E/CN.12/304/Rev.2

STUDY OF THE PROSPECTS OF INTER-LATIN-AMERICAN TRADE

(Southern Zone of the Region)

UNITED NATIONS

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(Southern Zone of the Region)

UNITED NATIONS
Department of Economic Affairs
NEW YORK
1954

NOTE

Symbols of United Nations documents are composed of capital letters combined with figures. Mention of such a symbol indicates a reference to a United Nations document.

E/CN.12/304/Rev.2

12 January 1954

UNITED NATIONS PUBLICATION

Sales No.: 1953. II. G. 4

Price: $U.S. 1.50; 11/- stg.; Sw. fr. 6.00
(or equivalent in other currencies)

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LETTER OF TRANSMITTAL

Santiago de Chile
November 1953

Sir,

In 1951, at its fourth session, held in Mexico City, the Economic Commission for Latin America adopted resolution 20 (IV), requesting the Executive Secretary to make a continuing study of inter-Latin-American trade as a whole, in its diverse regional aspects and with a view to its expansion. It was further recommended that special attention be given to the relationship between inter-Latin-American trade and complementary development of national economies for promotion of regional economic integration and development.

In accordance with this resolution, I have the honour of transmitting to you the present report, a preliminary version of which was presented to the fifth session of the Economic Commission for Latin America, held at Rio de Janeiro in April 1953. This report analyses the trade between seven countries of the southern zone of Latin America, representing more than 80 per cent of all the trade between the Latin-American countries.

As requested in both the above resolution and resolution 69 (V) adopted at Rio de Janeiro, the Secretariat is continuing its studies of inter-Latin-American trade which will cover the whole of Latin America.

Accept, Sir, the assurances of my highest consideration.

Raúl PREBISCH
Executive Secretary
Economic Commission for Latin America

The Hon. Dag Hammarskjold
Secretary-General
United Nations
New York, N. Y.

EXPLANATION OF SYMBOLS

The following symbols have been used throughout this study:

Two dots (. .) indicate that data are not available.

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

PART I

Chapter I

SUMMARY OF THE CONCLUSIONS

1. Introduction

The Economic Commission for Latin America has been concerned with the development of inter-Latin-American trade since its first session, held in Santiago in June 1948. Attention was initially concentrated on the financial aspects of developing this trade, in an effort to find the means for establishing a multilateral payments system between Latin-American countries.[1] At the third session, held in Montevideo in June 1950, the attention of the Commission turned to the main factors affecting inter-Latin-American trade. The Commission considered that the limited capacity of individual domestic markets to absorb higher manufacturing output constituted a serious obstacle to any such increase and recommended that Latin-American governments, in adopting measures to raise manufacturing output should "take into account the possibilities of expanding demand through reciprocal trade, in order to achieve a better integration of their economies and higher levels of productivity and real income" (E/1762, resolution E/CN.12/194).

During the fourth session, held at Mexico City in June 1951, there was considerable discussion of the relationship between economic development and inter-Latin-American trade, and two resolutions were adopted in this connexion. The first, relating to the economic development of Central America, was prepared and presented by the delegations of Costa Rica, El Salvador, Guatemala, Honduras and Nicaragua (resolution 9 (IV), E/2021).[2] By the second (resolution 20 (IV), E/2021), the Executive Secretary was requested "continuously to study inter-Latin-American trade as a whole, and in its diverse regional aspects, with a view to its expansion" and "to continue giving special attention to the study of the relation of inter-Latin-American trade to the co-ordination of national economic units within over-all plans for joint and harmonious development".

In view of the very wide scope and complexity of the subject, this resolution made it advisable that the work completed to date should be presented at the fifth session in Rio de Janeiro, as the first stage of a study embracing the whole of Latin America.

During this initial stage, the study was confined to trade between the seven southern countries, namely, Argentina, Bolivia, Brazil, Chile, Paraguay, Peru and Uruguay.[3] These countries are situated in a geographical area of dissimilar, yet complementary, natural characteristics, which has resulted in the development of a mutual trade representing more than four-fifths of the value of all commerce between the Latin-American republics. Nevertheless, for the future of this study and until the entire region has been covered, one factor must be underlined. Despite the high proportion of all inter-Latin-American trade carried out in the southern zone, this area has commercial ties and outstanding possibilities for greater trade with other Latin-American countries outside the zone. Examples of these ties may be found in the trade which has developed between Chile and two other countries, Cuba and Ecuador, due, among other factors, to differences of climate and produce, as well as direct shipping lines. Although Chile and Ecuador are situated in different geographic areas, for many years there has been a relationship, hitherto uncommon in Latin America, passing beyond the limits of trade alone to actual financial co-operation. This has permitted an increase in Ecuador's tropical fruit production for Chilean consumption, and upon this a stable mutual trade between these two countries has been based. Two examples of the latent possibilities between different geographic areas include the Venezuelan petroleum supplies available to some of the southern republics, and certain Mexican non-ferrous metals which are suitable for industrial requirements in Argentina, Brazil and Chile. Notwithstanding, due solely to the time factor and methods, this study has been limited to the southern zone of Latin America, where inter-Latin-American trade is mainly concentrated.

In preparing this analysis, an examination was made of official documents and other trade in the southern zone, such as treaties, payments agreements, statistics, exchange systems, etc. To provide a correct interpretation of these data, which would allow for certain conclusions of value in directing isolated trade policies towards concerted action, further research was undertaken. Direct inquiries were thus addressed to government officials, government and private banks, chambers of commerce, exporters and importers, as well as producers and manufacturers.

Part I of this report summarizes the results of this research and examines the structure of intra-zonal trade. It discusses certain general barriers which must be removed if trade is to prove a satisfactory basis for

[1] During the first session a resolution (E/CN.12/72) was passed, requesting the International Monetary Fund to undertake a study of the possibilities for instituting a multilateral clearing system in Latin America. This study was presented to the second session, in May-June 1949, it included, *inter alia*, that "multilateral clearing by itself is likely to contribute to an expansion of trade only as part of a regional payments scheme in which members are prepared to extend special credits to each other, or can call on an outside source of foreign exchange if it is needed to help countries that are net creditors within the group to convert their surpluses for use elsewhere". At the same session, the Uruguayan delegation suggested the establishment of an inter-American clearing agency, but this proposal was not approved by the Commission.

[2] See *Progress Report on Economic Integration and Reciprocity in Central America* (E/CN.12/296), which describes the work being carried out there by the Commission.

[3] Referred to elsewhere in this document as the "southern zone".

bringing the economies closer together. After presenting a brief outline of the basic trade characteristics, the report analyses the policies of the southern republics in respect to their reciprocal trade and examines the structure of payments, underlining some of the problems of monetary parities, price differentials, adjustment of balances and other factors. Finally, this part of the study discusses the effects which transport by ships registered in Latin America has both upon trade within the zone and upon the ability of locally produced goods to compete within the area, when carried by sea.

Part II of the study is concentrated upon specific foodstuffs and industrial raw materials which are, or could be, traded between the countries of the southern zone. Production and consumption prospects and practical problems delaying the disposal of surpluses are examined. Finally a description is given of how trade relations and economic reciprocity would be assisted if the structural elements referred to in part I (those basically determining the conditions for the movement of goods and services) were the object of practical agreements aimed at stimulating the economic development of Latin America.

2. Principal features of inter-Latin-American trade in the southern zone

As may be observed from this study, the traditional structure of trade between the seven southern republics is defined by the different policies adopted by the individual participants. Argentina, Brazil and Peru appear in the zonal market, with varying degrees of importance, as suppliers of foodstuffs. The other four countries, Bolivia, Chile, Paraguay and Uruguay, resort to the market to obtain essential foodstuffs, for which domestic production is inadequate or entirely lacking.

The trade in foodstuffs has a tendency which is frankly unfavourable to diversification. This trade, since the pre-war period, has tended to be limited to basic items such as wheat, sugar, meat, stimulants and fats, apart from the large fruit trade between Argentina and Brazil. Certain items, such as vegetables, cereals, rice, potatoes, pastes and preserves, etc., formed a valuable part of the trade only a few years ago, but now they no longer comprise an appreciable share. This is due to the expansion of both secondary crops and food industries in the various countries of the group. Trade in foodstuffs, representing 70 per cent of the total zonal trade in 1934–38, fell to approximately 53 per cent in 1946–51. This, however, was in part due to the fact that the food-deficit countries made purchases of wheat and fats, normally received from Argentina, in other parts of the world, because of Argentine price policies in 1946–48 and the lack of exportable surpluses in 1952.

Apart from these temporary events and the unfavourable trend towards diversification of food exports, foodstuffs dominate the trade pattern. In countries having a food deficit, the population growth, urban expansion, improvements of real income and to some extent the efforts for a better utilization of increased incomes, all influence the problem of underconsumption. They raise domestic food requirements at a greater rate than that of the plans to attain self-sufficiency. Between the pre-war period and 1953, increasing domestic demand in countries supplying foodstuffs has risen more rapidly than their production of wheat, sugar and meat. Since agricultural extension programmes have not significantly altered this trend, trade within the area, apart from fluctuations due to the varying success of development plans and climatic or world market conditions, depends upon the gap between production and consumption. To date, this resulted in a stronger bargaining position for the supplier countries.

Apart from exceptional cases, the trade balance in the zone shows an almost continuous deficit for food-importing countries, since they are unable to supply a sufficient reciprocal amount of the products essential to the economies of their trading partners. In order to avoid larger adverse balances, therefore, the debtor countries must limit their purchases to essentials and, at times, must restrict the purchase of new products. Thus trade expansion within the zone is closely related to eliminating the basic causes of such disparities.

On the whole, there have been signs of improvement in the differences shown in bilateral trade imbalances and in the degree of importance or the necessity for traded products. Since the pre-war period, the composition of trade shows an increase in exports of industrial raw materials from the food-purchasing countries. This trade, which was only 10 per cent of the total value of all zonal trade in 1934–38, has risen to more than 20 per cent at present, the improvement being mainly due to a greater demand for cotton and lumber and to a lesser degree for copper, nitrates and, more recently, iron. Lumber is practically the only commodity showing a real increase in production, rather than a mere shift in the usual export destination.[4] In the case of lumber, the present favourable trend in the southern zone also indicates that exports depend almost entirely upon Argentine purchases, which are under continuous pressure from European softwood supplies.

Although Latin America is one of the largest world exporters of copper, some countries in the area encounter considerable difficulty in obtaining sufficient quantities, due mainly to deficiencies in payments mechanisms. Some progress, however, has been achieved. The principal exporter, Chile, has changed the system formerly used by foreign producer companies to distribute copper, and now arranges the sales directly, thereby permitting their incorporation into the negotiation of trade treaties. Brazil, which imported less than its industrial requirements of copper in 1951 and 1952, is seriously considering the substitution of aluminium from domestic bauxite in its electric installations. However, the extent of this replacement will depend upon the amount and regularity of future copper imports.

Among the raw materials, Chilean nitrate has almost trebled its importance since the pre-war period, especially because of the rapidly increasing Brazilian demand for fertilizers. In 1952, the clearing account balance between the two countries showed an accumulated surplus resulting from fertilizer sales, which exceeded the exchange required for Chilean imports from Brazil. It will thus be necessary either to increase Brazilian exports to Chile or to find a multilateral method of liquidating the balance, if the latter is not to remain dormant. Increasing nitrogen requirements have also led to projects for synthetic nitrate production in Brazil, although this is currently prohibited under the terms of an agreement between the two countries, for some time to come at least.

[4] Over the medium-term, similar results might also be caused by an increase in the trade in certain iron and steel items.

Apart from the five items mentioned—cotton, lumber, copper, nitrates and iron—the other raw materials show a decline compared with 1934–38. If the value of exports of these five commodities is subtracted from the total value of raw material exports to the zone, the remaining raw materials accounted for approximately 4.7 per cent of total exports in 1934–38, and only 2.7 per cent in 1946–51. Among the raw materials which are losing ground, or showing only slight progress, the position of sulphur is paradoxical and illustrates how price problems can impede zonal trade. In 1934–38, the combined annual sulphur consumption of Argentina, Brazil and Uruguay was a little over 25,000 tons, while present requirements are closer to 120,000. A reliable estimate places Brazilian consumption in 1955 at approximately 150,000 tons. Despite this remarkable expansion and the vast deposits in the southern zone of Latin America which have been worked for many years, regional trade in sulphur is declining, since these three countries prefer to import from other parts of the world. Brazil is also testing the use of pyrite deposits and the processing of pyritous residue from coal-washing. The Argentine search for self-sufficiency involves the working of volcanic deposits at high altitudes. The high price of the Chilean and Bolivian product, in comparison with the world market, has prevented sulphur from providing a valuable contribution to the trade of the southern zone. Within the same group of raw materials, the slight increase in the trade of non-ferrous metals, excluding copper, is due to the fact that the tin and, to a lesser extent, the zinc produced in the zone are not of the grades mainly required by domestic consumer industries.

It is of interest to examine the trade composition of important raw materials and their progress since the pre-war period. Generally speaking, this indicates that the influence upon zonal trade exercised by the greater demand for industrial raw materials—an essential corollary to manufacturing expansion—has not yet caused any stimulus to raise production, with the exception of lumber. In the case of the remaining items where trade has increased, such as cotton, copper and nitrates, the market offered within the zone is only a substitute for other traditional export markets. For various reasons, including the price and the type of material available, the greater demand created by economic development has had little effect upon the trade in other raw materials.

The zonal trade in finished goods shows a well-defined tendency. Since the immediate post-war years, the lists of goods marketed in various bilateral channels generally show a marked reduction, especially in the number of items and also, in many cases, in their value. Although import restrictions are usually imposed because of balance-of-payments difficulties, and this is always the nominal reason, the basic cause of the decline appears to be the diversification of each country's domestic industry and the rapid measures for tariff protection which typically follow the establishment of new industries. In the principal countries of the southern zone, therefore, it is a general practice to reserve the domestic market, often indiscriminately, to local products of many different kinds. Many of these small industries are necessarily uneconomical, since their scale of operations is limited by the small available market. Typical examples are hypodermic syringes and needles, precision scales, certain radio components and sports equipment, which are manufactured from imported raw materials in several countries. Other industries in which there has been similar investment, such as the manufacture of cellulose fibres, plastics and rubber articles, frequently have machinery lying idle because their productive capacity far exceeds local demand.

During the past five years measures restricting imported manufactured goods, or which nominally limit their entry, have frequently been lifted to allow the import of items similar to domestic products, or those for which exchange facilities at the official rate are not normally granted. In all cases, however, such goods were acquired with exchange derived from exports which are difficult to place in world markets. Two examples are provided by Brazil and Chile, where such linked operations have provided an appreciable source of supply for manufactured goods during recent years. Since such imports depend upon exporting goods that are difficult to sell, and which generally find a market in Europe or the United States but not in the region, Latin-American countries have remained outside the trade in such manufactured goods. Furthermore, in compensatory trade agreements with European countries, part of the merchandise exchanged for Latin-American exports must necessarily consist of manufactured goods, including items the import of which is normally prohibited. For these and other reasons, countries of the southern zone now participate less in supplying other Latin-American countries with high-grade woven goods, household textiles, clothing, toilet articles, glassware and ceramics, household and medical electrical apparatus, school articles, sports goods, and even certain pastes and food preserves. Such items, inasmuch as their entry is permitted, are usually imported from outside the region. Although certain trade agreements between countries within the zone have included manufactured goods, difficulties in regard to prices, and, on occasions, methods of payment, often hampered their fulfilment.

To summarize, an examination of the structure and composition of inter-Latin-American trade in the southern zone establishes that, during the last fifteen years, such trade has tended to be limited by geographic causes, thus eliminating or postponing possible development due to economic factors—including advantages of comparative costs. Since the declining influence of economic factors directly concerns commercial policy and payments mechanisms, this study examines the relative influence of both in the present situation.

3. Problems of trade policy and payments

The trade policy of countries which are fundamentally exporters of foodstuffs and raw materials, as are most of the Latin-American countries, must primarily aim to ensure stability and favourable conditions for the sale of their products in world markets. By means of tariff agreements, formerly the controlling factor in overseas trade, it was ensured that products exported to world markets were not subject to heavier duties than similar items from other sources. Reciprocal treatment was thus accorded to imports from Europe and North America as consumers of Latin-American commodities. In addition to these main agreements, there were others covering inter-Latin-American trade, giving certain tariff advantages based upon proximity or climatic differences. Products not classified in the preferential tariff list were in the

majority, especially manufactured goods. These received the same treatment as similar items from other parts of the world, according to the most-favoured-nation clause.

Since the 1930 crisis, trade policy has been moving away from tariff agreements and now relies more upon State intervention in the form of payment agreements, differential exchange rates, allotment of quotas, prohibitions and so on. In the southern zone of Latin America, trade policy has made increasing use of these methods during the last ten years to foster commercial agreements based upon exchanging specific quantities of equally important goods, to meet careful long-term forecasts or at times because of temporary shortages. These same methods sometimes permitted a regional preference, even benefiting trade in goods that were covered by the most-favoured-nation clause. However, the obstacles caused by inequalities in exchange rates, non-observance of parities, non-competitive prices, transport costs and other factors, prevented these efforts from yielding any concerted benefits, and indeed often invalidated them. Furthermore, certain trade barriers have restricted commerce within the southern zone to a greater extent than the larger flow of trade between Latin America and other parts of the world. Extra-regional trade, because of its size, was more elastic in adapting itself to rapid changes in exchange regulations, quotas, prohibitions, approval or refusal of permits, and so forth. Inter-Latin-American trade has a weaker structure and, without any wide-spread organization to maintain continuity between supply and demand, it suffered severely from the frequent and short-lived changes in the regulations. This insecurity reacts adversely upon commercial operations. In addition, it tends to discourage investment in new industries, or the expansion of existing ones, whose exportable surplus could increase trade. Such changes in regulations thus react to the detriment of industrial expansion and economic development.

Since 1949, trade policies of the countries in the zone have moved in different directions as a result of an event of international importance. As may be seen in chapter III, some countries in the southern zone have concluded multilateral agreements under the General Agreement on Tariffs and Trade (GATT), while others have not. This divergence places them in different situations for mutual preferential agreements (of the type to which trade policy has inclined in recent years) and for import restrictions, either to defend the balance of payments or for economic development. Since those joining the GATT enjoy specific tariff and other benefits for their basic exports to the world market, they must obtain its approval for any proposed regional preference, or for restrictions which might prejudice the rights of other members. Those countries remaining outside the GATT may grant any preference, or apply any restrictions, compatible with their existing bilateral agreements.

Until the depression of 1930, the system of payments for intra-regional trade had all the characteristics of free-trade operations. Nonetheless, large accounts tended to accumulate because of unequal bilateral liquidation, serving to restrain the development of trade relations. Primary products and other goods traded on the basis of comparative costs nonetheless resulted in large net surpluses and deficits in all bilateral channels. In 1928, for example, Peru exported goods for a value of over 31 million dollars to the six other countries in the zone, while imports from them barely totalled 3 millions. Conversely, Chile imported 23 and exported less than 7 millions. Argentina and Brazil had very high balances in their bilateral trade, although their aggregate balances within the southern zone were relatively small.

The collapse of the multilateral payments system, resulting from the world depression, and subsequent compensation agreements between European and Latin-American countries, restricted the flow of foreign exchange which countries of the region had previously used to cover adverse balances in their mutual trade. The resources, which would have been available in the future for this purpose, were confined to those obtained from areas trading in convertible currencies. Consequently, the restrictions suffered by inter-Latin-American trade could not be offset by the mechanism of compensatory payments to which the republics of the southern zone also submitted their mutual trade. The basic causes of the inequality apparent in the various bilateral trading channels remained unchanged. Thus, since it was necessary to continue to settle non-compensatory balances with assets from other areas, which were decreasing substantially, bilateral compensation of inter-Latin-American trade in no way counterbalanced the breakdown of the multilateral payments system. Trade within the zone, which in 1946–51 rose to an average f.o.b. figure of 396.5 million dollars annually, showed, in the same period, an average of 15.9 million dollars per year in unliquidated balances. Difficulties in settling these balances had long deterred studies on the possibility of establishing a multilateral compensation agreement for Latin America. Recently, the detrimental effects resulting from difficulties in benefiting from blocked assets, as well as other defects in the payments structure, have revived regional interest in such studies. However, there has been a tendency to liquidate only the amounts resulting from trade in products of equal priority. In practice, this tendency results in the establishment of two accounts; one for basic, and the other for secondary or non-essential items. The creation of a clearing system in Latin America is therefore complicated, among other factors, by the problem of determining a common criterion as to the essential or secondary importance of traded foodstuffs, raw materials and manufactured goods. The experiences of government officials in treaty negotiations show how widely individual national opinions may differ in this respect.

The elimination of other payments defects would also remove barriers to the flow of trade. As may be seen from chapter IV of this study, there are many defects having wide repercussions on trade. These include: the non-observance of a monetary parity; the lack of prior definitions in *ad hoc* inter-governmental agreements, for example, as to whether the value of all goods covered by a specific trade agreement should be balanced in the corresponding compensation account, or whether some should be settled in hard currency; the system of surcharges, whereby a higher price may be fixed for goods paid through a compensation account (even if exchanged for goods of equivalent importance) than for the same items paid in United States dollars; the adjustment of balances in convertible currencies, which at present applies equally to receipts from basic and secondary goods; the lack of credit incentives facilitating the entry of regional goods; and finally the absence of measures (such as re-export or multilateral operations) to maintain an

equilibrium when a balance accumulates in each bilateral compensation account.

Research into these problems has led to the formulation of some possible solutions for most of the southern zone countries, as indicated in chapter IV. However, a more detailed study would be necessary to determine whether these would prove effective under present trade conditions.

4. Ocean transport

Ocean transport, closely related to trade and payments policies, is an important factor both in the movement of goods in the southern zone of Latin America and in the competitive capacity of these goods in the regional market.

Approximately 80 per cent of the intra-zonal movement of merchandise is effected by sea. Almost three-quarters is transported in foreign vessels capable of an average speed of more than 15 knots. The remainder is carried by vessels of zonal register. For the latter, in lines which sail to the northern hemisphere from the River Plate, on the Atlantic coast, and from Valparaíso, on the Pacific, without passing through the Straits of Magellan, speed, cargo capacity and the utilization of freight space are similar to those of European and United States vessels. There is therefore little difference between the shipping rates. Local merchant fleets, however, whose regular route is through the straits, have a smaller cargo capacity, a speed in most cases of only 10 or 11 knots and in general are working under less favourable conditions than the foreign vessels. There is no need to emphasize the effect this has upon the competitive capacity for their cargo.

Goods sent from the southern Atlantic countries to those on the southern Pacific coast have a much higher value than the reverse traffic. In 1951, exports from Argentina and Brazil to Chile and Peru averaged 196.4 dollars per ton, while those from Chile and Peru to Argentina and Brazil averaged only 97.1 dollars. For this reason the trade imbalance between the two groups, traditionally in favour of the Atlantic countries, had previously coincided with nearly the same volume of cargo carried in both directions. Since 1946, when declining Argentine exports improved the balances of Chile and Peru to a point where they finally showed a credit, the amount of cargo has varied inversely with the movement of the trade balance. Consequently, ships must now travel from the Atlantic to the Pacific with only a small cargo. Services are becoming less regular, while freight rates have increased by 25 per cent.

In addition, other influences affect freight rates. They include the presence of "outsiders" or "tramps" offering low rates for cash payment in dollars; the lack of agreements between countries in the zone, to avoid the disparity of exchange rates applied by each country to goods carried by national vessels; and the effect of certain bilateral agreements, whereby some of the countries divide their ocean freight as equally as possible.

Because of the complexity of the subject and the lack of available information, the chapter covering the main effects of ocean transport upon inter-Latin-American trade may be regarded as only a first approach to the subject. Nevertheless, it is sufficient to show how certain questions such as freight charges, exchange rates for freights and co-ordination of shipping enter into the general problems of trade policy.

5. Trade policy and the future of inter-Latin-American trade

To conclude this introductory review of the principal features of trade within the southern zone of Latin America, it becomes clear that no problem is more important to the economic integration of this area than that of trade policy. To date, economic development has only partially stimulated trade in raw materials, while, to a certain extent, it has even restricted that of manufactured goods. It is obvious that, for the trade in raw materials, supplementary agreements covering specific items could encourage specialization and substantially increase the demand which is at present confined to the requirements of isolated domestic industries. Another result might be a reduction in the current non-competitive prices for the exportable surplus. It is easy to envisage the broad effects that specialization could have upon zonal trade. In addition to reducing the drain on foreign exchange caused by imports of certain basic products, it could assist in the development of many industries on a regional scale. These might include mechanical and chemical pulp, rayon, vinyl resins and plastic raw materials, dyes and pigments, pharmaceutical goods, crop protectives such as insecticides, fungicides and pesticides, ink for high-speed printing and many others.

The weakness of the trade in manufactured goods also indicates the urgency for remedying the existing situation. At present, regional products may compete in their own market with similar goods produced in countries of higher productivity. But the imports often enjoy additional advantages, resulting from their exchange for items difficult to export. Complementary output in certain manufacturing lines, as in raw materials, would alleviate the financial and technical problems that are beyond domestic solution, and would, through multilateral agreements, allow for the development of industries benefiting the regional economy. For certain commodities, which are becoming increasingly more important in the foreign exchange budget, considerable financial resources could thus be applied to economic development and the encouragement of inter-Latin-American trade. In the case of antibiotics (to which might be added sealed units for refrigerators, domestic electrical appliances and many others) the amount involved for this medical item in Chile alone represents 4.9 million dollars in the foreign exchange budget for 1953, or the equivalent of 81 US cents per capita.

The future organization of inter-Latin-American trade can thus contribute substantially both to the economic development of individual Latin-American countries and to the region as a whole. It will largely depend upon the extent to which the traditional features of trade policy can be adapted to future circumstances. It is also essential that solutions applied to unequal trade between various Latin-American countries should not be of the restrictive type predominant among countries using exchange controls as a means of reducing bilateral balances. On the contrary, there should be an incentive for trade expansion within some form of multilateral contact. Trade policy may either cause inter-Latin-American commerce to decay, as a result of economic growth, or may use it as a spur to such growth. It is indeed difficult to find a common

viewpoint for trade policy among the Latin-American countries. Commitments with other areas, the reconciliation of internal regional trade interests with those of the large consumers of regional exports, and the impact which certain measures for expanding trade would have upon established domestic industries, must all be taken into account. Obstacles to the free play of economic factors in inter-Latin-American trade and the uncertainties affecting such trade, in a zone where more than four-fifths of it is concentrated, are of fundamental importance, meriting the united attention of the Latin-American republics.

Chapter II

CHARACTERISTICS OF TRADE BETWEEN COUNTRIES OF THE SOUTHERN ZONE OF LATIN AMERICA

1. Introduction

Statistics compiled by the Economic Commission for Latin America clearly indicate the importance of inter-Latin-American trade in each of the geographic zones of Latin America. Although the figures in table 1 refer to 1948–49, when the total f.o.b. value of this trade reached an annual average of 522.1 million dollars and 387.5 millions for the southern zone of the region, they are nonetheless representative of the present position. This may be seen by comparing the figures with averages established for 1946–51.

TABLE 1. PERCENTAGE IMPORTANCE OF INTER-LATIN-AMERICAN TRADE BY GEOGRAPHIC ZONES

(Average for 1948–49)

	Imports from			
	Mexico, Central America and Caribbean	*Colombia, Venezuela, Ecuador*	*Southern zone*	*Total*
Exports from:				
Mexico, Central America and Caribbean	52.7	25.6	21.7	100.0
Colombia, Venezuela, Ecuador	9.1	9.8	81.1	100.0
Southern zone	5.0	6.6	88.4	100.0
TOTAL, LATIN AMERICA	9.6	8.5	81.9	100.0

SOURCE: Economic Commission for Latin America.

Table 1 shows that four-fifths of inter-Latin-American trade is localized in the countries of the southern zone. It also demonstrates that this zone purchases approximately 80 per cent of the exports to Latin America from Colombia, Venezuela and Ecuador on the one hand, and 20 per cent of those from Mexico, Central America and the Caribbean on the other. From another viewpoint, this table indicates that, of total exports to Latin America from the southern zone, approximately 90 per cent goes to its own constituent countries. which, in addition, provide markets for over 80 per cent of inter-Latin-American exports.

During 1946–51, when the average f.o.b. value of inter-Latin-American trade (southern zone), 396.5 million dollars, reached a figure closely approaching that for 1948–49, the percentage value of trade between the seven southern countries, in relation to the rest of their trade and pre-war levels is shown in table 2.

Like table 1, this reveals the extraordinary importance of the southern zone in inter-Latin-American trade, although the relationship between intra-zonal trade and its trade with the rest of Latin-America shows some decline when compared with the pre-war period.

TABLE 2. PERCENTAGE IMPORTANCE OF INTRA-ZONAL TRADE

(Annual average of f.o.b. values)

	For exports to		*For imports from*	
	Latin America	*World*	*Latin America*	*World*
1934–38	96.0	8.2	90.4	12.2
1946–51	89.9	12.0	86.2	14.5

SOURCE: Economic Commission for Latin America.

This is mainly due to the drop in Peruvian petroleum exports to the zone and to the more or less corresponding increase in petroleum imports from Venezuela, outside the zone.

In contrast with the great importance of intra-zonal trade itself, as compared with inter-Latin-American trade, table 2 shows that the former is rather small in relation to the trade of the zone with the whole world. During 1946–51 it only amounted to 12 per cent of the zone's total exports and 14.5 per cent of total imports. In the years since 1934–38 a small but decided improvement may be noted in the zone's capacity to purchase the exportable products of its constituent countries.

2. The structure of trade

Reciprocal trade within the southern zone has always been dominated by the unequal distribution of food production in the respective countries. There is a continual and marked discrepancy in intra-zonal trade, between countries supplying foodstuffs and those obliged to import them in order to meet essential food requirements. This is evident in most of the bilateral trade and, despite some exceptions, generally results in an adverse trade balance for those countries lacking wheat, sugar, meat and fats. The traditional pattern of this commerce shows that the main reason for the disparity between the values of the goods exchanged in either direction is that countries with food shortages have found it impossible to provide their suppliers with a sufficient volume of equally essential goods.

This is clearly shown by figures given in the following tables.[1] Table 3 illustrates the part played by the different republics of the zone in reciprocal foreign

[1] It was necessary for the purposes of this study to know how trade in the southern zone had developed until recently. Quantum statistics were not available for some countries of the group after 1949, and since these are essential for determining the exact position of each product at constant prices, it was decided to use current prices. Although this method makes it impossible to gauge the influence of the particular price trend for each product, it does furnish data sufficiently representative of the prevailing trends.

trade. Argentina and Brazil are such decisive factors that of the total intra-zonal exports—which as already stated rose to an annual average of 396.5 million dollars in 1946–51—these two republics together contributed 72.5 per cent. Adding the 12 per cent supplied by Peru, the next most important exporter country, it is seen that three of the seven countries within the zone were responsible for 84.5 per cent of total exports, while the other four together contributed only 15.5 per cent. Since exports from the three countries accounting for such a high percentage of the total are based upon a few products, the general level of intra-zonal trade is very sensitive to any fluctuations among such commodities. They are wheat, stimulants, sugar and, of lesser importance, meat, fruit and fats. Although imports are more evenly distributed, Argentina and Brazil also predominate in that field, purchasing 60.1 per cent of the total within the zone.

TABLE 3. INTRA-ZONAL TRADE VALUES AND BALANCES

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

	Argentina	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Totals*
				Average 1934–38				
Exports to the zone....	45.5	1.1	21.3	4.4	2.3	11.1	9.2	94.9
Imports from the zone.	28.1	3.9	35.4	8.7	3.7	4.6	10.8	94.9
Net balances.....	+17.4	−2.8	−13.8	−4.3	−1.4	+6.5	−1.6	±23.9
				Average 1946–51				
Exports to the zone....	162.3	2.6	125.1	36.5	11.5	47.7	10.8	396.5
Imports from the zone.	133.8	19.1	104.4	65.2	12.6	20.9	40.5	396.5
Net balances.....	+28.5	−16.5	+20.7	−28.7	−1.1	+26.8	−29.7	±76.0

SOURCE: *Foreign Trade Yearbooks.*

(*a*) SUPPLIER COUNTRIES

Argentina ranks first among those members of the zone acting as principal suppliers to the common market. Before the war, its export values to the zone amounted to 47.9 per cent of the total trade. By 1946–51 these had fallen to 40.9 per cent, due to reductions in wheat sales. Imports, on the other hand, which before the war amounted to only 26.6 per cent, rose in 1946–51 to 33.7 per cent, thus showing a relative and absolute strengthening of Argentina's purchasing position.[2] It necessarily entailed a certain decline in the level of its visible trade balances. Before the war, Argentina enjoyed favourable balances in all its bilateral trade channels, except with Uruguay, where they were generally adverse because of large-scale imports of sand for building. This position was modified, as table 3 shows, during 1946–51. The highest proportion of Argentina's intra-zonal trade is with Brazil and this has shown a certain tendency towards *equilibrium*, possibly due to consecutive agreements regulating the volume of trade which the two countries conduct through an appropriate clearing system.

In contrast to pre-war conditions, the average balance of this trade in 1946–51 generally favoured Brazil. On the other hand, the decline of sand imports, together with certain other factors, gave Argentina a favourable trade balance with Uruguay. In the remaining sectors, Argentina maintained its traditional position as a creditor country, but on a reduced scale.

Brazil is second among the supplying countries. Unlike Argentina, however, its exports are increasing while the relative importance of imports from the zone is decreasing. This is partly because, during 1946–51, Brazil at times bought wheat from the United States, Canada and France that was formerly obtained from Argentina. Exports to the zone, which amounted to 22.5 per cent before the war, rose in 1946–51 to 31.6 per cent. Due to the reversal of Brazil's trade balances with Argentina, however, imports dropped from the pre-war figure of 37 per cent to 26.3 per cent in 1946–51. Simultaneously Brazil became a creditor for the entire zone with the exception of Chile, where it became a debtor. The latter was due mainly to increased purchases of Chilean nitrate and to a reduction in Chile's imports of Brazilian raw cotton and textiles.

Peru occupies third place among the supplying countries, its position having remained unchanged since before the war. Formerly, as at present, exports amounted to approximately 12 per cent of the value of intra-zonal trade, while the percentage for imports was 4.8 per cent before the war and 5.3 per cent in 1946–51. The disequilibrium of these figures is evident from the credit balances with Bolivia, Chile and Uruguay, principally due to sugar sales, with cotton taking second place. These balances are, however, weakened by the trade deficit with Argentina, where Peru buys wheat, meat and other foodstuffs, and also by the decline in petroleum exports.

The importance of the zonal market differs considerably for each of the supplying countries. Before the war, this market absorbed 8.4 per cent of Argentina's entire exports, rising to 12.6 per cent in 1946–51. For Brazil, these percentages were 7 and 10.1 per cent respectively, and 14 and 30 per cent for Peru. The zone has thus become of prime importance for Peru's foreign trade.

(*b*) IMPORTING COUNTRIES

Bolivia, Chile and Uruguay are basically importers from the zone, chiefly in order to supply their domestic markets. To them must be added Peru, since it is an importing country as regards Argentina.

[2] If in 1946–51 the countries of the group had imported from Argentina the wheat they obtained from other parts of the world (because of Argentina's high prices and its lower exportable surplus), and if Argentina had increased its imports from them in the same proportion (61.9 per cent of the wheat value), then Argentine exports for 1946–51 would have risen to 44.9 per cent, and imports to 34.6 per cent. Even under these conditions, therefore, there would have been a definite improvement in Argentina's purchasing position.

Of the first three, Chile's imports are the highest, their value amounting to 16.5 per cent of zonal imports in 1946–51, as against 9.2 per cent before the war. Its zonal exports, however, have increased at a faster rate than imports, having risen from the pre-war figure of 4.6 per cent to 9.2 per cent in 1946–51. This is mainly due to greater sales of copper and nitrate and, since 1950, products of the new Chilean steel industry. Although Chile has favourable trade balances with Bolivia, Brazil, Paraguay and Uruguay, its dependence on Argentine meat and on Peruvian sugar and cotton cause the net total to be negative with the zone as a whole.

Uruguay's imports show a slight downward trend while at the same time, exports are losing ground. For imports, there are marked fluctuations in the annual figures due to periodic purchases from Argentina of wheat and cattle on the hoof, the latter for processing and re-export. Purchases of lumber, coffee and maté from Brazil have been relatively stable. The decline in exports is chiefly due to the fall in traditional sand exports to Argentina. In absolute values, Uruguay recorded the highest deficit in intra-zonal trade, averaging nearly 30 million dollars a year between 1946 and 1951. With the exception of Bolivia, this balance is favourable to all the other members of the group and particularly to Argentina, Brazil and Peru.

Bolivia's imports have remained fairly stable since pre-war years, whereas exports are declining. Invariably, there are adverse trade balances with every other country in the zone, particularly with Argentina, the chief supplier of foodstuffs. Paraguay, an importing rather than an exporting country, has shown little change since 1934. There is almost always a deficit, especially with Argentina and Brazil, but Uruguay is an exception, since Paraguay supplies lumber and cotton for sale there. Despite the small value of Paraguay's share in total intra-zonal trade, this commerce is more important for Paraguay than for any other within the zone. During 1946–51, the zone bought 41.6 per cent of Paraguay's exports and supplied 39.1 per cent of the imports.

In brief, the opposing tendencies shown by the principal supplying countries, Argentina and Brazil, to increase and restrict their purchases within the zone, seem linked to the apparent temporary reduction in Argentine wheat exports. There is, however, a genuine though moderate improvement in Argentina's position as a consumer, chiefly due to its increased purchases of lumber from Brazil, Chile and Paraguay. Since the position of Peru, the other supplying country, remains stationary and there has been little variation in the tendencies of the importing countries, it may be assumed that the changes observed in 1946–51 reveal small, though significant, advances along the line of development that would be achieved by intra-zonal trade if the supplying countries would increase the relative importance of their imports without lowering their export levels.

3. Breakdown of trade

The basic features of the breakdown of intra-zonal trade are shown in table 4.

TABLE 4. BREAKDOWN OF INTRA-ZONAL TRADE

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

	Exports 1934–38	*Percentages of the total*	*Exports 1946–51*	*Percentages of the total*
Foodstuffs	65.8	69.3	210.5	53.1
Raw materials[a]	9.9	10.4	82.3	20.7
Fuels[a]	7.2	7.6	13.4	3.4
Manufactured goods and miscellaneous	12.0	12.7	90.3	22.8
TOTAL	94.9	100.0	396.5	100.0

SOURCE: Economic Commission for Latin America.

[a] Annual average 1946–50.

(a) FOODSTUFFS

The breakdown of the intra-zonal trade in foodstuffs shows the effects of domestic programmes for agricultural diversification and the clear tendency to limit exports to the more essential foodstuffs. Although wheat is sometimes purchased from areas other than Argentina, the trade in foodstuffs remains at a high level, despite some decline compared with the pre-war period. While the value of all intra-zonal exports in 1946–51 rose by 317.8 per cent over the pre-war figure, the value of exports of important foodstuffs rose by 242.8 per cent during the same period. Table 5 summarizes the general features of this trade.

TABLE 5. INTRA-ZONAL TRADE IN IMPORTANT FOODSTUFFS[a]

	Value of exports of foodstuffs to zone in millions of dollars (annual average)		*Percentage of exports of foodstuffs to zone*		*Percentage of foodstuffs within total exports to zone*	
	1934–38	*1946–51*	*1934–38*	*1946–51*	*1934–38*	*1946–51*
Argentina	37.1	117.8	65.6	60.8	81.4	72.6
Bolivia	0.3	0.1	0.4	0.0	19.3	5.6
Brazil	10.7	42.8	18.9	22.1	50.1	34.2
Chile	1.4	2.0	2.3	1.1	30.3	5.5
Paraguay	0.3	1.1	0.7	0.5	16.4	9.3
Peru	2.9	25.3	5.2	13.1	26.6	53.1
Uruguay	3.9	4.8	6.9	2.4	42.9	43.8
TOTAL	56.6	193.9	100.0	100.0	59.6	48.9

SOURCE: *Foreign Trade Yearbooks.*

[a] Sugar, oils and fats, cocoa, coffee, fruit, cattle, wheat and flour, and maté.

Table 5 shows the predominance of foodstuffs in the zonal trade, indicating that three countries alone supply 96 per cent of the imports of essential foodstuffs within the zone. The other four countries together account for only 4 per cent.

Apart from the foodstuffs covered in table 5, comprising the principal items in which trade is steadiest, there is additional intra-zonal trade in other food products. The amounts involved are of secondary importance within the total and cover such items as rice, malted barley, preserved goods, pastes, sheep, pulses, potatoes and a few others. The average annual value of combined trade in these products during 1946–51 amounted to 16.6 million dollars, as against 9.7 million dollars in 1934–38. The relative importance of post-war trade in this group of foodstuffs has been practically halved, falling from 9.7 per cent of total trade before the war to 4.2 per cent in 1946–51. This was mainly due to the decline in rice exports from Brazil and Chile and of pulses from Chile, their markets in Argentina and Uruguay having been restricted as a result of agricultural diversification in those countries.

Total trade in foodstuffs in the southern zone, taking both groups together, represented 69.3 per cent of the value of aggregate trade in the pre-war years and 53.1 per cent in 1946–51, when it amounted to f.o.b. payments equivalent to 210.5 million dollars.[3] Expressed in current values, this amount would have had to average 274 million dollars a year during 1946–51 for trade in foodstuffs to have remained at the same relative level as before the war. The influence of specific foodstuffs on the general trade structure requires a brief explanation of certain features; such an explanation is also necessary to understand the problems described in subsequent chapters.

Wheat is the most important commodity, not only for the intra-zonal trade in foodstuffs, but also in the pattern of reciprocal trade among the constituent countries. Bolivia, Brazil, Paraguay and Peru, and sometimes Chile, do not produce sufficient wheat to meet their domestic requirements. As a result they purchase large quantities within the zone, particularly from Argentina and, to a lesser extent, from Uruguay. The wheat trade during 1946–51 represented more than a fifth of the entire value of intra-zonal trade. When the republics having wheat shortages can obtain supplies from Argentina, their payments mechanism with that country enables them to cover at least part of the value of their purchases with their own commodities. When they have to resort to a third party, however, they are obliged to pay dollars for the entire purchase. It is also difficult, if not impossible, for them to sell, on other markets, some of the goods delivered as part payment to Argentina. This is specifically the case with lumber exports from Brazil, Paraguay and, to a lesser extent, from Chile, to Argentina. Moreover, the transfer of wheat purchases to other parts of the world, as explained in the chapter on ocean freight, tends to decrease even further the freight moving from the South Atlantic to the South Pacific. The disparity between this and the return traffic is another factor disrupting the regularity of shipping services in this part of the continent.

[3] The actual figures are undoubtedly somewhat higher, since, in addition to the foodstuffs included in the statistics forming the basis of this study, there are others of marginal importance or included in frontier traffic. The latter may be conservatively estimated at 2 per cent of the total trade in foodstuffs.

Wheat consumption in the five countries showing a deficit reached an annual average in 1946–51 of 2.9 million tons, of which their own production amounted to 1.4 million tons. They were thus obliged to import 1.5 million tons, at an average value of 155 million dollars a year. Within this total, imports from the zone covered 830,000 tons a year, with a value equivalent to 97.7 million dollars annually. In this same period, 1946–51, Argentine exports to the zone were 14 per cent of the total volume of its wheat production and 32 per cent of the value of its exports to all parts of the world.

In 1952 the decline in Argentina's exportable surpluses obliged the five countries suffering from deficits to import their wheat from other markets. These purchases amounted to 1.8 million tons, at a cost of 204.4 million dollars.[4] The consequent heavy decline in foreign-exchange holdings, experienced by these countries, shows the extent to which their balance of payments would be undermined if wheat were regularly included among the goods to be paid for entirely in dollars. Brazil's wheat imports from Canada and the United States represented almost half its pending commitments in the visible trade account with the dollar area during the year ending December 1952, or approximately 300 million dollars. While Brazil bought wheat in North America and was obliged by a decree in the middle of 1952 to halve its sawmill output of pinewood for export to Argentina, its compensation account with Argentina was accumulating an inactive credit balance almost equivalent to 60 million dollars. The corresponding value in cruzeiros had already been delivered to Brazilian exporters through credits extended by the Banco do Brasil. When Chile bought wheat from Canada and the United States, its exporters encountered difficulties on the Santiago free exchange market in converting the credits received from their exports to Argentina into Chilean pesos. Moreover, the deterioration in Chile's balance of payments caused by paying 28 million dollars for North American wheat, plus other outlays arising from similar commitments of the previous year, led to a series of restrictive measures on imports during the second half of 1952. These included the suppression of the system whereby import permits were not required for goods classified within the so-called "free area". In Paraguay, the purchase of North American wheat and the lack of timber sales to Argentina not only contributed to the exhaustion of monetary reserves, but also necessitated a loan of 800,000 dollars from the United States in order to finance a part of the wheat purchases.

Within the whole foodstuffs group, stimulants—comprising cocoa, coffee and maté—absorbed 8.5 per cent of the value of intra-zonal trade in 1946–51, and accounted for average annual payments of 33.6 million dollars. Of this proportion, cocoa represents one per cent, coffee 5.3 per cent and maté 2.2 per cent. The first two showed an improvement over the pre-war level and the third a decrease, mainly due to the steady decline in Argentine purchases from Brazil, from 34,000 tons in 1937 to slightly over 16,000 in 1951. Although the Argentine maté plantations, cultivated in Misiones since the beginning of the century, are sufficient to supply the entire domestic demand—which stood at 130,000 tons in 1951—production is restricted by a quota system. This, in effect, has

[4] Bolivia, 5.4 millions; Brazil, 140; Chile, 28; Paraguay, 7; Peru, 24.

reserved part of the Argentine market for Brazil and Paraguay, in accordance with their requests as expressed in the respective trade agreements. Argentine imports from Paraguay, like those from Brazil, have also declined, from 5,600 tons in 1946 to only 1,400 in 1951.

In 1941, as a result of a trade agreement, Argentina and Brazil came to an understanding which protected Brazilian maté exports from the risk of eventual competition by the Argentine product on the Chilean market. When this agreement expired, Argentina began to export maté to Chile. During 1946–51, these exports covered 6.3 per cent of Chilean consumption, which averaged 8,300 tons a year during that period. During the first few months of 1952, there was a sudden rise in such Argentine shipments to Chile, amounting to 3,100 tons for the year, resulting from the more favourable exchange rate granted by Argentina to its maté exporters. This led the authorities of the Instituto Nacional do Mate in Rio de Janeiro to reduce the 12-cruzeiro-per-kilogramme tax on exports of this product by 50 per cent, to avoid losing the connexion with the Chilean market. Sales were renewed during the second half of the year, and Brazil's exports to Chile for that year amounted to 11,145 tons.

Tea produced in Brazil was exported to Chile for the first time in 1952, in a sample consignment of 81 tons.

Sugar absorbed 7.5 per cent of intra-zonal trade during 1946–51, with average annual values of 29.5 million dollars. Bolivia, Chile and Uruguay produce no sugar, and thus are consistent importers of this commodity. Sugar-cane is grown in Argentina, Brazil, Paraguay and Peru. Their total annual production approaches 2.6 million tons, which is equivalent to the entire southern zone consumption.

During 1946–50, sugar imports by Bolivia, Chile and Uruguay averaged almost 209,000 tons a year. Peru was the principal exporter, followed by Brazil, these two countries supplying 76 per cent of the requirements of the three importers. The remainder came from Cuba, with small amounts from the Dominican Republic and some countries outside the region. Chile, under a trade agreement signed with Cuba in 1952, agreed to purchase 60,000 tons of sugar a year at world prices. Under this agreement, Chile was able to reduce the dollar outlay for sugar imports from its northern neighbour, since, unlike Cuba, Peru imports relatively little from Chile.

Cattle and chilled and frozen meat are regularly exported by Argentina and Uruguay, while Paraguay, exports only canned meat. These items entailed payments of nearly 20 million dollars a year in intra-zonal trade during 1946–51. While such payments represented only about 10 per cent of the trade in foodstuffs, cattle were important in some bilateral sectors, particularly in Argentine-Chilean trade where they have long held a key position.

Per capita consumption in the zone corresponds to the pattern of the meat trade among the countries involved. Argentina and Uruguay, the main suppliers, show high consumption figures of 76.2 and 73.5 kgs. per capita respectively. Paraguay, which is also an exporter, but not to the zone, consumed 50.6 kgs. per capita in 1951. This was a decrease of 5.1 kgs. in relation to pre-war statistics. The respective consumption totals in Brazil, Chile and Peru were 17.9, 20.0 and 31.7 kgs. The problem of protein deficiencies in these three latter countries is evident from the low figures for beef supplies, which determine their need to import.

In Chile, aggregate meat consumption, including beef, mutton, pork and goat meat, has declined considerably during the last ten years, falling from 31.2 kgs. per capita in 1940 to only 25.8 in 1950. The decline in supplies is partly due to the drop in sales of live sheep from Argentine Patagonia to the Chilean refrigerating plants in Magallanes. Until 1946, about half a million Argentine sheep were added annually to the slaughter of Chilean animals. During the past five years, the six refrigerating plants at Argentine ports south of latitude 42 have been obliged to extend their purchases to the foothills of the Cordillera, despite the long trail over which the animals must be driven. This has resulted in a decrease in exports of sheep from that region to Chile, the total in 1951 having fallen to a fifth of the 1946 figure. The export quota set by Argentina in 1953 is 300,000 head of sheep.

Fresh and dried fruit constituted 4.4 per cent of the value of intra-zonal trade in 1946–51. Trade during that period reached an annual average value of 17.4 million dollars, mainly covering exports of temperate-zone fruit from Argentina, and Brazilian bananas, pineapples and oranges. Both countries, consolidating their long-standing trade in these products, signed a far-reaching fruit agreement in June 1950. Its chief clause consisted in eliminating the import permit requirement previously needed for each fruit consignment. Producers are thus no longer prone to uncertainties and eventual losses because of the perishable nature of the fruit, which cannot be subjected to the delays involved in obtaining import permits. The higher exchange rate which Argentina gave its exporters has also helped to increase this trade. Nevertheless, some difficulties appear to have arisen owing to the short period for the agreement, which is limited to one year and is not automatically renewable. In 1949, Argentina supplied 34,000 tons of apples, pears and grapes to the large Brazilian market for temperate-zone fruit, the total for the year from all sources being 42,000 tons. In 1951, following the previous fruit agreement, Argentina supplied nearly 67,000 of the 81,000 tons of these particular items imported by Brazil.

Chile's share of the intra-zonal fruit trade, in 1946–51, amounted to nearly 2 million dollars a year, chiefly based on exports to Brazil, to Peru and to a lesser extent to Uruguay, particularly of prunes. Brazilian bananas were first exported to Chile in 1952 in a trial consignment of 1,000 tons and have favourable prospects.

Among important foodstuffs, edible oils and fats play a more modest role in intra-zonal trade, despite a dietary deficiency of fats in all the countries except Argentina and Uruguay. These two countries supply a part of the demand in the other five countries. Brazil has occasionally sent fairly large consignments to Chile. Total imports of edible oils and fats by the five countries with deficits averaged 21,000 tons annually in 1946–51, at an approximate value of 16 million dollars. Of this amount, 11,000 tons, representing nearly 6 million dollars, came from Argentina and Uruguay, and the remainder from Europe and the United States.

(*b*) Raw materials

Most of the basic industrial raw materials traded within the southern zone are exported by countries deficient in foodstuffs. Since the intrinsic weakness of

intra-zonal trade, as seen above, appears to lie in the differing ability of the various countries to satisfy their individual requirements through such trade, it is of value to note the composition and evolution of this trade since 1939 and in particular the trade designed to supply countries exporting foodstuffs.

Table 4 shows that raw materials represented some 40 per cent of the value of foodstuffs in intra-zonal trade during 1946–51. A considerable advance in the relative importance of raw materials may also be noted, since they rose from 10.4 per cent of total trade before the war to 20.7 per cent in 1946–51. In the latter period, raw materials comprised annual average payments of 82.3 million dollars.

Table 6 summarizes the changing position of various raw materials and of two fuels in intra-zonal trade. Moreover, it indicates that the increased value of their trade, by contrast with the decline in foodstuffs, is mainly due to lumber, despite the higher relative expansion of copper and cotton. It also shows that there has been some slight progress in the diversification of the export trade in raw materials, since zinc, iron and steel have now been added to the pre-war commodities.

Within the raw materials group, the increasing demand for cotton, due to expanding textile industries in the southern zone, has raised this product's importance in intra-zonal trade. Argentina, Chile and Uruguay in 1946–51 imported an annual average of almost 21,000 tons from all sources. The cotton-exporting countries in the zone, Brazil and Peru, contributed 67 per cent of this total.

Lumber is the most important raw material traded. It is also second in importance, after wheat, of all commodities in intra-zonal trade and is almost the only one where production has increased because of greater trade. Lumber transactions in 1946–51 averaged 41.5 million dollars a year, more than a third of the total value of the zonal trade in raw materials, excluding foodstuffs. In contrast to the sizeable value of lumber exports, however, its position is weakened by the fact that sales depend mainly on one market, Argentina.

Until 1949, the main types of lumber exported by Brazil, Chile and Paraguay to Argentina differed in each case. This permitted specialized use of the lumber in Argentina for certain well-defined purposes: Brazilian pine for construction scaffolding, Chilean *raulí* for cabinet work and cedar from Paraguay for building timber. Since 1951, when Argentina gave Chile the same customs treatment granted to Brazilian pine after 1941, Chilean pine appeared in Argentina in fairly large quantities. This pinewood, however, scarcely affects the market for the Brazilian variety, since Chile's exports are mainly sent to the Andean provinces of Argentina, near the Chilean frontier. In 1946–51, Argentina purchased 75 per cent of Brazil's pinewood exports, and 69 and 80 per cent, respectively, of Chile's and Paraguay's total lumber exports. In these three countries, the curve of aggregate lumber exports closely follows any fluctuations in Argentine purchases. These imports decisively influenced the level of zonal lumber activity and this is clearly illustrated by the drastic reduction in the output of pinewood from Brazilian sawmills, as a result of the drop in sales to Argentina. In Chile, the adverse effects on lumber production of the decline in domestic building activity were partly offset by increased exports to Argentina, the quantum of which rose by 50 per cent between 1949 and 1951.

Copper is the most important raw material of mineral origin. Its trade is beginning to show the pressure of economic development towards increasing self-sufficiency within the region, in so far as essential goods are concerned. Although the value of copper exports was less than a third of lumber, its intra-zonal trade has increased relatively more since the pre-war period. Furthermore, its position in the trade pattern shows fundamental changes. Chile is now able to include copper in its trade agreements, since the system whereby the large foreign mining companies distributed copper abroad has been gradually changed to one whereby the state acquires the entire output and makes the exports. The inclusion of copper and the decisions as to the volume to be exported have acted as decisive factors in the conclusion of trade agreements between Argentina and Chile, as well as between Argentina and Peru.

Other common non-ferrous metals play a very small part in intra-zonal trade. The factor limiting trade under this heading is apparently that some zonal metals (apart from copper) are produced in forms unsuitable for the requirements of consumer industries. This is particularly the case with tin. Countries in the zone can obtain the raw material from Bolivia to produce solder and metal for bearings, but not the pure arsenic-free metallic product required for tinplate in which to preserve foodstuffs. Brazil and Chile import tin in increasing quantities from other regions.[5]

TABLE 6. INTRA-ZONAL TRADE IN PRINCIPAL RAW MATERIALS AND FUELS [a]

(Annual average of f.o.b. values in thousands of dollars)

	Exports to the zone in 1934–38	*Percentage of the total*	*Exports to the zone in 1946–51*	*Percentage of the total*
Raw materials				
Of agricultural origin:				
Non-edible oils and fats[b]	57	0.1	953	0.2
Cotton	395	0.4	9,697	2.4
Wool, hides and bristle	751	0.8	4,265	1.0
Lumber	2,716	2.9	41,509	10.5
Quebracho	495	0.5	1,629	0.4
Seeds	932	1.0	—	—
Of mineral origin:				
Sand and stones	1,652	1.7	1,110	0.3
Sulphur	185	0.2	274	0.1
Copper[c]	142	0.1	12,529	3.2
Cement	3	—	244	0.1
Tin, lead and zinc	339	0.4	2,612	0.6
Iron and steel	—	—	4,479	1.1
Nitrates	255	0.3	3,233	0.8
Fuels				
Coal	295	0.3	713	0.2
Petroleum	6,861	7.2	12,649	3.2
TOTAL	15,078	15.9	95,896	24.1

SOURCE: *Foreign Trade Yearbooks.*

[a] Intra-zonal trade exists for other raw materials. However, they are less important, being estimated at 10 per cent of the value of those in the table.

[b] Include some of mineral origin.

[c] Includes manufactured goods.

[5] Brazil requires approximately 1,000 tons of tin for making tinplate, and Chile 400 tons, annually. A smelter has been built at Volta Redonda, Brazil, with a capacity for refining 2,500 tons a year of domestic tin oxide.

The small trade in Peruvian electrolytic zinc is due, firstly, to the low requirements of the principal purchasing industry which produces alloys for manufacturing bronze and, secondly, to the fact that plants for galvanizing iron prefer to use fire-refined zinc. This is produced in Mexico and is usually cheaper than Peruvian electrolytic zinc.

In the case of lead, republics in the zone mainly satisfy their requirements by importing Mexican pig lead, although some electrolytic lead is purchased from Peru. Apart from its uses in welding, sanitary installations and some other marginal items, it provides a small amount of the raw materials for specialized manufacturing activities. Moreover, the long-established Argentine refining industry buys lead concentrates from the La Quiaca region in Bolivia and those produced in Chile by a lead-zinc mine close to the frontier at Aysen. Output from the latter will be processed at a metallic-zinc plant to supply the Chilean market.[6]

The decline in the trade of sulphur shows a marked contrast to the progress of industries using this deposit, particularly those producing superphosphates which account for most of the zonal sulphur consumption. This weakening of trade is mainly due to difficulties in Chile, the principal zonal producer, in quoting sulphur from high Andean deposits at world prices. Due to the distances and to difficulties in transporting the fuel required for thermal processing of the ore, among other factors, its costs are higher than quotations for the Texas product, which Argentina, Brazil and Uruguay usually import.

Chilean nitrate is acquiring importance in the trade pattern, particularly through the increased demand of Brazilian agriculture. Purchases by Brazil in the last two years resulted in the accumulation of balances in the payments mechanism between these countries. These balances exceeded Chilean importers' demand for foreign exchange to buy Brazilian products and therefore remained partly inactive. There were also increased Chilean nitrate exports to Argentina, although on a smaller scale, these being used only for fruit-growing and for some marginal crops.

(*c*) Fuels

Table 6 shows that the importance of petroleum has been halved since 1939. Stationary Peruvian output, coinciding with an increased domestic demand, has affected Peru's petroleum exports to the southern zone. During 1946–51, Bolivia exported an annual average of 12,873 tons of petroleum products to Argentina. Agreements by both countries concerning the construction of the Yacuiba-Santa Cruz railway, to be financed with an Argentine loan, were intended to increase the volume of the petroleum trade. Since 1951 Chile has sold crude oil, obtained from wells in Tierra del Fuego, to Uruguay. These are emergency exports which will cease when the refinery at Concón, near Valparaíso, has been completed.

Coal is imported by Argentina from Chile and Peru. Chilean exports, mainly consisting of fines, averaged nearly 23,000 tons a year in 1946–51, slightly lower than the pre-war figure. Exports from Peru, under a vigorous development programme, consist of anthracite produced primarily for delivery to Argentina in part-payment for wheat. This trade was conducted on the basis of return freights, but collapsed in 1952 when Argentina failed to produce a wheat surplus. In 1946–51, sales of Peruvian anthracite to Argentina averaged 31,011 tons a year. This total should be substantially increased in the future, under the Peruvian programme for expanding exports to the Argentine market.

(*d*) Manufactured goods

Official statistics are inadequate to judge the general evolution and trends of the trade in manufactured goods within the zone. The different standards followed in each country to classify the products which might be grouped under this heading make it difficult to form a broad basis for comparison, without undertaking detailed work within each series of national statistics. They were, however, the basis for the remarks in chapter I concerning the position of certain manufactured goods in the bilateral trade of some of the countries. It should, however, be noted that official statistics, covering lists of goods traded by different countries in the group, show that products in the initial stage of industrial development are gradually being excluded as between pre-war and present periods. Such products are leather goods, wooden appliances, textiles for home use and prepared foods. It can also be seen that during 1945–50 this same elimination process affected various manufactured goods which had lengthened the trade lists during the Second World War. In particular, the following articles have lost their importance: plywood, glass and earthenware, enamel ware, nuts and bolts, tubular and other products of the mechanical industry, school equipment, sports goods and pharmaceutical preparations. Cotton textiles, which took first place in the trade of manufactured goods, particularly those exported by Brazil, reached their highest figure in 1947. Thereafter they declined in importance, due to the expansion of textile industries in the other countries of the zone.

The weakening of intra-zonal trade in manufactured goods parallels the increasing quantitative restrictions (on imported products which are similar to those made domestically) being adopted in varying degrees by the major countries in the zone. The decline is also because these countries, in their mutual trade, seldom share in the exclusive quotas for imported manufactured goods which some of them grant or have tended to grant in favour of both Europe and North America. By selling in the latter markets some of their own exports which are hard to place, they may accept in exchange imported goods which are normally prohibited.

[6] This project is still under study, with no final decisions having yet been made.

TABLE 7. PERCENTAGE IMPORTANCE OF ZONAL TRADE

	Exports to				*Imports from*			
	Latin America		*World*		*Latin America*		*World*	
	1934–38	*1946–51*	*1934–38*	*1946–51*	*1934–38*	*1946–51*	*1934–38*	*1946–51*
Argentina	97.4	92.5	8.4	12.6	90.7	82.6	8.9	12.6
Bolivia	99.7	98.4	3.3	2.7	96.9	96.9	31.5	40.7
Brazil	98.3	96.4	7.0	10.1	94.5	93.6	15.0	10.5
Chile	73.4	77.3	3.4	12.3	78.9	77.1	12.2	25.3
Paraguay	99.7	90.4	29.8	41.6	79.5	79.6	44.3	39.1
Peru	95.6	78.9	14.2	30.9	87.5	85.6	9.8	13.8
Uruguay	97.3	85.2	13.2	5.5	86.4	93.2	14.7	21.6
TOTAL FOR ZONE	96.0	89.9	8.2	12.0	90.4	86.2	12.2	14.5

SOURCE: *Foreign Trade Yearbooks.*

TABLE 8. PRE-WAR TOTALS AND BALANCES OF VISIBLE INTRA-ZONAL TRADE

F.o.b. values in thousands of dollars

(Average 1934–38)

Exporting countries	*Importing countries*							*Total exports to zone*	*Percentage of total exports to zone*
	Argentina	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*		
Argentina	—	2,329	30,004	3,323	3,533	3,403	2,924	45,516	47.9
Bolivia	721	—	253	93	2	45	39	1,153	1.2
Brazil	13,947	33	—	796	58	30	6,488	21,352	22.5
Chile	1,914	622	534	—	4	1,113	169	4,356	4.6
Paraguay*	2,098	1	10	3	—	—	181	2,293	2.4
Peru	3,198	906	1,545	4,489	1	—	974	11,113	11.7
Uruguay	6,196	—	2,813	38	101	9	—	9,157	9.6
TOTAL IMPORTS FROM ZONE	28,074	3,891	35,159	8,742	3,690	4,600	10,775	94,940	100.0
Percentage of total imports from zone	29.6	4.1	37.0	9.2	3.9	4.8	11.3		
				Trade balances					
Argentina	—	−1,608	−16,057	−1,409	−1,435	− 205	+3,272		
Bolivia	+ 1,608	—	− 220	+ 529	− 1	+ 861	− 39		
Brazil	+16,057	+ 220	—	− 262	− 48	+1,515	−3,675		
Chile	+ 1,409	− 529	+ 262	—	− 1	−3,376	− 131		
Paraguay	+ 1,435	+ 1	+ 48	+ 1	—	+ 1	− 80		
Peru	+ 205	− 861	− 1,515	−3,376	− 1	—	− 965		
Uruguay	− 3,272	+ 39	+ 3,675	+ 131	+ 80	+ 965	—		
+ Balance	20,714	260	3,985	661	80	6,718	3,272	35,690	
− Balance	3,272	2,998	17,792	5,047	1,486	205	4,890	35,690	
NET BALANCE	+17,442	−2,738	−13,807	−4,386	−1,406	+6,513	−1,618	±23,995	

SOURCE: *Foreign Trade Yearbooks.*

* C.i.f. values.

TABLE 9. POST-WAR TOTALS AND BALANCES OF VISIBLE INTRA-ZONAL TRADE

F.o.b. values in thousands of dollars

(Average 1946–51)

Exporting countries	*Importing countries*							*Total exports to zone*	*Percentage of total exports to zone*
	Argentina	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*		
Argentina	—	9,160[a]	86,123	28,053	10,349[a]	16,210	12,366[a]	162,261	40.0
Bolivia[b]	1,889	—	251	201	20	192	5	2,558	0.6
Brazil	94,378	893	—	9,888	1,669	1,386	16,926	125,140	31.6
Chile	17,888	2,761	10,462	—	165	2,882	2,315	36,473	9.2
Paraguay[a]	9,372	2	15	—	—	11	2,078	11,478	2.9
Peru[c]	6,830	5,941	1,136	26,944	11	—	6,859	47,721	12.0
Uruguay	3,416	311[a]	6,393	137[a]	354[a]	215[a]	—	10,826	2.7
TOTAL IMPORTS FROM ZONE	133,773	19,068	104,380	65,223	12,568	20,896	40,549	396,457	
Percentage of total imports from zone	33.7	4.8	26.3	16.5	3.2	5.3	10.2	100.0	
	Trade balances[d]								
Argentina	—	− 7,271	+ 8,255	−10,165	− 977	− 9,380	− 8,950		
Bolivia	+ 7,271	—	+ 642	+ 2,560	− 18	+ 5,749	+ 306		
Brazil	− 8,255	− 642	—	+ 574	−1,654	− 250	−10,533		
Chile	+10,165	− 2,560	− 574	—	− 165	+24,062	− 2,178		
Paraguay	+ 977	+ 18	+ 1,654	+ 165	—	—	− 1,724		
Peru	+ 9,380	− 5,749	+ 250	+24,062	—	—	− 6,644		
Uruguay	− 8,950	− 306	+10,533	+ 2,178	+1,724	+ 6,644	—		
+ Balance	36,743	18	21,334	5,477	1,724	36,455	306	102,057	
− Balance	8,255	16,258	574	34,227	2,814	9,630	30,029	102,057	
NET BALANCE	+28,488	−16,510	+20,760	−28,750	−1,090	+26,825	−29,723	± 76,073	

SOURCES: Argentina, Bolivia, Chile and Peru: *Foreign Trade Yearbooks*. Brazil and Paraguay: *Statistical Yearbook*. Uruguay: *Report of the Comptroller of Exports and Imports*.

[a] Average 1946–50. [b] Average 1946–49. [c] 1951 January to November.

[d] The + or − signs refer in each case to the countries heading the columns.

