such commodities on the international market.

The current value of sales abroad was also considerably higher for the group formed by the principal mineral exporters, although prices slumped during the first quarter of 1957. The increment in the volume of exports was considerably larger than that of the current value of total sales for both Chile and Bolivia, although it was much greater in the case of the former.

Table 5

LATIN AMERICA : VARIATIONS IN CURRENT VALUE OF EXPORTS IN THE FIRST QUARTER OF 1957 IN RELATION TO THE CORRESPONDING PERIOD IN 1956

	Increase or decrease (millions of dollars)	Percentage
Argentina	54.6	24.3
Chile	25.4	25.3
Ecuador	3.4	20.4
Peru	0.5	0.7
Venezuela	87.5	17.2
Cuba	21.3	12.1
Nicaragua	6.4	39.8
Panama	0.5	6.1
Dominican Republic	5.2	14.6
Bolivia	-1.4	-7.4
Brazil	-1.7	-0.5
Colombia	-5.7	-3.9
Paraguay	-2.1	-23.3
Uruguay	-9.7	-14.5
El Salvador	-2.7	-4.9
Guatemala	-0.4	-1.0
Mexico	-76.6	-29.4
Other countries	6.7	15.3
TOTAL	111.7	5.2

Source: ECLA, on the basis of official statistics.

Finally, the current value of Venezuelan exports rose steeply once again, partly owing to the situation of the world petroleum market after the events in the Suez Canal zone.

Table 5 shows the exact export situation of each Latin American country during the first quarter of 1957 and confirms the foregoing statements in greater detail. It also reveals the discrepancies between the countries' export trends, which were strongly influenced by price fluctuations, on the one hand, and by the efforts made to expand the volume of exports, on the other.

6. TRADE BETWEEN LATIN AMERICA AND THE PRINCIPAL INDUSTRIAL COUNTRIES

After the recovery of the European and Japanese markets in the post-war years, Latin America's trade with the United States, Europe and other geographical areas tended to follow a set pattern, 60 per cent going to the United States, a little more than 30 per cent to western Europe and the remainder to the other areas. The changes that have occurred latterly in these proportions have been short-lived and have amounted to no more than incidental adjustment of reciprocal demand even though trade competition between the regions has become progressively keener.

In the first place, Latin American imports into the United States, Western Europe, Canada and Japan during the first quarter of 1957 underwent some relatively important changes in comparison with the same period in 1956. For instance, the United States share of the total dropped from 57 to 53 per cent in 1957, while that of Western Europe rose from a little more than 32 per cent in the first quarter of 1956 to almost 40 per cent in the equivalent period in 1957. This was mainly due to the increase recorded by certain European countries, particularly France, the Netherlands and the United Kingdom.

Figure II

LATIN AMERICA : EXPORTS AND IMPORTS BY COUNTRIES

(SEMI-LOGARITHMIC SCALE)

— IMPORTS FROM LATIN AMERICA - - - EXPORTS TO LATIN AMERICA

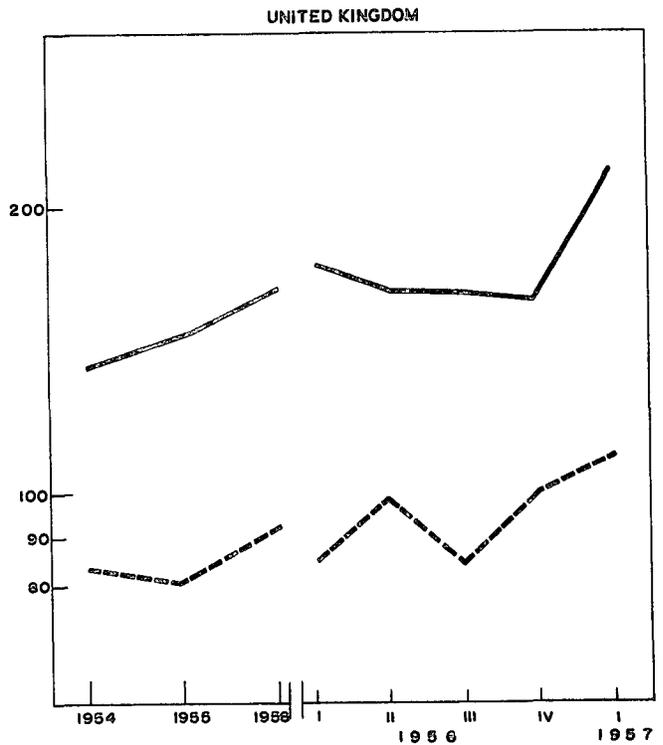
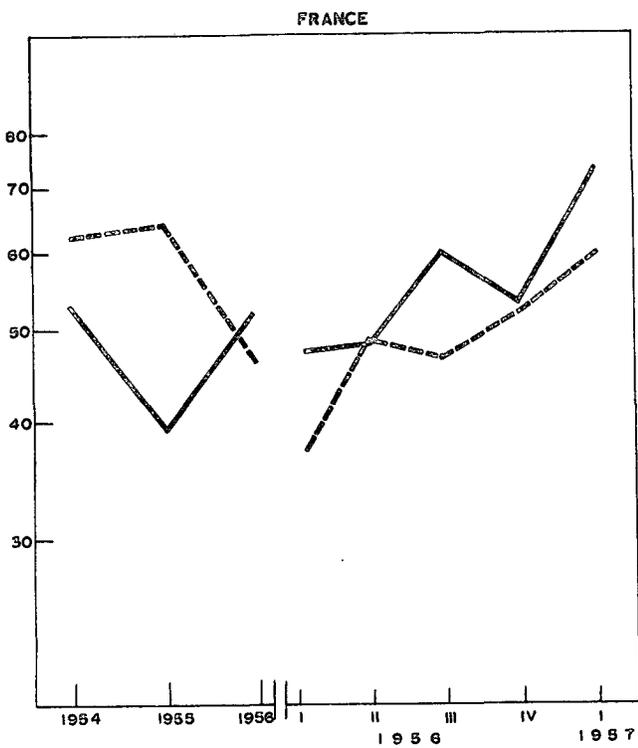
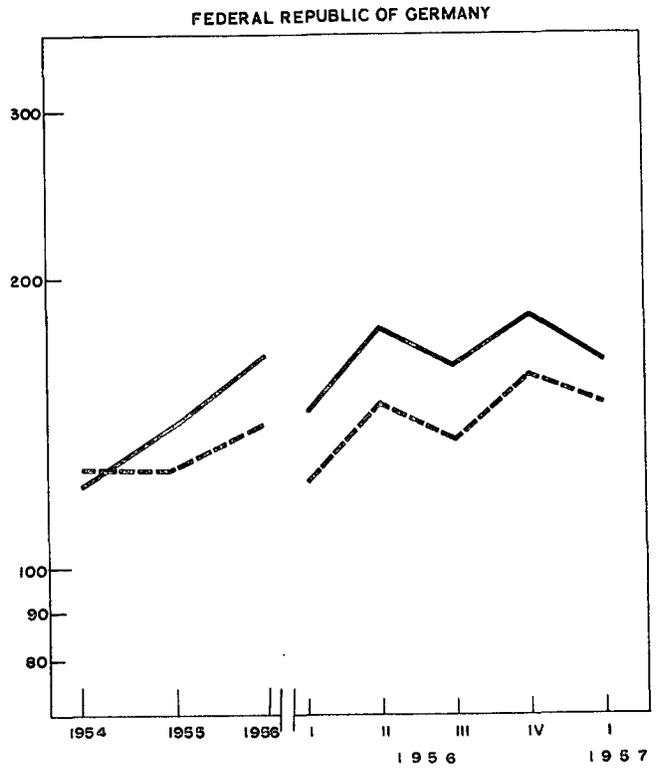
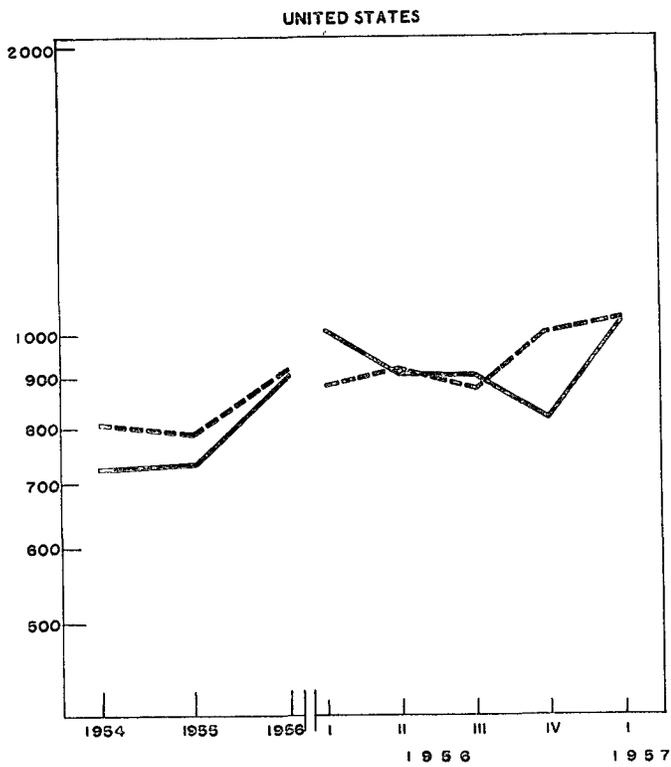


Table 6

IMPORTS FROM LATIN AMERICA

(F.o.b. values in millions of dollars)

From	Imports effected by Quarter	Imports effected by											Total	
		Germany (Federal Republic)	Belgium and Lux- emburg	France	Italy	Nether- lands	United Kingdom	Sweden	Switzer- land	Total for western Europe	United States	Canada		Japan
Brazil	1956 I	19.0	5.4	10.4	9.0	5.7	13.0	11.1	3.3	104.4	204.4	6.7	13.5	329.0
	1956 Average	25.0	6.6	13.1	7.5	6.6	16.3	12.8	3.1	119.6	186.3	7.7	10.9	324.5
	1956 IV	28.7	9.2	13.8	7.7	8.8	14.9	15.0	3.7	132.1	161.9	8.6	9.8	312.4
	1957 I	23.1	7.1	15.1	7.0	8.0	13.3	12.3	4.3	119.9	215.3	7.0	10.1	352.3
Colombia	1956 I	10.3	2.1	0.8	0.8	3.1	1.3	3.8	0.9	26.0	117.7	5.9	0.5	150.1
	1956 Average	9.5	1.9	0.7	0.6	2.7	1.0	3.5	1.1	23.3	102.3	5.1	0.4	131.1
	1956 IV	8.5	1.5	0.8	0.6	2.0	1.9	3.7	0.6	21.2	79.1	4.2	0.6	105.1
	1957 I	7.1	2.0	1.3	0.2	3.0	4.1	3.3	1.0	23.4	96.3	4.0	0.7	124.4
Other exporters of coffee and cacao ..	1956 I	13.5	5.5	3.2	3.1	2.2	8.8	1.9	1.7	43.4	102.7	3.5	3.0	152.6
	1956 Average	22.8	4.9	2.0	3.1	2.8	9.9	2.0	2.5	52.5	73.5	3.7	7.1	136.8
	1956 IV	25.5	2.6	1.5	3.4	2.2	5.4	2.0	2.3	48.0	81.3	4.1	2.0	135.4
	1957 I	25.2	5.4	5.4	3.5	8.2	19.5	2.0	4.2	77.4	94.4	4.3	0.9	177.0
Total for exporters of coffee and cacao	1956 I	42.8	13.0	14.4	12.9	11.0	23.1	16.8	5.9	173.8	424.8	16.1	17.0	631.7
	1956 Average	57.3	13.4	15.8	11.2	12.1	27.2	18.2	6.7	195.4	362.2	16.5	18.4	592.5
	1956 IV	62.7	13.3	16.1	11.7	13.0	22.2	20.7	6.6	201.3	322.3	16.9	12.4	552.9
	1957 I	55.4	14.5	21.8	10.7	19.2	36.9	17.6	9.5	220.6	406.0	15.3	11.7	653.6
Argentina	1956 I	28.5	0.4	13.8	12.6	3.3	66.0	1.0	1.4	138.1	47.4	0.6	8.7	194.8
	1956 Average	31.8	7.3	16.7	15.9	7.4	56.4	1.6	2.8	150.9	33.2	1.0	7.8	192.9
	1956 IV	43.2	8.6	12.9	22.6	11.2	53.8	1.5	3.6	167.1	24.9	1.1	5.9	199.0
	1957 I	30.0	8.0	13.2	20.3	22.5	69.1	2.9	4.0	184.4	39.2	0.7	3.4	227.7
Uruguay	1956 I	5.3	1.9	5.6	2.8	4.2	12.6	0.6	1.4	37.2	11.6	0.3	—	49.1
	1956 Average	7.4	1.5	3.2	2.6	3.7	7.5	0.6	1.2	30.1	6.3	0.2	0.8	37.4
	1956 IV	5.2	1.2	2.7	2.3	3.3	5.7	0.4	0.9	22.9	1.9	0.2	0.2	25.2

		1956 IV	1.5	0.3	3.8	1.7	3.5	7.5	1.6	0.4	28.6	71.3	0.8	19.0	119.7
		1957 I	6.3	0.3	3.9	1.2	0.9	9.4	2.3	1.1	32.4	122.2	2.0	9.3	165.9
Venezuela		1956 I	8.0	2.7	2.8	2.7	20.2	23.6	10.9	0.2	75.7	165.0	41.5	0.1	282.3
		1956 Average	10.9	3.9	5.8	4.6	24.8	23.9	9.8	0.6	88.5	174.4	46.1	0.4	309.4
		1956 IV	16.3	5.6	8.5	7.7	24.6	27.5	12.5	1.0	107.5	192.5	51.8	1.4	353.2
		1957 I	18.3	4.3	13.0	9.8	33.0	42.1	14.3	1.4	138.5	228.8	51.8	1.8	420.9
Mexico		1956 I	28.0	6.2	4.7	3.3	3.0	5.3	4.4	2.3	61.6	123.3	17.0	21.6	223.5
		1956 Average	22.6	4.1	3.7	2.9	2.3	4.0	3.2	2.8	48.0	100.1	9.2	27.8	185.1
		1956 IV	21.1	3.9	4.0	2.2	1.6	3.7	3.8	4.4	45.8	89.1	2.8	43.1	180.8
		1957 I	14.7	4.4	9.8	2.4	2.8	4.3	1.7	3.6	44.6	121.1	3.2	31.5	200.4
Chile		1956 I	17.2	0.6	2.0	9.0	0.3	13.6	0.7	1.6	50.5	48.0	0.1	0.5	99.1
		1956 Average	19.5	0.6	2.0	6.7	0.8	18.3	0.6	2.2	55.1	58.9	0.4	1.0	115.4
		1956 IV	19.5	0.9	1.7	7.7	0.6	19.2	0.1	2.3	56.5	65.1	0.8	1.2	123.6
		1957 I	19.7	0.6	3.0	4.2	0.6	22.3	1.6	1.9	58.3	54.0	0.3	2.6	115.2
Peru		1956 I	7.8	1.4	2.2	0.5	1.9	9.7	0.4	2.1	28.5	34.5	0.3	3.9	67.2
		1956 Average	9.7	2.7	2.3	0.8	1.8	10.2	0.4	2.9	32.4	33.5	0.6	5.6	72.1
		1956 IV	10.3	3.6	3.0	1.6	1.7	11.0	0.4	4.8	38.5	32.1	0.8	10.3	81.7
		1957 I	11.0	2.9	2.5	2.3	0.7	8.9	0.8	1.6	34.5	32.6	0.6	6.6	74.3
Bolivia		1956 I	0.8	0.3	—	—	0.1	7.3	—	—	8.8	10.9	—	0.3	20.0
		1956 Average	0.7	0.2	—	—	0.2	6.8	—	—	8.0	10.4	—	0.5	18.9
		1956 IV	0.7	0.2	—	—	0.1	8.3	—	—	9.4	9.0	—	0.6	19.0
		1957 I	0.7	0.3	—	—	0.3	11.5	—	—	12.8	4.2	—	0.2	17.2
Latin America		1956 I	146.6	27.1	47.6	44.1	46.3	174.8	36.9	15.6	616.4	1,003.6	80.0	56.8	1,756.8
		1956 Average	167.5	34.6	52.2	46.1	55.8	165.3	36.7	20.5	648.3	907.3	80.0	76.0	1,711.6
		1956 IV	184.1	37.8	53.2	58.7	59.8	160.1	41.1	24.2	686.3	818.1	77.7	95.2	1,677.3
		1957 I	164.7	37.7	73.1	55.2	86.6	218.0	42.2	24.9	777.7	1,030.1	76.6	67.5	1,951.9

Source: ECE, *United Nations Statistical Papers*, Series T; United States Department of Commerce.

Table 7

EXPORTS TO LATIN AMERICA

(F.o.b. values in millions of dollars)

To	Exports from Quarter	Germany (Federal Republic)	Belgium and Lux- emburg	France	Italy	Nether- lands	United Kingdom	Sweden	Switzer- land	Total for western Europe	United States	Canada	Japan	Total
12 Brazil	1956 I	12.2	3.8	6.7	7.4	1.3	7.9	8.3	4.0	77.2	74.7	2.5	11.3	165.7
	1956 Average	19.5	3.6	8.2	6.6	2.0	10.6	10.3	4.7	91.9	73.2	3.3	11.3	179.7
	1956 IV	30.3	3.9	12.2	7.9	2.7	13.0	13.5	6.2	118.8	76.4	4.1	11.2	210.5
	1957 I	25.6	3.6	10.9	8.2	3.0	12.9	11.9	5.3	107.5	87.2	5.5	5.4	205.6
Colombia	1956 I	17.8	3.7	3.1	1.2	2.1	5.6	3.3	2.9	42.5	89.6	4.2	1.8	138.1
	1956 Average	16.6	3.0	3.4	1.5	1.7	5.6	3.3	2.5	40.2	78.8	4.5	1.9	125.4
	1956 IV	14.9	1.9	2.8	2.0	1.5	5.5	2.4	2.7	35.7	55.6	4.1	2.0	97.4
	1957 I	6.9	3.0	3.4	1.5	1.6	2.7	1.9	1.6	24.3	44.2	4.3	1.1	73.9
Other exporters of coffee and cacao	1956 I	9.5	3.4	1.9	3.9	2.4	7.5	0.7	1.5	32.4	86.5	5.4	3.8	128.1
	1956 Average	11.4	3.1	2.6	3.4	2.8	7.2	1.2	1.7	35.1	87.6	5.5	3.4	131.6
	1956 IV	12.2	2.4	3.4	3.7	2.8	7.6	1.3	1.9	36.7	91.7	5.4	3.6	137.4
	1957 I	13.3	3.1	3.5	3.5	4.0	6.8	0.9	1.7	38.7	90.8	5.8	4.1	139.4
Total for exporters of coffee and cacao	1956 I	39.5	10.9	11.7	12.5	5.8	21.0	12.3	8.4	152.1	250.8	12.1	16.9	431.9
	1956 Average	47.5	9.6	14.2	11.5	6.5	23.4	14.8	8.9	167.1	239.5	13.3	16.6	436.5
	1956 IV	57.4	8.2	18.4	13.6	7.0	26.1	17.2	10.8	191.2	223.7	13.6	16.8	445.3
	1957 I	45.8	9.7	17.8	13.2	8.6	22.4	14.7	8.6	170.5	222.2	15.6	10.6	418.9
Argentina	1956 I	24.0	1.2	7.3	11.9	9.4	11.2	1.9	3.4	78.6	45.8	0.9	17.8	143.1
	1956 Average	24.7	3.9	7.9	12.2	5.4	12.4	6.6	4.6	86.5	53.1	1.6	9.7	150.9
	1956 IV	24.1	5.3	8.5	16.8	3.2	14.9	14.0	6.1	102.5	60.5	2.3	2.5	167.8
	1957 I	24.2	3.9	9.7	14.4	3.3	19.0	8.8	5.9	98.3	76.2	2.3	2.8	179.6
Uruguay	1956 I	3.8	0.7	1.2	3.1	0.9	3.4	1.7	1.6	18.1	7.3	0.6	1.6	27.6
	1956 Average	3.8	1.0	1.1	1.9	0.9	3.7	1.7	2.0	17.0	8.2	0.8	1.2	28.7

	1956 IV	6.2	2.9	3.4	1.6	2.0
	1957 I	6.1	2.2	4.4	1.4	1.2
Venezuela	1956 I	18.3	8.6	6.6	7.9	5.6
	1956 Average	22.1	7.2	7.9	8.7	7.3
	1956 IV	26.5	5.7	8.6	11.4	7.5
	1957 I	24.6	7.3	9.0	10.4	6.3
México	1956 I	10.8	2.7	3.0	7.6	2.2
	1956 Average	13.1	2.8	3.0	6.9	1.8
	1956 IV	13.8	3.7	3.2	7.6	2.2
	1957 I	14.3	2.8	4.0	7.0	2.0
Chile	1956 I	7.2	0.4	0.7	2.5	0.5
	1956 Average	9.4	0.6	2.9	1.5	0.7
	1956 IV	12.4	0.7	3.7	1.9	0.6
	1957 I	14.0	0.6	2.0	1.4	0.6
Perù	1956 I	5.3	1.9	3.3	1.4	1.0
	1956 Average	7.4	2.0	2.8	1.5	1.8
	1956 IV	9.1	1.7	1.9	1.7	1.8
	1957 I	8.4	2.0	2.8	1.6	1.6
Bolivia	1956 I	2.8	0.6	0.6	0.3	0.3
	1956 Average	2.9	0.4	0.8	0.4	0.5
	1956 IV	2.8	0.4	0.6	0.5	0.2
	1957 I	2.6	0.4	0.4	0.2	0.3
Latin America	1956 I	123.2	29.5	36.9	48.8	28.0
	1956 Average	141.7	32.3	45.8	48.6	26.9
	1956 IV	159.7	31.7	51.2	65.8	26.4
	1957 I	148.6	32.7	59.8	51.0	25.2

Source; ECE, *United Nations Statistical Papers*, Series T ; United States Department of Commerce.

5.7	0.4	1.6	29.0	146.2	4.6	1.0	180.8
5.5	0.7	1.6	28.0	158.0	4.4	0.9	191.3
30.3	2.6	3.7	88.0	153.9	7.7	3.4	253.0
23.4	2.6	4.0	88.0	162.9	8.8	4.0	263.6
21.4	2.5	4.2	92.9	191.4	12.1	4.9	301.3
22.3	2.5	3.4	90.4	209.7	7.1	4.2	311.4
6.3	1.9	3.0	44.8	191.6	7.9	1.1	245.4
6.7	3.0	3.9	45.4	210.1	10.1	1.8	267.4
7.2	2.3	4.3	47.9	236.4	11.9	3.1	299.3
7.6	3.0	3.9	47.5	217.7	11.8	2.1	279.1
3.2	1.3	1.5	21.5	26.5	0.7	1.5	50.2
3.7	2.4	1.4	25.5	38.6	1.1	1.9	67.1
5.1	3.4	1.8	31.8	50.2	1.4	1.9	85.3
4.0	2.0	1.5	28.1	49.4	1.2	2.8	81.5
10.0	1.2	1.7	26.7	36.6	1.8	1.7	66.8
9.8	1.5	1.7	30.1	39.7	2.9	2.1	74.8
8.9	1.7	1.7	30.1	43.5	4.3	2.7	80.6
8.3	1.5	1.8	30.0	51.6	2.3	3.8	87.7
1.5	0.3	0.3	6.8	12.0	0.3	0.2	19.3
1.1	0.4	0.6	7.3	11.8	0.4	0.7	20.2
1.0	0.5	0.6	6.9	11.1	0.3	0.6	8.9
1.1	0.5	0.3	5.9	9.5	0.3	0.8	16.5
84.0	24.0	25.3	461.3	881.5	36.1	42.4	1,421.3
91.3	34.2	28.7	522.0	920.1	45.1	41.0	1,528.2
99.0	44.7	34.3	577.0	1,007.4	57.6	37.9	1,679.9
109.5	36.5	28.8	553.4	1,036.8	58.6	34.7	1,683.5

A comparison of the statistics for exports from the United States, western Europe, Canada and Japan to Latin America does not reveal any major changes. Exports from the first two regions remained at the same level during the first three months of 1956 and 1957, while those from the United Kingdom and the Federal Republic of Germany increased appreciably. If, however, the last quarter of 1956 is compared with the first quarter of 1957, the United States contribution to the total is seen to have risen, while that of western Europe, with the exception mainly of the United Kingdom and France, fell appreciably. It remains to point out that in the majority of cases exports during the first quarter of 1957 surpassed the average quarterly figure for 1956, the United States accounting for the greater part of this increment.

A comparison of the figures for this group of countries' exports to Latin America with those of their imports from the same region is extremely important (see tables 6 and 7 and figure II). While western Europe's imports from Latin America exceeded its exports, resulting in a favourable trade balance for Latin America as a whole, the United States sold more than it bought in Latin America. Moreover, in 1956 the United States bought less from Latin America while its sales to that region gradually increased. This confirms the earlier assertion that the United States has consolidated its positive trade balance with regard to Latin America.

These statements have been summarized in tables 6 and 7 and figure II referred to above. Table 6 gives statistics on imports from Latin America by European countries, the United States, Canada and Japan, while table 7 shows the exports from these countries to Latin America. It should be borne in mind that both tables give f.o.b. values, and include only 88 and 70 per cent of Latin American imports and exports respectively, although they cover almost all imports of agricultural, industrial and mining machinery and vehicles. For these reasons, the figures in the tables for over-all Latin American trade differ from those cited in the foregoing pages.

7. THE TRADE PATTERN OF SELECTED COUNTRIES

The changes that took place in Latin America's over-all foreign trade pattern reflect the different trends that it displayed in each country. The lack of statistics and detailed information on the individual countries prevents a more exhaustive analysis from being entered upon here, but it has nevertheless been possible to collect some foreign trade data for five of them which will be discussed in the following pages.

(a) *Argentina*

To judge by preliminary information, the aggregate value of Argentine exports during the first half of 1957 amounted to 520.7 million dollars, or 77.5 million more than the total for the equivalent period in 1956. At the same time, imports rose to 615.7 million during the same period, exceeding the figure for the first half of 1956 by 41.3 million. According to these statistics, the trade deficit for the first 6 months of 1957 would be 95.1 million

dollars as against 131.2 and 124.7 million for the same periods in 1956 and 1955 respectively. This reduction was apparently attained without imposing further controls on imports than those already in force in previous years. These import restrictions, introduced because of Argentina's inadequate capacity to import in recent years, were one of the main impediments to the development of the economy, the normal evolution of which had been retarded by the acute shortage of imported raw materials and intermediate products and by the inadequacy of the import substitution measures adopted in respect of primary commodities, and the difficulties arising from the unsatisfactory energy supply and transport facilities.

Argentina's aggregate foreign trade balance reveals important discrepancies if a comparison is made between the two main areas into which this trade is divided. For instance, it had a credit balance with the multilateral payments area, while its deficit with the United States rose from 28 million dollars in 1956 to 71 million in the first five months of 1957. It was obliged to draw on a certain amount of its gold reserves, while simultaneously its foreign exchange credits with the multilateral payments area increased and some previous debts with the same area were liquidated.

As already stated, the shrinking trade deficit was the result of increased exports, mainly cereals, meat, wool and edible oils. It should be noted that the volume of wheat exports during the first quarter of 1957 was approximately the same as in the same period in 1956, although the 1956/57 harvest was slightly over 7 million tons, or 35 per cent more than in the foregoing period. It was agreed to sell 1,200,000 tons to Brazil during the current year at the prevailing world market price, for an estimated value of some 65 million dollars. Similar contracts were signed with Chile for the sale of 200,000-300,000 tons.

As the expectations for the disposal of the exportable maize surplus did not materialize, sales abroad will be no higher than in the preceding year, and the loss is estimated at over 40 million dollars.

The value of meat exports rose by 24 million dollars in 1957 — an increase of 13 per cent over their value for the first half of 1956 — while their volume expanded by 16 per cent. These two percentages show that, during the first half of the current year, the average price of meat fell again slightly, whereas meat exports maintained the pronounced upward trend that had characterized them in 1956, when 11.2 million head of cattle were slaughtered, or 1 million more than those produced. Practically the entire increase in the various kinds of meat exported by Argentina consisted of chilled beef, the volume of which doubled as compared with 1956, while exports of the other kinds either expanded slightly or remained stationary.

With regard to imports, attention should be drawn to the continuous increase in purchase of fuel and lubricants. In the first 6 months of 1957, their value was estimated at 149 million dollars (24 per cent of the total) as against 103 million (18 per cent) for the same period in 1956. Imports of textiles and textile manufactures

also rose from 13 million dollars in the first half of 1956 to 27 million in 1957, increasing their relative share of the total from 2.2 to 3.8 per cent. On the other hand, imports of foodstuffs and of iron and iron manufactures recorded a decline. No significant changes were observed for the other items.

Finally, it should be pointed out that Argentina received 56.1 million dollars during the first half of 1957, as part of a loan from the Export-Import Bank to finance the purchase of machinery and industrial equipment. Including this loan, the credits extended to Argentina by the Bank totalled 216.1 million dollars.

(b) *Brazil*

During the first half of 1957, Brazil's foreign trade situation deteriorated, showing a deficit of more than 100 million dollars in contrast to its credit balance of 171 million during the first half of 1956. Moreover, Brazil has to pay approximately 188 million dollars, worth of foreign exchange in 1957 for servicing of debts. Its international holdings shrunk from 612 million dollars in December 1956 to 573 million at the end of March 1957.

This deterioration in the trade balance, which began in the first quarter of 1957, became more pronounced during the next three months. In fact, although aggregate exports for January-March were approximately equivalent to those for the same months in 1956, they were considerably less than the totals for the three remaining quarters. From April-June 1957, exports of the three main items — coffee, cotton and cacao — decreased although for different reasons. In the case of coffee, of which 2.2 million bags — 22.6 per cent — less were sold in the first half of 1957 than in the same period in 1956, the cause of the decline lay in the reduced demand for Brazilian coffee on the world market. Exports of this crop to the United States dropped 22.5 per cent in the periods indicated, while to other parts of the world they fell off by 24.6 per cent. This decline did not coincide with a similar falling-off in world demand for coffee. Global imports amounted to 18.7 million bags in the first half of 1957 i.e., only 3.2 per cent less than the 19.3 million bags imported in the first half of 1956. During the same periods, the United States imported a total of 10.4 and 11.2 million bags respectively i.e., only 7 per cent less in 1957. Thus the greater part of the decline in Brazilian exports was due to the fact that other coffee exporters were able to compete more favourably on the world market. In this respect, some reference should be made to the continuous expansion of the African contribution to United States coffee imports, which constituted 15 per cent of the total in the first half of the current year as against only 10 per cent in the first half of 1956.

Cotton exports were scarcely a third of their volume for the same period in 1956. This phenomenon was a result of the heavy reduction in supplies following an appreciable drop in production. This drop induced the Brazilian Government to fix maximum export quotas for the first months of 1957 in order to give priority to the supplying of the internal market.

The drop in cacao exports, which from January to May 1957 were 39 per cent lower than for the same months in 1956, was due mainly to the fixing of official maximum export prices which were considerably higher than those quoted on the international market. This measure was naturally adopted when Brazilian exports constituted the principal and most immediate source of supply (the African crops reaching the market in the second half of the year), but even so buyers showed considerable resistance and the high quotations for Bahia cacao were of a purely nominal character.

Although insufficient data are available on imports, it is known that during the first quarter of 1957 they were slightly higher than during the first and second quarters of 1956. As yet, there has been no sign of any intensification of import restrictions designed to offset the appreciable trade deficit for the first half of 1957.

(c) *Chile*

The slump in world copper prices during the current year has constituted a serious obstacle to the fulfilment of the Chilean Government's economic stabilization programme, since the income from exports of this metal is vital to the economic life of the country. Although Chile has succeeded in defending itself to a certain extent against the depressive effect of the status of its primary export on the world market by increasing its export volume and thereby partially compensating for the fall in prices, its success during the first quarter of 1957 was purely relative and could not be maintained during the second quarter. Actually not only did copper prices abroad continue to fall during the latter period, but there was also a substantial contraction of demand. Thus, although copper exports during the first quarter of 1957 were 25 per cent above their level during the same period in 1956, the increment for the whole period January-June was no more than 19 per cent. Furthermore, no official decision was taken to restrict copper production which, in the first half of 1957, exceeded its volume for the first half of 1956 by 6.7 per cent. If a comparison is made between the first quarters only, this increment amounted to 20 per cent.

In contrast to the 19 per cent rise in copper exports during the first half of 1957, the average price for copper in New York dropped 27.5 per cent below that for the first half of 1956. In the following months, prices continued to fall and it was not until mid-September that the market appeared to have achieved a certain degree of stability, although the prevailing price of 28.5 cents per pound in New York was 32.3 per cent lower than the average price in 1956.

The second most important Chilean export — nitrate — also passed through a critical period. Production in the first 4 months of 1957 fell 10 per cent below its level during the equivalent period in 1956, in which year it had already been considerably lower than in 1955. An even greater reduction took place in the volume of exports which, in the first five months of 1957, was 19 per cent lower than in the same period in 1956.

According to data for the first quarter of 1957, Chile had a favourable trade balance of 19 million dollars.

If this is compared with its balance for the first quarter of 1956, when there was a deficit of 6 million dollars, the situation appears to be very favourable. It should be remembered, however, that the deficit for the first three months of 1956 was completely absorbed during the course of the year and that a credit balance of 191 million dollars was recorded at the end of 1956. In view of prevailing trends in the copper market there is no likelihood that this situation will recur, and it is to be feared that the small credit balance accumulated during the first quarter of 1957 will be reduced in the following months.

The total value of imports during the first quarter of 1957 — 106 million dollars — was exactly equal to their total value for the first quarter of 1956. Yet in view of the deterioration in the copper market in recent months, the authorities raised the percentage for advance deposits in respect of a large number of goods, a measure which will undoubtedly succeed in maintaining imports at their 1956 level, if not in substantially reducing their volume.

(d) Colombia

During the first five months of 1957, the pattern of Colombia's trade showed very different tendencies from those observed during the similar period in 1956. The total value of exports dropped to 215 million dollars — 10 per cent lower than the corresponding figure for the first five months of 1956 — while imports amounted to only 155.8 million dollars i.e., 47.2 per cent less than in January-May of the previous year. This exceptional decline in imports enabled the country to devote a greater proportion of its current foreign exchange earnings to the payment of the large trade debts it had contracted in 1955 and 1956. At the beginning of 1957, the Colombian authorities came to an agreement with their foreign creditors to liquidate 60 per cent of their debts in cash and to pay the remaining 40 per cent by means of bonds maturing in 2 years. The very appreciable reduction in purchases abroad has led to the gradual liquidation of the majority of these outstanding trade debts¹⁰ and Colombia's international reserves showed a decrease of only some 10 million dollars at the beginning of July in comparison with their level at the end of December 1956.

In mid-June of the current year the Colombian Government adopted several measures to improve the economic situation of the country and its balance of payments by introducing a large-scale exchange reform. The main object of this reform was to eliminate the complicated system of quantitative restrictions and multiple rates of payments in force, and to place foreign currency quotations on a more realistic basis. Hitherto almost all imports — 95 per cent in 1955 and 81 per cent in 1956 — were paid at the official exchange rate which, in spite of the various surcharges levied, was still considerably lower than the rate of payment for imports on the free market. This over-valuation of the peso acted, to a large extent, as a strong stimulus to imports. When the reform entered into force, the official rate of exchange

¹⁰ No information is available on the amounts still outstanding.

was abolished and replaced by a free market on which foreign currency quotations were governed by the laws of supply and demand. The operation of the new system may be summarized briefly as follows :

(a) All export earnings in foreign currency are exchanged in the *Banco Central* for "exchange certificates" or "foreign exchange securities" issued in United States dollars and liable to a 15 per cent export tax ;

(b) These certificates and securities are freely negotiable on the market within a period of 15 days at the prevailing market rate,¹¹ but they are valid only for the payment of items appearing on the list of free imports, for imports that have been previously authorized, or for certain payments on the invisible items account ;

(c) All imports are liable to a 10 per cent duty which has to be paid in dollars when the importers present the securities or certificates to be exchanged for drafts payable abroad to cover the respective imports ;

(d) The various percentages representing the advance deposit, which importers had to make depending on the value of their imports, were standardized at the rate of 20 per cent.

The reform thus has two fundamental aspects : to exporters it implies a considerable increase in national currency earnings that will be appreciable even after payment of the 15 per cent export duty. As a result of this increment, the *Federación Nacional de Cafeteros* was able to raise supporting prices for coffee within the country. With regard to exports of secondary importance, there was no fundamental change in the situation, since at the end of 1956 they were already protected by a device similar to the "foreign exchange securities" system. So far as importers are concerned, the restrictive effect of the reform is partly attributable to the higher exchange rate¹² and partly to the additional 10 per cent duty on drafts payable abroad. Nevertheless, the part played by the free rate of exchange as a means of restricting imports is, to a certain extent, only supplementary to the basic control device consisting of an expanded list of prohibited imports and a smaller list of imports requiring prior authorization.

Income derived from export and import duties was set aside for the creation of an exchange stabilization fund to cushion the effects of fluctuations in foreign exchange security quotations on the free market.

The repercussions of the exchange reform adopted in mid-June cannot be fully assessed in so short a time. Nevertheless, mention may be made of the fresh impulse given to coffee exports which, from February onwards, had shown a decided downward trend. Between March and June the monthly volume of exports, which normally varies between 400,000 and 500,000 bags, dropped to

¹¹ After 15 days, the exchange certificates may be sold only to the *Banco de la República* at the prevailing seller's rate, and at a 2 per cent discount. One of the main purposes of these certificates is apparently to prevent exporters from accumulating foreign exchange for speculative purposes.

¹² Foreign exchange securities were quoted in recent weeks at more than 100 per cent above their previous official quotation.

less than 300,000. Yet the total number of bags exported increased considerably in July, reaching more than 600,000. In spite of this improvement, the total number exported during the first 7 months of 1957 was 2.7 million, i.e., 16 per cent less than the figure of 3.2 million registered for January-July 1956. In contrast, other exports such as petroleum, cement, tobacco, and cotton textiles increased, although the last three items still represent a very small proportion of total exports.

External credits totalling 87 million dollars¹³ were one of the decisive factors in the development of the Colombian economy during the present year. These credits were used to liquidate all outstanding trade debts to United States creditors up to 1 May, from which it may be assumed that Colombia's trade credit was fully re-established by the second half of the year. Furthermore, at the end of June the International Monetary Fund granted a stabilization loan of 25 million dollars (under the Stand-by Agreement), in order to enable the monetary authorities to operate in the free market for foreign exchange securities, and to reduce the scale of the fluctuations in the quotations for the latter.

(e) *Mexico*

In contrast to 1956 — when various abnormal factors came into play which affected in particular the export value of certain commodities — Mexico's foreign trade during the first half of 1957 reflected market trends and seasonal variations in agricultural production more faithfully. In so far as exports are concerned, the main changes affected cotton. In order to forestall the possible adverse effects of the United States surplus disposal policy and to begin the new agricultural year with no cotton stocks on hand, Mexico stepped up its cotton exports during the first few months of 1956, and continued to export large quantities during the remainder of the year as a result of the bumper crop. On the other hand, cotton sales dropped considerably during the first half of 1957, for the reasons mentioned above and because of a somewhat poorer harvest in the corresponding agricultural year. Apart from the special situation of cotton, other factors led to a decline in exports of copper, among other items, with the result that the total value of Mexican exports from January to June 1957 amounted to no more than 334.5 million dollars i.e., 25 per cent less than during the same period in 1956. If cotton is excluded, however, this decrease represented only 3.3 per cent.

Imports were also affected by certain exceptional factors in 1957, especially an unusual rise in the import values of scrap, petroleum derivatives and maize, that of the latter being due to a poor harvest during the year in question. Consequently, total imports from January to July, which amounted to 569.8 million dollars, were 10 per cent higher than those in the first half of 1956.

The adverse trade balance of 235.3 million dollars was offset partly by the net income from tourist traffic, which was estimated at some 150 million dollars, and partly

¹³ The Export-Import Bank, Washington, granted 60 million, and other United States banks 27 million.

by remittances from Mexican seasonal workers abroad which amounted to approximately 12 million.

The total balance-sheet of goods and services, excluding returns on foreign capital invested in Mexico, showed a deficit of more than 70 million dollars for the first six months of the year. It should be pointed out, however, that the cost of some of the more important import items, which was estimated at a little more than 20 million dollars, was defrayed through medium- and long-term foreign loans and credit.

The total volume of exports registered a drop of 28.5 per cent in the first half of 1957 in comparison with the same period in 1956, but, if cotton is excluded, this becomes an increment of 6.8 per cent. Foreign tourist traffic showed an annual rate of growth similar to that of 1956, which was approximately 15 per cent. The volume of imports was larger by 12.2 per cent, but their prices rose 4.1 per cent on the average, while those of exports increased only 3.6 per cent. As a consequence of this, and in view of a decline of 0.5 per cent in the terms of trade together with a decrease in the volume of total exports, the capacity to import was reduced by 28 per cent.

Nevertheless, if the special factors affecting foreign trade in 1956, and which gave rise to the sharp contrasts in the statistics for the first half of 1957 and for the preceding period, are borne in mind, the situation of this sector during the whole of the current year does not appear to be as unfavourable as in the first few months.

As already pointed out, the marked decline in exports was due mainly to the falling-off in cotton sales; reductions in such items as minerals and manufactured goods were also partly responsible and were not offset by increased sales of such important commodities as sulphur, coffee and livestock.

From the first half of 1956 to the first half of 1957, cotton exports declined 74.7 per cent in volume and 77.7 per cent in value, these figures primarily reflecting the unusually large sales during the first half of 1956. Clearing operations, designed to offset the impact of the unfavourable world market for this fibre, and which provided for certain imports to be paid for in Mexican exports, involved exports and imports to the value of 71 million dollars in both cases in the course of 1956, almost 90 per cent being constituted by cotton. In May 1957, Mexico still had some 17 million dollars' worth of cotton to export from the balance of the clearing operations carried out in 1956. In view of the large scale of these operations, the system of sales through clearing accounts will probably remain in force throughout 1957.

Coffee exports underwent a substantial increase. In comparison with the first half of 1956, the corresponding sales in the first half of 1957 showed increments of 11 per cent and 10 per cent in volume and value respectively. In order to ensure the maintenance of this level, the Government fixed a new official price for coffee which was lower than that previously in force and which was intended to reduce the effect of the *ad valorem* duty on this commodity. Coffee nevertheless remained the second most important Mexican export after cotton.

Tomato exports, which had been showing a downward trend during the whole of 1956, rose sharply in the first half of 1957. The amount of 63,000 tons exported during the latter period represented an additional 41 per cent in foreign currency earnings, in spite of the lower prices for this crop. Cattle exports also soared, almost trebling their figure for the first half of 1956. Bananas, peanuts and sisal showed similar improvements, while sales of prawns, chickpeas and fodder were reduced.

Total copper exports in the first half of 1957 declined 42 and 56 per cent in volume and value respectively. While in 1955 and 1956 copper was the principal source of foreign exchange in the group of mineral products, during the first half of 1957 it was relegated to the fourth place after lead, petroleum and zinc. The volume of lead exports increased 19.7 per cent over the corresponding figure for the first half of 1956, and its value rose 13.6 per cent. Zinc sales went up 14.2 per cent in volume in comparison with the period January-June 1956, although their value increased only 13 per cent. During the first half of 1957, the volume of sulphur exports which had almost trebled from 1955 to 1956 was 106.6 per cent greater than in the first half of 1956, and 97.2 per cent higher in value. This notable increment in the sales of Mexican sulphur abroad bears witness to Mexico's status as the world's second largest producer. It remains to add that all the minerals cited above showed a greater increase in volume than in value as a result of the drop in world prices. Petroleum exports decreased in value considerably in the first half of 1957, while that of silver exports rose 6.6 per cent. Increments in value were also recorded for manganese, calcium fluoride and barium sulphate.

A comparison of exports of manufactured goods during the first six months of 1956 and 1957 shows a decline

of 4.8 per cent in volume and 5.7 per cent in value, principally due to reductions in the volume and value of refined sugar and hemp yarns and textiles.

The increment in total imports did not affect all the commodity groups and was accompanied by a change in the import pattern, consisting mainly in a sharp upward movement in both absolute and relative terms for non-durable consumer goods, fuels and lubricants and raw materials for capital goods. With regard to the first group mentioned, this upward movement was the result of increased maize imports. The other two groups, especially that of raw materials for capital goods, were equally noteworthy for a rise in prices and an increase in import volume. Furthermore, a significant increment in absolute terms was recorded for capital goods imported for industry and mining, and, on a lesser scale, for imports of durable consumer goods. The most important change of all was the increase in imports of non-durable consumer goods.

The upward movement in imports of non-durable consumer goods which had been observed in 1956 — following upon the declines recorded for 1954 and 1955 — was much more pronounced in 1957, particularly as a result of heavy purchases of maize. In fact, these imports, which had amounted to 400 and 30,000 tons in the first halves of 1955 and 1956 respectively, expanded to 206,000 tons in the first six months of 1957. This notable expansion may be attributed mainly to a falling-off in production, to the increasing use of this grain as raw material for the transforming industries and to the demand for it as a food for poultry and livestock, although some of the imports may have been intended to replace stocks which had diminished towards the end of 1956.

THE ECONOMIC DEVELOPMENT OF BOLIVIA *

PRELIMINARY NOTE

At the beginning of 1956 the Government of Bolivia requested the secretariat of the Economic Commission for Latin America to prepare a study on the economic development of Bolivia, on which a programme for the next few years could be based. In response to this request, the secretariat discussed the matter with the Bolivian authorities, and, early in February of the same year, it was arranged with the Deputy Executive Director of the National Commission for Co-ordination and Planning (*Comisión Nacional de Coordinación y Planeamiento*) that ECLA should undertake the study in question. At the same time, the Bolivian Government requested the United Nations Technical Assistance Administration to appoint experts to collaborate with the ECLA economists and, in particular, to analyse problems relating to foreign trade, industry, energy and transport, as well as to the social factors influencing economic development. For the study of topics connected with agriculture, the co-operation of the United Nations Food and Agriculture Organization (FAO), through the ECLA/FAO Joint Programme and the standing FAO mission in Bolivia, was sought and obtained.

By agreement among these international agencies, a mission was constituted in mid-1956 composed of members of the ECLA secretariat staff and experts from TAA and FAO, under the direction of one of the economists from the secretariat. This mission worked at the ECLA headquarters, in Santiago, Chile, from July to September 1956, and, after spending October, November and December of the same year in Bolivia, returned there in February 1957 to gather the final data needed for the study. During their stay in Bolivia, the experts had the opportunity of visiting selected areas of the country and collecting opinions at first hand from high-ranking Government officials, representatives of private enterprise and many other persons in various walks of life who were cognizant of the facts and problems of Bolivia's present situation.

The main difficulty encountered in the execution of the study was the inadequacy of statistical sources and available data. The absence of any systematic arrangements for the compilation and classification of statistics, the discrepancies between some of the series to hand, and the sporadic nature of such limited data as existed in almost all branches of economic and social activity, constituted obstacles familiar to everyone in the country concerned with such matters. Despite the invaluable co-operation of the Bolivian officials who assisted the

mission in its endeavours to overcome such difficulties, part of the latter's time had to be devoted to the collection and elaboration of elementary background material and to searching for the necessary documents — not always successfully — in libraries and files. The lack of accurate data often compelled the experts to resort to estimates, which, however, were based, as far as circumstances permitted, on the maximum degree of observation and most careful appraisal possible of actual facts. If to these problems is added the shortness of the mission's stay in the country, the weak points in many aspects of the present study will be readily understood.

The work of the Technical Assistance Administration and FAO experts who were appointed to collaborate with the mission provided the basis for the studies included here on the various sectors of the Bolivian economy, as well as for the analysis of its more general problems. The mission's work was at all times closely integrated, and the conclusions reached are the outcome of constant discussion and exchange of views among all its members.

It must in justice be stressed that the present study could not have been carried out but for the invaluable co-operation of the Bolivian authorities, who unfailingly provided the material means and moral support indispensable for its implementation. Of inestimable importance, from the purely technical standpoint, was the assistance rendered by the Ministries responsible for economic affairs, by the National Commission for Co-ordination and Planning, the *Banco Central de Bolivia*, the Statistics Department (*Dirección Nacional de Estadística*), the Mining Corporation of Bolivia (*Corporación Minera de Bolivia*), the Bolivian Development Corporation (*Corporación Boliviana de Fomento*), the Bolivian State Petroleum Deposits (*Yacimientos Petrolíferos Fiscales Bolivianos*) and other institutions of which the list is too long to be given here. Similarly valuable was the co-operation of the Chambers of Industry and Commerce, of the mining companies and of outstanding personalities in the fields of industry, trade, agriculture, mining and science. The mission was also able to take advantage of the wide knowledge and experience of the specialists attached to the United States co-operation programme and of the many experts from the United Nations and its specialized agencies who are permanently stationed in Bolivia; in addition, it was in daily contact with the office of the Special Representative of the Secretary-General of the United Nations, whose unflagging interest in the activities of the mission represented a vital contribution to the carrying-out of the study.

* The following pages should be considered as an advance text and résumé of a study which will be published shortly under the same title.

A. GENERAL PROBLEMS OF THE BOLIVIAN ECONOMY

I. INTRODUCTION

From the geographical, historical and economic points of view, Bolivia stands out among the Latin American countries as a special and highly interesting case. Broadly speaking, many of its characteristics are those common to the other countries of the region. Nevertheless, because of its geographical position, its physical environment, its population structure and the hierarchical composition of its society, Bolivia's history and economy display peculiar features of their own. It might even be asserted that many of the problems which have, in a less intensive degree, affected the economic and political evolution of the other countries of Latin America have assumed in Bolivia their most acute and dramatic form.

The social and political development of Bolivia is partly explained by the country's economic and population pattern since the time of the Incas. Bolivia can be divided into three clearly-distinct geographic zones. The first is the *Altiplano* or high plateau, which, bounded by the double chain of the Andes, has an average altitude of 4,000 metres, and covers 14 per cent of the territory. The second is formed by the low-lying plains to the eastward, with their tropical or sub-tropical vegetation, and comprises 70 per cent of the total area. And between these two stretches the region of the Valleys' which accounts for the remaining 16 per cent of the national territory. From time immemorial, the population of Bolivia has been concentrated on the high plateaux and in the valleys, especially the former, while the eastern lowlands are still to this day mainly virgin wilderness, practically marginal to the economy. In the first place it was the primitive community, collective farming and the actual origin of the race which peopled the land, that determined this singular distribution of the population. Later, the mining economy was responsible. From the earliest years of the Conquest, the summits of the Andes and the *Altiplano* became the most famous mining site of the time. Potosí is the symbol of this economy centred upon the lodes of precious metals, where agriculture remained as primitive as in the past and cities sprang up at the pitheads or along the roads leading to the mines; where fortunes lasted as long as the wealth of the deposits, or were spent abroad, and only poverty and deserted townships were left after the inevitable exhaustion of the veins of ore.

Since colonial times, Bolivia has remained a mining country up to the present day. When there was no more silver, tin came to the fore and the boom in tin began at the close of the last century. The economy then continued to be as dependent on the product of the mines as during the colonial period. Some aspects of this new era bore the stamp of modern capitalism. The *mita* (or Incaic method of casting lots to determine the distribution of work) was replaced by the wage system; modern plants superseded the primitive amalgamating-works; and it was along metalled roads instead of the original bridle-paths that the ore was carried to the ports. Bolivia took its place as the world's second tin producer, and

in addition possessed many other metals that enlarged the volume of its foreign trade. But apart from the mining economy, the outward aspect of the country hardly changed at all. In the rural areas, where the majority of the population dwells, the farming methods, social relationships and customs of the colonial and pre-Columbian epochs still survived. As mining is carried on exclusively in the *Altiplano*, this was still the centre of Bolivian life, while the lowlands remained neglected and cut off. The destination of the profits accruing from the mines and even the domicile of the enterprises themselves were outside the country, and the monetary economy barely embraced an incipient industry and an urban middle class in some few of the large towns. In the mid-twentieth century, Bolivia, with a *per capita* income equivalent to 82 dollars, was among the least developed countries in the region.

A quarter of a century ago, two events, or rather two catastrophes, occurred in Bolivia which determined the course of its history up to the present time. The first was the tin crisis, which reduced the country's economy to incredibly low levels. Although in later years there were temporary booms on the tin market, since that time domestic factors, among them the depletion of the deposits, have prevented any real recovery. The second of these calamities was the Chaco war, which apart from the enormous cost to Bolivia in terms of human life and material expenditure and the loss of part of its territory, led to an internal political crisis which was both deep-rooted and prolonged. The rising generation of politicians, eager for economic and social reform, found itself confronted with the inescapable reality of an impoverished nation. From the mid-thirties onwards, necessity or impatience for some form of action led to ambitious economic measures, and almost all Governments indulged still more freely in the practice, already chronic in Bolivia, of adopting dangerous financial expedients. The result, from the economic standpoint, was the initiation of an inflationary process which, with the passage of time, has become the most serious ever experienced by any country in America.

The economic, political and social crisis culminated in the revolution of April 1952, which was characterized by the application of measures that radically transformed the country's traditional economic structure. These included the nationalization of the large mining companies, the land reform, active participation in trade union policy and programmes for the diversification of the economy. The changes that have taken place have had repercussions on all aspects of Bolivian life. On the one hand, the nation has assumed responsibility for its most important economic activity. On the other, the traditional patterns governing social relationships within the agrarian economy have been destroyed, with the intention, as yet unfulfilled, of replacing them by more modern systems of land tenure and farming based on the productive use of capital. Moreover, an organized working class prepared to fight for its rights has acquired a position of singular pre-eminence in mining and indus-

try, where trade union interests frequently clash with the need for discipline and material progress. Lastly, in a period when the resources of the State and of the economy as a whole are at a low ebb, ambitious projects for the economico-geographical integration of the eastern plains have been undertaken or tested.

Since all these changes coincided with serious fluctuations in the prices of Bolivia's exports, the country's economic situation rapidly deteriorated during the past four years. The inflationary process has become increasingly acute and Bolivia, in order to survive, has had to use up its international reserves, its foreign credit and even its capital. The economic aid granted to the country by the United States Government since 1953, although reaching higher figures than anywhere else in the western hemisphere, has partially eased but not completely remedied the situation. Faced with the prospect of chaos, the Bolivian Government decided to take energetic action, and in December 1956 began to apply a stabilization policy, the results of which are awaited with interest in the region.

Stabilization is the immediate target of the Government and the people of Bolivia, and rightly so. Unless inflation — daily more serious in the last few months — can be halted, the outlook is gloomy indeed. It is natural, therefore, that every effort should be made and every kind of sacrifice exacted to restore order in the country's economy. But at the same time, Bolivia will have to make sure that it does not neglect its economic development. The evils by which it has always been beset, especially in recent years, are due in the final analysis to the low productivity of its human resources, to the absence of capital formation, to the concentration of its activities on a single branch of production, to the lack of a spirit of enterprise ; in a word, to the under-developed state of its economy. However daring the social reforms of the last few years, they would have achieved greater success in a shorter time if the country had reached a more advanced stage of development and diversification. Moreover, before the revolutionary measures were adopted, the inflationary process had already begun, and was attributable in no small measure to Bolivia's economic and institutional backwardness.

A short-term stabilization policy and a course of action designed to promote economic development are not necessarily incompatible. Although they may conflict in isolated cases, the future of stabilization is bound up with the effort to increase and diversify production which the Bolivian economy proves capable of putting forth. If the corrective measures do not strike at the root of the evils, the danger of further inflation will still exist. The very changes that have taken place in Bolivia during the last few years, despite the fact that their immediate results have been to some extent negative, open up possibilities for the acceleration of development once the country has emerged from the inevitable phase of disorganization. Mining is nowadays contributing most of its product to the internal economy, the archaic and pre-capitalist social relationships of the agricultural sector have been wiped out, and it is in the interest of the workers to raise their standards of productivity and efficiency in order to defend and consolidate the ground

they have gained in the field of social welfare. Undoubtedly, many serious problems have still to be tackled. But the material conditions and human qualities required for their solution are also to be found in Bolivia, as has recently become apparent in the energy and good faith with which the task of curbing inflation has been shouldered.

II. NATIONAL INCOME AND INVESTMENT

1. *Developments during the first half of the twentieth century*

It is difficult, if not impossible, to carry out a detailed study of the economic growth of Bolivia before the present decade. The almost total absence of all kinds of censuses and statistics and the tenuous and sporadic nature of existing information make it difficult to prepare representative series of the principal activities of the country. Only in 1950 was a demographic and agricultural census carried out, although a very deficient population census was made in 1900. Beginning in 1950 other series are also available which, even though they do not fulfil all statistical requirements, at least provide a basis for making estimates of the national income and product and for the preparation of other macro-economic series. Nevertheless, in order to understand the economic development of Bolivia during the last few years, it is necessary to have some idea of the evolution of the economy during the present century. This idea can only be very general, based as it is on incomplete and partial information, but it will facilitate an appreciation of current events and situations which have their origin in previous periods.

The backward state of agriculture has not undergone any modification during the first half of the twentieth century. The system of land tenure was characterized by large holdings farmed according to pre-capitalistic methods of "*renta-trabajo*". The agriculture worker received in return for his labour, instead of wages, a plot of ground which served only for the subsistence of his family, so that he remained unincorporated in the market and unable to contribute to the demand for industrial products and personal services. The landowners, on the other hand, did not contribute on an important scale to the demand for domestic products because of their relatively small number and because their income levels permitted them to consume high quality goods which were satisfied principally by imports.

The mining industry, because of the very nature of its production and the relative insignificance of local sales, was an activity directed abroad. A part of the income from mineral exports necessarily had to remain in the country to pay for wages and salaries and the purchase of local materials. But existing circumstances in the Bolivian economy tended to maintain these payments at low levels. Mining employment represented a very small part of total active employment in the country ; according to the 1950 census total mining employment of all kinds amounted to 43,441, or 3.2 per cent of the labour force and less than 2 per cent of the population. On the other hand, the earnings of Bolivian entrepreneurs

have always tended to emigrate, and there exist numerous cases of new industries which have been established in neighbouring countries with profits obtained in Bolivia. This situation has adversely influenced the level of saving and investment in the Bolivian economy and has created the paradox that Bolivia, even though insufficiently developed itself, has been an exporter of capital.

The circumstances mentioned could have been offset at least in part by a vigorous fiscal policy which could have stimulated private savings and investment and captured income of the community for the purpose of increasing investment in basic development projects. But the Bolivian public administration was not able to solve this problem opportunely. The fiscal history of this period is characterized by a deficient structure of fiscal revenue, by a disorderly system of expenditures and by the absence of misdirection of public investment.

During the period between the beginning of the century and the world crisis, one of the characteristics of the Bolivian public budget was a situation of almost permanent deficits. As internal resources were exhausted, it became necessary to recur to foreign loans, increasing in this manner the indebtedness of the nation and compromising future fiscal revenue in the service of these loans. These credits were contracted under rather burdensome financial conditions so that in some years the Government had to postpone ordinary administrative payments and the service of the internal debt in order to comply with its external obligations, which absorbed about 50 per cent of its revenue.

From 1930 most of the conditions which had favoured Bolivian development during previous decades disappeared. Already in 1927 the excess of world tin supplies had begun to reduce the price of this metal. The great crisis accentuated this downward tendency, and the prices and volume of Bolivian exports declined abruptly.

No significant progress was made in agriculture either between 1930 and 1950. Complete figures are not available on production nor investment in this activity during this whole period, but existing information reveals that there have been no significant changes in the social relationships nor in production methods employed in the *Altiplano* and in the valleys. At most some agricultural machinery was introduced in some isolated cases and certain permanent crops were extended, such as fruit trees and coffee.

The most important change which occurred in the economic structure of the country during these years was the increase in industrial output. The reduction in the capacity to import stimulated import substitution, and the exchange system aided the import of machinery and raw materials through the application of favourable exchange rates. Already in 1920 to 1929 some important enterprises had appeared in the manufacture of certain consumer goods, such as beer and textiles, and in the production of cement. Nevertheless, industrial output apparently did not register a persistent increase until the following decade.

In summary, between the decade of the 1930s and 1950, the tendency to promote domestic economic development and obtain greater resources from the export

sector to satisfy domestic consumption and investment was accentuated in Bolivia. This tendency was particularly apparent in the new tax and exchange policy applied to the mining sector, in the increase and the nature of public investment, and in the growth of domestic manufacturing industry. However, new economic conditions in more recent years have made it more difficult, compared with previous decades, to promote a development policy. One of these is the less favourable position of Bolivian exports in international markets, and another is the fall in mining production and in the price of tin except for brief periods of recovery. It is also necessary to point out that the internal inflation, however much it favoured industrial investment at the beginning, has created problems which in time have become serious obstacles to balanced economic growth.

2. Evolution of the gross product after 1950

(a) The gross product in 1950

In 1950 the gross product of Bolivia amounted to 248 million dollars, that is, 82 dollars *per capita*, a figure which places Bolivia among the lowest income countries of Latin America (see table 1).

Table 1

BOLIVIA : GROSS PRODUCT *PER CAPITA* COMPARED WITH OTHER LATIN AMERICAN COUNTRIES, 1950

(Dollars *per capita*)

Argentina	575	Ecuador	124
Bolivia	82	El Salvador	150
Brazil	195	Honduras	160
Chile	308	Mexico	210
Colombia	215	Paraguay	96
Costa Rica	290	Peru	125
Dominican Republic ...	164	Venezuela	641

Apart from the level of total income, it is interesting to examine also the composition of income by economic activity sectors (see table 2). Almost one-third of the gross product in 1950 was provided by agriculture, cattle raising and forestry, to which must be added a small contribution by rural artisans. Extractive industries, traditionally considered as the principal source of income for the country, contributed only one-fourth of the gross product. It is interesting therefore to point out the disparity between the relative importance of mining as a source of external income on the one hand, and its contribution to the gross product on the other. The contribution of manufacturing is relatively small, a fact which reflects the incipient state of industrialization attained by the country. Furthermore, only a part of income from manufacturing is provided by the so-called "registered industry", whereas an equal proportion is provided by small non-registered establishments. The income generated by urban artisans, on the other hand, is relatively large compared with that of industry itself. The small share of the gross product accounted for by transport is also notable, given the

fact that Bolivia is a country with very difficult geographic characteristics. Furthermore, about two-thirds of the income generated in this activity comes from road transport, which does not correspond to the relative volume of this kind of transport but instead to the nature of transport rates.

Table 2
BOLIVIA : PERCENTAGE BREAK-DOWN
OF THE GROSS PRODUCT, 1950
(Percentage of total)

Agriculture ^a	32.8
Extractive industries ^b	24.4
Manufacturing	8.9
Urban artisans	4.3
Transport	5.6
Commerce and banks	10.3
Government	4.4
Other services ^c	9.3
TOTAL	100.0
Total in millions of dollars	248.0

^a Includes rural artisans.

^b Mining and petroleum.

^c Includes construction and public works, rents and other services.

The analysis of the relative importance of the different economic activity sectors in Bolivia must also take into account the amount of active population absorbed by them and the differences in productivity. According to the 1950 census, the total active population amounted to almost 1.5 million, which signifies a gross product per active person of a little more than 170 dollars. If,

however, only the effective labour force in terms of adult men (amounting to only 1,043,000) is considered, the gross product per active person amounted to almost 240 dollars.

This figure is the result of very different levels of productivity in the various sectors. The extractive industries, for example, show a gross product per active person almost 11 times as great as that in agriculture (taking into account in the latter only the effective labour force). The productivity of manufacturing was about one-third of that in the extractive industries and more than 3 times that of agriculture. The productivity of artisans, on the other hand, was less than that of the economy as a whole and not very different from agricultural productivity. In general these differences reflect the various degrees of efficiency existing in the corresponding sectors, as well as substantial differences in the amount of capital employed per worker.

(b) *Changes in the gross product, 1950 to 1955*

As will be seen, the evolution of the gross product has not been favourable since 1950. After a moderate increase in 1951 and 1952, the gross product declined in the two following years, reaching in 1955 a figure barely 6 per cent above that five years before and practically equal to that already attained in 1951. Nevertheless, it is interesting to note that the figures mentioned reveal a situation much less unfavourable than that which has in general been estimated by those who have followed trends in the Bolivian economy during this period and who are aware of the serious obstacles which the country has had to face (see table 3).

The differences between the growth of the various sectors during the last six years have not altered in any important degree the composition of the gross product.

Table 3
BOLIVIA : ESTIMATES OF TRENDS IN THE LEVEL AND BREAK-DOWN
OF THE GROSS PRODUCT, 1950-55
(Millions of dollars at 1950 prices)

	1950	1951	1952	1953	1954	1955
Agriculture	78.9	78.9	75.3	70.3	67.4	71.5
Rural artisans	2.4	2.4	2.5	2.5	2.6	2.6
Extractive industries	60.6	66.2	67.2	68.4	60.1	66.6
Mining	58.5	64.4	65.4	66.3	54.2	57.3
Petroleum	2.1	1.8	1.8	2.1	5.8	9.3
Manufacturing	22.2	23.1	22.6	22.6	25.3	26.4
Registered	11.8	12.3	12.1	12.1	13.5	14.1
Non-registered	10.3	10.8	10.5	10.5	11.8	12.3
Urban artisans	10.7	11.1	10.9	10.9	12.2	12.7
Building and public works	1.1	1.7	2.2	1.5	1.5	2.0
Rents	10.0	10.6	11.2	11.3	11.5	11.7
Transport	13.5	13.8	16.4	16.2	18.1	20.2
Commerce	23.0	27.3	27.4	24.5	25.2	27.9
Banks	2.6	2.8	3.2	1.3	1.0	1.2
Government	10.9	12.5	14.6	6.6	7.6	8.1
Other services	12.0	12.1	12.2	12.3	12.0	12.5
TOTAL	248.0	262.7	265.6	248.5	244.7	263.4

The relative importance of the agricultural sector fell from almost 32 per cent in 1950 to a little over 27 per cent in 1955. Between these years the extractive industries as a whole increased their participation in the gross product from 24.4 to 25.3 per cent, manufacturing from 8.9 to 10 per cent, and transport from 5.6 to 7.7 per cent, while in the case of the Government a decline from 4.4 to 3.1 per cent was registered.

The influence of the effect of the external terms of trade with respect to 1950 makes it necessary to analyse this point. The year 1950 was exceptionally unfavourable for foreign trade from the point of view of prices for the principal export product. It is not surprising, therefore, that the high price for tin in 1951 brought about a substantial increase in income, which in that year was greatly superior to that recorded in any other during the period 1950-55: 265 million dollars compared with 219 in 1950 and 234 in 1955. Although after 1951 the index of the terms of trade remained above the 1950 level, its effect on the gross product was much weaker. This is a point which has had an important bearing on trends in the Bolivian economy during these years, for if 1951 is taken as the base year for analysis, it must be concluded that the contraction in certain domestic

activities was reinforced by external factors derived from the fall in the terms of trade (see table 4). If the increase in the population of the country by 10 per cent during this period is taken into account, then it can be concluded that there was a definite decline both in the gross product and net income *per capita*.

Figures on the availability of goods and services constitute the best indication of the capacity of the Bolivian economy to satisfy consumption requirements of the population and investment needed for the maintenance and increase of productive capacity. The trend in available goods and services during the period 1950 to 1955 was much more favourable than that shown by the product for several reasons. In the first place, the effect of the terms of trade with respect to 1950 has been positive during the whole period, which signifies a greater purchasing power of the gross product generated in the internal economy. On the other hand, the country has received, particularly towards the end of this period, a net inflow of foreign capital — directly and by means of trade agreement credits — and a considerable amount of foreign aid. Finally, gold and foreign exchange reserves accumulated during previous periods were utilized to finance larger imports.

Table 4
BOLIVIA : ESTIMATES OF TRENDS IN THE GROSS PRODUCT
AND NET INCOME, 1950-55

(Millions of 1950 dollars)

	1950	1951	1952	1953	1954	1955
<i>Gross product at market prices</i>	248.0	262.7	265.6	248.5	244.7	263.4
Plus : subsidies	—	—	—	—	0.8	1.1
Less : indirect taxes	4.7	5.2	5.5	8.4	8.4	16.8
<i>Gross product at factor cost</i>	243.3	257.5	260.1	240.1	237.1	247.7
Depreciation and disinvestment in cattle stocks	24.5	24.5	30.2	30.3	30.2	25.9
<i>Net product at factor cost</i>	218.8	233.0	229.9	209.8	206.9	221.8
Effect of the terms of trade with respect to 1950	—	32.4	22.6	9.1	10.7	12.5
<i>Net income</i>	218.8	265.4	252.5	218.9	217.6	234.3

3. Trends in investment and productive capacity

According to the preliminary estimates specially prepared for this study, in 1950 total fixed investment in the Bolivian economy — replacement cost of depreciated capital — amounted to approximately 870 million dollars. More interesting than absolute figures on the capital stock is its relation to the gross product, which indicates the degree of utilization of the productive capacity of the Bolivian economy. In general, the product/capital ratio for the economy as a whole appears to be rather low — 0.29 in 1950 — which is the result of very marked differences between the main activities. The

differences between the product/capital ratios of the principal economic sectors are much greater still if the amount of capital per employed person is compared. In effect, the extractive industries have a ratio 15 times larger than that of agriculture and double the ratio corresponding to manufacturing.

Now it is necessary to indicate the manner in which the total capital stock of the Bolivian economy changed between 1950 to 1955 and indicate the changes which have taken place in its sectorial distribution. Global estimates show that the increase in productive capacity during this period was very moderate (6 per cent), equivalent to a cumulative annual increase of 1 per cent.

One of the reasons which explains this slow rate of growth of productive capacity is related to the great effort which it has been necessary to make in order to take care of depreciation and the replacement and maintenance of this capacity. For this purpose alone the Bolivian economy has had to earmark approximately 25 million dollars annually.

Gross investment has shown very sharp fluctuations during the period under analysis. Whereas in 1951 and 1952 total gross investment exceeded 40 million dollars, in 1953 investment fell by approximately 40 per cent. In 1955 on the other hand, the highest level was reached for the entire period and perhaps since 1930. In summary, during the period as a whole gross investment amounted to a little more than 220 million dollars, or about 15 per cent of the gross product. On the other hand, total net investment was insignificant, barely 3.8 per cent of the gross product during these years.

An interesting aspect in relation to investment trends during 1950 to 1955 is the substantial change in its composition as between public and private. Before the revolution, public investment represented about 15 per cent of total gross investment, but since then the share of the public sector has tended to increase, so that in 1954 and 1955 this sector accounted for 33 and 50 per cent respectively. Among the factors which explain this substantial increase in public investment are the nationalization of the large mines, the increase in petroleum investment, and the sizeable resources allocated to public works in transport and other projects of the Bolivian Development Corporation. Private investment, on the other hand, declined sharply after 1953 in relation to the levels attained in 1951 and 1952. Thus, the increase in public investment was responsible for the high level reached in 1955 and made possible the moderate increase in the productive capacity of the Bolivian economy which was referred to above.

Apart from the foregoing, it is also interesting to examine the composition of goods and services absorbed by investment. In the period 1950 to 1955 an average of about 50 per cent of gross investment was accounted for by the value of imported machinery, equipment and construction materials. The remainder is attributable principally to the value of transport, installation and construction required to put this machinery and equipment in place. Domestic output of capital goods and construction materials, on the other hand, has been of relatively small importance during this period.

Finally, it is necessary to make a short reference to the form in which gross investment has been financed. Available figures indicate that, in 1950-51, the country attained a rate of saving more than sufficient to satisfy investment requirements. Already by 1952 a notable change took place, internal saving being considerably inferior to gross investment. During the following years the contraction in national saving was accentuated, until in 1955 it did not even cover 50 per cent of total gross investment.

Two principal factors compensated this reduction in domestic saving: United States aid and net foreign investment on the one hand, and the utilization of gold

and foreign exchange reserves on the other. The main factor has without doubt been United States aid, which in 1954 and 1955 represented more than one-third of total gross investment.

In spite of the importance of the decline in domestic saving, it is not easy to formulate precise conclusions as to its causes, because it is difficult to interpret this trend and undoubtedly it has been influenced by many diverse factors. Among them can be mentioned the significant improvement in the terms of trade in 1951, as well as their decline thereafter. In this regard, it could be considered that in reality the only year in which the coefficient of domestic saving was high, was in 1950. The 43 million dollars of saving recorded in 1951 must be interpreted by taking into account the fact that in this year the change in the terms of trade signified an increase in income of more than 32 million dollars. Similarly, the latter contraction in domestic savings up to 1953 is closely correlated with the reduction in the terms of trade effect, and the same can be said about the slight improvement shown in 1954 and 1955.

In any event, it is evident that domestic saving has only covered a moderate share of gross investment during recent years. The influence of other compensatory factors, however, must be considered temporary, so that prospects for future gross investment must be based on a domestic savings coefficient considerably higher than that registered during these years.

III. FOREIGN TRADE IN THE BOLIVIAN ECONOMY

The evolution of foreign trade has been a key factor in the economic development of Bolivia. The importance of foreign trade can be appreciated from the fact that the value of exports, which in real terms has not grown except during short-period fluctuations since the end of the Second World War, is still equivalent to over one-third of the gross product of the country. Imports also provide an important share of available goods and services; imports of capital goods, for example, account for about 60 per cent of the total value of gross domestic investment. Therefore many of the difficulties impeding the achievement of monetary stability and more balanced economic growth centre around problems of restoring and diversifying production for export and assuring a more effective utilization of foreign exchange receipts.

Although Bolivia is endowed with an abundance and variety of natural wealth, the capacity to import has been determined mainly by exports of a single mineral, for a long time silver and in more recent decades tin. Tin exports provided the basis for a significant expansion in foreign trade up to 1929, but thereafter the great dependence of the country on this metal, which up to very recent years accounted for over 70 per cent of total exports, has had adverse repercussions. On the supply side, Bolivian tin production was found to be at a competitive disadvantage compared with most other producing countries when mine capacity greatly exceeded world market demand. In Bolivia tin is extracted from underground lode deposits which require rather heavy fixed investment and large-scale operation to be worked

efficiently, whereas in South East Asia and Africa — the other major producing regions — tin is found in placer deposits which can be mined on the surface, often with less expensive and smaller scale methods such as dredging. Thus, the sharp fluctuations in demand and output and the restrictions imposed by the International Tin Agreement during the 1930s tended to improve the relative position of placer mines (in which output could vary considerably without seriously affecting unit costs) and smaller producers, at the expense of large lode mines, which received great stimulus when demand was rising rapidly and justified heavy fixed investment in large-scale operations, but which were at a serious disadvantage when demand prospects were doubtful and conditions called for optimum flexibility. Consequently, very little new tin investment has been made in Bolivia during the last 25 years, new exploration has not been carried out, and many installations have been allowed to fall into disrepair, in contrast to the relatively large investments which were made in Africa during the Second World War and in South East Asia thereafter.

Bolivian tin mining is also at a disadvantage because of the low tin content and greater complexity of the concentrates produced. Special smelting facilities are required to treat these minerals, or they must be mixed with cleaner and richer alluvial concentrates from other countries for smelting. The problem of marketing this ore was eased at the beginning of the Second World War with the opening of the Texas City smelter operated by the United States Government for the specific purpose of producing tin from Western Hemisphere supplies. Contracts for the purchase of Bolivian tin were successively renewed after the war, but the Texas City smelter has recently been sold by the United States Government and will gradually go out of production, so that Bolivia's low-grade concentrates will again have to be marketed in Europe.

On the demand side, restrictions on the use of tin during the Second World War and resulting technological innovations have seriously limited and perhaps permanently eliminated the possibility for any further significant growth in world tin consumption. In spite of increased world income and industrial output, even as late as 1956 demand was still considerably inferior to the pre-war level. This is the result of the more efficient use of primary tin, mainly by means of electrolytic tin plating which is replacing older, more tin-consuming methods; the increased utilization of secondary tin in bronze and brass and other products; and the substitution of this metal by other materials in such things as solder, collapsible tubes and foil. These trends are almost completely beyond the control of producing countries because of the pronounced price inelasticity of demand for tin, which forms an insignificant part of the price of the final products in which it is employed. On the other hand, increasing costs of production in tin mining eliminate the possibility of a really important reduction in its price without making tin mining generally unprofitable.

Trends in the supply and demand for tin have been the principal determinant of Bolivia's capacity to import and general balance of payments situation, but two other

factors have been of particular importance in recent years. The gross value of tin sales does not represent the foreign exchange income of the country from exports of this mineral, because included in this value are the cost of smelting abroad, international transport, and other foreign exchange expenditures such as salaries of foreign personnel and imports of materials and equipment for the mines. When the mines were privately owned, a proportion of receipts was also retained by the companies as profits. Over the course of the last 15 years the share of the value of mineral exports returned to the Central Bank has tended to increase as a result of measures obliging the private companies to surrender larger amounts of exchange to the authorities, and later as a result of the nationalization of the large mines and stricter Government control over the operations of the smaller mines which remained under private ownership. In addition, the mining companies were obliged to surrender their exchange to the Central Bank at an official rate which became increasingly over-valued as adjustments lagged behind the rapid increase in domestic prices. This was in reality a kind of implicit taxation in so far as the Government benefited by selling the exchange at higher rates to importers, or an implicit transfer of income from the mining industry to the rest of the economy through the subsidizing of imports at an over-valued rate of exchange. Thus, the capacity to import of Bolivia has fared somewhat better than might be surmised from export statistics.

The other important determinant of Bolivia's balance of payments position, besides tin supply and demand trends, has been United States procurement policy and more recently the foreign aid programme. The continuing operation of the Texas City smelter producing for the United States strategic materials stockpile was one of the main factors which enabled an orderly reduction of commercial stocks and a significant rise in tin prices after the war in spite of the reincorporation of South East Asian output in a depressed market. Later, when Bolivia's gold and foreign exchange reserves became virtually exhausted in the balance of payments crisis of 1952-53 following the short-lived Korean War boom, United States aid and the sale of surplus agricultural commodities were and continue to be of considerable assistance, particularly in view of the decline in the domestic commercial food supply which has resulted from successive droughts and problems arising from the land reform. Also, contracts for the purchase of Bolivian tungsten at prices twice those currently prevailing have helped to offset the continued decline in the country's tin sales. Thus, by 1955 Bolivia's capacity to import in constant prices had risen to a level even higher than that of 1951 and twice the depressed level of 1950.

The present artificial situation cannot be maintained indefinitely, so that it is urgently necessary for Bolivia to look for ways to restore and diversify production for export and the substitution of imports. The recent exchange reform has contributed in this direction by reducing incentives for contraband exports and re-exports, which had reached such proportions that they were a serious drain on the national economy. Steps have also been taken to put the mining industry on a

more realistic footing. With regard to the large mines under the control of the Mining Corporation,¹ the main problem concerns the deterioration in working conditions, such as the declining grade of ore, the narrowing or wedging out of veins, the excessive spread of underground workings, the worn-out state of installations and equipment for treating and concentrating ore, and shortages of water and electric energy. In general, in existing mines more ore will have to be extracted under more difficult conditions and hauled over longer distances to get the same amount of metal. This situation can be eased only by renovating and modernizing equipment and methods in the older mines and by developing new deposits. However, so little is known about reserves that it would be inadvisable to begin any serious investment programme until intensive exploration reveals where commercial reserves are large enough to justify additional capital outlays.