TABLE 10. INTRA-ZONAL EXPORTS OF PRINCIPAL FOODSTUFFS

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

	Exporting countries							*Total intra-zonal trade*	*Percentage importance of each product over total exports to zone*
	Argentina	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*		
				Average 1934–38					
Total exports to zone	45,516	1,153	21,352	4,356	2,293	11,113	9,157	94,940	100.0
Products exported									
Sugar	321	—	142	—	—	2,837	—	3,300	3.5
Edible oils and fats	137	—	—	—	—	—	—	137	0.1
Cocoa	—	—	580	—	—	—	—	580	0.6
Coffee	—	—	3,837	—	—	80	—	3,917	4.1
Fruit	429	—	1,452	921[a]	—	7	—	2,809	3.0
Cattle	1,876	222	—	—	—	28	1,792	3,918	4.1
Wheat and flour	34,277	—	—	400	—	—	2,136	36,813	38.8
Maté	14	—	4,696	—	377[b]	—	—	5,087	5.4
Total exports of important foodstuffs to zone	37,054	222	10,707	1,321	377	2,952	3,928	56,561	59.6
Percentage share of each country in exports of foodstuffs to zone	65.5	0.4	18.9	2.3	0.7	5.2	6.9	100.0	
Total of important foodstuffs over total exported to zone	81.4	19.3	50.1	30.3	16.4	26.6	42.9	59.6	
				Average 1946–51					
Total exports to zone	162,261	2,558	125,140	36,473	11,478	47,721	10,826	396,457	100.0
Products exported									
Sugar	89	—	4,114	—	—	25,344[c]	—	29,547	7.5
Edible oils and fats	6,727	—	588	—	—	—	73	7,388	1.9
Cocoa	—	—	4,110	—	—	—	—	4,110	1.0
Coffee	—	—	20,916	—	—	—	—	20,916	5.3
Fruit	10,108	—	5,303	1,976	—	—	—	17,387	4.4
Cattle	18,849	144[d]	—	—	357	—	240[e]	19,590	4.9
Wheat and flour	81,889	—	—	38	—	—	4,426	86,353	21.6
Maté	131	—	7,766	—	705	—	—	8,602	2.2
Total exports of important foodstuffs to zone	117,793	144	42,797	2,014	1,062	25,344	4,739	193,893	48.9
Percentage share of each country in exports of foodstuffs to zone	60.8	0.01	22.1	1.1	0.5	13.1	2.4	100.0	
Total of important foodstuffs over total exported to zone	72.6	5.6	34.2	5.5	9.3	53.1	43.8	48.9	

SOURCE: *Foreign Trade Yearbooks.*

[a] Includes: Fruits, root and other vegetables. [b] 1938. [c] Average 1946–49. [d] Average 1947–49. [e] Average 1946–50.

Chapter III

TRADE POLICY

1. Introduction

In recent years the trade policies of the seven countries in the southern zone of Latin America have shown both marked differences and similarities. The differences lie mainly in the decisions adopted by these countries in relation to the General Agreement on Tariffs and Trade; some have joined the multilateral system proposed under the agreement and others have not. The similarities lie in the common tendency, with the possible exception of Peru, towards negotiating bilateral trade agreements for the quantitative exchange of goods. These agreements are usually of short duration and the values involved are settled through the compensation mechanism described in chapter IV. Recently some bilateral agreements have been made on a barter basis, particularly as a result of the policy of the food-exporting countries. Such countries are faced by the need to improve supplies of certain goods essential to their economic development. They require the importing countries to supply, against the foodstuffs or at least for a substantial part of their value, goods which are equally essential.

In the past the basic trade policies of the countries within the zone were almost identical and followed the principle of ensuring that exports to the great industrial centres should not be subject to tariffs higher than those applied to similar products from other regions. In compensation for the treatment granted to the region's primary goods by the principal purchasers, these received a reciprocal guarantee that their exports to Latin America should not be subject to higher tariffs than those granted to another State for the same merchandise. Thus, the so-called most-favoured-nation clause was usually included, on a reciprocal basis, in the trade agreements ratified between Latin America and the countries of Europe or North America. This clause was frequently unconditional, but did not recognize the right of countries outside the region to enjoy the exclusive tariff reductions granted to other Latin-American republics, particularly neighbouring ones. Nevertheless, there were in fact few incentives for regional or zonal trade relations arising out of this exception to the most-favoured-nation clause. Exclusive privileges applied principally to frontier traffic such as that which Brazil and Uruguay regulated by the treaty of 1933, modified later in 1935. They also covered a few specialized natural commodities, particularly foodstuffs. This was the case of the 1938 agreement between Argentina and Chile by which Chile allowed 60,000 head of cattle to enter free of duty each year. Regional trade, not specifically mentioned within the reciprocal reductions or exemptions laid down in the respective bilateral agreements, was subject to tariffs under the most-favoured-nation clause. In other words, they were subject to the same tariffs as similar products from other parts of the world.

For a century, there have been various unsuccessful attempts to introduce broad regional preferences or exclusive bilateral agreements. But the main concern of trade policy has been to defend the flow of exports of primary products to the large consuming centres. A careful study of the commercial treaties during the early period shows that eight such agreements, granting specific preferences to neighbouring States or to the entire region, were not ratified. They are listed, and their aims summarized, in table 13 at the end of this chapter. In some cases, it becomes clear on analysis that ratification was not possible due to contractual obligations with countries purchasing the primary regional commodities.[1] A similar fate has befallen several recommendations made during international meetings. These proposals included the adoption of exclusive preferences of different kinds, covering both tariffs and exceptional reciprocal treatment to favour new branches of production. There were other proposals, intended to be the first steps towards the gradual construction of an economic policy for the zone or between its component countries. Table 14, at the end of this chapter, briefly summarizes these proposals. Certain broad preferences which had been ratified to foster the flow of trade, and in some cases transport of goods by national shipping lines, were not renewed upon expiration, for example the Chilean-Argentine agreement in force between 1856 and 1868.[2] Notwithstanding various attempts at the government level, no customs unions were introduced within the region or within sectors of the southern zone of Latin America constituting natural geographic units, such as the River Plate basin or the Patagonian territories of Chile and Argentina south of latitude 42.[3] Bilateral preferences between neighbouring States thus continued to be restricted almost exclusively to foodstuffs and certain other natural products, since this trade does not particularly attract suppliers outside the area.

[1] The clause in the treaty of free exchange for food products between Argentina and Paraguay, in 1936, and exclusive reciprocal exemptions agreed upon in the Chilean-Argentine *modus vivendi* of 1932, could not be maintained and remained inoperative, due to prior obligations with third parties, which had previously been granted unconditional most-favoured-nation treatment.

[2] In this treaty both countries agreed upon "perfect reciprocity and free concurrence of industries". Moreover, they established absolute customs exemption for land traffic under the "Free Cordillera" system; preferential tariffs for products transported by sea, and freedom for transit trade.

[3] There are certain similarities between the systems of customs exemption applied by Argentina and Chile, without discrimination, to certain essential goods imported into their territories. In 1945 both countries considered, without reaching an agreement, the possibility of establishing a customs union for their territories south of latitude 42. As a preliminary step towards successive stages of trade expansion, the union contemplated: (*a*) reciprocal elimination of duties for non-competitive goods; (*b*) gradual reduction of duties on semi-competitive goods; and (*c*) gradual reduction, at a later stage, for competitive goods.

For the remaining goods, covering the main items of trade with countries outside the region, the most-favoured-nation clause continued to prevail, that is, a tariff system which basically reflected the principal concern to maintain conditions for fostering basic exports to world markets.

2. Evolution of trade policy

The description of the zonal trade structure contained in chapter II shows that products forming the main basis for bilateral trade were certain foodstuffs essential to the importing country: Argentine wheat for Brazil, Bolivia, Paraguay and Peru; Argentine cattle and meat for Chile and Peru; and Peruvian sugar for Chile. These goods often enjoyed tariff reductions or exemptions, which the importing countries tended to grant individually, owing to the essential nature of the foodstuffs for their domestic needs. Incentives were thus provided which strengthened their traditional trading importance. After 1930, this system was supplemented by the incentive for preferential exchange rates. Conversely, products exported by countries suffering from a deficit in foodstuffs were, with one or two exceptions, accorded tariff treatment equal to that granted to similar goods originating in highly-developed manufacturing centres in Europe and North America. For this reason, often allied to cheaper ocean freight rates, such goods could be quoted at prices ensuring their preferential position on the market.

The prevailing tariff system, based on the most-favoured-nation clause, provided no means to compensate for the disadvantages of lower productivity. The trade agreements reciprocally entered into by the countries of the southern zone were thus weakened and such instruments were usually ineffective in correcting the disequilibrium due to the different position of each party in the mutual trade.

Document E/CN.12/165, "Trade trends and policies in Latin America", presented at the third session of the Economic Commission for Latin America held at Montevideo in 1950, adequately analysed the origins of the evolution brought about in trade policy by the simultaneous effects of, firstly, the decline in the capacity to import and, secondly, the increased demand for imports stimulated by industrial development. To prevent these factors from prejudicing the rate of growth of real income, trade policy became more complicated, with the dual object of restricting or containing the capacity to import and to protect industrial expansion. Under the impact of this new turn of events, customs tariffs, previously employed for fiscal reasons, began to be used with a view to protection. In fact, the rise in tariffs was theoretical, partly because current obligations with third parties for the reduction or freezing of duties (which were applied multilaterally under the most-favoured-nation clause) limited the efficiency of this method of protection. In some countries, particularly in Argentina, duties became a declining tax because of the rigid system of valuation, the relatively lower yield being offset by revenue derived from profits arising from the different exchange rates.[4] In order to bring imports to a level in harmony with the balance-of-payments position and to prevent certain foreign imports from competing with domestically-produced merchandise, preference was given to the introduction of direct methods of quantitative control on the entry of foreign goods. These became subject to restrictions, quotas, import permits, differential exchange rates and, in some cases, to prohibitions.

[4] Table 11 represents the different level of the average incidence on taxed merchandise in Chile and the United States. It should be noted that in both cases, when computing the values, those corresponding to duty-free goods have been omitted.

TABLE 11. COMPARISON OF TARIFF TREATMENT OF IMPORTS TAXED IN CHILE AND THE UNITED STATES, IN 1946

(Values in thousands of dollars)

	Free	*Taxed*	*Total*	*Customs duties*
Chile	23,484	173,451	196,935	28,593
Percentage of customs duties on imports	—	16.5	14.5	—
United States	2,934,955	1,889,946	4,824,902	477,854
Percentage of customs duties on imports	—	25.3	9.9	—

SOURCES: *Anuario de Comercio Exterior de Chile* and *Foreign Trade and Commerce of the United States.*

There was considerable flexibility in the new means for the discriminatory regulation of foreign trade. Such measures could be applied without limitations arising out of treaties with other countries, since the contracted obligations covered only customs treatment and, in exceptional cases, quotas for products. These means of regulation, being outside the scope of the most-favoured-nation clause, thus enabled trade operations to be conducted on a bilateral basis by means of simple administrative decisions. The need for adaptation to the method of compensation fostered by the European countries during the period between the two World Wars, had a considerable influence on the introduction of these new methods, the fulfilment of which largely remained in the hands of exchange control authorities.

As customs agreements lost ground as instruments for conducting foreign trade, the policy progressively departed from such agreements and began to be conducted entirely on the basis of exchange regulations. Thus all the republics in the southern zone, transferring their mutual trade relations to a new sphere, commenced to conclude agreements for the quantitative exchange of products. These agreements usually cover foodstuffs delivered in exchange for primary goods for industrial uses, to which a certain tonnage of less essential goods may sometimes be added. The inclusion of such goods in the agreements is due either to the importing country's wish to meet the price of foodstuffs, or to an attempt to foster exports of manufactured goods which industrial growth produced as a surplus to domestic consump-

tion. Some of the factors mentioned in chapter IV, which deals with the principal payments problems of the southern zone, have often hampered the fulfilment of agreements covering the quantitative exchange of basic products. This was particularly the case with non-essential goods, which were very sensitive to price competition from more industrialized countries. Furthermore, such goods seldom or never entered into the "linked" or similar operations described in chapter I. Nevertheless, in some bilateral channels (particularly those of Argentina and Brazil, where payments problems were less important) quantitative exchange agreements appear to have had a direct influence upon the strengthening and expansion of trade in the southern zone.

These new methods for conducting foreign trade gave rise to some decided forms of zonal preference. Several agreements were signed, some of them for six years' duration, between Brazil, on the one hand, and Argentina, Chile, Paraguay and Uruguay. Under them, within the variations corresponding to each bilateral sector, it was agreed to purchase from Brazil a given quantity of cotton textiles and to consult that country before purchasing such merchandise elsewhere, when offered at lower prices.[5] Argentina, in turn, in handling a similar type of clearing agreement with Bolivia, Chile, Paraguay, Peru and Uruguay, introduced a system of automatic permits for imports of given merchandise, although in the last two years it has been restricted through difficulties arising in the Argentine balance of payments. Argentina and Brazil, as mentioned in chapter II, agreed in 1950 on a procedure for mutual exemption from import permits in their fruit trade. The decisively favourable influence which this caused on such trade clearly showed that this type of exemption could facilitate an effective form of preference. In 1952 Chile had credit balances with Argentina and Brazil and thus as an exception, continued to admit some of their goods without permits.

Although such contemporary trade policies still lack a precise structure and are somewhat limited in application, it cannot be denied that these steps do indicate an initial approach to new trade formulas.

3. The General Agreement on Tariffs and Trade

During the last three years, the different positions adopted by countries of the zone towards the General Agreement on Tariffs and Trade have introduced fundamentally contradictory elements within the over-all trade policy. Because of these, foreign trade measures designed to assist regional preferences are somewhat subordinated to new international obligations outside the actual zone.

It will be recalled that the General Agreement, in which thirty-four countries are associated for the provisional application of some of the regulations contained in the Havana Charter, extends the effects of the unconditional most-favoured-nation clause to all Contracting Parties, with certain exceptions formulated at the time of ratification. This clause favours a long list of merchandise included in *ad hoc* bilateral negotiations between the Contracting Parties, both at the meetings which led to the agreement and others held later. The most-favoured-nation clause of the agreement, however, extending beyond the field of tariffs to which it had usually been restricted in bilateral treaties, now comprises all foreign trade resources for which contractual obligations were only occasionally accepted in the past. Brazil and Chile, for instance, had introduced in their convention on economic co-operation, signed in 1947 and ratified in 1952, a clause by which each party assured the other of a relative share in the supply of given products, should imports of such goods be restricted by quotas. Argentina and Brazil had also undertaken similar obligations. Now the most-favoured-nation clause of the General Agreement establishes the interdependence of all Contracting Parties, who automatically enjoy benefits granted by any of them to a third State, whether or not that State is a party to the General Agreement. Moreover this ruling covers quotas, permits, tariffs or other benefits. If any of the Contracting Parties to the GATT wishes to assume special obligations with a neighbouring country, or to establish a customs union which had not been excepted upon accession to the Agreement, such steps, under the terms of the Agreement, require prior consultation with the other members. The consultation has to include a plan for the new customs or free-trade area,[6] providing that duties or regulations "shall not on the whole be higher or more restrictive than the general incidence of the duties and regulations of commerce applicable in the constituent territories prior to the formation of such union".

Of the twenty Latin-American republics, Brazil, Chile, Cuba, the Dominican Republic, Haiti, Nicaragua, Peru and Uruguay[7] signed the General Agreement on Tariffs and Trade. Colombia, Costa Rica, El Salvador and Mexico sent observers to its meetings. In the southern zone of the region, Argentina, Bolivia and Paraguay remained outside the new body.

No precise official information is available regarding the reasons for each national attitude towards the GATT. In Brazil, Chile and Peru the opinion seems to have prevailed that, within the over-all advantages and limitations which it offered, respective national interests could best be defended through participation in the Agreement, particularly in relation to the safeguarding of basic exports to traditional consuming centres. Moreover, Brazil and Peru, before ratifying their accession and undertaking the respective bilateral tariff negotiations with the other members, were permitted to raise their customs tariffs, so that the negotiations could be based on a higher tariff level. They apparently wished by this means to avoid inequalities resulting from the reciprocal tariff reductions which they would have to agree upon with the European and North American countries once they had acceded to the Agreement. As those reductions mainly referred to primary goods, on the one hand,

[5] The rapid advance of domestic textile industries within the zone and some difficulties in the consultation mechanism meant that these agreements were not in practice applied to any great extent.

[6] Article XXIV of the agreement defines a customs union as "the substitution of a single Customs territory for two or more Customs territories, so that (i) duties and other restrictive regulations of commerce . . . are eliminated with respect to substantially all the trade between the constituent territories of the union, . . . and (ii) substantially the same duties and other regulations of commerce are applied by each of the members of the union to the trade of territories not included in the union".

[7] On 1 November 1952 the respective ratification was still awaiting approval by the Uruguayan Parliament. At the seventh meeting of the Contracting Parties to the General Agreement, held in Geneva in October–November 1952, the period granted to Uruguay for acceding to the Protocols of Annecy and Torquay was extended to 30 April 1953.

TABLE 12. BRAZIL: STRUCTURE OF FOREIGN TRADE

(Percentages of total value; average 1945–49)

	Exports	*Imports*
Cattle on the hoof	0.0	0.3
Raw materials	36.7	24.2
Foodstuffs	56.4	18.8
Manufactured goods	6.9	45.8

SOURCE: *Foreign trade statistics*, Brazil.

and to manufactures,[8] on the other, and as demand for the latter is very sensitive to price movements arising from the tariff reduction (which is seldom the case with the former), they appear to have sought in the formula of the prior raising of tariffs an element for counteracting the inequality of its effects. Moreover, the percentage importance of customs incidence on the total value of imports, in the case of Brazil, which averaged only 10.8 per cent in 1946, was no more than 8.2 per cent in 1949, when it joined the GATT.

Peru, in turn, which since 1931 had an agreement with the United Kingdom substantially reducing the duties on numerous British goods, could now place these at the level of the new tariffs. This increase in duties was, however, confined to goods usually prohibited due to balance of payments difficulties. Such goods could be imported exceptionally from Great Britain and were not subject to the prohibitions because sterling was available.

Chile, which maintains a tariff system based on gold, upon acceding to the GATT, did not forego its right to continue automatically to raise customs duties on a par with currency devaluation.

There appeared to be additional considerations for Uruguay joining the GATT. The agreement with the United States in 1942, which had an important bearing on the wool trade with that country, led to low customs duties for a large range of 151 articles from the United States, among which were goods which Uruguay now produces domestically, following diversification programmes. Most of the goods covered by the United States agreement remained, after 1942, outside the scope of any tariff increase, as that agreement, through circumstances at the time of signature, simultaneously consolidated the rate and the valuation, so that the duty was specific instead of *ad valorem*.

Under the most-favoured-nation clause, all the countries supplying Uruguay with products similar to those included in the United States agreement, enjoyed practically the same benefits, without the need for bilateral arrangements with Uruguay, which consequently found its margin of international negotiation narrowed. Since the General Agreement, the United States Government believes in negotiating new customs treaties only within the Agreement,[9] so that it seemed unlikely that the treaty between Uruguay and the United States could be modified by direct bilateral understanding. Uruguay's accession to the GATT caused the possibility, which occurred later, for a partial modification of the agreement with the United States. Thus, negotiations conducted within the terms of the Agreement replaced the previous specific duty for some goods by an *ad valorem* rate, based on valuations determined by any possible changes in the real price of these goods.

Responsible sources in Buenos Aires indicate that Argentina's abstention from the GATT was due to the conviction that prevailing international trade conditions made it premature for certain countries to accept the obligations imposed by the Agreement, if their payments position depended upon world market prices for certain products in the world market and upon the extent of convertibility of payments for such products. A further consideration may have been that the incentive required at the present stage of industrial growth made it inadvisable to hamper the expeditious use of the protective measures necessary to support a given manufacturing activity.

4. Repercussions of the GATT

The scope of the obligations contracted under the General Agreement and the repercussions thereof are only now becoming evident. Brazil, upon signing the Agreement, excluded from its obligations to other Contracting Parties the special tariff benefits granted to Paraguay for certain products. Chile formulated reserves concerning its obligations with Argentina, Bolivia and Peru, based on the neighbouring-country formula, while Peru made a similar reservation regarding Chile. Uruguay also reserved certain exclusive treatment previously recognized for Paraguay. Argentina, Bolivia and Paraguay, without acceding to the Agreement, acquired the right, under the unconditional most-favoured-nation clause included in their treaties with Brazil and Chile, to enjoy all customs or any other privileges which these Republics might contract with third powers through that instrument.

Although Chile, as already mentioned, joined the Agreement with the reservation covering customs preferences contracted with neighbouring countries, some of the Contracting Parties requested from Chile the same exceptional benefits granted under the 1932 treaty with Argentina and the protocol of 1938 to certain Argentine goods, including an exemption from the increased duties which automatically result, since 1932, from Chilean currency devaluation. These requests were based on the fact that under the GATT mechanism the unconditional most-favoured-nation clause included in the provisional treaty of 1942 between the United States and Chile gave all Contracting Parties access to the preferential Argentine-Chilean system, with the sole exception of concessions covering the small frontier traffic. Although all the Contracting Parties were provisionally and without exception granted the same preferential treatment as Argentina by the Chilean customs, since the end of 1952 such treatment was restricted to Argentina alone, as the result of a study carried out on this subject.

Also in the case of Chile, other Contracting Parties to the Agreement claimed the same treatment given to Peru by an agreement of 1951, by which Chile would purchase 5,000 tons of Peruvian cotton in

[8] The case of Brazil, mentioned above, and set forth in table 12, is typical.

[9] This was not an absolute rule, however, as the 1939 agreement between the United States and Venezuela was modified in 1951 outside the terms of the General Agreement. This was due to the abrogation of the treaty between Mexico and the United States; imports of Venezuelan petroleum to the United States had enjoyed, under the most-favoured-nation clause, the same low duties as Mexican petroleum. Apparently, to avoid the price movement provoked by the abrogation of this latter treaty, the agreement with Venezuela had to be modified.

exchange for a similar quantity of Chilean steel, based on a reciprocal reduction of duties for these specific tonnages. Similar requests were also received in Santiago from Contracting Parties in relation to the treaty between Chile and Cuba, signed at the beginning of 1952, under which Cuba, within certain quantitative arrangements, was to supply most of Chile's tobacco imports.

The more anomalous effect of the GATT, however, lies in the different position in which countries within the zone are placed for purposes of exclusive preferences or eventual customs unions such as that considered on several occasions by Argentina and Chile and which received renewed official attention at the beginning of 1952. These differences depend on whether or not the countries are Contracting Parties. In the case of Argentina and Chile, a situation may arise analogous to that recently observed in Central America, between Nicaragua, which is a Contracting Party to the GATT, and El Salvador, which is not. Both concluded, in August 1951, a treaty designed to establish a free trade area between the two countries under the rules of article XXIV of the Agreement.[10] The authorization of the Contracting Parties was extended to Nicaragua at the sixth meeting, at Torquay. A proviso was made that annual reports be submitted by the Parties on the measures adopted in accordance with certain articles of the treaty. These articles reserve the right to impose quantitative import restrictions on specific merchandise and to introduce modifications in the lists of products benefiting from customs exemptions covering exports and imports from one country to another.

From the foregoing, it appears that the General Agreement's immediate repercussions on trade relations in the southern zone, as far as may be judged in the brief period which has elapsed, is a tendency to revert, at least theoretically, to the former predominance of the unconditional most-favoured-nation clause, extended now to arrangements for the quantitative exchange of products, and to non-customs bilateral preferences.

5. The GATT and manufacturing development

Responsible sources indicate that, to varying degrees, there is concern in Brazil, Chile and Uruguay, over the difficulty of harmonizing manufacturing development programmes with certain obligations contracted under the General Agreement. These obligations impose prior requirements to be fulfilled by an importing Contracting Party before applying quantitative restrictions which differ from those permitted under the Agreement, in cases of serious disequilibrium in the balance of payments and until normal conditions are restored.[11]

It will be recalled that there must be prior consultation by those countries wishing to protect development programmes by reserving certain sectors of the domestic market entirely or partially for domestic industry and therefore proposing indiscriminate import restrictions affecting goods on which duties had previously been agreed with Contracting Parties to the Agreement. Such consultations may lead to full approval of the proposals, or to negotiations for a substitution of products in the lists of reciprocal reductions. Such, for instance, was the case of mine fuses, where Chile had reduced duties for imports from Great Britain in return for tariff concessions granted by that country, under the Agreement, to Chilean products. When proposing to restrict such imports in support of its own fuse-producing industry, Chile had first to reach agreement for withdrawing them from the list of mutual reductions concluded with Great Britain, which in turn nullified the tariff reduction on Chilean beans.

Where the reply to consultation regarding projected restrictive measures is negative, the regulations nevertheless appear to permit support of given domestic industrial activities to foster their development (through quantitative import restrictions on similar foreign products), to extend beyond periods of balance-of-payments difficulties, under conditions which in practice amount to protection. In Chile and Uruguay, however, and particularly in Brazil, the delay inherent in the consultative procedure, the uncertainty as to the results, and the difficulties offered by adjustments designed to substitute merchandise of equivalent customs importance in the lists of reciprocal reductions, are indicated as discouraging psychological factors, which might to some extent adversely affect given industrial enterprises. Furthermore, it has been maintained more than once that different conditions would be established for industries in countries with similar economic structures, according to whether or not they are contracting parties to the GATT. Those countries outside the GATT are exempt from the problems of reconciling manufacturing development programmes with the requisites imposed by the Agreement for the application of measures to defend those programmes. The Confederation of Brazilian Industries, in 1951, requested the Government of Brazil to renounce its membership of the GATT, because it was felt that its application would, for some years at least, be incompatible with the interests of domestic economic

[10] On 21 February 1953 Argentina and Chile reached a combination of the agreement in which, after expressing the conviction "that by means of financial resources, the establishment of a common market and the co-ordination of the economic development of both countries, they might reach an increase in total production much greater than that which would result from the isolated action of Chile and Argentina", the following clauses are contained:

"1. Both Governments shall draw up economic plans with a view to achieving the objectives contained hereunder, permitting commercial interchange to reach its broadest scope; co-ordinate the respective productions and the commerce of their articles increasing exportable surpluses; foster the industrialization process by capital contributions and all other resources within the range of the respective Governments and, in short, complement the economies of Chile and Argentina;

"2. As a fundamental part of these economic plans, the Governments of Chile and Argentina shall negotiate, within a period of 120 days from this date, a treaty tending towards the gradual elimination of Customs duties, taxes, exchange margins, excessive rates, and any other measure which burdens or restricts imports or exports between the two countries;

"3. Moreover, within the same period, the Governments of Chile and Argentina shall agree to facilitate as far as possible payments between the two countries, particularly in order to derogate or modify prevailing regulations on exchange rates, transfer of funds, distribution of foreign exchange, administrative and banking procedure which hamper such payments; and

"4. The preceding system, to which both Argentina and Chile hope the other neighbouring countries will adhere, shall be susceptible of integration with the other countries in the continent".

[11] At the seventh meeting of the Contracting Parties to the General Agreement, in October–November 1952 at Geneva, regulations were adopted for holding consultations with Brazil and Chile concerning their import restrictions.

development.[12] Brazilian sources familiar with both trade and industrial aspects of these problems admit that adaptation of industrial development programmes to the obligations arising out of the GATT presents considerable difficulties, particularly if there should be any decline in balance of payments problems. Nevertheless, the period which has elapsed since the Agreement came into force has been too short to illustrate with any clarity the scope of the regulations or their degree of adaptability to the requirements of economic development. Moreover, responsible circles have suggested that the undertaking in the recently ratified convention on economic co-operation between Brazil and Chile, to study the over-all problems arising out of the General Agreement, might be undertaken on a broader plane. This might perhaps be effected through a committee for Latin-American Contracting Parties to the GATT. Its aim should be to seek methods of reconciling the objectives of joining the Agreement with the interests of economic development and of inter-Latin-American trade.

[12] At the seventh meeting of the Contracting Parties to the GATT, held in Geneva from 2 October to 10 November 1952, Brazil stated that it had set up a commission to revise its customs tariffs, with a view to adjusting them to the country's present economic conditions and in order to give more concrete shape to Brazil's accession to the General Agreement.

TABLE 13. COUNTRIES IN THE SOUTHERN ZONE OF LATIN-AMERICA: REGIONAL PREFERENCES IN UNRATIFIED TREATIES

Year	*Contracting Parties*	*Synthesis of preferences*
1852	Argentina-Portugal	Argentina excludes the privileges "which trade with the countries of the River Plate and its tributaries enjoys or may enjoy".
1856	Uruguay-Prussia	Uruguay excepts the advantages granted or to be granted to neighbouring States.
1856	Argentina-Paraguay	Both countries decide that products they exchange shall not be taxed higher than their national products.
1859	Argentina-Bolivia	The Contracting Parties agree to the free and reciprocal trade of their products, exempting them from import and export duties.
1898	Brazil-Chile	Both countries agree on mutual free trade, without any duties, for products enumerated in an *ad hoc* list. They agree to maintain an exceptional preference clause favouring the American countries, and each grant national treatment on a reciprocal basis, to the ships of the other.
1935	Argentina-Brazil	The treaty lists articles exempt from duty or subject to consolidation, and sets forth the mutual obligation of both republics to include each other, reciprocally and fairly, in the enjoyment of quotas or contingents which either may establish for third parties.
1940	Argentina-Brazil	The Contracting Parties agree "not to practise any policy such as barter or compensation which artificially diverts the course of Argentine products in Brazil (wheat and flour) and of Brazilian coffee, cocoa, rice, maté, tobacco and timber, in Argentina.
1946	Argentina-Chile	Institutes the "Free Cordillera" system.

SOURCE: Ministries of Foreign Affairs in Argentina and Chile, abridgments of treaties.

TABLE 14. AGREEMENTS RECOMMENDING REGIONAL PREFERENCES

Year	*International meeting*	*Held at*	*Recommendations approved*
1931	Fourth Panamerican Trade Conference	Washington	To study the possibility of abolishing customs between Argentina, Chile, Bolivia, Paraguay and of achieving greater economic unity between these republics.
1936	Conference for Consolidating Peace	Buenos Aires	To exclude reciprocal privileges accorded between neighbours, from most-favoured-nation clauses with third Powers.[a]
1939	Conference of Treasury Ministers of Argentina, Brazil, Paraguay and Uruguay	Montevideo	To harmonize trade of the participants, resorting to tariff advantages and exchange co-ordination.[b]
1933	Meeting of Foreign Ministers of Argentina and Chile	Mendoza	To tend towards exclusive preferences between neighbouring and contiguous countries, and, as a general aim, among the Latin-American States.
1933	Argentine-Chilean Conference	Santiago	To take steps towards a continental customs union, commencing with one between Argentina and Chile, to be extended gradually to the other republics.
1940	Meeting of Treasury Ministers of Argentina and Brazil	Rio de Janeiro	To foster the production of goods not yet manufactured by both countries, by means of a guarantee that their trade should be free from protectionist duties during ten years, and from domestic or external measures reducing trade in them. To agree on procedures by which, when deficits arose in the mutual balance, the creditor countries would try to restore equilibrium by increasing imports and not restricting exports.
1941	Regional Economic Conference of the River Plate Countries	Montevideo	To recommend the study of a regional customs union and its extension to other neighbouring countries. To recommend increasing the mutual purchase of goods of regional origin, establishing preference over similar goods from other countries. Should the participants abrogate instruments contracted with third powers limiting this faculty, they should, in the new ones, reserve their right to grant the preference indicated. To tend towards introducing an exchange regulation fund.

SOURCE: *Instrumentos internacionales de carácter bilateral suscritos por la República Argentina*, Ministerio de Relaciones Exteriores y Culto, Buenos Aires, 1950.

[a] Restrictions placed on trade between the participating countries, imposed by the unlimited and unconditional most-favoured-nation clause contracted with third parties, were not eliminated as a result of this meeting.

[b] Argentina and Brazil, following the Conclusions of the Conference of Montevideo in 1939, had on 13 April 1939 signed a protocol on exchange problems in which the granting of mutual permits was assured, in Argentina, at the official rate, "in such a way as not to prejudice national industry and the normal progress of trade", and in Brazil "under the best conditions laid down in the exchange system".

Chapter IV

THE STRUCTURE OF PAYMENTS

1. Introduction

Payments policies between the seven countries in the southern zone of Latin America exhibit a pronounced tendency to exclude the use of convertible currencies, replacing them with bilateral payments agreements in current accounts. Widely varying types of agreements exist, ranging from official clearing systems, covering all direct commercial operations, to the quantitative matching of goods aimed at balancing trade in mutually essential items.

The extent to which these systems have achieved their purpose is surprising, since all countries of the zone have to some degree participated in them. Between 1946 and 1951 the visible trade between Argentina, Bolivia, Brazil, Chile, Paraguay, Peru and Uruguay amounted to an annual average of 396.5 million dollars. More than four-fifths of the imports and exports were settled by debits or credits in current accounts, without recourse to convertible currencies. The marked use of current accounts in the payments system is illustrated by table 15, showing the intra-zonal payments structure.

TABLE 15. PAYMENTS STRUCTURE OF THE SOUTHERN ZONE OF LATIN AMERICA

(Average f.o.b. values for 1946–51, in millions of US dollars)

	Argentina	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Total*
				Bilateral trade in clearing account				
Exports	159.0	2.3	129.8	22.3	9.4	6.8	9.8	333.4
Imports	128.8	12.8	99.3	34.9	12.1	16.2	29.7	333.4
Balance	+ 30.1	−10.4	+ 24.4	−12.6	− 2.6	− 9.4	−19.5	± 54.5
				Bilateral trade in dollars				
Exports	3.3	0.2	1.4	14.2	2.1	40.9	1.0	63.1
Imports	4.9	6.3	5.0	30.4	0.5	4.7	11.3	63.1
Balance	− 1.6	− 6.0	− 3.6	−16.2	+ 1.5	+36.2	−10.3	± 37.7
Percentage trade in clearing account	96.3	67.2	95.2	53.4	95.6	77.6	72.2	84.1
Percentage trade in dollars	3.7	32.8	4.8	46.6	4.4	22.4	27.8	15.9
				Total trade				
Exports	162.3	2.6	125.1	36.4	11.5	47.7	10.9	396.5
Imports	133.8	19.1	104.4	65.2	12.6	20.9	40.5	396.5
Net balance	+ 28.5	−16.5	+ 20.8	−28.8	− 1.1	+26.8	−29.7	± 76.1

SOURCE: Argentina: Banco Central. Bolivia, Chile, Peru: *Foreign Trade Yearbooks.* Brazil and Paraguay: *Statistical Yearbooks.* Uruguay: *Memorandum of the Export-Import Comptroller.*

Table 15 shows that the visible bilateral trade in dollars represented almost 16 per cent of the total trade between the seven countries. An annual average of 76.1 million dollars—mainly in dollars received from surpluses with other areas—was used to meet the debit balances resulting from the surplus of imports over exports in each bilateral trade channel.[1] Table 15 also shows that the net beneficiaries were Argentina, with 28.5 million dollars annually; Brazil, with 20.8 million; and Peru, a substantial intra-zonal creditor mainly because of its trade with Chile, with 26.8 million. Conversely, the 76.1-million-dollar debit balance was borne by the remaining four countries: Bolivia with 16.5 million, Chile with 28.8, Paraguay with 1.1, and Uruguay with 29.7 million dollars.

The distribution of the net balance has not differed appreciably during recent years. In 1948, when the International Monetary Fund prepared a report on the possibility of establishing multilateral payments in Latin America, the distribution of the balance was similar to that in table 15, although comprising fewer countries.[2] Then, as now, Bolivia and Uruguay showed net debit balances with all others in the group. Increased exports to creditor countries, under short-term or medium-term arrangements, would still undoubtedly remain below the levels required to liquidate their unfavourable balances. Thus, it is hardly probable that use of currencies from other areas to pay for intra-zonal trade debts will be eliminated, at least in the near future, even if the entire trade were to be conducted under clearing account procedure.

No official efforts to facilitate further research on multilateral payments had been made prior to the sur-

[1] Sterling and European currencies were also used for liquidating balances, although on a much smaller scale.

[2] Eight years before, in 1940, the United States and eight Latin-American countries, Bolivia, Brazil, Colombia, Ecuador, Mexico, Nicaragua, Paraguay and the Dominican Republic, sponsored a conference for the establishment of a trade-payments centre to be called the Inter-American Bank. This project was never ratified.

vey of the International Monetary Fund, or the report on intra-regional trade (E/CN.12/165), prepared by the United Nations Economic Commission for Latin America for presentation to the third session at Montevideo in 1950. Both these reports arrived at similar conclusions. However, from statements of senior officials of certain countries in the group, the obstacles encountered during the last two years in liquidating intra-zonal trade balances appear to have reawakened interest in a fresh approach to the subject. This has been chiefly because the use of such balances in other areas could only be effected through triangular operations outside both the sphere of government initiative and, at times, its control. The interest in this subject is accentuated by the problems arising from the diversity of payments systems, whose principal features are discussed below. The experience of the European Payments Union, which uses other currencies to support the trade transactions of its member States, could provide a basis for examining the practical advantages to be derived from a multilateral compensation plan under existing conditions. In carrying out such a study, consideration must be given to the present tendency in certain Latin-American countries of not liquidating balances in the same account for the value of products which have different priorities of importance.

In the above discussion of balances, and as illustrade in table 15, the amounts listed refer to the intra-zonal trade in visible goods. The extent to which capital transfers and payments for invisible trade items are liquidated through clearing accounts is difficult to ascertain, due to insufficient data. However, invisible trade items appear to reach a high percentage, if judged by all transactions concluded between Argentina and the remaining countries of the group, except Brazil, as shown in table 16.

TABLE 16. ARGENTINA: CLEARING OPERATIONS CONCLUDED WITH NEIGHBOURING COUNTRIES

(Average for 1946–51)

	Total operations on account (thousands of dollars)	*Percentage of total operations*		
		Invisible trade	*Capital transfers*	*Visible trade*
Bolivia	9,445	84.1	10.0	5.9
Chile	41,373	82.7	12.7	4.6
Paraguay	19,091	79.4	10.6	10.0
Peru	16,795	92.4	3.6	4.0
Uruguay	22,403	56.4	35.7	7.9

SOURCE: Banco Central, Argentina.

A number of different factors have contributed to the present payments structure. From the start, the principal trade-clearing agreements contracted between countries of the southern zone were affected by the specific situation of Argentina. Because of uncertain demand prospects on overseas markets, resulting from the Second World War, Argentina endeavoured to dispose of its surplus agricultural products in South America. This was the same policy followed by Argentina in Europe during the last ten years, based upon reciprocal concessions through bilateral trade agreements and the fixing of trade quotas. The Argentine Central Bank established accounts for liquidating payments with Bolivia, Chile,[3] Paraguay, Peru and Uruguay. Up to December 1948 payments made for Argentine exports in these accounts enjoyed a preferential rate of exchange amounting to a subsidy of 20 per cent.[4]

Countries with inadequate production of foodstuffs hoped that trading accounts would help alleviate their chronic trade disequilibrium with Argentina. In certain cases, the monetary difficulties arising from a rapid decrease in the foreign exchange holdings accumulated during the Second World War constituted the decisive factor in favour of participating in the system. With the exception of Peru, all countries of the zone showed interest. Peru has entered into only one payments agreement, which was concluded with Argentina and concerns the exchange of Argentine chilled meat and wheat for Peruvian electrolytic copper and petroleum. Due to the diversity of its exports and the demand for them in world markets, Peru remained apart from the trading obligations inherent in clearing agreements.[5] It would be difficult to reconcile the free exchange system, which Peru maintained until 1945 and re-established in 1949, with agreements involving trade in specific quantities of goods, unless effected by government-controlled agencies or assisted through the granting of special tariff reductions. This was the case for the 1951 agreement to trade Peruvian cotton for Chilean iron, previously referred to in chapter III. Of the visible trade operations effected outside the clearing account system (less than 17 per cent of the total trade in the southern zone), approximately half is derived from Chilean-Peruvian trade, which is carried out on a dollar basis. It is probable that this figure will be substantially reduced in the near future because of recent attempts to conclude payments agreements between Chile and Paraguay, between Paraguay and Uruguay, and, although still in the preliminary stage, between Chile and Uruguay.[6] Co-ordination of these agreements would serve to complete a process which, in just over ten years, has reduced the zonal use of convertible currency in normal trade operations to small proportions.

An examination of these agreements indicates that they frequently involve the use of clearing operations. These may be defined as government bank accounts, subject to periodic or *ad hoc* adjustment, which are

[3] No trade payments agreement exists between Argentina and Chile, there being a tacit understanding for the liquidation of transactions "on account".

[4] The rate of exchange for this zonal trade under clearing agreements was 4.01 Argentine pesos per dollar, as against the rate of 3.35 pesos applying to all other countries.

[5] In treaty negotiations with countries dealing in United States dollars, experience has shown that creditor countries frequently reject efforts to conclude agreements designed to balance trade with their debtors. This is because the resulting equilibrium would prevent them from acquiring balances of free currencies which they need for settlements in other areas. The debtor, moreover, to avoid increasing the deficit, may diminish imports from the creditor country or else transfer them to markets which will purchase its own exports. The consequent state of chronic disequilibrium is thus transformed into an obstacle to bilateral trade expansion or stability. Chile, owing to the pressure on its balance of payments in convertible currencies, has endeavoured to diversify the source of its supplies of sugar, since sugar is mainly responsible for the considerable passive balance with Peru that must be settled in United States dollars.

[6] In March 1952, Uruguay limited the use of dollars for freight payments, granting preference, under certain conditions, to the use of vessels belonging to countries linked to Uruguay by payments agreements. However, Chilean vessels have traditionally transported the general merchandise exchanged between Brazil and Uruguay, as well as the sugar shipped from Peru to Montevideo, for which freight is paid in dollars. Thus, discussions are proceeding to allow this traffic to continue under a part-payment system, involving the value of Chilean iron exported to Uruguay, of Uruguayan dolomite exports for Chile's iron and steel industry, and of transport performed by Chilean vessels.

utilized to balance the payments arising from the trade in products of equal value. This trade is arranged to avoid currency payments and the value is usually liquidated through clearing accounts. The entire structure may thus be considered as a vast payments system on current account, although any two contractual parties are unable to make multilateral transfers of the balances.

In studying obstacles to trade within the zone, the research undertaken between government officials responsible for foreign trade and by private organizations was extended to the practical trade problems which occur in bilateral accounts. Not only were the principal characteristics of this trade determined, but in addition such restrictive measures as parity differentials, surcharges, adjustment of balances, inadequate private credits and re-exports.

Rearranging the payments structure, within the wide field of agreements of this type already concluded between different countries of the zone, would eliminate certain unfavourable factors in the trade of essential products and would encourage the diversification of exports. Moreover, an examination of the system provides certain guiding principles on the fundamental aspects of payment problems in this part of Latin America.

2. Parities

Trade agreements between Argentina and Brazil, as well as between Argentina and Uruguay, contain precise provisions for the mutual recognition of parities existing between the respective national currencies and the United States dollar. Moreover, Argentina operates the neighbouring countries' accounts, mentioned earlier, with strict regard to parity with the dollar, not only for the basic rate of exchange but for preferential rates as well. Excluding these bilateral agreements, a mutual recognition of currency parities, by countries whose trade with Argentina is liquidated through the neighbouring countries' accounts, has not been specifically established in the respective agreements. For trade between Argentina and Chile, which is not based on any formal contract, the accounts in Argentina follow the official clearing procedure. In Chile, they operate entirely free from intervention by the government or the Central Bank. Following long-established custom, amounts to be settled between the two countries are liquidated through private bank operations, in accordance with the fluctuations of the supply or demand for the exchange. Paraguay also operates its clearing with Argentina without regard for dollar parities, which would seem to be in keeping with the particular nature of trade between these two States.[7] More than 50 per cent of this trade consists in exchanging Paraguayan wood for Argentine wheat. For many years, the trend of Paraguay's commercial policy has been to fix, irrespective of parities, the unit of account used in liquidating the respective transactions, with two considerations in mind. The first has been to ensure the continuance of the River Plate market for its lumber exports. The second has been to mitigate, where possible, the effects of the exchange rate accorded to these exports on the prices of foodstuffs, especially wheat imported from Argentina, and which are affected by the corresponding selling rate of exchange.

[7] In January 1953, after approving the exchange budget for the year, Paraguay established the exchange rate for the Argentine peso as 2.50 guaranis at its basic value, when the rate at parity with the dollar would have been 3 guaranis.

Although the absence of, or non-compliance with, parities is evident in various trade sectors in the southern zone, it tends to be particularly obvious in two bilateral channels and a serious obstacle to the normal development of trade is apparent. The trade channels involved are, firstly, Chile and Argentina and, secondly, Chile and Brazil.

For Argentina and Chile in particular, their lack of pre-established parities (in addition to their respective devaluations over the past five years) have had extremely divergent effects on the unit of account used in mutual clearing operations. In Argentina, the price of this unit in national currency was adjusted each time in accordance with variations in the basic exchange rate and the differential rates. In Chile—apparently as a result of a policy to moderate the price rise of certain Argentine foodstuffs—the price of the unit in Chilean pesos remained unaffected by exchange depreciations and was almost stationary. At the present time the difference between the units of account and the exchange rates under parities is so great that the clearing value of one dollar in Argentina can be purchased in Chile for half this amount. The situation with Brazilian-Chilean clearing is similar, but on a smaller scale, since the corresponding undervaluation in Chile was approximately a third of the price represented by the parity value.[8]

In a general way, this phenomenon is a barrier to the export of Chilean products to Argentina and Brazil. These sales must be accompanied by a price increase which will compensate the exporter for the disadvantages of undervaluation and which could otherwise be avoided by exporting to countries where rates are fixed at parity with the dollar. At the same time, when the prices of Argentine and Brazilian commodities are on the same comparative level as those of other supplying countries, Chilean importers are able to acquire such commodities with less domestic ties with less domestic currency than would otherwise be the case. The favourable difference is equivalent to the undervaluation affecting Chilean monetary units used in settling clearing accounts with Argentina and Brazil. With regard to both imports and exports, undervaluation contributes to Chilean difficulties in supplying a sufficiently large quantity of merchandise to Argentina that is as essential in nature as the foodstuffs which the latter supplies to Chile. In addition to this injurious effect to the bilateral expansion of trade, undervaluation necessarily alters the relationship between world prices and the price schedule regulating commercial activities between Argentina and Chile. Above all, the disrupting influence on trade is essentially due to the uncertainties that are caused, since one of its components (in this case Chilean exports) invariably finds more remunerative sales through trade with other markets. An annex to this chapter entitled "Effects of the absence of monetary parities between Argentina and Chile", explains some individual characteristics of this problem.

3. Price differentials

In the exchange of commodities between the seven countries of the zone, particularly essential products, higher prices are more often obtained as a result of payments through clearing than payments in United States dollars for exports. This phenomenon is observed in all cases where agreements are still in force,

[8] Quotation for 10 December 1952.

as shown by several examples. For instance, in 1952, Argentina concluded a sale through a clearing account of semi-refined sunflower-seed oil, worth 350 dollars per ton, at a price varying between 404 and 470 dollars. For sales in free currencies, the same country in 1952 accorded a discount, through the rate of exchange, of 30 per cent in the price of cattle hides exported and 20 per cent in the export of wool. In the same year, Brazilian pine, valued at 90 dollars per 1,000 square feet in convertible currency, was exported under clearing arrangements at a value of 125 dollars. Chilean copper, which during the second half of 1952 was being sold at 803 dollars per ton, was exported under payment through clearing at 1,000 dollars.

It would appear obvious that these price differentials for clearing-account transactions, over and above the prices of United States dollar sales, should decrease, or be eliminated, when the importing country reciprocates with exports of essential goods. However, definite information on this point is lacking, at least in so far as the numerous cases examined are concerned. In exporting goods of a similar nature, the contractual parties in general benefited from higher prices through quantitative agreements than from transactions concluded in dollars. The most recent case is that of the exchange of Argentine edible oils for Chilean iron, negotiated in 1952, the prices for which show surcharges varying from 20 to 30 per cent compared with United States dollar sales.

If both parties in trade of this type impose similar surcharges on the goods exchanged, neither will obtain net profits. However, in the domestic sector, this is equivalent to an income transfer favouring the exporter at the expense of the import consumer. The need to protect the consumer, by the officials who control maximum prices for essential goods, particularly foodstuffs, usually explains the difficulties of southern zone countries to obtain these goods through clearing arrangements or barter. Time and again, where such purchases would have enabled a country needing foodstuffs to utilize its inactive balances accumulated through exports, the final decision has favoured the lower-priced markets outside the region, despite the drain on domestic resources of convertible currencies.

The maintenance of surcharges, particularly in trade of more or less equivalent essential products, contributes to the uncertainties characteristic of trade through the clearing systems. Of ten clearing agreements regulating payments between the seven countries of the region, only two specify that payments will be made through clearing operations.[9] With regard to the others, the exporter may at any time require the importer to liquidate a balance in United States dollars. For example, Argentine sheep exports for refrigerating plants in Chilean Patagonia, exports of Argentine wheat to Chile, Chilean copper sales to other South American countries on the Atlantic and Bolivian tin sent to Chile have been frequently effected outside the clearing system and in convertible dollars. This has often been the result of decisions by financial authorities in the exporting country, when granting the necessary permits.

Since payment agreements do not specify the type of goods to which they apply, such refusals to authorize exports payable through the account frequently act as a hidden obstacle to the transactions planned, thereby further impeding trade in the southern zone.

It is not easy to induce countries to accept contractual obligations limiting their right to demand payment in United States dollars for essential goods. This is especially true when their exchange holdings are low, or when there is an increased foreign demand for goods whose proceeds are urgently required in order to obtain indispensable supplies from other areas. Nevertheless, several formulas have been suggested for adapting the procedures used in payments agreements within the zone, with the object of regularizing commercial operations. Among these, the most important suggests that the compensation of values through clearing arrangements be divided into two groups, namely, essential and non-essential goods, both of which would be determined in advance. This division, involving a contractual assurance that exports of essential goods be counterbalanced by an equivalent amount of essential imports, would be conditioned by an agreement not to fix higher prices than those for similar types of merchandise exported to free-currency areas.[10]

From one point of view, this formula might help to ensure an uninterrupted interchange of basic commodities and prevent certain of these being used as stop-gaps to relieve emergencies arising from a restriction in supplies from traditional markets. As such, it would promote a more stable and mutually advantageous trade in essential goods. However, it remains to be seen whether dividing the clearing account into two groups of products would restrict trading operations in non-essential goods to the level of the country exporting least, and thus interfere with the diversification of exports. The practical consequences of this proposed programme upon the respective bilateral trade channels should first be examined, taking into account the problems of adjusting unfavourable balances within each group of products. Only then could an adequate criterion be evolved for contractual agreements eliminating the overvaluation apparent between payments settled by clearing in the southern zone and those effected in convertible currencies.

4. Adjustment of balances

Since only one clearing account is used to settle the value of merchandise essential to a different degree, United States dollars are often needed for the payment of luxury or non-essential goods, due to the clause requiring adjustment of balances in hard currency.[11]

In general, the precautions taken by a debtor country to prevent deficits from exceeding the amounts agreed upon bring about periodic stoppages of the flow of supplies and leave the market to goods from countries with which the country has a surplus or a wider margin of credit. Such types of restrictions are typified in clearings between Brazil and Chile. At the end of 1947 the foreseen credit of 3.2 million dollars, as stipulated in the agreement, was exceeded by Chile, whose debt at the time amounted to some 5 millions. As exchange holdings in Chile were insufficient to

[9] Article 1 of the payments agreement between Brazil and Uruguay, 27 August 1948, and article 1 of the agreement between Argentina and Brazil, 22 October 1948.

[10] In the 1947 commercial agreement between Argentina and Brazil, Argentina was required to sell wheat for five years at the minimum price obtainable from other countries during the month immediately preceding the despatch of the Brazilian quota.

[11] Although there appears to be a general preference for dividing exports into three groups (namely high-priority goods, ordinary exports, and goods for which there is slight demand), the division into two, for purposes of account, would apparently assist in classified bilateral agreements.

repay the debt in convertible exchange, reciprocal trade remained practically stationary for five months until an arrangement could be devised for gradually liquidating the obligation. At the same time, exchange authorities of both countries reduced import permits to a minimum. Chile, the debtor country, was faced with the necessity of reducing its imports since, under the clearing mechanism, new credits received by Chilean importers to pay for articles purchased in Brazil were automatically applied by the government to offset the original debt, so that the envisaged operations were cancelled. The same situation occurred, under somewhat different circumstances, during the first half of 1952. This time, however, the reverse was true, for Brazil was the debtor, and exchange authorities, in order to confine the unfavourable balance to the lowest possible level, were forced to limit permits for imports from Chile drastically. (See table 17.)

TABLE 17. BRAZIL: AVERAGE NUMBER OF PERMITS ISSUED MONTHLY FOR IMPORTS OF CHILEAN MERCHANDISE

(*In thousands of dollars*)

1948	2,590
1949	953
1950	1,619
1951	3,352
1952 (first two quarters)	1,167

SOURCE: Banco do Brasil, Rio de Janeiro.

There have been various recommendations for measures to minimize the depressive effect on trade exerted by the clause for adjusting balances. This, as already seen, is mainly applied in the form of preventive restrictions of permits. The recommendations are found to be on the same plane as measures for regulating the prices of essential merchandise. In accordance with these suggestions, the clause concerning the adjustment of balances by means of convertible currency would continue to apply to mutually-defined essential goods. However, favourable balances accumulated through trade in non-essential or dispensable commodities would be reduced through greater purchases by the creditor country. In other words, the balances would be liquidated by goods. In Brazil, officials in the Import-Export Department of the Banco do Brasil have suggested that the obligation of using convertible currencies, in settling debts resulting from operations carried on under payments agreements, should be restricted to those cases where the debt is a result of greater purchases by the debtor country than was originally foreseen in the agreement. If, however, debts were the result of smaller purchases on the part of the creditor country than mutually agreed upon, the solution would be to increase them.[12] Although there is no clause agreed upon for adjusting balances in United States dollars between Argentina and Chile, an agreement was signed in April 1952 whereby the values settled in the clearing were divided into separate merchandise classifications, each with more or less the same intrinsic value, and which each country agreed to exchange in commensurate quantities.

5. Private credit

With some exceptions, payments agreements regulate the international credit mechanism utilized by the members, but they do not stimulate private credit to fulfil its role in trade promotion. In addition, quantitative import restrictions in the region have frequently diminished private credit facilities, particularly during the last two years. They have done this by preventing the importer from transferring to his suppliers, through the respective clearing accounts, the value of the merchandise in question before it has been dispatched to its destination. The same results are accomplished by the refusal to authorize customs clearance of goods on consignment, or, in other words, to permit sales under deferred payment.[13]

In the case of banking credits granted to importers to facilitate the introduction of foreign goods, selective control of imports shows certain tendencies to reserve this type of credit for essential imports, requiring the importer to finance anticipatory payments for the total value of the transactions when the imports cover non-essential goods. In some countries, a plan has even been studied for partially substituting the system of selective control, based on permits, for one of State control of bank credits requested by importers. This would reduce the demand for foreign exchange and cause fewer inconveniences, in the opinion of qualified government officials, than those brought about by the system of permits.

In the trade of the southern zone of Latin America, limitations placed on private credit, according to present information, have resulted in discouraging experiences. The goods traded under certain forms of private credit are sometimes removed from the customs by consignees only after much delay, and at other times may even be abandoned. Payments are frequently not made under the stipulated terms. For many items, particularly non-essential machinery and domestic and manufacturing articles, European and North American trade with Latin America achieved a considerable expansion in the past, following a practice which still persists to-day. This has been to extend credits as far as the local distributors, through a mechanism of responsible agencies maintained by the head offices of the firms in each country. The distributors in turn are assisted by local banks whose central offices are in the country of the export firms. Branches of the export firms may conclude sales under conditions of deferred payment, and send their remittances to the head offices when the total is collected. For inter-Latin-American trade, however, the situation is weak. There are few such commercial organizations as exist for Chilean nitrate, or, in the field of finance, as the overseas offices of the Banco de la Nación, Argentina, or the Banco do Brasil. These ensure the maintenance

[12] Among the "recommendations" made by the Treasury Ministers of Argentina and Brazil, in October 1940, was the following: "When a persistent debt occurs within periods of less than six months, the country with excess exports over imports should, on request from the other country, adopt the necessary measures for restoring the equilibrium, preferably through the use of means which will increase imports, and not decrease exports". In the payments agreement between Argentina and Brazil, on 28 October 1948, the possibility of settling the unfavourable balance was considered through various means: gold shipments, internationally acceptable means of payment, other currencies acceptable to the creditor, currency of the debtor, or exports of merchandise by the debtor. In August 1952, Brazil, the debtor, reached an agreement with Western Germany to reduce the debt gradually by exporting goods of a value to exceed by 20 per cent the value of Brazilian purchases, until an equilibrium could be re-established.

[13] Among recent measures of this type are those adopted by Argentina covering the export of cattle to Chile. Until the last half of 1952 these were dispatched under private credits, but after that time were to be paid for prior to their shipment.

of stable patterns of credit and international payments capable of contributing to specialization in intra-zonal trade. The perishable nature of some agricultural products found in zonal trade may exclude them from the system of consignment shipping or from sales "collect".[14] Therefore, an improvement in payments agreements, by the inclusion of standards for permitting these practices, would help to lessen the disadvantages of the organization of private credit in intra-regional trade, compared with the facilities characteristic of trade between the zone and Europe or North America.[15] The same credit facilities would contribute to greater export diversification if the principle of selective credit control over imports would exclude non-essential goods imported from zonal sources.

6. Re-exports

Under the Argentine-Brazilian payments agreement of October 1948, goods originating within their territorial limits and that were objects of trade between the two countries were to be destined exclusively for their respective consumption, or for transformation by industry in the importing country. In addition, the same contract agreed to ensure that the transfer of capital, through clearing procedures, would correspond only to direct operations between the two parties. The remaining commercial and payments agreements binding the republics of the southern zone, with the exception of certain indirect references, make no mention of the re-export of merchandise purchased through clearing or as a result of compensation.[16]

An examination of certain official resolutions, taken from triangular trade arrangements and involving re-export operations, gave the general impression that if purchases are made under a system of clearing or as a result of compensation, they are understood to be imported for domestic consumption. Nonetheless, some officials have been inclined to consider that when merchandise is once cleared through customs, and assuming no contrary commitments exist, there is no reason why it cannot be freely re-exported to another country. In Uruguay, especially, there appears to be no doubt as to whether merchandise traded through bilateral agreements may be re-exported to other markets. This attitude parallels the country's policy of favouring agreements designed to facilitate the transit of goods on such a large scale that it is partly equivalent to the free entrance and exit of capital in United States dollars.

The absence of rulings (in the payments agreements or in the treaties to which they are supplements) concerning the balancing mechanism that re-exports could provide, shrouds them with constant uncertainty, particularly concerning the opinions of officials who decide upon the issue of the respective permits, when it is finally considered as permissible. However, this absence of rulings does not prevent many efforts being made to re-export, especially through triangular operations. Due to prevailing exchange rates, particularly during 1951 and 1952, there were attempts to convert a portion of the Argentine and Brazilian balances, immobile in some countries of the region because of insufficient domestic demand, for balances in the United States or Europe. It was therefore necessary to export goods from Argentina or Brazil, destined to the clearing or compensation country which held the credits, then to cover the value by charging that credit, and finally to re-export the goods to a third market. In some of these transactions the operation was only permitted because the first recipient did not require the entry of the goods into the country before re-exporting. For example, there were projects for exporting Argentine merchandise to the United States, such as grease, hides and others, under triangular operations where the values were to be covered by Argentina clearing through Peru. There were also sales of Brazilian goods, under the same kind of circumstances, which were to be settled in Brazil by way of clearing in Chile. These generally lost their attraction for the merchants involved when the respective exchange authorities required the entry of the goods at the first port of arrival, except when the undervaluation of the respective clearing currency offered sufficient margin to absorb the additional costs of customs duties and transport. During most of 1952, when the clearing dollar of Brazilian-Chilean trade dropped in value by more than 30 per cent to the official parity, triangular trade operations became notably active, since the difference permitted the covering of supplementary costs such as transport and duties and even assured substantial profits.

The lack of contact, or of an exchange of information, between national bodies directly concerned with foreign trade, and which is particularly marked as regards exchange rates, contributes to the initiative—for disposing of surplus credits in the areas where they can be absorbed—being entirely in private hands. It is by no means exceptional for the government to ascertain, only after goods have been moved, that these in fact are multiple operations which are sometimes in conflict with permanent export interests. This fact was noted, during research on this study, in more than one country.

[14] Garlic, for example, is excluded from the "collect" shipments employed in Chilean exports to Brazil.

[15] A study is being conducted in Brazil to determine the necessary measures for extending the Banco do Brasil, which already has branches in Asunción and Montevideo, to other South American capitals, thus forming a network of offices to facilitate foreign trade credits and capital transfers. Similarly, the 1951 report of the Export-Import Department of the Banco do Brasil expressed the aim of studying a policy for developing inter-Latin-American trade, through credit assistance that its department could extend. In the economic co-operation treaty, signed in 1947 between Brazil and Chile, and in force since 1952, both countries agree to assist the establishment of national banks in the respective countries. The same type of agreement is found in the financial and economic treaty of 1946 between Argentina and Chile, but not ratified by the Chilean Congress, and in the economic and commercial treaty of 1948 between Bolivia and Peru.

[16] In the Argentine-Chilean treaty of 1952, agreeing to the exchange of cattle for copper, it was established that trade in these products be considered for domestic consumption, with each government committing itself to measures for preventing their re-export.

ANNEX

Effects of the absence of monetary parities between Argentina and Chile

1. Introduction

The absence of monetary parities between Argentina and Chile, together with the lack of connexion between their respective exchange systems, exerts a strongly disruptive influence upon their mutual trade. The barrier thus created is among the most serious of all the present obstacles hampering regular trade relations between the two countries.

Most commercial transactions are liquidated through bank accounts in Argentine pesos, which, in Chile, are referred to as *Nacionales de exportación*.[17] In Argentina, these accounts form part of the official clearing mechanism employed, with slight modifications, in trade with Bolivia, Chile, Paraguay, Peru and Uruguay. They are particularly used in cases where bilateral payments agreements are in effect, but there is no such agreement with Chile, where a *de facto* situation exists. In Argentina, the Central Bank directly controls all clearing operations which are based on a strict parity with the dollar. Payments in Chile are liquidated through private channels, without government intervention or fixed parities. The value of the currency, in which the transaction is accounted, fluctuates according to the Chilean money market or to Argentine differential exchange rates.

These accounts, and the commercial items to which they refer, are shown in table 18.

[17] To avoid confusion between Argentine and Chilean pesos, the term "nacional" is used for the Argentine peso throughout this annex.

Table 19, referring to 1951, indicates the significance of apparent Argentine-Chilean trade activity, with transactions for each of the exchange rates outlined. The table also shows the profit obtained by the Argentine Treasury, in actual currency, as a result of the margin between various exchange rates for this trade.

2. Argentine exports

As shown by the preceding table, the basic exchange rate of 5 "nacionales" per dollar predominates in Argentina's exports to Chile, covering almost 90 per cent of this total. In contrast, there is an even greater use of the 7.50 exchange rate for Chilean exports to Argentina, covering over 98 per cent, or practically all, of the trade in this direction.

Theoretically, the relative overvaluation abroad of the 5 "nacionales" rate used for exports and the relative undervaluation of the 7.50 exchange rate used for imports tend to exert an unfavourable influence upon trade, discouraging both Argentine exporters and importers, as well as Chilean exporters. Only Chilean importers of Argentine goods are favoured, excluding the effect of the favourable or adverse influence of domestic prices upon the goods in both countries. However, the depressive effect of the exchange structure upon Argentine exports is offset by subsidizing, through the use of a 7.50 rate, all export goods that the government wishes to stimulate. The subsidy is financed by

Table 18. Argentine-Chilean trade—Argentine clearing accounts

Account	*Use*	*Exchange rate ("nacionales" per dollar)*
"Special Exports, Circular 1308"	Primary goods[a]	5.00 and 7.50
"Special Exports, Circular 1310"	Secondary goods[b]	Official free market[c]
"Transferable Accounts and Others"	Invisible items	Official free market

Source: Banco Central, Argentina.

[a] The principal goods cleared by Account 1308 are: Argentina: semi-refined oils, meat, tanned leather, livestock, flour, wool, quebracho, lard and fats, oil seeds, combed woven goods, wheat; Chile: coal, fine coal, coke, cement, copper, ferro-manganese, iron books, lumber, nitrate.

[b] The principal goods cleared by Account 1310 are: Argentina: books, woven goods, various manufactures; Chile: oats, miscellaneous manufactures, nuts, sodium sulphate, wine.

[c] The official free exchange rate is at present approximately 14 "nacionales" per dollar, resulting in a Chilean price of 4.64 pesos per "nacional".

Table 19. Argentine-Chilean trade in 1951, classified according to Argentine exchange rates

(Values in thousands of dollars f.o.b.)

Argentine exchange rate	*Exports to Chile*	*Percentage*	*Imports from Chile*	*Percentage*	*Balances*	*Exchange rate differential for the Argentine Treasury (in thousands of "nacionales")*
5.00	30,145	89.8	401	1.4	+29,745	42,068
7.50	2,750	8.2	29,230	98.2	−26,480	
14.00[a]	685	2.0	127	0.4	+ 558	
Total	33,580	100.0	29,758	100.0	+ 3,822	

Source: Dirección General de Estadística, Chile.

[a] Subject to fluctuations.

the Argentine Treasury through the differential obtained from the purchase and sale of foreign exchange. For some marginal exports or those for which there is only slight demand abroad, an even greater stimulus is provided by an official free market rate, valued at approximately 14 "nacionales" per dollar.

The incentive to purchase Argentina's products has been strengthened in Chile by a similar policy for encouraging imports from Argentina. Whereas Argentina has consistently raised the value in "nacionales" of the currency used in clearance with Chile, in relation to the general devaluation of its exchange rates, Chile has not followed suit, excluding Argentina from the successive effects of its own devaluations. Thus, with some fluctuations, that unit of account retained a value in Chile very close to its original level, varying progressively from the actual value, in Chilean pesos, of the foreign exchange accruing from exports to other countries. Chilean exports to Argentina, particularly in 1949, have continued to suffer from the unfavourable consequences of this policy, providing lower prices than could otherwise have been obtained from sales to other markets. Nevertheless, the system has continued, principally due to a Chilean policy for reducing price increases of the foodstuffs imported from Argentina.

3. Chilean exports

Table 20 illustrates the two situations limiting Chilean exports to Argentina, namely, the disruption of the relationship between the official Chilean and Argentine exchange rates and exchange rates assigned to Chilean exports which generally differ from exports to Argentina.

Table 20. Chile: Relationship between the price variations of the "nacional" used for export and the general export exchange rate

Year	Bank price average for export "nacionales"	Percentage variation		Exchange rate for general exports[a]	Percentage variation	
		Annual	1948–52		Annual	1948–52
1948	10.23			43		
1949	10.44	2.1		43	—	
1950	11.23	7.6		60	39.5	
1951	10.27	−8.5		90	50.0	
1952[b]	11.23	9.3	9.8	122	25.5	183.7

Source: Quotations of "nacionales" used for exports: Banco de Chile. General export exchange rates: *International Financial Statistics*.

[a] For some exports, this exchange rate is lowered through the use of mixed rates. However, most manufactured, and many agricultural, products benefit from the rate without any reduction whatsoever.

[b] Average for the first ten months of 1952. (The quotation of the "nacionales" used for exports on 10 November 1952 was 13 Chilean pesos.)

Although the quotations for the "nacionales" used for exports in the annual averages in table 20 show slight variations, sharp fluctuations exist, causing rapid price decreases. The most severe reaction occurred in October 1950, when a decline in Argentine exports to Chile caused a price decline of 26 per cent, or, in Chilean pesos, from 12.30 to 9.15. Similar examples, though less severe, occurred intermittently between 1950 and 1952.

Fluctuations in the price of foreign exchange may take place in Chilean bank exchange rates, and even in the rates officially fixed at parity, due to the absence of any official mechanism for purchasing foreign exchange accruing from exports to Argentina or elsewhere. When importers are not interested in acquiring foreign exchange, the exporter must necessarily resort to private banking institutions or await a recurrence of demand. In both cases he runs the risk of receiving, in Chilean pesos, a lower payment than was originally anticipated.

From 1951 to 1952, there were periods when the supply of exchange in the Argentine-Chilean account exceeded the demand in Chile, thereby strongly discouraging exporters. Travellers and tourists proceeding to Argentina were allowed to purchase drafts so as to diminish the credit balance in the account. Normally, travellers use Argentine bills, which, for different reasons, have been accumulating in ever-increasing numbers in Chile, and costing 6.50 Chilean pesos.[18] However, since drafts could be obtained at the rate assigned to trade, or approximately 4.64, it was an unusually attractive offer inasmuch as travellers were able to purchase their exchange at almost a 30 per cent discount on the price of notes. Thus, the Chilean capacity to import goods from Argentina was reduced to the ratio of 1 dollar for every 14 draft "nacionales" sold.[19]

In addition to other unfavourable factors influencing Chilean exports to Argentina, there is one of a psychological nature, resulting from the methods of accounting for customs dues in Argentine pesos. For example, it may be assumed that a Chilean exporter dispatches merchandise valued at 2,000 Argentine pesos and classified in Argentina as corresponding to the exchange rate of 7.50. The Argentine customs, after permitting its entrance, provide a clearance certificate (*certificado de despacho a plaza*) valued at 400 dollars (2,000 divided by 5) for which the importer is obliged to pay 3,000 "nacionales" to the bank, at the rate of 7.50 per dollar. The total credit accorded

[18] 10 November 1952 quotation.