Labour and administrative problems have also contributed to a fall in the productivity of Bolivian mining. Although a certain amount of administrative difficulty was inevitable with the nationalization of the large mines in 1952, because of the diversity of accounting and managerial procedures in the different mines and the loss of experienced foreign personnel, the most serious problem has been the confusion and conflict between the different bodies responsible for the operation of the mines, which has led to indiscipline, greater absenteeism, feather-bedding and other practices prejudicial to efficient operation. Although it was natural for the miners to expect an improvement in their status and some voice in management after the revolution, it is necessary to find some arrangement which reconciles the legitimate economic and social aims of the workers with more efficient organization and management.

Analysis of the financial accounts of the Mining Corporation reveals that over-all operations were quite profitable at least until 1955. Short-run results were artificially favoured, however, by inadequate outlays on current supplies and the maintenance and replacement of equipment as well as by efforts to maximize current output at the sacrifice of preparing for future work. The sale of foreign exchange to the Central Bank at extremely overvalued rates also made it necessary to obtain credit in order to finance local currency expenditures. But at a more realistic rate of exchange, the Corporation would have been able to cover all local and foreign currency costs of production and still register a profit. Future prospects, however, are much less favourable than recent operations. In 1955, several of the most profitable mines of the Corporation benefited especially from the sale of tungsten at artificially high prices to the United States Government under contracts which are due to expire during 1957. Also, about 20 per cent of the value of output in this year came from mines with such high costs of production that they must be considered sub-marginal producers. The spread between costs and prices has apparently decreased since 1955, so that at the present time even the largest tin mine

¹ Most of the analysis of the mining industry is based on the study by the firm Ford, Bacon and Davis.

in Bolivia (Catavi) is probably near the break-even point and only three Corporation properties have sufficient proven reserves to justify continued large-scale exploitation for a period of years.

Thus, the Mining Corporation is faced with important decisions to make on investment priorities and the continued operation of sub-marginal mines. With regard to investment, present information on reserves must be supplemented by further exploration in order to formulate an intelligent programme. Given the fact that it takes from three to five years to explore and develop a new deposit, and that under present conditions Bolivia can ill afford to reduce its foreign exchange income, it may be necessary for the Corporation to keep in production all but the most unpromising mines for the time being, unless the factors of production engaged in them can be used more economically elsewhere. If sub-marginal or "social" mines are withdrawn from production so rapidly that serious unemployment results, then the drop in total output and foreign exchange income might create a greater burden for the Bolivian economy than the subsidization of these operations until alternative activities can be developed.

With regard to the privately-owned mines, the output of which was severely curtailed after 1952, what is needed are greater incentives to increase production from existing properties and restore the output of mines which have been closed because of unfavourable conditions. The first step is to permit private companies to retain a greater share of the value of exports in order to provide for the purchase of adequate supplies of materials and equipment and a reasonable profit.² Secondly, the functions of the Mining Bank, which has exercised a virtual monopoly over the operations of the private mines, should be restricted to those originally established by law, namely, the provision of services and credit to small miners who are handicapped because of their limited financial resources.

There exists another serious problem for which no short-run solution is apparently possible: heavy losses in the recovery of metal from ores and the inability to treat much commercially exploitable ore in small deposits, from which only the richest minerals are being extracted. The establishment of a local smelter designed to handle low-grade concentrates would enable many smaller mines to increase their recovery by 15 per cent or more, and exploitation could be carried out more rationally so as to increase mine yields and prolong their active life. Furthermore, since it is easier to market metal than concentrates, particularly of the type produced by Bolivia, a local smelter would help assure an outlet for the production of low-grade minerals as the Texas City smelter is withdrawn from production. Although there are no serious technical difficulties to smelting and refining low-grade concentrates in Bolivia, initial investment in fixed assets and inventories, together with start-up and training costs, would amount to about 17.5 million dollars for a 10,000 ton smelter. Not only would such an investment require available reserves for 15 to 20 years'

² In 1955 privately-owned mines were obliged to surrender 78 per cent of the gross value of exports to the Central Bank.

operation to be justified (which are presently uncertain), but the high cost of operation in relation to existing foreign smelters, which employ richer and less complex alluvial concentrates, would reduce profits to a very moderate level even under favourable circumstances. Thus, the advisability of making this investment at this time depends upon whether investment of a similar amount elsewhere would produce more immediate and surer benefits for the Bolivian economy than the establishment of a tin smelter.

Prospects for the diversification of Bolivian exports are rather uncertain at the present time. Apart from the traditional mineral exports of secondary importance, some of which have a favourable growth potential — particularly gold, antimony, tungsten (in spite of the expiry of special purchase contracts) and to a lesser extent lead and zinc — the country possesses deposits of just about all other principal minerals of commercial value in the world. However, in spite of the fact that Bolivia is generally a low-cost producer of minerals other than tin, little can be said about future prospects because deposits are often situated in inaccessible areas, technical problems complicate their exploitation on a commercial scale, or not enough is known about the extent and nature of deposits. With respect to agricultural products, it appears that coffee offers the only important possibility for increasing the participation of the agricultural sector in Bolivia's exports over the course of the next few years. Although petroleum reserves are considered to be of great importance, present productive capacity is not capable of both satisfying increasing domestic demand and raising exports. Thus, future prospects will depend upon the results of exploration now going on, which if successful, should begin to bolster Bolivia's capacity to import in three to five years.

Export prospects can be summarized in the following manner. Between 1955 and 1960, if the percentage increase in mineral exports considered feasible by the Ford-Bacon experts under favourable conditions is accepted, and 1955 prices are maintained (except for tungsten, for which the present world market price is more appropriate), and it is assumed that agricultural exports can reach 5 million dollars annually, then the gross value of exports could increase by 15 per cent, or to about 115 million dollars. This hypothesis excludes petroleum, since no basis exists at this time for making any projection. The proportion of the gross value of exports which can be expected to be returned to the country in payment of local costs of production, taxes, etc., will almost certainly be less than that in 1955 (about 58 per cent). Given the need for more adequate supplies and investment in the nationalized mines and the creation of incentives for the private mining companies, it would be unrealistic to expect that more than 50 per cent will be available for imports of goods and services for the rest of the economy, and the proportion might well be somewhat less. A reduction from 58 to 50 per cent, however, would entirely cancel out a 15 per cent increase in the value of exports ; so that unless the international situation changes markedly or there is a significant expansion in petroleum exports, it is not likely that Bolivia's net capacity to import will increase at least within the next five years. It should

be kept in mind, however, that there is ample room for a reduction in import demand, particularly through an increase in domestic output of agricultural products, which presently account for about 45 per cent of Bolivia's total imports.

IV. INFLATION AND ITS EFFECTS ON ECONOMIC DEVELOPMENT

1. *Historical background*

Nothing has affected so profoundly the development of the Bolivian economy as the severe inflationary process through which the country has been passing, especially during the last four years. In order to understand the present situation, it is thus necessary to evaluate the possibilities and requirements of a development policy by studying the factors which have had a role in the origin and growth of inflation and the maladjustments which it has caused in the economic life of the country.

The Bolivian inflation began in the first years of the 1930s when the Government had to cover large deficit resulting from the Chaco war. Since then trends in the demand for export products have been a permanent disturbing factor contributing to the instability and the inflationary financing of the public sector. But even before this period and in spite of the fact that in some years Government budgets were balanced, there existed in Bolivia a particularly weak economic structure and a fiscal policy which contributed to the intensification of instability.

Although from 1932 to 1952 the permanent inflationary factor has been the fiscal deficit and public investment financed with bank credit, there exist various periods in which it is possible to distinguish between different causes :

(a) During the Chaco war (1932-35), when the Government incurred a heavy deficit to meet expenditures and money incomes grew considerably. Nevertheless, the rise in prices was relatively moderate owing to the decline in public and private investment, to the subsidies extended by means of the exchange system to essential goods, and finally to the belief that inflationary tendencies were of a temporary nature.

(b) The period 1935 to 1939, during which money incomes increased at a slower rate than during the previous period, while prices experienced a considerable rise due principally to the increase in the velocity of circulation and to the devaluation of the currency.

(c) During the Second World War (1939 to 1945), when the major cause of inflation was of external origin as a result of the favourable balance of payments which led to an increase in money income, thus reinforcing traditional inflationary factors. The most important event during this period was the stabilization policy applied from 1944 to 1945, which slowed down the increase in prices without diminishing internal production.

(d) The post-war period (1945-51), when external inflationary pressure was eliminated and balance-of-payments deficit and pressure on the exchange rate reappeared, reinforced by government budget deficit and an expansion in bank credit.

The inflation after 1952

(a) *Introduction*

In 1952 and thereafter, as a result of the political revolution of 9 April, economic and social measures were carried out in Bolivia which signified in many respects a structural change in the country. Economic activity in general and the inflationary process in particular have been determined in succeeding years by the results of these measures, so that the analysis and appreciation of the Bolivian economy before this period loses a great deal of its validity because new factors began to play a preponderant role in economic events. The basic elements of the Bolivian economy, however, have not changed and their principal characteristics continue to be the dependence on exports of tin and a few other minerals, the low productivity of agriculture, the low level of industrial development and other traditional features. But in each one of these activities and in the directive spheres of the country changes have taken place which have altered the functioning of the economy as a whole. In addition to external factors which have influenced over-all trend and the traditional factors of disequilibrium and inflation during the last five years, there have appeared egalitarian social aspirations, a nationalistic mining policy, a marked increase in the importance of the labour unions, a radical redistribution of the land, and a programme of public investment which has required resources superior to the financial possibilities of the Government. The combined action of all of these forces in moments when external markets for the principal export products were not favourable resulted in a sharpening of internal disequilibrium and the inflationary process.

The Bolivian revolution destroyed the traditional organization of mining and agriculture, the two fundamental activities of the country, and brought about a reduction in productivity, at least temporarily while new forms of organization could be created. In general, a redistribution of income was carried out which altered the previous play of social forces and created a climate for a sharpening of this type of conflict. On the other hand, in an effort to transform the physical environment, or under the pressure of political necessities, a programme of Government expenditures was effected which was greater than could be handled by non-inflationary resources available to the Government. All of this resulted in a reduction in the national product and conflict between different social groups in an effort to obtain a larger share of the gross product. Even if economic conditions had been favourable, this complex of forces would surely have led to an inflationary situation. In Bolivia already the inflation was of long standing and had acquired greater momentum in the immediately preceding years. Moreover, simultaneously with these internal developments export prices and the terms of trade were falling, thereby causing an even more pronounced decline in the real product. Thus, the country found itself in a situation in which the national product was declining in real terms while nominal incomes were rising progressively under the pressure of labour union demands, Government expenditures and investment, and

the policy of subsidizing essential articles. As in all inflationary environments, new factors such as speculation, contraband and capital flights contributed to worsening the situation, along with the exchange system which did nothing to counteract the inflation.

The case of Bolivia in the last five years is that of a country which has begun a social transformation and a policy of accelerated development under inflationary conditions and by resorting to inflationary measures to carry out this policy. Whereas on the one hand it was desired to increase the product and bring about a more just distribution of income, on the other hand unstable conditions were created or accentuated which exercised increasing pressure on the economy and fomented tensions which could not continue without leading over the longer run to an untenable situation. The aspiration was that a rise in the real product from increased investment and the new social organization could produce results over a shorter period of time and that the inflation would disappear with the progressive increase in the availability of goods. Recent events show that this objective was not attained. The inflationary process became cumulative and threatened to undermine the economy and the social and political organization, while its effects impeded the increase of production and brought about a distribution of income very different from that which was initially desired. In this way, the fight against inflation even at the cost of temporarily suspending development investment and social conquests has become the urgent and all important problem of the Bolivian revolution. In the most optimistic of cases a solution requires a period of retrenchment before the conquest of the original objectives can be reinitiated under more favourable conditions. Recent experience has implied great economic sacrifice. The level of income, its equitable distribution, capital formation, and the creation of technical conditions appropriate for development have not improved in the inflationary climate. In the following pages the course of the Bolivian inflation in recent years and its effect upon economic development will be analysed in greater detail.

(b) *Indications of the rate of inflation*

In the period 1952 to 1956 the average annual increase in the cost-of-living index in the city of La Paz was 147.6 per cent (see table 5). This rate of increase has been the highest in the history of the Bolivian inflation, since before 1952 the period of most intense inflation was 1936 to 1939, when the annual average increase was 50.7 per cent.

The first great impulse to the inflationary process took place in 1953, in which year the cost of living rose 152 per cent. This was the year immediately after the revolution and the nationalization of the large mines. During this year the agrarian reform was also promulgated and the boliviano was devaluated. Thereafter in 1954 and 1955 the price index continued to increase at a higher rate than before 1953 although inferior to the increase of this latter year. As a matter of fact, a market tendency towards a reduction in the rate of inflation was noted (99 per cent in 1954 and 69 per cent in 1955). Nevertheless,

Table 5
BOLIVIA : COST-OF-LIVING INDEX IN LA PAZ
(Base: 1931 = 100)

Year	General	Foodstuffs	Fuel	Clothing	Services	Apartments
1952	6,596	7,036	6,841	8,079	2,688	5,323
1953	16,640	18,335	13,655	23,097	5,272	9,625
1954	33,212	34,066	24,462	57,770	7,876	9,625
1955	56,091	52,627	75,509	103,675	16,251	9,625
1956 March	85,042	97,010	107,331	132,214	28,062	9,625
June	102,970	129,258	140,789	137,385	42,911	9,625
October	166,362	240,098	161,380	190,636	52,100	9,625

Source: Statistics Department (Departamento Nacional de Estadística).

in 1956 the rise in prices was renewed with greater force, between January and October the index rising by 196 per cent and increasing even more rapidly during the last four months of the year.

The money supply in the hands of the public, including currency in circulation and bank deposits, increased 20 times between the end of 1952 and October 1956. The increase during the course of 1956 was also much more intense, rising from 91,000 to 206,000 million bolivianos in ten months (see table 6).

Table 6
BOLIVIA : MONETARY CIRCULATION (1952-56)
(Millions of bolivianos)

Year	Total	Currency	Deposits
1952	10,596.6	6,213.5	4,383.1
1953	20,557.3	11,599.7	8,957.6
1954	35,008.8	20,048.6	14,960.2
1955	73,112.6	39,197.9	33,914.7
1956 March	91,079.7	48,852.1	42,227.7
June	124,800.4	70,639.2	54,161.1
October	206,131.1	119,865.9	86,265.2

Source: Banco Central de Bolivia.

The official exchange rate, which was fixed at 60 bolivianos per dollar in 1950, was maintained at this level until May 1953, when a new rate of 190 was established. As will be seen, there existed exchange rates other than the official one, which were subject to frequent variations and which were applied to exports and to imports of necessary products. The free market was supplied with exchange from the tourist industry, from capital imports and from part of export receipts, and served to cover imports of non-essential articles, foreign travel and especially the outflow of capital and the hoarding of dollars. In the first months of 1952 the dollar was quoted in the free market at between 210 and 215 bolivianos. The rate reached 275 at the end of this year, depreciating rapidly thereafter until it reached 10,000 to 11,000 bolivianos per dollar between September and October 1956 (see table 7).

Table 7
BOLIVIA : QUOTATION OF THE BOLIVIANO
IN THE FREE EXCHANGE MARKET

(Units per dollar)

Month	1952	1953	1954	1955	1956
January	205	400	1,120	2,054	4,513
February	210	375	1,450	2,109	4,781
March	210	410	1,400	2,500	5,670
April	215	520	1,450	2,688	5,707
May	225	650	1,525	2,554	6,330
June	205	550	1,500	2,764	6,765
July	210	575	1,450	2,898	8,310
August	220	625	1,500	3,083	8,703
September	230	600	1,475	3,470	10,633
October	255	650	1,465	3,876	11,604
November	265	675	1,810	4,000	
December	275	950	1,820	4,018	

OFFICIAL RATE OF EXCHANGE

1952	1953	1954	1955	1956
60	190	190	190	190

Source: Pick's Currency Yearbook, 1955.

(c) *Principal factors aggravating the inflation*

(i) *Influence of the external sector and of the conditions of mining production.* At the time the large mines were nationalized, the favourable conditions of the international tin market occasioned by the Korean war had already begun to disappear. In 1951 the average quotation for tin in New York was 1.27 dollars per pound of metal content. In the months immediately preceding the revolution the mining companies were discussing with purchasers agreements on the basis of 1.21 a pound, which the former did not consider sufficiently remunerative. However, the price began to decline further and in 1952 an average quotation of 1.20 was recorded, which later fell to 0.81 in the United States and 0.76 in London by September 1953, thereafter becoming stabilized

Table 8
BOLIVIA : LOANS FROM THE CENTRAL BANK TO THE PUBLIC SECTOR
(Millions of bolivianos)

	<i>December 1952</i>	<i>December 1953</i>	<i>December 1954</i>	<i>December 1955</i>	<i>October 1956</i>
National Government					
Bonds	2,758.7	2,576.2	3,569.0	3,543.3	3,814.5
Loans	1,095.5	1,477.3	4,545.0	4,433.0	4,083.7
Advances on account	37.0	86.2	845.2	934.1	12,439.6
TOTAL	3,891.2	4,139.5	8,959.4	8,910.4	20,337.8
Autonomous institutions					
Bonds	—	8.9	32.2	25.4	23.4
Loans	942.7	924.5	15,553.9	15,412.3	15,269.7
Advances on account	282.1	490.3	887.4	13,826.7	40,224.0
TOTAL	1,224.8	1,423.7	16,473.5	29,264.4	55,517.1
Departmental Governments					
Bonds	155.9	208.9	208.7	252.7	230.9
Loans	2.9	8.5	6.7	4.9	3.6
Advances on account	—	—	—	10.4	—
TOTAL	158.8	217.5	215.4	268.1	234.5
Municipalities					
Bonds	53.8	75.0	202.8	221.3	235.9
Loans	28.7	27.2	25.0	15.7	12.5
Advances on account	—	10.1	28.4	142.5	164.9
TOTAL	82.6	112.3	255.9	379.5	413.3
Advances to mining and petroleum concerns ^a					
	2,164.0	13,482.2	6,223.2	33,413.2	128,101.3
	7,521.4	19,373.3	32,127.5	72,235.5	204,604.1

Source: Banco Central de Bolivia.

^a Includes notes discounted in favour of the Mining Corporation and the Mining Bank in 1952, 1953 and 1954.

between 0.91 and 0.96 up to 1956, when an average price of 1.01 dollar per pound was quoted in the New York market. But the most serious aspect was that while external markets were weakening, problems of an internal character since the nationalization had produced a critical situation in the Bolivian mining industry.

The Mining Corporation of Bolivia, which is in charge of the expropriated assets, was confronted with serious difficulties. Among them was the loss of numerous foreign technicians, the decline in the grade of mineral in the most important deposits, the lack of preparation of new work in the mines before and after nationalization, the shortage of electric energy in some of the enterprises (aggravated by greater consumption of electricity to treat poorer minerals), the lack of working capital, the shortage of materials, etc. Other fundamental factors have also affected the Corporation: First, the rise in internal costs resulting above all from increases in salaries and social obligations and increments in other expenditures due to the inflation; second, the

fall in production for technical reasons and because of the decline in labour productivity,³ and third, administrative deficiencies of the Corporation itself.

According to the Ford, Bacon and Davis study, in 1955 the output of tin in the nationalized mines had fallen 17.3 per cent below 1951; silver had declined by 12 per cent; lead 2.4 per cent; zinc 21.2 per cent; gold 51.9; and antimony 85.6 per cent. The only increases in production were recorded by wolfram (138.3 per cent) and bismuth (11.9 per cent).

The unfavourable situation of the large nationalized mines, aggravated by other circumstances, was also found to exist in medium-sized and small mines. In addition to the increase in internal costs caused by the inflationary situation, the price policy of the Mining Bank provoked

³ The firm Ford, Bacon and Davis estimates that labour efficiency within the mines declined by 15 per cent between 1951 and 1956, although it is necessary to make clear that this reduction is not only due to the workers themselves.

a decline in the production of these mines greater than that experienced by the Mining Corporation. According to Ford, Bacon and Davis, between 1953 and 1954 1,600 medium-sized and small mines were shut down and the value of output of these mines, which in 1950-52 had reached an annual average of 43 million dollars, fell by 1955 to 25 million.

In spite of the seriousness of these trends, perhaps the mining sector was affected even more by the exchange system. From 1934 exporters of minerals had been obliged to sell a part of the exchange earned on exports at a rate greatly inferior to the real parity rate of the boliviano. As far as the mining sector is concerned, this system signified a subsidy to the rest of the economy which increased in relation to the internal inflation and to the fall in the real exchange rate. As a consequence, while the local currency expenditures of the nationalized and private mining companies increased as internal prices and salaries rose, their income in national currency was frozen at the rate of exchange applied to their sales of dollars to the Central Bank. In this way a heavy deficit was created in the mining sector which had to be covered with credit from the Central Bank and which made this sector appear as one of the principal factors contributing to the increase in the means of payment (see table 8).

Thus the increase in the means of payment cannot be attributed entirely at least to losses suffered by the mining enterprises. If this sector had benefited from an exchange rate which corresponded to the real purchasing power of the boliviano, its income in national currency would have been much greater and deficits would have been much less than those which the figures cited indicate, or they would disappear altogether.

(ii) *Financing of public expenditures and investment.* The financing of the current expenditures of the public sector and government investments by means of Central Bank credit was accentuated during 1952-56, when the sharp increase in prices confronted the Government with voluminous fiscal deficit and when a large investment programme was being carried out. Central Bank loans to the national Government increased from 3,890 to 20,337 million bolivianos between December 1952 and October 1956, and credits extended to autonomous institutions rose from 1,225 to 55,517 million during the same period.

Deficit financing contributed to the inflation both directly through an expansion in the means of payment and indirectly because the Government resorted increasingly to expenditure and investment. In the second place, a structural change took indirect taxes to augment its revenue. Thus, added to the rise in prices originating from a reduction in the supply of goods and services, the devaluations, and the increase in the money supply, was the effect of these taxes on consumer goods' prices either directly or through tariff surcharges and exchange procedures.

(iii) *The role of bank credit in the private sector.* During the period 1951-56 bank credit to the private sector contributed to the growth of inflation in a smaller degree than during previous years. In any event, its

significance has been less than that corresponding to mining and the public sector.

If the rate of increase in bank credit to the private sector is compared with the annual rate of increase in prices during 1952 to 1956, it can be seen that except in 1955 the movement in bank loans has been parallel to the increase in prices. It thus appears that private banking has played a passive role in the inflation in the sense that the rise in credit has tended to follow the trend in prices, whereas the over-all amount of credit granted has diminished in relation to the nominal value of market transactions. On the other hand, since the supply of goods and services has not grown, the increase in bank credit has been an additional element in the creation of means of payment and in demand, although its role cannot be said to be autonomous but induced by other inflationary factors mentioned above.

(iv) *Fall in domestic output and in available goods and services. United States aid.* In contrast with the disproportionate increase in the money supply to which reference has been made, beginning in 1952 domestic production and available goods and services in Bolivia suffered a considerable reduction. The variations in the gross product during 1950-55 have already been examined. As was seen, in 1953 and 1954 a sharp decline was recorded, originating principally in the agricultural sector and in mining. In 1955 there was some recovery, although the level of 1952 was not regained. The per capita product, which amounted to 85 dollars in the latter year fell to 79 dollars in 1955.

Imports also declined after 1952. From 113 million dollars (in 1950 prices) in 1952, imports fell to 88 million in 1953 and rose slightly to 93 million in 1954. In the following year there was some recovery, due principally to United States aid.

As was seen in the analysis of the national income, available goods and services during the last five years have been superior to the gross product. This circumstance is explained in part by the improvement in the terms of trade with respect to 1950, but the main explanation is the utilization of the country's international reserves, the receipt of credits from other countries and from some private firms, the postponement of the replacement of capital equipment and the aid extended by the United States Government. All of these causes permitted the country to purchase a volume of imports greater than that which could be covered with current income, a situation which cannot be maintained indefinitely. At the end of 1956 the country found itself without international reserves and with an extraordinary external banking and commercial debt which made it difficult to continue recurring to external credit. In spite of the greater availability of goods and services than justified by the product, real per capita consumption declined substantially after 1952 in relation to the immediately preceding years: from 73.2 and 76.5 dollars per person in 1951 and 1952 respectively, to 69.9 dollars in 1953, 66.1 dollars in 1954 and 69.5 in 1955.

The shortage of essential goods was counteracted in part by the aid provided by the United States Government beginning in 1953. This aid consisted principally

of consumer goods and raw materials which brought about a considerable increase in the domestic supply of these goods. Between July 1953 and June 1954 the contribution of wheat, flour, lard, cotton and cotton seed amounted to 10.9 million dollars, or 17 per cent of Bolivia's imports in current prices; from 1954 to 1955 the contribution was 18.3 million dollars or 22 per cent of imports; in 1955-56 it reached 17.5 million dollars. Another aspect of the United States aid was the provision of capital goods for economic development, which rose from 1.2 to 5.7 and 5.3 million dollars in the three periods mentioned.

(v) *The influence of the exchange system.* In recent years the exchange system, which can be classified as anarchical, has had serious consequences for the general economy of the country and has contributed on an appreciable scale to aggravating the inflation. One of its most characteristic effects was the maladjustment created in the price system. The subsidies extended to certain imports by means of the official exchange rate and the application of this rate to goods provided by United States aid signified that domestic prices for these products were very inferior to those prevailing in the world market. This was on the one hand a disincentive for domestic production and obliged the Government to provide subsidies by means of minimum prices, whereas on the other it encouraged the re-export of these goods, both those imported by the Government and by individuals and those received through the aid programme. The exchange system also tended to discourage exports of domestically produced goods. Thus, contraband trade to neighbouring countries absorbed an important share of Bolivia's supply of essential articles. This contraband has existed for many years as a result of the anomalous exchange system, but it was accentuated to an extraordinary degree beginning in 1954. Although it is practically impossible to calculate the amount of this trade, authorized sources in the country estimate that contraband exports of wheat, sugar, rice and cattle reached a value of approximately 5 million dollars per year.⁴ Income received from these illegal activities was converted into foreign exchange or returned to the country in the form of non-essential or luxury articles which were sold in the black market.

The multiplicity of exchange rates was also a catalyst for internal speculation of vast proportions. Imports were carried out at different rates as a result of the shortage of official exchange, and the system permitted foreign purchases with dollars obtained at different quotations. As was logical, internal market prices were fixed in relation to the free exchange rate, so that extraordinary profits were realized. Although as has been said the system of "revertibles" was intended to correct these anomalies, it was not capable of eliminating them altogether. Furthermore, the distribution of essential goods was deficient and resulted in a great deal of speculation. The quotas for foodstuffs and other essential manufactured products assigned to the different productive sectors and urban centres did not always correspond

⁴ See C. H. Zondag, "Problems in the economic development of Bolivia", 1956 (mimeographed document).

to the population, thus contributing to shortages. The very distribution of exchange accounts and merchandise was also influenced by non-economic factors, as has been pointed out by high Government officials. In this way a black market developed in which prices were several times the official ones, especially in the larger cities. People who did not benefit from special quotas provided by the organizations to which they were attached — which included the bulk of the middle and upper classes and the independent workers — had to supply themselves in this black market, and even members of labour unions and co-operatives were obliged to purchase a substantial part of their supplies in this market because of the insufficient rations received at official prices.

Re-exports and speculation — originating in the exchange system and stimulated, particularly in the case of the latter, by the distribution system — accentuated the inflation. These factors are at the same time one of the most unfortunate manifestations of inflation. Their immediate effects have been the loss of important quantities of essential products to the internal economy and the exorbitant increase in prices. They resulted in an even larger decline in the real income of the majority of the population and a distribution of income in favour of a restricted group; and far from co-operating in solving the difficulties of the country, they have contributed to worsening them.

3. *The stabilization measures of December 1956*

The worsening of the inflationary situation in the course of 1956, characterized by a runaway increase in prices and by the progressive decline in the free exchange rate, induced the Government to make a decisive effort to halt or attenuate this process. The decree of 4 August created the National Monetary Stabilization Council, presided over by the President of the Republic and composed of various ministers, the president of the Central Bank and other high officials. From the beginning the Council has had access to the advice of experts of the United States Government and the International Monetary Fund. On 21 November the Congress granted the President of the Republic special powers for a period of one year to enable him to take measures necessary for the attainment of economic stability, and on 15 December the basic decrees were promulgated, to be complemented thereafter by other measures.

The fundamental characteristics of the new policy are the suppression of the multiple exchange system, the devaluation of the boliviano, and the establishment of a single fluctuating exchange rate in accordance with market conditions; the elimination of controls, of prohibitions affecting exports and imports, the adoption of a régime of free trade and exchange transactions, subject only to customs duties and the payment of export royalties; the elimination of direct and indirect Government subsidies to essential articles and of internal price controls, except for rents; the freezing of wages and salaries for one year after adjustments to compensate for the increase in prices resulting from the devaluation and the elimination of the cheap company

store system ; the control of bank credit and the adoption of fiscal measures to balance the national budget and replace revenue obtained from the old exchange system with more normal tax revenues.

At the time of preparation of this study (April 1957), only four months have elapsed since the application of these stabilization measures. It is thus premature to attempt to analyse the results, since several months must pass before it will be possible to appreciate how the country has been able to adapt itself to such a radical change and which have been the effects of the new situation both with regard to the economy as a whole and to its principal sectors. Nevertheless, immediately after the adoption of the anti-inflationary measures very significant changes took place which merit analysis, since they have a direct relation to the success of this policy.

One consequence which can be classified as definitely favourable is the immediate disappearance of the vices which had their origin in the system of controls and multiple exchange rates. Speculative profits in the sale of essential articles and illegitimate gains from the distribution of exchange and quotas and from other similar abuses, have ceased to exist along with the factors upon which they were based. Even more important, the incentive for contraband trade with neighbouring countries has disappeared with the suppression of exchange rates favouring the importation of consumer goods and some raw materials. This fact, together with the increase in the availability of essential goods provided by United States aid, has increased the supply of goods in the internal market and virtually eliminated the problem of shortages. It was possible to anticipate that during the period immediately following stabilization there would exist a heavy demand for exchange arising from uncertainty over the new measures and from speculative transactions arising from the difference between the old free rate of exchange and the new parity rate, but available information indicates that this demand has been less than that anticipated, which has made it possible to maintain the position of the boliviano without recurring in an exaggerated degree to the stabilization fund. Not less important has been the psychological climate created by the disappearance of unjust privileges, by the honesty and energy with which the new policy has been applied, and by the willingness with which large sectors of the population have agreed to contribute their share of sacrifice in order to carry out stabilization.

It is also possible to predict an increase in agricultural output as a result of the anti-inflationary policy, since the situation prevailing before December 1956 discouraged production in this sector. Small farmers enjoyed favourable relative prices in view of the fact that they sold their products in the cities and mining centres at free prices, whereas they were able to purchase goods provided by American aid and other products at controlled prices. Moreover, a considerable number of farmers came to the cities to form queues for the purchase of goods in official sales or at controlled prices in order to resell them in the black market, thereby earning more than they could in their agricultural pursuits. In areas adjacent to the frontier, especially in the lake Titicaca region,

contraband constituted a highly remunerative activity prejudicial to agricultural production. It might be considered that a worsening of relative agricultural prices would lead to a reduction in agricultural output, but in the case of Bolivia the situation is different. By eliminating special privileges and windfall profits from small large-scale speculation and contraband, the stabilization measures have induced important groups of farmers to return to the country side because of a lack of other opportunities for employment, and it is hoped that farms will produce more so as to permit the rural population to maintain its actual consumption level. It is possible that the full effect of this situation will not become immediately apparent because the sowing season has already passed, but it is almost certain that the next harvest will reflect the results of the return of labour to agriculture.

In addition to these favourable effects of the stabilization policy, some problems have arisen which require careful attention on the part of the economic authorities. The first of these — and without doubt the most important in view of its possible consequences — is the drop in real income of the wage earning sector. It is not easy to calculate the exact level of remunerations before and after stabilization. Before December employees received, in addition to their monetary wages and salaries, indirect income through quotas of essential articles which they could purchase at official or fixed prices, although it is difficult to estimate the magnitude of these purchases in comparison with those made in the free market at much higher prices. A measure of the incidence of the stabilization decrees thus must not only take into account the increase in free market prices but also the effect of the elimination of this system of indirect benefits.

The cost of living index for the city of La Paz prepared by the Dirección General de Estadística rose by 62 per cent between the end of November 1956 and the end of March 1957, although it should be noted that in the last two months there was a fall in prices in relation to December and January. This increase is undoubtedly quite exaggerated. In the foodstuffs group for the period prior to stabilization official prices were taken into account for various products which have a great weight in the index and which were purchased only to a limited extent at those prices even by labour union members, whereas prices for these products since December are those prevailing in the free market. The increase indicated in the price of housing is also doubtful.

According to an index prepared by the Central Bank of Bolivia for a group of foodstuffs consumed by workers in the city of La Paz, prices rose by 22 per cent between 3 December 1956 and immediately after the promulgation of the stabilization decrees. Thereafter the index declined to 92 on 25 March (3 December = 100) and to 86 by 29 April 1957, although this index is also unrepresentative of real trends. In the first place, in the calculation of the index only free agricultural prices were taken into account before and after 15 December, with the result that no consideration was given to that part of salaries spent on products at official prices. In the second place, the market in which the information was gathered is one with the lowest prices in which a large proportion

of consumers do not participate, and appreciable differences exist between prices in the different markets of the city. Finally, the weights used in the index appear to be very different from the real composition of expenditures.

With regard to statistics on salaries, the problems are not less serious. According to data supplied by the Ministry of Labour and Social Security, average total wages for industrial workers in La Paz rose by 23 per cent between November 1956 and February 1957, including payment for overtime, special bonuses, etc. However, it should be pointed out that according to the information obtained by the Mission these figures have not taken into consideration some payments in money and in kind made by certain enterprises to their workers.

Nevertheless, it would not appear venturesome to state that the real income of factory workers in La Paz has declined even though it is impossible to quantify the reduction at the present time. Aside from the elimination of subsidies to articles of first necessity, prices of fuel and transport have increased, and overtime work in many industries has been reduced. It is not very probable that the compensatory increase in nominal salaries has been sufficient to neutralize the effect of these factors on real wages. Another sector which appears to have suffered from the contraction in real income is the public employees. The compensatory adjustment made in the wages of this sector — 1,450 bolivianos daily per person — probably does not represent more than a 30 per cent increase over average wages before stabilization. In this group the most affected are the higher wage earners, whereas lower income employees may not have suffered any decline in their real income.

Such a result was of course to be expected. The level of national income in the last few years has been maintained above that of the product, thanks to transitory factors such as the use of international reserves and external credits, which have tended to diminish. Economic stabilization signifies basically that the country will have to live within its means and with the help of United States aid as long as it continues. Consequently, the inevitable reduction in real income is the prices which must be paid to restore a healthy economy. It is unnecessary to point out that a similar or even greater reduction would have come about in any event as extraordinary reserves became exhausted, which in fact had already been about to occur.

On the other hand, the most delicate aspect of the situation is that a marked decline in the real income level of the wage earning sector must have repercussions on demand, which might reduce incentives for the maintenance of activity in certain sectors. It is not easy to resolve this problem. A disproportionate increase in wages could disturb the anti-inflationary policy by increasing the cost of production in mining and industry. If these activities were not in a position to absorb such increases, then they would have an immediate effect upon prices. Moreover, in the case of mining an increase in salaries could lead to a new devaluation of the boliviano in order to avoid deficits in the budgets of the enterprises, in which case immediate increases would take place in

the prices of imported articles, particularly of essential goods and raw materials. In short, a pure and simple rise in remuneration could lead to a new wage/price spiral and worsen rather than improve the living conditions of the workers.

Without discarding the possibility of a revision in the level of wages which would take into account the dangers described, other ways should be mentioned which could lead to the improvement of real salaries by means of a reduction in prices. In the first place, many disproportionate price increases which took place immediately after stabilization have begun to fall back: the cost-of-living index revealed a reduction of 8.8 per cent in February which was particularly noticeable in food-stuffs and clothing, although a small increase took place in March. On the other hand, there appear to exist possibilities for revising railroad tariffs and truck rates without producing maladjustments in the economy of the enterprises. With regard to liquid fuels, which is another item with a great incidence on the price level, it may be possible to effect some reductions by lengthening the period in which Bolivian State Petroleum Deposits (*Yacimientos Petrolíferos Fiscales Bolivianos*) has calculated that it must wipe out the deficit accumulated before December 1956 and without disturbing its current budget. It is also possible to predict a reduction in the prices of some agricultural products after the next harvest (in May and June).

The possibility should also be considered of avoiding a fall in demand and in the national product through new investment to create employment and income — which at the present time would require external financial resources — and through the application in the shortest possible period of measures to adapt domestic industry to the new structure of demand.

Another question of utmost importance is the impact of stabilization on the financial capacity of the mining enterprises, both nationalized and under private ownership. It has already been seen that the difficult situation of the Bolivian Mining Corporation and of the private mines originated principally in the application of an overvalued exchange rate to their exports, which did not permit them to cover their current costs and take care of the replacement of equipment, the preparation of new work and new investment. At the time of stabilization the exchange rate paid by the Central Bank for mineral exports was 3,500 bolivianos on the average. The new rate signifies a doubling of the income of the mining companies in domestic currency, but their costs of production have also risen due to the increase in wages and prices of fuel, domestic and imported materials.⁵

This subject is presently being studied carefully by the economic authorities. The first results indicate that the Bolivian Mining Corporation will be able to finance its operations at the actual exchange rate, although with respect to the private mines it is not possible to anticipate any conclusion at the time of writing.

⁵ Before December 1956, mining enterprises acquired dollars from the Central Bank for their foreign currency expenditures at a rate of 190. However, transport rates have diminished since stabilization, as can be seen in Part B, section III, of this study.

Another problem is the reduction which has occurred in the sales of Bolivian industry, particularly of textiles. It is not difficult to explain the origin of these difficulties. The frontier market of neighbouring countries, which before stabilization was artificially stimulated by differences in prices arising from the exchange rates applied to imported raw materials and which absorbed an important share of Bolivian industrial output, has disappeared. Since 50 per cent or more of domestic output of certain textiles was sold in this market, a drop in sales of these goods was a logical consequence. It is furthermore possible that in anticipation of rising prices traders and consumers accumulated inventories of some manufactured products immediately before stabilization. It also appears that the direction of contraband has changed and that at present foreign articles are competing with domestic products.⁶

All of these circumstances are to a certain extent temporary and relatively easy to correct by administrative measures — with respect to contraband — or call for the adaptation of certain industrial sectors — the manufacture of textiles, for example — to the internal level of demand. More important is the problem arising from the reduction in consumption caused by the fall in real income, which has apparently taken place. There is no doubt that industry is presently confronted with serious difficulties. Labour unions and Government policy prevent the unemployment of workers, but if the present situation continues it is not improbable that some factories will have to shut down. Nevertheless, the problem has not yet reached this stage and only a limited number of enterprises has been seriously affected. As will be seen in the part of this study on industry,⁷ there exist various possible solutions to this problem. One method which offers the best prospects of success consists of putting into practice an intensive campaign for the rationalization of Bolivian industry to adapt it to market conditions, accompanied by a policy of supervised credit to aid needy cases and to permit the investment (at present very limited) which rationalization requires.⁸ In any event, the possibility of a short-term reduction in industrial employment should not be underestimated, in which case it would be necessary to find new employment for the workers released.

The fiscal situation is also a pressing problem, particularly for the immediate future. One of the principal bases of the stabilization policy is a balanced budget. To this end the Government has not hesitated to maintain the low level of wages of its employees, to reduce public

investment and to limit expenditures to those which are strictly indispensable. But not even with these measures of extreme austerity is the Government's financial situation optimistic. In the 1957 budget, which amounts to 292,000 million bolivianos, about 112,000 million or 38 per cent is provided from the counterpart funds of United States aid. It is not possible to make any projection of the yield of current taxes, in view of the fact that the effects of stabilization measures on the economy remains to be seen; but up to the present time tax collections appear to be inferior to the figures budgeted mainly due to the decline in economic activity. Thus, the Government is today faced with the problem of obtaining revenue during the current year sufficient to cover budgeted expenditures. In the immediate future the fiscal authorities must also seriously consider the need for increasing public investment in order to meet the development needs of the country. Soon, when the freeze on wages is lifted, it will also be necessary to increase the salaries of public employees. Although it is conceivable that further economies in expenditures can be made — particularly if organizational and work methods in Government offices are improved — this procedure does not offer great possibilities. A rise in fiscal revenue is thus a fundamental and urgent problem. The tax reform, the urgency of which cannot be over-emphasized, may reveal new ways of obtaining resources for the public sector, but it is very probable that in order to take care of a minimum of its obligations and to begin a development policy, the Government will require in addition to United States aid other extraordinary funds, at least for a time.