[19] Since the Argentine Central Bank conducts its operations with Chile using dollar parity, the monetary value of the dollar can indiscriminately equal 5, 7.50 or 14 Argentine pesos, depending upon the type of exchange rate assigned to the merchandise or service involved. Conversely, the same dollar in Chile costs, in every case, 65 Chilean pesos, at the 10 November 1952 quotation. If this dollar is purchased in Chilean banks in order to import essential goods, it is obtained by buying 5 export "nacionales" at 13 pesos each. If it is purchased to acquire secondary imports, to cover service charges or to pay for travellers' or tourists' expenses, it is obtained by purchasing 14 "nacionales" in Santiago, but always at the same price of 65 pesos. Therefore the price of each "nacional" is 4.64 Chilean pesos.

the exporting country, however, is 400 dollars, so that the difference of 1,000 "nacionales", resulting from the margin between the exchange rates, is credited to the Argentine Treasury.[20]

Frequently this operation is interpreted to mean that a surcharge of 2.50 "nacionales" per dollar is being imposed on all imports from neighbouring countries. This interpretation, however, is erroneous, since similar imports from other countries, billed in dollars, are indiscriminately assigned the 7.50 exchange rate.

4. Undervaluation

Table 20 shows the progressive divergence between the price of the "nacional" used for exports and that of the exchange rates fixed by Chile for exports to third parties. This has necessarily resulted in an increasing undervaluation of the exchange derived by Chilean exports to Argentina, particularly of manufactured or agricultural products whose exports to other markets are free from the disadvantages of mixed exchange rates.

The significance of this unique system may be seen in tables 21 and 22. Its effect can be noted on commodities traditionally exchanged between Argentina and Chile, as well as on the export of manufactured articles which result from their industrial development. Since traditional trade items between Argentina and Chile are also exchanged between Brazil and Chile, an extra column was added to these two tables indicating the effects of the Chilean exchange system upon the different values received by Chilean exporters for selected commodities sold to Argentina, Brazil or to other countries. Conversely, the tables show the repercussions of this system upon exchange rates for imports, which, regardless of the type of goods, vary according to their origin.

[20] The Chilean Government does not receive profits from the purchase and sale of the exchange used in Argentine-Chilean trade.

Table 21. Chile: Significance in Chilean pesos of a dollar received for exports[a]

	Exports to Argentina	*Exports to Brazil*[b]	*Exports to other countries*	*Percentage of undervaluation*[g]	
				Argentina	*Brazil*
Peas and oats	65	85	122	−46.7	−30.3
Sulphur	65	85	122	−46.7	−30.3
Malted barley	—	85	122	—	−30.3
Cement	65	85	122	−46.7	−30.3
Copper and manufactures[c]	45	60	60	−25.0	—
Ferromanganese	65	85	122	−46.7	−30.3
Hemp fibre	65	85	122	−46.7	−30.3
Fresh and dried fruit	65	60	60	+ 8.3	—
Iron and steel	65	—	122	−46.7	—
Flax	65	85	122	−46.7	−30.3
Lentils[d]	65	85	91	−28.6	− 6.6
Alerce, coigüe and mañiu lumber	65	—	122	−46.7	—
Cypress, lenga, lingue and roble lumber	65	—	60	+ 8.3	—
Laurel and raulí lumber[e]	65	—	106.50	−39.0	—
Miscellaneous manufactures including *medicine*[f]	65	85	122	−46.7	−30.3
Quillay	65	60	60	+ 8.3	—
Nitrates	50	50	50	—	—
Sodium sulphate and/or copper sulphate	65	85	122	−46.7	−30.3

Source: Decree No. 76 of 6 February 1952 of the Ministry of Economy of Chile, and export dollar bank quotations.

[a] 10 November 1952 quotations.

[b] The free-market dollar, when used in clearing operations with Brazil, also undergoes an undervaluation as regards the export dollar used in other convertible currency regions: this discount was 32 per cent on 10 November 1952. The undervaluation results from an accumulation in Chile of financial credits from Brazil for which there is neither sufficient demand nor an official mechanism for their purchase.

[c] The 45-peso rate is assigned to exports traded for Argentine cattle. For other countries, the rate assigned to copper is 60 pesos to a price of 35.5 US cents per pound of copper. The surplus, plus a discount on the basic price of 35.5 cents (the discount amounting to 10 per cent for refined copper and 7 per cent for semi-refined), is settled at the free-market rate.

[d] 50 per cent at the 60-peso rate and 50 per cent at the free-market rate.

[e] 25 per cent at the 60-peso rate and 50 per cent at the free-market rate.

[f] Proceeds from these exports are granted the free-market rate if the product has been produced from Chilean raw materials or from foreign raw materials imported under the free-market rate, or if the cost of the foreign raw material does not exceed 20 per cent of the total f.o.b. price charged to the foreign purchaser. If it exceeds 20 per cent, the credits derived from the exports are liquidated at the official rate in proportion to the value of the raw material used. The remainder is settled at the free-market rate.

[g] This column demonstrates the percentage undervaluation in Chile of the exchange derived from exports to Argentina and Brazil in comparison with similar products exported to other countries, although in some cases these have shown a slight overvaluation. This percentage partially shows the degree of encouragement that would be given to exports to Argentina and Brazil, if liquidation of the value accruing from exports were to be effected in terms of dollar parity. If this payment should represent an excessive profit for the exporter, it may be lowered by a mixed exchange rate or by other means to achieve the same end.

TABLE 22. CHILE: VALUE OF AN IMPORT DOLLAR IN CHILEAN PESOS[a]

	Imports from Argentina on accounts Nos. 1308 and 1310	*Imports from Brazil through clearing*	*Imports from other countries*	*Percentage overvaluation[d]*	
				Argentina	*Brazil*
Semi-refined oils and/or oil seeds[b]	65	60	60	+ 8.3	—
Livestock on the hoof, excluding beef cattle transported by railway	65	85	122	−46.7	−30.3
Beef cattle and meat transported by railway[c]	45	—	122	−63.1	—
Unginned cotton	65	60	60	+ 8.3	—
Cocoa	—	85	122	—	−30.3
Cow hides	65	85	122	−46.7	−30.3
Vegetable and chemical tanning fluids including quebracho	65	85	122	−46.7	−30.3
Miscellaneous manufactures including medicines	65	85	122	−46.7	−30.3
Greasy and non-greasy wool	65	85	122	−46.7	−30.3
Books	65	85	122	−46.7	−30.3
Wheat	50	—	50	—	—

SOURCE: *Foreign Exchange Budget for 1952*, Chile.

[a] 10 November 1952 quotations, plus 0.50 bank commission in the case of account No. 1308.

[b] During the second half of 1952, Argentina and Chile agreed to exchange 7,000 tons of semi-refined sunflower-seed oil for 15,050 tons of Huachipato iron and steel products.

[c] The "nacional" used for export of the 1308 account was assigned to imports of cattle transported by railway, whereas the price of 9 Chilean pesos was established for meat, the dollar being thus worth 45 Chilean pesos. The "nacionales" used in these imports are derived from the exports of copper to Argentina and are liquidated at the same price. The cattle-copper exchange agreement was extended, in September 1952, to 1 January 1953, and the value per head received in central or northern Chile continued to be 995.60 and 935 (or US$199.12 and US$187) respectively, whereas copper is priced at US$1,000 per ton.

[d] This column illustrates the percentage of the difference between the actual price paid in Chile for imports from Argentina and the hypothetical price under parity. It also demonstrates the modifications that would take place under a system of parities.

Tables 21 and 22 indicate the serious barriers which undervaluation, as defined above, raises to the elimination of the traditional disequilibrium of Argentine-Chilean trade relations, long the cause of its inherent weakness. The recent reversal of the position, due to the decline in Argentina's agricultural exports, is only temporary and is not likely to alter the fundamental trend. Since Chile has a deficit in food production, the undervaluation exaggerates its predicament in liquidating annual trade balances with Argentina, from whom the largest share of food imports is received.[21] In contrast to the generally monopolistic nature of these foodstuff imports, whose entrance into Chile (particularly in the case of meat) is not hindered by supplies from other sources, the commodities utilized by Chile for payment almost invariably face competition in the Argentine markets of similar products from other countries. Undervaluation reduces the ability of Chilean goods to compete on the Argentine market, even tending to eliminate them. If normal exchange conditions prevailed, there would undoubtedly be a greater demand for Chilean commodities.

The importance of this situation naturally varies according to the success with which Chilean goods—hindered in Argentina by the exchange system—may be sold in other countries, thereby providing sufficient dollars to liquidate the debit balance with Argentina.

Having reviewed the effects of undervaluation on primary Chilean commodities exported to Argentina, the difficulties caused by other anomalies in the exchange system must be analysed with regard to their effect upon the trade of secondary goods and upon services.

5. CONTRADICTORY EFFECTS OF MARGINAL EXCHANGE

The absence of a parity, as already noted, together with the fact that Chile has neither established official nor multiple exchange rates for use in the clearing of accounts with Argentina, has resulted in the unit of account producing, through the various Argentine exchange rates, two different rates in Chile. The more general rate is the "nacional" used for export, whose Chilean value is derived from supply and demand on the Santiago money market. The value of the second, and more marginal, rate is lower and inversely proportional to the highest Argentine rate. The latter notably influences the reciprocal trade of both countries due to the opposing effects which occur, as illustrated in table 23.

The Chilean exchange rate of 4.64 pesos per "nacional" (corresponding to 14 Argentine "nacionales" per dollar) aggravates the effect of undervaluation upon the disequilibrium in Argentine-Chilean trade. Table 23 demonstrates that Argentine commodities benefiting from the most favourable exchange rate, including certain manufactured goods as well as other products, also benefit in Chile from the most-favoured rate for the importer, namely, the marginal one. In contrast, however, similar Chilean products exported to Argentina do not receive comparable treatment. In fact the opposite holds true, since the Chilean exporter suffers from the most unfavourable exchange rate, which is the 4.64 marginal rate. The Argentine importer, in a similar manner, must also use the most

[21] The undervaluation represents another tariff advantage, unforeseen in the Argentine-Chilean treaty of 1933, for imports of Argentine products into Chile. When such imports correspond to goods classified by the Chilean Exchange Budget as belonging to the free-market rate, the surcharge duty amounts to 1,140 per cent, whereas for the same products from other countries it is 2,020 per cent.

TABLE 23. EFFECT OF THE MARGINAL EXCHANGE RATE ON ARGENTINE-CHILEAN TRADE

(a) *Upon Argentine exports*

	Exchange rates for Argentine exporters (in Argentine pesos per dollar)	*Exchange rates for Chilean importers (in Chilean pesos per "nacional")* [a] [b]	*Price of Argentine pesos for Chilean importers (in Chilean pesos per "nacional")*	*Percentage reduction for Chilean importers (in terms of basic exchange rate)*
Semi-refined oils, meat, livestock, flour, wheat, wool and seeds.....	5.00	13	13	
Tanned leather, quebracho, tallow and grease, combed woven goods	7.50	13	8.67	33.3
Books, carded woven goods, miscellaneous manufactures, capital transfers, freight and other services	14.00	4.64 [c]	4.64	64.3

(b) *Upon Chilean exports*

	Exchange rates for the Chilean exporter (in Chilean pesos per "nacional")	*Exchange rates for the Argentine importer (in Argentine pesos per dollar)*	*Price of Chilean peso for the Argentine importer (in Argentine pesos per Chilean peso)*	*Percentage surcharge in the price to Argentine importer (in terms of basic exchange rate)*
Coal, fine coal.....	13.00	5.00	0.076	
Cement, copper, ferro-manganese, iron, books, lumber and nitrate..	13.00	7.50	0.114	50.0
Oats, miscellaneous manufactures, nuts, sodium sulphate, wines, capital transfers, freight and other services.....	4.64 [c]	14.00	0.213	180.0

SOURCE: Banco Central, Argentina.

[a] 10 November 1952 quotation for "nacional" used for export.

[b] Plus bank commission of 0.10 per "nacional" used for export.

[c] Marginal exchange.

unfavourable, or 14-peso, rate. But if Chile exports the same goods, to Peru for example, then the Chilean exporter will enjoy the best exchange, in contrast to the lowest rate received for sales to Argentina.[22]

Unless other policies are adopted, this situation will represent a serious obstacle to the application of the Argentine-Chilean Convention of April 1952, according to which trade permits are to be reciprocally granted for numerous products with equal values, many of them light manufactured articles.

The inequitable exchange treatment imposed upon secondary commodities also affects payment for both capital transfers and invisible trade items. The exchange rate in Argentina, for investments abroad and for service charges, is the highest in domestic currency. In Chile, the same items for payment in Argentina may be effected at the lowest or marginal rate.

The obstacles to Argentine-Chilean trade caused by both the lack of parities and the existence of a marginal exchange rate have been indicated. They have resulted in intricate private exchange operations, such as a combination of the "nacional" used for export with the marginal rate and with Argentine paper currency, in order to adjust exchange rates to a level at which business is possible. Argentine bills are used to such an extent that, in Chile, the possibility of adopting a bilateral agreement determining the limit for all normal goods traded with Argentina had already been considered in 1951. It would be applied so that payment for transactions exceeding the adopted limit could be freely liquidated in the currency of either country. In fact, with the tacit approval of both governments, the bank note is at present used to adjust the exchange quotations for livestock, which Chile imports from Argentina against copper exports. The price agreed upon in April 1952 was that of 996.60 "nacionales" per head, at the basic rate of 5 "nacionales" per dollar used by Argentina for livestock exports. This is equivalent to 199.32 dollars in account No. 1308, providing the Argentine exporter with 996.60 Argentine pesos. But this sum really represents the cost for cattle on the range, requiring an additional charge of 400 "nacionales" per head of cattle—which rose to 564 in 1953—for transport charges to the border. Thus the tacit understanding has been to raise no objections to Chilean payment of this transport charge in Argentine notes. The final exchange rate for the Argentine exporter is in effect 7.65 pesos per dollar.

Fundamentally, as seen above, the problems are generally derived from Argentina's application, without discrimination, of the same system of parities in force for all its foreign trade. In contrast, Chile maintains an exceptional procedure in its trade with Argentina entirely different to its trade policy with other countries. It is easy to picture the destructive consequences with which mutual trade is faced through the uncertainty arising from the lack of correlation between the two exchange systems. Trade policies are,

[22] For example, if sodium sulphate is imported into Argentina, it is subject to the rate of approximately 14 "nacionales" per dollar. For the Chilean exporter this was equivalent to the 10 November 1952 rate of 4.64 per "nacional", namely, 65 pesos per dollar. A similar Chilean export to Peru, at the same date, would have brought in 122 pesos for each dollar.

at present, anything but propitious for a closer contact between the respective economies. In the middle of 1951 the favourable opinion in each country for finding a solution to this problem led to official consideration of a new formula. According to this, both countries would abandon the present system and agree to a clearing procedure for liquidating mutual operations in dollars on account, to which both parties would apply the same exchange rate, pegged to the United States, for similar transactions. However, the agreement would required certain reservations, particularly regarding internal price fluctuations prejudicial to the consumer, such as have occurred in Chile for certain basic food supplies traditionally provided by Argentina.

Later, during the preparatory discussions held in Santiago in February 1953, resolutions were adopted for the study and regulation of an agreement to co-ordinate production and to intensify mutual trade. The two governments expressed "agreement to facilitate payment between the two countries as far as possible, principally by abrogating or modifying the present policy for exchange rates, movements of capital, distribution of exchange, and administrative or banking procedures which hinder such payments".

Chapter V

OCEAN TRANSPORT

1. Introduction

Trade within the southern zone of Latin America is closely related to the development of maritime shipping, since about 80 per cent of this commerce is conveyed by ships. Associated with the significance of maritime transport in foreign trade are the considerable effects of freight charges on the ultimate cost of the merchandise and the repercussions of their expenditures and receipts on each national economy. In the southern zone the importance of sea transport to the various countries and the depletion of foreign exchange holdings resulting from the lack of domestic shipping lines are readily apparent. Thus, during 1946–51, the total value of trade between the seven republics reached a yearly average of 396.5 million dollars (f.o.b.) with total payments for ocean freight representing 63 million. Domestic lines carried only a value of about 19 million dollars, and the foreign lines accounted for a total of 44 million dollars.[1]

Problems of sea traffic are closely interrelated with those of foreign trade. On the one hand, changes in the latter are directly reflected in the supply of and demand for freight, creating conditions either favourable or adverse to the activities of shipping lines. On the other hand, characteristics of the vessels, such as age or speed, may influence the pattern of trade, either facilitating or obstructing its flow. Concerning the importance of studying sea traffic in relation to the improvement of foreign trade, certain documents presented by the Economic Commission for Latin America to the meeting of the Expert Working Group on the Iron and Steel Industry in Latin America, held in Bogotá in October 1952, stress the effect of freight charges on the ability of Latin-American goods to compete with similar items brought from outside the region. These documents, comprising a preliminary study of the local factors that influence costs, compare conditions of location which should exist with others in specified industries, if prices are to be maintained at normal levels. Seven imaginary steel plants were selected for different Latin-American locations, and an eighth, similar to the first seven, was assumed for the United States Atlantic seaboard at Sparrows Point. Their comparative costs were then determined as influenced by local factors. Using the iron and steel industry as an example, it is established that the theoretical cost of a ton of pig-iron would be 43 dollars at San Nicolás, Argentina, in a plant with an annual production capacity of 850,000 tons; 30.3 dollars in the Huachipato steel mill, Chile, having a capacity of 230,000 tons; 31.9 dollars in Chimbote, Peru, with a capacity of 150,000 tons, and 27.6 dollars in Sparrows Point, assuming its production capacity to be 1 million tons. The slight difference between costs in industries favourably situated suggests that the exploitation of relative competitive advantages for their respective products in foreign markets depends, in the long run, upon transport costs.

The study of the relationship between maritime traffic and foreign trade was hindered by a lack of basic official information. It was thus necessary to approach private shipping companies of different nationalities to obtain data for a report, however brief, on the characteristics of sea transport along the southern coasts of Latin America and their connexion with the growth of trade between countries of the southern zone and the region as a whole. The absence of statistics, in certain cases, and their fragmentary character in others, has made it necessary to replace or supplement them by approximate calculations and estimates. The latter are submitted with due reserve, although, in the opinion of shipping officials examining them, they may be considered as representative of existing conditions.

For these reasons, this chapter should only be considered as a first approximate survey of ocean transport in relation to trade within the zone. Nevertheless, it does identify certain basic problems which could be studied further when more complete data are available. These problems include: the influence on regularity of traffic due to equilibrium or disturbance of the balance of trade; the effect of low speeds, translated in terms of imposing a heavier increase on the price of the goods than any affecting similar products from other parts of the world; the lack of port and harbour facilities, and other obstacles. All these could be eliminated if bilateral agreements, in which the shipping policy of each country is expressed, took into consideration the over-all interests of the freight market in the southern zone of Latin America.

2. Importance of ocean transport in the zone

About 80 per cent of the goods involved in reciprocal trade between countries of the southern zone are transported by sea. Such a high proportion is due principally to difficulties inherent in land transport across the Andes. Moreover, in the Argentine-Brazilian and Chilean-Peruvian trade sectors, goods are often transported between points so widely separated as to render the sea route more economical.

Table 24 shows the average annual tonnage of goods conveyed by various means of transport between countries of the zone, during the period 1946–48.

After 1949, there was a reduction in the tonnage of intra-zonal trade, chiefly because of a drop in wheat exports from Argentina and sand from Uruguay. In 1951, the total volume of freight carried in the southern zone was only 4,150,000 tons.[2]

[1] During 1951, the freight value of goods exported by Chile to Argentina and Brazil amounted to about 24 and 17 per cent, respectively, of their f.o.b. price. By virtue of these and other data, the average value of freight within the zone was estimated at around 20 per cent.

[2] Exports of Uruguay sand to Argentina declined from 2,300,000 tons in 1949 to 261,000 tons in 1950.

TABLE 24. INTRA-ZONAL TRADE BETWEEN THE COUNTRIES—AVERAGE 1946-1948

(Thousands of tons)

Exporters	Importers: Argentina	Bolivia	Brazil	Chile	Paraguay	Peru	Uruguay	Total
Argentina	—	47.9	386.4	172.9	81.3	108.7	146.0	943.2
Bolivia	26.2	—	2.2	0.4	0.3	3.2	0.0[a]	32.3
Brazil	752.5	2.6	—	39.2	1.7	1.3	132.4	929.7
Chile	131.6	15.4	72.3	—	0.5	59.6	9.6	289.0
Paraguay	168.8	0.0[a]	0.1	0.0[a]	—	0.1	56.9	225.9
Peru	108.8	73.4	4.4	581.1	0.0[a]	—	123.2	890.9
Uruguay	2,321.6[b]	0.8	25.7	1.0	4.2	0.2	—	2,353.5
TOTAL	3,509.5	140.1	491.1	794.6	88.0	173.1	468.1	5,664.5

SOURCE: *Foreign Trade Yearbooks.*

[a] Less than 500 tons.

[b] More than 80 per cent of this figure corresponds to sand transported by river.

TABLE 25. MARITIME INTRA-ZONAL TRADE, 1951

(Thousands of tons)

Exporters	Importers: Argentina	Brazil	Chile	Peru	Uruguay	Total
Argentina	—	1,006.8	114.0[a]	99.9		1,220.7
Brazil	637.6	—	13.2	34.8	123.0	808.6
Chile	201 [a]	108.2	—	34.2	111.1	454.5
Peru	245.0	12.8	436.0	—	62.2	756.0
Uruguay		57.2	16.5	0.5	—	74.2
TOTAL	1,083.6	1,185.0	579.7	169.4	296.3	3,314.0

SOURCE: Economic Commission for Latin America.

[a] Estimated by subtracting, from total reciprocal trade, the tonnage transported by the Transandean and Antofagasta-Salta Railways.

In order to determine the quantity of cargo transported by sea routes, consideration must be given to the fact that trade between Argentina and Uruguay is carried on almost entirely by river. The same is true for Paraguay, and only a low percentage of Argentine-Chilean trade is carried overland, mainly by the Transandean Railway and the railway from Antofagasta to Salta. Deducting the volume transported by other than sea routes from the aggregate trade tonnage in 1951, it is estimated that 80.2 per cent of this total was carried by sea (see table 25).

The fact that ocean freight is used in a high percentage of this trade and that transport costs represent, on the average, 20 per cent of the f.o.b. price of the goods conveyed, emphasizes the importance, to the economy of the zone and to its foreign exchange position, of possessing vessels with sufficient capacity to undertake the trade. Nevertheless, no official statistics exist to determine, for each country, the cargo carried between the zone by vessels sailing under local flags.[3] However, with figures supplied by the principal Argentine and Chilean shipping companies, and a partial estimate of the possible percentage of Brazilian, Uruguayan and Peruvian merchant fleets, table 26 was compiled.

TABLE 26. THE PART PLAYED BY DOMESTIC SHIPPING LINES IN INTRA-ZONAL TRADE, 1951

(Thousands of tons)

Argentina[a]	278
Brazil[b]	180
Chile[a]	323
Peru[c]	60
Uruguay[d]	36
TOTAL	877

SOURCES: [a] Shipping companies. [b] Incomplete statistics of Lloyds of Brazil. [c] Estimated. [d] Administración Nacional de Puertos, Montevideo.

Merchant fleets of the southern zone countries can be assumed to have transported, in 1951, about 877,000 tons of the cargo pertaining to intra-zonal trade, somewhat more than 27 per cent of its total tonnage. About 65 ships[4] sailing under the Argentine, Chilean, Brazilian, Peruvian and Uruguayan flags carried this cargo, their net[5] tonnage amounting to approximately 508,000 tons. This tonnage also represents about 27.5 per cent of the total cargo capacity of these five countries, which stands at 1.9 million tons.

The possibility of an eventual increase in intra-zonal trade by domestic merchant fleets with their present freight capacity, can be judged by table 27.

[3] There is also a lack of statistics to indicate the fulfilment of the agreements whereby Argentina and Brazil, Argentina and Chile, and Brazil and Uruguay are to transport their respective commercial products in their own ships, sharing the cargo in equal amounts of tonnage.

[4] The difficulty of giving the exact number of vessels belonging to each country engaged in intra-zonal trade in any particular year arises from the fact that coasters are in the habit of making voyages to ports outside the zone.

[5] Weight of ship's cargo capacity, plus weight of fuel, lubricants, water, food and crew.

TABLE 27. PERCENTAGE TONNAGE OF TOTAL FOREIGN TRADE TRANSPORTED IN DOMESTIC VESSELS, 1951

	Tonnage transported	*Percentage of foreign trade*
Argentina	3,496,600	19.9
Brazil[a]	878,019	7.3
Chile	675,456	8.9
Peru	246,050	9.6
Uruguay	61,434	2.8

SOURCES: Argentina: *Síntesis Estadística*, 1951. Brazil: Mercantile Marine Commission. Chile: Asociación Nacional de Armadores. Peru: Estimated. Uruguay: Administración Nacional de Puertos.

[a] Data corresponding to 1950.

Table 27 shows the small importance of sailings under local flags in transport involving all trading activities of certain countries in the zone. Argentina and Chile, with the largest share of intra-zonal transport, carry only limited quotas of their world trade.

3. Main characteristics of zonal shipping services

As stated above, 877,000 tons of the cargo involved in intra-zonal trade, representing 27 per cent of the total tonnage, was carried by sixty-five vessels sailing under zonal flags in 1951. According to data supplied by a report on merchant fleets of the southern zone countries (see annex A to the present chapter), twenty are exclusively engaged on the route, via the Straits of Magellan, between southern ports on both oceans. They carried about 330,000 tons, in 1951. These ships are generally slow, varying between 9 and 11 knots and occasionally 12 knots. Their average deadweight is 6,100 tons.

The other forty-five vessels engaged in intra-zonal trade carry out regular itineraries to the northern hemisphere, mainly from ports of the River Plate, in the case of the Atlantic, and from Valparaíso, in the case of the Pacific. Those vessels, which do not usually pass from one ocean to the other, have an average deadweight slightly higher than 8,000 tons and a mean speed ranging from 15 to 16 knots.

About 73 per cent of intra-zonal maritime traffic is covered by ships with European, North American and Panamanian flags, having speeds rarely lower than 15 knots and frequently higher. Although complete data are not available concerning their cargo capacity, existing figures indicate an average over 8,000 tons deadweight.[6] Of such vessels, those travelling through the Straits of Magellan in 1951 carried about 735,000 tons of intra-zonal cargo.

Summarizing these statements tends to be hampered by the difficulty of generalizing on the many and complex elements involved. For 1951, however, some 63 per cent of intra-zonal goods carried by zonal vessels enjoyed transport conditions not much inferior to those of travelling under foreign flags operating in the same waters. Conversely, about 37 per cent of these goods do suffer from conditions of transport that are inferior to those offered by foreign vessels with higher speed and larger cargo capacities. This percentage consists of goods transported from one ocean to the other via the Straits of Magellan, and therefore, affects the operations of the reciprocal trade between countries on different sides of the southern zone of the Latin-American continent.

4. Disequilibrium of traffic

It is characteristic of trade between southern countries on both oceans that goods travelling westwards have a much higher specific value than those carried in the opposite direction. This means that an equilibrium for balancing payments necessarily involves an inequality in the volume of cargo transported in each direction and vice versa. The causes and consequences of this phenomenon are examined below.

To judge the differences in unit values between products transported in each direction, it is helpful to use some examples for 1951. Among Argentine statistics for exports to countries on the Pacific are wool (at an average value of 3,170 dollars per ton), sunflower oil (at 470 dollars) and meat (at 312 dollars). From Brazil, also en route to the Pacific, are cotton (at 1,186 dollars per ton), coffee (at 931 dollars) and cocoa (at 428 dollars). In the opposite direction, only cotton exported by Peru to Argentina and copper sold by Chile to countries along the Atlantic coast show high average unit values. Other goods, such as Chilean cement and nitrate or Peruvian anthracite and petroleum, have low unit values. In the same year the average price of goods exported by Argentina and Brazil to Chile and Peru was 196.4 dollars per ton. Conversely, exports from Peru and Chile to Argentina and Brazil registered an average value of only 97.1 dollars per ton.

The effects of this uneven balance in ton-value transported between both oceans and its influence on the net balance of trade, can be seen in table 28.

[6] In the pamphlet, *Situación del Transporte Marítimo en Chile*, published in 1952 by the Asociación Nacional de Armadores, Valparaíso, it is established that sixty-seven foreign vessels which ply regularly along the Chilean coast possess an average deadweight capacity of 8,800 tons.

TABLE 28. DISEQUILIBRIUM OF OCEAN TRAFFIC BETWEEN THE SOUTHERN ATLANTIC AND PACIFIC

(In thousands of tons)

	1946–47	*1947–48*	*1948–49*	*1949–50*	*1950–51*
Pacific-Atlantic	433	457	421	568	734
Atlantic-Pacific	274	276	207	137	191
Difference	159	181	214	431	543
Percentage of tonnage transported from the Atlantic to the Pacific in relation with that transported in the opposite direction	63.2	60.5	49.1	24.2	26.0

SOURCE: Economic Commission for Latin America.

Table 28 shows the ratio of east-west cargo trade to that in the opposite direction. This ratio, which fell from 63.2 per cent in 1946–47 to 26 per cent in 1950–51, indicates the increasing disequilibrium in the balance of traffic. Atlantic to Pacific cargo has fallen so low that it only represents about a quarter of the amount carried in the opposite direction.

This increasing disequilibrium coincides with that shown in recent years by export and import trade accounts between the eastern and southern countries. As explained in chapter II of this report, such accounts (especially those of Argentina with Chile and Peru) traditionally registered favourable balances for the former. After 1949, the fall in Argentine agricultural exports reduced the space occupied in the holds of vessels plying between east and west. At the same time, the trade balances rapidly became adverse for Argentina and Brazil, as early as 1950.

TABLE 29. FOREIGN TRADE BALANCE BETWEEN THE SOUTHERN ATLANTIC AND PACIFIC SEABOARDS

1946	*1947*	*1948*	*1949*	*1950*	*1951*
−10.8	−28.1	−29.4	−6.7	+4.7	+7.1

SOURCE: Economic Commission for Latin America.

NOTE: The sign (+) or (−) indicates a balance in favour of, or against, Chile and Peru.

In addition to this factor, a disequilibrium in the traffic balance between both oceans has two other effects: (*a*) loss of regularity in departure services for shipping lines with itineraries, and (*b*) an increase in their transport costs, since sailings from the Atlantic to the southern Pacific are made with half-empty holds. In 1952, some Argentine boats even sailed on ballast to Chilean ports where they were to load cargo for Buenos Aires. Table 30 shows the loss of regularity in departure services of ships running between Argentina and Chile, due to the disequilibrium of shipments. It suggests how greatly trade relations are prejudiced by the disruption of regular shipping itineraries.

TABLE 30. MARITIME TRAFFIC BETWEEN ARGENTINA AND CHILE, 1951

Number of days' interval between sailings	*Number of sailings from Argentina*	*Number of sailings from Chile**
0–5	12	16
6–10	11	2
11–15	5	5
16–20	3	3
21–40	1	2
More than 40	1	2
TOTAL NUMBER OF SAILINGS	33	30

SOURCE: Shipping companies of Argentina and Chile.

* Figures do not include sailings of flags foreign to the zone.

For sailings both from Valparaíso and Buenos Aires, there were four occasions in 1951 when the departure intervals were longer than twenty days, including one of sixty-two days. However, on three occasions, two vessels sailed from Valparaíso on the same day. A similar event occurred twice in the case of Buenos Aires.

These facts underline the difficulties of co-ordinating the aims of commercial policy in the zone with those of increasing and regularizing local maritime transport services linking the countries. The intrinsic weakness of trade between the republics on the southern Atlantic and Pacific seaboards, especially in the cases of Argentina, Chile and Peru, is the traditional trend towards a disequilibrium in their trade balances. This factor is discussed in chapter II of this report.

To correct this weakness and given the essential nature of the foodstuffs supplied by Argentina, it is evident that the aim of a commercial policy favourable to the development of both zonal trade and the respective domestic economies should be a relative equilibrium in trade balances. Logically, this equilibrium ought to be based, not on a reduction of imports from Argentina, but on an increase in Chilean and Peruvian exports to Argentina. These should be in the same proportionate value as the foodstuffs from Argentina. Since the equilibrium of these trade balances intensifies the disequilibrium in tonnages transported between the Atlantic and the Pacific, the reconciliation of a commercial policy with one of encouraging sea traffic in zonal ships raises a number of questions which require additional study.

5. Freights and costs

Frequent mention is made of the problem of establishing freight costs in vessels sailing under zonal flags. These costs invariably influence the competitive capacity of the products transported, when destined for markets in which similar goods are offered from other parts of the world. This problem arises continuously in the intra-zonal trade which countries on the Pacific conduct with those on the Atlantic via the Straits of Magellan.

The lack of balance in traffic between both oceans; competition from faster and more efficient European and North American vessels; the type of cargo which, from the Pacific, is generally mixed and therefore more difficult to handle (from the Atlantic, conversely, it chiefly consists of natural products, in sacks or in bulk, with smaller freight costs)—all such factors cause freight rates to be extremely variable.

Generally speaking, freight rates are fixed *ad valorem*. However, rates for equal cargoes and distances often differ for each country, since they have to be adjusted to the exchange rates at which the respective shipping companies convert their income. This applies whether funds are earmarked to cover expenses of ships in the country where payments are collected or whether they are transferred to the country of registry.

At present, ocean traffic between Argentina, Chile and Peru is governed by a freight-rate schedule approved by the Argentine Ministry of Transport, fixed in Chilean pesos for traffic to that country and paid in dollars for Peru. Nevertheless, for cargoes over 500 tons, the decree permits shipowners to fix prices by agreement. Peru recognizes the tariff fixed by the Argentine Ministry of Transport for goods coming from Argentina and Uruguay. In the ocean traffic between Argentina and Brazil, freight charges are fixed by agreement. For shipments between Brazil and Chile, principally carried by a Chilean line, the company owning the ships determines the charges.

These various methods of establishing freight rates, the absence of international exchange-rate agreements covering the conversion of freighting revenues into

national currencies, plus the competition of "tramps" and "outsiders", all combine to alter prices in the freight market continuously. Although, at a given moment, they are usually automatically regulated by the ship offering a lower rate, they often differ for the same merchandise. There is no need to comment on the unfavourable repercussions of this situation upon normal trade.

6. Factors of cost

Shipping costs to some extent reflect the quality of equipment, and differ when vessels are powered with coal, oil boilers or diesel engines.[7] The type of engine influences the number of crew, the fuel, the amount of space occupied by fuel storage in relation to cargo, and, above all, the speed. Many other factors also exert pressure on costs, particularly the expenses of handling cargo, port dues, the extent to which the hold-space is used, the disturbed balance of traffic in relation to its direction, the length of each haul, and so on. Each company may fix the operating costs of its vessels, but freight rates will also depend on competition with other lines, on freight agreements and on the demand for transport in the sectors covered by the itinerary.

Table 31, drawn up with the help of Argentine and Chilean shipping companies, enumerates the factors which intervene in operating expenses. The table is based on the calculation that a ship twenty years old, of 5,000 tons deadweight, with oil boilers, would incur a daily running expenditure of 1,000 dollars at sea and 750 dollars in port. However, the actual distribution of costs would depend upon the individual characteristics of each vessel, and the influence of causes unrelated to the ships themselves, which modify the duration of different voyages.

A summary examination of certain important cost factors follows. However it should be recalled that those arising from the unequal balance of tonnage carried between both oceans have already been men-

[7] The effect on costs exerted by available cargo space and the personnel required to install and maintain coal-burning boilers can be reduced through the employment of oil-burners, and especially by diesel engines. In a coal-burning ship displacing 10,000 tons deadweight, for example, 30,000 vertical cubic feet will be required to maintain a supply of 800 tons of coal, which would necessarily reduce cargo space. If petroleum is used, the horizontal tanks can utilize the double floor of the ship, and thereby constitute a minimum restriction of space. In addition, the petroleum can be supplied in a third, or less, of the time required for loading coal. By the same token, the same ship used in the example will consume an average of 45 tons of coal daily to enable it to travel at the rate of 10 knots per hour, 30 tons of petroleum to travel at 12 knots, and 15 tons of petroleum to travel at 15 knots if powered by a diesel engine.

TABLE 31. PERCENTAGE DISTRIBUTION OF EXPENSES FOR A 20-YEAR-OLD VESSEL OF 5,000 TONS, WITH OIL BOILERS, ON THE BASIS OF DAILY OPERATING EXPENDITURE OF 1,000 DOLLARS

Expenses of the vessel itself		
Cables and telegrams	0.3	
Fuel	14.7	
Consumption, miscellaneous	2.5	
Social laws	2.8	
Wages and overtime	12.0	
Insurance	3.3	
Food	2.6	
Renewal of equipment	1.7	
General and unforeseen expenses	1.9	
Action costs	6.3	
Repairs	1.9	50.0
Expenses in port		
Agencies and commissions	7.6	
Taxes	0.2	
Port dues	2.1	
Loading	37.1	47.0
Others		
Consular fees	1.0	
Unspecified	2.0	3.0
TOTAL		100.0

SOURCE: Argentine and Chilean shipping companies.

TABLE 32. RATIO OF SPEED TO FREIGHT COSTS FOR GIVEN CLASSES OF GOODS

Class of merchandise	*Port of embarkation*	*Distance (miles)*	*Days at sea at a rate of*		*Cost of freight (dollars)*
			10 knots	*15 knots*	
	(*From Chilean ports to Buenos Aires*)				
Coal	Lota	2,600	11	7	20.00
Cement	Valparaíso	2,860	12	8	10.00[a]
Copper (bars)	Antofagasta	3,430	14	9	20.00
Copper (sheets)	San Antonio	2,800	12	8	22.00
Pig-iron	Corral	2,445	10	6	14.50
Steel	San Vicente	2,620	11	7	14.50
Nitrate	Iquique	3,655	15	10	13.00
	(*From North American, European and Brazilian ports to Buenos Aires*)				
Coal	Cardiff	6,300	27	18	11.60[b]
Cement	Hamburg	6,665	28	18	13.00
Copper (bars)	Antwerp	6,405	27	18	30.80
Copper (sheets)	Antwerp	6,405	27	18	30.80
Copper	New York	5,870	24	16	24.60
Pig-iron	New York	5,870	24	16	21.00
Steel	Victoria	1,408	6	4	18.00
Sulphate of ammonia	Hamburg	6,665	28	18	22.40

SOURCE: Shipping lines of Argentina, Brazil and Chile.

[a] This rate is levied if payment is made in Argentina pesos on the Transfer Account. If payment is made in dollars, the cost rises to US$12 and sometimes as high as US$24.

[b] The freight of coal from Great Britain, at US$16.80 in March 1952, registered closing prices down to US$11.60 in the second half of that year (120 and 83 shillings, respectively). This was due to the hold-space left unoccupied by lower coal exports of North American coal to Europe, beginning in March. This together with other factors, resulted in the general decline observable in the freight of solid cargoes during 1952.

tioned and receive special mention in annex B to this chapter entitled "Increased transport costs due to traffic disequilibrium between the South Atlantic and Pacific".

(a) Speed

Speed, which depends upon the type of engine, has a definite influence on transport expenses and, together with cargo capacity, usually determines the efficiency of each vessel in the development of foreign trade. Faster ships make a greater number of runs in a year than slower ones and thus reduce the influence of general expenses on their operating costs. Moreover, the demand for the transport of perishable goods, or others in whose early arrival the importers are interested, is greater for more rapid ships.

The problem of slower local vessels, contrasted with the higher speeds of foreign craft trading within the zone, especially affects commerce between Argentina, Brazil and Uruguay, on the one hand, and Chile and Peru, on the other, especially for trade via the Straits of Magellan.

Table 32, listing relative freight charges on various classes of merchandise shipped to Buenos Aires from Chilean and European ports, clearly shows the relationship between speed and freight costs.

Table 32 shows that freight charges for products exported by Chile to Argentina are lower than those for similar articles brought from Europe and the United States. As the distance covered in the second case is twice that of the first, it may be concluded that the cost per ton-mile is much lower for transport from Europe. This is partly because the lines serving Europe have faster ships, generally with speeds of 15 knots or more, as against 9 or 10 knots typical of the traffic within the zone that is carried by local vessels. It should however be pointed out that, for transport between Argentine and Chilean ports, the potential advantages from faster units would be offset by the difficulty of navigating the channels in the extreme south, and by the time spent in port in relation to the total period for the voyage. Conversely, the benefits of increased speed would be better exploited by lines making longer runs, such as those between Brazil and Chile. This is illustrated in table 33.

Table 33. Ratio of speed of shipping to freight tariffs for given classes of goods

Class of merchandise	Port of embarkation	Distance (miles)	Days at sea at a rate of		Dec. 1951 Freight cost (dollars)	
			10 knots	15 knots		
(From Chilean ports to Rio de Janeiro)					[a]	[b]
Sulphur	Antofagasta	4,270	18	12	29	36.25
Nitrate	Iquique	4,476	19	12	30	37.50
Copper sulphate	Antofagasta	4,270	18	12	36	45.00
Onions	Valparaíso	3,307	15	10	38	47.50
Copper (ingots)	Antofagasta	4,270	18	12	27	33.75
Copper (sheets)	San Antonio	3,676	15	10	29	36.25
Cement	Valparaíso	3,707	15	10	15.0	
Wines	Valparaíso	3,707	15	10	1.35 per case	
(From North American and European ports to Rio de Janeiro)						
Sulphur	New York	4,763	20	13	22.50 in sacks	
Sulphate of ammonia	Hamburg	5,550	23	15	21.00	
Copper sulphate	Liverpool	5,145	21	14	19.60 (solid) 24.50 (liquid)	
Onions	Lisbon	4,232	18	12		
Copper (ingots)	Antwerp	5,290	22	15	30.80	
Copper (sheets)	Antwerp	5,290	22	15	30.80	
Cement	Hamburg	5,550	23	15	21.00	
Wines	Lisbon	4,232	18	12	1.70 per case	

Source: Brazilian and Chilean shipping companies.

[a] Prices obtained from the tariff list of the Compañía Chilena de Navegación Interoceanica, without including the surcharge of 25 per cent on freight to Rio de Janeiro.

[b] Freight costs including the 25 per cent surcharge.

The influence of speed on freight rates is noticeable in the case of Chilean goods transported to Rio. These rates are higher than those paid on similar goods originating from Europe or North America.

The time required for voyages from Europe or the United States, using ships capable of 15 knots, since it is shorter than from Chilean ports with ships of 10 knots, is of course one factor influencing the importer. Assuming that goods and prices are equal, there is naturally an advantage for the exporter offering a more rapid delivery. Furthermore, speed has other effects on the competitive ability of zonal products. For instance, if a Chilean product is offered in Brazil (quoted f.o.b. Iquique) at the same price as a similar one from Germany (f.o.b. Hamburg), the latter will suit the Brazilian purchaser better. Although the distance from Hamburg to Rio is 24 per cent greater than between Iquique and Rio, freight charges are 30 per cent lower for European merchandise. The following calculation, based on craft displacing 5,000 tons deadweight, shows freight rates payable for European products shipped to Brazil if, instead of using speeds of 15 knots or over, they were carried in vessels capable only of 10 knots. The latter is usually the case for local ships of the zone.

TABLE 34. THEORETICAL FREIGHT CHARGES FOR EUROPEAN PRODUCTS TRANSPORTED TO RIO DE JANEIRO IN 10-KNOT CRAFT

Class of merchandise	Port of embarkation	Freight cost (dollars) in 15-knot craft	Freight cost (dollars) in 10-knot craft
Sulphate of ammonia	Hamburg	21	24.5
Copper sulphate	Liverpool	19.60	28.8 (solid) / 38.5 (liquid)
Copper (ingots)	Antwerp	30.80	35.2
Copper (sheets)	Antwerp	30.80	35.2
Cement	Hamburg	21	24.4

SOURCE: Economic Commission for Latin America.

(b) LOADING OPERATIONS

Table 31 showed that loading and port dues account for almost 40 per cent of the operating costs of merchant ships. This expense includes stevedores and similar workers, whose wages vary according to prevailing daily rates for dock labour, social legislation, dock and warehouse installations, and mechanization. This last greatly affects rates, providing a partial check to the upward trend of wages and, in some ports, to the substitution of payments based on cargo handled at fixed wages rates.

Table 35 shows the costs of handling selected types of cargo, in 1952, in ports of the southern zone.

As may be seen from table 35, handling costs in Atlantic ports are notably higher than for those on the Pacific. In Brazil and Argentina they reach a level between four and nine times higher than in Chilean and Peruvian ports. In the case of Montevideo, they were one and one-half to three times higher.

(c) PORT DUES

Expenses under this heading, closely related to handling costs, cover pilots, tugboats, buoys and wharfage among others. They vary considerably in different ports due to their dependence on mooring and subsequent facilities, as well as on local rates.

A tabulation of these expenditures in selected American ports is shown in table 36.

The charges for handling cargo and port dues, shown in table 36, are not comparable without some clarification of the services which they each cover. But such research is outside the scope of this preliminary study.

During 1951 and part of 1952 the intensity of maritime traffic in the southern zone and the frequency of runs suffered from the consequences of congestion in the port of Rio de Janeiro and, to a lesser extent, in other Brazilian ports. In Rio, ships had to wait between eight and twenty days to obtain mooring, causing European and North American freight conferences to agree upon a 25 per cent surcharge, as of March 1951, on products despatched to certain Brazilian ports. This surcharge raised Brazilian expenditures on import freight charges, from 13.7 per cent of the f.o.b. value of the imports, to more than 17 per cent in the second half of 1951.[8] The Brazilian-American Mixed Commission (in a programme for improving port facilities that involves investments of 43.2 million dollars) estimates that 5 million dollars is required for the modernization of the port of Rio de Janeiro, where there are insufficient wharves. Existing quays were built in 1910, covering 3.3 kilometres of waterfront, the total goods being handled amounting to 2.3 million tons at that time. Although to date the length of the wharves has been more than doubled,

[8] *Relatorio Anual da Carteira da Exportação e Importação do Banco do Brasil, 1951.*

TABLE 35. COSTS OF HANDLING CARGO IN SELECTED PORTS, 1952

(Average per metric ton, including loading and unloading costs, day-wages of stevedores, supervision of stowage, overtime, social legislation, etc. (in dollars)

	Products								
	Steel	Oats	Sugar	Sulphur	Barley	Cement	Copper	Timber[a]	Nitrate
Argentine ports									
Buenos Aires	4.02	3.75	..	4.30	3.75	3.82	3.28	4.60	..
Brazilian ports									
Santos	..	4.30	..	4.99	4.30	3.31	2.98	..	4.21
Rio de Janeiro	4.79	4.53	..	5.29	4.53	3.85	3.09	..	4.48
Recife	..	..	..	..	..	..	..	..	3.78
Bahía (Salvador)	..	..	..	..	..	..	..	..	3.87
Chilean ports									
Iquique	..	..	..	..	..	0.47	..	..	0.41
Antofagasta	..	..	..	0.60	..	0.46	0.61	..	..
Coquimbo	..	..	..	..	..	0.38	..	..	..
Valparaíso	..	..	..	..	0.81	0.60	..	..	..
San Antonio	..	0.91	..	..	0.91	..	0.76	..	..
Talcahuano	1.09	0.87	..	..	0.87	..	..	0.86	..
San Vicente	1.15	..	..	..	..	..	..	..	..
Corral	0.41	..	..	..	..	..	..	0.37	..
Peruvian ports									
Chicama	..	..	0.77	..	..	..	..	..	..
Ilo	..	..	..	1.25	..	..	..	..	..
Mollendo	..	..	..	1.37	..	..	..	..	..
Uruguayan ports									
Montevideo	1.81	..	1.88	..	..	..	..	..	1.81

SOURCE: Argentine, Brazilian and Chilean shipping companies.

[a] Costs per ton of 500 feet.

TABLE 36. PORT DUES IN SELECTED AMERICAN COUNTRIES, 1952

(Pilot charges, tugboats, buoys, wharfage and others; in dollars)

	Per landfall	*Remarks*
Argentina		
Buenos Aires	1,277.71	In dock
Rosario (after B.A.)	1,031.49	In dock, grain elevator
Rosario (direct)	1,950.78	In dock, grain elevator
Brazil		
Rio de Janeiro	1,089.72	In dock, for ten days
Santos	1,087.07	In dock, for ten days
Chile		
Iquique	31.77	In dock; at anchorage US$19.67
Antofagasta	58.87	In dock; at anchorage US$31.97 per diem
Valparaíso	77.92	In dock; at anchorage US$19.67 one day only
San Antonio	72.75	In dock; at anchorage, within breakwater US$48.16
San Vicente	34.80	In dock; at anchorage, no charge
Corral	52.96	In dock
Ecuador		
Guayaquil	240.00	At anchorage in the River Guayas
North America		
San Francisco	414.78	In dock
New York	689.00	In dock, at Brooklyn
New York	756.00	In dock, at Manhattan
Boston	408.55	In dock
Peru		
Ilo	13.72	At buoy
Mollendo	13.92	At buoy
Callao	316.62	In dock
Uruguay		
Montevideo	358.97	In dock
Montevideo	118.14	At anchorage, unloading fuel

SOURCE: Argentine, Chilean, Brazilian and Uruguayan shipping companies.

the cargo has increased more than five times and consequently loading and unloading operations are slower. At the end of 1952, apparently owing to a lower volume of Brazilian imports because of payments difficulties, operations in the port of Rio de Janeiro became more normal.

In the first eight months of 1952 tonnage passing through Brazilian ports showed a decrease of more than 10 per cent compared with the same period in 1951.

(*d*) EXCHANGE RATES

A disturbing factor in determining operating costs and freight charges is the absence of international agreements for standardizing the exchange regulations imposed by each country on its shipping lines. In some countries the rate applied to internal conversion of freight revenues is the same as that for the cargo itself. In others, regardless of the rate of exchange applying to imported goods, a special rate is accorded to freight charges. In some countries this is the same as the free-market rate, and in others it is lower. Moreover, other factors affect the rate of exchange. For example, in Uruguay a dollar for the payment of export freight charges must be bought at the highest rate. This is the free rate, valued at approximately 2.80,[9] and since it is equivalent to 24 Argentine pesos in Montevideo, a dollar for the payment of export freight charges can be bought in Buenos Aires for 14 Argentine pesos. If this same dollar is remitted from Argentina to a Chilean shipping company, the latter will receive a sum in Chilean pesos equivalent to only half a dollar, due to the mechanism explained in chapter IV of this report dealing with the absence of monetary parity between Argentina and Chile. However, a Chilean exporter or importer, for an amount equalling half a dollar, can remit the value of a dollar to Argentina to pay freight charges in the latter country. The effect of these discrepancies in exchange regulations is to hinder the development of shipping, unless they are removed by means of *ad hoc* agreements between the countries concerned.

[9] Quotation of February 1953.

7. Distribution of hold-space

Three zonal agreements have been reached for a more equitable distribution of cargo in national vessels and for the development of shipping services among the signatory countries. In 1946 Argentina and Brazil agreed to share the transport of cargo in their reciprocal trade equally. In the same year Brazil and Uruguay came to a similar agreement, renewed six years later. In 1952 Argentina and Chile agreed on measures to ensure that goods traded between the two republics should be given transport priority in their own vessels, the tonnage being shared equally.

Isolated agreements of this nature have certain inadequacies. For example, in particular they do not consider the over-all market for freighting services, and therefore the shipping companies operate in relatively narrow bilateral itineraries. In order to save dollars, as mentioned in chapter IV, Uruguayan authorities stipulated that freight contracted in ships other than those belonging to countries of origin of the goods transported, or to those for which they are destined, can only be settled by a special payments account. Chilean shipping lines, carrying cargo between Brazilian and Uruguayan ports and also between Peru and Montevideo, found themselves partially ousted from those routes where there was an increase in services by some European vessels belonging to countries linked with Uruguay by the system of payments on special account.

8. Co-ordination of shipping

Early in 1952 Argentine and Chilean shipping companies considered the possibility of a freight association, to ensure a stable clientele for regular traffic lines between the southern coasts of both oceans. Customers would be offered prompt embarkation, fixed prices for transporting basic products and, in every case, a uniform rate for merchandise of the same class, with perhaps an annual bonus in favour of exporters and importers who made use only of vessels within the association.[10] It was felt that, initially, shipping companies of both countries could work out a common tariff for ships sailing from Chile to Argentina. Every effort was made to co-ordinate this tariff with the one fixed by the Argentine Ministry of Transport for cargo boats sailing from the latter country.

Partly because of the uncertainty which began to characterize world freight markets in the second quarter of 1952 and of the risk involved in fixing tariffs during transitional market periods, the scheme went no further than preliminary conversations. Maritime co-ordination between Argentina and Chile, as a starting point for subsequent co-ordination with merchant fleets of other Latin-American countries, is also connected with the proposal to create favourable conditions for intergovernmental agreements. They would be necessary if the bilateral agreements causing inefficient distribution of hold-space[11] were not to conflict with the common interests of the shipping lines concerned. It would also help to remove another obstacle hampering the development of shipping activities, namely, the discrepancies in exchange regulations fixed by each country for its maritime freight system.

[10] On the transport of timber between Brazil and Argentina, an annual bonus of 5 per cent of the freight charges is issued to exporters who employ only vessels belonging to the association concerned.

[11] In certain sectors of Latin America, shipping agreements facilitate national measures based on using local vessels for the transport of imported goods. For example, a measure adopted by Chile in 1950 was to ensure that half of the imported goods coming from ports included in regular Chilean shipping itineraries should be carried in Chilean ships. Thus, the Compañía Sudamericana de Vapores, the Grace Line, and the Gulf and South-American Line reached an agreement for sharing cargo transported between the United States and Chile. Under this agreement, the first two divide equally their traffic from Atlantic ports to Chilean ports. In the case of transport between the Gulf of Mexico and Chile, the first and third of the companies guarantee each other a share not less than 35 per cent of the total cargo.

ANNEX A

National merchant fleets and shipping routes in the southern zone

1. Main characteristics

To provide a better understanding of the characteristics of sea traffic in the southern zone of Latin America, a brief summary of the position of the zonal merchant fleets is given below. It refers to the number of units under each flag, their deadweight tonnage and their classification by age and speed. But it should be noted that the summaries contained in the tables for each nation appearing below are not complete, although they are representative of the individual position as regards shipping. As stated in the introduction to this chapter, the available official information is either out of date, or refers only to the principal shipping companies or lacks certain indispensable data. This is true of most of the data on zonal shipping lines.

Tables 37 and 38 represent the principal characteristics of vessels belonging to the two Argentine shipping companies which, between them, own 76 per cent of the total tonnage.

Table 37. Argentina: Deadweight of vessels owned by the Flota Mercante del Estado and the Flota Argentina de Navegación de Ultramar

Deadweight tonnage	*Age (years)*						*Total*	*Percentage of fleet*
	0–5	*6–10*	*11–20*	*21–30*	*31–40*	*Above 40*		
2,000– 5,000	4	—	2	1	2	—	9	14.1
5,001– 7,000	2	5	—	2	1	1	11	17.2
7,001–10,000	16	5	—	1	6	—	28	43.7
Above 10,000	3	12	—	1	—	—	16	25.0
Total	25	22	2	5	9	1	64	100.0
Percentage of fleet	39.0	34.4	3.1	7.8	14.1	1.6	100.0	

Source: *The Times of Argentina* (weekly shipping journal, January 1952).

Table 38. Argentina: Speed of vessels owned by the Flota Mercante del Estado

Mean speed (in knots)	*Age (years)*						*Total*	*Percentage of fleet*
	0–5	*6–10*	*11–20*	*21–30*	*31–40*	*Above 40*		
8–10	—	—	—	3	3	—	6	18.2
11–13	4	1	2	2	—	1	10	30.3
14–16	11	3	—	—	—	—	14	42.4
Above 16	3	—	—	—	—	—	3	9.1
Total	18	4	2	5	3	1	33	100.0
Percentage of fleet	54.7	12.1	6.0	15.1	9.1	3.0	100.0	

Source: Flota Mercante del Estado.

An analysis of tables 37 and 38 shows that the units of Argentina's two principal shipping companies have satisfactory characteristics. Of a total of sixty-four ships, twenty-five, or 39.1 per cent, are new, in the sense that they have seen less than five years' service, while forty-seven, which represent 73.5 per cent of the total, have had less than ten years' service. The time-limit, beyond which a ship becomes uneconomic to operate and must be replaced, depends on a large number of factors. But, in general terms, shipping companies consider the limit when a unit is classified as "old" as twenty years at sea; 26.5 per cent of the Argentine vessels shown in table 38 belong to this category.

The cargo capacity per unit of the sixty-four vessels is relatively high. Only nine of them, or 14 per cent of the total fleet, are of less than 5,000 tons deadweight, and sixteen, that is 25 per cent of the total, are of more than 10,000 tons deadweight.

Data on speed is only available for the thirty-three units of the Flota Mercante del Estado. Six of them are slow, varying between 8 and 10 knots; ten register 11 to 13 knots, and seventeen travel at the satisfactory average speed of more than 15 knots, while three are capable of 18 knots.

TABLE 39. BRAZIL: DEADWEIGHT OF LLOYD BRASILEIRO VESSELS

Deadweight tonnage	*Age (years)*						*Total*	*Percentage of fleet*
	0–5	*6–10*	*11–20*	*21–30*	*31–40*	*Above 40*		
1,000–5,000	—	4	5	1	2	16[a]	28	32.2
5,001– 7,000	—	12	—	—	3	5	20	23.0
7,001–10,000	20	—	—	1	9	7	37	42.5
Above 10,000	—	—	—	—	2	—	2	2.3
TOTAL	20	16	5	2	16	28	87	100.0
Percentage of fleet	23.0	18.4	5.7	2.3	18.4	32.2	100.0	

SOURCE: Lloyd Brasileiro, report for 1950.
[a]Includes three ships of less than 1,000 tons deadweight each.

TABLE 40. BRAZIL: SPEED OF VESSELS OWNED BY LLOYD BRASILEIRO

Mean speed (in knots)	*Age (years)*						*Total*	*Percentage of fleet*
	0–5	*6–10*	*11–20*	*21–30*	*31–40*	*Above 40*		
Less than 8	—	—	—	1	1	10	12	13.8
8–10	—	12	—	1	7	11	31	35.6
11–13	—	4	5	—	8	5	22	25.3
14–16	20	—	—	—	—	2	22	25.3
TOTAL	20	16	5	2	16	28	87	100.0
Percentage of fleet	23.0 [b]	18.4	5.7	2.3	18.4	32.2	100.0	

SOURCE: Lloyd Brasileiro, report for 1950.

TABLE 41. CHILE: VESSELS ENGAGED IN FOREIGN SERVICE

Mean speed (in knots)	*Age (years)*						*Total*	*Percentage of fleet*
	0–5	*6–10*	*11–20*	*21–30*	*31–40*	*Above 40*		
Less than 8	—	—	—	1	1	10	12	13.8
8–10	—	12	—	1	7	11	31	35.6
11–13	—	4	5	—	8	5	22	25.3
14–16	20	—	—	—	—	2	22	25.3
TOTAL	20	16	5	2	16	28	87	100.0
Percentage of fleet	23.0	18.4	5.7	2.3	18.4	32.2	100.0	

SOURCE: Asociación Nacional de Armadores, Valparaíso, Chile.

The eighty-seven units of Lloyd Brasileiro, the biggest shipping company in Brazil, are engaged in overseas and coastal transport. About twenty of the more modern vessels, almost all of more than 7,900 tons deadweight and with an average speed of 16 knots, are overseas units. In 1950, they carried 98.5 per cent of the total tonnage of Brazilian foreign trade transported by domestic lines.

Tables 39 and 40 show that 41.4 per cent of these vessels are less than ten years of age, and that 52.9 are "old" ships, that is, over twenty years old. Twenty-eight ships (32.3 per cent) are small, that is, of less than 5,000 tons deadweight, while 56 (64.3 per cent) have a cargo capacity ranging from 5,000 to 9,000 tons deadweight. There are twelve slow ships (13.8 per cent) with a speed of 7 knots or less. Forty-three craft, practically half the fleet, show a mean speed of 10 to 11 knots, while twenty ships, recently incorporated, can average 16 knots.

An expansion programme of Lloyd Brasileiro aims at the acquisition of nineteen ships, totalling 150,000 tons deadweight, to cope with foreign trade. In the first stage of this short-term programme it is planned to acquire five units of 8,500 tons deadweight each.

The eighteen ships included in table 41 belong to three companies. The Compañía Sudamericana de Vapores (South American Steamship Company), with seven vessels, serves North American Atlantic ports and Europe, via the Panama Canal. The Compañía Chilena de Navegación Interoceánica (Chilean Inter-Oceanic Navigation Company) has seven ships plying between the ports of Peru and Brazil, via the Straits of Magellan, and has recently extended its activities to the Pacific Coast as far north as Canada. The Compañía de Muelles de la Población Vergara (Vergara Settlement Docks Company) owns three ships which carry freight to and from the South Atlantic and the Caribbean. Table 41 also includes a tanker launched in 1952, belonging to the Sociedad de Navegación Petrolera (Oil Tankers Navigation Company), with 16,785 tons deadweight. Eleven of the eighteen units included in the table, that is 61.1 per cent of the total, are new (less than ten years old). Seven are more than twenty years old, including three launched over forty years ago. Half these vessels possess an individual cargo capacity of 6,300 tons deadweight, and five of them (27.7 per cent) are of almost 10,000 tons deadweight each.

In 1953 the Compañía Interoceánica will add to its fleet a vessel built in Spain, of 5,800 tons deadweight and a mean speed of 12 knots. In the same year, the fleet of the Compañía Sudamericana de Vapores will be increased by an ore ship of 10,000 tons deadweight. The mean speed of the ships serving Chile's foreign trade varies between 9 and 12 knots, with the exception of five belonging to the Compañía Sudamericana de Vapores, which can average 15 knots. The coastal service along the Chilean seaboard is carried out by forty-two units, totalling 104,966 tons deadweight, or an average of 2,500 tons each.

TABLE 42. PERU: VESSELS OWNED BY THE CORPORACIÓN PERUANA DE VAPORES

Registered gross tonnage	*Age (years)*						*Total*	*Percentage of fleet*
	0–5	*6–10*	*11–20*	*21–30*	*31–40*	*Above 40*		
Less than 4,000	—	4	—	3	—	1	8	61.5
4,001–6,000	—	—	—	—	—	3	3	23.1
6,001–8,000	—	2	—	—	—	—	2	15.4
TOTAL	—	6	—	3	—	4	13	100.0
Percentage of fleet	—	46.1	—	23.1	—	30.8	100.0	

SOURCE: Corporación Peruana de Vapores.

The corporation owns thirteen ships of more than 1,000 registered gross tons. Six are new and seven are more than twenty years old. Eight are of less than 4,000 registered gross tons, and only two are larger than 7,000 tons.

Uruguay's merchant fleet is small. It consists of four units for general freight, two of which are new (seven years old) and two old (twenty-two and thirty-one years). There are also two tankers and seven ships engaged in coastal traffic, the latter having an individual deadweight of 200 to 700 tons.

2. SHIPPING ROUTES

The Argentine merchant fleet is mainly concerned with trade in the Argentine-Brazilian trade sector. Some of the ships engaged in this traffic also share in the transport of Brazilian goods to Europe and the United States or of imports to Brazil from these markets. Of Brazil's total foreign trade tonnage, Argentine vessels carried 12.9 per cent in 1949 and 8.1 per cent in 1950. In the latter year, the participation of domestic lines in Brazil's foreign trade was only 7.3 per cent.

TABLE 43. URUGUAY: VESSELS ENGAGED IN FOREIGN SERVICE

Number of ships	*Age*	*Tonnage of freight*
1	7 years	5,885
1	7 years	6,006
1	22 years	10,230[a]
1	31 years	11,450
1 tanker	..	15,000
1 tanker	..	15,000

[a] Including the cold-storage chambers with a capacity of 7,032 cubic metres.

Seven Argentine ships, belonging to the Flota Mercante del Estado and two belonging to Navemar S.A., run between the ports of the River Plate and those of the South Pacific, some voyages continuing as far north as the Peruvian coast. In 1952 the frequency of these trips received a stimulus from the weakening of the demand for hold-space in the Argentine-Brazilian trade sector, especially due to the fall in Argentine wheat exports to Brazil.

The Brazilian merchant fleet, occupied with the demands of coastal traffic, plays a minor role in trade with Argentina and Uruguay.

TABLE 44. RELATIONSHIP BETWEEN WORLD MERCHANT NAVY TONNAGE AND THAT OF THE ZONE

(*Thousands of tons, 1951*)

Country	*Tonnage in 1951 (gross total)*	*Percentage of world tonnage*	
		1951	*1939*
United States	27,331	31.33	16.77
United Kingdom	18,550	21.26	26.12
Norway	5,816	6.67	7.05
Panama	3,609	4.44	1.05
France	3,367	3.96	4.28
Netherlands	3,235	3.71	4.33
Italy	2,917	3.34	5.00
USSR	2,222	2.55	1.91
Argentina	979	1.12	0.42
Brazil	688	0.79	0.71
Chile	162	0.19	..
Peru	57	0.06	..
Uruguay	24	0.03	..
Other countries	18,286	20.95	..
WORLD TOTAL	87,245	100.00	100.00

SOURCE: Lloyd's Register of Shipping, London.

The most consistent and regular traffic routes between the Atlantic and the South Pacific coast are those of the Compañía Chilena de Navegación Interoceánica, which has, since 1940, carried the greater part of the cargo involved in Brazilian-Chilean trade,[12] and about 20 per cent of the solid cargo going by sea from Argentina and Uruguay to Chile and vice versa.

Until 1952, a second Chilean line, the Compañía de Muelles de la Población Vergara, with three ships, regularly effected the transport of Peruvian sugar for consumption in Chile and Uruguay and that of the frozen meat exported by Argentina to Peru. Since 1952 the small demand for cargo space on the Atlantic-Pacific route caused this company to prefer the transport of frozen meat from the extreme south to the central zone of Chile, without abandoning its traditional service of transporting Cuban and Peruvian sugar to Chile.

Other Chilean ships belonging to semi-regular lines make sporadic voyages to Argentina. Their cargo space, added to that of the other two Chilean lines, carries about half the products constituting the maritime foreign trade between Argentina and Chile. For years both regular and semi-regular lines, threatened by unequal cargo tonnages in interoceanic trade, have tended to augment their operations by transporting Brazilian and Uruguayan products and—to a lesser degree—Indonesian and South African products to Chile via Montevideo and Buenos Aires.

The vessels sailing under the Peruvian flag, belonging to the Corporación Peruana de Vapores, are engaged primarily in the coastal trade, in carrying supplies to the Department of Loreto via the Panama Canal and the Amazon River, and in the coal and wheat trade between Peru and Argentina.

Uruguay, which possesses only a small merchant fleet, deals primarily with the transport of her trade with Brazil,[13] and secondarily, that with Argentina and Europe. On a small scale, these vessels take part in the coastal trade along the Brazilian seaboard. The tankers supply Uruguayan refineries with crude oil from Chilean territory in Tierra del Fuego.

As noted earlier, about three-quarters of the zonal maritime trade is transported by North American or European ships and those registered in Panama. Among the regular sailings which connect southern ports on both oceans, is the Moore-McCormack Line, which operates from the western coast of the United States to the South Atlantic via the Panama Canal, returning by way of the Pacific. Recently, owing to a reduction in the activities of the Compañía de Muelles de la Población Vergara, the Moore-McCormack line established a regular monthly service between the River Plate and Callao. The Norwegian Westfal Larsen Line also operates around South America from the coast of the United States, following the same route as the Moore-McCormack Line, but in the opposite direction. In addition "tramps" and "outsiders" offer competition to these regular services by offering transport for Chilean nitrate or Peruvian petroleum at reduced rates, provided payment is made in free-market dollars. Such services are possible since these vessels generally return empty from the South Atlantic and so are in a position to offer hold-space at reduced prices.

Amongst lines operating in the South Pacific are the Grace Line (United States), with nine ships totalling 90,000 tons; the West Coast Line (Danish), also with nine ships totalling about 50,000 tons; the Pacific Steam Navigation Company (British), with ten ships and 90,000 tons; the Knutsen Line (Norwegian), with seven ships totalling 72,000 tons, and the Johnson Line (Swedish), with five ships totalling 42,000 tons.

[12] In 1946–51 it carried about 70 per cent of the total tonnage exchanged between Brazil and Chile.

[13] In 1951 Uruguayan ships carried about 58 per cent of the export goods from Uruguay to Brazil, and 20 per cent of her imports from that country.

ANNEX B

Increased transport costs due to traffic disequilibrium between the South Atlantic and Pacific

The disequilibrium in the volume of cargo carried from the Atlantic to the South Pacific and vice versa, as stated earlier in this chapter, increases the cost of the shipping services by not less than 25 per cent, as shown in the succeeding paragraphs.

The cost of transport is generally expressed in units of traffic; or the total cost of transport is determined per ton-kilometre or per ton-mile, since the two basic factors to be considered are tonnage and distance. In the case of sea routes, the cost per ton-mile has a theoretical value, when comparing costs with other companies or other transport means, since, for any company, distance is almost a constant factor.

The incidence of transport costs to distance closely follows a hyperbolic law. It has been assumed, on the basis of the laws of mechanics applied to economics, that the projection is an equilateral hyperbola, a hypothesis that has generally been accepted. The equation of this hyperbola takes the following form:

$$y^2+Cx^2+Ex+F=0 \qquad (1)$$

Coefficient C depends immediately on the "direct cost" of transport, that is, on that part of the cost which varies in proportion to the intensity of traffic. Coefficient E depends on the direct cost, and on the terminal cost and the mean cost as well. Coefficient F represents the terminal cost, which includes port dues, the expenses of handling cargo, those of agencies and others, which, taken together, represent a high proportion of total cost. The terminal cost is influenced by "indirect expenses", which are those that do not depend on the intensity of traffic. Direct and indirect expenses, which are of the greatest importance, are difficult to distinguish, since many expenses come under both headings—such as the depreciation of equipment, which for the most part depends on traffic, but which may continue to occur even when this is suspended—material assets being subject to the action of time and obsolescence. The values obtained by equation (1), which includes in its coefficients the mean cost of transport, are consequently

valid for an average utilization of cargo capacity, a mean rate of speed, etc.

To determine the influence exercised on the operation costs of the ships by the disturbed balance of traffic between the east and the south-west, as was previously mentioned, and introducing into equation (1) the factor of utilized hold capacity, the following equation results:

$$y^2 = \frac{(L.W.+D.W.)^2}{\rho\ 2\ D.W.^2} \quad (-Cx^2-Ex-F)$$

in which: L.W. = gross weight of the unloaded vessel (lightweight); D.W. = gross weight of the cargo, including fuel (deadweight)

$$\rho = \frac{L.W._m+D.W._m}{D.W._m}$$

the sub-indices $_m$ indicating mean values.

In the case of Chilean ships operating between Chile and the South Atlantic, ρ equals approximately 1.9, where the influence of the disequilibrium in the balance of traffic can be demonstrated by examining the transport costs of a ship of 6,300 tons deadweight. In an analysis of the utilization of the 95 per cent hold-space available of this ship used in the Pacific-Atlantic trade, two hypothetical examples will be examined; (*a*) where 75 per cent of the hold-space is utilized, and (*b*) where 20 per cent of the hold-space is utilized.

In the first example the figures must be rounded off.

$$\begin{aligned} L.W. &= 3{,}700 \text{ tons} \\ D.W._1 &= 6{,}040 \text{ tons} \\ D.W._2 &= 4{,}980 \text{ tons} \end{aligned}$$

The last two figures are obtained by calculating the use of the ships on the basis of their cargo capacity, which is more or less 84 per cent of the deadweight tonnage. The remaining 16 per cent represents the weight of fuel, water, food, the crew, etc.

The cost incurred in the return trip must be absorbed by the cost of transport in the Pacific-Atlantic direction where traffic is greater as illustrated by the equation:

$$y_1^2 = \left[\frac{L.W.(2D.W._1-D.W._2)}{\rho\ D.W._1^2}+\frac{1}{\rho}\right]^2(-Cx^2-Ex-F) \quad (2)$$

The return trip in the Atlantic-Pacific direction is demonstrated by the equation:

$$y_2^2 = \left[\frac{L.W.+D.W._1}{\rho\ D.W._1}\right]^2 \quad (-Cx^2-Ex-F) \quad (3)$$

If traffic were perfectly balanced and cargo could be brought on the return trip enabling 95 per cent of capacity to be used in both directions, the cost of transport in both directions would be the same, as shown by equation (3).

In the case under consideration, in which 75 per cent of the hold-space is utilized on the return voyage, the equation would respectively be:

$$y_1^2 = \left[\frac{3.7(12.08-4.98)}{1.9 \times 36.6}+\frac{1}{1.9}\right]^2 (-Cx^2-Ex-F)$$

$$y_2^2 = \left[\frac{3.7+6.04}{1.9 \times 6.04}\right]^2 (-Cx^2-Ex-F)$$

The relatively high cost of transport in the Pacific-Atlantic direction is calculated by the quotient $\frac{y_1}{y_2}$

Therefore:

$$\frac{y_1}{y_2} = \frac{(3.7 \times 7.1+36.6)\ 6.04}{36.6 \times 9.74} = 1{,}063$$

This means that in the return voyage only 75 per cent use of the hold-space accounts for a rise of 6.3 per cent in the cost of transport in the direction in which traffic is greater.

In the second example, in which 20 per cent of the hold-space is utilized, $D.W._2$ will equal 2,060 tons.

Therefore:

$$y_1^2 = \left[\frac{3.7(12.08-2.06)}{1.9 \times 36.6}+\frac{1}{1.9}\right]^2 (-Cx^2-Ex-F)$$

The cost in the Atlantic-Pacific direction does not vary, and the relation between the costs in both directions is equivalent to:

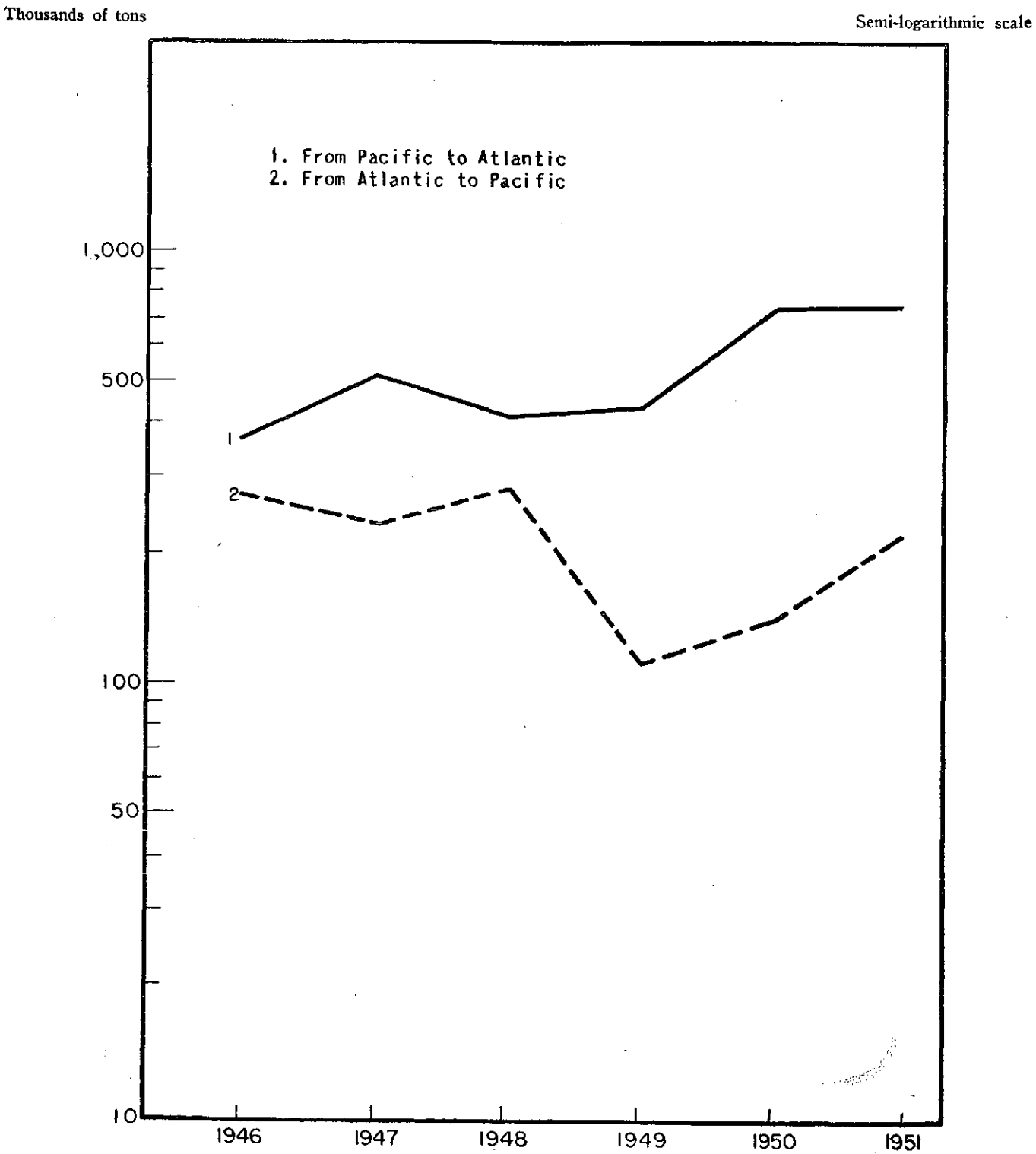
$$\frac{y_1}{y_2} = \frac{(3.7 \times 10.02+36.6)\ 6.04}{36.6 \times 9.74} = 1.25$$

The increase in the cost of Pacific-Atlantic trade, resulting from the return trip being almost on ballast (only 20 per cent of hold-space used), is, therefore, as high as 25 per cent. This theoretical method of deducing the influence of a disequilibrium in the balance of traffic upon freight costs gives figures very closely corresponding to rail transport. In the case of ocean traffic, the figures obtained for the rise in transport costs can be assumed to be lower than the actual figures, since indirect expenses are notoriously higher than those affecting rail transport under similar conditions. In any event, the result of this calculation underlines the minimum influence which the disequilibrium in the tonnage transported between the Pacific and the Atlantic exercises on costs and, therefore, on freight rates.

PLATE I

LATIN AMERICA (SOUTHERN ZONE)

Tonnage of goods transported from the Pacific to the Atlantic and vice-versa

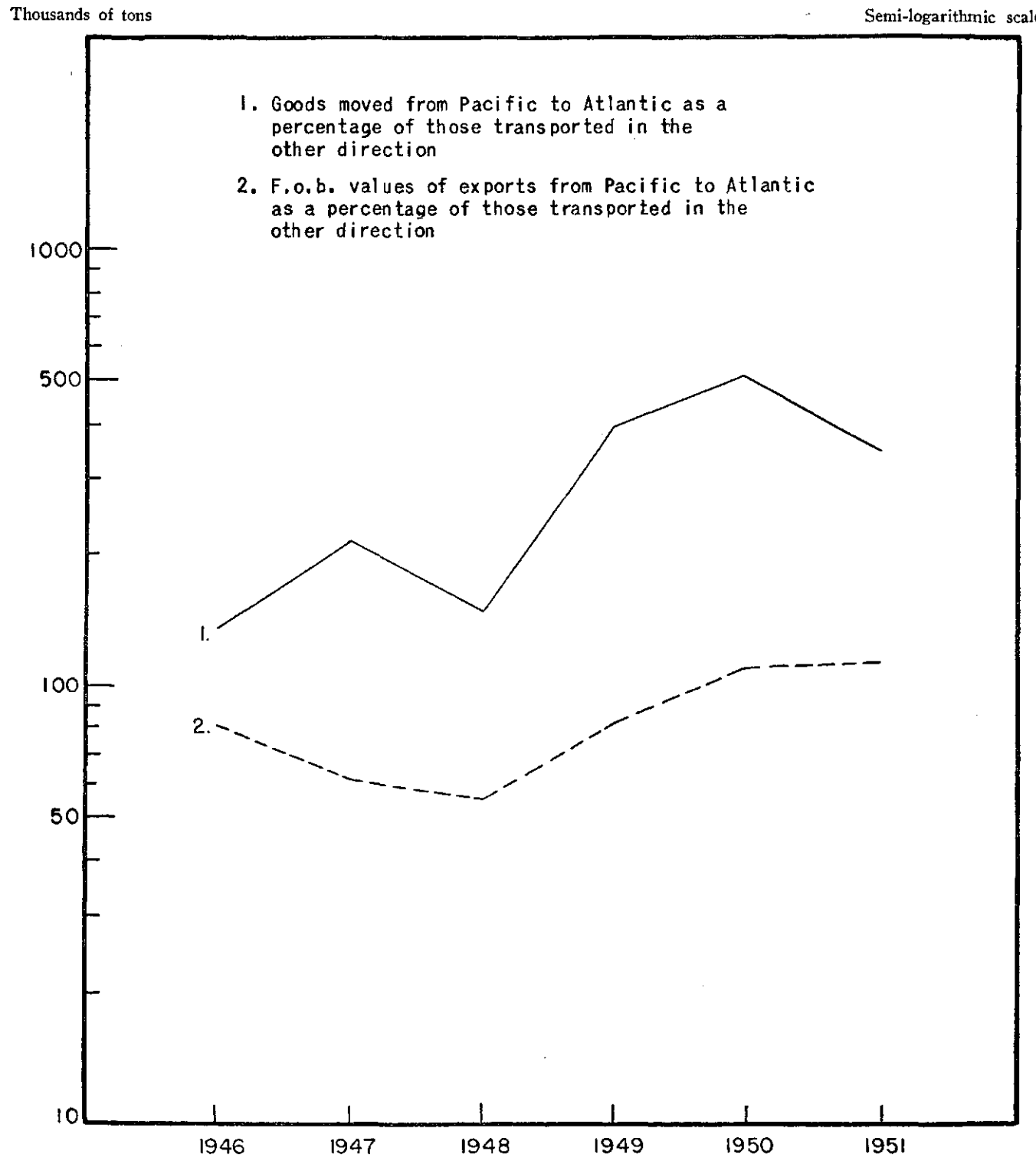


Source: Economic Commission for Latin America.

PLATE II

LATIN AMERICA (SOUTHERN ZONE)

Ratio between the tonnage and value of goods moved between the countries of the Atlantic and Pacific seaboards



Source: Economic Commission for Latin America.

PART II

STUDIES OF THE COMMODITIES IN TRADE

In accordance with the statement made in the introduction to part I of this study, at the same time as the research undertaken to obtain a knowledge of the elements of inter-Latin-American trade in the zone and of the general problems facing its development, a number of studies were begun on the principal foodstuffs, raw materials and manufactured goods which make up this trade. As in the case of the work for part I, the time factor and working methods made it advisable to limit the initial research stage to the production, consumption and trade of these commodities between the southern countries of the region, with the aim of broadening the study in the future to include the whole of Latin America.

Among the group of foodstuffs, the work already carried out, although incomplete, allows the presentation of the provisional reports which follow, dealing with four very important trade items—wheat, sugar, meat and fats. Their characteristics of production, domestic consumption and the size of the exportable surplus are discussed in relation to the possible effect of development programmes for agriculture and livestock and of the increase which demographic growth, among other factors, causes upon demand.

For raw materials and semi-finished goods, it has also been possible to provide a similar and provisional report about the prospects offered by markets of the southern zone for an increase in the trade of three commodities, the demand for which is influenced to a certain degree by economic development—iron and steel, copper and nitrate for agricultural use. The report on iron and steel examines the possibilities which an increase in the trade of such products would meet in the southern zone of Latin America generally and in Argentine-Chilean trade in particular. With regard to nitrate, the report deals with its prospects on the Brazilian market, where the use of nitrogen continues to be linked, in immediate terms and on a vast scale, with projects to defend Brazil's agriculture.

These provisional reports demonstrate a combination of facts and tendencies illustrating the problems and prospects facing the trade in commodities of fundamental importance to the commercial relations between the Latin-American countries. But it is evident that no definite conclusions can be reached from them, without previously extending the same research to other countries of the region which produce or import these commodities.

The study of the trade in manufactured goods is particularly complex, especially as noted earlier because the nomenclature used for official statistics differs from one country to another. The work of classifying and compiling the data already carried out by the Secretariat, providing evidence of the regressive phenomenon which influences most branches of this trade, does not at present permit more than conclusions of the very general nature used in chapter I. A further aspect of such work provides the basis to determine the future direction which should be followed for clarifying the basic problem of supplementing and specializing in Latin-American exports.

Chapter VI

WHEAT

1. Introduction

The most important commodity in the trade of the southern zone of Latin America is wheat,[1] the trade position of which appears to be determined by three basic factors:

(*a*) The curves for consumption and production in the zone do not run parallel, causing an appreciable decline in net exportable balances. (See plate III.)

(*b*) The reduction of wheat availabilities for export has provoked a considerable contraction as regards the self-sufficiency of the zone through trade, by obliging importing countries to divert part of their dollar resources to purchase wheat from other regions. (See plate IV.)

(*c*) The outlook for the next few years appears considerably brighter owing to the programmes for stimulating production in several countries, especially in Argentina. If these programmes are satisfactorily carried out, the zone, in addition to self-sufficiency and a consequent strengthening of reciprocal trade, would have substantial export surpluses.

First, an analysis will be made of the present situation and, secondly, future prospects.

2. Present situation[2]—production and consumption

The disparity between the tendencies of wheat production and consumption reduces net exportable surpluses, as seen from table 45.

The substantial decline in net exportable surpluses, shown in table 45, arises mainly from the increase in aggregate consumption as compared with an almost stationary production. During the period between 1934–38 and 1949–51, harvests decreased by 123,200 tons, while aggregate consumption rose by 1,939,000 tons in the same period.

During this time the population of the southern zone has increased from 68 millions in 1934–38 to 85 millions in 1946–50 and to 92 millions in 1951; there is approximately a 2 per cent average rate of growth each year.

If the data for production, consumption and trade are correlated with the growth of the population, the following evolution of annual per capita averages is obtained: from 1934–38 to 1949–51 production decreased from 111.6 to 81.8 kgs.; from 1934–38 to 1951 consumption increased from 78.7 to 79.9 kgs.; from 1934–38 to 1951 net surplus for export fell from 32.8 to 1.9 kgs. (See plate V.)

A detailed examination of production and consumption data for each of the countries of the zone indicates very differing situations, as may be seen from tables 46, 47 and 48.

As regards production, four countries have increased their crop: Brazil, Chile, Peru and Uruguay. Of these, three show a proportional rise in wheat production commensurate with their increase in population. Chile, on the contrary has increased its population to a much greater extent than its wheat production. This has produced a reversal in the position of this country, so that, from being a marginal exporter in 1934–38, it was essential to import in increasing quantities during recent years.

[1] In this study, the word "wheat" includes flour, assessed in terms of a wheat ratio of 70 to 100, wherever it deals with export and import figures and unless a statement is made to the contrary.

[2] The "present situation" represents the balance between the 1951 consumption and the average crops for the three-year period between 1949 and 1951, which is justified by the distinct nature of the determining factors: taking into account the demographic growth as regards consumption, and the necessity for weighting the very variable effects of climatic influences as regards the volume of the crops. For this same reason, the figures for the year 1952 have been entirely excluded, since they are completely out of proportion owing to the effects of an abnormal season of drought in Argentina. Actually, the statistical data for the last few years are partly provisional, but the possible margin for later rectifications cannot materially influence the conclusions.

TABLE 45. WHEAT: PRODUCTION, CONSUMPTION AND NET EXPORTS (SOUTHERN ZONE)

(Annual averages)

Period	*Production*	*Total consumption*	*Net exportable surplus*	*Population (thousands)*	*Per capita consumption annually (kgs.)*
	(*Thousands of tons*)				
1934–38	7,591.6	5,357.3	2,234.3	68,038	78.7
1946–50	7,120.2	6,460.0	660.2	85,090	75.9
1949–51	7,468.4	7,002.0	466.4	90,339	77.4
1951	7,868.0	7,297.0	576.4	92,337	78.9

SOURCE: *Statistical* and *Foreign Trade Yearbooks.*

TABLE 46. WHEAT: PRODUCTION (SOUTHERN ZONE)

(Thousand tons)

Year	Argentina	Bolivia	Brazil	Chile	Paraguay	Peru	Uruguay	Total southern zone
Average 1934–38...	6,127.7	33.0	144.0	849.9	..	76.3	360.7	7,591.6[a]
1946.....	3,907.0	14.0	212.5	904.5	1.3	90.6	216.6	5,346.5
1947.....	5,615.0	14.0	359.4	899.0	2.0	127.0	181.8	7,198.2
1948.....	6,500.0	24.0	405.1	1,026.4	1.1	136.8	423.5	8,516.9
Average 1946–48...	5,340.7	17.3	325.7	943.3	1.5	118.1	274.0	7,020.6
1949.....	5,200.0	28.0	437.5	1,113.5	2.2	129.0	518.3	7,427.3
1950.....	5,144.0	..	532.0	821.4	0.75	131.0	452.0	7,109.0[b]
1951.....	5,796.0	..	495.0	975.1	0.5	138.0	435.0	7,867.6[b]
Average 1949–51...	5,380.0	28.0	488.2	970.0	1.2	132.7	468.4	7,468.3
1952.....	2,050.0	..	580.0	988.0	..	146.0	472.6	4,265.1[c]

SOURCE: *Statistical Yearbooks.*

[a] Excluding Paraguay.
[b] Including Bolivia with the 1949 figure.
[c] Including Bolivia with the 1949 figure and Paraguay with the 1951 figure.

Due to the absence of complete statistical data, it is not possible to make accurate comparisons for Bolivia and Paraguay. In Paraguay there is practically no wheat production, the best years having reached only 2,200 tons. In Bolivia the average for 1947–49 is 33 per cent less than the average for 1934–38, but there is a tendency to a partial recovery. Finally, in Argentina, production dropped from 6,127,700 tons to 5,380,000 between 1934–38 and 1949–51 or there is a reduction of 12.2 per cent as against an increase in population of 32.6 per cent.

TABLE 47. WHEAT: A COMPARISON OF INDICES OF PRODUCTION AND POPULATION INCREASE (SOUTHERN ZONE)

Country	Increase of population 1949–51 on 1934–38 (percentage)	Increase of production 1949–51 on 1934–38 (percentage)
Brazil.....	37.6	238.9
Chile.....	24.0	14.1
Peru.....	20.9	75.0
Uruguay.....	15.7	29.6

SOURCE: *Statistical Yearbooks.*

The decrease of 747,700 tons in Argentina's crops is greater than the total increase in the four countries named in table 47 (628,400 tons). Obviously, the wheat situation in Argentina is the key to the whole problem concerning the zone, since this country is the chief producer, consumer and exporter.

As regards consumption, there are also very differing situations. Total consumption has increased in all the countries but in variable proportions, since in some cases the consumption per capita is greater and in others less than the same figure fifteen years ago. (See table 48.)

After a pronounced decline during the period of world scarcity (from the middle of 1946 to mid-1948) consumption figures as a whole have begun to rise almost to the pre-war level. This level has very substantially risen in Peru, while there is a material increase in Brazil, Chile and Uruguay. There also appears to have been some growth in Bolivia and Paraguay, but, as already indicated, data for these two countries are not very reliable. Finally, there is an appreciable decrease in Argentina. Many factors, sometimes opposing ones, are responsible for this situation. For example, the decrease in wheat consumption in Argentina is the result of a higher standard of living, since bread is being partially substituted in the popular diet by more varied foods. The same basic factor, that is to say an increase in the standard of living, has produced the opposite effect in Brazil, the average consumption of wheat being now much higher.[3] Here, there is, however, a demogeographic factor; there is an increasing concentration of population in the central, more temperate, areas. There is also a social-economic factor: there is a greater proportional increase in the urban and working-class population. In general terms these observations also apply to Peru.

[3] This is explained by the difference in the average level of the gross national product between the two countries.

TABLE 48. WHEAT: CONSUMPTION (SOUTHERN ZONE)

Country	Apparent total consumption (thousand tons)			Estimated population (thousand inhabitants)[b]			Per capita consumption (kgs. per year)		
	1934–38	1946–48	1949–51	1934–38	1946–48	1949–51	1934–38	1946–48	1949–51
Argentina[a].....	2,778.6	3,355.9	3,335.0	12,964.6	15,961	17,196	214.3	210.3	193.9
Bolivia.....	69.2	90.3	85.9	2,569.0	2,916	3,019	26.9	31.0	28.5
Brazil.....	1,139.3	1,150.9	1,697.3	37,893.2	49,000	52,633	30.1	23.5	32.2
Chile.....	833.9	986.7	1,090.2	4,684.2	5,525	5,809	178.0	178.6	187.7
Paraguay.....	33.1	33.0	51.7	921.8	1,238	1,406	35.9	26.7	36.8
Peru.....	204.6	257.8	370.4	6,950.6	8,019	8,405	29.4	32.1	44.1
Uruguay.....	298.6	330.0	369.7	2,055.6	2,303	2,380	145.3	143.3	155.3
TOTAL	5,357.3	6,204.6	7,000.2	68,038.0	84,962	90,848	78.7	73.0	77.1

SOURCES: *Yearbooks* of the Food and Agriculture Organization and national statistics.
[a] Data for Argentina has been adjusted in relation to the decrease of around one million tons of reserves accumulated between 1949 and 1951.
[b] For the average 1949–51 the figures for 1950 were used.

The actual levels of per capita wheat consumption may be considered satisfactory in Argentina, Uruguay and Chile. There still remains a large margin for a possible increase in the rest of the countries of the zone.

3. Evolution of trade until 1951

The position of wheat in the reciprocal trade of the countries in the southern zone has undergone considerable changes during the post-war period.

The decline of wheat's significance in intra-zonal trade, which is clearly visible in table 49, is similar to the fall of Argentina's exports, as may be seen in table 50.

It should be noted that the sharp decline, from 89.1 to 59.5 per cent between 1934–38 and 1949–51, of Argentine participation in the net imports of the other countries, corresponds to a much smaller reduction in volume, which has only decreased by 10 per cent. On the other hand, the participation of the zone in Argentina's exports has increased, rising from 33 per cent in the years 1945–47 to 42 per cent in the years 1949–51, after a temporary drop to 27 per cent during 1946–48. These divergences evidently arise from opposing tendencies between the decrease in Argentina's production and the increase of imports in other countries.

If exports from Chile and Uruguay to the zone are added, the figures are appreciably modified and it appears that the proportion of zonal self-sufficiency is higher.

In the relative reduction in zonal trade, the effect of the world wheat crisis during the years 1946 to 1948 must be taken into account. Since Argentina was not a member of the "Combined Food Boards" in Washington, nearly all the importing countries, owing to severe rationing, resorted to Argentina to obtain some help in alleviating the scarcity. The result was to extend to numerous countries the markets for Argentine wheat with a resulting reduction in that available to neighbouring countries, thus causing the price of wheat to rise. In 1937–38, Belgium, Brazil, Italy, the Netherlands and the United Kingdom absorbed 80 per cent of Argentina's wheat exports. In the years 1946–48, the share of these traditional purchasers dropped to less than 50 per cent.

Once the scarcity had passed, zonal trade showed a partial tendency to return to its former pattern. The consequences of events during the difficult years, however, could not be completely erased. Some of Argentina's new clients continued their mutual trade,

TABLE 49. WHEAT: RELATIVE IMPORTANCE IN INTRA-ZONAL TRADE

(Value in thousands of dollars)

	1934–38	*1946–48*	*1949–51*
Aggregate value of all the products exported within the southern zone by the countries of the zone	94,940	392,567	395,941
Value of wheat exported within the zone by countries of the zone	36,813	70,398	100,174
Percentage of wheat in the total	38.8	17.9	25.3
Aggregate value of all the products imported by the countries of the southern zone from the countries of the zone	102,900	421,105	446,599
Value c.i.f. of wheat imported by countries of the southern zone from the countries of the zone	39,781	81,067	117,328
Percentage of wheat in the total	38.7	19.3	26.3
Percentage of wheat in the whole regional trade	38.7	18.6	25.8

SOURCE: *Foreign Trade Yearbooks.*

TABLE 50. WHEAT: ARGENTINE PARTICIPATION IN ZONAL TRADE

(Annual averages)

	Total exports of Argentine wheat (thousand tons)	*Exports from Argentina to the southern zone* (Thousand tons)	(Percentage)	*Total imports of wheat in the southern zone* (thousand tons)	*Imports from Argentina* (percentage)
1934–38	3,349.1	1,109.5	33.5	1,245.4	89.1
1946–48	1,984.8	538.5	27.2	1,188.0	45.3
1949–51	2,379.0	997.1	42.0	1,675.1	59.5

SOURCE: *Foreign Trade Yearbooks.*

TABLE 51. RELATIVE IMPORTANCE OF WHEAT IN THE TRADE OF THE SOUTHERN ZONE

Period	*Total wheat exports of Argentina, Chile, Uruguay* (thousand tons)	*Exports to the southern zone* (Thousand tons)	(Percentage)	*Total imports of wheat in southern zone* (thousand tons)	*Imports from Argentina, Chile, Uruguay* (percentage)
1934–38	3,448.8	1,170.2	33.9	1,245.4	93.6
1946–48	2,038.7	582.7	28.7	1,188.0	49.0
1949–51	2,486.4	1,077.8	43.4	1,675.1	64.4

SOURCE: *Foreign Trade Yearbooks.*

Table 52. WHEAT: INCOME AND EXPENSES FOR WHEAT IMPORTS AND EXPORTS IN THE SOUTHERN ZONE

(Annual averages in thousands of dollars)

	1934–38			1946–48			1949–51		
	Total values	*With southern zone*	*Percentage*	*Total values*	*With southern zone*	*Percentage*	*Total values*	*With southern zone*	*Percentage*
Exporting countries:									
Argentina	96,164	34,277		267,832	67,479		228,100	93,381	
Chile	798	400		262	75		—	—	
Uruguay	3,309	2,136		3,130	2,844		9,317[a]	6,793[a]	
TOTAL	100,271	36,813	36.7	271,224	70,398	26.0	237,417	100,174	42.2
Importing countries:									
Bolivia	1,348	1,233		5,457	2,483		4,966[b]	1,961[b]	
Brazil	33,693[c]	32,813[c]		105,969	49,315		125,219	100,346	
Chile	411	356		5,354	5,073		12,421	3,002	
Paraguay	1,105[d]	1,105[d]		4,514[e]	4,164[e]		6,222[f]	6,222[f]	
Peru	4,083	3,824[g]		18,847	13,751		24,623[b]	5,797[b]	
Uruguay	458	450		8,252	6,281		—	—	
TOTAL	41,098	39,781	96.8	148,393	81,067	54.6	173,451	117,328	64.8
Balances:									
(1) Total exports less total imports	59,173			122,831			63,966		
(2) Total imports less imports from the southern zone	1,317			67,326			56,123		

SOURCE: National statistics.

[a] 1949 and 1950 only. [b] 1949. [c] 1934–37. [d] Based on indirect data: exports from Argentina and Uruguay plus 15 per cent for freight. [e] Calculated on the basis of the quantum of imports and the value of exports from Argentina. [f] 1950. [g] Indirect data: exports from Argentina to Peru plus 20 per cent for freight.

especially in the form of barter. The most notable case is that of India, which has become a regular market for half a million tons of wheat annually, in exchange for jute sacking. On the other hand, neighbouring countries of the zone made new trade links with other wheat-exporting countries, especially Canada and United States. In the year 1948 Brazil joined the International Wheat Agreement, ensuring for a period of five years an annual quota of 360,000 tons at a price which, although paid in dollars, was less than Argentina's export price.[4] This last factor, that of price, has come to play an important role in the change of direction of the normal flow of trade.[5]

Both the decline in the net exportable surplus of wheat and the reduction in the effective coefficient for self-sufficiency in the southern zone, have had serious consequences as regards the foreign exchange situation in these countries.

Table 52 provides a comparison of income and expenses, in terms of thousands of dollars, during the three periods being considered.

From table 52 it is evident that the decrease in the capacity for zonal self-sufficiency in wheat has been responsible for expenses of 67 *million* dollars during 1946–51. The volume of imported wheat rose from 48,000 tons in 1934–38 to an annual average of 562,000 tons in 1949–51.

To reach a more precise appreciation of these facts and trends, table 53 examines the potential loss of foreign exchange in the southern zone as a result of the divergence between production and consumption.

Table 53 shows that the decrease in the net surplus of wheat for export means a decrease in income of 131 million dollars annually for Argentina, while Bolivia, Brazil, Chile, Paraguay and Peru had to increase their purchases by almost 92 million dollars. Uruguay alone shows a higher income, although for a sum which has little influence on the general balance for the zone.

To appreciate fully these facts, they must be considered in relation to the total value of imports or

TABLE 53. MOVEMENT OF FOREIGN EXCHANGE BY WHEAT IMPORTS AND EXPORTS

(Millions of dollars)

Country	*Situation 1934–38 at present prices*[a]	*Situation in 1951*[b]	*Difference*
Argentina	+ 335.0	+ 204.0	− 131.0
Bolivia	− 4.2	− 6.8	− 2.6
Brazil	− 114.4	− 161.3	− 46.9
Chile	− 2.1	− 28.3	− 26.2
Paraguay	− 3.8	− 6.3	− 2.5
Peru	− 14.8	− 28.3	− 13.5
Uruguay	+ 6.2	+ 11.3	+ 5.1
TOTAL	+ 201.9	− 15.7	− 217.6

SOURCE: Economic Commision for Latin America.

[a] Volume of actual exports for 1934–38 calculated on the basis of 100 dollars per ton f.o.b.; volume of imports calculated on the basis of 115 dollars per ton c.i.f. The price of 100 dollars corresponds to a quotation of 2.40 dollars per bushel in the Chicago market.

[b] Similar prices applied to the import needs or to the export possibilities resulting from the balance between consumption in 1951 and the average production for 1949–51.

[4] Peru and, since 1949, Bolivia and Paraguay are also members of the International Wheat Agreement with the option of receiving respectively 200,000, 75,000 and 60,000 tons respectively per year.

[5] A comparison of prices paid in the years 1947 and 1948 is very complicated due to their considerable fluctuations. In the case of Brazilian imports, the average price paid for Argentine wheat, 153 dollars c.i.f. per ton, may be compared with the price of North American flour, 166 dollars c.i.f. Since flour is worth at least 40 per cent more than grain wheat, a ton of North American flour, in terms of wheat, cost 119 dollars. In 1948, Argentine wheat cost 196 dollars per ton c.i.f. while North American flour was never more than 171 dollars. This difference corresponds to the margin between the top prices reached in United States: 3.20 dollars per bushel in Chicago, or around 117 dollars per ton, and in Argentina 60 pesos f.a.s. per quintal, or about 180 dollars. On the other hand, small quantities of Chilean wheat in 1947 and Uruguayan flour in 1948 were bought by Brazil at prices which were even higher

exports, as the case may be, in these countries. Table 54 shows the proportion which the actual needs of wheat, at the prices which have been taken earlier as a basis, comprise in total imports for 1950, and compares this proportion with the theoretical result of maintaining import needs at the 1934–38 level and calculating them at present prices. The difference between the two sets of figures permits a measurement of the pressure exercised upon the capacity to import, owing to the unequal rise in the production and consumption ratio. The same calculation, applied to the income derived from wheat by the exporting countries, indicates in turn how aggregate exports have modified these resources.

Combining the increase in the budgets for imports with the reduction in resources caused by exports, the pressure of the relative lack of wheat upon the resources of the southern zone as a whole may be estimated at 7.5 per cent. This fact aggravates the difficulty which faces nearly all the countries of the zone, that of balancing their foreign exchange budgets.

Obviously, the solution of the wheat problem depends fundamentally upon a substantial increase in production, as much in Argentina as in the importing countries, at least where climatic and soil conditions allow reasonable production prospects.

4. Production prospects

(a) In general

In the republics of the southern zone, the recognition of the importance of developing wheat production has given rise to studies, programmes and various efforts towards accomplishing this goal. Broadly speaking, the results obtained to date may be noted from table 55.

TABLE 54. WHEAT: INFLUENCE OF THE RELATIVELY SMALLER AMOUNT OF WHEAT AVAILABLE UPON THE RESOURCES OF FOREIGN TRADE IN THE SOUTHERN ZONE

I. *Exporting countries*

	Percentage ratio between the value of wheat exports and total resources derived from exports in 1950	*Percentage ratio between the volume of the exports of wheat in 1934–38, estimated at present prices, and total resources derived from exports in 1950*	*Difference*
Argentina	17.3	28.4	−11.1
Uruguay	4.0	2.4	+ 1.6
Total weighted	15.0	23.8	− 8.8

II. *Importing countries*

	Percentage ratio between the value of wheat imports and total resources applied to imports in 1950	*Percentage ratio between the volume of wheat imports in 1934–38, estimated at actual prices, and total resources applied to imports in 1950*	*Difference*
Bolivia	16.0	10.0	+ 6.0
Brazil	14.6	10.4	+ 4.2
Chile	11.4	− 0.6	+12.0
Paraguay	25.0	15.2	+ 9.8
Peru	15.1	8.0	+ 7.1
Total weighted	14.4	8.5	+ 5.9

SOURCE: Economic Commission for Latin America.

TABLE 55. WHEAT: EVOLUTION IN CULTIVATED AREAS AND AVERAGE YIELDS IN THE ZONE

Country	*Area cultivated or harvested (thousands of hectares)*			*Production (thousands of tons)*			*Average yields (kgs. per hectare)*		
	1934–38	*1946–48*	*1949–51*	*1934–38*	*1946–48*	*1949–51*	*1934–38*	*1946–48*	*1949–51*
Argentina	6,783	4,752.2	4,706	6,634	5,340.7	5,380	980	1,124	1,143
Bolivia	34	27.0	37	33	17.3	28	950	640	757
Brazil	151	406.1	669.2	144	325.7	488.2	960	802	730
Chile	800	746.4	839	851	943.3	970	1,060	1,250	1,156
Paraguay	..	1.8	1.7	..	1.5	1.2	..	833	700
Peru	109	114.8	154	76	118.1	132.7	700	1,029	868
Uruguay	484	410.1	494.6	365	274.0	468.4	750	670	947
TOTAL	8,361	6,458.4	6,901.5	8,103	7,020.6	7,468.5	969	1,087	1,082

SOURCES: For 1934–38, *Yearbooks* of the Food and Agriculture Organization; other years, national sources, except for Bolivia.

NOTES: *Argentina:* Figures for harvested areas have been used. Taking into account the areas sown, the average return is appreciably modified: it is reduced to 907 kgs. in 1946–48 and to 953 in 1949–51. For the other countries the data refer to the areas cultivated, bearing in mind that there is no appreciable difference with the harvested areas. *Bolivia:* All the figures are from FAO. Data for 1934–38 refer only to the year 1938; data for 1946–48 refer only to the years 1947 and 1948; for 1949–51 there is no available data except for the year 1949. *Paraguay:* Data for the period 1946–48 only represent the year 1948. *Peru:* For 1949–51, only the years 1949 and 1950.

Table 55 shows the following facts. In recent years it is seen that the areas sown have greatly increased in Brazil, adequately in Peru and only slightly in Chile. They are insignificant in Paraguay and there has been a decline in Argentina. Yields have improved in Argentina, Chile, Peru and Uruguay, and have decreased in Brazil, Bolivia and Paraguay. The reduction of the harvested area in Argentina coincides with an increase in the average yield. This may partly be explained by the fact that marginal ground has been abandoned, either because it was not sown or since it was more advantageous for the farmer to leave the crop as livestock fodder. Partly, also, it is due to the progress obtained through the use of selected seed. Conversely, in Brazil, the considerable increase in arable land has resulted in a substantial reduction in the average yield. Chile presents a different example, since, with a stationary arable area, larger crops are being obtained owing to improvements in agricultural techniques. Peru and Uruguay are the only countries where larger average yields are combined with larger areas sown.

Taken as a whole the average yield for the southern zone has progressed satisfactorily between 1934–37 and 1949–51. However, if Argentina is excluded, the average yield only showed an increase of 4 per cent.

These yields should now be compared with those at present obtained in other parts of the world.

These figures show that the increase in yields is a general phenomenon, though of varied intensity. Canada, the United States and Australia have recently reached the same level as the countries of South America, thus nullifying the previous advantage of these countries in the pre-war period. If the yields from the countries of Latin America are compared with those in Europe under intense cultivation, even greater progress is evident in the European countries, with the exception of Italy.

The relative backwardness of the Latin-American countries is perhaps related to the lack of agricultural mechanization and the very reduced use of fertilizers. South America used only 150,000 metric tons of pure fertilizer elements in the agricultural year 1948–49, as against 6 millions consumed in Europe and nearly 4 millions in North America. In the year 1949–50, the average consumption of fertilizers in Latin America as a whole stood at 3.18 kgs. per arable hectare as against 17.83 kgs. in the United States and Canada.[6] As regards tractors for agriculture, FAO figures show 90,000 units[7] in the whole of Latin America, as against 972,000 in Europe and 4,235,000 in North America.

These statistics should not cause disillusionment. On the contrary, they rather indicate reasons for optimism in the future, because they show how enormous are the possibilities for increasing agricultural yields in general and the production of wheat in particular. This is especially true when the use of agricultural techniques are incorporated and intensified.

On the other hand, there are still vast tracts of land suitable for cultivation, even though their preparation for use would require heavy investments in many cases.

The studies and research in the different countries are very satisfactory. In the experimental stations of Brazil, for example, experiments in wheat cultivation with measured quantities of fertilizer have given returns of from between 20 to 30 quintals per hectare. In Paraguay, experiments by STICA with selected varieties have trebled the yields, raising them from 6 to 18 quintals.

TABLE 56. WHEAT: COMPARISON OF AVERAGE YIELDS IN SELECTED COUNTRIES

(Metric quintals per hectare)

Country	*1934–38*	*1948–50*	*Increase*
Canada	7.1	10.5	3.4
United States	8.7	11.1	2.4
Australia	8.0	10.9	2.9
New Zealand	21.1	27.0	5.9
Europe:			
Belgium	27.3	31.6	4.3
Denmark	30.4	35.8	5.4
France	15.6	18.3	2.7
Italy	14.4	14.8	0.4
Netherlands	30.3	35.4	5.1
United Kingdom	23.1	26.8	3.7
Average for the 6 European countries	*16.1*	*17.9*	*1.8*
Argentina	9.8	11.4	1.6
Chile	10.6	11.6	1.0
Southern zone total	*9.7*	*10.8*	*1.1*

SOURCE: Food and Agriculture Organization and national statistics.

(*b*) BY INDIVIDUAL COUNTRIES

In *Argentina* a number of adverse factors have caused wheat harvests to be low during the last few years. Among these factors, apart from the weather, is the man-power exodus from the country districts. Faced with this situation, the Argentine Government asked the Instituto de Economía Rural, in 1947 to study new types of agricultural equipment to determine those best suited to domestic agricultural conditions. In the Economic Plan for 1952, the government gave priority to its plans for agrarian mechanization. The effect of this official policy has caused a growth in the value of tractor imports as follows:

Year	*Millions of Argentine pesos*
1947	28.9
1948	75.0
1949	31.1
1950	50.7
1951	137.5

During 1952, 41.5 million dollars (310 million Argentine pesos) were allocated for the purchase of 10,000 tractors, mainly from Western Germany. This had its results in the harvests at the end of that year. On the other hand, it is evident that the imports which have been made to date only cover a relatively small proportion of domestic requirements. Evaluations of the actual need vary considerably, but have recently been estimated at between 75,000 and 100,000 tractors. In 1950, the number of units in existence in Argentina was thought to total 20,000.

The second Argentine five-year-plan provides for the domestic manufacture of tractors, and such a plant could also be responsible, during the next few years, for the maintenance and renewal of imported units. As regards the other elements for agricultural mechanization, Argentina's industry is in a fair way to produce the majority of them, or at least could

[6] According to FAO statistics.

[7] In 1951 this figure rose to 118,000.

provide for current maintenance and overhaul. As there is also a lack of other machinery, particularly machines for sowing and reaping, it is probable that a temporary increase in such imports will occur. Meanwhile steps have been taken to make the maximum use of the available equipment. In addition, more silos have been built, and credit to farmers increased, with the specific aim of stimulating the purchase of new machinery, since this had become increasingly difficult owing to the high price in terms of grain. It has been estimated that the price of a tractor in Argentina rose between 1928 and 1949 from 47 to 193 tons of grain.[8]

The official goal for the 1952–53 wheat campaign was to raise the area sown to 7 million hectares and the harvest to 8 million tons. As regards sowing, the desired objective has not been attained[9] and it was lower than that of pre-war years (average 1937–39: 8,266,000 hectares). For the harvests, when this report was compiled, the total has been estimated at more than 7 million tons. To draw a comparison the harvests for the years 1946–47 and 1950–51 may be cited:

Agricultural year 1946–47:
Area sown.....6,673,500 hectares
Harvest.....5,615,000 tons
Agricultural year 1950–51:
Area sown.....6,554,200 hectares
Harvest.....5,796,000 tons

This comparison shows an appreciable increase for the harvest of 1952–53 as regards the yield per hectare, which would now be above 12 quintals.

In *Brazil* for many years there has been considerable official interest in increasing wheat production. This received a strong impulse as a result of the grave crisis of 1946. Since then the area sown has increased steadily, passing from 300,000 hectares in 1946 to 705,000 in 1951. During the same period, production rose from 212,000 to 495,000 tons, due to a number of means for encouraging production. Among them is the partial mechanization of the agricultural work, directed by the Servicio de Expansão do Trigo. A further factor was the establishment of a remunerative official price.[10]

In the State of Rio Grande do Sul, where wheat harvests have recently shown marked advances, this crop is now sown in areas formerly dedicated exclusively to pasturage and rotation with livestock is now practised.

In 1952, the area sown increased by about 100,000 hectares and it was hoped that the harvest would reach 700,000 tons. It was also hoped that the efforts to encourage new methods and techniques would cause an improvement in the quality of the seed, thus increasing the proportion of the harvest which could be used for bread. In 1950, from a harvest of 532,000 tons, only 160,000 were used commercially for bread-making. Moreover, it is calculated that a quantity of 70,000 tons was used for farm consumption, and some 60,000 tons for seed. The rest of the harvest consisted of wheat of inferior quality, not suitable for bread-making.

[8] Economic Commission for Latin America, *Economic Survey of Latin America, 1949*. It should be noted that this ratio has been established from the price paid by the user making a direct import. The commercial price corresponded in 1950 to 300 tons of wheat. The tractor, which is worth 2,450 dollars in the United States, costs the North American farmer 30 tons of wheat.

[9] It stood at 6,057,500 hectares of wheat, according to data published at the beginning of February 1953.

It is uncertain whether there are errors in the data submitted by farmers to the statistical services. Nevertheless, there is a definite tendency towards a proportional increase in the harvest sold for bread-making. From 160,000 tons in 1950 it rose to 270,000 tons in 1951, in spite of a reduction of 37,000 tons in the gross volume of the harvest.

It is not possible to estimate the curve of the future growth of wheat production. Some Brazilian technicians estimate that the long-term production will reach a level almost equivalent to self-sufficiency. This would introduce a fundamental change in the whole structure of intra-zonal trade. By limiting the prospects to the medium-term and taking into account earlier observations, it appears probable that the estimate of an average of 1 million tons of wheat imported annually will be maintained.

In *Chile*, there are also plans for increasing wheat production. The Corporación de Fomento has acquired mechanical equipment, which is hired to farmers, together with technicians for its use in sowing and reaping. The use of fertilizers has been stimulated by tax reductions equivalent to half the price of the nitrate. But, as in Argentina and Brazil, the price incentive is the factor which seems to have the greatest effect. It rose from 85 pesos per quintal in 1937 to 395 pesos in 1950 and has been increased to 880 pesos for the year 1952–53.[11]

Obviously a relationship must be established between these figures and those of the general level of prices, which are as follows:

	Indices of retail prices	*Indices of wheat price to the farmer*
1937.....	100	100
1946.....	307	224
1950.....	601	465
1951.....	775	553
1952.....	976 (May)	769
1953.....	..	1,035[a]

[a] Base: 880 Chilean pesos per quintal.

It may be seen that the price of wheat has always been maintained at a lower rate than the index of retail prices. Nevertheless, for the first time in 1952 the price of wheat for the future harvest was announced before sowing and for the first time was higher to the index of retail prices at that moment. On the other hand, the mechanism of guaranteed prices had to make wheat cultivation during the last few years a more remunerative activity than the average agricultural and stockbreeding activities.

	Indices for wholesale prices		*Indices for wheat*
	Vegetable products	*Animal products*	
1947.....	100	100	100
1952.....	252 (May)	256 (May)	282
1953.....	..	..	380

[10] The price paid to the farmer is 150 cruzeiros per sack of 60 kgs. on the farm, including the value of the new sack, which is worth from 11 to 12 cruzeiros. This price is equivalent to 2,500 cruzeiros per ton. A comparison with the price of imported wheat shows that the latter averaged 1,854 cruzeiros during 1951. At first sight it would seem from this comparison that wheat cultivation in Brazil is uneconomical. Actually the difference in price is due to the disparity in the internal and external value of the cruzeiro. Thus, the wheat situation is in no way different from almost all the agricultural products of Brazil, the exceptions being coffee and cocoa. The difference between domestic production prices and those on the world market stand at 30 and sometimes even 60 per cent.

[11] In the last instance it was reduced to 820 pesos, but after the period of sowing.

The latest rise in the price of wheat has caused an appreciable increase in the area sown. It has risen from 750,000 hectares to 842,000 thus almost reaching the maximum figure of 867,000 hectares in 1948. With a yield equal to that achieved in the five-year period 1946–50 or 12 quintals per hectare, the harvest should reach a million tons. In ratio to apparent aggregate consumption over the last two years, a harvest of this size would leave a negative balance of nearly 200,000 tons. This is taking into account that per capita consumption has increased considerably during the last few years, passing from 178 kgs. in 1946–50 to 187 in 1949–51, which may be attributed to a certain reduction in supplies of meat and vegetables, either through smaller production or a rise in prices. This increase in domestic consumption, related to the reduction of the cultivated area since 1950, has caused a spectacular rise in the quantum of imports which in turn has become a very heavy burden on the budget for foreign exchange. An increase in wheat production is therefore of paramount importance. But this is not easy to achieve, given the relative limitation of the area which can be cultivated and the type of soil, it seems improbable that the relatively high yields which have already been achieved can be surpassed. On the other hand, the demographic growth of 1.7 per cent annually requires an increase of about 20,000 tons per year to be made available for consumption.

Assuming that the area sown is 850,000 hectares, it would be necessary to produce an immediate average return of 14 quintals in order to meet present needs, adding, on an average, one more quintal every five years to compensate for the increase in population. Alternatively, if the average yield for the five-year period from 1946–50 is taken as permanent, it would be necessary to add 130,000 hectares immediately to the area already devoted to wheat cultivation, increasing this area by 80,000 hectares every five years.

In practice, if the incentives for production are maintained at the present level, it is hoped that the two forms of development can be combined to a sufficient extent to compensate for the vegetative increase in consumption, probably maintaining at least part of the present deficit.

The lack of exportable Argentine wheat and the need for such Argentine imports created an acute problem in *Paraguay* in 1952. The necessity for importing wheat to be paid for in dollars was only solved due to a special loan from the International Monetary Fund. Domestic consumption is at present estimated at 70,000 tons annually, while Paraguay's production is very low. Wheat is not cultivated there, except in a few districts in the south-east of the country whose total area, in the years for which statistics are available, was less than 3,000 hectares.

In Paraguay, the Technical Service of Inter-American Agricultural Co-operation (STICA), which has been working for several years in this country and is now linked with the Point Four programme, has paid particular attention to the wheat problem. Such studies and experiments have led to the conclusion that in a few years the country could attain a high level of self-sufficiency. On its model farm, STICA has studied more than a thousand varieties of wheat and has selected some thirty varieties which give a good yield in Paraguay. They have singled out, as preferable to all others, Brazilian wheat Frontana 2–56, because of its greater resistance to plagues. STICA is now working on the increase of seeds of this variety so that it will be possible to develop wheat cultivation within the next few years. Complete self-sufficiency in wheat is impossible, since wheat grown in the country has to be mixed in certain proportions, with hard or semi-hard imported wheat, to make bread.

According to agricultural technicians, wheat cultivation in Paraguay is not as economical as in Argentina and will be less advantageous than other Paraguayan crops, especially maize. Nevertheless, it has been considered necessary to supply at least a part of Paraguay's consumption with local production, to relieve the considerable burden which imports involve when there is no possibility of reciprocal trade with Argentina; Argentine wheat must thus be paid for in dollars. In 1952 wheat and flour imports required the use of about a fifth of the resources normally derived from exports.

Since the programme to be adopted by the authorities is as yet unknown, it is impossible to provide accurate figures for production prospects in Paraguay. Thus, it is probable that in the near future import requirements will be almost equal to those of consumption.

In *Peru*, the government has put a development plan into action based on the utilization of selected seed, an increased use of fertilizers and the development of mechanization. In the south of the country, the region of Arequipa, there are already high yields of more than 30 quintals per hectare. In other districts, on the contrary, the yield is less satisfactory. It is hoped to increase harvests by means of progress in these regions and not by devoting more land to wheat cultivation. The objective of the programme is to become self-sufficient by 1956.

In *Uruguay*, the average yield obtained during eight years from the experiments carried out in the district of Maldonado increased to about 19 quintals, and in one case to 30 quintals per hectare. The new districts of extensive cultivation in the north of the country are giving better harvests at less cost than in the traditional areas with poor ecological conditions. Yields have been improved where a rotation of wheat and sugar-beet crops has been carried out. Mechanization has also had a favourable influence.[12] Nevertheless, the agricultural and livestock plans for Uruguay, as well as the recommendations of the Technical Mission under the joint auspices of the International Bank for Reconstruction and Development and the Food and Agriculture Organization, do not foresee any expansion in wheat cultivation to provide an increasing surplus for export. Their advice, in fact, is to maintain wheat production at the level necessary to meet consumption needs and to improve sugar-beet output to satisfy the domestic demand as well.

[12] The increase in agricultural mechanization during recent years should be noted:

Number of tractors, according to 1930 census	1,606
Number of tractors, according to 1946 census	3,172
Imports after the census of 1946 up to and including 1950	9,719
Number of harvesters, according to 1930 census	128
Number of harvesters, according to 1946 census	1,317
Imports after the census of 1946 up to and including 1950.	2,038

In 1951 imports of agricultural machinery taken as a whole were 33 per cent greater for the number of units and 100 per cent greater in value according to figures for 1950. At the end of 1948 the number of harvesters reached 2,524 and a census of units in service during the agricultural year 1948–49 shows a figure of 2,522.

TABLE 57. WHEAT: PROSPECTS FOR PRODUCTION AND CONSUMPTION (SOUTHERN ZONE)

(Millions of metric tons)

Country	1953			Annual average for 1956–60		
	Production	Consumption	Balance	Production	Consumption	Balance
Argentina	7.40	4.00[a]	+3.40	8.00	3.65	+4.35
Bolivia	0.03	0.09	−0.06	0.05	0.10	−0.05
Brazil	0.70	2.00	−1.30	1.40	2.40	−1.00
Chile	1.10	1.25	−0.15	1.25	1.35	−0.10
Paraguay	..	0.07	−0.07	0.05	0.08	−0.03
Peru	0.15	0.40	−0.25	0.30	0.45	−0.15
Uruguay	0.50	0.38	+0.12	0.50	0.40	+0.10
TOTAL	9.88	8.19	+1.69	11.55	8.43	+3.12

SOURCE: Economic Commission for Latin America.

[a] Including the replacement of a commercial reserve of from 500,000 to 600,000 tons.

5. General prospects of the wheat trade

From the foregoing analysis we can draw up a rather favourable table of the evolution of the relationship between production and consumption for the next few years. (See table 57.)

From table 57 it may be seen that in 1953 the southern zone will again show an appreciable net surplus for export after having entirely covered domestic needs. For the second half of the present decade the wheat available for export will be sufficient both to cover the needs of all the other Latin-American countries, and to leave about a million tons for trade with Europe and Asia. The position will thus reach and may even surpass that existing in the pre-war period, considerably relieving the pressure upon foreign exchange budgets, both for importing and exporting countries. But these favourable prospects are dependent upon a steady prosecution of development programmes for production, with the aim of reversing the tendencies which were recently predominant.

Perhaps the size of the problems resulting from a persistence, during the next five years, in the tendencies shown from the pre-war period to 1951 has not been placed in its proper perspective. The projection of these tendencies, as shown in tables 52, 53 and 54, leads to the situation shown in table 58.

The last figures, 362 and 582 millions of dollars, represent respectively 13.9 and 21.5 per cent of the total value of imports into the southern zone in 1950. In this way the exceptional position of wheat in the foreign trade of these countries is underlined.

TABLE 58. WHEAT: PROJECTION OF THE WHEAT DEFICIT IN COUNTRIES OF THE SOUTHERN ZONE WITH STATIONARY PRODUCTION

	Quantities which would be lacking to meet consumption[a]		Quantities which would be lacking to return to the 1934–38 situation[b]	
	Thousands of tons	Equivalent in millions of dollars[c]	Thousands of tons	Equivalent in millions of dollars[d]
1955	410	47.15	2,610	267.15
1960	1,250	143.75	3,450	363.75
1970	3,150	362.25	5,350	582.25

SOURCE: Economic Commission for Latin America.

[a] Basis: Ratio between the average production for 1949–51 and consumption for 1951 increased by 2 per cent annually.

[b] Figure [a] plus the net exportable surplus for the period 1934–1938, i.e., 2,200,000 tons.

[c] Estimated at 115 dollars per ton, basis c.i.f.

[d] By adding to the former figure the equivalent of the net exportable surplus calculated at 100 dollars per ton, basis f.o.b.

The situation which arose in 1952, as a result of the loss of the Argentine harvest, provides a forecast of the difficulties which a lack of productive increase would cause in the southern zone during the years to come. The loss of the wheat crop in 1952 was such

TABLE 59. WHEAT PRODUCTION, TRADE AND CONSUMPTION IN 1952 (SOUTHERN ZONE)

(Thousands of tons; millions of dollars)

Country	Production	Imports		Exports		Apparent consumption
		Volume	Value	Volume	Value	
Argentina	2,050	200	24.0	—	—	2,250
Bolivia	28	60	5.4	—	—	88
Brazil	580	1,250	140.0	—	—	1,830
Chile	988	187	28.0	—	—	1,175
Paraguay	0.5	60	7.0	—	—	60.5
Peru	146	250	24.0	—	—	396
Uruguay	472.6	—	—	172	21.7	300.6
TOTAL	4,265.1	2,007	228.4	172	21.7	6,100.1

SOURCES: *Production:* Official statistics, except for Bolivia and Paraguay where the most recent available figures have been repeated. *Imports:* Official estimates for Brazil, Chile and Paraguay. Estimates based on former data for Bolivia and Peru. For Argentina a plurilateral exchange based on maize. The value has been estimated with the price of wheat in the United States at the beginning of the operation. *Exports:* Data for Uruguay's exports correspond to the imports received by Brazil and Paraguay. Values f.o.b., calculations based on the c.i.f. prices.

that it caused an immediate situation resembling that which a projection of the former trends might have forecast at the end of the next decade. Aggregate production in 1952 did not reach more than 4,265,000 tons, while consumption requirements (basis 1951) reached 7,440,000 tons, leaving a deficit of 3,175,000 tons. At an average price c.i.f. of 115 dollars, the loss in foreign exchange would have represented 365 million dollars. In fact, it only reached a loss of some 200 millions, due to the considerable reduction in Argentine consumption.

Table 59 requires some additional comments. The difference between Uruguay's apparent consumption and its normal consumption is due to the fact that this country accumulated reserve stocks. The figures for the five importing countries are not abnormal in themselves. The most serious difficulties to be faced, especially by Brazil and Paraguay, do not arise from the quantity or the price of wheat imports, but from the fact that they must be paid for in dollars, instead of obtaining them from Argentina in exchange for their own products. In particular, in Paraguay, since exports to Argentina as a whole represent a third of the total trade, the purchase of wheat from other sources resulted in a reduction of nearly 25 per cent in the capacity to import.

In Brazil, dollar payments for imported wheat and flour represent nearly half the outstanding balance with the United States. Brazilian export products to Argentina continue to be restricted because, during the course of 1952, Argentina had an unfavourable trade balance with Brazil.[13]

It is thus apparent from these facts that the lack of Argentine wheat for export to neighbouring countries has caused an appreciable decrease in reciprocal trade, especially with Paraguay and Brazil.

6. Prospects for intra-zonal trade

To clarify the possibilities for encouraging the trade in wheat among the countries of the southern zone, table 60 examines two opposing hypotheses. The first (A) shows the figures which would result from stationary production, such as that which occurred between 1934–38. The second (B) indicates the more probable data if the individual countries made a progressive effort to carry out their plans for developing production.

Table 60, once more, shows the predominant part played by Argentine production, not only as regards the position of the zone as a whole but also for the trade possibilities among the individual countries. It is apparent that, as wheat exports from Argentina become less, the prospects for intra-zonal trade also become proportionately less. Prospects depend upon the volume of wheat available in Argentina and also upon its availability on the international market. This is particularly true in the case of wheat in Argentine-Brazilian trade.

[13] At the beginning of the second quarter of 1952, Argentina's debt to Brazil, according to Brazilian sources, amounted to about 1,500 million cruzeiros, or about 75 million dollars, which was the equivalent, at that time, of 860,000 tons of wheat f.o.b. at the international price appearing from a purchase of 75,000 tons from the United States in July at a unit price of 98.90 dollars c.i.f. At the end of September, the balance of payments owing to the United States was estimated at 250 million dollars and the dollar payments for wheat were estimated at 140 million.

TABLE 60. WHEAT: PROBABLE AVAILABILITIES FOR EXPORT AND IMPORT REQUIREMENTS (SOUTHERN ZONE)

(Thousands of tons)

	Period 1953–55		*Period 1956–60*	
	Hypothesis A	*Hypothesis B*	*Hypothesis A*	*Hypothesis B*
Importing countries:				
Bolivia	70	60	70	50
Brazil	1,650	1,300	1,900	1,000
Chile	270	150	370	100
Paraguay	70	60	80	30
Peru	260	200	300	..
TOTAL	2,320	1,770	2,720	1,180
Supplying countries:				
Argentina	1,950	3,050	1,750	4,350
Uruguay	120	120	100	100
TOTAL	2,070	3,170	1,850	4,450
NET SURPLUS	−250	+1,400	−870	+3,270

SOURCE: Economic Commission for Latin America, based on previous tables and comments, especially tables 57 and 58.

According to table 61, there still remains a deficit of 185 million cruzeiros or alternatively 100,000 tons of wheat in Argentina's trade with Brazil. The problem would be fairly simple to solve if Brazil could export to Argentina approximately the same tonnage of iron and steel. Until today, the increase in Brazilian iron and steel production has only covered the growing domestic needs and Brazil's development plans for the next three years with difficulty will allow any surplus above the rate of increase in domestic consumption. It is possible that before Brazil has substantial export surpluses to send to Argentina, the latter will have developed its iron and steel industry fully. It would provide a great incentive to the trade between the two countries if raw materials for the future Argentine iron and steel plant at San Nicolás

TABLE 61. THE TRADE OF ARGENTINE WHEAT FOR BRAZILIAN PRODUCTS

Wheat imports by Brazil

	Thousands of tons	*Millions of cruzeiros*
Actual requirements	1,300	
Quota in the International Agreement	360	
Balance to cover	940	
Estimated value[a]		1,760

Compensatory exports to Argentina[b]

	Thousands of tons	*Millions of cruzeiros*
Coffee	28.5	548
Pine	332.0	503
Cotton thread	5.3	357
Cacao	6.3	93
Hardwoods	..	48
Ferro-manganese and ferro-silicon	..	26
ESTIMATED TOTAL		1,575

SOURCE: Economic Commission for Latin America.

[a] On the basis of the prices in force during the second half of 1952, or about 2.40 dollars per bushel which corresponds to 100 dollars per metric ton, f.o.b.

[b] Possibilities for absorption by Argentine markets estimated according to imports made in 1951.

could be supplied with iron and manganese from Urucum in the Matto Grosso, some 25 kilometres from the Paraguay River. Brazil would thus enjoy new means for payment, which could contribute to more substantial wheat purchases from Argentina.

Conversely, there is a tendency in Brazil to acquire wheat from Uruguay. Negotiations for such trade are difficult owing to the high grain prices in Uruguay.

In order to ensure a satisfactory price for the farmer, the Uruguayan Government has fixed an official purchase price. From 1 August 1952, this price reached 17.55 Uruguayan pesos per quintal in bulk from store in Montevideo and, at the rate of exchange of 1.519 per dollar and including expenses, it rose to 118.10 dollars f.o.b. This was 30 per cent more than the international price at that date. On the other hand, the Uruguayan Treasury has to bear a heavy burden both to keep the price of bread at a moderate level and to provide a price which encourages the farmer to increase his harvest. According to the Banco de la República, wheat production for the year 1950 gave farmers an income of 62 million pesos, 26 million of which came out of the public treasury. Thus, Uruguayan official experts are not inclined to increase production for export purposes. They are more inclined to share the view of the FAO and International Bank mission which was mentioned earlier. Nevertheless, there is one factor which might influence the final decision of the Uruguayan authorities, that is the very unfavourable trade balance with Brazil. In 1951, in spite of having sold 40,000 tons of flour and 11,000 tons of wheat to Brazil, the trade balance showed the following figures: exports from Brazil to Uruguay, 310 million cruzeiros; exports from Uruguay to Brazil reduced to f.o.b. values, 170 million, in which wheat and flour were responsible for rather more than 100 million. In order to provide a balance of trade, it would have been necessary to more than double wheat and flour exports, raising them to around 150,000 tons in terms of wheat. This is precisely what Brazil is trying to accomplish by offering Uruguay a stable market for the wheat surplus during a number of years.

Between Chile and Argentina the trade in wheat has been very irregular. During the three-year period, 1946–48, Chile imported a total of 135,000 tons of wheat, of which 123,000 came from Argentina. For the three-year period, 1949–51, Chilean imports rose to 365,000 tons, of which Argentina was only responsible for 92,000. For various quotations, the prices charged in Buenos Aires were much higher than those for wheat from Canada or the United States and as, in both cases, they had to be paid for in foreign exchange on the free market, Chile chose the most advantageous source of supply. On the other hand, Argentina had no difficulty in selling her exportable surplus during these years. The four principal clients, Brazil, India, Italy and Germany, between them bought in 1950 and 1951 more than 2 million tons annually, leaving only half a million tons for other countries, among which are several from which Argentina imports essential products such as iron and steel and different types of machinery.

As regards trade relations between Chile and Argentina, this problem cannot be examined independently. In this reciprocal relationship, wheat is not so important as in the case of trade between Argentina and Brazil or between Brazil and Uruguay. Chilean trade with Argentina is more concerned with cattle on one side, as against copper on the other. In addition, if a comparison is made of the actual trade between these two neighbouring countries, the possibilities they have for selling their principal products and their primary import needs, this comparison shows a considerable rise in the actual levels. Wheat is only one element, the fourth in order of importance, in a problem where cattle, copper and lumber are predominant. But fats and edible oils, wool and leather on the Argentine side, and steel, sulphur and possibly, within a year or two, pulp or newsprint on the Chilean side, should also be included. As regards nitrates, its part in trade with Argentina will grow in proportion to the use of fertilizers there.