The picture which has been presented is far from being optimistic, but any other impression would not reflect the real situation. The job of restoring the economic health of the country is difficult and time-consuming. For many years Bolivia has been living beyond its means, spending more than it produces. Out of the inflation some sectors have enjoyed a favourable situation which cannot be maintained under normal circumstances since they were being paid out of the country's reserves, credit and capital. Today Bolivia must live out of its own resources, and this at the present time signifies a reduction in the standard of living. There are only two ways of overcoming the situation: one is transitory and limited, although perhaps necessary over the short run, namely, an increase in foreign aid and credit; the other is fundamental and permanent and consists of an increase in output and productivity so that real income may be raised. In order to attain this last aim the country must inevitably pass through a difficult transition period.

V. PROBLEMS AND PROSPECTS OF ECONOMIC DEVELOPMENT

1. *The economic problem*

The economic future of Bolivia should be analysed from two points of view, which are closely connected but call for different methodologies. The first is an approach to the short-term problems to be solved, while the second consists in a fairly clear conception of Bolivia's long-term economic prospects.

⁶ The deficient tariff reform, promulgated along with the measures of 15 December, has also contributed to increasing competition from some foreign products both of industrial and of agricultural origin. At the present time a new tariff system is being worked out.

⁷ See Part B, section I.

⁸ The rationalization mentioned here includes the diversification of production to adapt it to demand and the substitution of some imports by domestic output, as well as improvements in administrative, production and organizational methods of enterprises. Such a process could lead in some cases to a reduction in the number of personnel employed, although this does not appear to be the case in many firms. It would also signify an improvement in workers' discipline and the selection of employees according to their efficiency.

With regard to the first aspect, Bolivia is in urgent need of various investment projects in order to avoid, *inter alia*, disemployment and an increased reduction of real income which might undermine the Government's plans for stabilizing and consolidating the economy. Moreover, such investment would constitute the basis — and possibly the starting-point — of future economic development. In the sections composing Part B of this study, the major sectors of the Bolivian economy are analysed, and the factors which may help to determine the nature of investment in each of these are described in more or less specific terms. It should nevertheless be emphasized that these chapters simply indicate general basic principles which may serve as a guide in planning the individual projects, but should not be considered as projects in themselves. The task before the Bolivian technical institutions consists in the preparation of such projects at the earliest possible opportunity. It will be clear from the sections on the different sectors that there are numerous fields in which a suitable investment policy for the country's development needs might be initiated without delay, and that it only remains for a precise statement to be made of the objectives and requirements embodied by the specific projects referred to.

Although this method of approach to future investment policy can perhaps be justified by the imperative need to carry out specific plans for attaining the objectives mentioned, it is by no means the ideal formula for dealing with Bolivia's long-term development requirements. Despite the fact that the data given in the sector sections were based on as thorough a study as possible of prevailing conditions, they should not be taken as the constituents for an economic development programme. The drawing-up of a scientific programme will not, in fact, represent merely the sectorial requirements, but the construction of over-all projections for the basic economic factors (demand, product, investment, savings, etc.), to which the specific plans for each of the main economic sectors should be adapted.

The objective of this section is precisely to indicate some qualitative aspects of the long-term economic development problems confronting the country. As it is intended only to provide a methodological guide for the Bolivian technical institutions who will be responsible for programming, the tentative projections made should not be considered as the programme itself, or as predictions and indications of what will occur if their premises are fulfilled. The value given in subsequent pages will undoubtedly be modified considerably when a detailed programme is prepared on the basis of more accurate information than that available up to the present.

It should not be inferred from this that the figures arrived at by the analysis are divorced from reality. In spite of its predominantly methodological intention, its conclusions do not differ appreciably from the estimates in the sectorial sections, although the methods by which these were calculated were entirely different. The figures should admittedly be corrected — as they inevitably will be during the preparation of the programme — but they do provide some idea of the magnitude of the economic and financial problems that Bolivia will have to face during the next decade. The projections are

also intended to draw the attention of the Government and people of Bolivia to the urgent need of devoting all their efforts to investing in scientifically-chosen strategic sectors in order to improve the standard of living and ensure the uninterrupted rise of a more balanced and steady rate of growth.

(a) *Statement of the problem*

Although there may be various methods of studying the long-term prospects of the Bolivian economy, the most appropriate would perhaps be to take as a starting point the basic problem of the growth of the labour force and the capacity of the principal economic sectors to absorb this increment. The heavy demographic pressure on the agricultural zones in the *Altiplano* is a well-known fact; as the labour force is also being supplemented by several thousand persons annually, it is obvious that one of the nagging problems for the economy is how to find employment for the increasing population of working age without simultaneously reducing the exiguous average income of the agricultural worker.

In the first place, an attempt should be made to assess the magnitude of the problem. The 1950 census recorded a total population of 3,018,000 inhabitants,⁹ and, in comparison with the previous census of 1900, showed only a moderate rate of natural growth. A more extensive examination of possible demographic growth during the whole half-century will, however, lead to the conclusion that the real rate has accelerated in recent years and is likely to rise even more rapidly in future owing to improved sanitary conditions. If, therefore, a higher but still moderate rate of growth is assumed, the population in 1957 will probably amount to approximately 3,550,000 and, by 1967, may even have reached 4,300,000. To sum up, there is every likelihood that the Bolivian population will increase by some 750,000 persons during the next decade.

The same census data indicated that, in 1950, the active population could be estimated at 1,043,289 persons — approximately 34 per cent of total population — after the figures for employment in agriculture had been corrected so as to take into account the real labour force in terms of adult manpower equivalent. If the proportion is assumed to remain the same, the current real labour force can be estimated at 1,210,000 and may be expected to rise to 1,470,000 by 1967. It may thus be anticipated that the total active population in the country will increase by some 260,000 persons during the next ten years.

To state the problem much more precisely, it may be asked how the Bolivian economy is to absorb an average yearly increment of 26,000 persons. The extent to which the various economic sectors are able to employ this increase in the active population will constitute a determining factor in the economic growth of the country and the improvement of its present standards of living.

It is worth while to give some hypothetical estimates showing alternative possibilities in relation to the

⁹ This and subsequent population figures are based on estimates taken at mid-year.

distribution of the increase in the active population. When the corrections referred to had been made the labour force in the agricultural and livestock sector was estimated at 72.1 per cent of the total active population in 1950. If this proportion were maintained, agriculture would have to absorb almost 190,000 more persons during the next decade. The extremely unfavourable effect of such a large increase on productivity levels in the agricultural sector may easily be imagined, since the burden would fall mainly on areas where the density of employment is already very high.

If it were desired to retain this additional labour force in the agricultural and livestock sector without a resultant deterioration in the income-level of that sector as a whole, it would be essential — as explained in greater detail in the relevant section — for the major part of the new active population to engage in production for export. In view of the territorial conditions in Bolivia, its distance from embarkation centres and the high cost of transport, it appears very unlikely that this country could become a large-scale exporter of agricultural and livestock commodities, since it would have to compete with neighbouring countries whose export possibilities are much more favourable.

It is true that during the last few years other sectors have displayed a tendency to absorb almost 50 per cent of the increase in the active population, which has led to a proportional reduction of the agricultural labour force. (It is estimated that this will be only 61 per cent of the total labour force in 1957.) But it is equally certain that should this proportion be maintained during the following decade — even if other sectors continue to absorb half the increase in the labour force — the absolute figures for the active population that agriculture would still be obliged to employ would probably be incompatible with any real effort to improve the productivity of that sector.

The only remaining alternative, then, is to recognize that the essence of the problem lies in the agricultural and livestock sector, and to study over-all prospects on the basis of reasonable assumptions as to the greatest number of persons that can be absorbed by this sector in such a way as to enable them to contribute — on however small a scale — to the improvement of productivity in the economy as a whole. The new areas appropriate for colonization are capable of absorbing approximately 4,000 active persons every year. If this is accepted, two alternative working hypotheses, of which the second is the more favourable, may be postulated as follows: (A) the labour force in agriculture will increase by the aforesaid 4,000 persons in the new settlements and by another 4,000 persons comprising the active population increment in the areas at present under cultivation; or (B) there will only be an increment of 4,000 persons in the newly-colonized regions,¹⁰ unaccompanied by any increase in the active population on the land now under cultivation.

It may be deduced from these two hypotheses that non-agricultural activities will have to absorb 18,000

¹⁰ In future these will be designated as working hypotheses A and B respectively.

active persons every year in the one case and 22,000 in the other. It would therefore be useful to study the probable distribution of these increments, on the basis of an estimated break-down by sectors, of the non-agricultural active population in 1957, according to table 9.

Table 9

BOLIVIA : ESTIMATES OF NON-AGRICULTURAL ACTIVE POPULATION IN 1957

<i>Sector</i>	<i>Thousands of persons</i>
Extractive industries	55.2
Manufacturing	56.5
Urban handicrafts	68.2
Building	32.2
Transport	26.9
Public administration and general services	52.3
Trade, banking insurance	73.0
Personal services	89.2
Other services	11.5
TOTAL	465.0

Source: ECLA estimates, based on the 1950 census.

As regards 1967 an acceptable preliminary assumption would be that the distribution of the non-agricultural active population — 645,000 and 685,000 persons according to hypotheses A and B respectively — would be proportionally the same for each sector as in 1957. The corresponding figures appear in table 10. But, as this mechanical projection would not be in line with real conditions and possibilities in the different sectors, corrected figures, which are more reasonable in the light of current knowledge of the Bolivian economy, are given in the two last columns of table 10.¹¹

¹¹ In the case of hypothesis A, these readjustments may be justified as follows. As it is well known that there is at present a surplus labour force in mining, it was not considered safe to assume additional absorption of more than 15,000 persons in the next ten years. With regard to manufacturing, the detailed considerations in Chapter I of Part Two were taken into account, and a lower annual increase of 2,500 persons was assumed. It seemed reasonable to suppose that urban artisan labour would grow proportionately less than industry, at an annual rate of 1,600 persons, whereas the building industry, in view of the need for more public works and buildings of all kinds, seemed likely to expand more rapidly, and a rate of 2,000 persons per year was postulated. The same figure was assumed for transport, which also implies a high rate of increase, with a view to the need to add some 700 units yearly to the lorry park to enable it to serve the newly-settled zones and cope with the increment in production. It was estimated that the trade, public administration and personal services sectors would maintain much the same relative importance as in 1957, while employment in other services and activities was calculated residually, a slight percentage decrease resulting. Hypothesis B envisages the absorption of an additional 40,000 persons during the decade. It was assumed that these would be mainly distributed among the high-productivity sectors so as to ensure a greater increase in average national income. For this reason, a higher rate of employment was postulated for mining, manufacturing, building and urban artisan labour. It will be observed that hypothesis B is, in general, more optimistic, envisaging an expansion in the petroleum industry and, in particular, a higher rate of growth for industry than that forecast in the relevant chapter.

Table 10
BOLIVIA : PROJECTIONS OF THE ACTIVE POPULATION
IN 1967

(Thousands of persons)

Sector	Hypothesis A		Hypothesis B	
	According to percentage distribution in 1950	Readjusted distribution	According to percentage distribution in 1950	Readjusted distribution
Extractive industries ..	75.9	70.0	80.5	80.0
Manufacturing	83.3	82.0	89.3	97.0
Urban handicrafts	93.7	84.5	99.4	94.5
Building	44.2	52.0	46.9	57.0
Transport	37.0	47.0	39.2	47.0
Public administration and general services .	71.9	72.0	76.3	72.0
Trade, banking insurance	100.3	100.0	106.4	100.0
Personal services	122.8	122.8	130.2	122.8
Other services	15.8	14.7	16.8	14.7
TOTAL	645.0	645.0	685.0	685.0

(b) *Investment requirements*

The foregoing figures and considerations constitute, in the final issue, ideal projections of how the increase in the active population would have to be distributed in order to solve one of the country's basic economic problems. They would, however, have no significance unless complemented by an examination of the real possibilities of achieving these objectives. In the last analysis, the key factor is, of course, the volume of investment required by such growth and the sectorial redistribution of the labour force. An attempt will be made to deal with this aspect in the following paragraphs, although the figures employed are barely indicative of approximate magnitude.

In the case of agriculture, the problem will be considered at much greater length in the corresponding section of the present study.¹² It will therefore be sufficient at this juncture to note the conclusion that the annual net investment required by this sector, both for expansion of the area under cultivation and a moderate improvement in the techniques employed on existing farms, is likely to be approximately 5.5 million dollars. The section on manufacturing activities¹³ also estimates the average amount of capital required for providing employment for the increased labour force as approximately 3,000 dollars per active person. The possible net investment required in the mining sector will be calculated on similar lines, but the figures for investment per active person will be assumed to be considerably higher — as much as 10,000 dollars — in view of the high capital intensity required by the expansion of the petroleum industry and the fact that available 1950 data referred to depreciated capital. A capital of 6,000 dollars per person will be assumed necessary in the transport sector.

¹² See Part B, section IV.

¹³ See Part B, section I.

This figure is lower than that of the last few years, since the basic projects already terminated will presumably be utilized in greater degree and no large-scale expansion is forecast for railroad construction, which has a high capital intensity. A final postulate will be that average capital per person employed in other activities (800 dollars) will show a slight increase over the 1950 figure, owing to the possibility of more investment in electricity.

The conclusions to be drawn from these estimates are summarized in table 11, which gives the average annual net investment during 1958-67 (according to hypotheses A and B respectively) that is compatible with the rate of growth and distribution of the active population cited in the previous section.

Table 11
BOLIVIA : ESTIMATE OF ANNUAL NET INVESTMENT
REQUIRED, 1958-67

Sector	Hypothesis A		Hypothesis B	
	Annual increase in the active population	Annual net investment (Millions of 1950 dollars)	Annual increase in the active population	Annual net investment (Millions of 1950 dollars)
Agriculture and live-stock	8,000	5.5	4,000	5.5
Extractive industries ..	1,500	15.0	2,500	25.0
Manufacturing	2,500	7.5	4,050	12.2
Transport	2,000	12.0	2,000	12.0
Services and others ...	12,000	9.6	13,450	10.8
TOTAL	26,000	49.6	26,000	65.5

Source: ECLA.

If such projections were to become reality, aggregate capital invested in the Bolivian economy in 1967 would be 1,420 or 1,580 million dollars (at 1950 prices) according to hypotheses A and B respectively. It will be recalled that the figure for 1955 was only a little over 920 million dollars.

From the standpoint of the investment efforts required it will not be sufficient to consider net investment only, since some provision must be included each year for the depreciation of fixed capital. Assuming an average depreciation rate of 2.8 per cent, similar to that registered during 1950-55, and discounting the inevitable influence on such a rate of variations in the sectorial distribution of capital, total depreciation requirements may be estimated at an annual average of 32.8 million dollars on hypothesis A and 35.0 million dollars on hypothesis B for the whole period 1958-67.

It will now be feasible to calculate total gross investment requirements, in accordance with the terms of both hypotheses. In the case of hypothesis A, to the net annual investment of 49.6 million dollars would be added 32.8 million for depreciation, giving a gross investment of 82.4 million, whereas for hypothesis B a similar calculation would place the gross investment

figure at 100.5 million dollars. These conclusions are admittedly striking. Gross investment requirements estimated in this way are far higher than those recorded for 1955, which year in turn witnessed a very favourable level in comparison with that of former periods.¹⁴ In any case, before it can be judged whether figures of this magnitude are attainable, they will have to be related to the expansion in the gross product determined by such investment, as well as to the financing possibilities at the country's disposal. This will be the topic dealt with in the final pages of the present section.¹⁵

(c) *Repercussions on the gross product and productivity*

Some consideration should now be given to the probable effect of the growth and redistribution of the labour force on the level of the gross product and overall productivity of the Bolivian economy. The corresponding estimates are mainly based on the figures for the gross product per person employed in the principal sectors in 1955, and have been corrected to conform with more or less arbitrary hypotheses on possible increases in sectorial productivity.

As regards agriculture, the gross product per active person was 125 dollars in 1950 and slightly lower in 1955. It is estimated that cultivation of the new areas, and the improvement in the productivity of the labour force employed in the existing cultivated zones consequent upon improved techniques, will probably raise the aggregate gross product for this sector in 1967 to 35 million dollars above its 1950 level, which would represent an increase of 13 or 18 per cent, according to the hypothesis adopted, in the gross product per active person.¹⁶ In the case of mining, the gross product per active person in 1950 amounted to 1,340 dollars. It will be assumed

¹⁴ It will be recalled that average gross investment from 1950 to 1955 was only 37 million dollars annually and 54.4 million dollars in 1955.

¹⁵ See point (d).

¹⁶ It should be pointed out that a lower figure was given in Part B, section IV, which only comprised certain crops and covered a period of scarcely five years. Over a longer period, and including the anticipated increase in livestock and forestry production, the increment will be equivalent to that assumed in the hypothesis.

here that productivity will rise by slightly more than 10 per cent until, by 1967, the figure per active person will have reached 1,500 dollars. Calculations for manufacturing activities are based on the detailed information given in the pertinent chapter,¹⁷ which postulated a 20-per cent increase in productivity. Urban artisan labour is assumed to show only a slight improvement on the figure for the gross product per person recorded in 1950 (192-200 dollars), whereas the services sector retains approximately the same level of productivity as in 1950. The figures for these estimates, adapted to the premises of the two working hypotheses utilized, are summarized in table 12.

In short, it may be concluded that if the employment and productivity targets implicit in these assumptions are feasible, the total gross product in 1967 will amount to approximately 420 and 450 million dollars in hypotheses A and B respectively.¹⁸ This would imply a considerable improvement in the figures for gross product per active person — from 238 dollars per person in 1950 and 232 in 1955 to 286 in 1967, according to hypothesis A, and 304 according to hypothesis B. What is even more important is that the attainment of such targets would raise the gross product *per capita* from its current level of less than 80 dollars to 97 or 104 — according to which hypothesis is selected — by the end of the decade. It is surprising that such an intensive investment effort as that just assessed should prove indispensable for attaining what may be considered very moderate increases in *per capita* income. Nevertheless, it would result in the establishment of a much more favourable situation and pave the way for a subsequent acceleration of the rate of growth.¹⁹

¹⁷ See part B, section I.

¹⁸ The total gross product would increase at a cumulative rate of 4.7 per cent annually according to hypothesis A, and 5.5 per cent according to hypothesis B.

¹⁹ The wholly tentative nature of these computations should not be forgotten. In practice, there may be far greater increases in the gross product per active person, since a relatively small volume of investment in strategic points of the economy, where it is most useful in promoting the optimum utilization of existing capital and in eliminating bottlenecks, may result in a notable expansion of productivity.

Table 12
BOLIVIA : PROJECTIONS OF THE GROSS PRODUCT IN 1967

Sector	Hypothesis A			Hypothesis B		
	Active population (Thousands)	Gross product per active person (1950 dls.)	Total gross product (Mills. of 1950 dls.)	Active population (Thousands)	Gross product per active person (1950 dls.)	Total gross product (Mills. of 1950 dls.)
Agriculture and livestock	825.0	141	116.0	785.0	148	116.0
Extractive industries	70.0	1,500	105.0	80.0	1,500	120.0
Manufacturing	82.0	600	49.2	97.0	600	58.2
Urban handicrafts	84.5	200	16.9	94.5	200	18.9
Services and others	408.5	325	132.8	413.5	325	134.4
TOTAL	1,470.0		419.9	1,470.0		447.5

Source: ECLA.

Apart from an increase in the gross product, these hypotheses would also imply certain relatively important changes in its composition by sectors which are summarized in table 13. The most outstanding would perhaps be the marked decline in the relative importance of the agricultural and livestock sector under hypothesis B, and the notable growth of manufacturing activities and, to a lesser degree, mining, which would, to a great extent, offset this deterioration.

Table 13

BOLIVIA : PROJECTIONS OF CHANGES IN THE PERCENTAGE COMPOSITION OF THE GROSS PRODUCT

Sector	1950	1955	1967	
			Hypothesis A	Hypothesis B
Agricultural and livestock	32.8	28.1	27.6	25.9
Extractive industries ..	24.4	25.2	25.0	26.8
Manufacturing	8.9	10.0	11.7	13.0
Urban handicrafts	4.3	4.8	4.1	4.3
Services and others ...	29.6	31.9	31.6	30.0
TOTAL	100.0	100.0	100.0	100.0

Source: ECLA.

It should be pointed out that under these conditions there would be hardly any appreciable change in the product-capital ratio (0.29 in 1950 compared with 0.29 and 0.28 in 1967 according to hypotheses A and B respectively). The foregoing considerations would, however, not be incompatible with a marked improvement in the product/capital ratio in specific sectors, since a substantial expansion is also assumed for certain basic high capital density industries such as petroleum, electricity and so forth.²⁰

(d) *Financing possibilities*

The crucial problem in relation to the aforementioned projections is, clearly, how to finance the large annual investment that will be required. It should be pointed out, in the first place, that a comparison of the aggregate volume of investment with the growth of the gross product will give average investment coefficients of 24.1 and 28.3 for the whole period in hypotheses A and B respectively. These figures were also far from being reached during the last few years and their attainment would call for a much greater effort.

The first aspect to be considered is whether it will be feasible to raise national savings to a point when they could finance such investment. It has already been stated that consumption of goods and services in 1955 reached 233 million dollars (at 1950 prices), and it would patently be very unrealistic to put forward any hypothesis which would imply a further reduction of this already very small amount. It was thus considered much

more reasonable to assume that it will be necessary to set aside for this purpose a sufficient amount of consumer goods and services to meet the requirements of the population increment and leave a margin for a small improvement in *per capita* consumption (at an annual cumulative rate of 1 to 1.3 per cent *per capita*). From this, it may be concluded that the requisite annual average for the supply of consumer goods and services during 1958-67 will be 290 and 300 million dollars according to hypotheses A and B respectively.

When these figures are compared with the annual average gross product, it appears that national savings would have to reach 52 and 55 million dollars on the respective hypotheses.

When the possible volume of national savings was thus quantified, no allowance was made for possible changes in the terms of trade. If these were to show an upward trend, the above figures might be substantially increased, and a slightly more ample expansion in *per capita* consumption might be anticipated, whereas if the terms-of-trade index were to fall below current levels, the possibility of maintaining the volume of savings would be considerably diminished, unless the modest improvements postulated for consumption levels were sacrificed in its favour.

In any case, the preceding calculations indicate that the country will probably find it almost impossible to finance the investment targets, upon which the projections are based, by means of national savings alone. This emphasizes how serious would be the obstacles to a reasonable rate of development, unless the country can count upon substantial contributions from abroad.

These calculations will also enable an evaluation to be made of the necessary volume of such assistance. Taking the same annual averages for 1958-67, gross investment in accordance with hypothesis A would amount to 82.4 million dollars, of which 52 million would be financed by national savings, and the remainder — slightly more than 30 million — would be obtained from external sources. Under the terms of hypothesis B, foreign contributions would amount to 45.5 million dollars.

These estimates are by no means excessive, in view of the fact that, apart from external credit and assistance, they may also include direct foreign investment. Without the latter, it would be very difficult to raise the country's productive capacity to any appreciable extent, national savings would probably drop to such a point that they might be unable to cover depreciation requirements, and the possibility of a slow but steady improvement in the standard of living of the Bolivian people would have to be discounted. It seems unnecessary to reiterate how small are the practical possibilities offered by the alternative solution of an even more severe restriction of consumption of goods and services; such a step would result in economic as well as social difficulties, as a result of the lack of production incentives attendant upon a drop in consumer demand.

There are other relevant considerations to be taken into account. As gross investment implies, to a large extent, the importing of capital goods, it will be necessary

²⁰ See again footnote 19.

to ascertain whether the country's capacity to import will suffice to meet the maximum requirements estimated. Here no assessment was made, for want of the requisite data. It should nevertheless be mentioned that external contributions designed to supplement national savings would involve an increase in the capacity to import; moreover, the industrial and agricultural development implicit in the projections would undoubtedly modify the structure of imports to a considerable extent, as a result of which capital goods would represent a much larger proportion of total imports than at present. Finally, the moderate consumption increase assumed, together with the more intensive growth of internal activities would, in fact, presuppose large-scale import substitution in the course of the decade. It is unlikely, therefore, that such problems would constitute the main obstacle to the attainment of the purely hypothetical targets postulated in this section.

2. *Economic development programming*

(a) *Statement of the problem*

The question of whether a given country should base its economic policy on a development programme, and, if so, the nature and form of this programme, cannot be considered in the abstract without reference to the prevailing conditions in that country. It may well happen that the spontaneous behaviour of the economy has resulted in the satisfactory development of savings and investment as well as in an adequate rate of growth; in such a case, it might be preferable to fix objectives or goals that could be reached without the aid of a programme. It may also be decided in certain circumstances that the need to establish an investment programme refers to the public sector only, since private enterprise has sufficient resources, initiative and commercial knowledge to further economic development by its own spontaneous action. In addition to examples such as these, however, there is the more frequent case of under-developed countries where the magnitude of the problems arising and the limited nature or total lack of basic resources require a more resolute and systematic economic policy. In such cases there is also a very varied field from which to select the methods to be adopted, but there are undoubtedly advantages to be obtained from co-ordinating policy by means of a development programme which, on the basis of a sound and systematic study of the economy, would attempt to secure the best possible utilization of the limited resources and a minimum of conflict between its different aims.²¹

For this purpose, the case of Bolivia must be considered from the point of view of both past experience and the nature of its current or anticipated problems. The inference to be drawn from the development of Bolivia's economy during the century is that a balanced and sustained development is contingent upon an active economic policy, and a greater rationalization of the aims to be pursued. It has been seen that the growth

of mining was not sufficient to produce a similar phenomenon in the remaining production sectors. While Bolivia's economy remains in its present under-developed state, experience does not warrant the belief that the spontaneous action of private interests will be sufficient to achieve satisfactory development. At the same time, the lack of a more profound knowledge of the national economy, or at least the adoption of economic measures which did not take the prospects of the economy sufficiently into consideration, contributed to the creation of problems which in the course of time have become obstacles to development. A case in point was the large-scale investment in projects that were not always well-planned or executed and led first to heavy national debts and later to prolonged and increasing inflation. Further, fiscal resources²² were used to maintain consumption subsidies, which hindered domestic production and diverted resources from high-priority undertakings.

From a purely economic standpoint, and with no attempt to assess political needs, Bolivia's experience in certain periods has been that of an economic policy without any definite guiding principles, characterized by adoption of unrelated measures to solve immediate problems, and at other times, that of public investment programmes and social changes which did not give sufficient consideration to the consequences of the methods of financing and the transformations effected in the country's economy as a whole.

Current difficulties, and those which can be forecast for the near future, suggest that the country cannot afford an inadequate utilization of its limited financial resources. As may be appreciated from this study as a whole, Bolivia urgently requires investment in agriculture, industry, mining, petroleum, electricity, and transport in order to give employment to the active population without reducing labour productivity or *per capita* income. It also needs to improve health and education facilities, for which a considerable outlay in services and installations of various kinds is required. In the face of so many demands, domestic capital and the capacity to import are extremely limited. The country will need foreign capital, but must also raise national savings to the maximum and, above all, make the most rational use possible of its capacity for external payments.

Thus, in the case of Bolivia, there are grounds for considering the advisability of preparing an economic development programme to guide Government policy and private interests. Such a programme would require careful consideration of certain points. It would not be exclusively a public investment programme, since Bolivia's economic problem cannot be confined to the systematization and provision of sound financial bases for the execution of projects required by the economy. Nor should it be limited to the reform or improvement of public administration, although it is an accepted fact that this is of prime urgency if a sound economic policy is to be put into force. Under present conditions in Bolivia, what is required is a programme which, on the basis of a careful and far-reaching analysis of the economy

²¹ See *Analysis and projections of economic development. I. Introduction to the technique of programming* (E/CN.12/363). United Nations publication, Sales No. : 1955.II.G.2.

²² Including differences arising from the multiple exchange rates.

and the probable future behaviour of its governing factors — especially that of exports — could establish immediate objectives for employment, investment and production, the country's available resources for attaining them, and the method of utilizing these resources so as to obtain the best possible yield from them. This would involve the fixing of priorities for targets, investment, and the use of the capacity to import ; the estimating of the levels which domestic consumption and savings should attain ; the calculation of the foreign capital that would be required within a given period ; and, in particular, the demarcation of the spheres of activity of the public and private sectors, and the establishment of the general lines of political and social policy which would facilitate co-operation between the two sectors and make the needs of the economy compatible with the encouragement of private investment.

A programme which fulfils all these conditions cannot be quickly prepared in view of the difficulty of obtaining data in Bolivia as things are at present. This does not mean that the rationalization and improvement of economic policy could not be embarked upon immediately, nor that action must be deferred until studies and analyses in every field of activity have been completed. On the contrary, in the course of this study it has been emphasized that immediate action is necessary in order to create favourable conditions for economic development ; in addition, what may be considered as the requirements and aims of a short-term programme have been outlined. Such a position, however, cannot be considered as satisfactory from the point of view of economic programming ; it must only be regarded as a beginning. It will be necessary to improve methods of analysis and provide more scientific solutions in future. It therefore appears essential, if Bolivia's economic development programme is to progress, that an immediate start should be made on the creation of conditions which, within the shortest possible period, will conduce to an improvement in the techniques of programming and in development policy. These conditions comprise two closely related aspects : the first is the improvement of sources of data, and the second the nature and structure of the programming organizations.

(b) *Improvement of sources of data*

It has been mentioned repeatedly in this study that the sources of economic and technical data in Bolivia are decidedly inadequate. Statistics in particular — in spite of the efforts of certain individuals — have not yet reached the stage at which they may be considered satisfactory for every-day use of the series for purposes of economic policy. Furthermore, it is not unusual to find repeated gaps in the work undertaken, which signifies a waste of effort, and makes it impossible to use such data for chronological analysis.

A sine qua non for analysing Bolivia's economy and preparing a satisfactory development programme is the immediate improvement of the statistical services. This would involve a number of tasks.

Firstly, existing series and the information dispersed among the different public and private institutions and

administrative departments must be examined and systematized. There is an appreciable number of old and current studies in Bolivia which has never been used, or whose employment has been limited to individual offices, apparently without any knowledge of their existence on the part of the central statistical organizations or others who might be interested.

Although a laborious, it would not be a difficult task to examine and evaluate these data, and assemble them methodically in series which would provide information on the different economic activities. Unless this is done, it will be very difficult to improve the data available for the study of past phenomena which is essential to a diagnosis of the national economy. Another urgent necessity is an examination of the methods currently used to prepare the series published by private and official organizations. In the course of their work on the present study, the members of the mission noted serious deficiencies in methods and procedure, most of which could be corrected without any great difficulty.

A further requirement in the statistical field is the preparation of series and studies which are not at present undertaken in the country but are essential to an analysis of the national economy. Under the first heading calculations of the national product and income should be mentioned. Some isolated estimates of these have been made by private individuals or international organizations for certain years, but there has been no systematic and effective work in this respect on the part of the official organizations.²³ Some of the most important groups of data, such as fiscal and agricultural production statistics, are also too inadequate to be utilized. In general there is an immense field to cover with regard to accurate and useful statistics for economic programming, and specific projects have been presented by United Nations experts which may provide the basis for a radical improvement of existing conditions.²⁴

The adequate organization of and close co-operation between the institutions or government or private departments concerned with statistics are equally necessary. Contact between these offices is not close enough at present, while there is an almost complete lack of satisfactorily co-ordinated work programmes designed to prevent duplication and raise the standard of the methods used.

The absence or inadequacy of data is not limited to the statistical field, but includes almost all economic and technical activities with very few exceptions. Agricultural resources, sources of energy, industrial possibilities, labour, etc., all require both general and specific studies of different types which are indispensable for the preparation of programmes in these sectors and for the evaluation of specific projects. Various sections of the present article indicate the economic and technical

²³ During recent months a national income unit has been created within the economic and statistical studies section of the Banco Central. The work of this section and of other Bolivian economists has been most useful to ECLA for its estimates of national accounts during the preparation of this study.

²⁴ See report by Jacob Perlman, *A new system for the organization of Bolivian statistics* (TAA/BOL.9), 1956.

spheres where methodical studies should be undertaken at the first opportunity so as to obtain a better knowledge of the country's conditions and possibilities.

(c) *Programming organizations*

In Bolivia, as in various other Latin American countries, it has been found necessary to set up specialized organizations to prepare development programmes. The National Commission for Co-ordination and Programming (*Comisión Nacional de Coordinación y Planeamiento*), which has existed for some years, has been mainly responsible for the preparation of an economic development plan. However, as in other countries, no programme has yet been drawn up, or to be more precise, no systematic efforts have been made to do so. It is beyond the scope of this study to analyse the causes which have so far prevented the Commission from carrying out its principal task. Nevertheless, it would be well to make some comment on the essential requisites of this type of organization, as suggested by the experience of other countries.

Exclusive or predominant dedication to true programming appears to be an essential requisite — at least in the early stages — if this type of organization is to work effectively. It has often happened that where to this task the duties of supervision, departmental co-ordination, and advising on economic problems have been added, these supplementary activities have absorbed the whole of the organization's efforts to the detriment of programming. This is undoubtedly true in the case of Bolivia, and has been aggravated by the fact that multiple controls and excessive administrative intervention have laid a heavier burden on the Commission than its staff could hope to carry. Undoubtedly, at a certain stage of programming, especially when the country has already adopted specific objectives and a given line of economic policy, supervision of their execution, and of the co-ordination between the various departments involved, is essential. But the experience of a number of countries, both in and outside Latin America, seems to indicate that the premature use of the programming organizations for administrative co-ordination or advisory duties may prejudice their basic activities. Perhaps where it is impossible or inadvisable to relieve the programming organizations of these functions, an intermediate solution might be sought by setting up, within the parent organization, other sections distinct from those responsible for the preparation of the programme.

The ability and zeal of the staff naturally form the keystone of the organization. Without adequately trained economists and engineers, experienced in this type of work and possessing a sound knowledge of local conditions, the preparation of satisfactory programmes is inconceivable. Programming is not entirely the task of experts in the central organizations; it also requires the collaboration of public and private technical and economic offices. Analysis of general economic conditions, determination of the over-all aims of the programme, co-ordination of sectorial plans with the programme as a whole, appraisal of financing procedures

and the possible instruments of economic policy are, *inter alia*, all matters which should be handled by the central programming authority. To this end, a sufficient number of properly qualified persons must be available who will work exclusively for the organization, in both the executive and technical spheres.

Without the energetic support of the highest political circles and resolute collaboration from official economic organizations, it will be difficult for the programming authorities to carry out their task. It is not only a question of the status of this office within the administrative structure. In Bolivia, as well as in other countries, the National Commission for Co-ordination and Planning, or its equivalent, is placed at the highest level, but it still cannot be said to have received wholehearted official support. What is chiefly required is the "will to plan" on the part of the supreme political authorities, and the Ministers and other high officials in charge of the main organs of economic administration. In spite of the diversification plans commenced in Bolivia in recent years, certain factors appear to have militated against this spirit of enterprise, as is readily explicable. The serious inflationary situation, and the grave resulting problems, have been the main preoccupation of the Government, technical experts and public opinion, and at the same time have constituted a formidable obstacle to the preparation of an integral development programme, which would naturally appear a leap in the dark without more normal economic conditions.

The understanding and goodwill of the private sectors are fully as important as official assistance in programming. As repeatedly stated in ECLA document,²⁵ economic programming does not necessarily imply increased State intervention, but on the contrary it may mean that in some cases certain forms of intervention in private activities, prejudicial to economic progress, will disappear. Better knowledge of the economy and a more realistic approach to growth possibilities may be expected precisely in so far as private interests acknowledge the advantages of the development programme, and are prepared to collaborate with the programming organizations.

As suggested earlier, the economic development of Bolivia could be strengthened by a well planned development programme, which would form a basis for economic policy and a guiding influence for private interests. If the Government so desired, the National Commission for Co-ordination and Programming would be the appropriate body to centralize and direct the preparation of such a programme, with the co-operation both of official departments and autonomous economic entities, and of the private sectors. Under the current organization and staffing conditions of the Commission, it is improbable that this task could be efficiently undertaken. Alongside the other requisites mentioned, priority would undoubtedly have to be given to the reorganizing of the Commission so as to enable it to discharge its appointed duties.

²⁵ See especially *Introduction to the Technique of Programming*, chapter I.

B. SECTORS OF THE BOLIVIAN ECONOMY

I. INDUSTRY

1. *General considerations*

Bolivia is at present undergoing great changes in regard to the method of operating its economic system. Numerous measures of control, rationing and intervention of various kinds have been abandoned in an attempt to recover greater stability through simpler and more autonomous systems. Industry has naturally shared in these changes, so that many of the problems have disappeared which until a few months ago could have been considered characteristic of this sector, while others of a different kind have arisen. That is why it is particularly interesting, and at the same time extremely difficult, to study the industrial sector in this period of transition. Some problems already belong to the past and are therefore of purely historical interest ; others cannot yet be fully appreciated in all their magnitude, because the stabilizing measures have been in force such a short time.

It would of course be erroneous to try to examine the prospects of the country's industry solely in the light of modifications of the type just indicated. During recent years structural changes have taken place in Bolivia's economy which are bound to have a profound effect on its industrial development. A market which is in itself a limited one, because of the size of the population and its level of income, was until quite recently still restricted to a great extent by the existence of large sectors which were virtually marginal to the monetary economy, being based on a self-sufficiency. The reforms introduced, mainly in the institutional regime that existed in the countryside, are now opening up possibilities for the gradual incorporation of these sectors in a trading system and thereby facilitating their access to new forms of consumption. It therefore does not seem unduly ambitious to try to analyse the prospects of Bolivia's industry in relation to one fundamental problem : that of the need to change from an industry designed to supply part of the requirements of a relatively small nucleus of the country's population to a manufacturing output sufficient to meet the growing requirements of the entire population. This naturally involves a great effort. As long as the market for manufactured goods was small, part of its requirements could be met by imports, so that industry could restrict its activities to the supply of a few main commodities ; nevertheless, as this market expands, a domestic industry supplying a relatively small percentage of requirements for manufactures will no longer be sufficient, since the country's capacity to import would in all probability be insufficient to supplement this supply with foreign manufactures.

Even the measurement of the rate of industrial growth consistent with the raising of the standard of living of the Bolivian population to a given level would involve an unknown factor difficult to estimate. To this would have to be added other numerous factors essential in order to assist in guiding government activity and private enterprise itself in terms of industrial develop-

ment. Such factors include the main lines within which growth should develop, the methods to be followed, the incentives and protection required, etc. Briefly, an industrial policy would have to be defined for the country under which to unite the efforts of the different sectors.

It is naturally beyond the scope of a study of this kind to define in precise terms the outline of this industrialization policy. All that is attempted here is to provide some informative background data, some objective guiding principles and some over-all indications which might possibly serve as a starting point for subsequent research by official agencies or private institutions within the country. Even this preliminary stage offers considerable difficulties, mainly because of the inadequacy of the statistical material available ; to date no complete industrial census has been taken and continuous statistics are not always sufficiently broad and reliable.²⁶ Hence the work has necessarily been focused largely on the gathering and revision of basic statistics, supplemented by direct observation in some of the enterprises and with the valuable opinions of various entrepreneurs and Government officials.