As regards trade between Argentina and Paraguay, the two key products are wheat (50 per cent of the value of Argentine exports) and lumber (70 per cent of Paraguayan exports). Argentine sawmills on the banks of the Paraná River require Paraguayan raw materials, which they can obtain economically by river transport. There is reason to hope, once the crisis caused in Argentina by the recent drought has passed, that trade between the two countries will return to its normal level. The problem here is rather one for Paraguay. Faced with growing needs, a decision must be taken either to stimulate the domestic cultivation of wheat or to develop other commodities suitable for export.

In the trade relations between Argentina and Bolivia, in 1949 wheat was responsible for some 23,000 tons out of a total of 57,000 imported by Bolivia. It has already been seen earlier that Bolivia, by participating in the International Wheat Agreement, could receive substantial quantities of wheat at fixed prices. Imports from Argentina, also made at international prices, have not exceeded 40 per cent of all wheat imports into Bolivia.

In the trade between Peru and Argentina, there are also many fluctuations. In the period 1934–38, Peru imported an average of 128,000 tons of wheat annually, of which 106,000 came from Argentina. In the post-war years, although Peru imported wheat on a much greater scale, the porportion from Argentina was smaller, reaching its lowest level in 1949 when Peru received 220,000 tons of wheat of which Argentina was only responsible for 28,000 tons. In the same year the influence of the International Wheat Agreement is apparent, since the 171,000 tons of wheat bought by Peru from the United States, Canada and Australia averaged a c.i.f. unit price of 100 dollars, as against the 28,000 tons from Argentina which cost 187 dollars. In the following years Argentine prices drew closer to the international level and Argentina regained part of the Peruvian market in the ratio to which Peruvian needs exceeded the quota permitted under the International Wheat Agreement. Wheat imports from Argentina rose to 40,000 tons in 1950 and to 75,000 in 1951. In this last year wheat was responsible for approximately a third of the value of all Argentine exports to Peru.

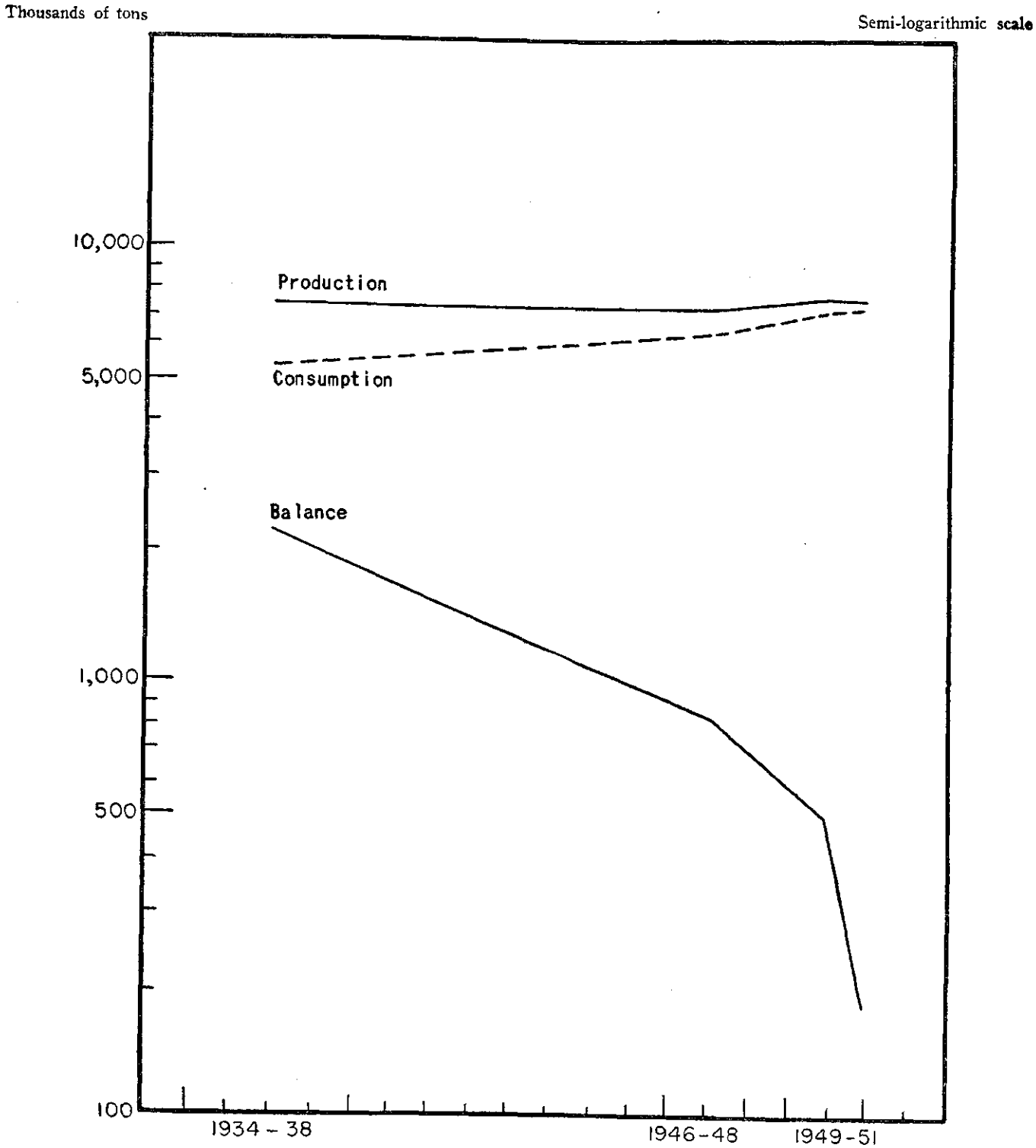
PLATE III

LATIN AMERICA (SOUTHERN ZONE)

WHEAT

Net production, consumption and exports

(1951 potential)



Source: Economic Commission for Latin America.

PLATE IV

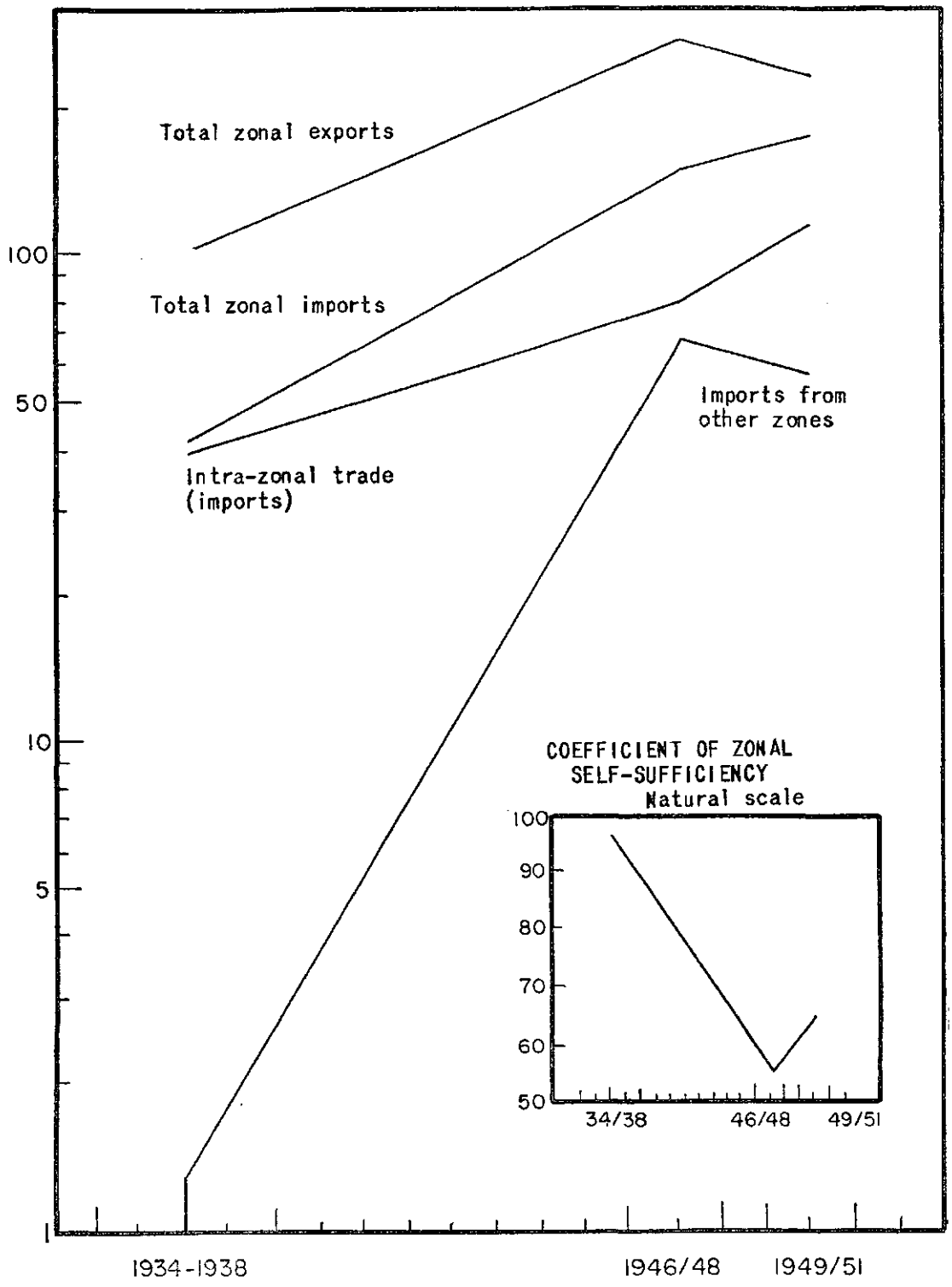
LATIN AMERICA (SOUTHERN ZONE)

WHEAT

Intra-zonal trade

Millions of dollars

Semi-logarithmic scale



Source: Economic Commission for Latin America.

PLATE V

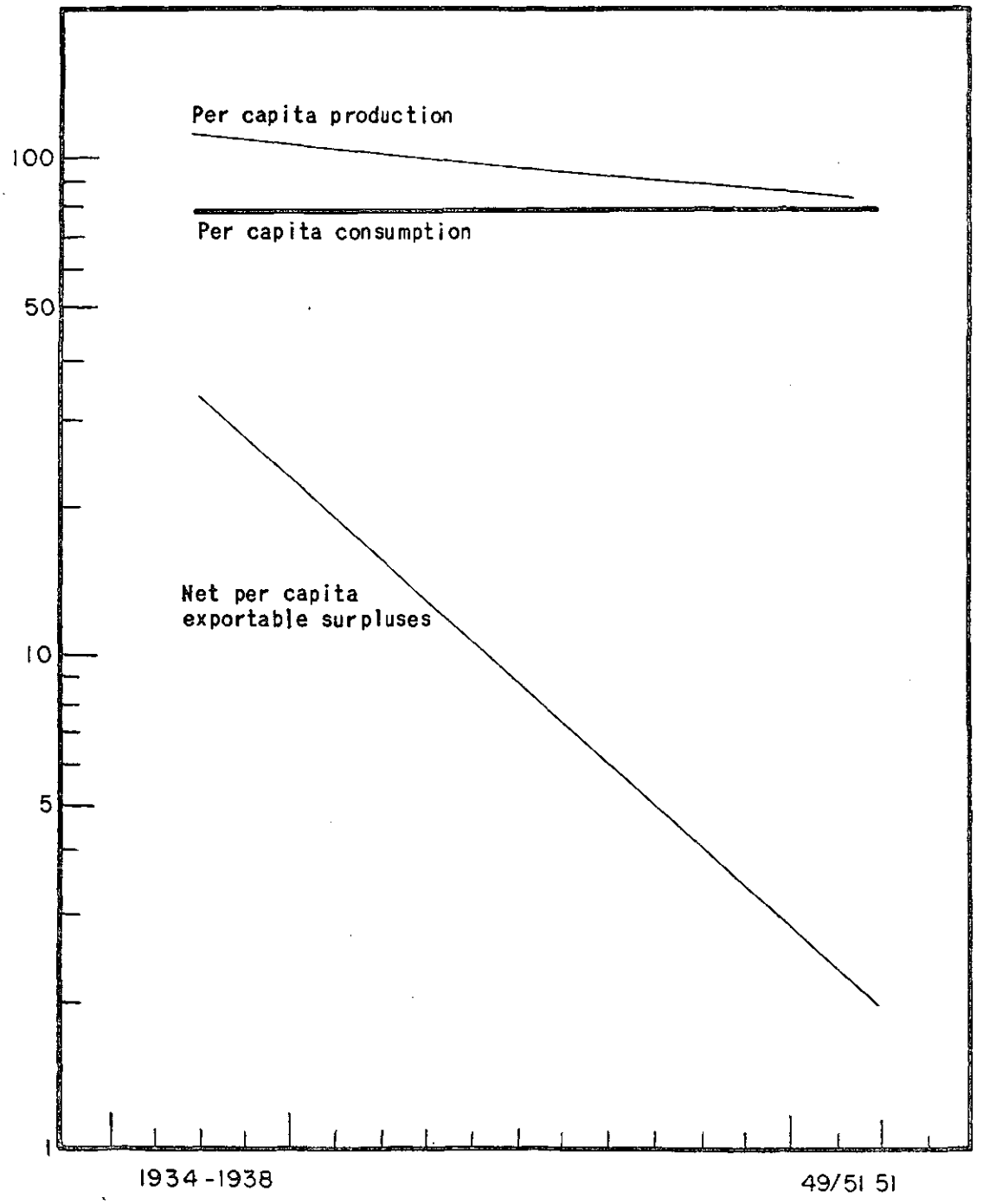
LATIN AMERICA (SOUTHERN ZONE)

WHEAT

Per capita production, consumption and exportable surpluses

Kilogrammes per year

Semi-logarithmic scale



Source: Economic Commission for Latin America.

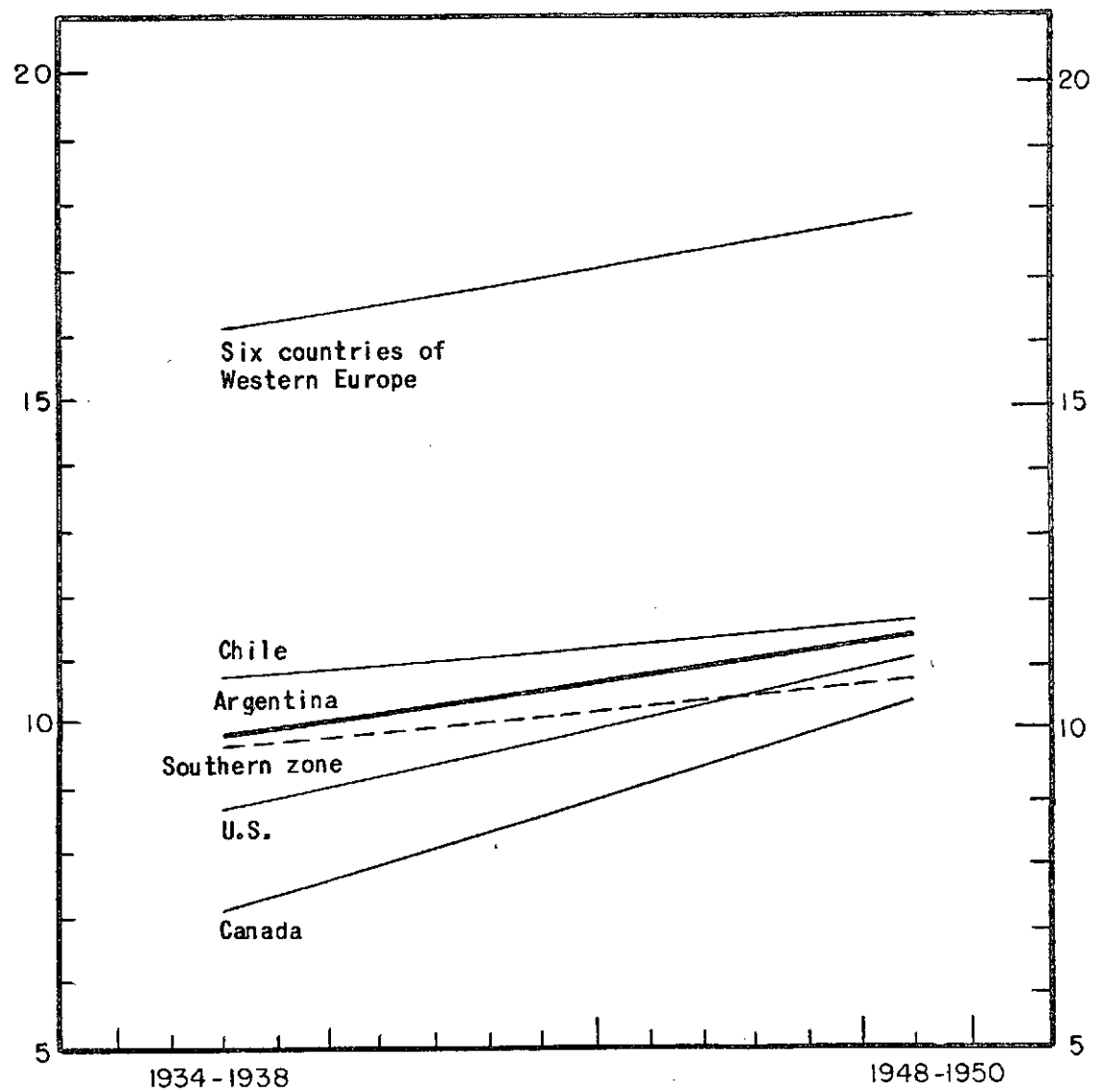
PLATE VI

WHEAT

Comparative yields

Kilogrammes per hectare

Natural scale



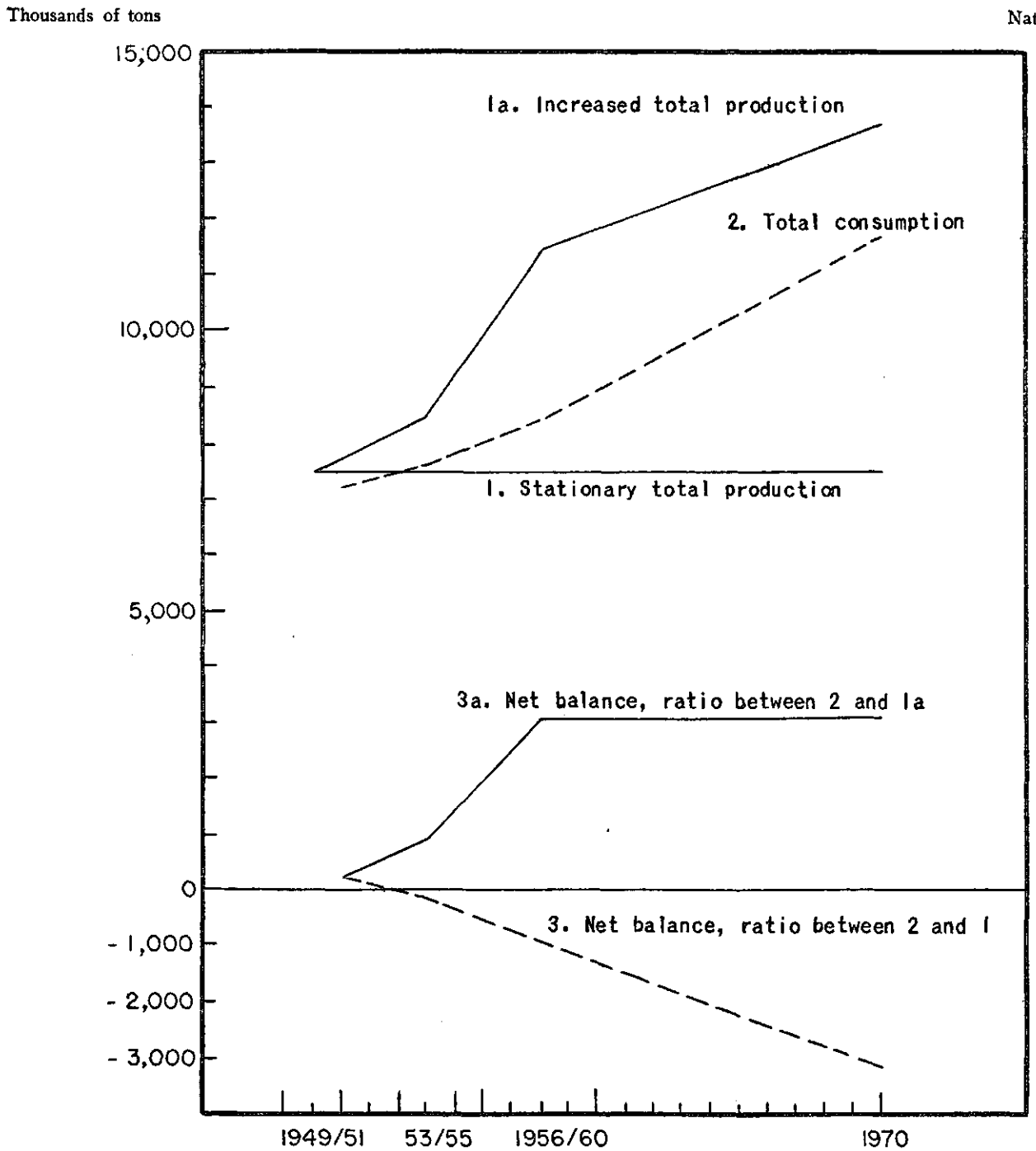
Source: Economic Commission for Latin America.

PLATE VII

LATIN AMERICA (SOUTHERN ZONE)

WHEAT

Projection for 1970 based on present trends as well as future development plans



Source: Economic Commission for Latin America.

Chapter VII

SUGAR

1. Introduction

Sugar constitutes an important item in the reciprocal trade between the countries of the southern zone of Latin America. Three of these countries—Bolivia, Chile and Uruguay—import all, or almost all, the sugar they consume; two of them—Argentina and, more recently, Paraguay—cover their requirements with their own production and only show minor figures in foreign trade statistics; the two remaining countries—Brazil and Peru—regularly produce more than their domestic requirements. Sixty per cent of Peruvian production is exported, thereby constituting one of the principal balance of payment assets. Brazil, on the contrary, does not export more than 2 or 3 per cent of total production, which, although amounting to a substantial quantity, is only equivalent to 0.6 per cent of the value of all exports. As regards the relative significance of sugar to total imports, it is interesting to note that 8 per cent of the capacity to import in Bolivia is devoted to sugar, whereas in Chile it represents 5 per cent, and in Uruguay almost 6 per cent.

Taking the zone as a whole, it may be seen that sugar production in the pre-war years did not exceed total consumption by any appreciable amount. During the second half of the last decade, both maintained a relative balance, and in certain years, consumption even exceeded production, as illustrated in plate VIII.

TABLE 62. SUGAR PRODUCTION IN THE SOUTHERN ZONE OF LATIN AMERICA

(Thousands of tons)

Country	*Average 1934–38*	*Average 1946–50*	*Difference*	*Percentage increase*
Argentina	410	607.3	+197.3	48
Bolivia	1	3.6	+ 2.6	260
Brazil	1,031	1,577.1	+546.1	53
Chile	—	—	—	—
Paraguay	6	16.8	+ 10.8	180
Peru	382	454.3	+ 72.3	19
Uruguay	1	2.6	+ 1.6	160
TOTAL	1,830	2,661.7	+830.7	45

SOURCES: Figures for 1934–38 were taken from the Food and Agriculture Organization. Figures for 1946–50 for Argentina: Argentine Industrial Census of 1946 and indices published in July 1952. Bolivia: FAO. Brazil: IBGE Statistical Yearbook, supplemented by data from the Getulio Vargas Foundation (*Conjuntura Económica*, August 1952, p. 7 *et sqq.*). Paraguay: Banco de Paraguay. Peru: 1951 Report of the Banco Central de la Reserva. Uruguay: *Recopilación Agropecuaria*, 1950.

2. Evolution of production and consumption

Tables 62 and 63 demonstrate that, while consumption increased at a higher rate than production in absolute terms, percentage increases were even greater.

TABLE 63. APPARENT SUGAR CONSUMPTION IN THE SOUTHERN ZONE OF LATIN AMERICA

(Thousands of tons)

Country	*Average 1934–38*	*Average 1946–50*	*Difference*	*Percentage increase*
Argentina	408.4	612.1	203.7	50
Bolivia	22.5[a]	34.6	12.1	54
Brazil	989.4	1,475.7	486.3	49
Chile	123.0	161.6	38.3	31
Paraguay	12.9	16.7	3.8	29
Peru	76.5	157.6	81.2	106
Uruguay	52.0	80.4	28.4	55
TOTAL	1,684.7	2,538.7	854.0	51

SOURCES: See sources for table 62.
[a] 1935–39.

TABLE 64. PER CAPITA CONSUMPTION OF SUGAR IN THE SOUTHERN ZONE OF LATIN AMERICA

Country	*Average 1934–38*			*Average 1946–50*			*Difference*	
	Total consumption (in thousands of tons)	*Population (in thousands of inhabitants)*	*Per capita consumption (in kgs.)*	*Total consumption (in thousands of tons)*	*Population (in thousands of inhabitants)*	*Per capita consumption (in kgs.)*	*Consumption*	*Per capita consumption*
Argentina	408.4	12,964.6	32	612.1	16,335	37	203.7	5
Bolivia	22.5[a]	2,599.0[a]	9	34.6	2,950	12	12.1	3
Brazil	989.4	37,892.2	26	1,475.7	49,782	30	486.3	4
Chile	123.0	4,684.2	26	161.6	5,619	29	38.6	3
Paraguay	12.9	921.8	14	16.7[b]	1,288	13	3.8	− 1
Peru	76.5	6,950.6	11	157.6	8,159	19	81.1	8
Uruguay	52.0	2,055.6	25	80.4	2,329	35	28.2	10
TOTAL	1,684.7	68,068.0	25	2,538.7	86,462	29	+854.0	+ 4

SOURCES: See sources for table 62.
[a] Total consumption for 1935–39; population for 1937.
[b] Total real consumption in 1946–50 was 173.9, equivalent to a per capita consumption of 21 kgs., revealing an increase of 97,400 tons total consumption and 10 kgs. per capita consumption as compared with the pre-war years.

An individual analysis by country reveals few changes. Argentine production and consumption remain balanced, while Bolivian and Uruguayan production are still insignificant. Exportable surpluses have increased in Brazil, but they have slightly decreased in Peru. The most important change has taken place in Paraguay, where, during the pre-war years, domestic output only satisfied 50 per cent of the requirements, and where a balance between consumption and production has now become possible, but only through a small reduction of per capita availabilities.

In calculating per capita consumption, gross figures were used. That is to say that the amounts of sugar used as a raw material in preserve factories, production of alcoholic beverages or other uses were not deducted from total consumption. Their exclusion is extremely difficult owing to the consumption for clandestine alcohol production which exists on a large scale in those countries where sugar prices are maintained at a low level. Nonetheless, a considerable difference may be noted between per capita consumption levels, ranging from 12 kgs. annually in Bolivia to 37 in Argentina. With the exception of Uruguay, it has been a characteristic of the countries importing sugar to show the smallest consumption increases. Considering the zone as a whole, it would appear that, with the exception of Paraguay and Bolivia, sugar consumption has been sufficient. Despite the fact that the minimum annual sugar requirement per person was determined at Hot Springs as 15 kgs., in fact this figure is generally surpassed in most European and American countries. For instance, in recent years it reached 40 kgs. in the United States and Cuba, 45 in Canada, 48 in the United Kingdom (pre-war figures), 38 in the Netherlands, 29 in Belgium and 23 in France. In Latin America the highest figures are those for Venezuela and Colombia, with 43 and 57 kgs. respectively, including consumption of unrefined country sugar (*panela*). (See plate IX.)

Thus, the total consumption for the southern zone of Latin America in 1951 clearly exceeded the production of these countries. Already in 1946 and in 1950 there had been small negative balances of 3,700 tons and 7,300 tons respectively. After adjusting the figures in table 65, on the basis of the real consumption data for Peru, the increase in the total consumption is reduced to 433,100 tons. As a result, zonal consumption exceeds production by 10,400 tons. Regarding per capita consumption, two countries have shown fixed levels: Argentina, prior to 1951, had already reached the highest figure in the zone, and Chile, where sugar imports represent the heaviest burden. The zonal average per capita consumption rose to 32 kgs. in 1951.

TABLE 65. COUNTRIES OF THE SOUTHERN ZONE OF LATIN AMERICA: INCREASES IN 1951 OF PRODUCTION, AND TOTAL AND PER CAPITA CONSUMPTION OF SUGAR OVER AVERAGE INCREASES FOR 1946–50

Country	Production	Total apparent consumption	Population	Per capita consumption
	(thousands of tons)		(thousands of inhabitants)	(kgs. per year)
Argentina	46.2	40.8	1,309	–
Bolivia[a]	2.4	8.2	69	3
Brazil	243.2	325.2	3,991	3
Chile	—	11.7	293	–
Paraguay[a]	5.6	5.6	118	3
Peru	2.3	77.7[b]	399	8
Uruguay	..	7.2[c]	81	1
TOTAL	299.7	476.4	6,260	4

SOURCES: See sources for table 62.

[a] Figures for 1950.

[b] Figure includes an increase in stocks. Real consumption was 192,000 tons, or an increase of 18,100 tons over 1946–50. Real per capita increase actually amounted to a little more than 1 kg. See note [b] to table 64.

[c] On the basis of assuming domestic production equal to the average for 1946–50.

According to available data, consumption in 1952 has further increased. In Chile, for example, imports approximate 220,000 tons, exceeding consumption for 1951 by some 45,000 tons.

The rise in average per capita consumption within the southern zone is due to a large extent to the increase of real income during the post-war years. However, it is evident that such a rapid expansion of consumption would not have been possible if the respective governments had not instituted a policy of low prices for the domestic consumer.[1] A similar policy was adopted both in producer and importer countries, being maintained through the use of either differential exchange rates or direct subsidies.[2] The decline in world sugar prices since 1947, only interrupted in 1951, also contributed to increased consumption.[3]

3. Production and consumption prospects

Although estimates of future consumption are subject to change, broadly speaking, the average per capita consumption for the zone will be more or less 35 kgs., provided no unusual modification is made in the relationship between total real income, quotations on the international market and the present low domestic prices. Table 66 illustrates the estimated total consumption for 1960 on the basis of three separate hypotheses. In the third of these, which presupposes that the present relationship between real income and prices will remain constant, the per capita consumption for Argentina and Uruguay has been estimated as the same as that for 1951, and calculated

[1] Retail prices between August and December 1952 for refined sugar per kilogramme were:

Argentina	2.90 Argentine pesos
Brazil	4.50 cruzeiros (São Paulo)
Chile	10.40 Chilean pesos
Paraguay	3.20 guaranis
Peru	1.80 soles (Lima)

Converting these prices at the free-market rate of exchange in January 1953, the following are equivalents according to: (*a*) official free market; (*b*) parallel free-market prices in dollars:

	(*a*)	(*b*)
Argentina	0.21	0.126
Brazil	0.25	0.125
Chile	0.095	0.08
Paraguay	0.065	0.053
Peru	0.116	0.116

[2] Sugar in Chile is one of the few articles still benefiting from the preferential import exchange rate of 31 pesos per dollar, despite the raising of the exchange rate applied to other consumer goods to 60, and other import exchange rates to 110. Using this as a basis, the retail price for granulated sugar at the beginning of 1953 was officially 10.48 pesos per kg., or little less than 10 US cents. At the same time, raw sugar cost more than 10 US cents c.i.f. Chilean ports and then received a surcharge of 7.26 pesos for costs and profit before delivery, refined, to the consumer. This surcharge includes the loss of weight due to transport and refining. In Bolivia, there is a subsidy on consumption of 7 bolivianos per pound.

[3] In Uruguay raw-sugar imports rose from 22,000 to 29,000 tons between 1947 and 1950. Total c.i.f. cost at Montevideo was reduced from 5.2 million dollars in 1947 to 4.5 in 1950.

at 35 kgs. for Brazil and Chile, and 30 kgs. for the remaining countries. The total consumption figure of 3,846,000 tons represents an average per capita consumption of 34.7 kgs.

TABLE 66. POSSIBLE PROJECTIONS OF TOTAL SUGAR CONSUMPTION, IN 1960 IN THE SOUTHERN ZONE

	Calculated population (thousands of inhabitants)	Total sugar consumption (thousands of metric tons)		
		Hypothesis: per capita consumption 1946–50	Hypothesis: per capita consumption 1951	Hypothesis: estimated per capita consumption
Argentina	21,000	777	777	777
Bolivia	3,400	41	51	102
Brazil	65,000	1,950	2,145	2,275
Chile	7,000	203	203	245
Paraguay	1,650	21	26	50
Peru	10,000	210[a]	220[a]	300
Uruguay	2,700	95	97	97
TOTAL	110,750	3,323	3,605	3,846

SOURCE: Economic Commission for Latin America.
[a] Based on real consumption.

A comparison of the last total, i.e., 3,846,000 tons, with the 1951 production reveals that in order to satisfy the consumption rise for 1960, and maintain the 1946-50 export-import schedule, production must be increased to the amounts shown in table 67.

In the case of Argentina, an increase of 123,000 tons in sugar production would require the additional cultivation of 50,000 hectares on the basis of a yield of 30 tons of sugar cane per hectare and 82 kgs. of sugar per ton of harvested cane.[4] In keeping with this increase, and corresponding to a production plan recently proposed under the Argentine second five-year plan for 1957, there would then be 300,000 hectares under cultivation. It should be noted that the plan mentions the possibility of improving yields by stimulating seed selection, the use of fertilizers and mechanization. In addition, the plan includes the building of a pilot sugar-beet refinery. The complete fulfilment of the plan will raise Argentine sugar production to a level somewhat higher than the present domestic requirements.

[4] Average 1946–50 yields.

TABLE 67. ESTIMATED SUGAR CONSUMPTION FOR 1960 IN THE SOUTHERN ZONE

(1) *Producers*

	1951 production	Estimated requirements for 1960[a]	Required increase
Argentina	653.5	777	123.5
Brazil	1,820.3	2,376.4	556.1
Paraguay	22.4	50	27.6
Peru	456.6	596.7	140.1

(2) *Importers*

	1951 imports	Estimated requirements for 1960[b]	Required increase
Bolivia	36.8[c]	96	59.2
Chile	173.3	245	71.7
Uruguay	85.0	92	7.0
			985.2

SOURCES: See table 62.
[a] Includes estimated consumption plus average 1946–50 exports for Brazil and Peru.
[b] Estimated consumption less domestic production in 1950 for Bolivia and Uruguay.
[c] 1950 figures.

In *Bolivia*, the future of sugar production and consumption is linked to the development of the eastern part of the country. In the Santa Cruz area, production has been encouraged in recent years by the establishment of new plants.

In *Brazil*, conditions are favourable for an increase in sugar production. The tendency to expand sugar cultivation is strong, particularly in São Paulo, where higher yields are obtained than in most of the other States. The problem of dissimilar economic yields between plantations in the north and south of the country has been solved through new dispositions taken by the Sugar Institute. These have fixed a uniform price for raw sugar at a sufficient level to permit continued production in the north, to assure a profit in the São Paulo region, and to provide resources for the institute itself to carry out a development programme, particularly aimed at the development of anhydrous alcohol production.

In *Paraguay*, sugar-cane cultivation also shows good prospects. Production at present gives a satisfactory yield of 45 to 50 tons per hectare, with up to 12 per cent sugar extraction, thus sufficing to satisfy consumption requirements. The principal problem facing the sugar industry in Paraguay is some lack of manpower and capital. In *Peru*, the increase in domestic consumption presents a serious problem. Owing to the limited land area available, it is difficult to effect any considerable increase in the area devoted to sugar production, which for years has stood at 50,000 hectares. In addition, with high yields of almost 80 tons of sugar cane per hectare (in 1946–50), which is higher than that in Cuba, Brazil or Paraguay, the margin for greater yields is necessarily restricted.

From 1930 to 1940, production of sugar, from cane as well as beet, was established in *Uruguay*. However, it progressed slowly until recently when the National Fuel, Alcohol and Portland Cement Administration (ANCAP) decided to establish a plan to develop sugar production. ANCAP selected approximately twenty varieties capable of yielding 8 to 9 per cent of sugar and 50 to 60 tons per hectare. Beginning with the August 1952 crop, a production of from 7,000 to 8,000 tons annually is expected. With an investment of 10 million pesos, it is hoped to reduce the foreign exchange expenditure for importing sugar by approximately 800,000 dollars.

Chile is one of the few remaining countries in the world with no sugar production. In recent years, the Development Corporation (CORFO) has devoted extensive research to the possibilities of sugar beet, resulting in a plan for rational cultivation which is on the way to fulfilment in 1952. Previous experiments have been encouraging, with crops of 40 tons per hectare and a sugar yield of 18 per cent. Using 13,000 hectares of irrigated land, under a five-year rotation plan with grass and wheat, production of more than 10,000 tons of sugar could be obtained, assuming crops of 30 tons per hectare and 12.5 per cent sugar yield. With the planting of the first crop, simultaneous con-

struction of a sugar beet mill was undertaken. Present plans are that production could begin industrially in 1954 to reach a target of 10,000 tons in 1955.

Summarizing the prospects for production and consumption, it may be estimated that by 1960 the import requirements of Bolivia and Uruguay will be reduced to but half the approximate consumption needs, while Chilean imports will remain stationary at the 1951–53 level, as expressed by the following figures:

Bolivia	51,000 tons
Chile	220,000 tons
Uruguay	49,000 tons

or a total of 320,000 tons, representing an increase of 43,000 tons over the five year period 1946–1950.

On the other hand, Peruvian capacity to export, assuming a production increase of some 10 per cent, appears destined to decline by some 50,000 tons in 1960. Thus Peru will not have more than 250,000 tons available for export by that date. Assuming as a hypothesis that the southern zone would be able to fill its entire sugar requirements, 70,000 tons would still be required which could be obtained either from Brazil or, on the long term, from Paraguay, and, without omitting a further source of regional supply, from Cuba.

4. The position of sugar in intra-zonal trade

At a first glance it appears that the role of sugar in the trade between the countries of the southern zone is of considerable significance, but this is not so great when compared with that of production and consumption. This is due to the fact that the two most important countries—Brazil and Argentina—are self-sufficient and make exports on a small scale. In contrast, sugar plays an outstanding role in the trade of Peru, Bolivia, Chile and Uruguay.

TABLE 68. TOTAL EXPORTS AND IMPORTS OF SUGAR WITH NET BALANCES (SOUTHERN ZONE)

(Thousands of tons)

Country	1934–38 Exports	1934–38 Imports	1934–38 Net balance[a]	1946–50 Exports	1946–50 Imports	1946–50 Net balance[a]	Difference between net balances
Argentina	2.6	1.0	+ 1.6	0.9	5.7	− 4.8	− 6.4
Bolivia	—	21.5	− 21.5	—	31.0	− 31.0	− 9.5
Brazil	41.6	—	+ 41.6	101.4	—	+101.4	+59.8
Chile	—	123.0	−123.0	—	161.6	−161.6	−38.6
Paraguay	—	6.9	− 6.9	0.7	0.6	+ 0.1	+ 7.0
Peru	305.5	—	+305.5	296.7	—	+296.7	− 8.8
Uruguay	—	51.0	− 51.0	—	77.8	− 77.8	−26.8
TOTAL	349.7	203.4	+146.3	399.7	276.7	+123.0	−23.3

SOURCE: Foreign trade statistics.
[a] Exports (+), Imports (−).

Comparing total figures for trade with those for production, it may be observed that aggregate exports in 1934–38 represented 19.1 per cent of production, and that this figure declined to 15 per cent in 1946–50. Imports stood at 12.1 per cent of consumption in 1934–38, but only 10.9 per cent in 1946–50. Lastly, while in 1934–38 the net exportable surplus of the zone to other parts of the world was 8 per cent of production, it declined in 1946–50 to 4.6 per cent. It has already been noted that in 1951 the net exportable surplus was transformed into a net import deficit amounting to 54,000 tons.

An analysis is made in tables 69 and 70 of the fluctuations in zonal trade with reference to total sugar exports and imports.

TABLE 69. INTER-LATIN-AMERICAN SUGAR TRADE IN THE SOUTHERN ZONE

(Tons)

Country	1934–38 Total exports	1934–38 Exports within the zone	1934–38 Percentage	1946–50 Total exports	1946–50 Exports within the zone	1946–50 Percentage	Difference Total exports	Difference Exports within the zone	Difference Percentage
(A) *Exporters*									
Argentina	2,600	2,515	97	900[a]	536[a]	60	− 1,700	− 1,979	−37
Brazil	41,600	4,108[b]	10	101,412	24,323	24	+59,812	+20,215	+14
Peru	304,299[c]	138,881	46	298,212[d]	183,946[d]	62	− 6,087	+45,065	+16
TOTAL[h]	348,499	145,504	42	400,524	208,805	52	+52,025	+63,301	+10
(B) *Importers*									
Argentina	975	174	18	7,510[e]	7,510[e]	100	+ 6,535	+ 7,336	+82
Bolivia	21,481	20,466	95	29,359[f]	26,988[f]	92	+ 7,878	+ 6,522	− 3
Chile	122,650	109,587	89	161,734	118,537	73	+39,084	+ 8,950	−16
Uruguay	47,733[g]	3,862[g]	8	77,809	55,878	72	+30,076	+52,016	+64
TOTAL[h]	192,839	134,089	70	276,412	208,913	76	+83,573	+74,824	+ 6

SOURCE: Foreign trade statistics.
[a] 1946–48 only. [b] Excluding 1938. [c] Excluding 1937. [d] Excluding 1950. [e] 1946–48 only. [f] 1947–49 only. [g] Excluding 1935.
[h] Totals do not include Paraguay since data for origin of Paraguayan imports are not available. According to FAO data, Paraguay imported an average of 6,900 tons, exporting 700 tons in 1946–50.

TABLE 70. VALUE OF INTRA-ZONAL SUGAR TRADE

(Thousands of dollars)

Country	1934–38 Total exports	1934–38 Exports within the zone	1934–38 Percentage	1946–50 Total Exports	1946–50 Exports within the zone	1946–50 Percentage	Difference Total exports	Difference Exports within the zone	Difference Percentage
(A) *Exporters*									
Argentina	327	321	98	178	86	48	− 149	− 235	−50
Brazil	1,450	142	10	12,242	3,292	27	+10,792	+ 3,150	+17
Peru	6,063	2,837	47	37,751	25,344	67	+31,688	+22,507	+20
TOTAL	7,840	3,300	42	50,171	28,722	57	+42,331	+25,422	+15
(B) *Importers*									
Argentina	69	12	17	1,447	1,447	100	+ 1,378	+ 1,435	+83
Bolivia	866	817	94	4,662	4,326	93	+ 3,796	+ 3,509	− 1
Chile	3,126	2,706	87	22,427	16,153	72	+19,301	+13,447	−15
Uruguay	3,458	221	6	12,190	8,457	69	+ 8,732	+ 8,236	+63
TOTAL	7,519	3,756	50	40,726	30,383	75	+33,207	+26,627	+25

SOURCE AND NOTES: See table 69.

The above figures demonstrate a definite tendency towards greater self-sufficiency within the southern zone. From the pre-war years until 1946–50, exports to destinations within the zone increased by 63,000 tons and absorbed 52 per cent of the total exports instead of the previous 42 per cent. The rise in value was even more marked, passing from 42 to 57 per cent, with an annual increase in value of 25 million dollars. Figures for imports show the same tendency but to a greater extent. The quantum of intra-zonal imports increased from 70 to 76 per cent, while in value they rose by 27 million dollars, or from 50 to 75 per cent. The remarkable difference between the comparative increase in quantum and value is due to the fact that 69 per cent of Uruguayan sugar imports are now made within the zone, as compared with 6 per cent in pre-war years. It is of additional significance that a large proportion of these imports are of refined sugar, which has a higher unit value.

(*a*) CHILEAN AND URUGUAYAN IMPORTS

To complete the description of the role of sugar in zonal trade, reference must be made particularly to the purchases of Chile and Uruguay, which are the principal importers in this group of countries, the figures for 1946–50 being shown in table 71.

TABLE 71. SOURCE OF CHILEAN AND URUGUAYAN SUGAR IMPORTS, TOTAL IMPORTS DURING 1946–50

(Metric tons; value in thousands of dollars)

	Chilean imports Tons	Chilean imports Thousands of dollars	Uruguayan imports Tons	Uruguayan imports Thousands of dollars	Totals Tons	Totals Thousands of dollars
Brazil	48,557	5,186	56,054	8,847	104,611	14,033
Peru	544,121	75,578	223,334	33,435	767,455	109,013
SUB-TOTAL	592,678	80,764	279,388	42,282	872,066	123,046
Cuba	167,151	22,044	29,785	6,128	196,936	28,172
Colombia	—	—	4,001	683	4,001	28,172
Dominican Republic	50,218	9,065	—	—	50,218	9,065
Panama	17	72	—	—	17	72
SUB-TOTAL	217,386	31,181	33,786	6,811	251,172	37,992
TOTAL LATIN AMERICA	810,064	111,945	313,174	49,093	1,123,238	161,038
United Kingdom	—	—	52,329	7,828	52,329	7,828
Belgium	—	—	1,692	249	1,692	249
Poland	—	—	991	141	991	141
Formosa	—	—	13,115	1,946	13,115	1,946
Portuguese possessions	—	—	5,006	1,109	5,006	1,109
United States	1,922	530	—	—	1,922	530
SUB-TOTAL	1,922	530	73,133	11,273	75,055	11,803
GRAND TOTAL	811,986	112,475	386,307	60,366	1,198,293	172,841

SOURCES: Chilean and Uruguayan trade yearbooks.

A prominent influence upon sugar prices is that of transport. In the first half of 1952 ocean freight and other costs between Peru and Chile represented 12.76 dollars per ton, f.o.b. Peruvian port to c.i.f. Chilean port, while sugar imported from Cuba f.a.s. to c.i.f. Chilean port stood at 19.96 dollars per ton. In the first case transport cost 15 per cent of f.o.b. value, and in the second, 24 per cent of f.a.s., value.

In view of the difference in transport costs between Cuba and Peru, it would appear anomalous that Chile and Uruguay import sugar from Cuba. It is interesting to analyse some of the factors for this situation: the cost price of Cuban sugar is lower than in other countries; similarly, the Peruvian harvest is not sufficient to supply the entire demand of the southern zone, unless the exports to other countries, which Peru has traditionally maintained be discontinued. In 1951, Peru exported 10,000 tons of raw sugar to the United States, as well as 2,000 tons of refined sugar. The United States quota allocated for 1953 was increased to 44,500 short tons for which a higher price is being obtained than on the international market.[5] If this quota is maintained during the next few years, Peru will have some 250,000 tons available as an exportable surplus. After deducting the 40,000 tons exported to Bolivia, the balance would be insufficient to cover Chilean requirements completely and would exclude the entire demand of the market in Uruguay.

Until today Brazil's exports to the southern zone have been slowed down by price obstacles. Sugar is classified in Brazil among the "costly" commodities, that is, those whose domestic cost price in cruzeiros exceeds that on the international market. In mid-1952 the price of Brazil's quotations for sugar exports was 55 per cent higher than the ruling world price. From that date there was a marked reduction in world prices and the unfavourable ratio as regards Brazilian exports almost reached a difference of 90 per cent.

(*b*) Sugar and bilateral balances

As demonstrated in table 72, reference will be made to another aspect of the sugar trade concerning its relationship to the bilateral balances resulting between individual countries.

[5] Due to the policy of the United States and its system of quotas, the price of imported sugar is related to the price of domestic production. It has been observed that sugar prices during slump years have been higher in the United States than on the international market, although in 1951 United States prices were slightly lower. According to the *Sugar Report* of October and November 1952, average Cuban f.a.s. prices compare since 1948 as follows:

	Export prices to U. S.	*World prices*	*Difference*
1948	4.66	4.23	+ 0.43
1949	4.95	4.16	+ 0.79
1950	5.09	4.98	+ 0.11
1951	5.07	5.68	− 0.61
1952 (9 months)	5.32	4.24	+ 1.08

Prices are calculated on the basis of US cents per British pound. The prices in the United States were calculated after delivery in New York, but exclude tax and transport and insurance costs from Havana. World prices were calculated at Cuban f.a.s. prices for other countries.

Table 72. Trade balances of Chile and Uruguay with their principal sugar suppliers

(Thousands of dollars)

(A) *Chile*

	Exports to Brazil	*Imports from Brazil*	*Balance*	*Sugar imports*	*Balance excluding sugar*
1946	9,240	11,333	− 2,093	—	2,093
1947	7,638	13,141	− 5,503	—	− 5,503
1948	7,417	12,156	− 4,739	3,214	− 1,525
1949	12,165	12,999	− 834	1,972	+ 1,138
1950	12,965	11,274	+ 1,691	—	+ 1,691
1946–50 average	9,885	12,181	− 2,296	1,037	− 1,259
1951	13,349	6,156	7,193	—	+ 7,193
	Exports to Cuba	*Imports from Cuba*	*Balance*	*Sugar imports*	*Balance excluding sugar*
1946	6,163	6,475	− 312	5,242	+ 4,930
1947	4,402	4,149	253	3,653	+ 3,906
1948	4,692	1,043	3,649	418	+ 4,067
1949	4,161	4,661	− 500	4,058	+ 3,558
1950	2,670	9,219	− 6,549	8,673	+ 2,124
1946–50 average	4,418	5,109	− 691	4,409	+ 3,718
1951	..	..	..	..	..
	Exports to Peru	*Imports from Peru*	*Balance*	*Sugar imports*	*Balance excluding sugar*
1946	4,291	31,759	−27,468	17,538	− 9,930
1947	3,564	35,697	−32,133	19,472	−12,661
1948	3,063	35,563	−32,500	14,210	−18,290
1949	1,885	32,680	−30,795	11,037	−19,758
1950	1,643	17,977	−16,334	13,321	− 3,013
1946–50 average	2,889	30,735	−27,846	15,116	−12,730
1951	2,848	14,221	−11,373	11,867	+ 494

TABLE 72 (*continued*)

(B) *Uruguay*

	Exports to Brazil	*Imports from Brazil*	*Balance*	*Sugar imports*	*Balance excluding sugar*
1946	3,136	17,164	−14,028	2,032	−11,996
1947	2,012	18,370	−16,358	2,875	−13,483
1948	10,005	19,603	− 9,598	3,960	− 5,638
1949	13,741	16,700	− 2,959	—	− 2,959
1950	2,450	17,272	−14,822	—	−14,822
1946–50 average	6,269	17,822	−11,553	1,773	− 9,780
1951	7,017	20,023	−13,006	..	..
	Exports to Cuba	*Imports from Cuba*	*Balance*	*Sugar imports*	*Balance excluding sugar*
1946	672	6,918	− 6,246	5,459	− 787
1947	3,143	562	+ 2,581	—	+ 2,581
1948	3,158	517	+ 2,641	—	+ 2,641
1949	294	820	− 526	81	− 445
1950	11	1,210	− 1,199	588	− 611
1946–50 average	1,456	2,005	− 549	1,226	+ 677
1951	6	..	..	..	..
	Exports to Peru	*Imports from Peru*	*Balance*	*Sugar imports*	*Balance excluding sugar*
1946	344	10,928	−10,584	10,478	− 106
1947	196	10,951	−10,755	8,555	− 2,200
1948	18	6,949	− 6,931	4,928	− 2,003
1949	147	5,235	− 5,088	4,665	− 423
1950	369	5,795	− 5,426	5,309	− 117
1946–50 average	215	7,972	− 7,757	6,787	− 970
1951	..	8,364	..	..	..

SOURCES: Chilean and Uruguayan trade yearbooks.

As may be seen in tables 71 and 72, Chilean sugar trade is relatively stable only with Cuba. This latter country constitutes an important market for a number of Chilean agricultural products, including a type of bean, the red kidney bean, which is almost exclusively grown for export to Cuba. Thus, to a certain point, Chilean imports of Cuban sugar are counter-balanced by exports. The trade agreement of April 1952 between these two countries, includes the export of 60 thousand tons of Cuban sugar annually to Chile.

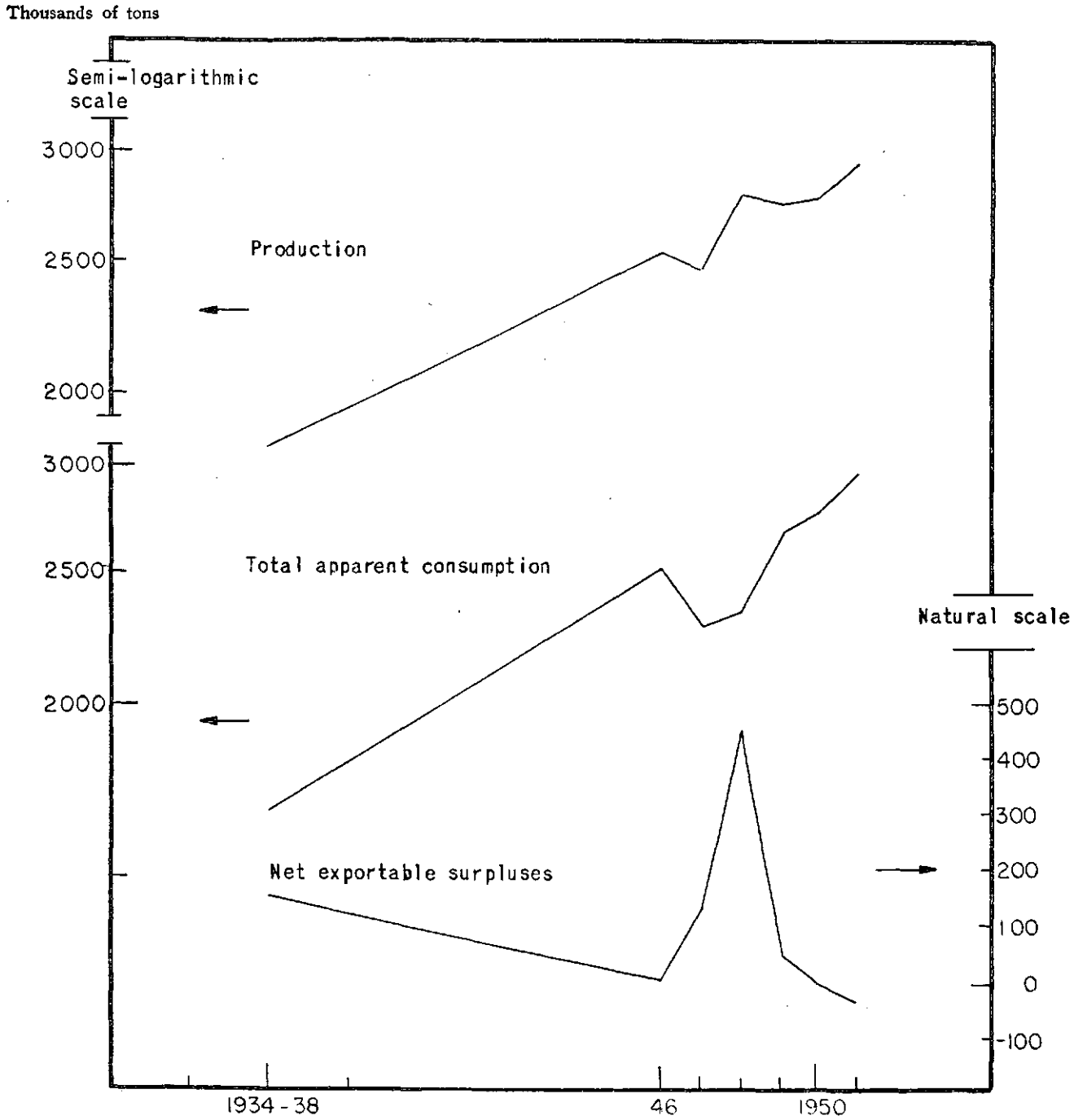
The situation of Chile with Peru and Brazil is quite different. Chile had heavy debit balances with both countries in 1946–50, even exceeding the value of the sugar imported from them. The trend with regard to Peru over the five years, and in 1951 as well, has been towards a reduction of trade in both directions. Excluding sugar, Chile had reached by 1951 a small favourable trade balance with Peru. But the value of sugar imported from Peru appeared as a total of 11 million dollars, almost entirely as a negative balance, to be paid in foreign exchange. Furthermore, it would appear difficult for Chile to develop a greater export trade with Peru. In contrast, in Brazil the trend has been towards a higher fertilizer consumption and the possibility of normalizing the export price of sugar, resulting from the recent exchange law passed by Congress, thus providing an opening for an increase in reciprocal trade. In the chapter dealing with the situation of Chilean nitrate on the Brazilian market, special reference is made to this aspect of the trade relationship between Brazil and Chile.

PLATE VIII

LATIN AMERICA (SOUTHERN ZONE)

SUGAR

Production, total apparent consumption and net exportable surpluses



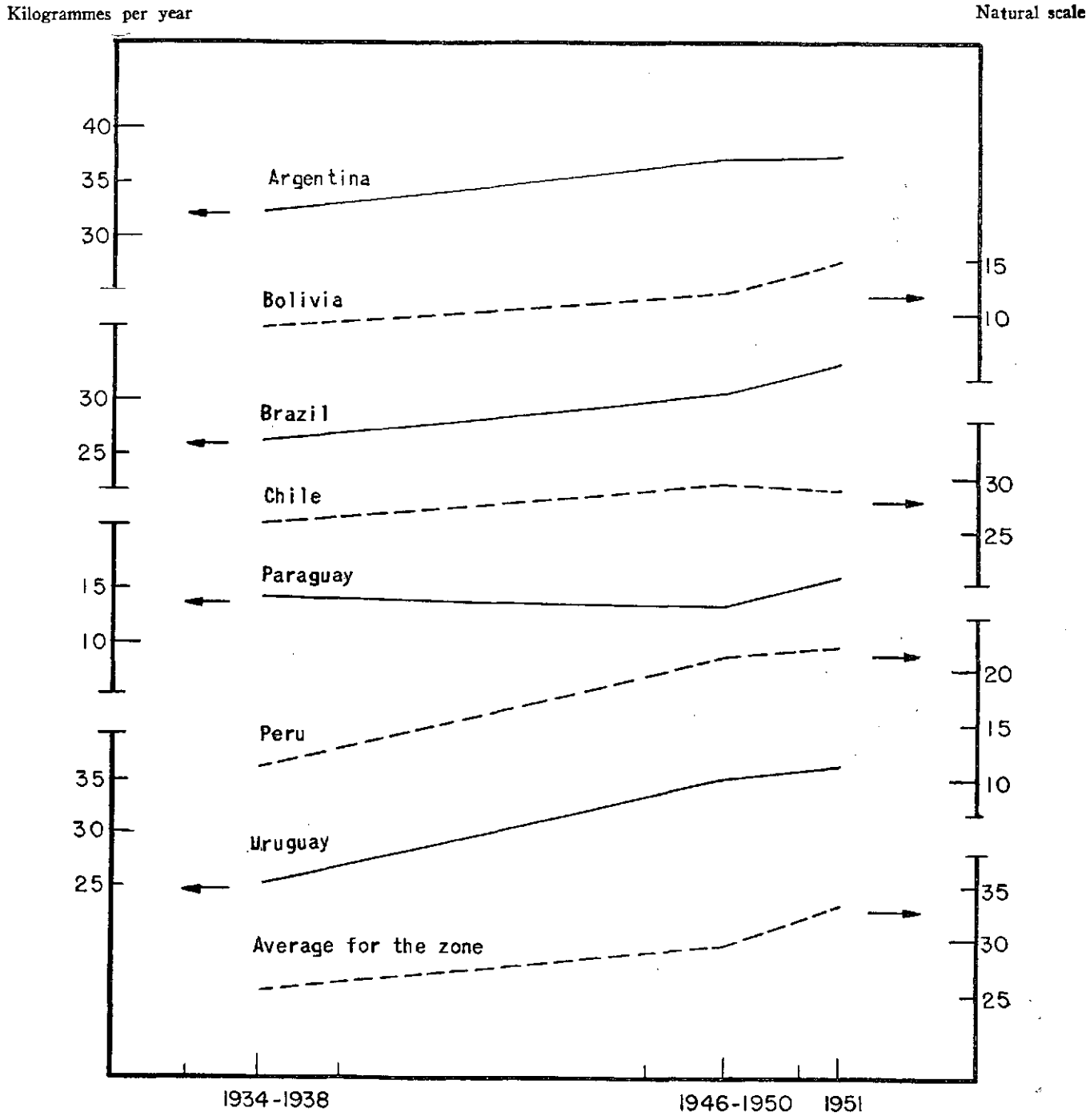
Source: Economic Commission for Latin America.

PLATE IX

LATIN AMERICA (SOUTHERN ZONE)

SUGAR

Per capita consumption



Source: Economic Commission for Latin America.

Chapter VIII

CATTLE AND BEEF

1. Introduction

Up to the present, the trade in beef has had little significance in intra-zonal trade, although it is a substantial export commodity to other regions. Conversely, the trade in cattle on the hoof is almost entirely local, and of considerable importance both in tonnage and value as well as in the role it plays in satisfying basic nutritional requirements.

This chapter is restricted to an analysis of cattle and beef alone, inasmuch as trade in other types of meat or animals is relatively insignificant, with the exception of the movement of sheep between Argentina and Chile in the southern extremity of the continent.

Before analysing intra-zonal trade, it is convenient to present a general summary of the principal factors affecting the problem of cattle and beef in the countries of the southern zone.

2. Evolution since pre-war years

As a basis it may be stated that, until 1940, several countries of the southern zone, with the exception of Chile and Bolivia, were in a position to meet their needs for beef from domestic cattle resources. At that period there were no beef imports and the movement of cattle was for the most part in a different direction from that existing today.

From that time, the basic features and development of the beef problem can be outlined as follows (see plate X):

Cattle herds and beef production have not increased in proportion to the demographic growth;

Per capita consumption has increased by more than 16 per cent, or by 4.9 kgs., and aggregate consumption by 44 per cent; and

Since the slaughtering rate and beef yield per animal have remained more or less constant, and the increase in herds is less than that required by demographic growth, it indicates that higher consumption can only be met by large reductions in zonal exports to the rest of the world.

(a) Animal population

At a first glance, it might appear that aggregate herd increases have been favourable, but, by comparing these aggregate figures with the demographic growth, it may be noted that, with the exception of Peru and Bolivia, the ratio has been regressive in all the countries. An even more eloquent factor is the comparison between the actual increase—or decrease as in the case of Chile and Paraguay—and what the increase should have been to maintain within each country the pre-war ratio between the human population and the herds available for food purposes.

Table 73. Cattle population (southern zone)

	Pre-war			*Present situation*		
	Years	*Herds (thousands of head)*	*Per capita ratio of animals to population*	*Years*	*Herds (thousands of head)*	*Per capita ratio of animals to population*
Argentina	1937	33,207	2.51	1952	40,000[a]	1.84
Bolivia	1938	1,842	0.70	1947	3,041	1.04
Brazil	1937	40,861	1.06	1950	52,655	1.00
Chile	1936	2,573	0.55	1951	2,186	0.37
Paraguay	1938	3,551	3.76	1951	3,369	2.53
Peru	1929	1,844	0.29	1949	2,883	0.35
Uruguay	1937	8,297	3.99	1951	8,154	3.38
Total		92,175	1.34		112,268	1.24

Sources: Argentina: 1937, census; 1952.[a] Bolivia: 1938, FAO; 1947, *Dirección de Estadística*. Brazil: 1937, National Meat Institute; 1950, census. Chile: 1936, census; 1951, *Sinopsis Estadística*. Paraguay: 1938, 1951, STICA. Peru: 1929, FAO; 1949, Ministry of Agriculture. Uruguay: 1937, FAO; 1951, census.

[a] The cattle census of November 1952 gave a total of 42,263,000 cattle. Previous winter censuses showed a lower proportion of small animals. The 1952 census, technically more perfect, covered the full total, thus differing from the previous surveys. Thus, to establish comparable data for the years covered by this report, it was decided to reduce the 1952 census to a conservative figure.

It is unnecessary to enter into a detailed analysis either of the events which occurred between the dates used for comparison or of the causes leading to the present situation. It is sufficient to mention that the

TABLE 74. CATTLE: EVOLUTION OF HERDS IN RELATION TO DEMOGRAPHIC GROWTH

(Thousands of head)

	Years used in comparison	*Actual herd fluctuations*	*Difference between pre-war herds projected in terms of demographic growth*
Argentina...	1937–1952	+ 6,793	− 5,210
Bolivia.....	1938–1947	+ 1,199	+ 999
Brazil.....	1937–1950	+11,794	− 3,132
Chile.....	1936–1951	− 387	− 1,074
Paraguay...	1938–1951	− 182	− 1,628
Peru.....	1929–1949	+ 1,039	+ 451
Uruguay....	1937–1951	− 143	− 1,459
		+20,113	−11,033

SOURCE: See table 73.

years of extreme drought during the last decade caused considerable damage to livestock, especially in Argentina and Uruguay. As for Paraguay, the effects of the political upheavals during this same period are still being felt. Perhaps the most significant example of the fundamental trend in cattle development is presented by Brazil, where despite a remarkable impetus, the calving rate of cattle still lags behind the demographic growth.

(*b*) THE BEEF INDUSTRY AND PRODUCTION

A comparison between slaughtering figures for 1936–42 and for the present indicates an increase approximately proportional to the growth of herds, as seen *in* table 75.

TABLE 75. CATTLE INDUSTRY AND SLAUGHTERING RATE IN FIVE SOUTHERN-ZONE COUNTRIES

	1936–42			*Present situation*		
	Head of cattle	*Period*	*Percentage rate of slaughtering*	*Head of cattle*	*Period*	*Percentage rate of slaughtering*
Argentina.....	7,080,033	1936–40	21.0	7,700,000	1951	22.0
Brazil.....	4,596,000	1940	11.3	5,964,715	1950	11.3
Chile.....	530,321	1943	15.3	515,515	1951	18.2
Paraguay.....	535,339	1938–42	14.3	500,508	1950	13.5
Uruguay.....	1,379,814	1940–42	16.6	1,371,895	1951	16.8
TOTAL	14,121,507			16,052,633		

SOURCES: Argentina: 1936–40, bulletin published by the Ministry of Agriculture; 1951 includes figures for slaughterings in the interior estimated at 3,881,000 head. If the total cattle on the hoof exported be included, the percentage would rise to 21.6 per cent in 1936–40 and to 22.6 per cent in 1951. Brazil: *Statistical Yearbook*. Chile: *Agricultura e Industrias Agropecuarias* of the Dirección General de Estadística; 1943 is the first year for which data is available, and figures for that year included an estimate—based on the meat yield—of total slaughterings within the country amounting to 25,000 head; the percentage for 1951, after deducting the number of cattle imported, was calculated on the basis of the operation within eight of the principal cities in terms of the same operation during 1949 in proportion to the country as a whole. Paraguay: STICA; includes imported cattle and that part of the industry destined for export; the percentage was calculated allowing for deduction of imported cattle. Uruguay: Ministry of Agriculture and Livestock.

Regarding meat production from slaughtering, which includes that produced from cattle imported on the hoof, table 76 demonstrates that, despite an increase in absolute figures, per capita availabilities have decreased in all countries of the zone, except Uruguay.

TABLE 76. BEEF PRODUCTION IN FIVE SOUTHERN-ZONE COUNTRIES

	1936–42			*Present situation*			*Difference*	
	Year or period	*Tons*	*Kilogrammes per capita*	*Year or period*	*Tons*	*Kilogrammes per capita*	*Total*	*Per capita*
Argentina...	1936–40	1,522,200	112.72	1951	1,666,130	95.20	+143,930	−17.52
Brazil.....	1942	803,056	18.67	1950	955,956	18.16	+152,900	− 0.51
Chile.....	1937–41	113,365	23.10	1951	119,388	20.00	+ 6,023	− 3.10
Paraguay...	1938–42	95,390	95.29	1951	80,235	60.39	− 15,155	−34.90
Uruguay....	1940–42	264,935	122.03	1949	288,602	122.65	+ 23,667	+ 0.62
TOTAL		2,798,935			3,110,311		+311,370	
Peru.....		..		1950	157,739	18.57		
TOTAL, incl. Peru		..			3,268,050			

SOURCES: Argentina: 1936–40, calculated on the basis of 215 kgs. average yield of meat per animal; 1951, partly estimated on the basis of 215 kgs. yield of animals slaughtered in municipal and private plants; household production not included. Brazil: 1942, first year when official statistics published beef production separately; rural production not included. Chile: 1937–41, official statistics; 1951, calculated on the slaughtering and average yield of 1949; figures include meat from imported cattle. Paraguay: Calculation based on slaughterings employing average yield rate derived from information from the Corporación Paraguaya de Carnes. Peru: *Panorama Ecónomico del Perú*, 1951. Uruguay: 1941–45, *Plan Agropecuario Nacional*. 1949, Ministry of Agriculture and Livestock.

(c) Exports and consumption

Table 76 indicates the per capita production but not total availabilities for domestic consumption. To obtain this, exports must be subtracted, but not involving the mere total given in foreign trade yearbooks. Foreign trade figures must first be converted to product weight from slaughterhouses. Once this conversion is effected, the figures shown in table 77 appear.

Table 77. Exports of frozen and preserved beef from five southern-zone countries

(Tons)

	Frozen beef	*Preserved beef*	*Total in terms of slaughtered beef*[a]	*Frozen beef*	*Preserved beef*	*Total in terms of slaughtered beef*	*Difference*
Argentina[c]	443,300	61,700	626,891	108,700	50,000[b]	250,000.	−376,891
Brazil[d]	58,260	21,305	118,810	4,894	4,081	16,305	−102,505
Paraguay[e]	—	14,352	39,612	—	4,690	12,944	− 26,668
Uruguay[f]	..	..	130,312	..	..	117,085	− 13,227
Total	..	..	915,625	..	..	396,334	−519,291

Source: Foreign trade statistics.

[a] Based on the ratio 100/103 for frozen meat and 100/276 for preserved meat. Data for Uruguay in 1940–42 and 1949 was published in the *Agricultural Plan* as well as in the *Agricultural Statistics Summary*. Frozen meat includes chilled meat. Such meats as *charqui* or *tasajo*, the trade in which declined considerably during the pre-war years, are not included. [b] Estimated. [c] 1937–38. [d] 1942. [e] 1940–42. [f] 1940–42 and 1949. [g] Figures published in the Second five-year plan.

As shown in table 77, the quantum of meat exports declined in twelve years by 56.7 per cent. By absolute figures, the decrease is greater for Argentina than for the other exporting countries. But the proportional decline is higher for Brazil and Paraguay, where domestic consumption at present absorbs all available production. In Uruguay, where the per capita export figure is still very high, there has also been a marked relative decline.

The data from preceding tables allow an approximate estimate of the aggregate and per capita consumption figures for the countries of the southern zone to be made.

Table 78. Apparent aggregate beef consumption in six southern-zone countries

	1936–42			*Present situation*		
	Production[a]	*Import (+) Export (−)*	*Apparent consumption*	*Production*[a]	*Import (+) Export (−)*	*Apparent consumption*
Argentina	1,522,200	−626,891	895,309	1,666,130	−250,000	1,416,130
Brazil	803,056	−118,810	684,246	955,956	− 16,305	939,651
Chile	113,365	—	113,365	119,388	—	119,388
Paraguay	95,390	− 39,612	55,778	80,235	− 12,944	67,291
Uruguay	264,935	−130,312	134,623	288,602	−117,085	171,517
Total	2,798,946	−915,625	1,883,321	3,110,311	−396,334	2,713,977
Peru	..	..	..	157,739	+ 6,288	164,027
Total, incl. Peru	..	..	..	3,268,050	−390,046	2,878,004

Source: Economic Commission for Latin America.

Years of reference: Argentina: 1936–40 and 1951. Brazil: 1942 and 1950. Chile: 1937–41 and 1951. Paraguay: 1938–42 and 1951. Uruguay: 1940–42 and 1949. Peru: 1950.

[a] Production figures include meat obtained from imported cattle.

An examination of the figures in table 78 reveals that aggregate consumption increased in twelve years by 830,000 tons, or by 44 per cent. Thirty-seven per cent of the increased consumption, or 310,000 tons, came from higher production, and the remaining 63 per cent, or 520,000 tons, from reduced exports.

Of the three countries where increases in average consumption have taken place, two, Argentina and Uruguay, had already achieved the highest levels in the world. The increases in Argentina reflect the growth of real income combined with abundant supplies of meat at low prices. The same factors are present in Brazil although on a smaller scale, and here again surpluses formerly destined for export have been utilized for domestic consumption. However, in contrast to the situation in Uruguay and Argentina, Brazilian meat exports have almost entirely been eliminated, a similar situation prevailing in Paraguay. In Chile the problem presents different aspects, since for many years it has been necessary to supplement domestic beef production with imported cattle. The outstanding event in recent years is the increase of import requirements. Supplies depend mainly upon the possibilities of obtaining livestock from Argentina

TABLE 79. APPARENT PER CAPITA BEEF CONSUMPTION IN SIX SOUTHERN-ZONE COUNTRIES

	1936–42			Present situation			
	Aggregate consumption (tons)	*Population during period under consideration*	*Apparent consumption (kgs. per capita)*	*Aggregate consumption (tons)*	*Population during period under consideration*	*Apparent consumption (kgs. per capita)*	*Difference (kgs. per capita)*
Argentina	895,309	13,504	66.3	1,416,150	17,500	80.9	+16.6
Brazil	684,246	43,050	15.9	939,651	52,632	17.9	+ 2.0
Chile	113,365	4,907	23.1	119,388	5,969	20.0	− 3.1
Paraguay	55,778	1,001	55.7	67,291	1,330	50.6	− 5.1
Uruguay	134,623	2,175	61.9	171,517	2,353	73.5	+11.6
TOTAL	1,833,321	64,637	29.1	2,713,977	79,784	34.0	+ 5.9
Peru	..	..	..	164,027	8,493	19.3	..
TOTAL, incl. Peru	..	..	..	2,878,004	88,277	32.6	..

SOURCE: Economic Commission for Latin America.
YEARS OF REFERENCE: Argentina: 1936–40 and 1951. Brazil: 1942 and 1950. Chile: 1937–41 and 1951. Paraguay: 1938–42 and 1951. Uruguay: 1940–42 and 1949. Peru: 1950.

and in financing their purchase. Thus, an increase in real income does not here show the same direct relationship to meat consumption in Chile.[1]

As for under-consumption or over-consumption of beef, on a per capita basis, shown in table 79, the information is inadequate for any definite conclusions to be reached. In addition, only incomplete data are available for the consumption of other types of meat and fish in the southern zone. Further, such figures, once completed, should be examined in the light of the type and quantity of each national diet, as well as the dietary habits of each nation, to relate them to the norms established at the Hot Springs Conference. These standards proposed an annual per capita consumption of 54 kgs. of meat and fish as a balanced diet.

(*d*) INTRA-ZONAL TRADE

As already mentioned at the beginning of this chapter, the cattle trade in the southern zone has experienced a marked growth since pre-war years. (See table 80.)

Certain comments should be made on the two preceding tables. In the first place, it should be noted that aggregate figures for exports and imports include those to all markets and from all sources. However, in practice they may be considered as representing intra-zonal trade with the exception of Peru whose imports come from Central America.[2]

An outstanding fact at a first glance is the marked increase in trade during the immediate post-war period and its decline at a later date. Actually, the regressive tendency is apparent since 1949. Thus, Argentine cattle exports of 373,823 head in 1946–48 declined to 124,700 in 1949–51. This is related to the decline in the export industry due not only to an increase in domestic consumption, but also in a certain degree to the adverse effects of unfavourable weather conditions.

[1] The fact that sea-food and shell-fish are more readily available must also be taken into account.

TABLE 80. CATTLE EXPORTS FROM FIVE SOUTHERN-ZONE COUNTRIES

(Head)

	1934–38 average	*1946–50 average*	*1951*
Argentina	81,100	272,257	134,077
Bolivia	—	2,500	2,000[a]
Paraguay	—	..	—[b]
Peru	4,600	—	—
Uruguay	65,900	1,575	..
TOTAL	151,600	276,332	136,077

SOURCE: *Foreign Trade Yearbooks.*

[a] Indirect data: Brazilian statistics indicate imports from Bolivia of 592 tons.

[b] Brazilian statistics show 10,000 tons imported from Paraguay, those of Paraguay do not account for any exports whatsoever, since exports of cattle were strictly prohibited.

TABLE 81. CATTLE IMPORTS

(Head)

	1934–38 average	*1946–50 average*	*1951*
Bolivia	5,000	31,767[a]	9,125[b]
Brazil	20,500	11,025[c]	32,000[c]
Chile	22,600	141,835	117,191
Paraguay	81,000	26,617[d]	—
Peru	1,800	6,950[c]	14,765
Uruguay	3,400	47,243	—
TOTAL	134,300	265,437	173,081

SOURCE: *Foreign Trade Yearbooks*, Peru, 1951: *Panorama de la Economía del Peru.* Chile, 1951: *Instituto de Economía Agrícola.*

[a] Average for 1946–48.

[b] Indirect data: Argentine exports to Bolivia.

[c] Average for 1946–49.

[d] Average for 1948–50.

[e] Calculated on the basis of the weight of kilogrammes.

The discrepancy is even more marked in Uruguay, where before the war substantial numbers of cattle were exported to Brazil. But the drought of 1942–43 considerably depleted cattle herds; its effects were still being felt in 1947 and 1949, when Uruguay had to import 233,000 head, not for domestic consumption, but to maintain activity in the frozen-meat industry for export. Since 1949, Uruguay discontinued all cattle imports and only exports on a small scale to Brazil.

[2] Exports outside of the southern zone in 1934–38 amounted to 402 head, and 2,800 in 1946–50, but only 123 in 1951. It is possible, of course, that these small surpluses can be attributed to certain inaccuracies in properly classifying cattle destined for consumption purposes and those for reproduction.

TABLE 82. DISPARITIES BETWEEN IMPORT AND EXPORT DATA FOR CATTLE IN THE SOUTHERN ZONE

	Imports		*Exports*		*Difference (exports minus imports)*
	Countries	*Head*	*Countries*	*Head*	
1925	To Chile from Argentina	54,100	From Argentina to Chile	61,501	+ 7,401
1946–48	To Uruguay from Argentina	234,415	From Argentina to Uruguay	191,917	−42,498
1946	To Paraguay from Argentina	83,222	From Argentina to Paraguay	78,070	− 5,152
1950	To Paraguay from Argentina	12,320	From Argentina to Paraguay	45,330	+33,010
1946–51	To Chile from Argentina	827,043	From Argentina to Chile	861,716	+34,673
1951	To Brazil from Paraguay	32,000[a]	From Paraguay to Brazil	—[b]	−32,000

SOURCE: National statistics.

[a] Estimated on basis of weight: 10,000 tons. [b] Export prohibited.

Before the war, Peru exported small quantities of cattle to Brazil and, some years before, to Chile as well. At present, Peru must import at an ever increasing rate in order to supply the domestic demand. Thus, Argentina remains the sole large and permanent exporter in the southern zone.

3. Contraband as an important factor

Another aspect is the discrepancy between export and import figures. According to these statistics, it would appear that in the period 1934–38 the southern zone exported 17,000 head of cattle which did not arrive at their destination. By 1946–50 this difference declined to 11,000. But if total Peruvian imports from Central America are deducted, the figure of 17,000 head is once again attained. In 1951, the difference amounted to 22,000 head—excluding the Peruvian imports—but in that particular year apparently imports exceeded exports. If the reciprocal data is subjected to careful analysis, even greater differences are discovered, some examples being illustrated in table 82.

To a certain degree, the disparities shown above underline the importance of contraband in the cattle trade of the southern zone. This is particularly true when there is only one side to the illegal trade, that is, when the cattle movement was declared normally on one side or other of the frontier. This also explains where the discrepancies appear in the statistics.

Since it is impossible to estimate the real extent of contraband, the available statistical data must be accepted, but bearing in mind that it only reflects partial data.

4. Purpose of imports

Another aspect of the growth of cattle imports is their ultimate purpose among the importing countries. Some of these—Bolivia, Chile and Peru—import to compensate for their inadequate meat production. Among others—Brazil, Paraguay and Uruguay—imports provide sufficient raw materials for the refrigerating plants which re-export the meat and the by-products. Following this criterion in classifying imports, the following facts appear. (See table 83.)

Perhaps it might be maintained, in the case of Brazil, that an indeterminate proportion of the imports is directly used for consumption in certain frontier areas. This is probable, but it is more than neutralized by some uncontrolled imports destined for the refrigerating plants in Rio Grande, Santa Catarina and Paraná. The meat industry in the entire River Plate basin, as well as along its tributaries, is mainly controlled by a few international companies, with refrigerating or processing plants distributed throughout Argentina, Uruguay, Brazil and Paraguay. The movement of cattle thus generally follows the raw-material requirements of these plants. Another factor influencing the flow of trade is that of transport costs. It is more economical to slaughter cattle from the north of Uruguay at the Brazilian refrigerating plant of Sant'Ana do Livramento, for example, than it is to transport them to Montevideo. In much the same way, the plants in Paraguay are better situated to process cattle from the frontier regions of Argentina than are those to the south of Corrientes. These facts explain why large imports of cattle are made by Paraguay and Uruguay, although their cattle population is already greater than that required domestically.

TABLE 83. CLASSIFICATION OF CATTLE IMPORTS ACCORDING TO ECONOMIC UTILIZATION

(Head of cattle)

	Imports for consumption			*Imports for industrial processing*		
	1934–38	*1946–50*	*1951*	*1934–38*	*1946–50*	*1951*
Bolivia	5,000	31,767	9,125	—	—	—
Brazil	—	—	—	20,500	11,025	27,000
Chile	22,600	141,835	117,191	—	—	—
Paraguay	—	—	—	81,000	26,617	—
Peru	1,800	6,950	14,765	—	—	—
Uruguay	—	—	—	3,400	47,243	—
TOTAL	29,400	180,552	141,081	104,900	84,885	27,000
Percentage	22	68	84	78	32	16

SOURCE: Preceding tables.

The difference in the prices paid in one country or another also constitutes a motive for illicit exports. Such appears to be the case of cattle raised in Paraguay, particularly in the north-eastern zone, where the price offered for a two-year-old heifer is from 1,200 to 1,400 cruzeiros, in contrast to the official Paraguayan price in mid-1952 of 880 guaranis per unit of 370 to 400 kgs. according to the official price.[3] At the free exchange rate, the Brazilian price is three times that of Paraguay. According to well-informed sources in Asunción, the flow of uncontrolled trade in cattle to Brazil may still be estimated at a minimum of 15,000 head annually. In years of less rigorous control measures, it may have reached 50,000.

Regarding the illegal passage of cattle from Argentina to Brazil, Uruguay or Paraguay, it is probable that the system of frontier control has caused substantial reductions during 1952.

In the case of trade through legal channels, it has been shown in table 83 that imports for consumption are tending to expand at the cost of imports for industrial processing. This trend is not a new one. It was already in evidence during the period of the First World War, but during the Thirties it was interrupted by the absolute decline of imports for consumption. The evolution of Argentine exports of cattle on the hoof contributes very clearly to the interpretation of the phenomenon.

TABLE 84. ARGENTINE EXPORTS OF CATTLE ON THE HOOF, CLASSIFIED ACCORDING TO ECONOMIC UTILIZATION

	Consumption		*Processing*		*Total exports to southern zone*	*Total exports to all markets*
	Head	*Percentage*	*Head*	*Percentage*		
1914.....	33,135	29	82,188	71	115,323	115,556
1925.....	65,932	54	55,523	46	121,455	130,306
1934–38.....	30,023	37	50,170	63	80,193	81,081
1946–50.....	175,996	65	93,459	35	269,455	272,454
1951.....	113,169	84	20,908	16	134,077	134,200

SOURCE: Economic Commission for Latin America.

TABLE 85. ARGENTINE FROZEN BEEF EXPORTS TO PERU AND BRAZIL

	Exports to Peru		*Exports to Brazil*		*Totals*	
	Tons	*Dollars*	*Tons*	*Dollars*	*Tons*	*Dollars*
1943.....	2,269	277,880	—	—	2,269	277,880
1944.....	2,226	249,300	7,956	1,395,202	10,182	1,644,502
1945.....	3,999	426,300	—	—	3,999	426,300
1946.....	4,800	654,528	—	—	4,800	654,528
1947.....	4,400	706,020	—	—	4,400	706,020
1948.....	11,000	2,803,668	—	—	11,000	2,803,668
1949.....	12,085	5,635,360	—	—	12,085	5,635,360
1950.....	5,595	2,490,307	—	—	5,595	2,490,307
1951.....	7,953	3,060,700	521	208,960	8,474	3,269,660

SOURCE: Argentine foreign trade statistics.

Total values for Brazil were converted to dollars at the rate of 3.36 in 1944 and 5.00 in 1951.

Total values for Peru were converted to dollars at the rate of 4.00 until 1948, 3.36 for 1949, calculated average of 3.90 for 1950 and 5.00 for 1951.

The consequences of this phenomenon upon the meat industry in general, as well as its possible future course, will be discussed in the second part of this chapter.

5. Frozen meat

The trade in frozen meat is only a few years old in the southern zone. The earliest trade was between Argentina and Peru as the importer. At the start there were certain technical difficulties due to a lack of refrigerating space in ships of the two merchant fleets and also the problem in Peru of insufficient storage or distribution facilities. However, little by little these obstacles were overcome so that supplies reached the figure shown in table 85, a maximum of 12,085 tons in 1949 and some decline in 1950–51. Although both governments in 1949 signed a trade agreement, including provisions that 25,000 tons of frozen meat would be dispatched annually for five years, the exchange rate modifications of the same year in Peru caused the market price of imported meat to rise above domestic meat, thus slowing down imports. Since 1951 imports once again have increased in the ratio to which price levels tended to balance one another. Table 85 also shows the sporadic Argentine exports to Brazil.

6. Value of the southern zone trade

Table 86 shows the total value, in thousands of dollars, of intra-zonal trade in beef and cattle.

7. Production and consumption

Prospects for the future can be assumed if based both on the cattle and meat market situation in 1951 and trends since the pre-war period. Table 87 shows what would be the situation in each of the countries of the southern zone—except Bolivia—by 1960, assuming the following conditions are accepted:

(*a*) That the annual demographic growth will be at the same percentage rate as in the immediately preceding period;

(*b*) That the annual percentage growth in total herds will also be similar to that in the immediately previous period;

[3] July 1952 prices.

TABLE 86. F.O.B. VALUE OF INTRA-ZONAL EXPORTS OF CATTLE AND FROZEN BEEF

(In thousands of dollars)

	1934–38	1946–50	1951
Cattle			
Argentina	1,876	19,094.6	18,459.2
Bolivia	222	143.6[a]	149.2[c]
Paraguay	—	..	625.0[c]
Peru	28	—	—
Uruguay	1,792	240.0	566.0[d]
TOTAL	3,918	19,478.2	19,799.4
Frozen beef			
Argentina	4	2,458	3,271.2
GRAND TOTAL	3,922	21,936.2	23,070.6

SOURCE: Foreign trade statistics.

[a] Average for 1947–49, all of which was exported to Brazil.

[b] Indirect data: Value of Brazilian imports from Bolivia.

[c] Indirect data: Value of Brazilian imports from Paraguay.

[d] 1950.

(*c*) That the extraction rate and yield from slaughtered meat will not vary; and

(*d*) That per capita beef consumption will remain at the 1951 level.

In comparing tables 87 and 77, it will be observed that slight differences appear. These may be explained by the inclusion, firstly, of data for Peru and Chile and, secondly, by commercial cattle operations in table 87. These additions largely compensate each other so that the final disparity does not exceed 4 per cent. Another aspect of this comparison reveals that between the pre-war years and 1951 exportable surpluses in the zone declined by more than half. In terms of prices at the end of 1951, this is equivalent to a decline in resources of some 250 million dollars. By 1960, there would be a further reduction of 71.5 per cent, equal to approximately 130 million dollars, in the aggregate value of net exports to other regions. If the curves assumed from these tables are further extended (see plate XI) it will be seen that aggregate consumption would reach the level of production in 1964, representing an ultimate additional loss of 50 million dollars in net export resources.

However, extreme caution should be used for these figures. To project a consumption curve for a commodity such as beef is very fortuitous, due to the elasticity of the various factors which may influence it. Meat consumption reacts rapidly to a situation of combined factors. The increase or decline in per capita real income produces a more serious effect on this type of consumption than on the majority of other basic foodstuffs, at least in urban areas.

On the other hand, the production curve reflects the effects of normal incentives resulting from a rise in demand or livestock development programmes. An analysis of these factors would permit a readjustment of table 87 by the addition of elements which would show the immediate future in a more favourable light. But before undertaking this analysis, other more general considerations should be taken into account.

The fundamental problem is how livestock development can be accomplished, maintaining the export capacity of the large producers and at the same time ensuring that the import requirements of the other countries do not increase disproportionately.

On the basis of present conditions for livestock birth-rates and the relationship of the use of natural pasture land, for the time for fattening and the meat yield from slaughtering, the increase of herds in relation to demographic growth rests upon the problem of the land available.

For sufficient beef to be available in 1960 to maintain the average per capita consumption without a further reduction in the present exportable surplus, 585,000 additional tons would be required. On the basis of the yield in meat, according to countries, this amount is equivalent to an additional 3,135,000 head. If the average slaughter rate of 15.1 per cent[4] is applied to this last figure, it may be seen that an increase of such size will require an additional availability in total herds of more than 20 million head. Estimating that an average of 4 hectares per head is the normal amount

TABLE 87. THEORETICAL BALANCES BETWEEN ESTIMATED BEEF CONSUMPTION AND PRODUCTION FOR 1960

Exports (+), imports (−)

(Metric tons in terms of cattle slaughtering)

	1951	1960	Balance
Argentina	+268,201	+ 75,936	+210,265
Brazil	+ 10,905	+ 17,615	+ 6,710
Chile	− 35,157	− 57,873	− 22,716
Paraguay	+ 12,944	− 11,269	− 24,213
Peru	− 9,241	− 42,209	− 32,968
Uruguay	+117,085	+127,000	+ 9,915
TOTAL	+382,537	+109,200	−273,337

SOURCE: Economic Commission for Latin America.

NOTES: *Argentina:* Cattle exports include exportable surpluses converted to meat at the rate of 225 kgs. per head in 1937–38, and 270 kgs. in 1951. *Brazil:* The equivalent of meat derived from imported cattle was deducted from the exportable surplus, assuming 1951 and 1960 imports as the same. *Chile:* Meat production from domestic cattle was considered to be unchanged. Imported cattle were judged to yield 300 kgs. of beef per head. Only imports from the central and northern zones were considered. *Peru:* Lacking sufficient material to compare the post-war and pre-war periods, 1950 consumption and imports were used as a basis. Cattle imported from Nicaragua was provisionally calculated to yield 200 kgs. per head. *Uruguay:* Cattle exported during 1940–42 was estimated to yield 210 kgs. per head.

Details of years and periods used appear in table 78.

[4] 16,052,000 head slaughtered in 1951, from a total of 106,204,000 animals.

TABLE 88. INCREASE OF BEEF CONSUMPTION AND THE NEED FOR ADDITIONAL PRODUCTION BY 1960 (SOUTHERN ZONE)

	Increase of aggregate consumption by 1960 (tons)	Average yield in kgs. per head	Additional number of animals to be slaughtered
Argentina	266,000	215	1,237,209
Brazil	220,808	160	1,380,050
Chile	22,716	225	100,960
Paraguay	16,190	180	89,944
Peru	32,968	160	206,050
Uruguay	25,294	210	120,448
TOTAL	583,976		3,134,661

SOURCES: Economic Commission for Latin America, according to data obtained from official documents. For Peru, *Panorama Económico del Perú, 1951*, of the Sociedad Nacional de Industrias.

of land required in the southern zone,[5] it will be necessary to increase pasture land during the period up to 1960 by 80 million hectares. In other words, during this nine-year period, in order to satisfy consumption requirements, which in total are not great, it will be necessary to increase the area devoted to livestock by 800,000 square kilometres; this is equivalent to the area of the four southern states of Brazil combined—São Paulo, Paraná, Santa Catarina and Rio Grande do Sul—or, as a further example, to 30 per cent of the entire area of Argentina.

Fortunately, in addition to the use of greater and area, there are other resources for increasing meat production. The reason for emphasizing the above figures is to demonstrate the urgency for undertaking reforms and improvements in livestock techniques, in order to intensify the fattening cycle, to achieve a reduction in losses due to disease and to obtain higher meat yields per animal. In other words, it is necessary, at least in those zones with more favourable ecological conditions, to pass gradually from extensive livestock production to a system more characteristic of intensive production.

It is to their advantage that some countries of the southern zone have already undertaken research and and drawn up programmes for this purpose. In *Argentina*, according to summaries of the five-year plan published at the end of 1952, an increase by 1957 of 10 per cent in total cattle numbers is envisaged, based on 1951 figures. This increase would be a little under the demographic growth that will occur during these six years. Nevertheless, an increase of 130,000 tons in beef exports has been proposed, which seems to be based on the supposition that aggregate consumption will remain constant, or in fact on a reduction in per capita consumption.[6] On the other hand, a 10 per cent increase in cattle herds would give a total of not less than 44 million head.[7] Meat exports, planned at 380,000 tons, will remain 40 per cent below pre-war figures.

In *Bolivia*, over the short term, it appears probable that the need to import cattle will increase. However, on a medium-term or long-term basis, a substantial development of livestock resources in the eastern part of the country may be forecast, capable of satisfying all domestic requirements.

The situation of the meat market in *Brazil* presents two main factors. Since 1942 the curve for the production increase and that for the demographic growth coincide.[8] The second factor shows that, in the meantime, per capita consumption is increasing rapidly, absorbing practically the whole surplus formerly exported.

In practice, Brazil has ceased to export meat. There were periods of shortage when it was necessary to import certain quantities of frozen meat. The future of such imports depends, among other factors, on the development of domestic livestock resources. In fact, during the last fifteen years these resources have shown a remarkable growth, although insufficient to compensate for the increase in per capita consumption. Unlike the situation in Uruguay, Brazil still has no land problem, since the area available for expanding livestock resources is still considerable. There are, however, other problems. The cattle industry is somewhat out of date in its techniques. It is only in recent years and in certain regions that cotton-seed cake has begun to be used as an additional item of fodder. In the intensive livestock areas of São Paulo, railway transport difficulties also provide an obstacle to the development of meat production. Nevertheless, Brazil possesses the basic elements for covering the domestic demand without recourse to imports.

In *Chile* the average meat yield from slaughtering is higher than in the other countries, although this is influenced by the fattened cattle imported from Argentina. Cattle stocks in Chile are tending to decline; in 1910 the figure stood at 2,300,000 head, rising to 2,573,000 in 1936 and falling to 2,186,000 in 1951. Taking into account the demographic growth since 1910, the ratio of cattle to population has decreased from 0.70 in 1910 to 0.55 in 1936 and 0.37 in 1951. Meanwhile, despite a decline in per capita consumption, cattle imports have increased. A serious problem is the limited availability of land. Thus, the agrarian plan of 1945 was directed towards complete self-sufficiency, by reducing the proportion of beef in the domestic diet. According to the Ministry of Agriculture, total per capita consumption of meat, fowl and fish, amounted to 44.9 kgs. in 1944, distributed as follows:

	Kilogrammes	*Percentage*
Beef	23.7	52.4
Mutton	6.4	14.1
Pork	4.3	9.5
Rabbit	1.5	3.3
Fowl	3.0	6.6
Fish and seafood	6.0	13.2

Subsequently beef consumption fell to 20 kgs.

The 1945 agrarian plan further advised an increase in the yield of meat per animal, but its fundamental thesis consisted of developing milk production, subordinating meat production to this aim.[9] In addition, it counselled greater attention to the sanitary conditions for cattle, a reduction in the slaughter of young heifers and the establishment of refrigerated warehouses to build up reserves for the winter when traffic in livestock over the Andes is normally interrupted. In addition, the plan suggested reforms in the distribution system to protect the consumer from prices three times higher than those paid to the producer. For the future, the plan proposed the utilization of the areas of Aisen and Chiloé for a livestock industry.[10]

Paraguay has at present no concerete plan for developing the cattle industry. However, STICA has devoted research to this problem and the findings coincide with those of local experts. Briefly, Paraguay is capable of developing its cattle industry, although conditions for the moment are deficient, with the exception of a few farms. Thus, it still has vast lands not yet used for livestock, a density of animal population of only one animal to each 4 or 5 hectares, a slaughter rate estimated at 12 per cent and an average weight per animal of 365 kgs. Here, the average yield in beef does not even reach 50 per cent of the total weight of the animals; the rate of calving is a third

[5] This average is in terms of the present situation, but does not exclude the use of the same area for other animals or for the cultivation of rotation crops.

[6] Based on an estimated population of 20 million inhabitants in Argentina by 1957, the per capita beef consumption would be reduced from 80.9 to 71.4 kgs.

[7] See note to table 73.

[8] The ratio is not so favourable if taken from 1937. (See table 74.)

[9] Milch-cows in proportion to total cattle herds almost doubled in number between 1910 and 1950.

[10] According to the joint report of the International Bank and FAO (DeVries report, 1952), the island of Chiloé would be better suited to pig farming.

below normal, and the death rate between actual calving and the period when heifers are branded stands at 33 per cent. All of these factors testify to the large sphere in which specific improvements could be achieved.

A country with wide livestock development plans is *Uruguay*. The publication of an agricultural and livestock plan in 1947, drawn up by the Ministry concerned, was followed by a study made by a joint mission of the International Bank for Reconstruction and Development and the Food and Agriculture Organization. In 1951, this mission presented its recommendations, which in August 1952 received the approval of Congress. The essential measures prior to the plan being carried out are being taken, on the basis of funds from domestic sources of 93 million pesos and/or a 54-million-dollar loan by the International Bank.

According to the plan, its fulfilment would allow beef production to be doubled in less than ten years. However, the mission warned that "the meat price subsidy has reduced the price to the consumers—in so far as the letter of the law is observed—to a level entirely out of proportion to the prices for other foodstuffs, and has therefore distorted the normal consumption structure". The plan thus recommends that domestic prices be adjusted to those for exports. If this advice be followed, a substantial reduction in per capita consumption can be obtained. Accepting this assumption, as in the case of Argentina, the aggregate consumption would remain constant, permitting the export of the entire productive increase obtained during the remaining years of the present decade. In this way, Uruguay's capacity to export would rise from 120,000 to 400,000 tons in terms of slaughtered beef. This increase could be achieved without extending the areas available for pasture, but by raising the density of herd population[11] as well as by accelerating the fattening rate and improving the average meat yield. The means proposed to achieve these ends are, briefly, the provision of wire fencing to limit the area of the properties, the erection of outdoor shelters, a rational distribution of the water supply, the use of selected seed and fertilizers for improving fodder resources, the improved breeding of animals and a systematic attack upon livestock diseases.

8. Problems and prospects for intra-zonal trade

According to table 86, exports in intra-zonal trade during 1951 were covered 94 per cent by Argentina. Imports were distributed between Chile, 67 per cent, and Peru, 13 per cent. (See table 81.) It may thus be appreciated that Argentine-Chilean trade alone represents two-thirds of the total intra-zonal trade in beef and cattle. The characteristics of this trade are noted below.

9. The Argentine-Chilean trade of cattle for copper

During the last ten years Argentine cattle exports to Chile rose rapidly, reaching a peak in 1946 and 1947. In 1948 and 1949 they declined to a third of the 1946 total. The evolution of the livestock situation in Argentina, the rise in domestic consumption and the difficulties of maintaining the level of meat exports to Europe, and particularly to the United Kingdom, combined to reduce the cattle numbers available for export to Chile. By 1950 a slight recovery was noted, although the causes for the previous decline had not disappeared. The reason for this increase was the Korean War and the subsequent world scarcity of raw materials, particularly copper. In view of the international shortage, Argentina sought to obtain from Chile the larger quota of copper required by its developing industries. In 1951, the facts described in section 2 of chapter XI, under the title of "Copper in Argentine-Chilean trade", caused an agreement to be reached, by which a large share of the Argentine cattle exported to Chile was directly traded for copper. Under this agreement, Chile decided to export 10,000 tons of copper to Argentina. In 1952 the tonnage was increased to 15,800 and should have covered all Argentine cattle exports with the exception of 11,250 head for northern Chile in exchange for nitrate and all cattle imported south of the 34th parallel, from the pre-Cordillera region, which reach Chile through passes over the Andes. This trade in the south is estimated at some 10,000 to 15,000 head a year,[12] but it is of much inferior quality to the well-fattened

[11] At present around 2 hectares per head.

[12] The new treaty for 1953 now under study proposes the exchange of 23,700 tons of Chilean copper for 127,000 head of cattle.

TABLE 89. ARGENTINE-CHILEAN TRADE IN CATTLE AND COPPER

	Argentine cattle exports to Chile			*Argentine imports of Chilean copper*		
	Head[a]	*Thousands of Argentine pesos*[b]	*Thousands of dollars*	*Tons*	*Thousands of Argentine pesos*	*Thousands of dollars*[c]
1949.....	72,825	37,438.2	11,142.3	3,387.7	10,799.2	2,895.2
1950.....	88,003	61,534.9	15,778.1	6,841.2	35,937.8	7,187.6
1951.....	103,108	77,810.7	16,362.1	10,280.4	63,697.1	8,493.0
1952.....	93,000	89,544.3	19,808.8	15,800.0	118,500.0	15,800.0

SOURCE: *Foreign Trade Yearbooks.*

[a] Figures covering the period from 1949 to 1951 were taken from official statistical sources. For 1952, amounts listed in the Argentine-Chilean agreement were used, even though these were not completely fulfilled. Also, copper for 1952 is priced f.o.b. rather than c.i.f.

[b] Conversion of Argentine pesos to dollars is somewhat complicated by the multiple-exchange-rate system employed in Argentina, as well as for certain modifications introduced in August 1950. As a result, the following rates were used: for cattle: 3.36 in 1949, 3.90 in 1950, 5.00 in 1951 and 1952; for copper: 3.73 in 1949, 3.90 in 1950, 7.50 in 1951 and 1952. The price listed in Argentine statistics for cattle includes the surcharges to be referred to below, and which amount to some 800,000 dollars in 1951 and 1,900,000 dollars in 1952.

[c] For copper the customs sections used were 1375c, 1378, 1380, 1381 and 1385, that is, cable and bare wire, tubes, electrolytic copper and copper, bronze or brass in slabs or sheets.

TABLE 90. CHILE: TRADE IN CATTLE AND COPPER WITH ARGENTINA

	Imports of Argentine cattle		*Exports of copper to Argentina*[a]	
	Head	*Thousands of dollars*	*Tons*	*Thousands of dollars*
1949.....	69,262	5,692.2	3,027.4	1,843.7
1950.....	61,969	5,711.2	6,896.3	5,437.4
1951.....	116,872	16,964.6	7,828.3	6,348.7
1952[b]....	93,000	19,808.8	15,800.0	15,800.0

SOURCE: Official statistics.

[a] Customs sections used cover: copper sheets and bars, bare copper wire, electrolytic copper, and copper and bronze manufactured goods.

[b] 1952 figures were taken from the trade agreement, although these were not entirely fulfilled. Cattle values for 1951 and 1952 include the surcharge, but exclude imports over the Andean passes.

heifers imported into the central or northern zones of Chile.

Despite certain marked differences, the statistics, for both Chile and Argentina, show a tendency towards a general balance in the trade of copper for cattle. (See table 89.)

The relative importance of copper as a means of barter for cattle amounted to 32.4 per cent in 1949 according to Argentine statistics, while Chilean statistics placed it at 26 per cent. Since 1949 it has increased to some 80 per cent according to the terms of the 1952 agreement.

10. Reciprocal prices of cattle and copper

At first sight, based on the agreement of 1951 and the 1952 treaty, the ratio amounts to a little more than five head of cattle for one ton of copper. But this ratio has been altered, from one year to another, in favour of Argentina, inasmuch as the price for cattle of 912 Argentine pesos a head fixed by the 1951 agreement was later raised by the 1952 treaty to 995.60.[13] In the meantime there was no change in the price of copper. But the official price did not entirely cover the real value of the cattle. From the beginning, in May of 1951, Chilean importers paid a small supplement of 15 to 20 Argentine pesos her head. As domestic prices in Argentina rose, the supplement also increased until, by December 1952, it had reached an average of 564 Argentine pesos. However, the official price of 995.60 Argentine pesos involves a currency entirely different in value from the supplementary 564 pesos. The first is used in official negotiations at the ruling official export rate of 5 pesos per dollar, whereas the 564 pesos, with the tacit approval of both governments, may be paid in Argentine bills, bought by Chilean importers on the free market in Santiago. In December 1952 these bills were being sold at an approximate rate of 22 Argentine pesos per dollar.

In other words, the average price per head exported to Chile in dollar equivalent was as follows:

995.60 Argentine pesos at 5 per dollar.....199.10 dollars
plus 564.00 Argentine pesos at 22 per dollar..... 25.64 dollars

or a total of 224.74 dollars per head. It must be emphasized that this price applies to fat heifers averaging 540 kgs. weight on arrival in Chile (at Los Andes) or 580 to 600 kgs. live weight in pasture.

The price for cattle exported during the early days of the 1951 agreement was 182.40 plus 1, or 183.40 dollars. Within one year and a half, Argentine cattle exports to Chile showed a price increase of 41.34 dollars per head, or 22.54 per cent, while the copper price remained constant.

A comparison may be made between the price received by Argentina for cattle exports with that received for exports of frozen beef. A comparison of this type is based on the supposition that the f.o.b. value of frozen meat from one animal is equivalent to the value of the same animal on the hoof with the by-products obtained compensating for the cost of slaughtering, processing, storage and transport charges to f.o.b., taxes, commissions and normal profits made by the plants and agents.[14]

Argentine meat has various prices according to the markets upon which it is sold. In sales to the United Kingdom, for example, the new treaty signed at the end of 1952 raised the price of chilled beef from 126 pounds sterling per long ton to 161. In dollar equivalents it rose from the original price of 347.24 per metric ton to 443.70. For exports to Great Britain, an animal weighing 580 kgs.[15] with a 60 per cent yield in frozen meat, equivalent to 348 kgs., is valued at 154.41 dollars per head. Exports to other markets—Brazil and Peru for instance—have the price fixed by IAPI at 530 dollars per metric ton, or a total of 184.44 dollars per head. There is therefore a remarkable difference between both these cases and the price charged in Chile. However, Argentina also pays above-average prices for Chilean copper.

Since Chile abrogated its former treaty with the United States and freely established the price and destination of its copper exports, the mineral value has been fixed by the Central Bank at 35.5 US cents per pound for slabs of electrolytic copper and 35.25 US cents per pound for smelted copper. Since the agreement with Argentina stipulates the export of equal volume of both types of copper, the mean price must be based upon the average for the two, or 35.375 US cents per pound. This represents 779.88 US dollars per metric ton, while Argentina actually pays 1,000 US dollars, or 45.36 US cents per pound.

In other words, the price of Chilean copper for Argentina has a surcharge of 28.22 per cent, while

[13] This price applies to cattle destined for the central zone of Chile. The price for the northern zone was increased from 850 Argentine pesos in 1951 to 927.90 in 1952. The variation in rate as applied to the central and northern zones is due to the quality of the animals, those dispatched to the north having a lighter average weight. The treaty of 1952 stipulated the import of 48,000 head into the central zone and 45,000 by the north. Of these latter, 11,250 were traded for nitrate. The price of only 330 Argentine pesos was placed upon cattle imported via the mountain passes of the south, since these animals were not only lighter but inferior in quality. Payment for this last group is effected through the usual channels without any connexion to copper or any other specific commodity.

[14] This balance also prevails in Chile in terms of official prices. The Development Corporation at present (December 1952) buys all Argentine cattle arriving at Los Andes at 25.70 Chilean pesos per kg. on the hoof, reselling it to slaughter-houses at 26 pesos. The average weight per animal is 540 kgs. and the average yield 60 per cent, providing 324 kgs. of meat whose official price is around 40 pesos. Thus, for meat on the hoof 14,040 pesos (26x540) is paid and the wholesale price for the meat is 12,960 pesos (324x40). It must be noted that this represents butchered meat which has been neither processed nor subject to the transport costs of frozen meat for export.

[15] The weight was estimated at a little higher than average since losses due to transport are usually less than those occurring during the long journey to Chile for similar animals.

the price of Argentine cattle, in terms of meat, is 45.5 per cent higher for Chile than that paid by the United Kingdom and 21.85 per cent higher than that for other markets.

In establishing the copper equivalent for the Argentine exports of beef and cattle according to where it is sold, the following figures are reached:

	Kilogrammes
Equivalent in copper at 1,000 dollars per ton for a fattened heifer exported to Chile	224.74
Equivalent in copper at 779.88 dollars per ton for a fattened heifer exported to Great Britain	197.99
Equivalent in copper at 779.88 dollars per ton for a fattened heifer exported to other markets	236.50

The difference is small between the equivalent in copper for cattle exports to Chile and the exports of meat to other countries of the southern zone—5.23 per cent in favour of Chile. However, these calculations have not allowed for the fact that, in accordance with the 1952 agreement, part of the copper is exported to Argentina in semi-manufactured form. In other words, a proportion of the copper includes bars and wire following a first rolling. The value added for these processes is low, standing at 1.74 Chilean pesos per kg., or a supplementary cost of 4.92 per cent. Thus, an approximate balance in the reciprocal prices is established, leaving for Chile the additional benefit obtained from slaughtering by-products, which does not involve the use of foreign exchange.

11. Importance of an absolute balance in reciprocal prices

The question may arise, assuming that the reciprocal prices for cattle and copper are in balance, as to the advantage of maintaining them both at a higher level than that of the prices for trade with other countries. It is evident that there is no advantage in terms of the tonnage exchanged. However, there is a distinct disadvantage for both countries if the respective domestic prices for imports are fixed too high. The present balance based on the price of 1,000 dollars per ton of Chilean copper and 225 dollars per head for cattle would not be altered if the ratio were maintained at the price level which Chile receives for exports to other countries. If the 4.92 per cent additional charge for semi-refining be added to the price of 779.88 dollars for copper slabs exported to Argentina, the total f.o.b. price would be 818.25 dollars and would correspond in terms of reciprocal prices to 183.89 dollars per head of cattle. Assuming that the present exchange rates remain stationary, the f.o.b. price of copper in Argentina would be reduced from 7,500 Argentine pesos to 6,137 per ton and the price of Argentine beef in Chile, on the hoof at Los Andes, would decrease from 25.70 to 21.03 Chilean pesos. But, to modify the present agreement between the two countries thus, it would be necessary to arrange a previous compromise between the exchange regulations of both countries. Their lack of connexion provides an unfavourable influence upon the terms of trade, which is described in the annex to chapter IV, under the title "Effects of the absence of monetary parities between Argentina and Chile".

12. Cattle-for-copper trade perspectives

The trade prospects of Argentine cattle for Chilean copper are subject to development factors, which are difficult to forecast. On one hand, there are the meat requirements for Chilean consumption. It has already been seen that the probability of increasing domestic production is relative, at least over the short term, so that, in order to maintain the present per capita supply, Chile will be more and more dependent upon imports. The normal supplier of such imports, particularly for cattle on the hoof, is Argentina. On the other hand, the industrial growth in Argentina has the natural corollary of causing an increasing demand for copper. Thus, these are parallel factors which should contribute to the development of trade.

However, other less favourable factors are apparent. The smaller availability of meat for export in Argentina has caused a definite tendency to restrict exports of cattle on the hoof. The flow of such exports to Brazil and Paraguay is already interrupted. In the case of Chile cattle exports have declined to less than half between 1946 and 1951, while the 1952 agreement contains a clause revealing the Argentine desire to reduce them even further. This clause states: "To substitute exports of cattle on the hoof gradually by chilled and/or frozen meat, up to 20 per cent of the total value of the cattle on the hoof exports stipulated in the present agreement may be replaced by the value of chilled and/or frozen meat to be exported under conditions which the Contracting Parties will establish by mutual agreement." This clause for the moment has not been fulfilled. In 1952 Chile purchased only one shipment of Argentine frozen beef, for the small quantity of 140 tons, priced at 550 dollars f.o.b. Buenos Aires.[16] The wholesale price of this frozen meat in Santiago was fixed at 41.50 Chilean pesos a kilogramme or at a price somewhat higher than that for fresh meat. Apart from obstacles caused by the lack of transport, warehouses and means of distribution for frozen meat in Chile, the future development of Argentine exports to Chile appears to depend partly upon the extent to which Argentina follows a policy of substituting sales of cattle on the hoof by those of beef.

13. The contribution of Bolivia and Paraguay to the supply of northern Chile

Mining companies in the north of Chile are in the first stages of carrying out a project of great importance, over the medium and long terms. This is to combine the economic interests of Bolivia and Paraguay with those of the meat supply for the Chilean provinces of Tarapacá and Antofagasta, which will diversify and supplement the latter's source of meat, which at present is Argentina alone.

Exports of cattle on the hoof from Argentina to Tarapacá and Antofagasta during 1948–52 averaged 43,550 head annually. These cattle were mainly transported by the Socompa Railway and until a few years ago came from the surplus production of northern Argentina. However, since increased consumption in the provinces of Salta, Jujuy and Catamarca in Argentina has gradually absorbed these surpluses, exports to the north of Chile have had to come from more distant sources, such as the livestock areas of Córdoba and Santa Fé. Since the demand for meat in the mining area of Chile consistently exceeds the

[16] It may be noted that the numbers for head of cattle exported to Chile have been substantially below the amounts foreseen. To the middle of December, and lacking but a few days to complete the year 1952, only 32,255 head had been imported into the northern zone and 21,293 into the central zone. In other words a total of 53,548 head as compared with the 93,000 forecast in the agreement.

available supply, the project outlined above, without affecting present Argentine exports, aims at improving the levels of supply and stabilizing their future prospects.

To carry out this programme, two areas of land were purchased in Bolivia. One is of 120,000 hectares at Bañados de Otuquis (Tucavaca) in the zone served by the Corumbá-Santa Cruz railway, and the other of more than 240,000 hectares is located in the Department of Cordillera at Mantellapecua. With regard to Paraguay, the negotiations have not as yet been completed, but embrace the purchase of 500,000 hectares of government land through the Instituto de Reforma Agraria. According to these projects, once the areas are stocked it is proposed to fly half the production, after slaughtering, to Chile by means of a special airline. The remaining half in Bolivia will go towards increasing the supply for domestic consumption, while the remaining half in Paraguay will be used for freezing and ultimate export. The aeroplanes to be used for transporting the meat may, in turn, be used for the transport of Chilean goods to markets in Bolivia and Paraguay.

In addition, there are other prospects for cattle, through agreements for frontier traffic. One, under study at present, proposes to stimulate the export of breeding stock from Matto Grosso in Brazil in order to raise the herd population of Beni, Bolivia, depleted by the increasing demand of the Altiplano. This project provides for the value of the Brazilian breeding stock to be balanced by imports of beef cattle from Bolivia for consumption in Guaporé and Acre. Another possibility has arisen from the research carried out in Paraguay for a number of years by the Inter-American Technical Service for Agriculture Cooperation (STICA), as well as in 1952 by certain Brazilian experts. This would provide for regular exports of zebu breeding stock from Brazil for improving the cattle strains in Paraguay.

TABLE 91. PARAGUAY: IMPORTS AND PROCESSING OF CATTLE FOR EXPORT

(By head)

	Total head slaughtered in plants[a]	*Source of cattle*		*Percentage imported*
		Imported	*Domestic*	
1938.....	123,984	38,286	85,698	30.9
1939.....	202,474	79,971	122,503	39.5
1940.....	138,067	19,985	118,082	14.5
1941.....	177,764	27,785	149,979	15.6
1942.....	162,279	23,084	139,195	14.2
1943.....	169,244	57,561	111,683	34.0
1944.....	163,083	64,265	98,818	39.4
1945.....	205,928	107,255	98,673	52.1
1946.....	162,880	77,084	85,796	47.3
1947.....	85,399[b]	62,781	22,618	73.5
1948.....	122,315[b]	63,603	58,612	52.0
1949.....	95,277[b]	396	94,881	0.4
1950.....	72,788[c]	44,811	25,977	63.3

SOURCE: Inter-American Technical Service for Agriculture Co-operation, according to official statistics and those from the Paraguayan Meat Corporation.

[a] Liebig, International Products Corporation and Industria Paraguaya de Carnes. The latter only operates with domestic cattle.

[b] Excludes cattle used for preserves consumed within the country.

[c] Subject to revision.

14. Paraguay and cattle from Argentina

Despite the fact that the livestock industry has been a traditional activity in Paraguay, the meat-processing industry has been dependent for many years on imports of Argentine cattle. Paraguay has three packing plants for preserving and producing meat extracts, two of which depend partially upon cattle imports. The following table demonstrates the development and relative size of such imports since 1938.

The three plants in Paraguay have a capacity to process 225,000 head annually and require at least 150,000 in order to operate economically. Already, by 1948, there were only 125,000 head available of which 65,000 came from Argentina. In 1949, when Argentine exports were entirely suspended, the Paraguayan Government placed 100,000 head of domestic cattle at the disposal of these plants. In 1950 Paraguay received a quota of 80,000 head from Argentina, but the agreement was suspended in the middle of July after Paraguay had received only half this amount. In 1951, despite a reduced quota of 20,000, Argentina was still unable to fulfil the allotment. Although in 1952 Paraguay received a promise of 30,000 head, the net result was generally unfavourable owing to the combined effects of a rise in the price of cattle in Argentina and the obligation to make payments at the basic export rate of 5 Argentine pesos per dollar. Whereas in previous years cattle had cost between 220 and 240 Argentine pesos per head, the price was subsequently raised in February 1952 by resolution of the Instituto Ganadero Argentino to 530 pesos as applied to native Formosa stock. This price—equivalent to 106 dollars—is too high to permit economic utilization. According to data from Paraguayan sources, the cost of processing requires 34 dollars per head, whereas gross income from the sale of meat and by-products does not exceed 95 dollars. Therefore, since the top price the Paraguayan industry could pay per head would be 60 dollars, the only remedies would be for Argentina to lower the total cost per head to 300 Argentine pesos,[17] or alternatively to raise the exchange rate to 9 pesos per dollar. It should also be taken into consideration that Argentine Formosa stock, produced at the rate of some 150,000 head annually, has gained increasing acceptance on local markets whether for local consumption or processing in Rosario and Santa Elena. The conclusion is obvious. Paraguay, in order to revive and fortify her meat industry, as well as to recuperate the foreign exchange once provided by exports of meat and its by-products, must without delay establish an adequate livestock development programme.

15. Brazilian meat imports

As seen above, Brazil has almost abandoned its former role as a meat exporter and has even resorted upon occasion to sporadic imports. The future of such imports is closely linked with both the development of real income in the urban areas, particularly in the Federal District, and the relative price level at which meat is sold to the consumer. Over the medium and long terms, the general trend of the economic development of Brazil is probably towards a gradual increase in income. This will undoubtedly give rise to increases

[17] According to the press, the price for 1953 has been lowered to 400 Argentine pesos.

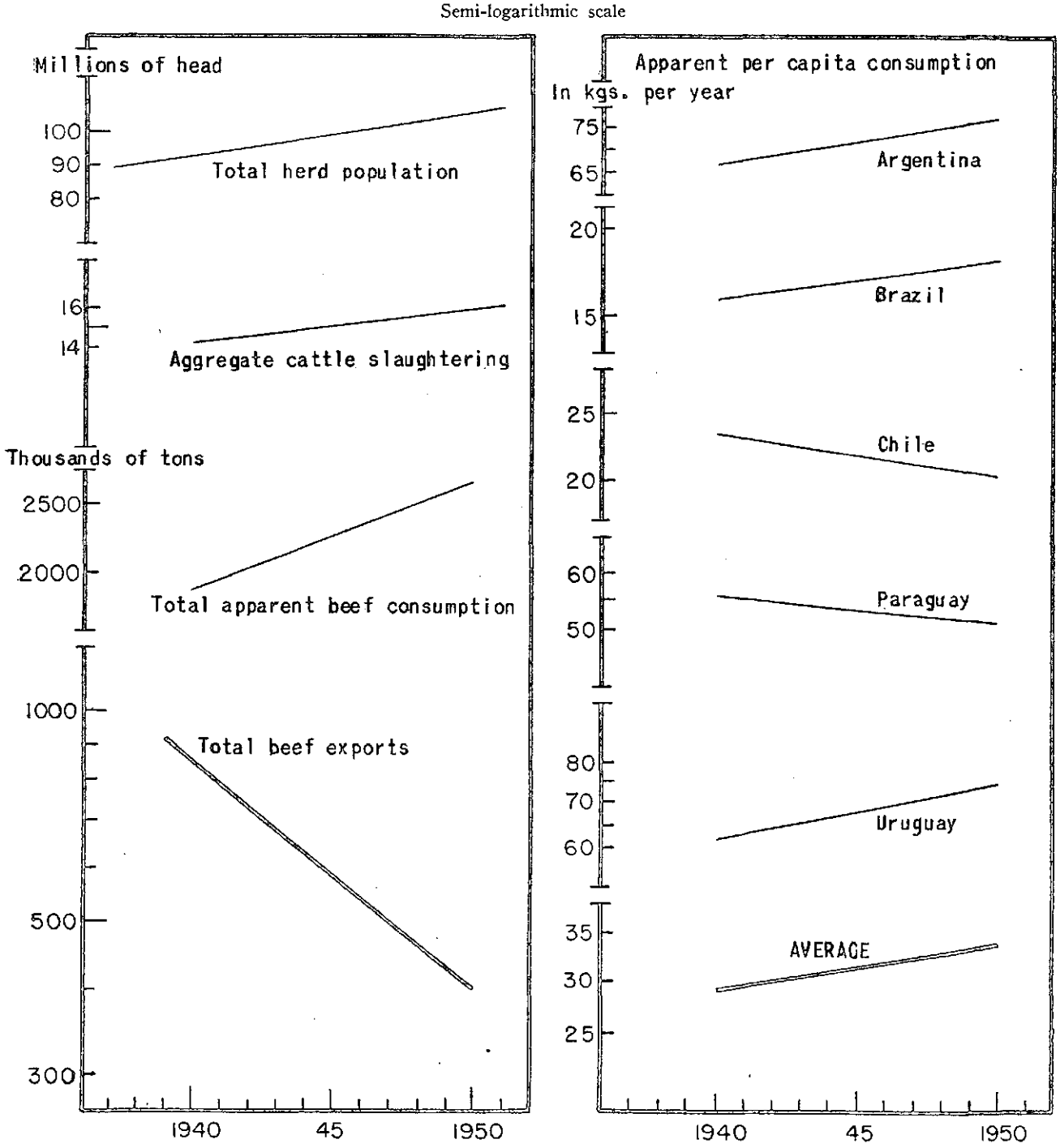
in per capita consumption and the resulting need to resume meat imports unless the rate of expansion of the livestock industry is not accelerated. Although these eventual imports will not attain more than marginal importance in relation to the aggregate domestic consumption, they may reach substantial figures in absolute terms, especially during periods of shortage caused by adverse factors such as unfavourable climatic conditions or a lack of adequate domestic transport facilities. Such a situation occurred in 1944 as well as in 1951 and 1952. At the beginning of 1951 there were official discussions for importing up to 100,000 tons of frozen beef as a more or less permanent measure. The conversations with Argentina on this subject were unfavourable. In 1952, a few purchases of beef were arranged from both Argentina and Uruguay. The contract with Uruguay stipulated 20,000 tons at a price of 530 dollars, f.o.b., Montevideo. However, the shipments of the monthly quotas were delayed owing to the improved domestic meat supply of Rio de Janeiro as a result of the actions of the Control Commission for Supply and Prices (COFAP), particularly in regard to transport and distribution.

PLATE X

LATIN AMERICA (SOUTHERN ZONE)

BEEF

Evolution of livestock population, slaughtering, total and per capita apparent consumption and exportable surpluses



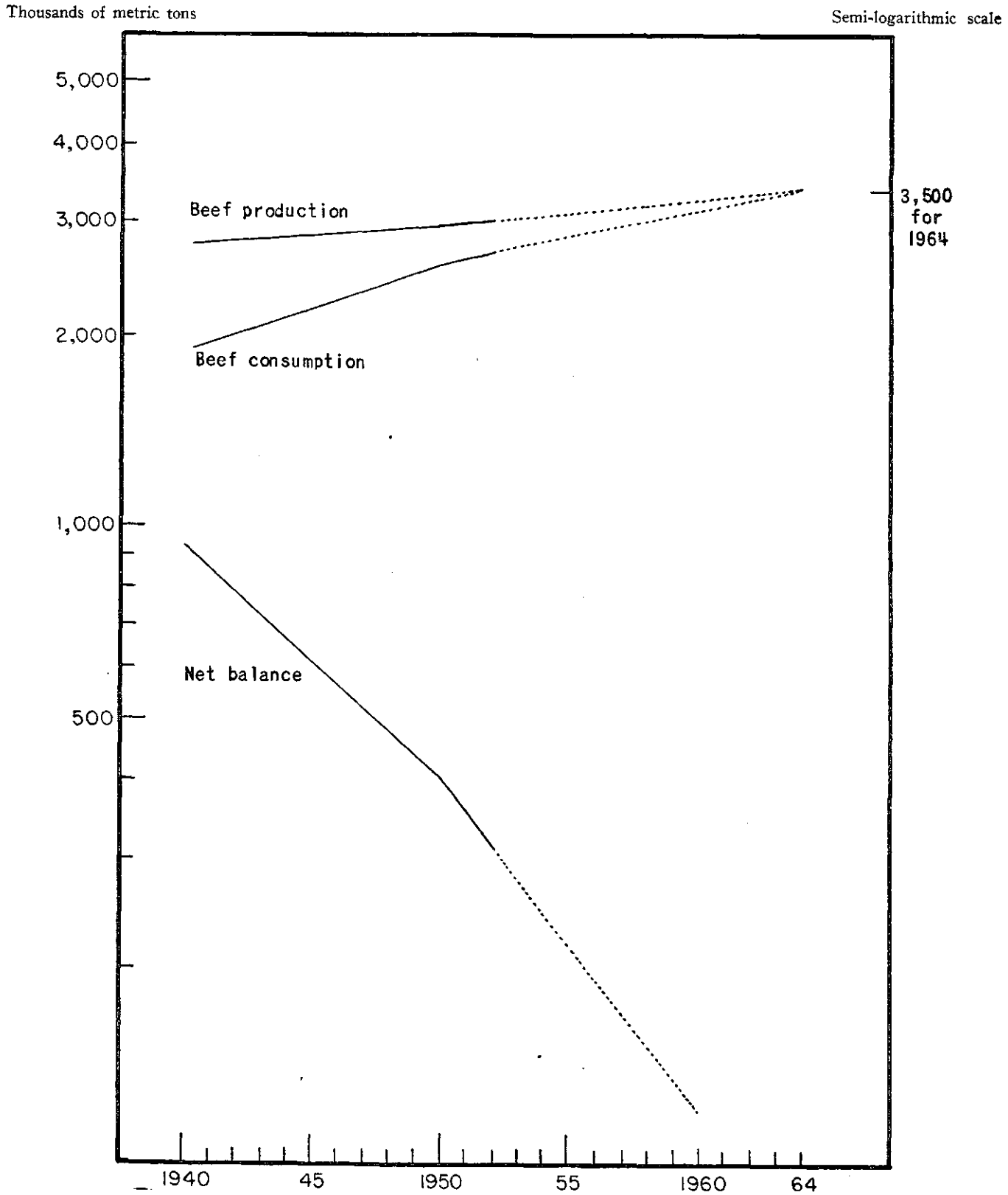
Source: Economic Commission for Latin America.

PLATE XI

LATIN AMERICA (SOUTHERN ZONE)

BEEF

Production and consumption trends in the Southern Zone



Source: Economic Commission for Latin America.

Chapter IX

EDIBLE OILS AND FATS

1. Introduction

Until today the part played by edible oils and fats in intra-zonal trade has been limited. It does not correspond with what is possible, given the available surpluses in exporting countries, nor with what is desirable in view of the level of consumption in the importing countries.

Taken together, the production of edible oils has progressed substantially during the period since 1939, but this is not the case for butter and animal fats.

According to figures for 1946–50, consumption is satisfactory in Argentina and in Uruguay and only just normal in Brazil and Chile. For the other countries in the southern zone there are signs that consumption is inadequate, but the absence of production data does not allow a precise statement to be made. However, a comparison between the available figures and the level of consumption in other regions of the world suggests that it is essential to raise the average consumption substantially.

In the southern zone there are three exporting countries, of which Argentina is by far the most important. Uruguay, second in order, also shows relatively large exportable surpluses. Those of Brazil are smaller and are tending to decline as the aggregate consumption of the country increases.

Excluding olive oil, more than three-quarters of the imports made by the countries in the zone originate from the zone itself. Zonal consumption, according to the available data, averages the low level of 5.5 kgs. annually, excepting Argentina and Uruguay where it reaches some 15 kgs. The full use of the entire production of the zone for consumption purposes would not raise the supply more than 2 kgs. per capita annually. To raise the average consumption to 10 kgs., always excluding Argentina and Uruguay, it would be necessary to use all the available surpluses which the zone at present exports to other regions and in addition to raise aggregate production by 15 per cent.

2. The present situation

In table 92 below, a summary is given of the available data for the productive volume of butter, animal fats and edible oils in six countries of the southern zone. These data are incomplete in certain respects. Although production figures are related to the period 1946–50, they cover, in all cases except for Argentina, only a part of those years. For Paraguay, production statistics are lacking for butter and animal fats. The figures for Peru are incomplete and there are no statistics at all for Bolivia.

However, these statistical deficiencies do not cause any great difference to the aggregate figures. The deficiencies, which may be as high as 30,000 tons of productive volume not included in the statistics, only represent less than 4 per cent of the total, as shown in table 92.

TABLE 92. PRODUCTION OF EDIBLE OILS AND FATS IN SIX SOUTHERN-ZONE COUNTRIES

(Annual average in tons)

	Butter	*Total animal fats*	*Total oils*	*Grand total*	*Years referred to for available statistics*
Argentina	45,540	97,600	230,400	373,540	1946–50
Brazil	24,892[a]	182,450	119,904	327,246	1948–50
Chile	6,967	7,890	21,074	35,931	1947–49
Paraguay	..	..	2,603	2,603	1946–49
Peru	2,300	1,230	10,880	14,410	1948–50
Uruguay	2,008	26,073	16,212	44,293	1949
TOTAL	81,707	315,243	401,073	798,023	

SOURCES: Argentina: *Síntesis Estadística* and *Industrial Census*. Brazil: Statistical yearbooks. Chile: Industrial statistics, 1949, and direct information furnished by the Instituto de Economía Agrícola. Paraguay: Official statistics compiled by the Servicio Técnico Interamericano de Cooperación Agrícola. Peru: *Yearbooks* of the Food and Agriculture Organization. Uruguay: Extracts from *Estadística Agropecuaria del Uruguay*.

[a] Includes cream.

As regards the import statistics, summarized in table 93, it was possible to obtain more complete details from foreign trade yearbooks and from information received directly from official statistical services.

It should be noted that these statistics do not reflect the real movement of imports into Paraguay and Bolivia, since there are indications that the contraband traffic across the frontier, especially in regard to imports from Argentina, is very substantial.

However, in more recent years some changes are apparent. Firstly, the doubling of Chilean imports of edible oils and, secondly, an appreciable increase of Brazilian imports of olive oil.[1]

On the basis of data for 1946–50 and by relating the figures of tables 92 and 93, an approximate estimate of the aggregate and per capita zonal consumption of edible oils and fats may be made.

TABLE 93. IMPORTS OF EDIBLE OILS AND FATS IN THE SOUTHERN-ZONE

(Metric tons)

	Animal fats	*Butter*	*Total oils*	*Grand total*	*Years for statistics*
Argentina	—	—	329.3	329.3	1947–48
Bolivia	2,181.9	281.0	799.0	3,261.9	1949
Brazil	—	—	5,539.0	5,539.0	1948–50
Chile	54.6	993.5	5,963.9	7,012.0	1946–50
Paraguay	100.0	26.0	456.5	582.5	1950
Peru	2,489.4	218.0	848.8	3,556.2	1948–49
Uruguay	—	—	758.8	758.8	1950
TOTAL	4,825.9	1,518.5	14,695.3	21,039.7	

SOURCE: Economic Commission for Latin America, according to official statistics.

TABLE 94. APPARENT TOTAL CONSUMPTION OF EDIBLE OILS AND FATS IN THE SOUTHERN ZONE

	Oils		*Fats*		*Butter*		*Total*	
	Aggregate consumption	*Per capita*	*Aggregate consumption*	*Per capita*	*Aggregate consumption*	*Per capita*	*Aggregate consumption*	*Per capita*
	(tons)	*(kgs.)*	*(tons)*	*(kgs.)*	*(tons)*	*(kgs.)*	*(tons)*	*(kgs.)*
Argentina	155,117	9.5	54,387	3.3	32,502	2.0	242,006	14.9
Bolivia	799	0.3	2,182	0.7	281	0.09	3,262	1.1
Brazil	110,638	2.2	182,450	3.5	24,892	0.4	317,980	6.2
Chile	27,038	4.8	7,945	1.4	7,961	1.4	42,944	7.6
Paraguay	3,060	2.2	100	0.07	26	0.002	3,186	2.3
Peru	11,729	1.4	3,937	0.5	2,518	0.3	18,184	2.2
Uruguay	11,647	4.9	24,994	10.5	1,917	0.8	38,558	16.2
TOTAL	320,038	3.6	278,998	3.1	70,097	0.8	666,120	7.5

SOURCES: See previous tables.

TABLE 95. EXPORTS OF EDIBLE OILS AND FATS FROM THREE SOUTHERN-ZONE COUNTRIES

(Metric tons)

	Edible oils	*Butter*	*Edible fats*	*Total*	*Years for statistics*
Argentina	75,576	13,038	43,215	131,827	1946–48
Brazil	14,805	—	—	14,805	1948–50
Uruguay	5,324	91	1,076	6,491	1950
TOTAL	95,705	13,129	44,289	153,123	

SOURCES: *Foreign Trade Yearbooks.*

It should be recalled that table 94 does not include production data for Bolivia and lacks part of the production for Paraguay and Peru. For this reason, the figures for these three countries are obviously lower than reality. As regards average per capita consumption for the southern zone, if an estimated addition of around 25,000 tons is made, to compensate for data which are lacking, a figure of 7.9 kgs. is reached instead of 7.5.[2]

If this last figure is examined in the light of FAO studies on human food levels,[3] it may be seen that consumption is more than satisfactory in Argentina and Uruguay. In Brazil and Chile, it is within the limits of minimum consumption established by FAO. In the other countries, although the figures do not give the entire availability, it is probable that there is under-consumption.

To raise the consumption level of fats, excluding Argentina and Uruguay, to 10 kgs. per capita annually,[4] it would be necessary to increase aggregate production by 100,000 tons each year and, for the supply of the zone, retain the exports at present dispatched to other regions.

[1] There are also indications from Argentine export statistics of a substantial increase in Bolivian imports of edible oils.

[2] Without accounting for direct consumption in rural areas, which largely comprises bacon and lard.

[3] FAO *World Food Survey*, Washington, July 1946. This report recommends that a daily diet of 2,600 calories should be achieved, of which 150 to 200 should be directly provided by fats, representing an annual average consumption of 6 to 8 kgs. per capita.

[4] Some experts in Chile consider that annual per capita consumption should reach 11 kgs. at least.

TABLE 96. IMPORTS OF EDIBLE OILS AND FATS BY COUNTRIES (SOUTHERN ZONE)[a]

	Tonnage			Thousands of dollars		
	Total	Zonal imports	Percentage	Total	Zonal imports	Percentage
Argentina	329.3	4.8	1.5	502.3	3.5	0.7
Bolivia	3,261.9	1,690.5	51.8	1,457.6	952.1	65.3
Brazil	5,539.0	—	0.0	7,061.7	—	0.0
Chile	7,012.0	6,781.7	96.7	3,373.9	3,249.9	96.3
Paraguay	582.5	515.7	88.5	165.5	86.6	52.3
Peru	3,556.2	2,251.8	63.3	2,936.8	1,724.8	58.7
Uruguay	758.8	—	0.0	571.5	—	0.0
TOTAL	21,039.7	11,244.5	53.4	16,069.3	6,016.9	37.4

SOURCES: *Foreign Trade Yearbooks.*

[a] For statistical years, see table 93.

This total of 153,000 tons exported must be considered in relation to total imports which scarcely reach 21,000 tons (see table 93), of which only half comes from the southern zone.