2. *Present situation and future prospects*

The industrial nucleus of Bolivia is relatively small. The contribution by this sector to national income (less than 9 per cent) is not only low in absolute terms, but also in relation to the country's level of income, compared with other Latin American countries. In this sense the desire to achieve substantial industrial expansion cannot be considered over-ambitious, since to a large extent it would do little more than offset great relative backwardness.

The contribution of national industry to the total supply of manufactured goods is very restricted, so that the country has to depend to a very high degree on imports ; this is true even of the relatively "easy" branches of manufacturing activity, such as the production of non-durable consumer goods, in which national industry began to participate quite a long time ago. By way of contrast, the profound changes that have taken place in the country in recent years have opened up prospects for great expansion in the domestic demand for some manufactures, since large sectors of the Bolivian population can now be incorporated into this kind of consumption. In view of the limited prospects of the country's capacity to import, the foregoing makes it urgently necessary to progress rapidly from the stage of an industry designed to supply some of the needs of

²⁶ The Statistics Department (*Dirección Nacional de Estadística*) periodically sifts the main information relating to a sample of industry, which covers from 1,300 to 1,400 of the largest establishments in the country. In the absence of a census, it is difficult to estimate how representative this sample is in terms of manufacturing output as a whole, particularly when it is remembered that in some branches of industry handicraft production predominates. The sample itself tends to show variations in the number of establishments included, which makes the interpretation of the corresponding tabulations a very complex process.

a very small nucleus to a manufacturing output sufficient to supply the growing needs of the entire national population.

Bolivia's industry absorbs a very small proportion of the country's active population, less than 2 per cent in registered industry and slightly over 4 per cent in the small unregistered industry which is also included in the estimate. Nevertheless, this sector has an immense responsibility to absorb a growing proportion of the increase in the labour force, in view of the limited immediate prospects of mining and the excess of active population in the existing agricultural areas. Moreover, any transfer of manpower from other activities — except the extractive ones — to the industrial sector will be of considerable assistance in raising the country's average income level, since the gross product per person employed in manufacturing activities, including the small unregistered industry, is more than double the figures for the over-all economy.

This is largely the result of the low productivity of agriculture, involving a very high proportion of activities which are almost at the bare subsistence level. It cannot therefore be interpreted to mean that the productivity of the industrial sector would be very favourable; on the contrary, even if only the registered industry were considered, the value added per person employed is less than one-third of that for the extractive activities.

Bolivia's manufacturing sector is characterized by a marked predominance of industries operating on a very small scale, as well as by high production of the artisan type. Registered industry, which might be considered as industry properly speaking, employs less than one-fifth of the total population employed in manufacturing activities; about 40 per cent of it corresponds to small unregistered industries and almost half to handicrafts. The difference in the productivity of these three activities is very marked, the figure for registered industry being almost double that for unregistered industry and nearly three times higher than handicrafts. Therefore the expansion and modernization of activities which have until now operated practically without any machinery or equipment would be a factor of considerable influence in improving the productivity of the sector as a whole.

In registered industry, productivity is very low in relation to the machinery and equipment which it has at its disposal. This is mainly the result of factors of four different kinds:

(a) *Social factors.* Lack of discipline, the virtual immovability of personnel as a whole and demands and pressures of every kind have prevented the adjustment of employment to the levels of production and of technical improvements, encouraged absenteeism, considerably reduced the number of days worked each year, and have led to activities which are scarcely conducive to the improvement or even the maintenance of the productive levels.

(b) *Inadequate maintenance of equipment.* The difficulties of importing spares and accessories and of replacing obsolete equipment have been progressively worsening maintenance conditions and affecting pro-

ductive capacity; in fact, this has led to a reduction in the real capital of several industries and to a drop in productive capacity that can scarcely be afforded.

(c) *Insufficient raw material supplies.* The shortage of foreign exchange has seriously restricted the possibilities of importing the raw materials which industry simply must have in order to maintain or to increase its levels of production; in most cases, these levels have been determined more by the availability of raw materials than by productive capacity or the possibilities of placing goods on the market. Supplies of domestic raw materials, particularly those of agricultural origin, have been likewise limited.

(d) *Shortage of technical personnel.* Bolivia has a relatively scarce supply of technical personnel at the various levels; even though industrial education is being encouraged, a great deal has still to be done in regard to training. Industry in turn has not had the necessary facilities for the greater temporary utilization of foreign personnel which, together with an improvement in present technical conditions, could facilitate the more rapid training of national personnel.

Although the demand for manufactured goods has expanded considerably during recent years, Bolivian industry, largely because of the factors just mentioned, has been unable to expand its supply of national manufactures at the same rate. This was undoubtedly one of the factors which contributed to the acute inflation of recent years. After growing very rapidly from the time of the crisis at the beginning of the thirties' until just before the war, and then again during the war, the volume of industrial output has remained practically stationary for the last 5 or 6 years. Moreover, it can be proved in several cases that production reached higher levels than the existing ones as long as 5, 10 or 15 years ago. These facts suggest that the immediate problem of Bolivian industry does not lie so much in an expansion of its productive capacity as in reviving a capacity already existing and in eliminating the factors which impede its proper utilization. If each branch of industry recovered the maximum levels already recorded in some past years, that by itself would increase the country's manufacturing output to a large extent.

This cannot eliminate the permanent need to maintain an adequate rate of investment in the industrial sector, a rate which in recent years has declined to an alarming extent. The average amount of industrial machinery and equipment imported annually in the years 1954-55 has fallen very far below that recorded over the five-year period from 1925 to 1929, and is not half as much as during 1936-40 or 1947-50. Apart from general factors such as import difficulties and social factors, this decline in industrial investment is partly attributable to the discouragement implicit in the introduction of various controls and Government measures: The fixing of official prices, lengthy processes for the prior approval of costs, countless regulations for authorizing the installations of new industries or the expansion of existing ones, difficulties (deriving from a very high tax on revaluation) in revaluing assets in relation to currency devaluation, etc. Some of these factors have been eliminated through

the recent stabilization measures, and this will probably have a favourable effect on the rate of investment in industry. Nevertheless, the problem is so important that it merits careful and detailed subsequent consideration in order to examine, for instance, the measures that might possibly encourage a greater reinvestment of profits, through a broader policy relating to amortization and depreciation, special taxation treatment for undistributed profits, etc. Foreign capital could also contribute considerably towards raising the volume of investment in industry ; until now, foreign investment in this sector has been relatively small, although Bolivia has offered several interesting opportunities which naturally have to be supplemented by adequate legislation. Apart from the intrinsic importance of such opportunities because of the increase they would entail in the supply of machinery and equipment operating in the country, these investments could also represent a technical contribution of great interest.

As might be expected, the results of the present stage of industrial growth in Bolivia, characterized by a greater development of activities producing consumer goods and by the scanty participation of those designed to process intermediate products, is largely that industry has to depend to a marked degree on imports of raw materials and intermediate products. This fact in turn makes domestic manufacturing output highly dependent on variations in the capacity to import. To lessen this dependence to any large extent is obviously a long-term undertaking and will depend not only on the expansion of industry itself — to provide numerous intermediate manufactured products — but on that of the agricultural sector. In respect to the first, the present phase of Bolivia's industrial development suggests that there are still many possibilities of growth in the branches of non-durable consumer goods, before the stage of import substitution of intermediate goods is entered upon, since the latter usually require greater investments and represent more advanced technology. Naturally this does not mean that their production should not be encouraged in certain specific cases, in view of the fact that activities of this kind might constitute a field in which the participation of foreign capital could be particularly advantageous. On the other hand, since the objective is to alleviate Bolivia's balance of payments situation so as to ensure the availability of the foreign exchange needed for importing raw materials, industrial expansion which replaces a growing proportion of final consumer goods at present imported would, although indirectly, have a similar effect ; this also means that at the present stage some manufacturing activities which have to operate with imported raw materials and intermediate products should not be overlooked. Such activities always imply some foreign exchange saving because of import substitution in respect of the final product and they lead to greater employment opportunities for national labour and a growth in income, as well as the gradual assimilation of new manufacturing techniques and training of skilled technical personnel on an increasing scale.

As for imports of agricultural raw materials, production of several such raw materials — cotton, sugar cane, tobacco — is just beginning to be encouraged and if

their cultivation is given the necessary incentives they can yield results in a relatively short time and thus help to alleviate this situation of dependence on imported raw materials. In some cases it is more a question of correcting a relative backwardness in agricultural development, since the supply of some national raw materials has even declined in relation to corresponding imports. Bolivia also has a potential output of several raw materials (oilseeds, cacao, rubber, leather of different kinds, etc.) which up till now have been used to a very slight extent by national industry and could be utilized to a much greater degree within the country.

The recent stabilization measures have created the necessary conditions for overcoming several of the obstacles which up to a few months ago hampered Bolivia's industrial growth (abolition of controls and limitations on imports of spare parts, equipment and raw materials ; reduction in the tax on the revaluation of assets, etc.), but at the same time they have created new problems. The most serious of these is perhaps the marked contraction of demand, which has led to a reduction of sales to levels which are a matter of grave concern. This seems to be the result of a coincidence of several factors. On the one hand, a considerable proportion of the country's industrial production, and of the textile industry in particular, was exported clandestinely, advantage being taken of the low import prices of some raw materials enjoying an exceptionally low preferential exchange rate ; under the new conditions such exports are no longer so profitable. On the other hand, it is natural that, in a period of uncertainty as to what will really happen to price levels, the consumers should wait until the situation shows a more definite trend, particularly in the case of consumption which, as happens in the case of many manufactured products, can be delayed for a certain period. The most important factor seems, however, to reside in the decline in real wages, which has meant a contraction in effective demand which the reduction in the relative prices of manufactured products had not been sufficient to stimulate. This problem has been causing serious concern, justified by the fact that, with the *per capita* level of income in Bolivia, a moderate decline in real income — determined by unemployment or a decrease in productivity as the levels of production fall — accompanied by a marked increase in the prices of foodstuffs, may be sufficient to cause the demand for other manufactures to drop to minimum levels, even if their prices fall considerably. This then is a basic problem requiring serious study to prevent the stabilization measures from reaching the point where they jeopardize the recovery of the manufacturing industry and the prospects of any future industrial development.

The above has not been the only unfavourable effect of the stabilization measures on the industrial sector. The increase in monetary wages and the rise in raw material prices have also accentuated the problem of supplies of working capital for the enterprises. In fact, to have to make these larger disbursements at a time when there is a marked drop in sales raises a serious cash problem for industry, further aggravated by the restrictions imposed on credit facilities. In contrast to

the preceding problem, it is probable that this one has not yet made itself felt to its full extent because of the initial possibilities of liquidating stocks of finished products or raw materials. Nevertheless, close attention will have to be paid to the course taken by new applications for imports of raw materials and intermediate products, in order to anticipate a situation that might lead to a virtual stoppage of industrial activities through lack of financial resources for the supply of these products. At the same time, attention must be paid to the possibility of pursuing a flexible credit policy in this connexion naturally adjusted not to conflict with the over-all stabilization measures.

The foreign trade system which has accompanied the stabilization measures has also created new problems for industry. According to the new regulations, the competitive position of national manufacturing *vis-à-vis* imports is determined exclusively by customs duties, modified recently. Hence it is essential to follow closely the effect of this tariff and the extent to which it affords sufficient protection for the maintenance and promotion of the production of those goods for which the country has the necessary capacity and the financial and technical resources.

Leaving aside the immediate problems just indicated — among which the importance of the social and political ones should not be overlooked — it may be stated that, from the long-term point of view, rapid industrial development is indispensable to the favourable evolution of Bolivia's national income. This is so not only because of the foreseeable disparity between a reasonable growth of rate of income and the limitations of the capacity to import, which will render the need to replace imports and to change their pattern ever more acute; the principal reason is the part that will have to be played by industry in absorbing a growing proportion of manpower resources. It has already been said that, even if the country did not propose to lessen the present population pressure in the currently inhabited agricultural areas but only to prevent it from mounting further, an annual increase in the labour force of nearly 25,000 persons would still have to be considered, and these people would have to be provided with opportunities for employment in other activities. Allowing for a possible expansion in the mining and petroleum industries, and taking into account the present surplus population in mining activities, a good part of this increase will have to be absorbed by industries and services. The magnitude of the problem can be better grasped if it is remembered that such an annual increase in the labour force represents more than a quarter of the total population currently employed in all manufacturing activities, including handicrafts, and one and a half times the present employment in registered industry.

Similar conclusions are reached if thought is given to the prospects of demand for manufactured goods. The present levels of consumption are as a rule very low, and in some cases the *per capita* consumption figures recorded are barely a fraction of those for countries with a slight higher level of *per capita* income. Therefore the growth and diversification in the demand for manufactured products will be one of the more important

dynamic factors in the future development of Bolivia's economy. Industry will not only have to increase its share in the total supply of manufactures, which is very small in comparison with imports, but will also have to take measures to meet the increased demand which it is logical to anticipate. In addition to estimating the magnitude of the problem in over-all terms, it will also be important to proceed with the detailed studies of the possible increase in demand for each of the more important types of manufactured goods. Such studies will serve as a guide and help to determine the necessary policy of incentives for private investment as well as the policy of investment by the public sector.

Bolivia's small population and its low level of income are obstacles which, from the market point of view, limit the development prospects of numerous industries where a minimum scale of economic production is required which is probably above the present consumption figures. Nevertheless, the importance of this factor ought not to be exaggerated when considering the short and medium-term development prospects. For the time being there are great possibilities for expanding the levels of production in existing industries. This is possibly the most urgent task, but in addition there is room for diversification along present lines. At the present time these industries do not meet Bolivia's present requirements so that the output has to be supplemented with imports. In general, industry is far from covering several items that do not seem to require too high a degree of capital intensity or any great technological resources and for which the present size of the market would not impede economic production. This is true not only of the industries making consumer goods, but also of some industries making intermediate products and some categories of tools and simple equipment. Meanwhile, the growth of over-all income and industrial development itself will create the conditions for an expansion of the internal market which will justify future industrial growth along lines which would include certain more complex intermediate products and capital goods. This might even happen relatively quickly, in view of the high income-elasticity usually shown by the demand for manufactured consumer goods and the great potential need to improve the supply of tools and equipment, even of the simplest types, for agriculture and other activities.

Apart from domestic demand, industry could also count on an export market. Although in general terms the costs of Bolivian industry are too high to facilitate any considerable exports, Bolivia does have numerous natural resources that could provide a margin for manufactures intended for export. (Purely for purposes of illustration, the following might be mentioned: processed timber, cacao products, tinned fruit, skins of "wild" animals, etc.) Although the total amount of such exports might appear small, its importance should be judged in relation to the size of existing industry and the relatively low value of the country's total exports, amounting to only about 100 million dollars per year.

With the statistical reservations indicated earlier, it may be pointed out that an examination of the present composition of industrial production shows a high

degree of concentration on foods, beverages and tobacco, and on the textile and garment industries : the remaining manufacturing activities cover a great variety of production lines, but all of very slight importance, and at times only at an incipient stage of development. Even in the traditional branches of the food and textile industries, imports are still very substantial and the development prospects even over the short term are therefore very high : imports of wheat flour could easily be replaced if necessary by using imported wheat ; preserves and tinned foods could be expanded ; the dairy products industry ought to be expanded, since it is only in its initial phase ; the capacity has already been created for a growing production of sugar ; the preparation of cacao products could be expanded, even with a view to small-scale exports ; various imports of cotton manufactures could be replaced ; there appear to be good prospects for establishing a textile industry based on hard fibres, etc. As for the industrial branches which are so far less developed, it seems likely that even over the short-term there could be an improvement and an expansion of the timber industry ; further development of the rubber industry, in regard to which efforts were made earlier to set up a tyre-making plant ; expansion to overcome the constant cement shortage ; expansion in the range of production of the glass industry, etc. Two industrial branches merit special mention, since they seem to be even more backward, namely those covering the broad range of chemical and pharmaceutical products and the great variety of products made by the mechanical and metallurgical industry. Leaving aside the production of more elaborate goods, the above include many specific industries for which the small size of the market and the amount of investment needed would not constitute very great obstacles. In brief, even taking into account the present size of the Bolivian market, there are many industries where expansion or installation would be fully justified from an economic point of view. A better knowledge of existing industry, is needed, together with a more careful study of future prospects and the laying-down of certain general lines of industrial policy for the establishment of priority criteria. The latter would ensure industrial growth, as balanced as possible, and would facilitate the better utilization of Bolivia's resources of all kinds, as well as the introduction of adequate credit, fiscal and tariff incentive. From the preceding remarks it might be deduced that as a first step, efforts should be directed toward restoring the productive capacity of existing industry and the elimination of obstacles preventing the full utilization of that capacity. At the second stage it would be necessary to encourage investment in new manufacturing activities. This could be done through a system of priorities in which account would be taken of the need to obtain a maximum yield from the scanty capital resources available, of the effect of this production on the country's balance of payments and of the extent to which the development of such production would help to absorb real or virtual manpower surpluses from other sectors of the economy. It is probable that a good part of this stage would still consist in the expansion of industries producing consumer goods and that the encouragement of industries producing intermediate

goods and some capital goods, which as a rule require greater capital resources, demand greater technological skills and a higher minimum scale of economic production, would take place at successive stages of later development.

Many of the current problems affecting the manufacturing sector might be considered more adequately if they were judged in the light of the possible industrial development requirements over the next ten years. If during this period industry is to account for a moderately larger relative proportion of Bolivia's total active population (from 4.1 to 5 per cent), it would have to absorb some 2,500 persons each year, which would thus be added to the present employment figure of some 50,000 persons. Such growth would at the same time be essential to meet the increased demand for manufactured products and to offset possible insufficient expansion in the capacity to import. Adding the investment requirements needed to maintain present productive capacity to those required to provide this extra labour force with reasonable capital intensity, an annual gross investment in the order of 9.5 million dollars would be called for ; this figure is much higher than that recorded in recent times and would require in addition a substantially higher investment coefficient. It is probable that to achieve it numerous favourable factors would have to play this part (credits, taxation incentives for the reinvestment of profits, etc.) and the contribution of foreign capital in this sector would have to be much greater than has been recorded in the past. Despite difficulties of this kind, this would be the only way to bring about a positive participation by industry in the future development of Bolivia's economy, as well as to prevent it from hampering a reasonable growth in national income during the next few years.

II. ENERGY

Energy is one of the basic elements of economic development, not only because its increasing use is essential for raising productivity, but also because of the welfare of the population, for whom a part of the supply constitutes a consumer item. *Per capita* energy consumption — especially commercially — is a clear index of economic development, and its increased availability is a prior, indispensable condition if a country is to achieve greater development, characterized by greater mechanization in industry, transport, agriculture and mining.

An adequate supply of energy therefore plays a primary role in the development of productive activities, and must be given high priority in economic plans. This becomes even more important when it is remembered that the installation and plants required for its production, transformation and distribution normally take longer to construct and require greater capital than most sectors of the economy.

An increased supply of energy, in the quantities and localities indicated by the demand, is essential to economic development, and every possible effort should therefore be directed towards its attainment.

Although this problem is common to almost all the Latin American countries, none presents the same

degree of contrast as Bolivia as regards the abundant natural energy resources available in the country and the low level of consumption, nor the same difficulties in increasing the utilization of these resources.

Bolivia does not lack the natural resources required to increase production. Hydraulic energy and petroleum, the two main types of commercial energy most needed in modern technique, are abundant. The problem lies in the shortage of financial resources to make use of them, and since this is a problem affecting the remaining sectors, a decision must be reached from the point of view of the needs of the economy as a whole.

Although all types of energy have common basic aspects, each has its own peculiar characteristics, both present and future. These should be distinguished, in order to appreciate better the Bolivian energy problem.

1. *Development and future prospects of energy consumption*

As regards the present energy consumption situation and its recent development, the characteristics — which should be analysed before the future prospects are examined — would be the following :

(a) Both total *per capita* energy consumption — fuel and electricity — (235 kilogrammes of petroleum equivalent) and that of electricity above (60 kWh),²⁷ are the lowest in Latin America. At the same time, if this is compared with the gross product, it is seen that Bolivian consumption is higher than the average of the remaining Latin American countries. This is explained by the relative preponderance of mining activity, which is a large consumer of electricity, using almost half the total production.

(b) The low electricity consumption is aggravated by several factors. The annual increase of installed capacity and production — less than 5 per cent annually — are the lowest registered in Latin America in recent years, and much lower than what may be considered normal in countries in a similar stage of economic development.

Generally speaking, the electric supply does not meet the demand, an acute problem in some cities in the interior, and the situation will deteriorate in years when limited water supply reduces the generating possibilities of the hydraulic power stations. This occurred in 1956, when the supply was heavily rationed in some cities, and mining needs could not be met.

The lack of systematic studies of resources, and of opportune investments, has necessitated excessive recourse to the installation of thermal plants in recent years — generally an uneconomic step when hydraulic resources are available.

Except for the La Paz and Oruro systems of the Bolivian Power Company Ltd. and certain of the plants of the large mining industry, it may be stated that almost all the electric systems in Bolivia are seriously deficient, both in generation and in transmission and distribution. Further, Bolivia has no water or electric energy legisla-

tion, nor is there a suitable national organization to deal with the electrical problem efficiently. There is no uniformity in distribution frequencies and voltages. No Government department carries out hydrological studies, nor are there any integrated electrification plans.

At the same time, electricity consumption is strongly concentrated in the main cities, and the mining establishments on the high plateau. *Per capita* production varies considerably between cities ; in 1954 it was 307 kWh in La Paz, and 17 kWh in Santa Cruz. It may be estimated that some 2.2 million people (nearly 70 per cent of the population) have no electricity supply.

(c) The petroleum derivative supply situation in recent years differs from that of electricity. The praiseworthy efforts made by Bolivia, through the action of Bolivian State Petroleum Deposits (*Yacimientos Petrolíferos Fiscales Bolivianos*) (YPFB), together with the discovery of the Saracenda oil-bearing sands in the Camiri deposit in 1953 have led to a substantial increase in production reaching 504,000 cubic metres in 1956 (6 times more than in 1952). The total consumption of derivatives also rose considerably (more than 20 per cent in the past three years) to 331,000 cubic metres in 1956. Imports, which reached a maximum of 133,000 cubic metres in 1952, almost ceased by 1954 ; exports of crude oil increased, and derivatives began to be exported to neighbouring countries, attaining a total of 67,000 cubic metres in 1956.

The Cochabamba and Sucre plants, together with those in the deposits, cater for all of Bolivia's petroleum refining needs, except for aviation petrol. Existing pipeline systems have provided a satisfactory solution to internal transport problems, and also that of derivatives exported to Argentina. In addition to the increased production, refining and transport within the country, YPFB has improved its organization and its technical personnel.

Although domestically it has contributed to inflation, the incentive provided to the petroleum industry has not caused any expenditure of foreign exchange, since what was saved through prohibition of imports, in transport, and by the increased exports, was slightly more than the foreign exchange expenditure of YPFB (38 millions dollars) from 1953 to 1956.

(d) Finally, an analysis of the composition of total fuel consumption shows that in Bolivia, as in other Latin American countries, petroleum derivatives are gaining an ascendancy over the use of coal, the consumption of which is small and entirely met by imports, and more especially vegetable and similar fuels. These latter, however, still account for 60 per cent of the total, since a large proportion of the population has not yet been absorbed into the commercial economy.

The first step towards the adoption of plans and measures for dealing with the energy problem is to estimate future consumption. Insufficient data are available for an exact calculation to be made, but in order to make some estimate — using comparative data from other countries — possible consumption in Bolivia in 1965 can be obtained from the hypothesis of 20 per cent growth of the gross product over the 1955 level.

²⁷ Excluding mining consumption.

These calculations show that the gross consumption of all types of energy (770,000 tons of petroleum equivalent in 1955) should reach 1,047,000 tons in 1965. Total electricity production should increase from 375 to 900 million kWh (9 per cent annual increase), with hydroelectric power maintaining its share of approximately 80 per cent. The very small consumption of coal would remain almost unchanged, while vegetable and similar fuels should decline from 400,000 to 320,000 tons of petroleum equivalent. Petroleum derivatives would increase from 240,000 to 490,000 tons (7.3 per cent annual increase), not only absorbing all fuel consumption increases, but also replacing the reductions in vegetable fuels.²⁸ Available information is insufficient to permit a separate calculation of the growth of each of the derivatives, but it had been estimated that petrol consumption, both standard and aviation, could reach 200,000 cubic metres in 1956, which would mean a cumulative annual increase of 5.7 per cent.

2. Prospects of electricity production

Bolivia has excellent hydro-electric resources, estimated at a total of some 7 million kW. Furthermore, as in few other countries, the Bolivian resources are close to consumer and distribution centres, so that low power, approximating to the requirements, can be generated, in many cases using the available flow in a succession of falls, which permits scaled utilization. The resources are much greater than even the long-term needs which may arise in Bolivia, and a small part of the known possible utilization would satisfy short- and medium-term requirements.

A satisfactory solution of the Bolivian electricity problem would demand that the installed capacity should be increased by at least 68,000 kW in the next five years ; 70 per cent of this could probably be hydraulic. These figures show the appreciable difference between resources and utilization needs. Although in the majority of cases the resources have been insufficiently studied, there are several projects, some well advanced, whose execution could satisfy much of the future demand. Certain factors will necessitate immediate needs being met by thermal plants — lack of hydraulic resources in certain regions, lack of hydrological data, the long period required to build hydroelectric plants — but it must be emphasized that maximum use of hydroelectricity would bring notable economic advantages to Bolivia.

The investment needed for an increase of 68,000 kW generating capacity would be around 33 million dollars.²⁹ The limited capacity of the country to make all the investments required in the various economic sectors makes it doubtful if those of the hydroelectric sector could be met, but it must not be forgotten that energy is a basic requirement for production and economic development. To help solve the investment problem, it

²⁸ A greater or lesser substitution of vegetable fuels by petroleum derivatives would give rise to a similar variation in the latter.

²⁹ Specific studies of the different projects might cause this figure to vary, since it is only an indication. It must also be remembered that some hydroelectric plants are built with greater capacity than that immediately required.

may be considered that a part could be made by private enterprises. For example, Bolivian Power is building a 6,000 kW plant in its Oruro and La Paz systems, and projects other construction up to 1961, totalling 19,500 kW.³⁰ It seems also that there are financing offers from certain enterprises interested in the construction of the Corani project which, according to the comparative study of the various hydroelectric projects and consumption requirements, should be started as soon as possible.

Although investment problems prohibit Bolivia from undertaking works which would in 5 years produce the capacity required to meet the needs of economic development and improvement of the standard of living, the creation of an institutional structure would undoubtedly contribute towards an improvement of the present situation. Such an organization, co-ordinating the work of all branches at present interested in the problem, could study and formulate complete water and electricity legislation, prepare a national electrification plan, and commence methodical hydrological studies of all resources which could possibly be utilized in the future.

3. Prospects of petroleum production

The supply of domestic needs for petroleum products is not a major problem for Bolivia, since ample oil resources are confirmed by satisfactory preliminary studies of the country's geological structure. On the other hand, to obtain large exportable surpluses, which would diversify Bolivian exports and improve the capacity to import, does constitute a problem.

To maintain its reputation as a country of contrasts, two contradictory aspects again appear. On one hand, it is difficult for YPF B to increase its production with the financial means at its disposal, while the door opened to foreign capital by the *Código del Petróleo* and the considerable interest of private enterprises lead to the belief that output could be greatly increased.

YPFB's present situation is difficult. Known reserves, the extent of which is not precisely determined, seem too small to provide the increased output needed to leave any large exportable surplus. Also, the fall in the output of wells means that the 1957 drilling programme will only maintain output — or possibly show a slight increase — over 1956 production, making the opening of new deposits essential. At the same time, the foreign exchange budget for the enterprise under the stabilization plan³¹ will not permit YPF B to acquire the essential drilling equipment, nor to carry out sufficient prospecting. It is therefore probable that production will decrease in 1957, except under unusually favourable circumstances.

If the Bolivian State enterprise is to achieve a satisfactory situation which will permit consolidation of its operations and competition with private enterprises in exports, investments would have to be made to give a

³⁰ The execution of the company's plans are subject to the approval of new rates, since the present ones are not considered to be sufficiently remunerative.

³¹ 12.6 million dollars, including 1.8 for imports of aviation petrol.

daily output of approximately 25,000 barrels. As in all cases of petroleum production calculations, that of these investments is dubious. To give some idea of the magnitude of the figures, it is estimated, according to international data and the opinion of Bolivian technicians, that the total investment required to achieve such production, the reserves which justify it, the means of transport etc., must be around 60 million dollars over the normal budget of the enterprise, to be applied during three or four years.

The difficulties in making the investments, and the poor results of leasing to the firm of Glenn McCarthy, led YPFB to grant a concession in 1956 to the Bolivian Gulf Oil Co., covering a large area in the region reserved by the *Código del Petróleo*. The approval of the *Código* by Congress at the end of 1956 has awakened great interest among foreign capital enterprises, and many have obtained concessions for direct working or for prospecting and subsequent working.³² In addition, six enterprises, including YPFB itself and the others mentioned, have received permission for primary prospecting, and further requests from large enterprises are expected.

From the activities of the private enterprises which have obtained concessions for prospecting and working, subject to the liberal conditions of the *Código*, export prospects on the world market may be considered to be promising. Apart from the increase of available foreign exchange which would be obtained,³³ Bolivia would benefit from the economic activity resulting from the essential works. In spite of this, it is estimated that the obtaining of an output which would allow sizable export surpluses would require at least 3 to 5 years.

Because of the peculiar geographical situation of Bolivia, transport to any foreign port which could export the product to the world markets presents a problem. To meet this difficulty, YPFB has already projected an oil pipeline to the Chilean port of Arica on the Pacific coast, and there are also plans to make an outlet through the Peruvian port of Ilo, and to the Atlantic through Paraguay.³⁴

It does not seem that Bolivia will have a market problem in placing its petroleum, since current data show that the neighbouring countries, Argentina, Brazil and Chile, will continue to be heavy importers of this product; there are also the Californian markets.

4. Price problems

A further aspect of the energy problem, partly connected with investments, is the question of the prices at which energy is sold on the domestic market. The

³² Bolivian Gulf Oil Co., Shell Prospecting Co. Ltd., Andes Oil Co. Inc.

³³ According to the contract between YPFB and Bolivian Gulf, a daily production of 20,000 barrels would give Bolivia an income of some 7 million dollars, of which 2.5 would be for YPFB. To this must be added the foreign exchange returns arising from the expenditure of the enterprise in Bolivian currency.

³⁴ The construction of the pipelines is subject to international agreements at present being discussed with the neighbouring countries concerned. To help the financing of the pipeline to the Pacific, Bolivian Gulf has offered to provide part of the investment by means of an interest-bearing loan.

stabilization measures of December 1956 have caused considerable increases; those for electricity in La Paz have risen between 185 per cent for low-quantity household consumption to 665 per cent for industry. Liquid fuel prices have risen between 220 per cent for standard petrol to 800 for paraffin. As may be expected, these increases have given rise to much adverse comment by the consumers.

The problem is difficult. In the case of electricity, Bolivian Power maintains that the increases still do not cover expenses or leave a sufficient margin of profit to allow investment plans to proceed. Thus on the one hand there is the desire of the population to enjoy relatively low prices, which could be obtained if the advantageous characteristics of Bolivian hydroelectric production were utilized, and, on the other hand, it would be most advisable for Bolivia to receive new capital contributions to meet the essential future increase of installed capacity.

The income which YPFB obtains from petroleum derivatives with the new prices and from exports, according to sales forecasts at the beginning of the year³⁵ (171,212 million bolivianos) will enable it to finance the expenses and investments of 1957, reduce the pending debt by 13,000 million bolivianos, and amortize 3,171,000 dollars of the debt for previous credit purchases. It has been estimated in some circles that the new prices are too high, and should be reduced. This would favour the economy in general by increasing the purchasing power of the people, but it would also reduce YPFB's possibilities of paying off matured commitments within a short period, and of making new investments in a few years' time.

Finally, it must be emphasized once more that to solve adequately all aspects of the energy problem, it is essential that the country should have an institutional authority to deal with programming, execution and control.

III. TRANSPORT

1. Means of transport

There are few parts of the world where transport presents so many problems as in Bolivia, partly because of its geographical situation and its configuration, but especially because of the uneven distribution of its population, which is concentrated in the mountainous part of the country and supplied from very distant centres. Almost the whole of the mining output comes from the *Altiplano* (High Plateau), one of the most uninviting regions of the world. There are workings at 5,000 metres above sea level, where the cold, the wind, the desolation and the rarified air make living conditions barely endurable. To export ore from Chilean or Peruvian Pacific ports, it must be transported hundreds of kilometres — more than 1,000 in some cases — over difficult mountainous country.

Up to the end of the last century, the llama was the only means of long-distance transport available to the

³⁵ Subsequently a drop in sales and a reduction in prices produced a substantial deficit.

inhabitants of the *Altiplano*. Silver and tin were carried by thousands of these animals, whose load was not more than about twenty-five pounds each and which brought consumer goods to the population and the mining centres on the return journey. Indian labour also helped, each man being capable of carrying 50 or more pounds on his back. Even today, llamas, donkeys and men in the *Altiplano* still carry a considerable part of the loads, although they are now limited to food-stuffs, vegetable fuels and similar articles.

The railway joining the central region of the *Altiplano*, the most important from the mining point of view, to the Chilean port of Antofagasta was only completed at the end of the last century. During the present century the line has been extended from Uyuni to Oruro, Cochabamba, La Paz, Potosi and Sucre, to the Argentine border, and the shores of Lake Titicaca, thus connecting with Peru.

At the same time, the narrow roads of the *Altiplano* were widened to allow the passage of lorries, and work was begun on the expansion of Bolivia's road network, joining the largest cities to each other and to the valleys, from which most of their supplies came. Until the end of 1955, when the new Cochabamba-Santa Cruz highway was opened to traffic, the journey between these two cities was by an extremely bad road, impassable for a large part of the year; today it takes ten hours by car, or one hour by plane. The provinces of Beni and Pando still have no surface communication with the capital. Rail traffic between the *Altiplano* and Chaco must pass through Argentina, which involves a 600 kilometre journey outside the country.

Bolivia was one of the first Latin American countries to organize air services, which solved the problem of communication to the vast regions of Beni, Santa Cruz, Tarija and Chuquisaca, formerly without any form of transport. The air services began on a modest scale in 1925 and developed rapidly, covering today almost the whole country and carrying not only passengers but also a considerable volume of freight, consisting of fresh and dried meat, timber, raw rubber, Brazil nuts, cocoa, hides, etc., produced in the tropical regions, and delivering to these regions all types of materials, vehicles and machinery.

Excluding Lake Titicaca, there are no organized commercial transport systems on Bolivia's inland waterways. Only recently has an attempt been made to reach the navigable parts of the rivers Beni and Ichilo by roads from the Yungas and Cochabamba. The River Paraguay is also not used for international traffic. Unfortunately Bolivia has no suitable coast for utilizing this magnificent tributary of the Plata. To arrive at the port of Corumba on the River Paraguay, only a few kilometres from Bolivian territory, cargo to and from Bolivia must pass through Brazilian territory. This would be the only possible route for exporting to Argentina the iron from the rich Mutum deposits, near Port Suarez, a short distance from Corumba. At present, utilization of the inland waterways is less important than the improvement of the road and rail systems, on which greater efforts should be concentrated in order to reduce transport costs.

The railway is the most important means of transporting passengers and freight in Bolivia. All ore to the Pacific ports and all imports from those ports travel by rail. Railways within Bolivia carry a total of 2.5 million tons of freight³⁶ and 3.5 million passengers.

Next in order of importance come the roads, for which there are no statistics except a count of the number of vehicles travelling on some major roads. With few exceptions, there are no private enterprises carrying passengers or freight on scheduled services, but there are three passenger and freight road services operated by State railway enterprises. Most of the drivers carrying passengers and goods own their vehicles and are at the same time transporters and traders, since they buy agricultural products and sell them in the city markets. There are no drivers, co-operatives to operate services, but all belong to various trade unions which exercise a virtual monopoly over passenger and freight traffic.

The figures for the air services give an excellent picture of the importance of this means of transport in Bolivia: 184,000 passengers and 40,000 tons of freight and parcels were carried in 1956 by *Lloyd Aéreo Boliviano*, *Transportes Aéreos Militares* and other domestic airlines.

The rail and road freight rates are extremely high, because of the very difficult terrain and the consequent high fuel consumption and heavy wear. The altitude also has an adverse effect on the efficiency of internal combustion engines. It is natural that these high costs should be reflected in the road and rail service rates. Air services are also expensive, since the petrol must be imported and transported at high cost to inland centres. Furthermore, the greater part of the traffic is in the most unfavourable direction. All these disadvantages combine to raise the prices of articles of prime necessity, raw materials and construction materials.

The above comments show the basic importance of transport in Bolivia's economy. Serious problems thus exist which should be solved as soon as possible to prevent transport and communications from becoming an excessive price-burden on goods, or an obstacle to the general development of the country.

2. The main problems

(a) Current freight rates

Transport operating conditions in Bolivia produce an increase in costs which is naturally reflected in the high passenger and freight rates. Nevertheless, apart from unavoidable geographical reasons, there are other circumstances which bear on the excessively high level of these rates. It is therefore urgent to examine current transport rates in order to reduce them to the lowest possible level while still allowing the enterprises to cover costs and show a reasonable profit. Railway and road transport rates could possibly be modified; they are greatly influenced today by transport monopolies. There

³⁶ This figure is obtained by adding the total carried by each railway, which means that each passenger or ton of freight carried from La Paz to the Argentine frontier, for example, is counted three times, since three different railways are involved.

also seems to be a possibility, subject to certain measures in regard to organization and costs, of reducing air traffic rates.

(b) *Internal reorganization of some transport enterprises*

A reduction of the rates must be accompanied by an improvement in the administrative and operating methods of the enterprises, so as to reduce costs. This is especially necessary in the State railways, where the multiplicity of accounting systems and the number of workshops artificially increase operating costs.

(c) *Modernization of railway equipment*

The soundest way to improve railway operation and consequently to lower costs and prices is to replace the old, costly traction equipment of all the rail enterprises by modern diesel engines. This applies to both State and private enterprises.

(d) *Investments in roads and railways*

A careful study shows that Bolivian investments in surface transport are open to considerable adverse criticism. The way in which railways and certain roads have been constructed has undoubtedly cost the country much more than would have been the case under a rational plan, and this is not entirely a question of the past. Even today, the justification for some of the investments made is highly questionable ; the gravity of this is increased when Bolivia's few resources for economic development are taken into account. There have been, and still are, many motivating circumstances. The transport policy must be formulated from the point of view of the general economic interest rather than of local considerations, and not under the pressure which has often led to the execution of activities in which considerable capital has been and is being invested, without producing the improvements which might have been expected in the country's transport system. Other railway operations should be examined, in which large sums continue to be invested, which appear to be quite unjustified under present or immediate future circumstances.

An analysis of the road situation leads to the conclusion that, apart from a few cases, the improvement and repair of existing roads, together with the building of local roads to connect the present system to the production centres are more essential than the construction of new highways.

(e) *Administrative organization*

Obviously the major transport problems must be studied together and in relation to the economy as a whole ; this is the only way to avoid waste of effort and capital and to obtain the greatest possible use from each system, according to its capacity and special characteristics. For instance, the building of a railway parallel to an existing road could only be justified if it could be proved that there is, or will shortly be, sufficient traffic for both systems. That is to say, heavy car, bus and lorry traffic for small loads which must be moved rapidly from door to door on the road, and a volume

of long-distance rail traffic sufficient to ensure profitable railway operation ; such loads might include grain, sugar, timber, cement, industrial raw materials, etc. It is not in the national interest to continue investing in railway construction which duplicates road facilities.

In addition to investment problems, there are also questions connected with the co-ordination of existing means of transport, rates, concessions and monopolies, all of which should be in the hands of a specialized organization. The formation of a transport board is proposed, to include representatives of the Government in each of the country's transport systems, and subdivided in the most effective manner consistent with private interests and the technical requirements of each case.