Tables 93, 95 and 96 show that, although the zone as a whole is a net exporter of fats, the trade between these countries is insignificant. This is particularly true if the relative figures are compared with those for imports from Europe, under the form of olive oil. The size of such European exports to the zone is evident in table 97. The recent decline is partly due to the development of olive oil production in some of the republics of the zone.

TABLE 97. OLIVE OIL IMPORTS TO THE SOUTHERN ZONE

(Metric tons)

Importers	1934–38	1947–50	Difference
Argentina	18,120	129	−17,991
Bolivia	250	..	..
Brazil	4,530	4,565	+ 35
Chile	1,090	17	− 1,073
Paraguay	30	..	..
Peru	380	136	− 244
Uruguay	3,350	1,455	− 1,895
TOTAL	27,750	6,302	−21,448

Source: FAO Yearbooks.

3. Recent events and trends

In recent years the over-all situation of the production, consumption and trade in fats has shown changes of some importance.

There has been an increase in *Argentina* of cotton-seed oil and olive oil, together with a certain recovery in ground-nuts. But the market continues to be dominated by sunflower-seed oil, the production of which fluctuates considerably due to climatic conditions. Thus, for a sown area of 1,600,000 hectares, the seed production dropped from 1,021,000 tons in 1950–51 to only 648,000 tons in the following year. The second five-year plan proposes some expansion in the production of edible oils of vegetable origin and plans factories for the hydrogenization of oils.

Argentine production of olive oil has reached some 2,000 tons annually with prospects for a rapid increase. The availability of olive trees, which stood at 2 million fully grown trees in 1948, has increased so rapidly, with new plantations, that in 1952 the Asociación Olivícola Argentina estimated the number at 10 million.

In *Brazil*, exports of cotton-seed oil appear to be rapidly diminishing through the growth of domestic consumption of fats. This rise in consumption is being more fully covered by the initial results of the industrialization of babassu nuts. The cultivation of sunflowers, undertaken a few years ago in Rio Grande do Sul, appears to be abandoned for the moment. In the same State, the yields obtained from olive trees have reached 100 kgs. of olives per tree annually, which is giving a decided incentive to wider cultivation.

Up to the present Brazil has been a marginal exporter of edible vegetable oils and imported only olive oil. There are, however, the first symptoms of what might be a change in this position. In 1951 oil exports declined while imports of olive oil increased, a small quantity of butter (618 tons) being received from the Netherlands and Denmark. In 1951, for the first time, lard was imported (250 tons) from Argentina.[5] The present tendency is thus a double one, linking a greater domestic use of the edible oil production with some imports of lard, butter and olive oil. Such imports are those for which Argentina and, to a lesser degree, Uruguay could, now or in the immediate future, be the nearest suppliers.

To raise the consumption of fats in Brazil to a minimum of 8 kgs. per capita, divided into 4 kgs. of edible oils and 4 kgs. of fats and butter, it would be necessary for an estimated population of 56 millions to use the entire resources of the country by 1953. It would also be essential to add to the amount available in 1948–50, either through an increase in domestic production or through imports, the following quantities: edible oils, 100,000 tons; fats and butter, 22,000 tons, principally in the form of butter whose actual per capita consumption does not reach 500 grammes annually.

Imports of such size would be exactly equivalent to the level of exports in recent years from Argentina and Uruguay, although, in composition, these exports were slightly less in edible oils and slightly greater in animal fats. By value at present prices this would represent some 40 million dollars each year. It is obvious that such an increase in consumption would require some increment to the gross national product. In addition, as in the case of wheat, there is also the

[5] A thousand tons in 1952. This was due to swine diseases which affected production.

problem of Brazilian exports to pay for commodities with a dollar value.

In *Chile* the prospects are also those of a growing need to import fats for human consumption. The most important event during recent years has been the tendency to increase the sowing of sunflowers. From 1940 to 1950, the area sown with sunflowers steadily increased from 3,000 to 54,000 hectares. In 1951–52 it declined by 10,000 hectares and it does not appear probable that it will again exceed 50,000. The cultivation of sunflowers requires irrigated soil and a substantial use of fertilizers. The most probable trend is the establishment of the domestic production of vegetable oils at an average figure around 12,000 tons annually. Conversely, some increase in the production of olive oil has been witnessed, at present estimated at approximately 500 tons annually.

In recent years a change in the traditional flow of such imports has become apparent. In the five-year period 1946–50, Chile bought practically all its imported oils from Argentina. In 1951 and 1952, however, the major part of the purchases were made in Europe, 12,000 tons of soybean oil from the Netherlands, 5,000 tons for Germany and 7,000 tons of sunflower-seed oil from Argentina. The preference given to the industrialized soybean oil from Europe was due to the fact that the IAPI[6] had maintained its sales prices without accounting for the fall in edible oil quotations on world markets. A purchase of 7,000 tons of sunflower-seed oil from Argentina, which was arranged at the end of 1952 in exchange for steel products, indicated a closer relationship between the Chilean and Argentine economies. However, this agreement was made, as in the case of the financial operations regarding livestock and copper, at higher price levels than those normally quoted on the international market.

The cost of fats imports, in foreign exchange, for Chile stands at an approximate figure of 7 million dollars, estimating imports of 17,000 tons of oils at 35 US cents c.i.f. and 1,000 tons of butter at a little over 1 dollar a kg. This means that such imports represent for Chile an expense equal to half of that resulting from wheat import requirements.

Further, if an attempt is made to raise per capita consumption to the level proposed by Chilean experts, or 11 kgs. per capita, imports would have to be doubled, raising the cost to some 15 million dollars annually. As compared with the present total foreign exchange budget of Chile,[7] and bearing in mind that fats are an essential dietary element, the burden does not appear excessive. But it is evident that such a solution cannot be made over the short term, since it would require a previous improvement in real income and a gradual transformation of dietary habits.

In *Uruguay*, the production of edible oil has considerably increased in recent years. For example, it has risen from 28,000 tons of oils (sunflower and peanut) in 1946 to 68,000 in 1949 and to 127,000 in 1951. Since 1949 Uruguay has made considerable efforts to provide exportable surpluses, which at present may be estimated at around 15,000 tons of oils. Exports of animal fats reach an average of about 3,000 tons annually. As regards butter, exports are marginal, depending partly upon climatic factors which influence the volume of milk production and the comparative profits between the production of butter, cheese and caseine.

A new factor is the growing availability of sunflower-seed and ground-nut oils, but there are some fears as regards prices. From June 1951 to April 1952 North American soybean oil fell from 410 dollars to 238, later recovering by 10 per cent. The prices of other edible oils have also continued to decline more or less in the same proportion. At this level production in Uruguay can only compete with difficulty on the international market. In mid-1952, there were stocks in Mongevideo of 10,000 tons of sunflower-seed oil, the cost price of which stood at 0.99 Uruguayan peso per kg. At the same time it was not possible, on the basis of the preferential rate of exchange of 2.35 pesos per dollar, to sell it abroad for more than 0.62 peso.

[6] Instituto Argentino de Promoción del Intercambio (Argentine Institute for Trade Promotion).

[7] In 1951, it represented 368 million dollars.

Chapter X

IRON AND STEEL IN THE TRADE OF THE ZONE

1. Introduction

Apart from the traditional commodities which form the pattern of inter-Latin-American trade, one of the best possibilities for the expansion of such trade appears to lie in the new iron and steel industries. The establishment and development of domestic steel-making industries and the progress made in certain branches of the steel-transforming industry open the way for such an expansion.

Numerous factors would have to be considered to provide a more accurate estimate of the real prospects for this trade. Among such factors, different aspects of the progress made by these industries in each country should be analysed to see whether they tend to be complementary, or whether, on the contrary, they are developing along parallel lines with each country seeking self-sufficiency. The expansion possibilities for these industries in each country of the zone must also be considered and compared with the prospects for demand in order to ascertain which countries in the zone might be able to count on exportable surpluses and which would continue to depend—at least partially—upon imports. In addition, research is required into some economic factors, such as costs, freight charges and other elements which influence export prices and market competition with products from industrial countries with higher production standards.

Detailed consideration of all these factors is beyond the framework of this study, and the observations made here are in fact a summary of the material contained in the studies submitted by the Executive Secretary of the Economic Commission for Latin America to the Expert Working Group on the Iron and Steel Industry in Latin America, held in Bogotá in October 1952.[1] These documents examine, in their different phases, some of the factors noted above. In addition, as an annex to this chapter, a special study on the iron and steel trade between Argentina and Chile has been added.

2. Present consumption of finished iron and steel products

The combined annual consumption of the seven countries in the zone amounted to nearly 2,400,000 tons of finished steel in 1951. Of this some 1,100,000 tons were consumed by Argentina, about 900,000 by Brazil, 210,000 by Chile and 104,000 by Uruguay, while the combined figure for the remaining countries —Bolivia, Paraguay and Peru—did not reach 90,000 tons. Three of the seven—Argentina, Brazil and Chile —were able to rely on relatively large domestic supplies, totalling slightly over 1,100,000 tons of finished steel annually, while the others depended exclusively upon imports, amounting to 1,250,000 tons in 1951. A very small proportion of this total corresponds to intra-zonal trade, so that the zone's over-all consumption consists largely of imports from other areas (about 55 per cent).

The zone's production, import and consumption figures for finished steel are shown in table 98.

TABLE 98. APPARENT CONSUMPTION OF IRON AND STEEL IN THE ZONE[a]

Country	*Production*	*Imports*	*Consumption*	*Per capita consumption (kgs. per inhabitant)*
	(Thousands of tons			
Argentina	300	800	1,100	63
Brazil	702	196	898	17
Chile	120	90	210	35
Bolivia	—	15	15	5
Paraguay	—	10	10	7
Peru	—	60	60	10
Uruguay	12	92	104	43
TOTAL	1,134	1,263	2,397	

SOURCE: Economic Commission for Latin America.

[a] The figures are for 1951 in the case of Argentina, Brazil, Chile and Uruguay, and correspond approximately to consumption for 1948 or 1949 in the case of Bolivia, Paraguay and Peru.

A large proportion of the total finished steel consumption was made up of bars and sections, the relative importance of this group of products having amounted in 1945–49 to nearly 43 per cent in Argentina, slightly over 37 per cent in Brazil and about 45 per cent in Chile. Wire and by-products thereof (nails, bolts, etc.) accounted for about 15 per cent of total consumption, while the proportion for rails and railway accessories ranged from 6 per cent in Argentina to 14 per cent in Brazil with tubing accounting for 9 per cent of the whole. Flat products have been acquiring greater relative importance, although the proportions vary to a marked extent from one country to another, mainly as a reflexion of the uneven development of the transforming industries. Consumption of plate and sheet during the period mentioned amounted to 17.9 per cent of total consumption in Argentina, 15.7 per cent in Brazil and 11.8 per cent in Chile, the proportions for tinplate being 7.1, 9.5 and 5.8 per cent respectively. They are undoubtedly lower for both types in Bolivia, Paraguay and Peru. The following figures give an approximate idea of present consumption of the various types of products within the zone:

[1] These studies were: L.86, "Factors influencing iron and steel consumption in Latin America"; L.87, "Influence of local factors on the iron and steel industry in Latin America"; L.88, "Structure of the steel-transforming industry in Latin America"; and L.91, "Influence of the size of the markets on iron and steel industry in Latin America".

	Estimated consumption (thousands of tons)
Rails and accessories	160
Bars, sections, etc.....	890
Wire and wire products .	350
Plate and sheet.....	520
Tinplate.....	210
Tubing.....	270
TOTAL	2,400

As regards the present position of the countries which have some domestic production of finished steel, Argentina, in the first place, has had no integrated steel industry up to the present and tended to develop rolling mills based on domestic supplies of scrap, on charcoal pig iron (from the Zapla plant) and on imports of billets and pig iron. Consequently it is even more dependent upon imports than is indicated in table 98.

Brazil has achieved greater development in iron and steel-making than any other country in the zone and there are several companies operating plants based on charcoal, while one major enterprise is based on coke, the Volta Redonda plant. This plant in 1951 produced just over 340,000 tons of finished steel, mainly plate and sheet, tinplate, bars and sections, and rails. Fairly large export figures for billets were also recorded for Brazil during 1947 and 1948, owing to a production surplus over and above the local rolling capacity of those years.

Finally, since 1950, when the Huachipato plant was inaugurated, Chile became the second country in the zone to produce pig iron. By 1951, production for the domestic market amounted to nearly 120,000 tons of finished steel, that is, over 55 per cent of the country's total consumption; over and above this figure, some exports should be added, mainly to Argentina and the United States and, on a lesser scale, to Uruguay and Peru.

It may be concluded from these figures that at present none of the countries in the zone has any surplus production of finished steel which might be exported to other countries in the region. Although some inter-Latin-American transactions in iron and steel products have taken place in recent years, this has not been due to the existence of real export surpluses, but rather to the need for procuring some essential products from the other country, in exchange for which it was necessary to deliver goods of comparable importance.[2]

3. Prospects for expanding consumption

In addition to the inadequacy of domestic production to meet the consumption of the zone, there is the additional fact that in all the countries there appear to be prospects for a considerable increase in such consumption over the next two years. This primarily is due to the fact that present per capita consumption figures are unduly low, even on the basis of the individual level of income. Actually, steel consumption for every 100 dollars of national income is considerably lower in these countries than, for example, in most of Europe.

In the second place, finished steel consumption over the past twenty-five years has, in general, followed a downward trend and such a trend could scarcely continue in the future without severely hampering the economic development of the countries in the zone. In Argentina, for instance, per capita consumption of finished steel fell from 107 kgs. per inhabitant in 1905–09 and from 96 kgs. in 1910–14 to 81 kgs. in 1925–29, to 48 in 1935–39, recovering only to 58 in 1950–51. In the meanwhile it fell to little more than 20 kgs. per capita (1940–44). In Brazil it was only in 1950, after considerable development of domestic production, that the per capita consumption figure for the years prior to the crisis was surpassed; but the consumption level is still so low that large sectors of the country remain outside it. In Chile, in turn, per capita consumption had fallen from 37.7 kgs. a year, during the period 1925–29, to 28.9 kgs. in 1947–51, that is, there was a reduction of 23.4 per cent.[3] In Uruguay, by contrast, apparent per capita consumption rose from 30 to 43 kgs. between 1948 and 1951.

As the result of this unfavourable trend, finished steel consumption has fallen behind in relation to the factors determining demand. For instance, it has not maintained a rate similar to that for income and the relationship between steel consumption and industrial production has declined considerably, particularly when it is remembered that, for manufacturing output as a whole, iron and steel-transforming industries show the most rapid growth in recent years. Furthermore, consumption of some iron and steel products has not increased on a level with certain specific requirements: consumption of bars and sections increases more slowly than activity in the building industry; the canning industries develop much more rapidly than tinplate consumption; whereas consumption of rails and railway accessories has not even been sufficient to cover replacements.

In some cases such discrepancies may be partly explained by technological progress (reduction of the quantity of steel needed for construction work, the use of thinner tinplate, the manufacture of larger containers) or by the use of substitute products (asbestos-cement sheets and tubes, glass or cardboard containers).

These factors all combine to indicate that potential demand is much higher than the actual figures for consumption, so that considerable increases over present consumption levels must be anticipated under more favourable supply conditions. The difficulties in making a quantitative estimate covering the influence of some of these factors make it very difficult to attempt any forecast of future consumption figures. Generally speaking, there would appear to be broader prospects in Brazil due to the present low level, and in Argentina where considerably greater consumption might be anticipated from the high level of income; in Chile, on the other hand, there seems to be more likelihood of satisfying the potential demand on the domestic market. With regard to the rest of the countries in the zone there has to date been no study conducive to a closer understanding of the extent of the lag in consumption and prospects for future growth.[4]

[2] The export of some Huachipato products to Argentina is a typical example of this type of transaction, intended to compensate purchases of edible oils made by Chile in that country.

[3] Document L.86. The reasons for this unfavourable development were analysed in some detail and it became evident that a similarly adverse development in the capacity to import had prevented maintaining a level of iron and steel imports comparable with that for the period 1925–29.

[4] An approximate idea might probably be obtained from the steel consumption figures per 100 dollars of national income, which in recent years have amounted to 9 kgs. in Bolivia, 10 kgs. in Peru and 16 kgs. in Uruguay, whereas the comparable figures for Argentina, Brazil and Chile are respectively 19, 21 and 26 kgs. (Figures taken from *Economic Factors Affecting the Consumption and Production of Iron and Steel in Latin America*, E/CN. 12/293, Economic Commission for Latin America, United Nations, 1953.)

4. Possibilities for establishing or expanding domestic industries

Insufficient domestic production in relation to the present finished steel consumption in the zone, on the one hand, and future prospects of intense increase in the demand for these products, on the other, would appear to be negative factors for the possibility of expanding inter-Latin-American trade in these items. Together with these prospects for an increase in the demand for iron and steel, it is necessary to consider those offered by the establishment of new steel-making industries or the expansion of those already existing. In general, these are new industries in which the countries in the zone have as yet barely taken the first steps and where there appear to be great possibilities for future development.

In Argentina, as mentioned earlier, the trend has been towards the installation of rolling mills using domestic supplies of scrap, imports of billets and pig iron plus a small output from the Zapla plant. Present expansion plans are directed mainly along two main lines: first, pig-iron production at Zapla is to be expanded, always on the basis of charcoal; secondly, it is planned to install an integrated plant at San Nicolás, details of which are included in the annex to this chapter.

In Brazil, most of the possibilities for increasing local output lie in the plans for expanding the Volta Redonda plant. The first stage of these plans would raise production to 680,000 tons a year of steel billet (about 460,000 tons of finished products, as against the 1951 output of 340,000 tons), with the long-term aim of reaching a million tons, that is, some 750,000 tons of finished steel, of which a large proportion will be made up of sheet, heavy plate and tinplate. Together with the expansion of this and other existing industries, new plants are also being installed. These new plants include one at Belo Horizonte, which will specialize in the production of seamless tubes and special steels, having an initial capacity of 80,000 tons a year but capable of expansion later to 400,000 tons; another in São Paulo, with a production capacity of 260,000 tons annually of finished steel, and a third of similar capacity in Santos.

Chile is currently engaged in carrying out an investment plan, amounting to some 12 million dollars, for the purpose of expanding the Huachipato plant.[5] This would increase production, under the best operating conditions, to some 400,000 tons a year of steel billet, or about 300,000 tons a year of finished steel. The capacity of the Corral plant is also being expanded; this plant, which operates with charcoal, is expected to reach a blast-furnace output of 29,000 tons a year, while it is also planned to establish a foundry with an annual production of 12,000 tons of light and heavy products. A rather more remote prospect under consideration is that of building a second blast furnace for the Huachipato plant.

Finally, Peru is the fourth country in the zone having the basic raw material for establishing an integrated steel industry. There is, in fact, plenty of iron ore, the most important deposit being at Marcona with a preliminary proved reserve of 40 million tons and probable reserves of 170 million tons of 58 grade ore. There are also considerable coal reserves of a broadly varying range. The installation of a steel plant using electric reduction furnaces is currently under consideration; annual production capacity would be 53,000 tons of finished steel including 15,000 tons of sheet. An alternative solution would be to operate on a larger scale using a blast furnace providing there were serious possibilities for export. In this case, metallurgical coke could be obtained using local anthracites blended with petroleum asphalt.

By contrast, Bolivia and Paraguay appear to have no immediate prospects for developing their own steel industries, due both to their small domestic markets and their much more unfavourable position for the availability of raw materials.

5. Prospects for intra-Latin-American trade

Some general conclusions of the possibilities for achieving a fairly large zonal trade in these products may be gleaned from the foregoing observations concerning the demand prospects for iron and steel products in each of the countries in the zone and for establishing or expanding local steel industries.

Two of the seven countries in the zone—Bolivia and Paraguay—will undoubtedly continue to import all their iron and steel products and they therefore constitute potential markets for the steel industries of the other countries. Although their present consumption is relatively small, it must be recalled that it has been limited by the capacity to import and does not reflect the real extent of domestic requirements, which tend to rise. Consequently, there might be a considerable expansion of consumption in these countries, particularly if they could obtain larger quantities of iron and steel by means of agreements without further burdening their capacity to import.

The execution of plans for the installation and expansion of Argentine steel industries would place that country in a position to produce a large part of the finished steel used there at present, thus sharply reducing imports. Nevertheless, the need for a substantial expansion in present consumption leads to the assumption that even so Argentina will continue to import a considerable tonnage of iron and steel, either in the shape of finished products or of pig iron for rolling within the country.

In Brazil, development plans for steel production reach figures well above the level of present consumption, but here again there are such broad prospects for expanding the domestic market in this country that it is unlikely there will be any appreciable export surplus at least for some time. Consequently, Brazil can rapidly achieve self-sufficiency in terms of iron and steel, except for special products which, for economic reasons, will continue to be imported from areas with specialized production; but it will probably not be an exporter on any considerable scale to other countries in Latin America, except for those items in which Brazilian steel-making might specialize, such as seamless tubes or the production of ferro-alloys and special steels.

The picture is much the same in Chile, within the framework of the more immediate expansions and improvements at Huachipato. The Chilean domestic market probably has sufficient potential capacity to absorb a higher output which, under optimum conditions, could be achieved with the investments cur-

[5] The plan provides for the establishment of new storage yards for raw materials, expansion of the coking plant, installation of a sintering plant for using fines, installation of a mixer, of a Bessemer converter, and a third Siemens-Martin furnace, as well as expansion of the rolling mill installations.

rently being made. The installation of a second blast furnace at Huachipato would, however, lead to a production level considerably above domestic market requirements, thus providing surpluses which could be used for trade with other countries of the zone.

With regard to Peru, prospects for inter-Latin-American trade ultimately depend on the decisions to be adopted concerning the size of the projected steel plant. A domestic output of 53,000 tons of finished steel per year would approximately cover the country's present consumption, always remembering that imports of some special products from other areas would have to continue. But the growing demand trend and the impulse to achieve a consumption more in harmony with its income level may result in this output being insufficient even within a relatively short period. so that there will eventually be new import requirements. If, on the other hand, a larger plant is considered, it could meet domestic requirements more fully and provide exportable surpluses for other countries of the region.

Thus, prospects for inter-Latin-American trade in primary iron and steel products during the next few years are confined to trade possibilities between Chile and Peru, as countries which will eventually export, and Argentina, Bolivia, Paraguay and Uruguay, which will continue to have recourse to imports; such imports might be partially covered by the first two countries. This is a very general conclusion, since it is still necessary to analyse the influence of the economic factors which have already been mentioned and which would determine whether these trade possibilities could, in fact, take definite shape. Furthermore, up to the present it has been assumed that there would be a parallel development of the existing or planned steel industries—as has in fact occurred—in the four producing countries in the zone; the possibility should also be considered of a combined development in these industries, tending towards specialization in given types of products.

A brief outline of some of the additional factors to be considered is given below.

(*a*) Production costs at various sites and freight costs

Price is naturally one of the determining factors of the possibilities for trade in iron and steel products, since such trade will always be conducted in competition with exporters from other areas. Ignoring a series of less important items, steel production costs in the various zonal countries depends fundamentally upon two types of factors: locational ones—mainly including assembly costs which in turn depend upon the location of the basic raw materials and their quality—and wage costs; secondly, those relating to the size of the steel plants to be established. Freight costs must be added to production costs in the different locations and for the varying sizes of plant, in order to compare the selling prices of these products elsewhere in the zone in relation to the prices for those obtainable from other regions.

[6] Apart from production capacity, a number of factors are assumed, for purposes of comparison, to be equal for the various plants; among them, operations at full capacity is assumed as well as production of the same assortment of finished products, together with identical transport costs per ton-kilometre, identical productivity of labour, similar costs for equipment in the Latin-American countries, such costs being 20 per cent higher than those of the United States, and so forth.

Document L.87 gives detailed calculations providing an appreciation of the position of some countries in the zone as regards the influence of locational factors upon steel production costs. For this purpose some imaginary plants were selected at different sites, having the same production capacity[6] (250,000 tons of finished steel a year), and these are compared with a similar plant located at Sparrows Point in the United States. For Argentina an imaginary plant is assumed to be located at San Nicolás, using domestic ore from Sierra Grande and imported coking coal; for Brazil, Volta Redonda is selected, using domestic ore from Lafaieta, while the coke would be obtained from a blend of 70 per cent of coal imported from the United States and 30 per cent of domestic coal from Santa Catarina; for Chile the plant is located at Huachipato, using domestic ore from El Tofo, with 85 per cent of Chilean coal blended with 15 per cent of coal imported from the United States; whereas the Peruvian plant is assumed to be located at Chimbote, using ore from the Peruvian deposit at Marcona, and for the coke, 85 per cent of domestic anthracites from El Santo blended with 15 per cent of imported asphalt. The Sparrows Point plant taken as a basis for comparison is assumed to be operating with Venezuelan ore from El Pao and domestic coal.[7]

A comparison of production costs in these plants shows clearly the degree of relative advantage which each of the countries may have on the exclusive basis of locational factors. At a second stage these calculations are adjusted to the size of the plants according to the approximate size of the respective real markets. Thus, the Argentine plant at San Nicolás is assumed to have an annual capacity for 850,000 tons of finished steel (which exceeds current plans in that country). The Volta Redonda plant is assigned 716,000 tons; the Huachipato plant, 230,000; two alternatives are considered for Chimbote: 50,000 and 150,000 tons a year; whereas Sparrows Point has been assigned an annual capacity of 1 million tons, this being considered to be more or less the best size, beyond which no considerable reductions in production costs are achieved.

The results of these calculations are summarized in table 99.

The calculations for plants of equal size show, on the basis of the assumptions used in the paper, the advantages in relation to Sparrows Point which would be enjoyed by Huachipato and Chimbote, and even by San Nicolás and Volta Redonda, if freight costs from the United States to Rio de Janeiro and Buenos Aires are added, these having been estimated at between 18 and 22 dollars per ton of finished steel. By contrast, the difference between production costs at San Nicolás and those of Huachipato and Chimbote appears to exceed the value of the freights required for transporting products from these plants to the Argentine market.

A calculation for the adjusted plants allows an appreciation of the great influence exerted by the size of the plants on production costs. While, in absolute terms, the decline in unit costs is more marked in the steel mill and rolling processes than at the pig-iron stage, the proportionate reduction at that stage is greater, as may be seen from the curves representing

[7] Imaginary plants are also assumed for Colombia, Mexico and Venezuela, but these are not considered here as this study is concerned only with the southern zone at this stage.

TABLE 99. IRON AND STEEL PRODUCTION COSTS IN SELECTED IMAGINARY PLANTS

(Dollars of 1948 per ton)

Location	Similar plants[a]		
	Pig iron	*Steel billet*	*Finished steel*
San Nicolás	48.5	64.4	105.3
Volta Redonda	46.8	62.1	102.1
Huachipato	32.2	46.2	83.6
Chimbote	31.1	44.9	81.8
Sparrows Point	35.9	52.6	100.2
Location	***Plants appropriate to size of market[b]***		
	Pig iron	*Steel billet*	*Finished steel*
San Nicolás (850,000 tons)	43.0	56.7	91.7
Volta Redonda (716,000 tons)	39.0	51.4	85.4
Huachipato (230,000 tons)	30.3	44.2	82.4
Chimbote (50,000 tons)	37.8	53.9	102.2
Chimbote (150,000 tons)	31.9	47.3	89.6
Sparrows Point (1,000,000 tons)	27.6	40.1	72.4
Sparrows Point (500,000 tons)	33.5	47.6	84.0
Sparrows Point (250,000 tons)	36.5	53.4	100.9
Sparrows Point (50,000 tons)	53.3	77.2	155.0

SOURCE: Economic Commission for Latin America.

[a] For 250,000 tons.

[b] The basis of calculation for the plants appropriate to the size of the market do not coincide exactly with those for the plants of equal size, mainly because the possibilities of operating with reduced maritime freight rates have been considered.

unit costs corresponding to the different capacities expressed as a percentage of those for the 50,000-ton plant.[8]

Calculations for the plants of unequal size show that the costs for the four imaginary locations in the zone would be higher than those for the million-ton plant at Sparrows Point; but these differences would, even in the case of the San Nicolás plant, be less than the costs at Sparrows Point, if freight charges from the United States were added. The only exception is Chimbote, with a 50,000-ton capacity, because its small scale would completely offset the locational advantages, except those resulting from the use of cheap hydro-electric power.

These figures, with all their imperfections and provisos, do permit a more realistic approach to the fulfilment of the prospects for the inter-Latin-American trade already mentioned.

Thus, the possibility of a surplus production of pig iron arising in Chile and being exported to Argentina is justified from the economic point of view by a considerable difference in the probable costs at both locations. Actually the difference amounts to almost 13 dollars (of 1948) per ton of pig iron—this figure being probably higher than that for the necessary transport costs—when San Nicolás is assigned an annual production capacity of 850,000 tons as against 230,000 for Huachipato. As indicated earlier, the expansion plans for the San Nicolás plant aim at a lower figure, while Chile will not have an exportable surplus unless it achieves a capacity considerably higher than that assigned to it. But these corrections, in both cases, would tend to accentuate the difference. By increasing its capacity, Huachipato would also tend to have pig-iron production costs which would at least be no higher than those for the imaginary plant at Sparrows Point (with a capacity of a million tons) so that it would be able to compete favourably on the Argentine market, particularly if a reduction in maritime freights were obtained.

On the other hand, the Chilean steel industry is approaching a critical stage as regards expansion possibilities. In fact, once the blast furnace at Huachipato is operating at full capacity, any increase in domestic market requirements will have to be met by pig-iron imports or by the installation of a second blast furnace, which, if it does not operate at full capacity but is confined simply to meeting the deficit on the domestic market, would cause a higher production cost for pig iron, instead of bringing about a reduction thereof. The only possibility for achieving a reduction would lie in operating at full capacity and creating a surplus which could be placed on foreign markets. This emphasizes the need for long-term arrangements made in advance.

In the case of Peru, the benefits to be derived from a higher production capacity with the aim of exporting part of the pig-iron production are even more evident, since this plant is at a sector in the cost curve where the reductions are proportionately stronger as the size of the plant increases. The transition from a plant with a capacity of 50,000 tons to one with a capacity of 150,000 tons[9] would reduce the cost of pig iron—under the conditions assumed for the hypothetical plants—to a figure closely approaching that for Huachipato, adding in freight costs for transport to Argentina which, for special reasons, would probably be no higher than those from Chile.

Apart from the direct advantages for Argentina of being able to import pig iron from Chile and Peru at prices below those of its own domestic production or those obtainable in other areas, consideration must also be given to the indirect effect upon rolling-mill costs of being able to expand the steel and rolling mills beyond the limits of domestic primary production. Similarly, Chile and Peru, by increasing their production capacity, could not only achieve pig-iron costs enabling them to compete on foreign markets, but could also cause the pig iron intended for rolling within the country to be cheaper, thus reducing finished product costs for the domestic market.

(*b*) POSSIBILITIES FOR SPECIALIZATION

Even under these conditions, inter-Latin-American trade prospects appear limited to the probable export of finished steels to Bolivia, Paraguay and Uruguay, of pig iron from Chile and Peru to Uruguay and Argentina, this latter country having broad prospects for expanding the rolling-mill capacity, but with more restricted prospects for primary production. Up to this point, greater intra-regional trade in iron and steel products is compatible with parallel development of the local steel-making industries, with no mutual relationship beyond that arising from the various natural conditions in each country. Nevertheless, consideration should also be given to the possibility of the co-ordinated development of regional iron and steel

[8] Nevertheless, between 250,000 and 500,000 tons the reduction is more marked in the steel mill and rolling mill processes than at the pig iron stage: 25 per cent in the first, and only 20 per cent in the second.

[9] Among current projects in Peru, consideration has been given to the question of establishing a plant with an annual capacity for 180,000 tons of pig iron, 130,000 of which would be for export, while 50,000 would be finished within the country for the domestic market.

industries, tending towards specialization in specific types of products.

While one of the features of the existing or projected industries in the zone is the tendency to produce the broadest possible assortment of finished steel, such wide diversification cannot be achieved in many cases, except at a considerable sacrifice in the cost or quality of the products. In fact, domestic markets are insufficient to justify production of some finished steel under really economic conditions. The use of modern equipment designed for large-scale production requires a heavy investment which adversely affects production costs if the capacity is only partially used. Therefore, it is usual to find more antiquated equipment, and the opportunity is lost of achieving more satisfactory output and quality.[10]

Present consumption figures for some types of product underline this deficiency, even bearing in mind the previous statement that all the countries in the zone have a higher potential demand than the present levels of consumption. For example, none of these countries has a rail consumption approaching 100,000 tons a year, a figure corresponding to about the minimum for satisfactory production; combined consumption for all seven countries may currently be estimated at only some 160,000 tons. Argentina is considering a plan for re-rolling existing rails instead of replacing them.

The consumption of thin sheets and tinplate is somewhat similar, since only the sum of several local markets together could probably justify the installation of a continuous strip mill and the necessary auxiliary plant for production under optimum conditions.[11]

In any event, these are considerations of a very general nature which would have to be analysed in detail from the point of view of the minimum size for the necessary installations, for the possible locations, for transport costs, and so forth, requiring considerable background information which is not currently available.

(c) Net foreign exchange derived from iron and steel exports

The small net revenue in foreign exchange which may accrue from iron and steel exports made by some countries in the zone has an adverse bearing on intra-regional trade prospects for this type of commodity. In actual fact, production of pig iron or finished steel intended for export implies for the exporting countries a foreign exchange outlay which may amount to a considerable proportion of the cost of such products.

This is partly due to the fact that the countries in the zone have no coal of the quality required for obtaining metallurgical coke and therefore must import some of the fuel for the blast furnaces.[12] The most important factor is, however, that iron and steel requires a much higher capital investment than most other branches of industry, so that amortization and interest charges have a heavy bearing on production costs. This need for a heavy capital investment per unit of value added in the production process is one of the distinctive features of the steel industry.

Whether the installation or expansion of plants, aimed at producing exportable surpluses, is financed by means of national savings or by foreign loans, it will be necessary in both cases to account for a considerable pressure on the country's foreign exchange resources, either for the purchase of equipment abroad or for servicing the loans.

Bearing in mind both these and less important factors, it may be estimated, according to figures in the ECLA documents already quoted, that the proportion of production costs corresponding to expenditure in foreign currency would be around 43 per cent in the imaginary plants of Volta Redonda, Huachipato and Chimbote.[13]

Once again, this is also an aspect of the problem upon which the size of the plants or the possibilities for specialization have a considerable bearing. In fact, a reduction in costs, that can be achieved thereby, arises mainly from the relatively lower charges for amortization and interest on the plant required. Thus, the importance of the capital intensity required per unit of value added tends to decline rapidly as the size of the plant is increased or as the use of more modern rolling equipment is considered on the basis of wider operations. An idea of the influence of the size of the plants upon the relative reduction of the capital required may be obtained from the following figures, estimated for the imaginary plant at Sparrows Point, which correspond to capital investments per ton of finished steel:

Capacity (tons per year)	*Capital investments (dollars of 1948)*		
	Blast furnace	*Steel mill*	*Rolling mill*
50,000	102	62	222
250,000	87	55	175
500,000	74	41	163
1,000,000	72	40	157

Thus, while the outlay in foreign exchange forms a high proportion of the steel cost, tending to reduce any interest in exporting it as a source of foreign currency revenue, this factor's adverse influence is partially offset by the fact that plant expansion would be necessary to provide exportable surpluses, implying a reduction of the incidence of this type of outlay on production costs.

6. Iron and steel-transforming industries

From the foregoing it may be concluded that prospects for achieving any substantial inter-Latin-American trade in primary iron and steel products depend to a large degree on the planning for a co-ordinated development of domestic steel industries. A difficulty arises here, since some plants already operating in certain zonal countries—and others being constructed—were planned on the basis of domestic market requirements, without any consideration being given from the beginning to the potential prospects of intra-regional trade. In this connexion, the position is much more favourable as regards the trade prospects for items from the iron and steel transforming industry, which have been initiated more recently and offer

[10] The quality of the products is very important when, for instance, it is a case of supplying some transforming industries, which require very strict specifications, and are difficult to obtain unless up-to-date rolling equipment is available.

[11] The combined consumption of the seven countries is at present some 500,000 tons of sheet of all kinds and slightly over 200,000 tons of tinplate.

[12] As stated earlier, for the cost calculations of the imaginary plants it was assumed that Huachipato would have to operate with 15 per cent of coal imported from the United States, and Chimbote with 15 per cent imported asphalt.

[13] Calculated on the basis of annual capacities of 716,000, 230,000 and 50,000 tons of finished steel, respectively. It includes, apart from amortization costs and interest, imported fuels, payments to foreign technical staff and other minor items.

broader prospects for future development.[14] Furthermore, these industries have some general features which might be considered as a greater incentive to inter-Latin-American trade, such as:

(*a*) Greater difficulty in achieving economic production based only on domestic markets;

(*b*) A relatively smaller intensity of capital than in the primary industry;

(*c*) A lesser incidence of transport costs upon the value of the end products.

It is difficult to obtain reasonably exact information concerning the minimum sizes which might be considered for the economic production of specific products of the transforming industry. Not even the degree of complexity of a given industry can be taken as an adequate indication. Simple industries may require a large market in order to achieve efficient production, while others, apparently more complicated, may operate satisfactorily on a smaller scale. On the other hand, it is neither easy to establish on the basis of the normal statistics, the actual scale of consumption of the various types of products in each country nor, therefore, to gain an appreciation of their potential requirements.[15] In both cases, special research and surveys would have to be conducted in order to reach approximate conclusions.

It is obvious that there are several products of the transforming industry for which, even a priori domestic zonal markets would individually be insufficient to justify the establishment of a domestic industry. Any attempt in that direction would thus have to be based upon plants designed to satisfy more than one such market, thus leading to the need for specialization, at least in some branches of the transforming industry.

Freight costs constitute one of the most important economic factors that might tend to limit these specialization prospects for increasing inter-Latin-American trade. Nevertheless, their effect upon the value of the end products is undoubtedly much less than upon primary iron and steel items, although, in many cases, the relative importance of freight costs does not depend merely on the relationship between value and weight, but also on the volume and nature of the merchandise carried. This is another of the factors requiring detailed research when specific possibilities for exchanging given products are being studied.

With regard to the relative intensity of capital required, the difference between the primary iron and steel industry and the transforming industry is marked. Stress has already been laid on the fact that the first is essentially a heavy industry, in which about six tons of various raw materials are required for the production of one ton of finished steel, valued at about 100 dollars; for the second, in contrast, the value added is proportionately much higher in relation to the investments required. According to figures in document L.88, the investment coefficients of various industrial groups, expressed as percentages of that corresponding to the manufacturing industry as a whole, amount in the United States (1945) to 140 for the primary production and transformation of iron and steel, whereas for secondary transformation the figure is only 54. Thus by contrast with the primary industry, there is little of the adverse influence of the intensity of capital required, in the case of providing exportable surpluses.

Even within these statistical limitations, some import figures may serve to illustrate the importance for the zone's economy of some sectors of the iron and steel-transforming industry. For instance, in 1947, when total imports, and particularly imports of capital goods, had reached one of the highest post-war levels, the countries in the zone assigned between 20 to 40 per cent of their total imports to certain durable consumer goods, agricultural machinery, transport and communications machinery, and implements for industry in general. A broad idea of the significance of these imports to the region in terms of foreign exchange expenditure may be obtained from the figures in table 100.[16]

These import figures are insufficient in most cases, when compared with the potential requirements for the various types of products. Document L.86 gives figures which reflect, for example, the extent of the delays in some zonal countries in replacing their railway and transport equipment in general. That document also stresses that in order to reach a level of imports sufficient to meet this delay and to enable a supply in accordance with the growing requirements due to economic development, it would be necessary to spend foreign exchange far in excess of the restricted capacity to import. The limited prospects for probable future increases in the capacity to import, in turn, emphasize the importance of developing domestic iron and steel transforming industries.

The availability of raw materials was the first economic obstacle in the way of such development. In fact, any transforming industry based exclusively upon imports from other areas of the primary iron and steel products required as raw materials would be exposed to fluctuations in the primary industry of the exporting countries and to those in the capacity to import of the country concerned. This becomes very important for countries such as those in Latin America, which over the last twenty-five years have experienced two periods of heavy import reductions of finished steel. These were the crises of the thirties and during the Second World War.

But this difficulty has been losing much of its importance due to the establishment and development of domestic iron and steel industries, which have meant a future source of supply under more normal conditions. There is still the problem of the small size of the individual domestic markets in relation to the minimum size necessary for an economically justifiable output in various branches of the iron and steel transforming industry. This second difficulty will probably only be overcome, in many cases, through co-ordination between one or more countries, tending towards specialization, and therefore towards a re-inforcement of inter-Latin-American trade.

[14] The manufacture of tubing and other relatively simple products is excluded here from the concept of a transforming industry because they are considered as part of primary industry.

[15] Foreign trade statistics, which might be the most logical basis for such appreciations, are not generally compiled in sufficient detail. Items are, for instance, frequently found which include indiscriminately such products as machinery, tools and spares for farming, industry or mining.

[16] With the sole purpose of presenting relatively uniform figures, conversions to dollars have been made using the rates of exchange usually applied to total imports. The presentation of the figures in physical nits for the separate items is hampered because these products are consigned in units in some countries, and in tons in others. Furthermore, several products are included under the headings which do not strictly correspond to the iron and steel transforming industries, but rather to those of other materials.

TABLE 100. IMPORTS OF SOME PRODUCTS OF THE IRON AND STEEL TRANSFORMING INDUSTRY IN THE SOUTHERN ZONE (1947)

(Thousands of dollars)

	Argentina	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Total*
A. Farm machinery and implements								
Tractors	7,262.7	..	3,297.0	1,218.1	..	..	1,353.0	
Threshers and harvesters	3,112.6	..	..	152.4	..	..	721.0	
Reapers	..	..	..	159.2	..	..	..	
Planters	501.2	..	..	86.1	..	..	94.0	
Ploughs and harrows	1,250.7	..	1,243.2	415.5	..	..	333.0	
Other machinery and implements	5,731.4	..	2,756.6	1,193.8	..	..	187.0	
TOTAL	17,858.6	721.6	7,296.8	3,225.1	556.9	4,991.3	2,688.0	37,338.3
B. Transport and communication materials and equipment								
Lorries, chassis and accessories	118,926.3	3,547.8	87,831.2	5,155.7	226.2	8,322.3	10,434.0	
Railway freight cars	..	82.8	15,242.1	4,718.7	..	1,168.9	..	
Passenger carriages for railways	374.2							
Locomotives, autocars and their accessories	1,682.4	317.7	14,053.0	1,704.0	..	1,118.4	..	
Sundries	45,543.8	927.8	61,508.9	7.935.8	371.8	2,531.5	7,701.0	
TOTAL	166,526.7	4,876.1	178,635.2	19,514.2	598.0	13,141.1	18,135.0	401,426.3
C. Industrial machinery and equipment in general	146,834.2	5,488.6	175,176.0	28,591.6	852.4	17,471.7	18,646.0	393,060.5
D. Durable consumer goods								
Automobiles and parts	45,143.1	562.6	49,942.2	6,968.2	732.0	3,861.8	6,762.0	
Electric appliances	8,141.7	494.3	42,915.7	1,865.5	110.7	1,154.4	774.0	
Others	13,711.4	261.8	7,567.0	658.3	364.0	595.4	2,046.0	
TOTAL	66,996.2	1,318.6	100,424.9	9,492.0	1,206.7	5,611.6	9,582.0	194,632.0

SOURCE: Economic Commission for Latin America.

ANNEX

Argentine-Chilean trade in iron and steel products and ferro-alloys

1. INTRODUCTION

In 1951 Chile began to export iron and steel products. These, at least until the end of the current decade, could satisfy requirements of the Argentine market for products which are still outside its policy of self-sufficiency. In turn, part of the surplus of the Chilean ferro-alloy industry might, as in the past, be absorbed by Argentina, where this type of manufacturing, so essential to the steel industry, does not exist. As in each case such goods are available from various sources, Chilean sales and their stability will depend on the competitive nature of their prices, which must struggle against the undervaluation of the exchange in Chile accruing from exports to Argentina.[17]

During the last two years, the Chilean steel industry managed to begin and to maintain an export flow to Argentina, temporarily overcoming, by the means described below, the obstacle of under-valuation which is the main problem for the future of this trade. This has not been the case with ferro-alloys, in particular ferro-manganese, which has been exported to Argentina since 1947. A steady decline has occurred in the tonnage of sales to the Argentine market, which was large some years ago but almost disappeared in 1951 and 1952, at a time when this Chilean industry was ready for a substantial expansion to increase its exportable surplus considerably.

Over the long term, unless there is some reciprocal agreement to co-ordinate specific stages of Argentine and Chilean iron and steel production and by-products, and to encourage an increase in the low level of iron and steel consumption in both countries, the parallel growth of their respective industries appears destined to reduce even further the collaboration of the Chilean steel industry in supplying the Argentine market. As outlined below, it is possible that the Chilean exports of primary steel products and those of rolled sheets will be welcomed there for many years, always providing that the reductions through currency under-valuation can be avoided.

2. CHILEAN PRODUCTION AND EXPORTS

Chilean production and exports of iron and steel items during the last three years, and the production programme for 1953, may be seen from table 101.

[17] See the annex to chapter IV entitled "Effects of the absence of monetary parities between Argentina and Chile".

TABLE 101. CHILE: PRODUCTION AND EXPORTS OF IRON AND STEEL ITEMS

(Huachipato and Corral; in thousands of tons)

Products	1950		1951		1952		1953
	Production	Exports	Production	Exports	Production	Exports	Production forecast
Foundry pig iron	9.2	7.5	92.3	72.9	33.0	17.4	100.0
Steel scrap	—	—	—	—	6.0	—	—
Billet	1.0	1.0	4.0	4.0	12.6	1.4	—
Products of the rod mill	12.0	2.4	73.9	9.1	90.0	12.7	90.0
Products of the sheet mill	17.7	1.2	45.9	10.6	67.7	18.0	75.6
Tubing	1.1	—	3.9	0.5	8.4	1.9	8.4
TOTAL	41.0	12.0	220.0	97.1	217.7	51.4	274.0

SOURCE: Compañía de Acero del Pacífico, Chile.

NOTE: In addition to the output of Huachipato and Corral, there is that of INDAC and FAMAE, based exclusively on scrap. The first produces about 12,000 tons a year (10,000 tons of bars for concrete and 2,000 tons of alloys and other specialized items), and the second about 5,000 tons of bars for concrete and strip. Other smaller cold-rolling industries finish products for Huachipato, to a total of about 500 tons a year.

Table 101 shows that Chilean production of iron and steel has increased threefold since the middle of 1950 as a result of the production at Huachipato. In 1951 this plant delivered 219,934 tons, of which exports totalled 97,209 tons. For 1952 the production goal was set at 217,620 tons, and for 1953 at 274,000, through enlargements to the steel mill enabling all the iron from the blast furnace to be converted into steel. In 1953 development of the sheet mill will be almost finished, thus strengthening Chilean production in the least-developed branch of the Argentine industry.

Notwithstanding the new increase in Chilean production planned for 1953, it is foreseen as unlikely that the exportable surplus will, over the next few years, exceed the 97,209 tons for 1951.

The Chilean domestic market for materials derived from the rod mill, particularly round bars for reinforced concrete, amounted to 45,000 tons in 1951, although original estimates made when the plant began to operate allotted only 37,500 tons to domestic consumption. In 1952, according to figures for the first ten months, the total will not be less than 50,000 tons. Furthermore, any increase in Chile's building index, which has been steadily falling since 1947, would affect the domestic demand for bars, sections and tube

TABLE 102. CHILE: EXPORTS OF IRON AND STEEL

(F.o.b. values in thousands of tons)

	Foundry pig iron		Products of the rod mill		Products of the sheet mill		Tubing		Total exports	
	Tons	Thousand dollars	Tons	Thousand dollars	Tons	Thousand dollars	Tons	Thousand dollars	Tons	Thousand dollars
1950										
Argentina	1,012	64.4	502	47.0	48	6.5	—	—	1,562	117.9
Bolivia	—	—	—	—	—	—	—	—	—	—
Colombia	—	—	—	—	—	—	—	—	—	—
Ecuador	—	—	357	23.6	236	27.4	—	—	593	51.0
United States	7,449	373.3	—	—	—	—	—	—	7,449	373.3
Peru	10	0.6	1,557	100.1	946	111.2	—	—	—	—
Uruguay	—	—	—	—	—	—	—	—	2,513	211.9
TOTAL, 1950	8,471	483.3	2,416	170.7	1,230	145.1	—	—	12,117	754.1
1951										
Argentina	14,482	941.1	1,421	173.9	5,156	994.8	7,635	495.2	28,694	2,605.0
Bolivia	—	—	336	48.2	—	—	—	—	336	48.2
Colombia	—	—	1,287	124.5	—	—	—	—	1,287	124.5
Ecuador	—	—	466	48.8	220	41.3	—	—	686	90.1
United States	53,374	2,674.8	—	—	4,094	575.4	500	102.5	57,968	3,352.7
Peru	10	0.7	5,623	443.5	1,161	209.9	—	—	6,794	654.1
Uruguay	1,444[b]	112.4[b]	—	—	—	—	—	—	1,444	112.4
TOTAL, 1951	69,310	3,729.0	9,133	838.9	10,631	1,821.4	8,135	597.9	97,209	6,987.0
1952										
Argentina	13,284	1,030.4	—	—	16,446	3,181.1	—	—	29,730	4,211.5
Colombia	—	—	256	31.9	380	94.0	—	—	636	125.9
Ecuador	—	—	1,067	122.6	290	49.2	—	—	1,357	171.8
United States	1,325	67.0	—	—	—	—	1,863	396.9	3,188	463.9
Great Britain	2,800	170.9	—	—	—	—	—	—	2,800	170.9
Panama	—	—	14	1.8	4	0.6	—	—	18	2.4
Peru	20	1.7	11,352	1,383.3	885	202.3	—	—	12,257	1,587.3
TOTAL, 1952[a]	17,429	1,270.0	12,689	1,539.6	18,005	3,527.2	1,863	396.9	49,986	6,733.7

SOURCE: Compañía de Acero del Pacífico, Chile.

[a] Provisional figures, corresponding to real exports for the first eight months of the year, and for the last four to sales effected by Huachipato.

[b] This export refers to billets.

strip.[18] Indicating that any forecast as to the size of the exportable surplus during the next few years must be made with reserve, the competent authorities consider that, after 1953, the surplus may be in the neighbourhood of 90,000 tons.

Table 102 shows that the United States, the main purchaser of Chilean iron in 1951, bought 57,968 tons in that year, mostly pig iron, in transactions arising out of the rearmament emergency and having no normal future. The second client was Argentina, with 28,964 tons, of which 19,555 tons were pig iron and the remainder billets and products of the steel mill, particularly sheet. By 1952 the United States was no longer a buyer. Great Britain purchased 2,800 tons of billet in an exceptional transaction due to a scrap shortage. The main client became Argentina, with 29,730 tons, of which 16,446 tons were products of the sheet mill. Sales to Peru rose from 6,794 tons in 1951 to 12,257 tons in 1952. Total exports to all destinations amounted to 53,660 tons in 1952 compared with 97,209 in 1951.

For some years at least, Argentina will remain the most stable and important Latin-American market for placing Chilean steel output. For many years, Argentina customarily bought the pig-iron surpluses from the charcoal blast furnace at Corral. The oft-expressed idea as to the incentive which co-operation in the steel-making field would provide for the economic development of both countries took concrete form in the treaty of December 1946, under the terms of which Argentine capital would be invested in Chilean enterprises designed to collaborate in supplying that country's iron and steel requirements.[19] This agreement was not ratified by the Chilean Parliament. Later on, the development of this industry in both countries has not been the subject of any new official attempt of a similar nature.

3. Argentine imports

Tables 103 and 104 are indicative of current Argentine requirements for iron and steel products.

At the present rate of demand, Argentina should import about a million tons of iron and steel, apart from appliances, as indicated in tables 103 and 104. The first of these summarizes imports since 1939, by item. The second, by means of an estimate drawn up in Buenos Aires with the assistance of producers and distributors, shows that for the period July 1952 to June 1953, demand, which is affected by the decline in building, could be met with imports not exceeding 836,000 tons.

Within these figures and for its present requirements, Argentina must import 85,000 tons a year of pig iron of the type supplied by Chile,[20] to which should be added that obtained from the domestic Palpalá blast furnace (Zapla) which in 1950 produced 18,000 tons of pig iron, rising to 35,000 in 1951.[21] (In September 1952, Fabricaciones Militares contracted with Demag, Germany, for technical services, to the approximate value of a million dollars, to modernize this blast furnace and raise its capacity to 70,000 tons.) With regard to billet, Argentina should import some 100,000 tons a year, both for re-rolling and for meeting the demand of those steel mills with a higher capacity than the blast furnaces. The demand will increase if the world shortage of scrap, together with the problems of foreign exchange, hamper scrap imports. The deficit could partly be met by the refining

[18] Notwithstanding the fall in the building index, the consumption of round bars for reinforced concrete has increased in the last two years due to the proportionate increase, within the total figure for building, of large-size buildings, which require 50 to 70 kgs. of iron per square metre, that is, two to three times the requirements for ordinary houses.

[19] According to the ideas on co-ordination, after a period of reciprocity to solve problems relating to the first stage of production, the combined effort would enable the low consumption figures for iron and steel products in Argentina and Chile (table 106) to be raised through the combined utilization of steel in the manufacture of equipment, transport material, tractors and so forth.

[20] Argentine industry is interested in Chilean pig iron with the following composition: carbon, 3.5 per cent; silicon, 2.5 per cent; manganese, 0.4 per cent; phosphorus, 1.7 to 1.9 per cent; sulphur, 0.05 per cent maximum. It is also interested in a phosphorus content of 0.05 to 1.2 per cent.

[21] The price of the Zapla product has been steadily higher than for imports, although the difference almost disappeared in 1951, when the exchange rate for imports rose from 3.7313 to 5.50 pesos. Domestic pig iron at 350 Argentine pesos, on the railway wagon at Palpalá, in 1950 rose successively to 450,490 and 560, and in 1952 to 720 pesos in February and 785 in April, plus 208 for carriage to Buenos Aires, that is, 993 pesos a ton in the capital.

Table 103. Argentina: Imports of iron and steel products

(In thousands of tons)

Article	*1939*	*Average 1940–1944*	*Average 1945–1949*	*1950*	*1951*
Foundry pig iron	55.8	21.1	63.4	93.3	71.2
Steel billets	0.1	—	36.7	163.6	180.5
Round and square iron bars and small sheet (including rod)	173.6	50.3	61.6	81.9	51.9
Sections	49.0	11.7	40.2	78.3	103.7
Rod	14.6	1.1	21.4	15.7	18.7
Strip	22.6	11.0	29.1	51.4	58.2
Rails	16.5	1.4	37.2	15.7	30.6
Wire	57.7	27.1	86.8	95.2	62.7
Sheet iron	109.3	44.5	125.4	130.9	274.7
Tinplate	66.3	60.6	52.2	58.7	85.4
Unworked steel with over 0.4% carbon in bars, sheet and small sheet	5.7	3.6	19.8	14.0	38.5
Seamed and seamless iron piping	39.2	18.8	38.9	65.6	8.1
Sundries	17.0	2.7	8.4	0.9	4.7
Total	627.4	253.9	621.1	865.2	988.7

Source: Dirección General del Servicio Estadístico Nacional, Buenos Aires.

process of Argentina's Siemens-Martin furnaces, using compact hematite obtainable from Brazil.[22]

[22] In 1951 and 1952, although Argentina offered high prices for some scrap consignments from the dismantling of various nitrate workings Chile did not grant export permits, because of its own deficient scrap supplies. Table 105 is typical of the development of scrap prices in Argentina.

TABLE 104. ARGENTINA: ESTIMATE OF DEMAND, DOMESTIC PRODUCTION AND IMPORTS REQUIRED OF IRON AND STEEL IN THE PERIOD 1952–53

(In thousands of tons)

Product	*Estimated demand*	*Domestic production forecast*	*Balance to be imported*
Foundry pig-iron	120	35	85
Billet	100	—	100
Iron in round bars for concrete and other uses; squares, small sheet, including 80,000 tons of rod	300	260	40[b]
Sections and angles	70	20	50
Rod	30	10	20
Strip	100	40	60
Rails[c]	50	—	50
Wires	120	100	20[d]
Sheet iron	180	10	170
Tinplate	65	—	85
Unworked steel with over 0.4% carbon in bars, sheet and small sheet, including tool steel	20	—	20
Seamed and seamless tubes	95	45	50[e]
Old iron[f]	170	70	100

SOURCE: Economic Commission for Latin America.

[a] With regard to the potential possibilities of the Argentine market, it should be pointed out that per capita consumption in 1951 was 68 kgs., which provides a high margin of growth, when compared with figures for the countries enumerated below, taken from the April 1952 issue of *L'Ossature metallique*, Brussels:

	1937	*1950*
United States	420	628
Great Britain	279	319
Canada	208	312
Belgium	222	255
Germany	273	238
France	166	169
Russia	118	157

(Chilean estimated consumption is 35 kgs. per capita.)

[b] Not including round for concrete, in which Argentina is self-sufficient.

[c] In rails, accumulated extraordinary requirements are estimated at not less than 100,000 tons.

[d] 15,000 tons of unprocessed and processed wire and 5,000 tons of galvanized round and oval wire.

[e] Seamless. This item can be heavily expanded, for tubing in petroleum workings.

[f] The difficulty in importing, sharpened by the world shortage of old iron in recent years, may result in an increase in imports of billet.

TABLE 105. ARGENTINA: AVERAGE PRICE OF SCRAP PER TON AT BUENOS AIRES

(In Argentine pesos)

1948	196.11
1949	201.44
1950	226.68
1951	271.56
1952 (first six months)	409.85

SOURCE: Private firms, Buenos Aires.

4. ARGENTINA'S POLICY OF SELF-SUFFICIENCY

Argentina's foreign purchases of iron and steel have been passing through a new phase. This is shown in table 103, from which it may be seen that the steel-transforming industry, both in the type of goods manufactured for some time past, and in the incorporation of items formerly imported, specifically tends to substitute imports of manufactured products with raw material imports for making them. Thus, taking just one aspect, Argentina's foundry capacity,[23] which was 41,000 tons in 1937, had already reached 285,000 in 1951, when the twenty-four furnaces in operation delivered 206,000 tons. This represents[24] over a third of the domestic rolled-steel requirements, estimated for that year at 580,000 tons. But for products of the rod mill, of which the Argentine market absorbs some half-million tons a year, the plants already in use are capable of supplying approximately 330,000 tons. Enlargements at present under way will shortly make it unnecessary to resort to such imports at all, except for specialized products representing only a small percentage of the whole.[25]

[23] See table 106.

[24] See table 106.

[25] As the customs tariff, according to this table, does not provide sufficient protection for Argentine iron and steel products, the development of self-sufficiency has in fact been supported by the selective import system applied by the Central Bank.

TABLE 106. ARGENTINA: SIEMENS-MARTIN FURNACES IN OPERATION,[a] INSTALLED CAPACITY AND POTENTIAL AND REAL ANNUAL PRODUCTION (BASED ON 3.5 TAPS A DAY AND 200 ANNUAL WORKING DAYS)

(In thousands of tons)

	Installed capacity	*Annual production*	
		Potential	*Actual*
1937	58	41	14.0
1942	129	90	62.5
1948	327	230	128.2
1951	407	285	206.0

SOURCE: Private firms.

[a] The furnaces in operation in 1951 belonged to the following firms: Vulcano, 6; Fábrica Militar de Aceros, 2; Cantábrica, 4; Torres y Citati, 2; Tamet, 3; Rosati and Cristefani S.A., 2; Crefin, 1; Santa Rosa, 2. Total: 24 furnaces.

TABLE 107. ARGENTINA: PRODUCTION OF FINISHED STEEL

(Excluding re-rolling; in thousands of tons)

1939	10.4
1945	66.2
1946	110.8
1951	206.1

SOURCE: Private firms.

TABLE 108. ARGENTINA: TARIFF TREATMENT OF IRON AND STEEL IMPORTS

Products	*Rate*	*Duty*
Foundry pig iron	Exempt	
Billet	Exempt	
Unworked sheet	15%	0.056 a kg.
Strip	15%	0.064 a kg.
Plain galvanized wire up to No. 14, and barbed wire	28%	without invoice value
Mild wrought iron piping	42%	0.128 a kg.
Galvanized piping	42%	0.16 a kg.

SOURCE: Argentina's tariff schedule.

In the same sector, Acindar S.A. operates a modern Norgan continuous mill, which manufactures domestically both rod for the wire-drawing mills and hot-rolled strip for the plants manufacturing welded or seamed piping. Argentine equipment for wire-drawing is amply sufficient to meet the domestic demand, including barbed wire and high-tension cable, current demand for all types being about 80,000 tons a year altogether. For welded tubes, the plants for making them in diameters ranging from up to 4 inches and over 14 inches, exceed domestic requirements. In diameters between 6 inches and 12 inches, equipment is being assembled which will shortly cover domestic requirements.

A prominent feature of Argentina's self-sufficiency policy for iron and steel is the initial construction at the Punta Algerich (San Nicolás) steel plant, 70 kilometres from Rosario and 235 from Buenos Aires. This plant will produce 315,000 tons a year of pig iron and billet after 1958. This figure will be expanded later to a million tons. In view of the vast nature of this project, its rate of production, according to the ambitious plans, will particularly depend upon the availability of foreign exchange to purchase equipment suitable for coking the Río Turbio coal to be used there.

The new plant will be managed by the Sociedad Mixta Siderúrgica Argentina, the State supplying 80 per cent of the initial 100-million-peso capital. Moreover the State undertakes to cover possible deficits. Some 3,300 hectares of land were expropriated for the industrial site, of which this unit will form the centre. The billet plant will occupy 350 hectares and the remainder will be set aside for the surrounding State and private transforming plants. Each of the three blast furnaces will have a capacity of 1,300 tons of iron every twenty-four hours. The gases are to be used as fuel for the central power installation of the plant. A coke and by-products plant with eighty-nine ovens will coke the coal and use volatile substances. Six Siemens-Martin furnaces will transform pig iron into steel. Four batteries of re-heating ovens are planned for rolling the billets, together with a blooming mill to obtain blooms with square and round sections, small rectangular sheets and billet in square and rectangular sections. A continuous rolling mill will transform the billet into merchant bars of standard types. The project also envisages a structural mill for the manufacture of heavy rails and shapes. The production of thick and thin sheet and tinplate with the corresponding installations will also be considered in the programme. The electric plant planned for the new industrial zone, for 125,000 kilowatts, will start with a section having three turbo-generators, supplying 25,000 kilowatts each. The iron ore deposits recently found at Sierra Grande, thirty kilometres from the sea at Río Negro, and coal from Río Turbio, near Gallegos, will provide basic raw materials for pig-iron production at the new plant. In addition, iron ore from Urucum in Brazil, shipped by way of the Paraguay River, might be the subject of negotiations for its use at San Nicolás.

5. Tubular products

Although, generally speaking, the Chilean manufacturing industry for welded tubes meets domestic requirements, it should be noted that there is still no *ad hoc* equipment for diameters of 14 to 24 inches, which would cost about half a million dollars. In Argentina, the American Rolling Mill (Armco) factory operates a plant which has maximum efficiency for precisely these dimensions. According to some technical opinions, under a scheme for combined utilization, which would improve the use of its capacity, arrangements might be made for the temporary export to Argentina of raw materials from Huachipato for tube manufacture. These tubes could be re-exported both to Chile and to other Latin-American countries, while Chile would meet the cost of the respective services through an Argentine-Chilean clearing agreement.

Further, on the subject of tubular products, it might be worth while to examine in detail the possibility of Chilean-Argentine collaboration in seamless tubes for petroleum piping, in sizes from 6 to 12 inches. These Chile buys in the United States at the preferential rate of 31 pesos to the dollar for the Manantiales oil wells in Tierra del Fuego.[26] Requirements for such tubes appear likely to rise to 15,000 tons annually, for a value of 3 million dollars, some 40 per cent of the international price of the finished product corresponding to billet. This collaboration would result in full use being made of the seamless tube plant now being erected in Argentina by a branch of the Italian Dalmine group, with a substantial investment and an initial capacity of 100,000 tons a year. This plant, incidentally, is a potential client for Huachipato billet. It would be feasible to draw up an agreement providing the basis of temporary admission for the manufacture of petroleum pipes for Manantiales, using Chilean raw materials.

6. Supply of sheet

In contrast to the facts observed for rod-mill products, where the development of Argentine industry leads to a rapid growth of the margin which its market still offers to the foreign supplier, in the line of those from the sheet mill there is no large-scale equipment nor any plans for such, except for the long-term ones depending on the San Nicolás steel plant mentioned above. The present demand for sheet is estimated at 180,000 tons, of which domestic Argentine industry supplies only 10,000. The balance offers encouraging prospects for Chile as this is a specialized product for which Huachipato is preparing a considerable expansion. Table 109, established with the assistance of producing and distributing firms in Buenos Aires to indicate the position of sheet, shows the percentage distribution, by dimensions, of Argentina's consumption:

Table 109. Argentina: Estimated annual requirements for sheet by types

Thickness	*Number*	*Percentage*	*Thousands of tons*
1 mm. or less	20 or finer	11	19.8
Over 1 mm. and less than 2.2 mm.	14 to 19	31	55.8
Over 2.2 mm. and less than 8 mm.	13 to 5/16"	33	59.4
Over 8 mm. to 50 mm.	5/16" to 2"	25	45.0
		Total	180.0

Source: Manufacturing firms, Buenos Aires.

Any continued Chilean contribution to Argentina's supplies of iron and steel would fundamentally depend upon the value of exports to Argentina being liqui-

[26] This was the policy in 1952.

dated in Chile on the same basis as sales to other countries. Until today exports to Argentina have taken place through decisions which have temporarily offset the effects of under-valuation. Thus, the Chilean peso equivalent of iron and steel sales to Argentina in 1951 and part of 1952 was paid to Huachipato in Chilean currency, instead of being paid in foreign currency, intended to cover obligations abroad, and which would have had to be bought at a preferential rate of exchange. In turn, under the special arrangement reached with Argentina, that country received at the same value a total of 8.5 million dollars, on account of the dollar debt amounting to 18.5 millions, which the Corporación de Fomento and the Instituto de Economía Agrícola de Chile owed to the IAPI as a balance of the purchase price of wheat and oil bought in 1946–47. This formula enabled Huachipato, by evading the under-valuation, to quote practically at the same levels as those from competitors.[27] In addition, this arrangement laid down that iron should be invoiced at the average of the respective United States, Belgian and French quotations and that if these markets should suspend their exports or freeze their prices, the quotation would be adjusted to the ratio of the variations, f.o.b. Buenos Aires, of quebracho, edible oil and beef.

It was feared that, once the deliveries agreed upon with IAPI would cease at the end of 1952, the rise in Chilean iron quotations, due to its entry into the common system of payments subject to undervaluation, would hamper trade with Argentina. This concern was somewhat relieved by a barter agreement reached in September 1952 between the governments. Under this agreement, 7,000 tons of Argentine edible semi-refined sunflower oil, was to be exchanged, as from October 1952, for 15,050 tons of Huachipato products (3,000 of pig iron, 11,500 of sheet and 550 of tinplate for meters), with a total value of about 2.9 million dollars; this credit would be offset by the value of the oil, calculated at 2,020 Argentine pesos in account 1308 per ton f.o.b. in bulk, that is 404 dollars in account 1308. Furthermore, it was agreed that Chile would send Argentina, for temporary admission, 1,000 tons of sheet to manufacture the 225-litre drums for transporting the oil. These drums are estimated to cost 150 Argentine pesos per ton, plus a similar sum for the expenses incurred in putting the oil into the containers, inspecting its quality and embarking it in Buenos Aires. The total was covered by Chile through the Chilean-Argentine clearing, under a co-ordination agreement similar to that for the manufacture in Argentina of the petroleum tubes for the wells at Manantiales. When the edible oil-iron barter was drawn up, the idea remained of studying its renewal on a stable basis, perhaps every three years, with a pre-arranged mechanism for price adjustment by which equal advantages would be assured to both parties.

[27] See tables 110 and 111.