IV. AGRICULTURE

1. *The importance of agriculture*

Despite the fact that the major part of Bolivia is potential agricultural land and that agriculture supplies more than 60 per cent of the population with work and a means of livelihood, as well as substantially contributing to the formation of national income, this branch of the economy has long been stagnant and has lagged behind the other sectors which have meanwhile continued to progress. The boom in mining production and the consequent increase in exports and foreign exchange availabilities have, in the past, enabled Bolivia to import vital foodstuffs and raw materials, without giving serious thought to their domestic production. While internal demand was still small, owing to the low standard of living of the indigenous population and their virtual isolation from the outside world, and foreign exchange availabilities were adequate, the static situation of agriculture had no very appreciable effect on the country's development. During the last few years, however, urban growth, together with other social and economic factors which will be considered later, have raised import requirements for foodstuffs and raw materials derived from agriculture and animal husbandry. This has come to represent an ever-growing burden on the Bolivian economy, which in 1955 amounted to 38.5 per cent of total imports, thus absorbing a major part of the foreign exchange needed for importing the capital goods indispensable for a more rapid development of the economy.

Although Bolivian agriculture is capable of supplying nearly all the items required by the domestic market and of undertaking import substitution and improving the current meagre diet of the population, as well as considerably expanding Bolivian sales abroad, there are many reasons why it is actually unable to do so.

The primary cause of the retarded state of agriculture in Bolivia was the system of land tenure in force up to August 1953, when the Land Reform Decree (*Decreto de Reforma Agraria*) was enacted. The system of large semi-feudal estates was almost totally impervious to progressive agricultural techniques ; the farms mainly used antiquated methods of cultivation while the farmhands continued to live in wretched conditions. The owners, who were for the most part absentee landlords,

left all responsibility in the hands of a bailiff who was no more knowledgeable than they were, and who persisted in growing crops on land that was becoming increasingly exhausted without troubling to revive its vanishing fertility. The application of minimum standards of animal health and plant genetics, and the use of fertilizers and soil-conservation methods were almost unknown, while tools were generally very primitive and resembled those in use in colonial times. The agricultural worker, who was obliged to devote two to four days of the week to working on the owner's land as payment for the right to cultivate a small holding or "sayaña" for his own use, usually imitated the methods of production on the main farm. The result of all this was very low unit yields, which restricted agriculture to the mere production of subsistence crops with no particular commercial end in view. The majority of agricultural workers sold in the towns only the smallest possible fraction of their produce in order to obtain the money needed to buy whatever they could not raise on their own land. For the same reason, they scarcely ever charged adequate prices, which frequently prevented the more commercialized farms from competing with them.

The revolutionary movement of 1952, and the subsequent Land Reform Decree of 1953, were intended to end this state of affairs by redistributing land and incorporating the indigenous population into the economic life of the nation. Although the land reform has succeeded in justifying its introduction by breaking up the system in force until then, and giving the agricultural worker a new sense of his own worth which will enable him to become of greater social and economic significance to the country, it had no positive effect on production for the first few years. The natural confusion resulting from such a radical change has already lasted too long. The complexity and slowness of the distribution methods were combined with the lack of an effective development policy and of a spirit of change as regards the technical aspect. The far-reaching transformation which was attempted has so far had repercussions of a purely political and social nature. In contrast, production has dropped even lower, as a considerable number of agricultural workers deserted the land, probably because of the uncertain and even insecure atmosphere prevailing in the Bolivian countryside. There has been no appreciable advance in methods of cultivation either, although serious efforts have been made in this respect during the last few years, especially since the formation of the Inter-American Agricultural Service (*Servicio Agrícola Interamericano*).

At all events, it would be premature to try to evaluate the different aspects of such an important reform in the short space of time that it has been in force although this has already been long enough to reveal the existence of weak points and the need to modify its organization to enable it to be carried out more coherently and effectively.

The natural confusion created by land reform which lacks the material means to carry it through expeditiously was heightened by the effects of the economic crisis in Bolivia during the last five years arising from, among other factors, acute inflation and an inadequate exchange

régime. The complete disruption in the country's current agricultural and livestock production may be partially explained by this.

Another delaying factor of considerable importance was the imbalance between the population and the supply of cultivated land. The Bolivian population is predominantly concentrated in the *Altiplano* and certain valleys where suitable agricultural land — especially in the Valleys — is limited, erosion far-advanced and fertility low, and which have a particularly rigorous climate. The eastern plains, on the other hand, which have the largest stretches of potential agricultural land, are almost uninhabited and have no adequate means of communication with the rest of the country or abroad. For these reasons, the proportion of cultivated land *per capita* is extremely low and has, moreover, been impoverished by centuries of inefficient cultivation without any effort having been made to restore its fertility.

As a result of the Chaco war, the belief that Bolivia possessed fertile territory in the east, which was underpopulated and almost entirely virgin land, spread and from that time onwards, the idea of breaking the "Andean curtain" enclosing the Bolivian population, and removing the population surplus to the plains, has been constantly gaining ground. The efforts made in 1945 to settle colonists in Santa Cruz, the opening of a road between that town and Cochabamba, the formation of the "*Batallones Coloniales*", the concentration of controlled credit and the work of the Inter-American Agricultural Service in that region may all be ascribed to it, and it has ultimately become so popular that many are convinced that it represents the whole solution to Bolivia's agricultural problem. The matter is so important that it warrants further examination, however cursory.

It does not seem likely that the eastern region will be able to absorb the surplus population from other areas at the rate of more than 3,000 or 4,000 persons a year, which would require the annual reclaiming of some 5,000-6,000 hectares. As the natural growth of the population in the *Altiplano* and Valleys is approximately 25,000 annually, it is clear that the east can only provide a solution for less than a sixth of the annual surplus population from that region, which would leave the problem of where to settle and find work for some 20,000-22,000 persons still pending. A similar number to that estimated for Santa Cruz might be placed in other areas, such as Caranavi, Chapare and some of the southern valleys. But, in any case, more than 15,000 rural inhabitants³⁷ will have to search for work in other sectors of the economy, if the present low income-level of the population in the *Altiplano* and Valleys is not to be further diminished.

In fact, one of the principal problems of Bolivia's over-all economic development is how to find work for its increasing population and simultaneously raise rather than reduce their average income-level. Without entering upon a detailed analysis which would exceed the scope of an agricultural study, it may be said that any solution

³⁷ This figure may be lower still if commercial and industrial activities which will complement agriculture, are initiated in those areas.

envisaged for the agricultural sector must be conducive to the balanced development of each region so that the easing of population pressure in the *Altiplano* and Valleys, and the higher income-level enjoyed by that part of the population that migrates to the new settlement areas, may be combined with an improved income-level for the agricultural workers obliged to stay in the *Altiplano*.

Yet another factor which has been active in slowing down agricultural development and which is closely linked with the former is the relative isolation of large areas of the country owing to the lack of satisfactory means of communication. The rugged topography of Bolivia hampers and raises the costs of road and railway construction, and this has meant that important potential production sectors have remained with rudimentary or no contact at all with the large consumer centres. The majority of the existing communications were built to facilitate access to the mines and did not consider agricultural development. For instance, only a hundred kilometres from La Paz, in the Upper Beni region, there is sufficient land, at present uncultivated, to supply the capital with the major part of its foodstuffs without difficulty.

During the last decade, some attempt has been made to counteract the desertion of the land by forming numerous public services to deal with agricultural problems. The Ministry of Agriculture has thus been supplemented by the Inter-American Agricultural Service, a subsidiary of the United States Government International Co-operation Administration; the Ministry of Farm Affairs (*Ministerio de Asuntos Campesinos*); the Land Reform Service (*Servicio de la Reforma Agraria*); the Bolivian Development Corporation (*Corporación Boliviana de Fomento*) and other less important institutions. In order to co-ordinate and plan the work of all the organizations promoting Bolivia's economic development, the National Council for Co-ordination and Programming (*Consejo Nacional de Coordinación y Planeamiento*), whose Department of Agriculture will integrate the activities of the aforementioned organizations into a coherent plan for the harmonious development of the agricultural sector. The lack of effective co-operation between the various bodies is, however, one of the fundamental defects in their administration; each one prepares its work programme independently, which has resulted in unnecessary duplication, competition between the different sectors and, most important of all, the inability to formulate a definite agrarian policy or any joint plan for tackling the problems of Bolivian agriculture that would be both radical and comprehensive.

Bolivia's most pressing current problem in agriculture is how to supply its urban and mining centres satisfactorily, and reduce its agricultural and livestock imports so as to free the foreign exchange urgently required in other sectors, as well as in agriculture itself, for the import of capital goods. At the same time, there is a need for greater homogeneity in Bolivia by means of the migration of some of the surplus population from the *Altiplano* and Valleys to the hitherto uncultivated regions.

The incorporation of new and more fertile land and, above all, the adoption of improved production techniques will promote a large-scale expansion in the supply of foodstuffs and raw materials, thereby improving the average diet, which is at present very deficient, and helping to raise the low income-level of the agricultural workers. In turn, this will stimulate demand for non-agricultural commodities, which will then facilitate the absorption into other activities of the surplus rural population that could not be settled in the new agricultural zones.

2. *A programme outline*

The following suggestions for an agricultural development programme are only intended to provide a rough outline, since their final execution will be the responsibility of Bolivian experts, with the co-operation of foreign technical assistance consultants.

(a) *Objectives of the programme*

The objectives of a programme to develop agricultural and livestock production in Bolivia may be summarized as follows:

(i) Increased production in agriculture, the fishing industry and forestry, in order to effect maximum import substitution in these branches, which absorb almost 40 per cent of the country's foreign exchange supply; to expand agricultural and forestry exports so as to increase total capacity to import and reduce the extent of national dependence on mineral exports; to raise the dietary level of the population, especially of the indigenous inhabitants and urban low-income brackets, which is at present far below the standard nutritional requirements.

(ii) Improvement of yields and labour productivity, in order to contribute to the expansion of production referred to in (i); to raise the average income of the agricultural worker; to lower production costs; to preserve natural resources more satisfactorily.

(iii) More efficient distribution systems, in order to diminish transport and marketing costs; to reduce the distribution margins, and, consequently, lower retail sales prices; as a result of this, to extend the present limits of consumption and enlarge the domestic market for the sale of country produce; to improve the quality of the goods and reduce losses during marketing.

(iv) Equilibrium between the rural population and suitable agricultural land in order to alleviate, or avoid intensifying, the population pressure in some zones of the *Altiplano* and in the Valleys; to raise the average income of these communities; to integrate national territory more thoroughly.

(v) Consolidation of the land reform, in order to restore security and confidence to agriculture; to recultivate land deserted because of the reform, and thus contribute to population growth; to establish a definite system of land tenure.

(vi) A rise in the cultural level of the agricultural worker and in his average standard of living, in order

to integrate the agricultural workers more completely with the remainder of the population ; to incorporate them into the monetary economy of the country, as a preliminary step to the development of other sectors ; to rescue them from the cultural isolation in which they have been living.

In the course of preparing the development programme, these objectives should be converted into specific targets to be attained within a given time. This measure, which is characteristic of any well-planned programme, is essential for determining the degree of utilization and combination of resources to be employed in its execution.

(b) *Available means and resources*

Once the programme's objectives have been defined and its targets laid down, an analysis should be made of the measures to be applied and the resources required for attaining such objectives.

The requisite measures for carrying out the programme fall into four main groups : (i) physical and technical ; (ii) financial ; (iii) economic ; and (iv) administrative.

(i) *Technical measures.* Among these, the following should be singled out : the selection of new areas to be reclaimed in the Santa Cruz, Upper Beni and Chapare regions and in other valleys, which, according to estimates, should amount to 8,000 to 10,000 hectares annually ; the land reclaimed should be settled by the indigenous inhabitants, especially from the overpopulated regions of the *Altiplano* and Valleys ; the new colonies should have every technical and financial assistance to enable them to apply the most up-to-date production techniques to their respective holdings ; the irrigation works being carried out in Angostura, Tacagua and Villamontes should be finished as soon as possible, and those projected for the *Altiplano* and Cochabamba Valley begin immediately ; in addition, areas should be chosen in which to concentrate the efforts of agricultural extension and controlled credit services with a view to improving techniques,³⁸ the agricultural extension services of the Ministry of Agriculture and the Inter-American Agricultural Service should be reinforced, so as to enable them to deal more effectively with the regions where advanced techniques are to be introduced ; the import and internal distribution of the necessary elements to improve production techniques, such as fertilizers, improved seeds, insecticides, machinery, spare parts, wire for enclosures, etc., should be facilitated ; research on early varieties of wheat, hard fibres, oil-seeds, dry-farm fodder crops, beetroot and so forth should be expedited ; the establishment of seed-beds of *Vicia villosa* to propagate cultivation of this leguminous plant throughout the *Altiplano* should be encouraged ; the enclosure of grazing land should be promoted, the quality of fodder crops should be improved and the building of forage silos accelerated ; the efficiency of the marketing system should be increased through the

³⁸ It has been estimated that large-scale technical improvements will be introduced in some 20,000 hectares annually, including land for crops and grazing, apart from the newly-colonized zones referred to above.

establishment of central markets, refrigerator plants and modern slaughter-houses as well as the grading of crops and livestock according to quality.

(ii) *Financial measures.* The execution of the programme will require a substantial increase of investment in agriculture. It has been calculated that, in order to reach the minimum targets set, an average of no less than 5.5 million dollars will have to be invested annually during the next few years in the following items : heavy machinery for reclaiming land — 1.2 million ; irrigation — 1.3 million ; crops — 2 million ; livestock — 0.6 million ; miscellaneous items — 0.4 million. As the farmers' own investment will have to be financed by the expansion of supervised credit, the capital held by the Banco Agrícola will have to be approximately six times as great. The Bolivian Development Corporation (*Corporación Boliviana de Fomento*) and the Irrigation Department (*Dirección General de Riegos*) will also have to be granted funds for terminating the irrigation works already under way, and for putting the new projects approved into effect. At the same time, the Ministry of Agriculture's budget will have to be considerably expanded, especially that part of it earmarked for the Departments of Agriculture and Livestock (*Direcciones de Agricultura y Ganadería*). Moreover, the Extension Division of the Inter-American Agricultural Service will need to increase its budget about 200 per cent before it can employ more assistant representatives and agronomists and effectively cover the region where it is proposed to introduce improved techniques.

(iii) *Economic measures.* The price policy to be pursued in future should be studied carefully with a view to providing the appropriate incentives for attracting investment to agriculture and implementing the technical measure recommended. In order to avoid any extreme fall in prices which might hamper the future development of agriculture, some consideration should be given to the fixing of minimum prices, and to Government purchases for stock-piling, which may later be used for the completely different purpose of stabilizing prices during periods of shortage and preventing an uncontrolled price-rise. At the same time, the application of new customs tariffs should be envisaged to protect agricultural development, in view of the slow rate of growth to be expected in the capacity to import, and Bolivia's imperative need for import substitution. All these measures should be closely linked with the country's general economic development policy.

(iv) *Administrative measures.* The execution of a development programme will require readjustments in the organization of the public services connected with agriculture, as regards both their internal structure and their inter-relationships. On the first aspect there is little to be said at the present time. Nevertheless, as a general principle, attention may be called to the need to increase the technical staff in most of the institutions, and to raise their salaries in order not to lose trained personnel who would often be extremely difficult to replace.

Within the Ministry of Agriculture itself, a Department of Agriculture (*Secretaría General de Agricultura*) might

be created which would take precedence over the different Departments and would serve as a liaison between them. As a Minister's duties are political rather than technical, it would be indispensable for a permanent technical expert of high rank to be included on the staff, who would be unaffected by purely political changes and whose presence would give the development programme greater stability. It is also of primary importance to reorganize and strengthen the Department of Agricultural Economy (*Dirección de Economía Agraria*) in order to make a start on the basic economic and statistical studies required for planning and carrying-out an agricultural and livestock development programme.

Of just as great or even greater urgency than the internal reorganization of the institutions connected, in one form or another, with agriculture, is the need to co-ordinate their activities and thereby eliminate useless duplication, which is often costly and hinders the enforcement of a consistent and cohesive policy.

The organization to which the role of co-ordinator should be assigned is undoubtedly the National Commission for Programming and Co-ordination, through its Agricultural Department (*Departamento Agrícola*). It should bear the main responsibility for the preparation of the agricultural development programme and to this end should be able to count upon the close collaboration of the technical institutions which will supply the background data and information relating to its respective fields of action. It would consequently be preferable for the Commission to limit its own technical studies for the time being, and give greater emphasis to the analysis and evaluation of reports prepared by other organizations. On the other hand, the preparation of research and reports on general economic topics should be undertaken by the Commission itself, in close cooperation with the Department of Agricultural Economy of the Ministry of Agriculture.

The Programming Commission should be the highest authority in so far as both the planning and execution of the programme are concerned. For this reason, it would be essential for the Agricultural Committee (*Comité Agrícola*) of the Commission to include representatives of each organization actively connected with the programme. For instance, the Ministry of Agriculture should be represented (if possible by the Director of the Secretariat referred to previously), as well as the Ministry of Rural Affairs, the Land Reform Service, the Inter-American Agricultural Service, the Bolivian Development Corporation, the *Banco Agrícola* and the Commission itself. In this way, the decisions taken by the Agricultural Committee, and subsequently ratified by The Executive Council of the Commission (*Consejo Superior*), will reflect those aspects of the over-all policy to be applied by each of the institutions. Their respective fields of action will thus be defined more clearly, thereby avoiding the waste of resources and other defects referred to above.

The possibility of creating a Settlement Board (*Junta de Colonización*) has been considered. This would be a branch of the Committee, in common with other similar

entities, such as an agricultural extension service, a sub-committee on machinery, another on irrigation, and so forth. These sub-committees will usually be responsible for partial aspects of the programme, so that the Committee's decisions may be based on material that has been well prepared and analysed. They should also include representatives of private organizations directly concerned with crop and livestock production, such as the *Cámara Nacional de Ganadería*, the *Asociaciones de Agricultores*, co-operatives, etc. If the programme is under the auspices and direction of the Programming Commission, it will be easier to integrate it with the over-all economic policy of the country and see that it is consonant with development projects in other sectors. In this sense, it is obvious that transport policy should be closely linked to that adopted for the agriculture and livestock sector.

(v) *Other measures.* There are other highly necessary measures that do not fall definitely into any of the foregoing categories, and which will therefore be dealt with separately.

Among these, the improvement of agricultural and livestock statistics is of primary importance, and is fundamental to the preparation of the programme. Without such statistics, the task of programming would be transformed into a mere game of chance, with an equal possibility of success or failure. An attempt should therefore be made to build up a permanent system for gathering, tabulation and analysing data in this sector of the kind that already exists in many other countries. The Food and Agriculture Organization is currently examining the problem and its regional statistics expert recently went to La Paz to study it in the field. The cooperation of the international organizations in this, as in many other fields, may be of immeasurable assistance to Bolivia in attaining its development objectives.

A complementary system of periodic surveys should also be initiated, which would deal with consumption of foodstuffs and raw materials produced by the agricultural and livestock sector and give an accurate idea of the evolution of real demand among the population. Moreover, the inclusion in these surveys of other elements, such as consumer income and expenditure distribution, is essential for an analysis and better understanding of the dynamic factors in Bolivia's economy, which is a fundamental requisite for the programming of its economic development.

Mention has already been made of the need for more foreign technical assistance experts to strengthen the basic categories of public administration in Bolivia, but there are other aspects, in connexion with which the need for technical collaboration is even more imperative. This might be provided by international organizations such as FAO or UNESCO. It is obvious that, in so far as the agricultural and livestock sector is concerned, technical assistance projects must be closely linked to the requirements arising from the sector's development programme. However, technical assistance will probably be required very shortly for tropical crops, which have been studied very little in Bolivia; the marketing of agricultural and

livestock production, on which a more detailed study is required to complement the preliminary reports by a FAO expert; stockbreeding and management; the conservation of natural resources and water utilization; technical agricultural education at the three levels of primary, secondary and University studies; and the agricultural statistics and consumption surveys mentioned previously.

The possibilities that agriculture in Bolivia will emerge from its present retarded state are clearly so favourable that the combined efforts of the responsible officials and agricultural leaders, together with foreign technical and financial assistance will, without the slightest shadow of doubt, enable agriculture to develop more rapidly and thus contribute more effectively to the general well-being of the Bolivian people.

C. THE SOCIAL PROBLEM

I. THE SOCIAL STRUCTURE OF BOLIVIA IN NOVEMBER 1956

Under an over-troubled surface, the crowded history of Bolivia flows by in the three well-known stages of its course — the rule of the Incas, the dominion of Spain and finally, the independent Republic, which now, in the flood-tide of liberalism, is broadening out in an effort to merge into the modern world. Yet such an image is far from accurate, for although these phases can be enumerated in chronological order it would seem that they represent, rather than a gradual onward movement, a succession of historical strata, superimposed one upon another, but not yet welded together, and still divided by innumerable breaches and cleavages. And while the chronicle of the past is essential to an understanding of the finer shades and complexities of the country's present-day life, its study is so remote from the task in hand that there is no need here to do more than touch upon two aspects which are very much to the purpose. One is apparent in the ideologies prevailing today, and another, as a result of these, has become part and parcel of the characteristics of contemporary Bolivia's real social situation.

Those who take history as what actually did happen and could have happened in no other way, may feel that each of the phases of Bolivia's history fulfilled its own mission, even if after the defective, incomplete and fragmentary fashion of all the works of man. The present state of affairs in Bolivia is their outcome, and no other point of departure exists; it is — if these same phases may now be envisaged in terms of the nucleus of their respective economic structures — as much the product of the "ayllu" as of the hacienda and the mine, and the achievements of each stage will, under other guises, be prolonged into the future. But so total an acceptance of history is not the most common attitude; it is more usual to indulge in speculation as to what might have been, or to analyse yesterday from the standpoint of today, in the light of tomorrow's possibilities. Then it comes about that events are distorted from one angle or another, that the shadows of this or that period are more darkly pencilled in, that there is a quickening of nostalgia for the successful endeavours of times gone by, or that in the desire to escape into the past, its facts are made to fit into the unyielding grooves of a sequence of occurrences that can be seen to lead up logically to a predictable future. In Bolivia, as in other Latin American countries, there has existed and still does exist a lively interest in the interpretation of its history, and this has been the source of a literature which includes some

undeniably brilliant books. The interest of such literature on this occasion, however, lies not in its intrinsic value but in the sociological effects of its repercussions on the ideologies of the man in the street. For all those of its elements that represent contradiction and controversy in an intellectual field where there is still room for shades of opinion, are transmuted in the day-to-day struggle into a turmoil of sweeping and exclusive assertions which in no way help to create that awareness of historical continuity without which a deep-seated sense of nationality cannot take shape.

Nevertheless, on the formation of such a sense of nationality the survival of Bolivia depends. For the series of accretions and superstructures already referred to, by boxing up, as it were, one within another, systems that differ in social organization and belong to different epochs, has brought the history of Bolivia to a point at which the foremost of its social problems is that of its failure to become a fully integrated nation. Up to now there have still been geographical regions almost entirely cut off from one another, where it was easy for the traditional seed of Spanish individualism to take root and flourish, and contacts between the various ethnical and social strata and their ways of life have been so slight as to preserve these as closed cultural systems. Moreover, the minority responsible for government has constituted too small a proportion of the total population. These shortcomings have inevitable repercussions on each and all of the country's social problems, and not least on its economic development possibilities. In this sense, national integration and economic development are permanently associated in mutual inter-action. The former process will prove easier, and is bound to be consolidated, by virtue of an economic development which opens up new means of communication, strengthens the interdependence of production and markets and in general raises the standard of living of the whole population. But economic development in its turn, at the world's present pass, calls for a national consciousness to combine discipline with responsibility and to provide a major share of the incentives and stimuli that are essential if the necessary effort is to be kept up.

It is in no way surprising that this problem, whether clearly stated or dimly divined, was one of the main-springs of the revolution in Bolivia.

Every revolution, once a *fait accompli*, seems the work of destiny. Idle then to speculate on the clear-sighted action by which it might have been prevented. The historian has only to trace objectively the chain of causes that led to such an effect. Nothing of the kind, of course,

will be attempted here in the case of Bolivia ; but equally of course an endeavour will be made to single out certain vital moments. Two aspects seem inseparable from each other. One of these is the internal exhaustion of the possibilities of a socio-economic system, and the other the ossification of an *élite* that failed to adapt itself to new demands, for want of the ability or the will to infuse fresh blood into its veins. The unilateral structure of an economic system based almost entirely on the export of tin ore necessarily ceased to fulfil the function that it had discharged for many decades, because of the changes in prevailing conditions that inevitably took place, externally in the market and internally in production. And the traditional ruling minority, caught up in the inertia of the system, was unwilling or unable to introduce new stamina into its ranks, despite the efforts made under the Governments of Saavedra and Siles.

Like all its kind, the revolution in Bolivia was not a sudden outbreak ; it was a long time brewing. And the whole of this period of ferment dated from the decisive episode of the Chaco War and its unhappy consequences. It is impossible here to trace them step by step. Rather should it be recalled that this event not only drew attention for the first time to the symptoms of exhaustion manifested by the system out of which modern Bolivia had grown, but also united its social classes and ethnical strata in common experiences and on the equal footing of danger shared, kindling in the country's disillusioned youth an ardent desire to see their nation self-renewed. The subsequent years, coinciding with one of the most troubled moments in the world's history, are of supreme interest to any who wish to determine the exact origin of the prevailing ideologies and to account for their undoubted confusion and heterogeneity. For in this welter of conflicting ideas and aspirations lies the second most serious problem confronting the Bolivia of today.

The task of passing judgment upon a revolution is usually shelved until posterity's more impartial outlook enables history to be "contemplated in tranquillity". This is not, of course, the place to attempt any such thing. But two facts can safely be acknowledged. A régime could not long survive that allowed a major part of its population to continue living in obsolete conditions. And a Government came into being which, desirous of redressing ancient wrongs — though perhaps it was Utopian to hope to do so at a single blow — had the supreme courage to take that leap into the dark every historic decision must represent, and opened up for its country a prospect full of promise, it is true, but also of grave risks.

The radical changes brought about by the Movimiento Nacionalista Revolucionario shook the foundations of each and all of Bolivia's hereditary institutions, political, economic, and cultural, with the exception of the Catholic Church. Obviously, however, immediate and final shape could not be given to those which were to replace them. The agrarian reform, the nationalization of the mines or the disbanding of the army, were at the outset vigorous measures of demolition, practicable only if succeeded by the patient labour of reconstruction. The magnitude of the task may, for the time being, be considered an excuse for delay. But this latter must also have been

largely due, as is commonly recognized, not so much to the differences existing within the party, as to the variety of ideological banners — already referred to — under which its members march. The passion inherent in every young nationalist movement, vestiges of certain Germanic influences, Marxist doctrines of every sort and shade, together with liberal elements and technological targets common to all the peoples of our time, were woven into a mental web difficult to unravel into clear, firm and feasible decisions. Sociologically speaking, the disparity between ideology and practice is unimportant, since the former can fulfil special functions on its own account, as is abundantly proved by contemporary experience. But what is, on the other hand, of vital significance is the tendency of the unrelated and conflicting elements in an ideology to find expression in incompatible forms of action, or in the paralysis of any form of activity whatsoever. Political decisions imply ultimate appraisals which transcend the scope of rational analysis. But, conversely, such analysis — social science, if the reader will — can declare, with the strictest impartiality, what may be the immediate and secondary consequences of these decisions, and demonstrate that they cannot serve to bring about the simultaneous fulfilment of aspirations which by their very nature are mutually irreconcilable. Without rational analysis to serve as a guide, only painful collisions with reality can teach exactly what is wanted, as well as what it is reasonable to want. During the past few years, it was impossible for the Bolivian revolutionary movement to embark upon the methodical work of reconstruction without first sorting out its doctrinal confusions, or, in other words, clearly defining not only the content but the real limitations and practical scope of its hopes and aims. In these circumstances, the third factor making for delay was to be found in all the various repercussions of uncontrolled inflation.

As a society cannot survive without disgregating in an institutional vacuum, its tendency is temporarily to fill up the void with pseudo-structures, non-functional over the long term, but for the moment enabling it to keep its feet. This is what has happened in Bolivia during recent years. With its foundations embedded in the rubble of traditional institutions, a structure has gradually arisen which has served to buttress up the everyday concerns of a large number of individuals. The speed of events may shortly convert into a historical curiosity a phenomenon which, to the loss of social science, has not been made the subject of a satisfactory monograph. And this is the more regrettable inasmuch as, while the general outlines of this phenomenon are well known, they are here to be seen for the first time in the setting of a primitive environment and attended by singular and paradoxical effects.

Bolivia, apart from its positive achievements, has for some years been dependent on a structure composed of the following elements : contraband, a black market and trade-union sinecurism. It must be understood that such terms are used only in their strictly structural connotation, and that no judgment of any kind is implied. Among these elements, contraband is the only one of which a careful description exists, in one of the chapters

of the study made by C. H. Zondag ;³⁹ as regards the other two and their inter-connexion, the want of the monograph mentioned, which might have been extremely important, makes itself felt. How was this structure able to function ? What efforts did it stimulate ? What were its repercussions on the standard of living of the workers, and on the stratification of society ? What were its positive and negative effects in the sphere of both moral conduct and economic behaviour ? These are some of the questions to which at present only conjectural replies could be offered. Not even an attempt will be made to do so here. However, some apparently paradoxical consequences may be pointed out, and a modest prophecy tentatively ventured.

It was not, of course, to be expected that such a structure (smuggling, black marketeering, trade-union feather-bedding) could constitute a sound basis for economic development. Neither savings nor investment can become a firmly-established part of so hand-to-mouth a way of life. According to strictly Hegelian theory, the "cunning devices" of Reason might be held to account for the unexpected fact that the great mass of the Bolivian people — the rural population especially — should have set foot upon the road to rationalization thanks to the incentives provided by such a structure. Speculation is, after all, a form of calculation, and the rejection of established usage for reasons of necessity constitutes a final break with long-standing tradition. It is incredible how quickly the agricultural worker traverses the lengthy stages of the process of transition from the hoarding of coins to fixing the price of his produce in dollars. And there can be no better index of some human beings' adaptability and their latent possibilities of metamorphosis when conditions become more favourable. Much the same is true of the expansion of demand. The growth of aspirations and needs is largely bound up — if the stimuli offered by the new political atmosphere are set aside — with the hazards and the peculiar features of this pseudo-structure. And if such growth is therefore far from logical and organic, it is, even so, a form of initiation into ambitions which perhaps may later be satisfied by efforts of another kind. Thus, although in quantitative terms there can be no compensation for the number of hours wasted in unproductive work, on a balance-sheet of over-all human losses and gains, among the latter must be reckoned, perhaps for all time, the abnormally intensive process of rationalization to which the Bolivian people has been subjected.

How long this structure might have lasted, left to itself, is now a pointless question. If the stabilization measures announced and already under way are successful, they are bound to cause its downfall in a relatively short space of time. For with the abolition of the complicated exchange system at present in force, the incentives to smuggling disappear, as well as the *raison d'être* of the quota mechanism, prop of trade-union and bureaucratic sinecurism, and, with these two, the network of the black market with all its varying range of intermediaries and retailers. But with them will also vanish the

³⁹ See *Problems in the economic development of Bolivia*, *op. cit.*

numerous forms of disguised unemployment, and the sources of income — compensatory or lucrative, moderate or high — of a considerable sector of the population. In this sense, stabilization is not merely an economic operation, but something broader, with social repercussions whose immediate and secondary effects far transcend what can be calculated and readjusted with the help of known statistics. Monetary stabilization will constitute a little revolution within the pseudo-structure that for some years has been the basis of Bolivian life. Consequently, apart from the major and minor resistances that are sure to be set up, two prophecies can be made. First, the changes that have taken place in the interim — especially in the stratification of society — will have to be accepted, since any return to the *statu quo* is impossible. Secondly, the work of demolition will be a barren task unless it is simultaneously accompanied by that of building up Bolivian society on a system of "eufunctional", or in other words, practical institutions. Economic stability and social stability — each needs, as it conditions, the other.

II. THE SOCIAL PREMISES OF ECONOMIC DEVELOPMENT

Any attempt to outline the social premises of a country's economic development must be based on a clearly-defined framework of concepts in which a theory is implicit. Both exist at the present time, and undoubtedly as the expression of a consensus of opinion much greater than is usually recognized. For this reason it will perhaps be as well here not to pursue the first-hand preparation of the theoretical background,⁴⁰ but to use a set of concepts presented elsewhere. Acceptance of the systematic classification drawn up by W. E. Moore at the request of UNESCO⁴¹ not only invokes the support of an acknowledged authority, but at the same time offers evidence of the concordance referred to, which is patent despite terminological differences or discrepancies of detail. In this connexion, needless as it may seem, attention should nevertheless be called to two points. The fact that Mr. Moore's scheme has been adopted in the present analysis does not imply a commitment to reproduce it literally — and this not only with respect to the Spanish rendering — provided that the liberties taken are not too great. Secondly, all the theoretical groundwork that can only be alluded to in passing must be taken for granted.

The analysis of the social premises of Bolivia's economic development will therefore be based on the three planes or levels suggested by Moore, namely, institutions, organization and the psycho-social plane of motives or incentives.

Every society, of course, is nothing but a system of institutions, and, for better or for worse, exists only as long as this system, whatever it may be, continues

⁴⁰ See ECLA, *Progress report on the study on social conditions of economic development* (E/CN.12/374), and "Three sociological aspects of economic development", *Economic Review of Latin America*, special issue, Bogotá, August 1955, pp. 56 *et seq.*

⁴¹ "The social framework of economic development" (unpublished); see also the index to W. Arthur Lewis' *Theory of Economic Growth*, London, George, Allen and Unwin Ltd., 1955.

The unequal distribution of the population throughout the national territory has repercussions on the labour market. While some parts of the *Altiplano* and the valleys are over-crowded with people engaged in marginal work, in Santa Cruz there are not enough hands for the sugarcane and rice harvests. Clearly, the predictable social effects of any development include, over the long term, a more balanced geographical distribution of the population. But the question is so urgent, especially in its agrarian aspects, that for some time the possibility of directed population shifts has been arousing interest in Bolivia. The problem lay in the doubt as to whether the inhabitants of the plateau would be able to acclimatize themselves to the tropical and sub-tropical zones. In effect this problem has been convincingly solved, thanks to a few well-planned settlements established by private enterprise or by the Development Corporation and through the unquestionably admirable experiments of the "Regimientos Coloniales". But it is doubtful whether these small-scale achievements could be repeated on a larger scale. The undertakings mentioned undoubtedly are of value as spurs to further effort. But in all likelihood future population shifts will have to be spontaneous rather than directed, when the economic magnets created by a development programme are allied to the effects of better education, which invariably generates new incentives and desires.

What is the situation of the agricultural worker since the decisive episode of the Agrarian Reform? Unfortunately, scarcely any of the problems which this question raises can be discussed on a basis of objective research⁴² and conclusive evidence. If all controversial elements are eliminated, only the consensus of a few reliable opinions remains.

It is an undisputed fact that the standard of living of the indigenous agricultural worker has perceptibly risen. In what degree and through what combination of different elements it has done so, and how far the improvement implies the beginning of a metamorphosis of his way of life, are questions to which no precise reply can be given. What is important — from the sociological standpoint, of course — is not so much the extent of the improvement as the fact that it is not strictly confined within the inherited system of a closed economy at subsistence levels.

But these questions imply another of prior and therefore fundamental significance. How has the Aymará and Quechua agricultural worker reacted to that restoration of his dignity as a human being which was the underlying motive of the reform? What has really gone on in his mind in face of his sudden endowment with both moral and material possibilities?

Another undeniable fact is the enthusiasm with which the agricultural worker has co-operated in the defence and maintenance of his new rights, which, if not actually conquered by him, are undoubtedly consonant with his age-old aspirations. Equally incontrovertible is the gent-

leness of his nature, which has kept violence within relatively moderate limits. For, while violence there has been everywhere — in Cochabamba especially, although the Quechua is supposed to be of a more open and malleable temper — together with "reinstatement feasts" comprising numerous head of prize cattle, it has been very slight in comparison with what might have been indulged in by armed masses in whom red-hot ancestral passions had been aroused. But an understanding of these facts does not constitute a sufficient reply to the question posed. Once the enthusiasm — always transitory — is over, what attitude is taken to the sober demands of every day? Once the rights have been assumed, how are they reflected in the duties that are their reverse side? Once the tumult has been stilled, how will the tasks of the new community life be shouldered?

Hence the question: What has really gone on in the agricultural worker's mind? Ignorance on this point precludes even a vague forecast of the future of the agrarian reform, and therefore, because of the latter's basic importance, of the country's economic development prospects themselves.

The Indian's time-honoured method of defence, as those who know him well are constantly repeating, has always been a barricaded withdrawal into himself and his own group. Perpetually on the defensive, his existence was necessarily founded on suspicion and mistrust, hide bound by custom and resistant to innovation as it was. While nothing has hitherto had the power to bring him out of his shell, one of the greatest of the hopes pinned to the agrarian reform is that it will do so for the first time. Success depends upon some means of breaking down the attitudes behind this aloofness. Mistrust must be replaced by confidence in dealings with strangers, and the all-absorbing desire for security, rooted in tradition, must be ousted by eagerness for progress. None of this, of course, can be achieved in a day; and only the establishment of a more favourable institutional environment will at some future time reveal the meaninglessness of the heated arguments between those who systematically disparage the Indian and those who romantically exalt his virtues. So much the more important is it, therefore, to examine certain symptoms and forecast certain dangers, for the greatest risk that can be incurred is that clumsiness and want of tact, or a slavish subjection to preconceived and doctrinary ideas, may once again set in motion the machinery of the age-old impulse towards security.

The indigenous rural population has been subjected to an intensive process of syndicalization. Agrarian inspectors, rural schoolmasters and joint commissions of officials and from among the agricultural workers themselves, devoted their energies to the speedy performance of this task. Apparently some of these commissions managed to organize as many as three trade unions in a single day. The inevitable defects consequent upon so much haste, and various others that might be cited, do not affect the present issue, since in order to state it clearly, the process might even be assumed to have followed ideal lines. The essence of the problem lies in discovering how the agricultural worker was able to effect the transition from the primary community

⁴² Up to now it has not been possible to make use of a piece of research which apparently meets this need, namely, R. W. Patch's *Social Implications of the Bolivian Agricultural Reform*, Doctoral Thesis, Cornell University, June 1956.

in which he lived to the secondary organization represented by the trade union, and what were his animic reactions in face of the relative but obvious abstraction which the latter implies. It cannot be supposed that so abrupt a step could be taken with ease, or without being attended by a few negative consequences. The impersonal and objective nature of the relationships thus suddenly embarked upon was to stretch as far as the official routine of the Ministry, through the series of claims and formalities relating to the allocation and concession of the worker's land. The leap from the personal relationship with the "compadre" (the patron who stood godfather to his tenants' sons) to the functional relationship with the secretary of the trade union symbolizes an altered situation in which some sense of bewilderment and defencelessness must presumably exist.

And this is precisely the feeling which must at all costs be avoided, as two facts seem to suggest. One of these is the readiness with which the agricultural worker, despite his traditional attachment to the soil, has sometimes broken away from his farming to engage in petty trading and smuggling; although allowance must obviously be made for the general effect of the insecurity of tenure previously mentioned, which was bound to influence old and new landowners alike. The second is the apparent existence, in certain rural groups, of a fairly definite and even more or less conscious nostalgia for the old order of things. If such a sentiment exists, it is called forth not by the previous system in itself, but rather by the "security" which it afforded, mediocre as was the level attained. This is understandable. But those who reject the black-and-white portrayal of reality that is inevitable in political contests, are bound to suppose that not all the former landowners were incompetent and ruthless exploiters, and that there must have been some among them who were not only capable farmers, but human beings able to feel concern and affection for their servants and employees. In this sense the landowner of the past, with all his shortcomings, perhaps fulfilled a twofold function *vis-à-vis* the indigenous agricultural worker. On the one hand, he could provide technical advice and economic assistance, when occasion arose, in a professional capacity, that is, with respect to the farming of the land belonging to both. On the other hand, he could also give personal support and friendly aid, which in its different degrees might extend as far as the family tie represented by the "compadrazgo" (position of godfather to the tenant's sons). Both these functions were of course discharged within a relationship typical of paternalism but afforded a security which complemented that of the blood-community.

The disappearance of the old type of landowner leaves a gap that is psychologically dangerous for those accustomed to living under his authority. And upon whether this gap can be satisfactorily filled will depend the success of the agrarian reform from the social standpoint. When a contemporary sociologist (Gehlen) attributes all the problems of power in the modern world to the irreparable loss of its patriarchal sources, there is nothing to wonder at in the suggestion that for an almost primitive world some risk is entailed by the

sudden disappearance of its traditional paternalism. How, and by what substitutes, can the two functions indicated be replaced?

The only safe prescription is to grapple with the problem in all its aspects and using all the instruments that come to hand; and, moreover, without too much impatience. The rational association of the trade union is not enough, nor is the official action of a far-away Ministry. The effects of extension courses on agricultural techniques must be combined with the warmer and more human results of basic education. And even so, the pervading influence and the example of the person close at hand remains a lack which by one means or another would have to be supplied.

All these problems, and others of a technical or juridical nature, derive from the way in which the agrarian reform was carried out; or rather, from the way in which all agrarian reforms are habitually effected, with identical results. For, while theory is rich in suggestions for the concrete action that should accompany it, the inertia characteristic of the world's history has usually prevented its being put into practice from above, with all the precautions and complementary measures recommended, and its implementation has been imposed from below as a revolutionary expedient. This was what occurred in Bolivia's case. It seems, therefore, unnecessary to seek for possible justifications or to imagine how things might have happened otherwise. As it was, the decisive move seems to have been based upon the *de facto* appropriation of the land, or, in other words, to have been a political rather than an economic step. Or again, to use the Marxist terminology of some Bolivian intellectuals, the reform is typically "plebeian"; which means that if it has satisfied the claims of material justice, it has paid no heed to the formal principles of productivity. It has thus been possible to contend that while the reform is a success in the social field, it constitutes a failure — like many others — from the economic point of view. But how long this dichotomy can last — if at a given moment it actually exists — is highly problematic. The real social value of the agrarian reform, on the contrary, depends on its economic outcome, and if this latter is negative, the former can yield no positive results.

It will be for economists and agricultural experts to say what can be done in this connexion, and where the weaknesses that must be remedied lie. Clearly, however, unless adequate credit facilities are available and the farm worker is given technical training (through agricultural extension services and rural education), no steady progress can be made. Bolivia's shortcomings in these respects seem plainly apparent despite legislation and praiseworthy but as yet limited efforts such as supervised credit. What is not so obvious is all that derives from the persistence of sheer mythologies — the myth of the primitive community's switch-over to the patterns of modern collective organization, and the myth of mechanization for mechanization's sake. Because of this, the wholesale creation of co-operatives, without the prior collaboration of personnel qualified to tackle so difficult a task, and the indiscriminate donation of tractors and farm implements, have not always

The existence of science must not be confused with that of an isolated group of learned men, however eminent they may be, but depends upon its adequate institutionalization. As this is the major weakness of the Latin American countries in general, it is not surprising that present-day Bolivia should be among the cases in point. What is more, its situation in this respect may be more dangerous than that existing some years ago. For the traditional system did permit, though on no methodical basis, it is true, the creation of an *élite* composed of Oxford, Sorbonne or Harvard graduates, whereas today such a group must be built up within the country and in larger numbers, by a systematic effort of internal organization and foresight, although it can draw upon the several forms of technical and cultural assistance from abroad. And in this connexion, what has been said of science is applicable, *mutatis mutandi*, to technique. For if it is a fallacy that technique can be imported without in some way bringing in its train the rational and scientific principles upon which it is based, it is equally erroneous to believe that every kind of technique can be imported, or that it can flourish — at the necessary levels of discovery and adaptation — without becoming institutionalized along with scientific research.

According to the 1950 census, Bolivia had in that year 12,409 university graduates, 6,170 persons with technical training and 758 with business training of an academic type. It should be borne in mind that these statistics include both foreign technical experts and Bolivians trained abroad. Such data of course speak for themselves, and their testimony would be much more eloquent still if the aggregate University figure were broken down by its various component groups.

Here Bolivia's greatest problem lies in its university tradition itself, for it possesses an exaggeratedly large number of universities, more than one of which endeavours to cover the entire field of advanced education. The solution of this delicate problem, which is as much a matter of diplomacy and of local susceptibilities as of organization proper, is hardly one of the most urgent tasks ahead, though it should not be dismissed as a complete impasse. It is, of course, of basic importance, for the necessary expansion of Bolivia's ruling classes calls for real ability rather than mere graduation statistics. And while in all countries an excessive number of degrees, or of some degrees in particular, is a very serious question, the surplus of "intellectuals" whose capacities fall below a minimum standard only adds to the factors making for dissatisfaction and restlessness which are intrinsically abundant in those countries that are under-developed.

The defects and inadequacy of technical and vocational education are apparently so striking that recent Bolivian Governments have made every possible endeavour to fill up the gaps.

In the whole field of education and scientific training, Bolivia's own efforts have been supported by the efficient aid of UNESCO, of the United Nations Technical Assistance Administration and of the United States co-

operation programme.⁴⁴ If in the last few years circumstances have perhaps not allowed all these projects to yield the desired results, the country's economic and social stabilization will undoubtedly make it possible not only to achieve greater success but to reproduce such achievements over the wider field required.

There is one aspect of the social premises of economic development in which Bolivia has made positive progress during recent years, and has reached a position which, at least as a beginning, may be considered favourable. For it has broken the bonds of its hierarchical social system and has rendered possible the increased mobility which accompanies every development process.

Bolivia, like other countries of the region, is an excellent testing ground for the historico-sociological theory of "superimposition". But from the outset the special cultural features of the peoples placed in contact have hindered correct interpretation of the social stratification which has gradually been built up. In this context, although the traditional term suggests such an idea, no closed caste system has existed, nor have the different ethnical characteristics played a decisive part in the difficulties of moving from one internal level to another. Politics, military activities and the acquisition of knowledge or wealth have always enabled exceptional individuals to rise in the social scale, whatever their ethnical or social origin. Even so, just as the process of racial fusion has been less complete than in other countries, this social mobility previously outlined was undoubtedly slower, because individuals were involved rather than strata. However, a detailed study would reveal an increasing acceleration in the present century to date, especially in urban environments.

The social and political upheavals of this whole period, as well as the composition of the groups which supported the Movimiento Nacionalista Revolucionario, are in themselves clear proof of the transformation brought about. In this sense the events of 1950 represent no more than the legal and political recognition of this metamorphosis.

By virtue of a solemn official declaration all the lingering remnants of serfdom disappeared in a single day. And the principle of equality of opportunity, henceforward the basis of the whole of the legislation, inevitably takes on a note of almost lyrical enthusiasm in the "Education Code". But it is facts rather than official statements that are really important. In effect, during the succeeding years the stratification of society has been undergoing such rapid changes that their outcome is as yet unknown. The functioning of the structure sketched elsewhere was the social mechanism behind all these modifications, but unfortunately not the first trace of a detailed description of it is available. Some groups were ousted from their positions of power and prestige; others found their income or status seriously reduced — perhaps only temporarily, as was the case with the small middle-class composed of professionals

⁴⁴ There is a current project to set up, under the auspices of the Federal Republic of Germany, a technical training centre capable of meeting the needs of the time.

or of medium-scale proprietors and entrepreneurs — and, conversely, others emerged as the heirs of new possibilities and as the nucleus of groups destined to climb to higher rungs of the social ladder. To indulge in conjecture as to the lasting result of all these changes — for example, as to the structure of the future class — seems unsatisfactory. The essential fact, representing a final and positive gain, is the increase in social mobility, which is an indispensable requisite of economic development. Upon the direction taken by the incipient stabilization process, and on the new employment groups created, will depend the firm establishment and the internal mobility of the new social hierarchy. The initial conditions are present for the functioning of the system based on intrinsic merit and effort which a modern economy entails.

Although rational methods of productive organization are much more frequent in pre-industrial societies than is commonly believed, they nevertheless constitute the central and universal characteristic of economically advanced societies. This concept is formulated by an author⁴⁵ who rightly adds that the theoretical bases in this field are less sound than might be desired, and, of course, less reliable in their general conception than those which have hitherto been considered in the institutional field.

In actual fact, as was stated at the outset, the rational organization of productive work is far from being a novelty in Bolivia, not merely among the large mining companies, where it was to be expected, but in agricultural and industrial enterprises. Within the traditional inertia of the agrarian system of large-scale estates, some haciendas were organized on strictly model lines, and their fragmentation — even for the time being — has had regrettable effects. And, of course, in the field of industry, which is that of major interest in this context, there are enterprises whose organization in no way differs from that of their counterparts elsewhere.

However, it is still doubtful whether industry as a whole had reached the stage of maturity implied by the widespread predominance of the rational organization of work ; or, in other words, whether the economic system functioned with the productive efficiency that specialization and the methodical co-ordination of the various specialized branches brings in its train. The small volume and the youth of Bolivian industry of course excuse its shortcomings. But it must be confessed that not much can be said on this subject with any accuracy, for want of the necessary research.

When studies on the entrepreneur and on industrial sociology, such as are at present completely lacking in the whole of Latin America, can be undertaken in Bolivia, it will be possible to reply to the questions which are of most interest today. Which have been the prevailing types of entrepreneur in Bolivia ? By what general characteristics has enterprise been distinguished ? By what economic and social ideals were the entrepreneurs inspired ? What were and are the attitudes adopted by society to enterprise ? What form has been taken by human relationships in this sphere ?

⁴⁵ W. E. Moore, *op. cit.*

On the basis of the information received from competent observers and of some few approximate data, certain comments may be hazarded upon the current situation of private enterprise in Bolivia. The abundance of names of foreign origin — of the first or second generation — within the narrow limits of the Bolivian industrial census, immediately suggests two conclusions. In the first place, apart from its actual youth, Bolivia's industry has lagged behind in the sense that little part is played in it by local energies, which are absorbed in other occupations. Strictly Bolivian enterprise would not have advanced by now beyond the commercial phase. This means that Bolivian capital has hitherto tended to avoid the risks and complications of industrial investment, a characteristic which seems to have persisted even in recent years. Secondly, the origin of many of the industries would seem fully to account for the excellence of their entirely "imported" organization.

As regards the situation of industry during the past few years, all data seem to coincide in indicating one over-all trend, namely, the decline in its productivity as a whole. It is precisely in the discussion of this fact that the sociological point of view may intervene ; for if it can be partly explained by powerful economic reasons, difficulties relating to exchange, to imports of raw materials or to the replacement of equipment, no little influence has also been exerted by factors of a special character deriving from the striking deterioration in the relationships between workers and employers. In face of a trade union organization with political backing, the contractual weakness of the employer, which has dominated labour relationships in recent years, seems undeniable. For this reason, neither over-employment in some industries nor the almost universal lack of discipline could be normally handled, and were thus added to the ordinary labour difficulties already mentioned. Authority within the enterprise — of whatever type it may be — is not only the reflection of clearly defined powers of disposal, but also the counterpart of the rational organization it sets up. No wonder if this has also intrinsically deteriorated in one way or another.

It is impossible at this juncture to examine the relative influence exerted by economic and social factors on the decline in productivity, and how far those adduced do or do not constitute sufficient justification for given behaviour patterns — the flight of capital, the absence of new investment, etc.

Mention has been made elsewhere of the part played in this state of affairs by ideological wavering in official circles. And, as is natural, to these vacillations must be attributed the creation of negative attitudes towards enterprise, more or less widespread or openly declared. It is therefore needless to insist that the situation hangs upon a clearcut decision as to the ends and means of economic development. If it is believed that private enterprise can and must make some sort of contribution to such growth, the conditions under which it can exist must at the same time be restored, by means of a transition from the neglect of everything that might induce the mass of the population to shake off its apathy, to the just but firm re-establishment of labour relationships under a well-defined legal system. Intermediate steps will have

union organizations of one kind or another. In the course of time, the trade unions have become an almost constitutional element not only of the industry of these countries but of the whole of their public life, and this, with shades of difference, applies as much to the Anglo-Saxon tradition as to the continent of Europe, where there is more propensity towards a fighting spirit and the class struggle. Consciousness of co-responsibility, firmly based on their own interests, governs the strategy and the actions of trade-union policy, without entailing the renunciation of its essential aims. It is understandable that in the less developed countries a very different situation should prevail. The trade union, which has merely inherited methods and doctrines that it has not itself hammered into shape throughout long years of experience, may sometimes make demands that outstrip real possibilities and operates as a rule in a more hostile environment, which compels it to voice stronger protests. How far such action may hamper incipient economic development, and whether it is or is not feasible to accelerate the transition from one stage to another, are questions to which no general reply can be given, and which fall outside the scope of the present topic.

The situation of trade-unionism in Bolivia displays no new or surprising features in this respect. Fashioned in the course of its short career, by the methods common to the whole of Latin America, in the combative traditions of the continent of Europe, it preserves the same attitude along with the same ideology. But its most characteristic feature at present is rather to be found

elsewhere, namely, on its rapid growth under the protection of political activities and the State. In this sense, its position seems abnormal and definitely temporary. For in their association with politics in the more advanced industrial countries the trade unions have either become a mere cog in the machinery of economico-administrative organization in totalitarian states, or one more element of political pluralism in the life of the democracies. But a situation of ambiguity with respect to political power and the authority of the trade unions, in which the latter both gains in exclusive social influence and loses in responsibility, corresponds only to a particular revolutionary moment and must in the long run take definite shape along one or other of the lines indicated. It is thus not to be wondered at that Bolivian trade-unionism has in the last few years been more superficial than basic, and that given the economic circumstances, there has been a tendency towards utilizing it as an instrument of obvious sinecurism. In view of these features and of the present situation, it was impossible that its influence should be other than negative in matters of discipline and labour relationships. All this does not imply a waste of time. On the contrary, trade-unionism in Bolivia has been shaped by experience ; it has, in its enthusiasm, gone so far as to accept responsibilities which it has not been strong enough to carry, and its leaders have had the opportunity of learning what national responsibility means. There is consequently every reason to hope that when it is once more operating within its own due limits, it will make a constructive contribution to Bolivia's economic development.

INDEX CLAUSE IN DEFERRED PAYMENTS *

PREFACE

This article deals with a subject which has already attracted attention in Latin America, the issuing of bonds that keep their "real" value. It is difficult, in countries which suffer from inflation, to find a market for fixed-interest securities because investors fear that the purchasing power of the invested capital and of the annual interest payments will dwindle away as prices increase. The article describes a device used in some countries, mostly in Europe, to cope with this problem : a clause is inserted in the loan agreement which entitles the investor to receive not only the nominal interest and amortization payments but also an allowance for any rise in prices as reflected in the fluctuations of a specified price index from the day of issue of the loan to the day of payment. The article starts with an account of various ways in which a number of countries have applied this device in practice. The theoretical aspects are discussed in the light of the literature on the subject, references to which are given for those who wish to learn more about the subject.

The index clause in deferred payments is a device aiming at stabilization of the value of financial investments and the return on them in terms of a value index. The payment of the principal or of the interest, or both, is varied according to changes in the index chosen. The index can be defined in different ways depending upon the aims pursued and upon available statistics. Also the link between payments and index changes can be constructed in different ways.

To give an immediate, practical idea of what an index clause is, section I of this paper describes different types of clauses now in effect in some countries.

Section II contains a discussion of the incentives for different kinds of lenders and borrowers (including the government) to use an index clause in their operations.

The next section provides an analysis of the nature of a market for financial investments embodying an index clause, and discusses price formation in that market. This analysis is focused on a discussion of the factors which will determine the difference, if any, between the

* Prepared by the Fiscal and Financial Branch, Bureau of Economic Affairs, United Nations Headquarters.

effective remuneration of indexed and non-indexed assets under varying assumptions about the nature of the clause.

Against the background of this analysis of the prerequisites and functioning of such a market, section IV is devoted to the implications for the economy as a whole of the introduction of indexed financial assets.

Some technical notes referring to the problems discussed in sections II and III are given in section V for those readers who wish a detailed exposition based on equations and diagrams.

Not very much has been written on the theory and practical working out of this device on deferred claims. The most important contributions seem to have come from Scandinavia : from Finland, which is the country that has gone farthest in applying the index clause to the credit market ; and from Denmark and Sweden, where studies have been undertaken on the initiative of the governments. This article draws heavily on these studies, but frequent reference is also made to other literature, of which the titles are given in a reading list at section VI.

It must be kept in mind throughout the discussion that the devices and policies discussed here make sense only in an economic environment characterized by considerable experience with inflationary developments. Its meaning and purpose would probably be easier to explain to people in certain European and underdeveloped countries than to people in the United States and Canada, for example. Only to the extent that the notion of deterioration in money values because of rising price has pervaded the economic reasoning of businessmen, bankers, savers and others will it be possible to make the functioning of the index clause understood and will it be worthwhile even to start to contemplate its introduction. It would, on the other hand, also be noted that a serious discussion or actual use of an index clause by no means implies a defeatist attitude towards the possibility of combating inflation. On the contrary, it can be viewed as an instrument which, under certain circumstances, can reinforce a long-range anti-inflationary policy and lead to its success. This will be discussed in the concluding section, but should be kept in mind throughout.

I. RECENT EXPERIMENTS WITH AN INDEX CLAUSE IN THE CREDIT MARKET

1. *Finland*

The Finnish Government issued in 1945 a ten-year amortization loan of 18 billion marks. The bonds were provided with an index clause and were used as indemnity to the people who evacuated Karelia and other territories

ceded to the Soviet Union. The domestic wholesale price index was applied in repayment of the principal, with full compensation for every 10 per cent increase above the price index base and without stipulations about an upper limit for the rise in the price index subject to compensation. The loan had been fully repaid

years. At the same time an ordinary loan was floated at a 6 per cent rate of interest. A new indexed loan was floated in June 1954.

In November 1954 the *Groupement de l'Industrie Sidérurgique* issued a 6 per cent loan linked to the price of steel as well as to the total production of the borrower. For each 10 per cent increase in the steel price beyond 30,000 francs per ton, the interest and amortization are increased by 2.5 per cent (that is, 25 per cent price compensation), and for each 10 per cent increase in total production beyond 10,500 tons of steel, interest and amortization are increased by one per cent. In later issues amortization and interest payments have similarly been tied to the turnover of the group. The last one in a series of four loans was issued in October 1956, tied to any increase above the turnover of 500 billion francs achieved in 1955/56.

4. United States

In 1925 the Rand Kardex Company issued bonds tied to the wholesale price index of the United States Bureau of Labour Statistics. The initiative for the loan came from Irving Fisher, who was co-owner of the company. It was not successful, however, and was converted after a few years to preferential shares and ordinary bonds.

5. People's Republic of China

In 1949, widespread use was made of "parity deposits", that is, deposits linked to the price of a "basket" of certain essential commodities in specific quantities. The parity basket contained rice, cotton fabric, peanut oil and coal briquettes. The price of the basket was estimated daily and used for immediate adjustment of the deposits. Workers with incomes beyond a certain minimum had to deposit a part thereof. Bank loans are also reported to have been converted to a purchasing power basis, thereby providing the banks with the necessary hedge. In 1950, bonds were issued according to the same principle, their value being based on the prices of rice, flour, cotton cloth and coal.

The adjustments for price movements worked in both directions, so that, when prices started to fall in 1950, this type of deposit lost its attraction and was not used

any more. The parity deposits were therefore abandoned, being replaced by "guaranteed" deposits adjustable only upward and linked to commodity prices selected according to their importance for different regions. In the cotton region, for example the value of the deposits was linked to the price of raw cotton to induce farmers to accept deposits instead of keeping their product for speculation in the event of price increases.

The indexed deposits were abandoned in 1952 but seem to have constituted a powerful incentive to bank saving, thereby decreasing the holding of currency, as well as speculation and private loans channelling the funds via bank loans to activities favoured by the Government.

6. Sweden

Kooperative Forbundet (the Co-operative Association) issued in 1952 a 3 per cent loan tied to the cost-of-living index. Full compensation with regard to the principal is given for any rise in the index, but not for more than a total increase of 50 per cent of the initial nominal value.

7. Iceland

Landsbankin Islands issued a 5.5 per cent indexed loan in November 1955 to be used for financing residential building. The loan is repaid by drawings over a period of fifteen years, the payments being regulated according to the retail price index. At the same time a non-indexed 7 per cent loan was floated. The yield of the two loans will be about the same if one expects a price increase of 35 per cent (about 2 per cent yearly).

8. Chile

The *Banco del Estado* has announced an issue of 1,500 million pesos in "adjustable bonds" to be placed with official organizations and provident institutions. Of this total 1,000 million pesos will be for agricultural development, and the nominal value of these bonds will be based on the market price of a metric quintal of wheat; 500 million pesos of the loan will be devoted to workers, housing construction, and the nominal value will be based on the cost of one square metre of concrete construction. The interest rate is 3.5 per cent.

II. THE INDEX CLAUSE AS AN INCENTIVE FOR BORROWERS AND LENDERS

1. The private lender

The index clause can be applied either to the interest on a loan or to the principal, or to both. If applied to the interest, it ensures the lender a future income stabilized in real terms. When applied to the principal, the investor is assured of the future purchasing power of his current savings. A variety of purposes can be served by these two forms of index clauses, such as assuring income in old age or providing for children's education, over a period of time, or the fulfilment of different purposes for saving (a house, for example, or a business). Actually,

a combination might be desirable, as in the case of a man saving in order to have a certain purchasing power available at a future date with the ultimate purpose of drawing a guaranteed real income from his savings. This could be implemented by a savings plan with a guaranteed purchasing power at a future date and the option of acquiring an investment with guaranteed future yields at that date.

It would certainly be possible to have side by side bonds which carried an index clause regulating interest only, or principal only, thus satisfying the different aspirations of lenders. But such an arrangement creates

difficulties from at least two points of view. For one thing the payments on bonds which carry only one type of regulation are sometimes difficult to estimate. This applies especially to annuity loans. When both the interest and the principal are regulated, the computation is much easier.² Another disadvantage is that it is quite difficult for a buyer to evaluate a market in which these two types of bonds exist side by side.³ The greater the variety of index clauses that are introduced, the more obstacles will be created for the smooth and comprehensible price formation of the bond market. From this point of view the ideal would be to use one single, simple clause, if no special saving purposes are considered. This general statement also applies to clauses with "partial" compensation, with "one-way" compensation, with "roofs" and "floors", "escalator clause", etc., which will be discussed in a later section. A bond with *both* principal and interest regulated would offer an investment to both classes of buyers referred to above, even if they might have to pay a little more for protection which is not their primary objective.

The savings objectives just discussed are, of course, usually achieved through bank savings, investments in ordinary bonds or by different kinds of insurance, all of which, however, are exposed to deterioration in value when prices increase. The very purpose of the index clause is to prevent this deterioration and thus encourage savings which would not occur otherwise. It has been argued that investment in shares would serve the same purpose and that an index clause therefore is not needed. It is obvious, however, that shares for various reasons do not appeal to many groups of potential savers. It may to a large extent be a question of saving habits, which are not easily changed. People who would save through deposits or bonds but do not because of their deterioration in purchasing power would not consider buying shares, but might buy bonds or use deposits with an index clause. Shares from the point of view of solidity definitely belong to a more risky class of securities than bonds, and many people just do not want to take any kind of risks in placing their savings. It is exactly because of the presence of another type of risk — the price risk — implied in deposits and ordinary bonds, that savers may shy away from these investments. If the price risk is eliminated by an index clause, savings may again materialize.

In many under-developed countries shares are simply not available because those that do exist are often privately placed in the hands of a few. For that matter, bonds may not be available either but could, as will be argued later, be issued by the Government under certain conditions. Now, even *if* shares are available, and *if* they are considered as eligible investments by the majority of savers, in many cases they probably still could not be considered a satisfactory alternative to indexed securities. The reason is that shares may provide only partial protection against decreases in the value of money. The outcome of a Danish study of this matter is that, whereas in the period 1949-1954 retail prices

had on an average increased by 100 per cent compared with 1936, the value of the shares studied has on an average increased only 20 per cent and their yield only 40 per cent, due regard being paid to issues of free shares, shares made available to holders at favourable prices, and similar transactions. (The increase in yield is also probably overstated, since the development in 1949-1953 is compared with a situation of unusually low yields before the war.⁴) To take another example, in Israel the general price index rose 169 per cent between 1950 and 1955, whereas the average price of ordinary shares increased by 117 per cent only and preference shares only by 66 per cent. The average price of Government debentures did not increase at all. The price of debentures linked with foreign currencies, on the other hand, increased about as much as general prices, by 171 per cent.⁵

If it is generally true that shares cannot give satisfactory protection against price increases — but this question needs to be investigated more thoroughly — the different varieties of securities with mixed share-bond features, such as preferred stocks, convertible debentures and participating debentures, would not give the kind of protection offered by index bonds either. Participating debentures may be advantageous from the point of view of the entrepreneur in that they vary with the income of the enterprise, but for the holder they give only the (partial) protection of the share with regard to yield, with the principal no better safeguarded than in the case of an ordinary bond.

The appeal to the saver to invest in indexed financial assets will to a large extent depend upon the index used in the clause. Again one has to distinguish between those who wish to secure for themselves a future steady income and those who save in order to put into effect a project, for which they need an assured future purchasing power. In the first case some kind of over-all purchasing power clause is most convenient; in the second case special indices may have to be used. The "Save to Build" and "Citrus Grove through Saving" projects in Israel, described above, are good examples of specific indices serving long-range saving purposes. In these cases it is a question not of general bond issues but of limited schemes appealing to special savers. But a clause using such special indices would not be suitable for other groups of savers, since the movement of such indices may erratically or systematically deviate from the trend of the general price index.

From the point of view of the issuer, it is preferable to have the index closely tied to the income of the enterprise or agency (see below), but that may not appeal to investors if they are not prepared to take the product of the issuer as payment — as in the case of the French railway bonds. Such public or semi-public enterprises as gas or electricity production or railways, which could be envisaged as issuing bonds linked to their tariffs, may also be able to keep the tariffs artificially low by covering a deficit by aid from the Government's budget. The same element of manipulation is also present if

² Reference No. 9, pages 41 and 42.

³ Reference No. 10, page 42.

⁴ Reference No. 9, pages 59 to 68.

⁵ Reference No. 7.

rents are used in an index clause. Tariffs and rents are often regulated, precisely during periods of price increases, that is, when the index clause protection is most needed.

In most cases the objectives of the lenders would be achieved if the index clause referred to regulation according to changes in the cost of living or in retail prices. This is, as already noted, the most common clause used in those countries where the scheme has actually been put into effect. The domestic wholesale price index has been used in some instances — this type of clause might be more desirable from the point of view of the entrepreneurs, as it may be more closely related to their income than is the cost of living.

From several points of view a clause related to a *wage index* would be a more satisfactory and clear-cut proposition than the others. This is especially true in those cases where changes in *productivity* affect the distribution of income between income derived from the holding of financial assets and other types of income. Productivity losses caused by bad harvests or rising import prices or other factors should be carried by the whole economy; price increases caused by these factors should not be compensated by an index clause. But neither should payments on financial contrasts be revised downward if productivity increases cause price decreases (that is, if the clause operates symmetrically in both directions). If, for example, a good harvest leads to declining costs of living, the holders of financial assets also should benefit from this and not be penalized by the operation of the clause if no special reasons exist for changing the distribution of income in favour of other income receivers. The simplest way to correct the price index for productivity changes would be to use the wages index instead. This is probably as close as one can get to an expression for the development of the average income of the economy and should not be more difficult to compute than a price index. Productivity changes reflected in prices will then not affect the index, whereas the asset holder will be on an equal footing with wage-earners with regard to productivity changes reflected in wages. The saver will thus be assured that a saving corresponding to one hour's work today will also buy him one working hour's worth at a future date, that is, that he will benefit from productivity increases reflected in rising real wages which may have taken place in the meanwhile. And as long as there is not a material change in profit margins — which there hardly is in the long run — the distribution of income between the holder of financial assets and others will not change either, that is, his real income will move along with the real national income. This use of the wage rate in the index clause has been advocated by Professor Jørgen Pedersen.⁶

If it is desirable to make index bonds especially attractive, they may be made tax exempt with regard to the yield as well as to the payments received by adjustment of the principal. In this way a preliminary resistance towards the bonds may be overcome, or a market opened up in an economy where no demand for financial assets previously existed. In fact, most of the index bonds described earlier (especially the Finnish bonds) have

been provided with this feature. It might also be desirable to amortize the bonds by annual lottery drawings, giving the participants a demonstration of the working of the clause. This presumes, of course, that the principal and not only the interest is index-regulated.⁷ In this context the lottery feature of the "Save to Build" project in Israel is of considerable interest.

The lender would normally have to make a sacrifice in order to get the desired protection against a deterioration of the real value of his financial investment. In an economy where ordinary bonds are already on the market, this sacrifice or "opportunity cost" would materialize in the spread between the effective rate of interest on ordinary bonds and that on index bonds. (The formation of the relative prices of the two types of bonds will be discussed in section III.) Given a certain spread between the effective rates, the index bonds would be bought by those investors who would consider the "opportunity cost" low compared with the value of the protection.

This evaluation would then depend upon their expectations with regard to the future development of the index used in the clause. The spread between the effective rates would, on the other hand, also create the necessary incentive for some borrowers to go into the market where investments with an index clause are available. Expectations among lenders of high future prices and expectations among borrowers of low prices would obviously further the establishment of such a market. A distribution of expectations among lenders and borrowers would tend to distribute the loans between the two types, and even identical expectations would not prevent the establishment of a market for indexed securities (cf. below). In the event that the market for non-indexed securities is restricted or nationed, the "opportunity cost" for the lender may very well be negligible or even negative.

2. *The private borrower*

The lender thus benefits from the index clause inasmuch as it removes the risk of deterioration of his financial investment. But the index clause also removes a risk element as far as the borrower is concerned. In an economy where expectations of price increases predominate, the rate of interest contains an element of compensation for this expected development. The cautious entrepreneur who does not take this expected price increase for granted may not be willing to borrow at the prevailing interest rate although his project is otherwise perfectly sound. Borrowing by means of a loan with an index clause should enable him to achieve an effective rate of interest which does include an extra "fee" for expectations of rising prices. He would then be sure that he would have to pay for the price increases only when he is really able to do so, that is, when they materialize. Entrepreneurs choosing this type of loan will therefore be those who do not base their investment calculations on expectations of rising prices. A loan tied to an index would also make them less apt to abstain from investments because of expectations of falling

⁶ Reference No. 9, page 40.

⁷ Reference No. 3, pages 27-28.

prices. Use of the clause would, in other words, have the effect that investments will less than otherwise be influenced by speculation in changing price levels which would dampen economic fluctuations. One could even visualize the enforcement by law of this clause for different types of borrowing in order to achieve a rational selection of investment in a situation which otherwise would call for credit control or rationing.⁸

It might happen that interest rates remain comparatively low even in the face of constantly rising prices, so that the borrower would be better off choosing the conventional form of contract. But this only holds for those borrowers who actually can get a loan at low interest. It might well be that the low interest rate is enforced by law or social custom or is just an indication of a rationing of credit. If a market for index bonds is created and free price formation is allowed, the ordinary interest rate would increase, reflecting the scarcity of lendable funds and making index loans competitive and attractive to these borrowers who did not have access to credit previously. Derationing would then be achieved while at the same time a certain element of efficiency in the distribution of credits would be introduced.⁹

The financing of enterprises with index bonds might have a favourable effect on retained earnings in countries where corporations are constantly under pressure to disperse large dividends. This is the case in many under-developed countries, with the consequence that self-financing and real investment are severely hampered. It might not be possible to issue ordinary bonds, but index bonds may have some appeal and would protect the enterprise from exaggerated claims for dividends. The financing of investments would then be facilitated in two ways : by access to an additional form for borrowing and by an opportunity to preserve a larger part of profits for self-financing. The size of the profit itself, of an enterprise borrowing with an index loan, compared with that in the case of a non-index loan, would depend upon the actual development of prices as against expectations, as these were reflected in the spread between the two interest rates at the date when the borrowing took place. This spread is an indication of what the *market* thinks should be the compensation in the form of a lower interest for what the borrower has to pay for future price increases on account of the index (cf. section III). If the borrower thinks that this compensation is more than ample — that prices will not increase as much as the market thinks — there is an incentive for him to borrow by an index loan.

As a counterpart to the case of the lender, certain borrowers would find an incentive in going into the market for index securities because their price expectations do not agree with the "market expectation" as it is expressed in the difference between ordinary bond interest and that on index bonds. This incentive would naturally prevail among the lenders who expected the highest price rise and the borrowers who expected the lowest.

⁸ Reference No. 10, pages 180, 213-14.

⁹ Reference No. 1, pages 7 and 8.

The profits of the enterprises — and thereby the incentive for the index clause and the impact on the whole economy — will also depend upon the way in which the index-regulated payments are incorporated into the cost calculations under a process of rising prices. If replacement costs are used in the calculations, the clause would not seem to make any difference to the pricing procedure. If increases in wages, raw materials, and such factors are immediately accounted for and a given markup applied to costs inclusive of depreciation, then the compensation to the lender for interest and amortization is withheld in the enterprise but could be extracted by an index regulation.

The net worth of an enterprise increases during a process of rising prices as the real assets increase in money value, whereas the monetary liabilities remain unchanged. This increase in the net worth may act as a "buffer" against the immediate use of replacement costs, which nevertheless have to be accounted for sooner or later. The index clause applied to amortization and interest would cut short this adjustment process since no increase in net worth would materialize, and the "buffer" therefore would be removed.¹⁰

It can be argued that use of a *wage index* in the clause would be preferable for the borrowers as well as for the lenders. Normally, the wage cost index varies in the long run more than the cost of living index since the latter contains elements of considerable inertia. This would tend to make a wage index a better approximation to most factory prices, which also normally vary more than retail prices. But in an inflationary period the middleman — especially in under-developed countries — is in a strategic position to charge what the traffic can bear, and retail prices can easily get out of line with factory prices, and thereby also with the capacity of the enterprises to pay their loans if keyed to the retail price index. A wage cost clause might under such circumstances be more suitable. It would also prevent cost increases resulting from decreased productivity from causing either additional price increases or shrinking profit margins. The wage clause would, on the other hand, be helpful in clarifying for wage-earners the mechanism by which wage increases which do not correspond to productivity increases are automatically transmitted into cost and price increases which make the expected gains in real wages illusory.

Neither a price clause nor a wage clause may, however, be sufficiently correlated with the price of the product of the enterprise. From the point of view of the entrepreneur, the ideal index to be used would be one which refers to the changes in price of his own product, which for a number of reasons can deviate from a general index. This was achieved in the case of the French industrial bonds described in an earlier section. From this point of view the wholesale price index might be more attractive to the borrower than a retail price index

¹⁰ The question of the effects on the price policy of entrepreneurs of index clause loans has hardly been touched upon in literature. Some references to the problem are found in Finnish reports and articles (cf. references No. 11, No. 12 and No. 13). It is, however, to a large extent an institutional problem and must be referred to cost and price structures in the specific countries under discussion.

but, again, would perhaps give insufficient incentive to the lender. The nature of the index clause thus constitutes a dilemma, since the lender and the private borrower often may have different preferences, and the preferred indices are not correlated or at least not in the short run. A wage index clause may represent a compromise acceptable to both parties.

Widespread use of securities with an index clause would make it possible for an enterprise to put its planning on a more "real" basis than would otherwise be the case. Thus, devaluation of depreciation reserves, for example, could be counterbalanced by investments in such securities. In under-developed countries, enterprises — especially the smaller ones — often do not provide for such reserve funds because of the risks involved in holding financial assets.¹¹

It should also be noted that the revaluation of the assets and liabilities of a firm necessitated by an index clause actually will result in a variation in the net worth which is smaller than that which otherwise would have taken place.¹² A systematic distribution of the financial liabilities and assets of an enterprise between investments of the index and non-index types would — at least theoretically — make it possible to stabilize the net worth even if the index used in the clause varied more or less than the price of its real assets. The presumption is, however, that the entrepreneur has a definite idea of the future relationship between these prices. He can then borrow in the index securities market and lend to the ordinary market to such an extent that his net worth is stabilized if his anticipation of the *relationship* between the prices is correct and no matter which absolute levels these prices actually reach.¹³ This matter is further explained in note 1, section V.

3. *The Government*

Under this heading only the purely "treasury" aspects of loans tied to an index are discussed, monetary policy in general in the field of index securities being discussed in section IV on the over-all implications on the economy of this device.

The potential interest of the Treasury in issuing index bonds was pointed out by J. M. Keynes in 1924 in a paper to the Colwyn Committee. If a demand for such bonds exists, they could be issued at an interest rate lower than the ordinary rate, and the Treasury would benefit from it. Such a demand would presumably exist even if actual price tendencies did not point in any definite direction. Actually, the gain to the Treasury would be the larger the more people expected price increases, *provided* the Government succeeded in preventing these price increases from taking place. If the scheme is a link in a stabilization programme which becomes effective, this will in itself ensure the profitability of the device. If, on the other hand, the Government borrows in an orthodox way, the success of the stabilization programme will imply a future heavy cost because of the high interest rates that certainly would

have to be paid on ordinary bonds in an inflationary situation.¹⁴ A high level of the ordinary rate of interest may even very well be part and parcel of a stabilization programme and thus make high costs unavoidable on ordinary Government bonds.

If, on the other hand, stabilization is not achieved, the income of the Government probably would increase along with prices so that no particular difficulties would arise in connexion with payment of interest and amortization. At the same time future expenses for the debt amortization and interests become more uncertain, which may cause some difficulties for the annual or long-range budgeting. Naturally, the Government might then have been better off if it had borrowed by means of ordinary bonds. In such a case it would even have been preferable to borrow altogether by a floating debt. Such a method, however, does not fit into a stabilization programme. It might temporarily extract forced savings from the public by the decrease in money value on holdings of Government bonds and interest thereon, but it also hampers the development of the capital market, as has been the case in several under-developed countries.

If a Government has a choice of a loan by ordinary bonds or by index bonds with a lower effective rate of interest, the choice of the former actually implies speculation in rising prices. The choice of the latter, on the contrary, would manifest the belief of the Government in stable prices — at least as far as the Treasury point of view is expressed in the choice. Thereby the public might be induced to adjust expectations in the same direction and this obviously would be a most important achievement in a stabilization programme.

The question has been raised whether the Government should not use the proceeds from sales of the loans to invest in real capital in order to secure future payments.¹⁵ The answer seems to be the same as in the case of any other kind of Government borrowing. The investment programme of the Government should be based on considerations with regard to the over-all economic situation and the priorities of all kinds of investment (public as well as private) and not linked to the special needs or form of the borrowing.

4. *Financial intermediaries*

If index securities started to pervade the capital market in any country in the form of bonds issued by the Government or by private borrowers, the banks and the insurance companies would be hard pressed to follow suit. These institutions would, however, encounter the technical difficulty of synchronizing the time structure of their index assets with their liabilities. This problem certainly exists also in the case of ordinary financial assets and liabilities but in a more manageable and comprehensive way. At least, in the case of the banks, it would hardly be possible to adjust the maturity of the index asset holdings to that of deposits unless the latter were made available on very long term only. Another solution is given in the Finnish system, but it is, as indicated before, usable only under certain circumstances, not always

¹¹ Reference No. 3, page 27.

¹² Reference No. 1, page 15.

¹³ Reference No. 10, page 180.

¹⁴ Reference No. 1, page 8.

¹⁵ Reference No. 1, page 11.

present. An alternative would be that banks hold private or public index securities as a counterpart to deposits tied to an index. But then the banks would run the risk that at unforeseen points of time they would have to market index clause assets to meet contingencies arising from runs on the deposits. This again is a risk implied also in ordinary banking, but the price risks involved in selling securities are of necessity larger than those involved with ordinary bonds. The market values of the former would not only be influenced by current expectations about future interest rates, but expectations about the future course of the general price level would also directly influence their prices. If prices have been rising considerable for a period of time, the value of deposits would be correspondingly high. But bonds held by the banks as a counterpart to deposits would have a market value determined not by actual prices but by *expected* future prices. If expectations generally turn downwards, the market values will do the same (cf. next section of this paper). In exactly such a situation a run on deposits can be expected — when their money value is still high but is expected to fall¹⁶ — but the market values of the bonds held by the banks as backing would already have fallen and might be sold only at a heavy loss. The only rational answer to this dilemma seems to be stabilizing operations by the Government (the central bank) as has been pointed out in two reports.¹⁷ (This will be discussed further in section IV under the heading “Government policies”.)

The above-mentioned problem seems to be less serious as far as insurance companies are concerned. The Finnish example seems to show an insurance business can be run on an indexed basis.

¹⁶ It should be noted that, even if the index clause of the deposit provides a “floor” below which the index cannot be adjusted, the index would nevertheless be subject to downward revisions once it has risen above this floor.

¹⁷ References 9 and 10.

To give full coverage to the insured, the bonds held by an insurance company must have an index clause with regard to both interest and principal. At the same time the premium also must be regulated according to the index. For, while the liabilities of the company depend only on the index at the date of final payment, its ability to pay this final indexed payment will depend upon the whole stream of premium payments at different intermediate dates and therefore also on the course of prices in between. The company will be covered only from the date the premium is paid; the insured therefore must cover the intermediate price increase from the contracting date of the insurance until the different dates when premiums are paid by paying corresponding index-regulated premiums. If the premiums are not regulated, the insured will get more than full compensation in a period of rising prices.¹⁸ The calculation may also be based on an estimate of the trend in prices, which would have to be on the non-conservative side, and involve the possibility of redistribution to the insured of any accumulated surplus.¹⁹

It would be possible to envisage more limited schemes providing at least partial coverage for the insured. A simple one is to permit the insurance companies to invest in shares or in index bonds and to vary the premium redistribute a surplus according to the yields and value increases of these assets. In such a case the insurance company will also function as an investment trust. This kind of scheme is contemplated in the United States by some insurance companies. An elaborate scheme along the same lines has been proposed by J. G. Koopmans.²⁰ According to it, the premiums as well as the insurance are paid in unit values measured in terms of the value of the investments made by the companies.

¹⁸ Reference No. 9, page 34.

¹⁹ Reference No. 10, page 240.

²⁰ Reference No. 5.

III. THE PRICES OF INDEX BONDS

This section is devoted to a discussion of the functioning of a market in which index and non-index bonds are available side by side. First, the question arises in which way the available capital will be distributed among the different bonds. Secondly, the nature and level of the equilibrium rate on index bonds is discussed. It is assumed throughout that a well developed market exists with free price formation. (Imperfections in the market which may be frequent and important have to be treated as deviations from — and usually as simplifications of — this theoretical case.) It is also assumed that a “complete” clause is used, that is, a clause with 100 per cent compensation operating both ways and without any limitations with regard to the increase in prices. Different kinds of incomplete clauses are discussed at the end of this section.

1. *The nature of the market for such securities*

Even if expectations with regard to future prices were fairly uniform among buyers and sellers of bonds and

even if these expectations pointed towards stable prices, one could still envisage the establishment of a market in bonds tied to an index. The expectations would be *probabilities*, and the probability, however small, of a significant price change would imply a risk. The borrower and the lender should in many cases be willing to pay a price to eliminate this risk — a kind of precautionary motive for lending in real terms (if there is a probability of a price increase) or borrowing in real terms (if there is a probability of a price fall). But the real case for such bonds and a forceful factor in sustaining a market would be widely held expectations of substantial price changes. It should be pointed out that it does not matter if these price expectations go in the same direction, for example, towards a price increase. It is sufficient that they are of different magnitudes. The market would be a meeting ground for the lenders who expect the highest price increases and the borrowers who expect the lowest price increases. Such a lender would be willing to sacrifice a significant part of the interest on an ordinary bond in order to achieve protection, that is, he would be willing

to pay a comparatively high price for a bond based on an index. A borrower, on the other hand, who does not expect such a high price increase as is reflected in the afore-mentioned lenders' bid would be willing to issue bonds tied to an index provided that the higher price — lower effective yield — thereby obtained would more than compensate him for *his* estimate of the risk involved in borrowing in "real" terms. The "marginal" sellers and buyers of such bonds — that is, those who are almost indifferent to transactions in indexed as against ordinary bonds — would have about the same expectation of the future development of the index used in the clause, and their expectations would be reflected in the established prices of the market. If the marginal transactors expect rising prices, then there will be a premium on the bond with an index clause and a lower effective yield compared with an ordinary bond. The premium and yield difference corresponds to the compensation the buyer would expect to receive through the index clause and the seller would expect to pay. The marginal transactors would then — according to the calculations — be about as well off as if they had issued — or bought — ordinary bonds instead of indexed ones.

The "intra-marginal" holders of index bonds definitely expect a gain from their holdings compared with the alternative of holding ordinary bonds. The higher their price expectations, the higher their expected gains. They would be willing to hold index bonds even if the yields were lower than the established market yields, although continuous decreases of the yield (in relation to the yield of an ordinary bond) would bring into the market a continuous stream of sellers for whom the holding of index bonds no longer would seem to be profitable. The holders of ordinary bonds, on the other hand, think that the extra cost of buying a bond with an index clause is not profitable, because the index will not rise enough to cover the extra cost. To these groups naturally belong also those bondholders who expect price decreases. This reasoning can be applied in the same way to the intramarginal issuers of index and ordinary bonds. Bondholders and bond sellers can thus be stratified according to their expectations, and this stratification shapes the market and determines the activation of potential buyers and sellers as the spread between the two rates changes. A more detailed exposition of this problem is given in section V, note 2.

2. Price formation in the market for indexed securities

Since the market equilibrium has now been discussed in general terms, it is convenient to get a more precise idea of the equilibrium rate itself (that is, the rate, the level of which has been illustrated by the intersections of the curves used in the diagrams of note 2). The following example giving a concrete illustration may be quoted from the Danish report.²¹

An ordinary loan of \$1,000 at 4 per cent interest being compounded yearly will after thirty years have a value of \$3,243. The lender may consider, as an alternative, investing in an index loan for which the interest as

well as the principal are regulated according to changes in the price level. If he then expects a price increase of 45 per cent over the period, according to his calculation, he will be just as well off with a 2.7 per cent index loan as with the ordinary 4 per cent. Both will give the same yield over the period, assuming, of course, that prices increase as much as he expects. If he expects prices to increase by 80 per cent, he can lower his claims on the index loan to a yield of 2 per cent. Thus, if the market yield of index bonds is 2.7 per cent and the ordinary rate 4 per cent, all lenders with higher price expectations than 45 per cent would lend on the market for indexed securities. If the rate on index loans falls — the ordinary rate being stable — holders of index loans would start to sell, but those expecting a price increase of 80 per cent or more would not contemplate selling until the rate has fallen to 2 per cent. From the point of view of the borrower, a market rate of 2.7 per cent on index loans would mean that he should borrow in that market only if he does not expect prices to increase more than 45 per cent. If he expects them to increase more, he should, of course, borrow in the ordinary market.

If the index rate of 2.7 per cent and the ordinary rate of 4 per cent thus prevail side by side, the "marginal" borrower and lender expect a price increase of 45 per cent, which is reflected in the difference between the rates. All intra-marginal holders of index loans would have higher price expectations, and all holders of ordinary loans lower expectations than the marginal holder. If this were not so, there would be scope for arbitration between the ordinary market and the market for index securities. It has been pointed out by Professor Palander²² that price formation on the "index" market can be explained in terms of an ordinary market plus a *forward* market in "real" loans. If I lend \$100 in the ordinary market at 4 per cent to be paid in a year, I command \$104 at that later date. If at the same time I can buy a *future*, value-guaranteed financial asset for \$101 to be paid in a year, I will be assured $\frac{104}{101} = 103$ (approximately) of the "real" asset by committing my future proceeds from the ordinary lending to the forward market for real loans. The implication of the combined transactions is the same as if there had existed a present market for index loans in which I had lent at 3 per cent.

Unhampered arbitrage would actually mean that everybody who had expectations deviating from those reflected in the market rate would go into the market. Anybody expecting a price increase of more than one per cent would borrow in the ordinary market at 4 per cent and lend in the "real" forward market at 3 per cent. Opposite arbitrage would be undertaken by those expecting an increase of less than one per cent or a price fall. Limitations on borrowing and/or increasing borrowing costs would, however, limit these kinds of operations. As has been pointed out, there are also other factors than price expectations, such as special risk evaluations, which influence the distribution between the two markets.

²¹ Reference No. 9, page 43.

²² Reference No. 10, pages 173 *et seq.*

It is obvious that the lender in extreme cases may have to settle for a negative yield when buying an index security — that is, he would have to pay such a high price that he would suffer an absolute loss in money terms if no regulation materialized. Such an investment would be motivated by expectation of a yearly rate of price increase exceeding that of the ordinary rate of interest. The alternative of holding cash instead of securities prevents the ordinary interest rate from becoming negative but does not provide the same “floor” for the rate on index securities. The alternative of holding cash would, on the other hand, prevent the rate on these from falling below the expected rate of price decline.²³

In conclusion it may be said that the price expectation is reflected in the difference between the ordinary rate and the rate on index securities. If the ordinary rate is 4 per cent and the index rate 3 per cent per year, the difference of one per cent indicates the price increase expected by the marginal speculator. This conclusion is, however, only approximate. It is possible to work out the result more precisely. This has been done in the report of Professor Palander referred to several times. Note 3 in section V restates some of his arguments for the reader who wants a clear understanding of the effects on the prices of index bonds of changes in price expectations and of changes of the ordinary interest rate.

3. *Incomplete index clauses*

The discussion has so far only considered bonds with complete index clauses. One can, however, envisage several deviations from a complete clause, deviations which of course will be reflected in differences between yields of bonds with incomplete and complete clauses. The clause can be incomplete in the following ways: (a) only the principal or only the interest is regulated; (b) there is a “ceiling” or a “floor” for the index compensation; (c) there is only a partial index compensation (although unlimited in amount); (d) the index compensation is “escalated” in comparison with the index, that is, takes place only stepwise.

Of two otherwise similar bonds, the one with regulated principal would in most cases be more favourable for the lender than the one with regulated interest if prices increase. The opposite would be true if prices fall. This would be the case, for example, if the price index changes at an even rate. Only in such a case as when a price increase is concentrated in the earlier stages of the term of the bonds and then prices decline just before the maturity date would the bond with interest regulated be decidedly more favourable than in the case of index-regulated principal. If an increase takes place in the price index on which the clause is based just before the maturity date, the holder of a bond whose principal is regulated would benefit just as much as if the increase had prevailed during the whole period, whereas if the index affects interest only he would hardly be better off than with an ordinary bond.²⁴ This difference in

attractiveness between the two types of bond would naturally be reflected in differences in their effective yield.

In the second type of index clause listed, there is a provision for a floor or a ceiling below or above which the clause does not operate. A most common feature is that there is a floor, represented by the value of the index at the date of issue. This acts as a guarantee that the lender will not be worse off than if he had purchased an ordinary bond. Such a bond would presumably be more attractive than a bond without such a floor. It should be noted, however, that *once prices have risen* — that is, the index has risen above the floor — the clause will operate in both directions and the holder will be exposed to losses. His bond will now be a less favourable proposition than a similar “one-way” bond issued at a later date — that is, with a higher floor. This would tend to make a difference in the yields of the two bonds although they are of exactly the same type even with regard to date of maturity. If, on the other hand, prices start to fall from the date of issue, the index bond becomes equivalent to an ordinary bond in the whole range between the (fallen) index and the floor.²⁵ This makes for a complexity in the market which does not seem to be counterbalanced by the mainly fictional advantages of the floor arrangements. It may be argued that if prices fell — presumably in a depression — no “contra-cyclical” effect would ensue unless there were a floor to keep up the purchasing power of the bondholders.²⁶ But that, again, would hold only for newly issued bonds for which the floor was still operative. And the more the purchasing power and liquidity of the borrowers — the enterprises — are improved, the more those of the lenders worsen.

Much the same can be said about a “ceiling”.²⁷ Once the ceiling set in the index clause has been approached, the holder will be in a less favourable position with regard to the marketing of his bonds. The value of his bond is now less than that of a comparable ordinary bond since it cannot benefit any more from price increases but is exposed to revisions downwards from the ceiling all the way down to the floor. Again, it seems to be more reasonable to work with a “complete” clause, thereby avoiding the complications which follow from an incomplete one.

The clause can provide that only a part of the loan is given compensation for changes in the index; thus one part of the loan is ordinary and the other fully covered. But this “partition” of the bond will vary with changes in the index.²⁸ If prices have doubled at a certain date, the “indexed” part will double its weight, and at that date the bond is equivalent to a newly issued bond which is covered by a 67 per cent index clause. Or — put in another way — it would be worth more than an identical bond issued at a later date (but with the same maturity date). This can be illustrated by the figures given below.

²³ Reference No. 10, pages 37-38.

²⁴ Reference No. 3, page 19.

²⁵ Reference No. 10, pages 38-39.

²⁶ *Ibid.*, pages 35-36.

²³ Reference No. 1, pages 12-13.

²⁴ Reference No. 3, pages 34-35.

Bond 1		Bond 2		Price index	Year
Ordinary part	Indexed part	Ordinary part	Indexed part		
100	100			100	0
100	200	150	150	200	1
100	400	150	300	400	2

Bond 1 has a nominal principal of 200, regulated 50 per cent, that is, with half of it regulated 100 per cent according to the index. If prices double in one year, the bond is worth 300 and the indexed part then carries a weight of two-thirds. This bond may now be compared with a newly issued bond of the same amount with the same 50 per cent index clause (bond 2). If prices again double over the next period, bond 1 will have a higher value

IV. THE ROLE OF A CREDIT MARKET FOR INDEXED SECURITIES

So far the credit market for indexed securities has been discussed only as a part of the financial sector. It remains to consider its role in the wider context of the economy as a whole. The introduction of such securities will presumably affect the totals as well as the distribution of investment and savings and may thereby have a significant influence on the development of the economy. The force of this impact will naturally depend on the scope and range granted to the operation of the index clause, which in turn will depend upon the Government policy envisaged in this field. These three aspects of indexed securities will be briefly discussed in this section: the impact on the economy, the scope of the clause and the problems arising from different financial policies.²⁹

1. *The impact on the economy*

One of the primary aims in using an index clause would be to increase the amount of saving and to promote a more rational distribution of real investments. The mechanism by which these aims may be realized have been discussed to some extent in section II. In practice, success would of course depend on the institutional structure and the economic situation and outlook, to which the scope of the clause and Government policy would have to be adapted. Any effect achieved has to be evaluated in terms of the administrative and other costs incurred. It should be noted that the impact on saving cannot be measured simply by the apparent holdings or increase in holdings of indexed assets. Especially at the start of the project a considerable shift from non-indexed to indexed assets could be expected. This would not imply "new" current savings. But it might very well mean a cutting down of expenditures otherwise planned for a more or less distant future and a transfer of a "floating" part of the liquid stock into more stable holdings. Such a transfer of assets to the indexed types

²⁹ This section gives only a bare outline and should be accompanied by a discussion of the applicability of the clause in different institutional environments, notably in the under-developed countries.

than bond 2 (500 compared with 450). Again, it can be seen that the use of an incomplete clause makes a comparison between the yields of different bonds complicated and thereby may hamper a smooth functioning of the market.

A variety of escalator clauses have been used for different indexed securities. The differences concern the size of the "steps" in the escalator. For the same bond there can also be a difference, for example, as between the introductory and the following steps. These provisions usually aim at a simplification of the procedure of payments but also prevent comparability between bonds which differ in this respect. It would therefore be advisable, when a market for index bonds is opened up and an expansion is envisaged, to aim at uniformity of the clause from the beginning. This naturally also goes for the different varieties of incompleteness of the index clause discussed above.

may be just as important as "new" saving and it is, as a matter of fact, hardly possible to draw a clear line between the two types of effects.

It has been pointed out that there is a risk that "real" balances would be diminished and cash transferred to indexed securities if such a superior, liquid substitute should be offered.³⁰ The demand for goods and services may thus be initially increased if private sellers of indexed securities use the acquired purchasing power for real investments. This could, however, be prevented by Government operations, that is, by sale of index bonds. These initial operations, in order to avoid an increase in "surplus cash", may have to be comparatively large if the Government also has to take up ordinary securities in order to stabilize their prices. It should in any case be possible to achieve a considerable initial effect of shifting the existing stock of financial assets towards a lower degree of liquidity and a higher degree of stability. An increase in current savings, on the other hand, has to be envisaged as a slow process, picking up speed as habits of saving are changed and new layers of potential savers are reached. If the scheme is worked properly, this process should be *cumulative*. There should be a comparatively strong *trend* component in the "indexed" saving if an appeal can be made to potential savers who previously have shrunk away from the risk of deterioration of the money value of their savings. In under-developed countries, there often exists a significant "luxury" consumption difficult to reach by taxation, which might be tapped if the alternative of value-stable saving is offered.³¹

³⁰ Reference No. 1, pages 10-11.

³¹ It has been estimated that, in Chile in 1951-1953, personal consumption out of profits, interests and rents represented on average 22 per cent of gross national income (secretariat of the United Nations Economic Commission for Latin America, based on data from the *Corporación de Fomento de la Producción*). If consumption of these incomes were reduced to the same percentage as in the United Kingdom (30 per cent, as against 60 per cent in Chile), it would be equivalent to raising the rate of net investment from 2 to 14 per cent of net national income (cf. Kaldor, "Economic Problems of Chile", shortly to appear in this *Bulletin*).

From a cyclical point of view, the holding of indexed assets would probably have a stabilizing effect on the economy, especially in comparison with the holding of ordinary financial assets. There would be a relatively strong inducement to retain the indexed securities in periods of rising prices and to dispose of them in times of falling prices.³² The holding of ordinary financial assets is stabilizing in an economy in the sense that the owners become poorer during inflation and vice versa during deflation. But this argument carries little weight when the inducement to hold those assets at all is very small, precisely because of the inflation, which thus might completely prevent the establishment of a security market. One also has to consider the favourable effect on the urge for anticipatory spending during an inflation which presumably would be achieved by the availability of indexed assets.³³ As for the reduction in the money value of indexed assets during a deflation, this may be remedied by stabilization of the asset prices by Government operations.

The effect on profits of the use of the index clause should also have a stabilizing effect on the economy. It would be harder for enterprises to make "windfall" gains, whereas, on the other hand, their "real" debt burden during a deflation would be alleviated compared with their situation in case they had borrowed by ordinary loans. The linking of payments of interest and principal to prices (or wages) would make speculative borrowing and investments based on price expectations much less attractive and, as pointed out before, tend to achieve a more rational distribution of real investments. It could also be expected that holdings of indexed securities would be substituted for real investment of low social value undertaken only because of the lack of value-stable financial assets. During a deflation, entrepreneurs would become less hesitant to invest, since expectations of falling prices would no longer play an all-important role in their calculations.

The spread of the "index-mentality" already present in most countries in regard to wage contracts would therefore tend to remove illusions about gains to be made from price increases. This would especially be the case if the clause was linked to a wage index. Wage-earners would then realize that wage increases would spread to other costs as well, and — if not substantiated by increases in productivity — would immediately be transferred to price increases. Entrepreneurs, on the other hand, would be more reluctant to grant wage increases if financial costs were automatically involved as well, so that a wage increase could be granted only through a corresponding price increase. It might thus be possible to brake the wage/price spiral which is an important element in the inflationary trend in many countries. Groups which formerly borrowed by ordinary loans and were forced to borrow through "indexed" loans would lose interest in an inflationary develop-

ment, making the resistance to a stabilization policy correspondingly easier to overcome.³⁴

2. *The scope of indexed securities*

The impact on the economy of the introduction of indexed holdings would, to a large extent, depend upon the standards adopted for maturity, redemption, marketability and limitations on holdings.

It could be argued that at the beginning, when the system was tried out, holding should be limited in order to permit a gradual adaptation of the new device.³⁵ If, on the other hand, the aim is to achieve a significant anti-inflationary effect from the very start, holdings should be unlimited.³⁶ The savings aspect of the scheme might be stressed if the indexed assets are given a comparatively extended duration. One could even envisage a scheme combining duration and limits on holdings in order to achieve a maximum saving effect. The purchase and holding of long-term indexed assets would then be permitted in larger amounts than that of short-term assets.³⁷

The effect aimed at by giving the indexed securities a relatively long duration would, however, be curtailed if the securities had an unlimited marketability. If the savings aspects of the scheme were to be stressed, it should be constructed as a clear-cut alternative to the short-term securities with unlimited marketability available in abundance in many countries. The features of the scheme would then provide safeguards against speculative transfers into other kinds of assets in addition to those incentives inherent in the device itself. This might be achieved by a system of inscribed limited holdings marketable only by inscribed transfers.³⁸

Redemption prior to maturity in specified cases would be an alternative to marketability in assuring a certain liquidity in such emergency cases as death or disability of the owner.³⁹ Redemption could be envisaged at nominal values and with or without the ordinary rate of interest⁴⁰ or even at the value indicated by the actual position of the index.⁴¹ As pointed out several times before, this last-mentioned matter — stabilization of the market value of indexed securities — represents one of the central problems of the management of the system. Without a stabilization policy, the market for indexed securities probably has to be comparatively modest in scope, restricted to specific schemes stressing the savings effects of stable holdings of long duration and limited marketability. If a wider scope is aimed at, that is, if the intention is to let the scheme pervade the whole credit market, including all financial institutions, then a definite need for large-scale Government responsibilities would arise.

³⁴ Reference No. 10, page 215.

³⁵ Reference No. 3, page 32.

³⁶ Reference No. 2, page 338.

³⁷ Reference No. 3, page 33.

³⁸ *Ibid.*, page 34.

³⁹ Reference No. 9, page 31.

⁴⁰ Reference No. 2, page 336.

⁴¹ Reference No. 10, pages 43-44.

³² Reference No. 3, pages 16-17.

³³ R. Goode, "A Constant Purchasing Power Savings Bond", *National Tax Journal*, vol. IV (Lancaster, Pa.), December 1951, page 339.

3. Government policy

At the core of a large-scale scheme for indexed securities is a mechanism for checking excessive swings in the value of institutional holdings, those of banks as well as of insurance companies. Naturally ordinary bond holdings would presumably fluctuate considerably more since an additional speculative factor is introduced, that is, the anticipated changes in the price level. (There could be cases when the prices of the index bonds were more stable than those of the ordinary bonds, notably when the ordinary rate of interest and price expectations move together ; see section V, note 3.)

The simplest method of providing financial institutions with coverage for their indexed liabilities would be to let them hold index-regulated Government bonds. Those bonds are then always available when a need arises for the institutions to replenish their indexed holdings in order to match their indexed obligations to the extent that indexed loans cannot be placed with private borrowers. Alternatively, the Government can aim at a stabilization of the value of indexed securities by open market operations as described before. Generally speaking, the Government would have to counteract variations in the supply of private indexed securities in order to stabilize the market.⁴² The additional opportunities for the Government to stabilize price expectations by stabilizing the prices of index bonds have also been discussed above.

⁴² Reference No. 9, page 24.

It remains to consider the conditions most suitable for the introduction of one variant or another of the scheme. In general, not very much can be said here since the credit market structure and economic situation would have to be discussed in detail in the case of each particular country. Two different situations may be mentioned as examples of cases which might be especially suitable for the use of indexed securities.⁴³ In one case a country has chronic inflation and a high velocity of money circulation. In such a situation, it would be appropriate and useful to promote the use of *private* indexed securities. When inflation has to be taken as a datum, in the short run at least, an index clause may be unavoidable if any kind of habits of saving are to be developed. Increased opportunities for the sales of *Government* bonds might induce wasteful spending instead of diverting it and may discredit the use of the device in the private sector if the Government defaults on the bonds. A second opportunity is to use the scheme as a preparation for, or as an integrated part of, an over-all stabilization programme. If securities with an index clause are already in use in the private sector before introduction of the stabilization programme, the political resistance towards it from debtor groups may be significantly reduced. The Government may make a considerable gain if the stabilization materializes, and the sale of Government indexed bonds may in itself inspire confidence in the success of the programme. To these two examples could probably be added several others, both of unlimited use of the index clause and of its application in specific fields for specific purposes.

⁴³ Reference No. 1, pages 17-18.

V. TECHNICAL NOTES

Note 1. Hedging in the market for indexed securities as a means of stabilizing the net worth of an enterprise.

Suppose that the owner's equity is a , that the expected change in the general price factor incorporated in the clause is $100 p$ per cent and that the expected relation between changes in the special price (value) of the real assets of the enterprise and changes of the index is t . The borrowing of the enterprise by indexed loans is x times the owner's equity and is used for ordinary lending (for example, trade credits). The problem is to find the value of x that secures an increase in the money value or the owner's equity along with an increase of the index of the clause, that it secures a stable real net worth $= (1 + p)a$. The balance-sheet of the enterprise after price increases have taken place can be made out as follows :

	<i>Debit</i>	<i>Credit</i>
Indexed liabilities	$1(1 + p)x$	
Non-indexed financial assets		ax
Real capital		$a(1 + tp)$
Owner's equity	$a(1 + p)$	

To achieve stabilization of the owner's equity the "hedging" has to amount to $x = t - 1$, a formula

derived by making the sum of the debit items equal to the sum of the credit items. If the value of real assets is expected to rise or fall three times as fast as the general price index used in a clause ($t = 3$), then the enterprise would borrow an amount twice the owner's equity in the indexed market and lend the same amount in the ordinary market ($x = 2$). Starting with an owner's equity $a = 100$, the enterprise takes an indexed loan $ax = 200$, which is counterbalanced by the same non-indexed lending. A price decrease of 20 per cent ($p = -0.2$) changes the real asset value to 40, the indexed financial liability to 160 and leaves the non-indexed financial asset unchanged. The residual net worth will then be 80 and has changed in the same proportion as the general price index ; that is, its real worth is unchanged.

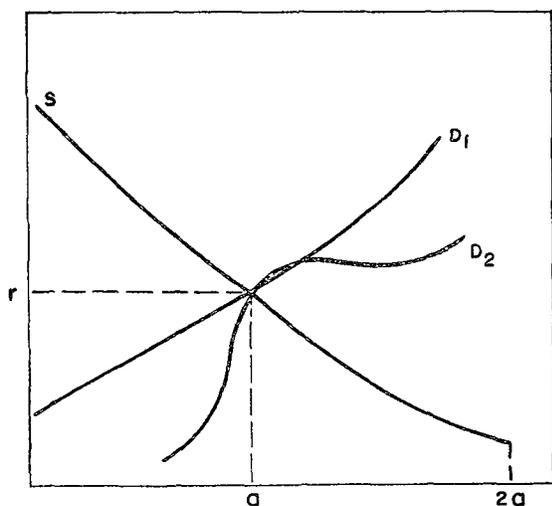
If $t < 1$, that is, if the value of the real assets of the firm changes more slowly than the general price index (the clause index), then the "hedging" implies borrowing in the ordinary market and lending in the indexed market. The borrowing should amount to $(1 - t)a$. If $t = 0.5$, the borrowing would be $0.5a$. An increase of the index by 20 per cent ($p = 0.2$) along with an increase in the money value of the real assets by 10 per cent would increase the net worth by 20 per cent, that is, just as much as the general price increase.

Note 2. Diagrammatic interpretation of equilibrium in a "double market".

The nature of the market equilibrium can be illustrated by diagrams. Diagrams of a similar type are used in reference No. 9, see section VI.

In figure 1 the effective yield of index bonds is measured along the y axis and the bond holdings along the x axis. The D and S curves denote the demand for and supply of index bonds. The intersection between the curves D_1 and S determines an equilibrium "indexed" rate r and a holding a of index bonds. As the curves are symmetrical the total market $2a$ is equally divided between index bonds and ordinary bonds. The symmetry of the curves implies a symmetrical distribution of price expectations among buyers and sellers. (The curves can only denote the behaviour of private borrowers and sellers, since the Government presumably may react otherwise. The effect of the intervention through open market operations is illustrated in figure 2.) If the sellers of bonds generally expected higher prices (lower effective rates) than the buyers, the S curve would be situated further to the left, the equilibrium rate would be lower than r and the share of the market taken by index bonds smaller than a . It might very well be that the borrowers — that is, the entrepreneurs — have on an average higher price expectations than the lenders. This would then tend to limit the share of the market taken by index bonds.⁴⁴ The equilibrium illustrated is "partial" in the sense that total demand for bonds and the "ordinary" bond rate is assumed to be given. Therefore properly speaking the diagram only illustrates the determination of the *spread* between the ordinary and the index rate, whereas absolute levels are determined by all those factors which are incorporated in the theory of the ordinary rate of interest.

Figure 1



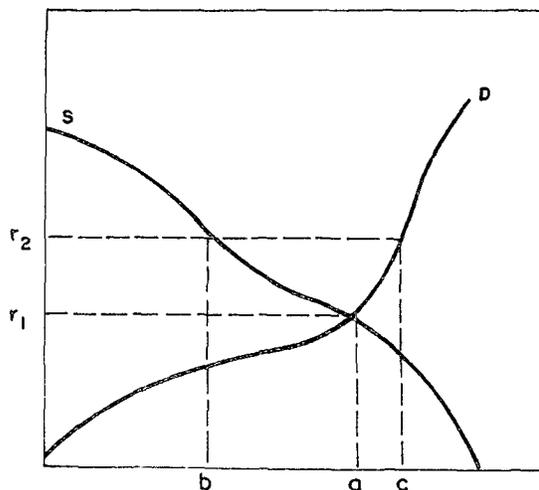
The demand curve D_2 in figure 1 denotes a less symmetrical distribution of expectations of the bondholders than does D_1 . The curve is very price-elastic above the

⁴⁴ Reference No. 9, pages 24, 44.

equilibrium rate r , so that a slight increase of the yield on index bonds would cause a considerable increase in demand for them from those who want to switch from ordinary bonds. The implication is that the price expectations of the holders of ordinary bonds are concentrated around a value which just about makes an indexed investment unprofitable at the current rate r . Below r , on the other hand, the curve D_2 is inelastic, meaning that holders of index bonds would generally hang on to their investments if the yield r was lowered from its equilibrium position. Contrary to the case of the holders of ordinary bonds, their expectations thus are *not* concentrated around that of the "marginal" holder. The special form of the curve D_2 would therefore have a stabilizing effect for movements of the "indexed" interest upwards but account for instability in movements downward compared with the situation pictured by the curve D_1 .

This type of diagram can be effectively used to illustrate the meaning of "inter-market operations",⁴⁵ Government transactions in index and ordinary bonds aiming at a desirable constellation of the two rates. This is shown in figure 2.

Figure 2



In figure 2 the equilibrium rate is r_1 , and the index bond holding a , the index bonds taking the larger part of the total market. The central bank might now want to raise the "indexed" rate from r_1 to r_2 , in an effort to achieve, for example, a revision downward of the expectations of the market about future prices. The bank would then start to supply index bonds at prices more favourable to the buyer than that corresponding to the effective yield r_1 . At the rate r_2 the demand for index bonds would have increased to c , so that $c - a$ index bonds would have to be sold and a corresponding amount of ordinary bonds bought by the central bank. But at the same time the supply of ordinary bonds would tend

⁴⁵ The term is Professor Palander's; cf. reference No. 10, page 212. Professor Palander has used a diagram with "iso-curves" in order to illustrate the effect, of open market and inter-market operations. With this technique it is possible to study simultaneously the variations of the money rate and the "indexed" rate. This case is perhaps more interesting than that discussed in the text but also more complicated. Cf. reference No. 10, pages 196-199.

to decrease since the issues of index bonds would be converted into ordinary bonds at maturity or conversion dates or the issuer might try to repurchase his own bonds in the open market. If the supply could respond immediately to the preferences as expressed by the curve S , the central bank would have to absorb additional $a - b$ in ordinary bonds and supply a corresponding amount to the market for index bonds. The operation would not cause any significant change in the money supply since it is mainly a question of exchanging one type of bond for another. The net result or cash effect caused by these transactions would mainly depend upon how the central bank went into the market. The bank could, for example, immediately "post" the index bond price corresponding to r_2 and at that price sell all the index bonds demanded. Alternatively, the bank could try to decrease the price, only stepwise, thus offering effective rates ranging from r_1 to r_2 according to the gradual appearance of a demand for index bonds in the market. The last-mentioned method would obviously give the largest sale return. For purchases of ordinary bonds the same alternatives could be envisaged, and the combined effect on the money supply would depend on the methods chosen. Naturally, the authorities would use both financial resources and skill to proceed in this type of operation.

Figure 3

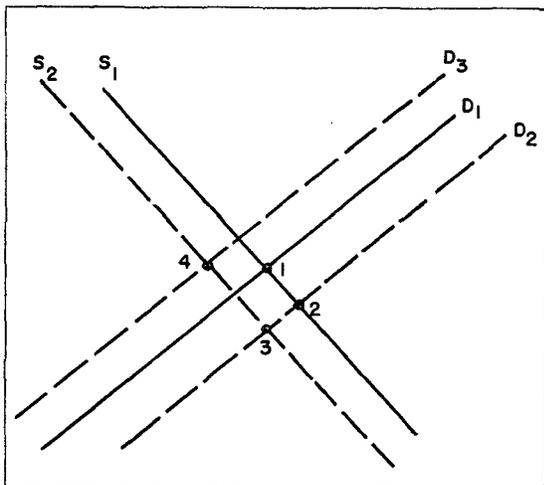


Figure 3 gives an idea, although very inadequate, as to what would happen to the indexed rate if expectations about future prices change. The ordinary rate has still to be assumed as given, since the diagram only reflects a partial equilibrium, and a total equilibrium analysis requires a much more complicated theoretical apparatus. The assumption corresponds, for example, to a situation in which the central bank pegs the ordinary rate but allows the indexed rate to fluctuate or in which the market for index bonds is so small that fluctuations in the indexed rate would not materially affect the ordinary rate.

Let it first be assumed that the lenders revise their price expectations upwards. This implies a shift of the demand curve (D_1) to the right (D_2) and a equilibrium

position from intersection point No. 1 to No. 2 with a lower effective indexed rate (that is, higher bond prices) and an increased market for index bonds. It might be natural to assume a similar revision of the expectations of the borrowers, but if the supply is inelastic the change in their expectations would not affect the short-run equilibrium. In the long run, however, the supply curve would then shift to the left (S_2) as the supply is reduced according to the higher expectations. If the shift is symmetrical to that of the demand curve, the new equilibrium position (No. 3) is characterized by a lower equilibrium rate but an unchanged distribution of the market between index and ordinary bonds. Finally, the possibility has to be considered that expectations change in opposite directions. Assume, for example, that the lenders generally revise their expectations downwards and the borrowers theirs upwards. If the change is symmetrical (as denoted by D_3 and S_2), there will be no change in the indexed rate (No. 4). Again, this case does not seem to be very realistic. It can, however, be interpreted in a meaningful way. The same kind of curve shifts would take place if both lenders and borrowers allowed for a risk premium in dealing with index bonds. Given the same range of "objective" probabilities of future price changes, the borrower might give an additional "subjective" weight to the risk of price increases and the lender a corresponding additional weight to the risk of price decreases. The market effect of these lopsided evaluations obviously would not affect the equilibrium rate but would restrict the market for index bonds compared with the case of "objective" evaluations.

Note 3. Determination of the equilibrium rate

Professor T. Palander uses an elaborate system of two accounting standards — one real and one nominal — and thereby gives the theory of the index bond a formal dress of the same design as the theory of fluctuation in foreign exchange rates. He also works with different interest rates in order to give a consistent explanation of the interrelations between the market for index bonds and the ordinary market (real rates and nominal rates, both of which can be either "own" rates or "cross" rates). The following is an attempt to extract some main elements of his arguments.⁴⁶

An exact theory for the indexed rate necessitates the introduction of the *instantaneous* rate of interest in the calculation of effective yields. This approach, used in insurance mathematics, is also necessary in order to simplify the expressions. It means that, when calculating the future value K_t of an investment K_0 , the expression $K_t = K_0 e^{rt}$ is used instead of $K_t = K_0 (1 + i)^t$ (for the same value K_t the instantaneous rate 100 r per cent will be somewhat smaller than a rate of 100 i per cent based, for example, on an annual or semi-annual accrual basis).

If a bond indexed both with regard to interest and principal has a market value K_0 , a nominal rate of interest 100 i per cent and is redeemed by the amount K_T at a future date T , its effective yield 100 r per cent can be calculated according to the ordinary formula :

⁴⁶ Reference No. 10, pages 189 *et seq.*

$$1. K_0 = \int_0^T e^{-rt} i dt + e^{-rT} K_T$$

The solution of this formula is given below :

$$2. K_0 = \frac{i}{r} (1 - e^{-rT}) + e^{-rT} K_T$$

It should be noticed here that r is a *real* yield in the sense that it is protected against changes in the price index used in the clause. The investor chooses the index bonds exactly because he expects a future increase in the index at, say, an instantaneous rate of 100 w per cent. If an increase materializes, the money yield on his investment will be higher than the yield r calculated above. It is this corrected yield $100 \times$ per cent that should be compared with the yield on an alternative investment in ordinary bonds. The expected *money* yield on the index bond can be calculated according to the formula given below :

$$3. K_0 = \int_0^T e^{-xt} i e^{wt} dt + e^{-xT} e^{wT} K_T$$

$$4. = \frac{i}{x-w} (1 - e^{-(x-w)T}) + e^{-(x-w)T} K_T$$

A comparison between formula 2 and formula 4 shows the exact relationship between the (subjective) money yield of the index bond, the (real) market rate of that bond and the price expectation of the investor : $x = r + w$. If the (subjective rate) x on the index bond is higher than the market rate of an ordinary bond, the investor will prefer index bonds, and vice versa. At the margin the difference between the ordinary bond yield and the index bond yield is equal to the expected increase in prices, all measured at instantaneous rates. If the expectation w is revised upwards, the prospective money yield increases correspondingly and makes it correspondingly more profitable to invest in index bonds. The increased demand will tend to raise the price K_0 , to lower the "real" yield r and to restore x to its former value. At the same time the ordinary bond rate, which at the *margin* also represents the subjective rate x , will tend to increase so that in the new equilibrium position

the increase in w will be offset both by a decrease in r and an increase in x .

The argument has so far been pursued under the assumption that K_T is given objective value, that is, the nominal value redeemable at the date of maturity. If investors consider the possibility of selling the bond at an earlier date, then K_t , in addition to w , also becomes a subjective value. The future value of K_t at a date t before maturity will become the expected market value, which will depend upon what the *market* at the time expects about future prices. The price expectations of the investor concerning the period t are now only relevant as far as the prospective accrued interest is concerned — they will be determined by what really happens during the period t . But his calculation with regard to K_t will be determined by his expectations about the *market's* expectation beyond t . He himself may very well expect prices to fall beyond t , but if he thinks that the market generally will expect rising prices, then K_t will be given a correspondingly higher value, which will be directly reflected in the level of x .

It should also be pointed out that the actual value of K_t will depend not only upon future market expectations but also upon changes in the ordinary rate of interest. An increase in the ordinary rate will lower the market value of the index bond. In formula 3 we can let w denote the marginal price expectation of the market, x the ordinary bond rate and K_0 the actual market value. An increase in x would lower the market value K_0 . Only in the event that there is a proportionate increase in the ordinary rate of interest x and in the price expectation w will K_0 remain unchanged. Thus if there is a positive correlation between the actual money bond rate and the *expectations* of prices at any future date, the prices of index bonds will vary less than the prices of ordinary bonds.⁴⁷ This would be the case, for example, if the ordinary rate of interest — and that rate only — is manipulated by the monetary authority in conformity with the price expectations of the market.

⁴⁷ Reference No. 2, page 336.

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