TABLE 110. ARGENTINA: RATIO OF PRICES AND FREIGHTS PER TON, IN DOLLARS, FOR IRON AND STEEL FROM CHILE AND BELGIUM, AT SIMILAR RATES

Year	F.o.b. Chilean port	Freight from Chilean port to Buenos Aires	F.o.b. price Belgian port	Freight from Belgian port to Buenos Aires
		Foundry pig-iron		
1950	56	11	Jan. 36.68 Dec. 64	10.12 13.62
1951—Jan.	62	11	66	14.70
1951—Dec.	83	14.50	120	16.10
		Billets		
1950—Jan.	61.94	11	48.21	10.12
1950—Dec.	66.94	11	80	10.12
1951	125	16	134	16.10

SOURCE: Importers, Buenos Aires.

TABLE 111. ARGENTINA: C.i.f. PIG-IRON PRICES, QUOTED IN ARGENTINE PESOS

Date	Rate of exchange	Origin	C.i.f. value
8/1/48	3.7313	Brazil	337.79
14/1/48	3.7313	Netherlands	311.00
1/2/48	3.7313	Brazil	337.79
9/10/48	3.7313	Belgium	348.91
26/1/49	3.7313	Austria	387.07
12/9/49	3.7313	France	329.04
6/12/49	3.7313	Netherlands	295.37
17/3/51	7.50	Norway	587.48
26/5/51	7.50	Chile	547.50
18/8/51	7.50	Chile	675.00
9/11/51	7.50	Norway	661.50
17/12/51	7.50	Chile	735

SOURCE: Processing companies, Buenos Aires.

7. FERRO-ALLOYS

Chilean manufacture of ferro-alloys has, since 1945, contributed to the supply of ferro-manganese for Argentine industry, whose present requirements of this essential product for steel-making are estimated at about 3,000 tons annually with an approximately similar amount of ferro-silicon. Demand for silico-manganese does not appear to exceed 600 tons.

Production of ferro-manganese and silico-manganese as well as that of ferro-silicon will be increased in Chile with the transfer to the industrial area of Huachipato of the factory which Carburo and Metalurgia S.A. have owned for some time at Nos. Its furnaces, with an output of up to 6,000 tons of ferro-alloys annually, are currently being enlarged with 700,000 dollars of the first quota of an Export-Import Bank loan for 1.5 millions. It will enable this plant, as from 1954, at its new site at Huachipato and using coke dust from the steel plant, to process Chile's manganese yield at the rate of 46,000 tons of ore annually, thus providing a yield of approximately 18,400 tons of ferro-manganese. As Chilean demand stands at only 3,000 tons a year, exports will be the deciding factor for the full use of this industry's capacity. Ferro-silicon has more restricted international prospects, since it is derived from quartz, a raw material which is more commonly found than manganese throughout the world.

Argentina's purchases of Chilean ferro-manganese, which reached a maximum of 2,012 tons in 1948, have been declining to a point where, in 1951, they amounted to only 200 tons. Similar exports from Brazil to Argentina have risen in an inverse ratio to the Chilean exports. Of Brazil's total exports in 1951, amounting to 4,615 tons, Argentina absorbed 2,790. Although Chilean ferro-manganese has been exported to Europe since 1945 at world market prices, undervaluation does not allow it to compete in Argentina. In 1951, the f.o.b. price of Chilean ferro-manganese for the Argen-

Since the figures for apparent consumption in Argentina and Brazil show a continued trend upward in the demand for copper during 1950 and 1951, it may be estimated that the southern zone at present constitutes a market for about 78,300 tons a year of virgin and refined copper, distributed as in table 114.

The fact that zonal production has grown at a faster rate than exports to other regions and the demand on domestic markets has resulted in a more substantial trade between the countries in the zone. The small pre-war[3] inter-Latin-American trade in copper rose to fairly high figures after the war, but the level remains below that of the substantial and sustained imports from sources outside the region. According to table 115, total imports for the countries in the southern zone averaged slightly over 50,000 tons annually during 1947–49, 14,000 of which came from within the region and the remaining 36,000 tons from Europe and the United States. During these same years, Chile was practically the only country exporting to other regional markets. Peru's first large share was recorded in 1951, when slightly over 4,000 tons in slabs were sent to Argentina and about 2,200 tons to Brazil.

Argentina and Brazil show the highest percentages for purchases of copper within the zone in relation to their total imports, the figure in both cases amounting to about 33 per cent in 1947–49. This proportion, for Argentina, rose to 60 per cent in 1951.

The preceding table indicates the main specifications of imported copper in the countries of the southern zone. Over 60 per cent is made up of slabs, bars and sheets intended to supply domestic transforming industries. Wires and cables constitute the major portion, and copper tubing the smallest share, of manufactured products. This composition of imports mainly arises from the type of purchases made by Argentina and Brazil, which, apart from Chile, have the most highly developed transforming industries.

Blister copper represents about 45 per cent of the total zonal copper imports, almost all the finished copper goods being imported from countries outside the zone. Raw-material supplies for the transforming industries in Argentina and Brazil have usually been below their productive capacity. The Chilean transforming industry, which does use domestic copper, has exported very few finished goods.[4] Thus, prospects for inter-Latin-American trade appear to lie in the possibility of shifting to countries within the zone—Chile and Peru—the present blister copper purchases, amounting to some 20,000 tons, which are now made outside the region, and to increase the trade of manufactured copper goods.

[3] This trade in 1935–37 barely amounted to an annual average of 500 tons.

[4] Copper wire exports from Chile ranged between 2,000 and 5,000 tons a year during 1946–50, mainly to countries outside the region. Exports of this article increased sharply in 1951 to over 19,000 tons, about 13,400 of which were sent to non-regional markets.

TABLE 115. COMPOSITION AND ORIGIN OF COPPER IMPORTS IN THE SOUTHERN ZONE OF LATIN AMERICA

(Annual average for 1947–49, in thousands of tons)

	Total	*Slabs, bars and sheets*	*Wires and cables*	*Pipes and tubes*	*Other manufactures*
Argentina:					
Total	19,400	11,201	5,833	736	1,630
From the zone	6,503	5,738	534	98	133
From other regions	12,897	5,463	5,299	638	1,497
Bolivia:					
Total	272	34	[a]	[a]	238
From the zone	33	18	[a]	[a]	15
From other regions	239	16	[a]	[a]	223
Brazil:					
Total	23,158	18,219	1,428	656	2,855
From the zone	7,528	7,518	10	—	—
From other regions	15,630	10,701	1,418	656	2,855
Chile:					
Total	2,102	226	1,674	136	66
From the zone	14	—	10	—	4
From other regions	2,088	226	1,664	136	62
Paraguay:[b]					
Total	165	..	165	..	..
From the zone	—	..	—	..	..
From other regions	165	..	165	..	..
Peru:					
Total	1,805	221	1,325	149	110
From the zone	50	13	37	—	—
From other regions	1,755	208	1,288	149	110
Uruguay:					
Total	3,313	1,128	1,988	133	64
From the zone	170	126	43	2	—
From other regions	3,143	1,000	1,946	131	64
Total for the zone:					
Total	50,215	31,029	12,413	1,810	4,963
From the zone	14,298	13,413	633	100	152
From other regions	35,917	17,616	11,780	1,710	4,811

SOURCE: Foreign trade statistics.

[a] Included in "other manufactures".

[b] Wire only, average 1948–49.

The first of these possibilities may be somewhat restricted by the domestic development of copper mines in some of the importing countries within the zone. Argentina's second five-year plan, for instance, envisages an investment of 6 million pesos in copper prospecting. Brazil, in turn, plans to build an electrolytic refinery having an annual capacity of 5,000 tons.[5] Nevertheless, there appears to be a considerable margin for an increase in the trade in blister copper, which might be covered through greater intra-zonal commerce.

The possibilities for developing the trade in finished copper goods is restricted by the fact that the main consuming countries—Argentina, Brazil and Chile—have large transforming industries, which are being expanded. But, since Chile has sufficient raw materials within its borders and is similarly the principal supplier of blister copper for the other two countries, the future of intra-zonal trade in manufactured copper goods must necessarily be subject to the agreements reached in this connexion. In addition, the ability of Chile to continue marketing a quota of manufactured copper goods appears to depend largely on world supply conditions. Moreover, the copper-transforming industry is relatively simple and requires a fairly low capital investment. These factors together constitute incentives for the establishment of domestic industries, even though the local market may be small.

As regards the demand for finished goods, the strong upward trend shown by consumption between the pre-war and post-war years and the low prevailing level notwithstanding that increase leads to the conclusion that an expansion in zonal markets may be anticipated within the next few years.

In any case, even if there were no greater trade in finished copper goods, the development of the transforming industries would increase the requirements for blister copper, which, linked to the imports made up to the present from outside the zone, might lead to some strengthening of inter-Latin-American trade.

Following this broad outline of general trade prospects for copper and its manufactures, some recent events are indicated below, covering copper agreements made between countries in the southern zone.

2. Copper in Argentine-Chilean trade

Copper was the principal basis for one of the latest arrangements for a quantitative exchange of equally essential commodities between countries in the southern zone. According to an agreement between Argentina and Chile in 1952, mentioned in chapter VIII of this study, Argentina's industry was assured of a minimum annual supply of 15,600 tons of Chilean copper, based on the exchange of 82,000 head of cattle to cover the meat shortage in the central and northern areas of Chile.

This agreement marks a new attitude by both countries as regards their reciprocal trade connexions. Formerly, cattle were delivered to Chile against payment on account. Chilean copper was only exported against payment in dollars, except when the operation covered cables, wire or other manufactures, where the value added by manufacture represented a substantial percentage over the raw material price.

Since 1950, the conditions under which Argentina exported cattle began to be influenced by the need to strengthen the purchasing power of decreasing agricultural and stock-breeding production. This had fallen as an immediate result of the severe drought which had affected its best grain and cattle lands since 1950. In Chile, the copper export policy was changing, by a process which began in 1942. Until then, sales took place in New York by the North American companies, known in Chile as the "greater mining companies". These companies work Chile's three principal copper mines and ensure the Chilean economy, in dollars, of a return equivalent to the cost of production, plus an amount equal to half the difference between this cost and the selling price abroad. Under this system, copper was not a subject of negotiation in Chile's trade agreements. During the Second World War, as a result of the installation of a copper-transforming industry in Chile, it began to supply the Latin-American market with products in different stages of manufacture. Sales of copper slabs, however, continued to be based upon the New York market, with no Chilean intervention. In 1951, when the International Materials Conference in Washington laid down an outline for distributing the copper available to the West, Chile's representatives announced their government's intention to handle the sales of 20 per cent of all slab output of the greater mining companies, plus all that from the medium and small enterprises in Chile, using a plan which assured the domestic transforming industry of over 70,000 tons of blister copper a year. This reserve was along the same lines as the agreement which Chile had previously signed with the United States, by which 80 per cent of Chile's production of blister copper was to be purchased by the United States, at 27.5 cents per pound (24.5 cents to be paid by the consumer and 3 by the United States Treasury). Chile would sell the remaining 20 per cent at the world free-market price, which was 54.5 cents per pound at that time. Shortly after this agreement was signed, however, the free quotation fell rapidly. The factors leading to this price decline appear to have been the fixing of a quota, by the International Materials Conference, at amounts not exceeding those of world production; the controls aimed at preventing re-exports of copper to countries within the Soviet sphere of influence; and news releases indicating a new Chilean-United States agreement, which would lead to the sale of all Chilean copper at a single price.

In May 1952, Chile abrogated the agreement with the United States and adopted measures bringing all copper mined in the country within the scope of trade agreements, so that it could be used for liquidating bilateral balances. The greater mining companies ceased to sell 80 per cent of their production in New York, all sales passing to the Banco Central de Chile, at a single price for all Chilean exports of copper slabs; this price in May 1952 was set at 35.5 cents per pound of electrolytic copper. The bases for the financial relationship between the Chilean Government and the greater mining companies were modified. Thus, the Chilean Government would receive the difference between the selling price of copper on the international market and the same day's United States quotation for purchases of domestic copper, after deducting the value of freight between Chile and New York. The government would in future purchase the entire out-

[5] The plant at Utinga (São Paulo) will be partly supplied with 3,000 tons a year of concentrates from the Camacua mine, existing proved reserves of which are about 500,000 tons of copper ore. Itapera and Caraiva are other Brazilian reserves, with 200,000 and 40,000 tons, respectively, of relatively low-grade ores.

put of the greater mining companies, at the price indicated earlier,[6] for export purposes. The bill passed by the Chilean Congress laid down that exports of both slabs and finished copper goods should be authorized by the Central Bank only against payment in dollars. This regulation, unlike the Chilean-Argentine agreement of 1952, does not contradict obligations arising out of international agreements, which are also valid in law, nor treaties in which transactions are made in currencies other than dollars, or based on barter agreements.

Chilean approval of the agreement with Argentina implied, to a certain extent, official recognition of the importance or necessity of importing meat on the hoof, as required by the regulations of its foreign exchange budget for merchandise authorized for payment in dollar currency. Although, in practice, cattle importers had for a long time enjoyed this status, the uncertainty arising out of prevailing difficulties for reconciling such imports with the policy of fostering domestic stockbreeding, had been one of the principal obstacles to Chilean-Argentine trade. This agreement, by previously determining a ceiling for foreign cattle imports and by recognizing that they would be paid for in values equivalent to dollar currency, is thus very important for the future expansion of trade between Argentina and Chile, which is naturally linked with the establishment of a definite stockbreeding policy in Chile.

There are still further obstacles to be overcome before a steady flow of Chilean copper exports to Argentina can be arranged, despite Argentina's increasing requirements, and the prevailing difficulty, at least at present, of importing copper from other world sources. Apart from the problems of price and payment described elsewhere in this report, the close resemblance between the respective transforming industries in the two countries obliges Argentina primarily to require raw materials, 50 per cent of it in the shape of electrolytic slabs and the rest fire-refined, for its smelters, rolling and wire-drawing mills, and those producing tubes and alloys. As Chile's installed capacity, except for 12-mm. wire, is sufficient for the present domestic requirements, and is in course of expansion, through a new plant belonging to Fabricaciones Militares, prospects for the sale of Chilean copper manufactures to Argentina appear to be destined mainly to a gradual shift to blister copper on a scale to be determined by world raw-material supplies and the position of the Argentine balance of payments in the dollar area.

3. Copper in Brazilian-Chilean trade

In the Brazil-Chile trade sector, under the treaty of economic co-operation signed by the two countries in 1947, which has only been in force since 1952, Chile agrees to export to Brazil 1,000 tons a year of copper slabs, while Brazil agrees to place no restrictions upon annual imports to its territory of 3,000 tons of manufactured copper goods. This agreement, which makes no stipulation as to the currency to be used in payment, is typical both of the parallel development of the transforming industries of both countries and of the kind of formula which it establishes for reconciling raw-material requirements with a defence of the manufacturing industry in the country of origin.

Current—though restricted—copper requirements in Brazil, are estimated at 33,000 tons,[7] and almost two-thirds of actual consumption come from the requirements for electric cable. The shortage of copper in Brazil, however, linked to the low quotas obtained from the International Materials Conference and to balance-of-payments difficulties, particularly in the dollar area, caused serious consideration of the use of aluminium produced from local bauxite as a substitute for copper in electrical installations, including even high-tension cables, which will be made of aluminium with a steel core. This metal, in turn, is required for other uses, and industrialization of Brazilian bauxite, under the most favourable conditions according to existing information, would scarcely take less than five years to reach the present consumption level for aluminium, quite apart from requirements for replacing copper in electrical installations. The scale on which the replacement takes place will necessarily depend, for the next few years, upon the future possibilities of obtaining copper and upon its prices.

During 1952, the bilateral conduct of Brazilian-Chilean trade did not fulfil the terms of the agreement, which would have allowed Brazil to raise its copper supplies for that year by 4,000 tons. The causes mitigating against full compliance with the agreement indicate the utility of filling the gaps caused by the payments system for bilateral trade in the zone, as described in an earlier chapter. As a rule, Brazilian sales to Chile were hampered by the difference between Brazilian and world prices. For some commodities, which could have made a considerable contribution to stabilizing bilateral clearance, such as sugar and cotton, Brazil's quotation during the first half of 1952 was at times 82.6 and 31.2 per cent higher, respectively, than the price paid by Chile for purchases in other areas, payable in dollar currency. Thus, the abundant unused credit which Chile had in this account would have been increased by the value of copper dispatched to Brazil. This in turn would have had to be invoiced at an overprice to offset the surcharge on Brazilian goods. But current Chilean exports, with the introduction of copper into the account, would have weakened its purchasing power. Under these conditions, the operation remained subject to the possibility of Brazil covering the price in dollars.[8]

[6] 24.5 US cents a pound.

[7] 28,000 tons of electrolytic copper and 5,000 tons of fire refined copper, according to the report presented to the Banco do Brasil by the Sindicato de Industria de Condutores Elétricos e Trefilação of the State of São Paulo.

[8] In another bilateral sector, that of trade between Chile and Uruguay, there have been suggestions, since the end of 1952, to complete sales of Chilean copper on the basis of payment in sterling instead of dollars.

Chapter XII

CHILEAN NITRATE ON THE BRAZILIAN MARKET

1. Introduction

An example of the size reached by the transfer to Latin America of a substantial proportion of nitrate exports is the growth of Chilean nitrate sales to Brazil, which have almost quadrupled in eight years. From an annual average of 18,598 tons in 1938–43, they increased to 71,050 in 1951 and approximately 80,000 in 1952, according to provisional data for this last year.

Sugar plantations take almost half (48.7 per cent in 1951 in round figures) of the agricultural consumption of nitrate in Brazil, followed, in order of importance, by coffee (16.2 per cent) and cotton (12 per cent). The nitrate consumed for the cultivation of other agricultural products is insignificant.

The amount of nitrate used, in itself a large tonnage, is however a minimum for the potential demand of agriculture in Brazil. This demand on the threshold of a complete reorganization of techniques, aims at reducing the disequilibrium between agricultural development and that of industry.[1] The figures in table 116 indicate the rate at which the potential demand for fertilizer is transformed into effective consumption.

TABLE 116. BRAZIL: APPARENT CONSUMPTION OF FERTILIZERS

(Thousands of tons)

	1948	*1949*	*1950*	*1951*[a]
Imports	99	127	237	383
Production (excluding additions in the form of mixtures from imported fertilizers)	40	40	60	40
Apparent consumption	139	167	297	423

SOURCE: Banco de Brasil, Rio de Janeiro.

[a] Provisional.

In Brazil, basic crops, whose problems of declining yields have traditionally been solved by migration to new areas, are now beginning to arouse interest in soil rehabilitation due to the impulse from official circles for the protection of agriculture. In the new atmosphere which is prevailing, the prospects for the future consumption of fertilizers appear very stable. It has been estimated that 600,100 tons of nitrate would have been equivalent to a minimum application to only 16.4 per cent of the land that was at that time under cultivation in 1949, or nine times the total 1951 consumption and little more than a third of the total annual Chilean nitrate production.

[1] According to data of the Conselho Nacional de Economia do Brasil, the rate of population growth for 1940–50 was 2.3 per cent, as compared to a 12 per cent increase in agricultural production, for the same period, resulting from an extension of the area cultivated. The area devoted to wheat cultivation increased 259 per cent between 1941 and 1951, whereas wheat production increased only 213 per cent. Although the average cotton yield in 1941 was 167 *arrobas* per *alqueire*, only 65 was registered for 1951.

Real consumption in Brazil since 1938 increased at a cumulative rate of 14 per cent annually. A conservative estimate of Brazilian nitrate consumption for the cultivation of sugar reveals that, in 1961, 134,000 tons will be required as compared with the 69,700 tons in 1951. This estimate took into consideration that sugar is the crop needing the greatest amount of nitrogen and that its producers are highly organized and in a good position to acquire nitrate. It was also based on the supposition not only of a 10 per cent annual increase in nitrate consumption by the sugar industry, but a 5 per cent increase for all other consumers, as well as no increases for industrial purposes. Therefore, the value of exports based on actual prices—approximately 5 million dollars at present—would be practically doubled within a decade.

The increased imports, production and distribution of fertilizers experienced in recent years in Brazil are partly a result of an increased demand for nitrogen. Phosphorus fertilizers have shown the greatest increase as a result of new and extensive phosphate deposits, otherwise scarce in South America. This increase has also been due to the organization of local milling of African phosphorus, which may be used without further treatment. Another reason is that superphosphate plants increased productive capacity tenfold, from 19,100 tons in 1949 to 200,000 in 1952.

It is not surprising that private enterprise has preferred to deal with such principal raw materials as apatite and phosphorus, since these have not only offered a larger profit but also fewer supply problems. The different fertilizers should be used together, thereby bringing about the closest approximation to the ideal ratio between nitrogen, phosphorus and potassium, three of the four basic elements. Contrary to this principle, in practice it has been found that during the last three years nitrogen has been used in insufficient quantities to maintain the ratio. However, the different price variations of phosphate and nitrogen fertilizers are the obvious cause of the more rapid increase in the supply of phosphate products for farmers. The price of sodium nitrate increased between 1946 and 1950 by 63 per cent, whereas 20 per cent superphosphate rose only by 25 per cent; 45 per cent superphosphate increased 16.7 per cent between 1948 and 1951, whereas potassium nitrate rose 23.9 per cent.

Due to the acidic nature of Brazilian soil, maximum use should be made of lime—the fourth basic element —so that a rational use of the available fertilizers can be made. It is precisely this aspect of soil improvement that constitutes one of the principal problems facing Brazil. Relatively small quantities of lime are used, because the limestone from which it is derived is also in great demand as a raw material for the cement industry. Owing to the highly profitable character of the cement industry, the rise in the price of lime has been double that of those fertilizers showing the high-

est price increase, 142.4 per cent between 1946 and 1951. It appears difficult for this weakness of agriculture in regard to lime supply to be solved other than through direct governmental measures; the scarcity of lime constitutes one of the principal problems in this field, requiring a greater effort than private enterprise is probably able to provide.

In the case of nitrogen the situation is different, since supplies from Chile have temporarily been adequate to satisfy the demand. However, to ensure additional tonnages to meet the heavy increases forecast for the demand, a number of industrial groups are planning to produce synthetic nitrogen from domestic raw materials.

A trade agreement between Brazil and Chile has until now prevented the construction of projected synthetic plants in Brazil. This has caused a position of *status quo*, which, if maintained and if the demand for nitrate continues to rise, will require a correlated increase in Brazilian exports to Chile. The only alternative to this would be the establishment of a means for liquidating balances multilaterally, to avoid inactive balances.[2]

Two formulas have been suggested for co-ordinating trade for the benefit of both countries, through increasing sales of nitrates.

The first proposes that the Sugar and Alcohol Institute of Rio de Janeiro should abandon its plans to produce anhydrous alcohol for synthetic rubber, using greater sugar-cane cultivation, and should devote this expansion to permanent sugar exports to Chile. In addition, the raw material for synthetic rubber, instead of being obtained from anhydrous alcohol, could be derived from the natural gas of the petroleum refinery at Cubatão. Such gases would not be used for the projected programme of producing synthetic nitrogen. According to this first formula, Chilean sugar imports, amounting to 200,000 tons annually, would be distributed between Peru, Cuba and Brazil.[3] The second formula suggests a change, through an *ad hoc* agreement, of the present treaty whereby Brazil refrains from establishing synthetic nitrate plants. The new agreement would guarantee to Chile a regular and fixed percentage of Brazilian nitrogenous imports. The success of these alternative formulas will necessarily exert a considerable influence upon the future of nitrate as a means of intra-Latin-American payments.

[2] The trade disequilibrium between Brazil and Chile, in which Chile has accumulated a favourable but inactive balance during the last two years, retards financial operations received for nitrate exports. The cotton and sugar purchases which Chile might have imported from Brazil to utilize such credit balances were difficult due to the high prices of these commodities: whereas sugar from Cuba and Peru in August 1952 was valued at 91.30 dollars per ton f.o.b., the price in Brazil was 166.70 dollars; for the same year, North American cotton classified as type 5 was worth 904.50 dollars a ton f.o.b., when the official price in Brazil was 1,186.70 dollars. The difference from international prices on these two markets for sugar and cotton was thus 82.6 and 31.2 per cent higher, respectively. At the same date, the price for nitrate imported by Brazil was 95 dollars c.i.f., amounting to an average of approximately 11 per cent higher than the prices quoted to other countries which normally liquidate payments upon delivery. In August 1952, this price was reduced to 85 dollars for all orders not less than 1,000 tons. The price of nitrate exported to Brazil is actually theoretical, inasmuch as in 1951 and 1952 the values from the total sales, amounting to substantial sums, remained frozen, frequently over the equivalent of 3 million dollars. Chile utilized this amount to stimulate, through various subsidies, imports of certain Brazilian merchandise to neutralize the difference in prices and thus permit the release of a portion of the inactive balance.

Another aspect of the problem, although still in the experimental stage, is the considerable importance which experts give to Chilean nitrate bioxide, whereby this product, derived from the raw material of nitrate, could be used for transforming Brazilian phosphates into solubles as a substitute for sulphur and which would also produce calcium nitro-phosphate as a by-product. Although the financial, economic and trade possibilities have not as yet been established this subject was considered at a meeting held by F.A.O. in Rio de Janeiro in 1951. Nitrate bioxide, it should be noted, could also be used to replace sulphuric acid in obtaining ammonia nitrate derived from distilled ammonia, thereby leading to a greater harmony of the traditionally opposing interests between natural and synthetic nitrates.

The preceding remarks summarizing the prospects of Chilean nitrate on the Brazilian market, as well as the obstacles presented by the present disequilibrium of trade between the two countries, have been based on data which will be reviewed below. Because it is necessary to explain the nitrate situation in terms of the obstacles to its expansion, it has been deemed indispensable to include certain technical aspects.

2. Brazilian nitrate imports and consumption

Nitrate is the principal source of nitrogenous supply in Brazil, where to remedy deficiencies in rural economy, proportionately, more stimulants and fertilizers are required than in countries of the tropical zone in which highly acidic soils abound.

The bulk of the nitrate demand comes from the States of São Paulo and Minas Gerais, particularly in São Paulo where cultivation of sugar, coffee, cotton, vegetables and to a smaller degree, certain other products absorb about 80 per cent of fertilizer imports. As may be seen in table 118, the percentage consump-

[3] Cuba reserved for Chile an annual quota of 60,000 tons of sugar in the 1952 treaty. In the same year Chile began the establishment of a new sugar-beet industry, designed to absorb the estimated 3.3 per cent annual growth of domestic sugar consumption.

TABLE 117. BRAZIL: IMPORTS OF FERTILIZERS

(Thousands of tons)

	Annual average 1938–43	*Annual average 1944–50*	*1950*	*1951*
Total nitrogenous products...	18.6	41.6	72.7	96.5
Chilean nitrate.....	16.5	40.9	62.0	71.0
Other.....	2.1	0.7	10.7	25.5
Phosphates.....	16.0	38.7	129.4	225.5
Potassium products.....	3.8	9.9	34.6	46.7
Mixtures and miscellaneous..	2.6	3.7	0.2	14.7
	41.0	93.9	236.9	383.4
Percentage of:				
Nitrogenous products.....	45.4	44.3	30.6	25.2
Nitrate to total nitrogenous products.....	88.9	98.3	85.3	73.5
Nitrate to total imported fertilizers.....	40.4	43.5	26.1	18.5
Phosphates.....	39.0	41.2	55.6	58.8
Potassium products.....	9.3	10.5	14.6	12.1
Mixtures and miscellaneous..	6.2	3.9	0.2	3.7

SOURCE: Serviço de Estatística Economica e Financeira do Ministerio da Fazenda, Rio de Janeiro, 1951.

tion in São Paulo and Minas Gerais, rather than increasing as a result of increased Brazilian nitrate imports, actually decreases owing to additional consumption by other regions where its use becomes generalized. Examples are the State of Rio Grande do Sul, where the use of nitrate consumption rose from 1,000 tons in 1940 to 3,605 in 1951, and in the northern states where consumption jumped from 800 tons to 21,126 in the same years.

TABLE 118. BRAZIL: AGRICULTURAL AND INDUSTRIAL USES FOR CHILEAN NITRATE

(Thousands of tons)

	Agriculture	*Industry*	*Total*	*Percentage consumption in the states of São Paulo, Rio de Janeiro and Minas Gerais*
1937–38....	5.0	2.7	7.8	79.0
1945–46....	31.0	10.2	41.2	75.0
1947–48....	30.0	15.6	45.6	73.5
1950–51....	57.9	11.8	69.7	—

SOURCE: Brazilian distributors.

Table 118 also illustrates the ratio between nitrate consumption by agriculture and industry, demonstrating that within the last two years industrial consumption declined. In 1950 a rayon mill using 4,000 tons of nitrate annually as a raw material for the nitric acid used in nitro-cellulose knitted wear, suspended its activities. Consumption was further decreased since nitrate was also used for transforming aluminium oxide (bauxite) into a sulphate aluminoid. The most important industrial use at present is to replace sodium carbonate as a raw material for sodium oxide used in glass manufacture. While both chemicals produce more or less equal amounts of sodium oxide and have similar effects upon the refractory material used in the ovens, the employment of nitrate compensates for the supply interruptions of soda ash caused by periodic shortages of the foreign exchange necessary to make payments to exporting countries.[4]

[4] It would appear that the efforts to produce soda ash and caustic soda in Brazil are to be fulfilled as a result of a 15-million-dollar loan granted by the International Bank for Reconstruction and Development for the construction of an alkali plant in Cabo Frio.

3. Nitrogen

In 1948–49, an average of 0.59 kg. of nitrogen per hectare were used in Brazil, compared with an average of 1.18 used in Latin America as a whole and 4.58 in Canada and the United States.[5] Brazilian consumption of nitrate for the same period—calculated on the basis of pure content—amounted to only 3.76 per cent of the total Chilean production of 277,000 tons. Inasmuch as the formula 1–3–1 represents the ratio between nitrogen, phosphorus and potassium as established for Brazil by FAO in the document already quoted earlier, it is considered, from both a theoretical and practical point of view, that in view of the acidic soil, typical of the zone, and because a considerable area is devoted to the production of carbohydrates, the tendency should be towards an increase in the use of nitrogen and potassium. The ultimate formula would not necessarily imply such a disparity between these two elements and phosphorus, although it is naturally recognized that certain soils and crops have special requirements. In practice, during the last three years, the use of fertilizers has followed an opposite trend to the formula, particularly as regards the insufficient use of nitrogen. An explanation of this phenomenon would be that the domestic production of phosphate fertilizers not only increased but was accompanied by a more favourable price for consumers than that of other fertilizers.[6]

Only through a long-term programme designed to solve the technical and financial aspects of the problem, will the wide gap between potential and actual consumption of nitrogen, depicted in table 119, be eliminated.

[5] FAO: *Supply of Fertilizer for Latin America*, 1951.

[6] Table 122 shows the price movement of fertilizers in Brazil from 1946 to 1951.

TABLE 119. BRAZIL: POTENTIAL MINIMUM REQUIREMENTS FOR NITRATE IN AGRICULTURE

	Arable area (in thousands of hectares)[a]	*Area to be covered*		*Minimum applications of nitrate per hectare (kgs.)*	*Consumption (in thousands of tons)*	
		Percentage	*Thousands of hectares*		*Potential*	*1951*
Cotton.....	2,497	30	750	150	112.5	7.2
Rice.....	1,758	10	175	100	17.5	0.5
Bananas.....	100	40	40	300	12.0	..
Potatoes.....	154	30	45	300	13.5	2.7
Cocoa.....	258	10	25	200	5.0	..
Coffee.....	2,537	20	500	300	150.0	10.0
Sugar cane.....	796	60	480	300	144.0	30.0
Coconuts.....	51	10	5	300	1.5	0.7
Beans.....	1,790	5	90	50	4.5	..
Tobacco.....	145	15	21	200	4.2	1.2
Oranges.....	80	40	30	400	12.0	3.9[b]
Tapioca.....	941	10	95	200	19.0	..
Maize.....	4,516	10	450	200	90.0	1.1
Tomatoes.....	12	30	3.5	300	1.0	..
Wheat.....	630	10	60	150	9.0	0.2
Vineyards.....	35	30	10	300	3.0	0.2
Miscellaneous....	709	2	14	100	1.4	0.2
TOTAL	17,009	16.4	2,793.5		600.1	57.9

SOURCE: Serviço de Estatística da Produção do Ministerio de Agricultura, Rio de Janeiro, 1949.

[a] Figures from the Production Statistical Service of the Ministry of Agriculture, Rio de Janeiro, 1949.

[b] Includes consumption for other fruit and garden vegetable produce.

As illustrated in table 119, if 16.4 per cent of the arable area in 1949 had been given a minimum dose of nitrate, at the low estimated level, consumption would have risen in that year to 600,100 tons. This would represent ten times the amount actually employed, and is equivalent to 38.6 per cent of total Chilean exports of sodium nitrate in 1949, which were almost 1.6 million tons.[7] It is evident that such a substantial increase in nitrogen consumption as would occur—supposing adequate applications of fertilizer—would adjust the rate between the increased amounts of lime, phosphorus and potassium employed, to a point more in accordance with basic soil deficiencies. This is particularly true in Brazil where it is well known that the plant capacity to absorb nitrogen from the organic matter of the soil itself is practically inexistent.

Estimates of probable future increases in nitrate consumption cannot be considered entirely reliable, being subject to many conditions or factors regarding the Brazilian market as well as the price relationship between the various types of fertilizers. But such estimates, as shown in table 120, for possible sales increases between 1951 and 1961, can be useful. Although consumption increased, due to the 14 per cent annual cumulative increment since 1938, the table indicates that increased nitrate consumption for sugar—which has maximum nitrogen requirements—will be 10 per cent annually by 1951–61. Regarding other crops, only 5 per cent increases are registered, and there was none for industry.

TABLE 120. BRAZIL: ESTIMATED GROWTH OF NITRATE CONSUMPTION

(Thousands of tons)

	Consumption 1951	*Estimated consumption 1961*	*Percentage increase*
Cultivation of sugar	30.0	77.0	47.0
Other crops	27.9	45.2	17.3
For industry	11.8	11.8	—
TOTAL	69.7	134.0	64.3

SOURCE: Brazilian distributors.

4. Synthetic nitrogen production

The project for producing synthetic nitrogen in Brazil presents a new and problematical aspect for future nitrate imports. Brazil has three small synthetic plants, but only one is devoted to agricultural requirements. Of the three, one, belonging to the Nitroquimica Brasileira, produces 100 tons annually for the production of chemical pulp. The second, belonging to Rhodia Brasileira, produces liquid ammonia for refrigeration based on 24 to 25 per cent ammonia. The third, at Volta Redonda, produces 3,000 tons annually of 25 per cent ammonium sulphate in liquid form for agricultural use, derived from coking by-products.

Various efforts have been made within the last ten years to establish new sources of synthetic nitrogen. The most important has been that of the National Petroleum Board, which in 1951 planned to build a plant to produce 375 short tons of ammonium nitrate and calcium carbonate daily—20.5 per cent pure nitrogen content—derived from the residual gases of the oil refinery to be constructed at Cubatão (São Paulo). Contracts had been drawn up for the purchase of the equipment in Germany, amounting to 8 million dollars, of which the first quota was to be paid in sugar upon the signing of the contract in July 1952. But this plan was abandoned *sine die* as a result of the ratification in 1952 of the economic co-operation agreement of 1947 between Chile and Brazil. In this agreement, Chile agreed to supply Brazil with the nitrate required in exchange for certain other reciprocal trade products. It was also agreed that Brazil—under a clause for three years, automatically renewable—would not establish plants for producing synthetic nitrogen, ammonia or nitric acid, except where the ammonia is a by-product and not designed as material for synthetic nitrogen production. Similar to another pact between Chile and Argentina, the agreement is valid—within the specified time limits only—so long as no other countries in South America establish synthetic nitrogen plants.[8]

The Sugar Institute has studied the possibilities of establishing mixing plants in Pernambuco and Santos to cause a price reduction for mixed fertilizers used by sugar-cane producers. In addition, it has considered a project for considerably increasing the present Brazilian anhydrous alcohol production, by means of reductions in the human consumption of *aguardiente*, estimated at 300 million litres annually. Half the surplus thus derived would be devoted to anhydrous alcohol production for mixing with gasoline—four parts gasoline to one of alcohol. Further, a second use for anhydrous alcohol, as the area of sugar cultivation increases, might be a substitute for butadiene and isoprene in the manufacture of Buna-S rubber, which, as the project gradually took shape, could probably be produced at a ratio of 24,000 tons of rubber for 84 million litres of alcohol, or a ratio of 3.5 litres per kilogramme. Based on these projects, the officials of the Sugar Institute, in 1952, were interested in reviewing the expansion programme for the sugar areas devoted to anhydrous alcohol production. They considered that this expansion, if devoted to the production of raw materials for synthetic rubber, in addition to diverting the utilization of sugar to other channels, would help maintain fixed-quota sugar exports, which, through reciprocal trade, would enable the country to arrange regular nitrate imports so much in demand by sugar producers. If this were to occur, Cubatão, rather than being a source of synthetic nitrogen, would supply the raw materials required for synthetic rubber. It must also be noted that this plan would benefit Brazilian agriculture in that the sodium contained in Chilean nitrate assists the plants to assimilate the potash in the soil, otherwise lost when synthetic nitrogen is used.

5. Phosphates

In contrast to the rest of South America, where phosphate fertilizer industries must face a continued dependence upon imports, since high-grade reserves

[7] World production of nitrogen in 1950—excluding the USSR—according to the *United Nations Statistical Yearbook* for 1951 was 3 million tons, pure content, of which 75 per cent was synthetic, 17 per cent derived from the by-products of coal and 7.4 per cent from Chilean nitrate. The latter figure refers to the gross production of 1.6 million tons in 1950, equivalent to 277,000 tons of pure nitrogen.

[8] If gases from Cubatão are not utilized for producing nitrogen, experts consider it possible that the gases could be used for manufacturing isoprene, which, in addition to benzol, is the raw material used in manufacturing synthetic rubber. Brazil has already planned such rubber factories owing to insufficient production of natural rubber.

of domestic phosphorus are not available, Brazil has vast deposits of igneous and sedimentary origin. One of the igneous deposits in the States of São Paulo and Minas Gerais has estimated reserves of 100 million tons of apatite. The sedimentary phosphorite seams discovered in the north are sufficient to satisfy not only domestic needs, but also exports as well, although this would be a long-term project. The apparent reserves of just one of these deposits—in Pernambuco —is estimated at 42 million tons. Similar to that of Africa, Brazilian phosphorus can be employed directly on acid soils without any treatment other than pulverization. Brazil has requested the technical collaboration of the United States Point Four programme in the complex problem of exploiting the Pernambuco seam without damage or alteration to a vast subterranean lake, located directly beneath the phosphorus deposit, which has traditionally served the local population and agricultural needs.

TABLE 121. BRAZIL: ESTIMATED PHOSPHORUS ORE RESERVES

(Millions of tons)

Trauira-Pirocaua and others (Maranhão)	15
Olinda (Pernambuco)	42
Monteiro (Paraibo)	2
Ipira (Bahía)	..
Araxá (Minas Gerais)	92
Ipanema (São Paulo)	1
Jucupiranga (São Paulo)	6
Serrote-Juquiá (São Paulo)	6
Anitápolis (Santa Catarina)	..
Fernando de Noronha	1
TOTAL	165

SOURCE: S. Fross Abreu, "O Problema do Fosfatos do Brasil," *Digesto Economico de São Paulo*, June 1952.

[a] Details unavailable.

According to 1951 data, Brazilian phosphates provide some 50 per cent of the raw materials used by domestic fertilizer plants. The remaining proportion consists of both domestic and imported bone meal and dried blood. The imported material is received, almost entirely, from the Comptoir des phosphates de Sfax, in Tunisia, and is pulverized by Brazilian plants in which the French company has capital.[9] Output capacity of super-phosphates rose from 87,000 tons in 1951 to 200,000 in 1952. But deliveries were retarded due to shortages of sulphur used in transforming it to a soluble. Thus, the actual production was 19,000 tons in 1949, 56,000 in 1950 and 87,000 in 1951.[10]

There are many different problems confronting a rational utilization of Brazilian phosphorus: the varied composition of the deposits, where in some cases aluminium, iron, barium are found, together with phosphorus ore or pure apatite. A further obstacle is the difficulty in transforming the ore into an element adequate for agricultural use; another is the shortage of sulphur; and finally, the problem of the cost of transporting phosphorus from the interior as a means of substituting domestic for imported material. It would appear that these problems can only be solved gradually and over the long term. As regards the possibilities of exports to other countries of South America, in connexion with the recent discoveries, experts have declared that no real forecasts can be made until the Pernambuco deposits have been fully investigated. Such export prospects are of general interest, especially in Chile and Uruguay.

6. Replacement of sulphuric for nitric acid obtained from original ore

In the treatment of natural phosphates, sulphuric acid has until now been the most generally accepted agent for transforming phosphoric acid into a soluble, thus rendering it useful as a fertilizer. However, when it became clear that world availability for sulphur, estimated in mid-1952 at a little under 6 million tons annually, would be below the demand, the consistent rise in price has presented severe obstacles to the industry using sulphur for treating phosphorite or apatite in the preparation of super-phosphates. The same problem has confronted the plants treating by-products of the distillation of petroleum or coal in the preparation of ammonia sulphate.

Thus, there have been efforts made in Brazil to replace sulphur[11] by using nitric acid as the principal agent. This would probably result in additional Brazilian-Chilean trade.

In Chile, several experiments have been carried out by the Sociedad Chilena de Fertilizantes—a government organization—to replace the sulphuric acid, used in producing super-phosphates, by nitric acid obtained from the mixing of the original ore with the iron sulphates found in the same area of the country. At the FAO meeting held in Rio in 1951, the results of these experiments were made known. It was demonstrated that, through combining sodium nitrate with anhydrate of aluminium sulphate, nitric bi-oxide gas is liberated, which when mixed with water and oxygen is converted into the nitric acid required to replace sulphur for transforming phosphates into solubles. The problem of transporting nitric bi-oxide over the long distance between Brazil and Chile would be simplified by shipping it in liquid form in metal containers.

Upon receipt, the liquid nitric bi-oxide—consisting of 30.4 per cent nitrogen—would be transformed into a superior acid than formerly employed for fixing synthetic ammonia, capable of producing 35 per cent ammonia nitrate as compared with the 21 per cent ammonia sulphate produced by sulphuric acid. In addition, nitric acid could also be used to treat phosphorous used for calcium nitro-phosphate fertilizer, which is similar to super-phosphate but with a 27 per cent content of phosphoric anhydrite and 10 per cent nitrogen, both soluble in water. The Chilean experiments demonstrated that the phosphorous and nitrogen salts could be avoided in the process simply by adding lime water thereby obtaining a phosphorous precipitate, bi-calcium phosphate—containing from 38 to 40 per cent phosphorous anhydrite. In addition, calcium nitrate is obtained which, when crystallized and solidified, provides an excellent fertilizer.

[9] According to data of the Second World Conference on Fertilizers, held in Rome in 1951, world consumption of milled phosphorus for 1950–51 was 5.6 million tons, as compared to 3.5 in 1939. Consumption of the principal South American countries individually, in thousands of tons, was:

Argentina	6.5	Chile	17.1
Brazil	30.0	Peru	24.0
Colombia	6.0		

[10] Certain Brazilian technical organizations have objected to the indiscriminate use of super-phosphates on acid soils. Serviço Nacional de Pesquizas Agronómicas, on page 18 of its bulletin No. 5 of 1949, summarized experiences in which hyper-phosphates gave better results.

[11] For the treatment of phosphoric rock, certain studies have been completed for utilizing the natural gases of Aratu for transforming apatite ore of Bahía into solubles.

Only through a study of the economic significance of these formulas for providing new uses for nitrate can an adequate appreciation be made of the part they may play in co-ordinating the Brazilian phosphorus industry. Nor is it possible, before such research takes place, that the traditional and opposing interests of natural and synthetic nitrates can be ultimately harmonized.[12]

7. The pre-eminent problem of lime

Due to the limited use of lime by Brazilian agriculture, the benefits accruing from fertilizers are substantially reduced. Because of the warm and humid climate of the country, particularly in the eastern food-producing areas, the intense rainfall—sometimes over 2 millimetres per minute—greatly exceeds the rate of evaporation. Therefore, as the land is cultivated and the soil subjected to leaching—the dissolving and draining-off by water—the mineral content of the soil is rapidly depleted. Once the top layer of organic material has been lost, the earth acquires a waterproof quality easily subject to erosion, giving rise to a migration of Brazilian farmers who, in the face of rapidly-declining yields, seek new and more fertile land. The rolling topography of the land is particularly subject to erosion and, in addition, the lack of cold winter months aggravates vegetable diseases, to which plant life deficient in calcium are particularly susceptible. Thus, the inherent acidity of a sub-soil composed of acidic matter is a result of the serious deficiency of calcium caused by the heavy rainfall. It produces a lack of calcium, in some cases so severe that in the eastern rain belt the soil analyses of arable land sometimes reveal no calcium carbonate whatsoever.[13]

[12] In some Chilean fertilizer plants, the nitrate is used under a thermal process to transfer the phosphorus of apatite to a soluble state by means of a calcination with sodium nitrate or sodium sulphate. The Institute of Technological Research in Santiago is preparing to experiment with the Jourdain process whereby caustic soda can be obtained from nitrates, leaving nitric acid as a by-product.

[13] *Bulletin No. 5*, page 9, published by the National Agricultural Research Service in 1949.

Throughout the Brazilian agricultural services, it is generally agreed that every effort must be made to prevent a further leaching of calcium and to restore the soil conditions necessary for the growth of micro-organisms, as well as to normalize the original permeability of the soil. An application of 100 to 300 kgs. a year of calcium carbonate ($CaCO_3$) per hectare, according to the soil conditions, has been recommended by experts in the field as the minimum dose required so that other fertilizers, in combination with the calcium, may raise the level of efficiency in terms of yields. An application of 100 kgs. of calcium per hectare to approximately 17 million hectares of cultivated land would require 1.7 million tons of calcium carbonate. According to a study of 1952, no more than 45,000 tons of calcium were sold in 1951, but it must also be noted, as shown in table 122, that, while the price of the fertilizers that varied the most only rose 63 per cent between 1946 and 1951, the price of calcium carbonate rose 142.4 per cent in the same period. This abnormal increase has been due in all probability to the demand for lime by the cement and construction industries which are at peak production and receive preferential treatment. Although all the States in Brazil have lime deposits, their working has not as yet attracted the private capital necessary to produce an agricultural calcium product. Indeed, the fertilizer factories have shown a marked preference for superphosphates although, according to experts, its use merely intensifies the acidic condition of the soil unless accompanied by calcium. Viewed in these terms, calcium deficiency would seem to be the principal problem facing Brazilian agricultural policy.

8. Fertilizer prices

The purchasing power of Brazilian agricultural products, subject to internal price movements, has increased at a higher rate than the price of fertilizers, which have been imported since 1947 at 18.72 cruzeiros per dollar, and previously at 16.50 since 1939. Thus, it is shown, in tables 124 and 125, that in São Paulo the price of fertilizers in sixteen years has increased 3.5 times, while agricultural prices rose from 5.4 to

TABLE 122. BRAZIL: SALES PRICES ON CREDIT OF NITRATE, OTHER FERTILIZERS AND CALCIUM CARBONATE

(Cruzeiros)

	1946	*1948*	*1949*	*1950*	*1951*	*Percentage increase since 1946*
Sodium nitrate.....	1,323	1,626	1,626	1,687	2,156	63.0[a]
Potassium nitrate.....	—	1,976	1,976	1,961	2,449	23.9
Ammonium sulphate...	2,600	2,200	2,500	2,890	2,960	13.8
Potassium chloride.....	2,000	2,400	2,800	2,800	2,800	40.0
Potassium sulphate.....	—	2,900	3,000	3,000	3,000	3.4[a]
20 per cent superphosphate.....	1,400	1,400	1,300	1,550	1,750	25.0
45 per cent superphosphate.....	—	3,000	3,000	3,000	3,500	16.7[a]
Hyper-phosphate.....	—	—	1,200	1,250	1,662	38.5[b]
Calcium carbonate ($CaCO_3$) with 43 per cent calcium oxide content	165	180	180	250	400	142.4

SOURCE: Sindicato das Industrias de Adubos e Colas, as well as private firms in São Paulo.

[a] Ratio between 1948–51.

[b] Ratio between 1949–51.

NOTE: The price of nitrate for sales of 1,000 tons or more during the second half of 1952 was 85 dollars per metric ton c.i.f. Brazil; the resulting price ex-dock in São Paulo was, therefore, 2,325 cruzeiros per metric ton.

TABLE 123. BRAZIL: PRICE OF IMPORTED FERTILIZERS

(Cruzeiros per ton)

	Cost price in importers' warehouse	*Expenses for storage commisssions, interest, insurance, advertising, etc.*	*Sale price to agricultural producer*	*Differential of importers' warehouse charges over cost (percentage)*	*Net profit (percentage)*
Normal super-phosphates..	1,030	226	1,500	46	23.7
Potassium chloride.....	1,838	387	2,730	52	27.5
Chilean nitrate.....	1,492	318	1,843	30	2.2[a]
Hyper-phosphate[b].....	1,055	231	1,355	28	6.5[a]
Ammonium sulphate.....	1,933	406	2,890	50	28.5

SOURCE: Sub-Divisão de Economia Rural, Secretaria de Agricultura, São Paulo.

[a] The distributors commission apparently is included, with reference to these two fertilizers, in the warehouse charges.

[b] Hyper-phosphate is subject to an additional unloading charge of 75 cruzeiros per ton.

TABLE 124. BRAZIL: RELATIONSHIP BETWEEN PRICES OF FERTILIZERS AND AGRICULTURAL PRODUCTS [a]

(1935 = 100)

	Fertilizers[b]	*Coffee*	*Cotton*	*Maize*	*Rice*	*Ground-nuts*	*Potatoes*
1935.....	100	100	100	100	100	100	100
1940.....	170	115	72	125	169	93	178
1945.....	259	..	132	403	434	256	361
1950.....	335	1,134	380	533	587	581	761
1951.....	355	1,202	542	643	721	503	643

SOURCE: Sub-Divisão de Economia Rural, Secretaria de Agricultura, São Paulo.

[a] Annual average quotations compiled by the São Paulo stock market.

[b] Prices based on the annual average quotation of the following fertilizers in Santos: ammonium sulphate, simple super-phosphates, potassium chloride and sodium nitrate.

12 times. In addition, where one ton of foodstuffs cost 9.8 *arrobas* of cotton in 1935 only 6.4 *arrobas* were required in 1951.

It is apparent that the encouragement to be derived from proportional increases in the value of agricultural crops would be greater if the high prices for fertilizers on the Brazilian market were lower. In table 123 it may be seen that the farmer suffers from a difference on the price in the importers' warehouse of between 28 to 52 per cent. Such a large difference for the farmer is explained by the inadequacy of credit facilities, by the high rate of interest on instalment purchases, which vary from 8 to 15 per cent, by the high costs of advertising and domestic freight rates and sometimes by the cost of uniting the fertilizers.[14]

[14] The railway tariff applied to a loaded boxcar, transported 500 kilometres, after deducting the 50 per cent discount granted to fertilizers, is subject to a 4 to 7.5 per cent surcharge over average fertilizer prices.

TABLE 125. BRAZIL: COMMODITIES REQUIRED TO BUY A TON OF FERTILIZER

Product	*Unit of measurement*	*1935*	*1951*
Cotton.....	Arrobas	9.8	6.4
Maize.....	Sack 60 kgs.	46.4	25.4
Rice.....	Sack 60 kgs.	19.8	9.8
Ground-nuts.....	Sack 25 kgs.	44.5	31.3
Potatoes.....	Sack 60 kgs.	23.2	12.8

SOURCE: Sub-Divisão de Economia Rural, Secretaria de Agricultura, São Paulo.

TABLE 1. INTER-LATIN-AMERICAN TRADE IN THE SOUTHERN ZONE: EXPORTS

(F.o.b. values; annual averages in thousands of dollars)

	To the zone			*Total*		
	1934–38	*1946–48*	*1949–51*	*1934–38*	*1946–48*	*1949–51*
Argentina	45,516	156,086	163,596	542,000	1,466,600	1,111,943
Bolivia	1,154	2,762	2,444	38,802	94,666	115,064
Brazil	21,352	130,192	120,091	304,001	1,013,166	1,657,065
Chile	4,356	34,212	38,731	139,000	280,230	326,317
Paraguay	2,028	10,271	12,353	7,820	25,473	31,026
Peru	11,113	50,134	47,322	79,400	156,000	200,206
Uruguay	9,157	8,910	13,919	69,150	22,560	227,424
ZONAL TOTAL	94,676	392,567	398,456	1,180,172	3,058,695	3,669,045

SOURCE: *Foreign Trade Yearbooks.*

TABLE 2. INTER-LATIN-AMERICAN TRADE IN THE SOUTHERN ZONE: IMPORTS

(C.i.f. values; annual averages in thousands of dollars)

	From the zone			*Total*		
	1934–38	*1946–48*	*1949–51*	*1934–38*	*1946–48*	*1949–51*
Argentina	33,930	141,790	169,291	376,361	1,163,358	1,254,200
Bolivia	6,285	24,672	18,892	24,191	59,948	56,952
Brazil	39,201	88,553	147,510	260,690	1,013,193	1,408,180
Chile	8,999	74,256	50,017	75,065	245,376	293,894
Paraguay	4,341	12,006	8,872	7,960	22,621	26,355
Peru	5,056	28,860	13,127	50,802	140,100	211,297
Uruguay	10,012	51,115	33,933	52,326	187,652	251,693
ZONAL TOTAL	107,824	421,252	441,642	847,395	2,832,248	3,502,571

SOURCE: *Foreign Trade Yearbooks.*

TABLE 3. ARGENTINA: EXPORTS

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

	Bolivia	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Zonal total*	*Grand total*
1934	1,064	18,119	1,911	3,575	1,714	2,595	28,978	475,000
1935	1,770	24,138	2,878	3,594	3,383	3,071	38,834	501,000
1936	2,626	33,736	3,273	3,535	4,068	2,663	49,901	537,000
1937	3,167	42,384	4,259	3,383	4,304	3,763	62,160	758,000
1938	3,018	30,741	4,295	3,580	3,545	2,529	47,708	438,000
Average 1934–38	*2,329*	*30,004*	*3,323*	*3,533*	*3,403*	*2,924*	*45,516*	*542,000*
1946	10,912	43,746	26,419	11,052	14,726	14,360	121,215	1,159,200
1947	10,425	72,761	42,087	11,436	17,865	24,686	179,260	1,611,800
1948	10,939	76,405	23,736	12,544	28,856	15,303	167,783	1,628,800
Average 1946–48	*10,758*	*64,304*	*30,747*	*11,677*	*20,482*	*18,116*	*156,086*	*1,466,600*
1949	6,734	113,727	17,229	7,773	12,206	3,143	160,812	1,043,500
1950	6,792	92,223	28,796	8,940	7,139	4,340	149,230	1,177,700
1951	6,760	116,868	30,054	8,388	16,468	2,209	180,747	1,114,629
Average 1949–51	*6,762*	*107,942*	*25,360*	*8,370*	*11,938*	*3,230*	*163,596*	*1,111,943*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 4. BOLIVIA: EXPORTS

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

	Argentina	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Zonal total*	*Grand total*
1934	375	96	68	—	23	14	576	56,211
1935	806	124	57	11	21	15	1,034	36,600
1936	963	221	123	—	31	111	1,449	37,300
1937	817	277	129	—	64	44	1,331	36,400
1938	646	548	89	—	85	13	1,381	27,500
Average 1934–38	*721*	*253*	*93*	*2*	*45*	*39*	*1,154*	*38,802*
1946	2,700	400	100	40	300	5	3,545	79,300
1947	1,770	329	168	40	340	1	2,648	86,000
1948	1,539	132	323	1	92	5	2,092	118,700
Average 1946–48	*2,003*	*287*	*197*	*27*	*244*	*3*	*2,762*	*94,666*
1949	1,545	143	211	—	37	8	1,944	100,300
1950	2,156	295	162	—	6	12	2,631	94,072
1951	1,301	982	247	—	212	17	2,759	150,819
Average 1949–51	*1,667*	*473*	*207*	—	*85*	*12*	*2,444*	*115,064*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 5. BRAZIL: EXPORTS

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

	Argentina	*Bolivia*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Zonal total*	*Grand total*
1934	13,450	44	794	90	6	8,596	22,980	284,000
1935	13,223	4	842	64	56	6,951	21,140	272,000
1936	13,065	14	810	36	22	6,328	20,275	320,000
1937	16,609	52	1,021	49	36	6,361	24,128	348,000
1938	13,388	51	515	52	29	4,206	18,241	296,000
Average 1934–38	*13,947*	*33*	*796*	*58*	*30*	*6,488*	*21,352*	*304,000*
1946	70,445	1,176	10,008	2,115	1,603	15,338	100,685	673,600
1947	108,301	1,383	11,826	4,137	1,306	19,282	146,235	1,231,700
1948	111,057	763	12,729	1,178	291	17,641	143,659	1,134,200
Average 1946–48	*96,601*	*1,107*	*11,521*	*2,577*	*1,067*	*17,420*	*130,192*	*1,013,166*
1949	83,774	240	9,340	1,806	382	15,668	111,210	2,115,900
1950	75,789	151	9,225	516	59	16,967	102,707	1,097,900
1951	116,907	1,648	6,198	264	4,678	16,662	146,357	1,757,396
Average 1949–51	*92,157*	*680*	*8,254*	*862*	*1,706*	*16,432*	*120,091*	*1,657,065*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 6. CHILE: EXPORTS

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

	Argentina	*Bolivia*	*Brazil*	*Paraguay*	*Peru*	*Uruguay*	*Zonal total*	*Grand total*
1934	1,723	497	534	5	1,572	141	4,472	95,000
1935	1,372	533	356	2	926	87	3,276	96,000
1936	2,083	609	480	2	1,044	167	4,385	113,000
1937	2,315	677	641	7	991	216	4,847	193,000
1938	2,079	792	661	4	1,030	236	4,802	139,000
Average 1934–38	*1,914*	*622*	*534*	*4*	*1,113*	*169*	*4,356*	*127,000*
1946	17,645	5,231	9,240	17	4,291	1,112	37,536	230,700
1947	21,665	2,321	7,638	17	3,564	1,761	36,966	280,100
1948	13,841	2,482	7,417	246	3,063	1,085	28,134	329,900
Average 1946–48	*17,717*	*3,344*	*8,099*	*126*	*3,698*	*1,319*	*34,212*	*280,230*
1949	11,112	2,593	12,165	514	1,885	649	28,918	308,300
1950	17,695	1,642	12,962	170	1,643	4,254	38,366	293,900
1951	25,368	2,299	13,349	24	2,848	5,022	48,910	376,752
Average 1949–51	*18,053*	*2,178*	*12,825*	*236*	*2,125*	*3,308*	*38,731*	*326,317*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 7. PARAGUAY: EXPORTS

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

	Argentina	*Bolivia*	*Brazil*	*Chile*	*Peru*	*Uruguay*	*Zonal total*	*Grand total*
1934	2,732	5	29	—	—	184	2,950	8,400
1935	2,029	—	6	2	—	178	2,215	8,500
1936	1,061	—	2	13	—	133	1,209	6,300
1937	1,779	—	5	—	—	162	1,946	8,400
1938	1,660	—	3	—	—	157	1,820	7,500
Average 1934–38	*1,852*	*1*	*9*	*3*	—	*163*	*2,028*	*7,820*
1946	7,085	7	31	4	4	2,083	9,224	26,754
1947	8,606	3	3	—	—	1,551	10,163	21,261
1948	9,290	—	13	6	—	2,116	11,425	28,185
Average 1946–48	*8,327*	*3*	*19*	*3*	*1*	*1,917*	*10,271*	*25,473*
1949	11,475	—	21	3	—	1,541	13,040	32,883
1950	10,405	—	244	16	—	3,148	13,013	29,124
1951	9,742	1	7	6	—	1,450	10,206	31,070
Average 1949–51	*10,541*	—	*124*	*7*	—	*2,046*	*12,353*	*31,026*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 8. PERU: EXPORTS

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

	Argentina	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Uruguay*	*Zonal total*	*Grand total*
1934	1,811	801	2,058	3,686	—	970	9,326	71,200
1935	2,803	696	1,413	4,040	—	1,051	10,003	75,400
1936	594	833	1,978	4,389	7	739	8,540	83,500
1937	4,742	1,225	779	5,648	—	466	12,860	92,100
1938	6,038	975	1,497	4,684	—	1,643	14,837	75,100
Average 1934–38	*3,198*	*906*	*1,545*	*4,489*	*1*	*974*	*11,113*	*79,400*
1946	4,535	6,265	1,321	29,189	—	8,995	50,305	151,300
1947	3,620	4,878	655	30,254	—	9,900	49,307	154,300
1948	6,688	6,072	386	30,785	—	6,861	50,792	162,400
Average 1946–48	*4,887*	*5,738*	*787*	*30,076*	—	*8,585*	*50,134*	*156,000*
1949	4,616	5,142	1,179	26,676	57	2,927	40,597	154,400
1950	9,454	6,264	531	28,339	5	5,449	50,042	193,700
1951	14,023	7,998	3,100	19,171	2	7,034	51,328	252,517
Average 1949–51	*9,364*	*6,468*	*1,603*	*24,729*	*21*	*5,137*	*47,322*	*200,206*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 9. URUGUAY: EXPORTS

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

	Argentina	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Zonal total*	*Grand total*
1934	4,069	—	3,667	2	108	—	7,846	56,355
1935	5,540	—	3,807	1	43	—	9,391	76,909
1936	8,011	—	2,235	97	46	4	10,393	72,206
1937	7,429	—	2,121	57	126	—	9,733	78,176
1938	5,933	—	2,237	35	182	43	8,430	62,103
Average 1934–38	*6,196*	—	*2,813*	*38*	*101*	*9*	*9,157*	*69,150*
1946	1,921	79	3,136	370	477	344	6,327	152,766
1947	3,213	13	2,012	109	165	196	5,708	162,502
1948	4,077	389	10,005	8	198	18	14,695	178,953
Average 1946–48	*3,070*	*160*	*5,051*	*162*	*281*	*186*	*8,910*	*22,560*
1949	7,623	303	13,741	18	252	147	22,084	191,660
1950	1,305	771	3,450	180	680	369	5,755	254,282
1951	2,360	—	7,017	—	—	—	9,377	236,330
Average 1949–51	*3,763*	*537*	*7,736*	*99*	*466*	*258*	*13,919*	*227,424*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 10. ARGENTINA: IMPORTS

(C.i.f. values in thousands of dollars)

	Bolivia	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Zonal total*	*Grand total*
1934	323	17,968	2,405	2,948	3,870	1,182	28,696	317,663
1935	403	19,593	2,072	2,410	6,130	2,388	32,996	333,342
1936	549	17,594	2,618	1,099	1,668	1,595	25,123	324,181
1937	527	24,325	2,943	1,965	9,441	1,714	40,915	479,455
1938	546	21,948	2,069	1,778	14,226	1,353	41,920	427,164
Average 1934–38	*470*	*20,286*	*2,421*	*2,040*	*7,067*	*1,646*	*33,930*	*376,361*
1946	2,522	85,244	8,323	6,053	5,548	3,279	110,968	588,130
1947	1,504	110,013	14,535	7,017	4,761	5,764	143,594	1,340,209
1948	1,514	131,448	13,120	8,074	7,821	8,831	170,807	1,561,737
Average 1946–48	*1,847*	*108,901*	*11,993*	*7,048*	*6,043*	*5,958*	*141,790*	*1,163,358*
1949	2,033	90,714	16,008	11,435	6,353	11,180	137,722	1,179,532
1950	3,200	92,000	28,000	13,800	7,200	2,000	146,200	964,200
1951	2,145	147,480	34,409	15,337	21,664	2,916	223,951	1,618,869
Average 1949–51	*2,459*	*110,065*	*26,139*	*13,524*	*11,739*	*5,365*	*169,291*	*1,254,200*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 11. BOLIVIA: IMPORTS

(C.i.f. values in thousands of dollars)

	Argentina	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Zonal total*	*Grand total*
1934	1,398	306	1,288	—	2,011	3	5,006	25,111
1935	2,117	365	870	—	1,714	23	5,089	27,309
1936	2,867	299	964	—	1,786	13	5,929	20,683
1937	2,833	287	850	—	3,439	15	7,424	25,881
1938	3,347	198	1,118	—	3,308	4	7,975	25,881
Average 1934–38	*2,512*	*291*	*1,018*	—	*2,452*	*12*	*6,285*	*24,191*
1946	11,975	2,322	4,920	8	7,151	80	26,456	51,552
1947	12,097	1,482	3,697	—	6,281	—	23,557	59,557
1948	11,151	2,026	3,775	—	7,048	—	24,000	68,736
Average 1946–48	*11,741*	*1,943*	*4,131*	*3*	*6,827*	*27*	*24,672*	*59,948*
1949	12,403	1,116	3,580	4	6,353	299	23,755	78,330
1950	9,864	1,155	2,947	9	6,042	697	20,714	55,843
1951	5,383	793	1,957	2	3,797	276	12,208	36,683
Average 1949–51	*9,217*	*1,021*	*2,828*	*5*	*5,397*	*424*	*18,892*	*56,952*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 12. BRAZIL: IMPORTS

(C.i.f. values in thousands of dollars)

	Argentina	*Bolivia*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Zonal total*	*Grand total*
1934	25,599	9	872	32	1,875	1,418	29,805	205,729
1935	29,125	9	736	7	1,603	1,256	32,736	224,800
1936	40,563	20	649	2	2,118	1,627	44,979	246,729
1937	45,829	13	1,136	5	1,063	816	48,862	330,565
1938	34,971	14	1,016	4	1,517	2,101	39,623	295,628
Average 1934–38	*35,217*	*13*	*882*	*10*	*1,635*	*1,444*	*39,201*	*260,690*
1946	52,731	121	11,101	9	1,633	3,225	68,820	673,586
1947	78,946	128	12,376	35	859	2,233	94,577	1,231,761
1948	80,884	121	10,950	62	569	9,677	102,263	1,134,233
Average 1946–48	*70,854*	*123*	*11,476*	*35*	*1,020*	*5,045*	*88,553*	*1,013,193*
1949	117,498	163	15,268	30	1,758	16,655	151,372	1,116,029
1950	109,786	105	15,256	9	569	8,195	133,920	1,097,941
1951	125,034	157	16,215	634	5,143	10,056	157,239	2,010,571
Average 1949–51	*117,439*	*142*	*15,580*	*224*	*2,490*	*11,635*	*147,510*	*1,408,180*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 13. CHILE: IMPORTS

(C.i.f. values in thousands of dollars)

	Argentina	*Bolivia*	*Brazil*	*Paraguay*	*Peru*	*Uruguay*	*Zonal total*	*Grand total*
1934	1,228	39	702	—	4,333	4	6,306	49,431
1935	1,930	18	780	2	4,509	5	7,244	62,699
1936	2,004	11	953	14	5,019	67	8,068	71,600
1937	3,805	29	898	—	7,176	38	11,946	88,561
1938	4,491	10	638	—	5,995	301	11,435	103,035
Average 1934–38	*2,692*	*21*	*794*	*3*	*5,406*	*83*	*8,999*	*75,065*
1946	28,724	178	11,338	16	31,759	384	72,399	196,929
1947	28,563	124	13,141	1	35,697	122	77,648	269,965
1948	25,857	254	10,997	24	35,563	25	72,720	269,233
Average 1946–48	*27,715*	*185*	*11,825*	*14*	*34,340*	*177*	*74,256*	*245,376*
1949	13,364	197	12,994	14	32,667	23	59,259	304,583
1950	13,437	160	11,274	170	17,976	124	43,141	247,958
1951	26,044	231	6,156	—	14,221	1,002	47,654	329,140
Average 1949–51	*17,615*	*196*	*10,141*	*61*	*21,621*	*383*	*50,017*	*293,894*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 14. PARAGUAY: IMPORTS

(C.i.f. values in thousands of dollars)

	Argentina	*Bolivia*	*Brazil*	*Chile*	*Peru*	*Uruguay*	*Zonal total*	*Grand total*
1934	4,318	—	99	6	—	119	4,542	7,700
1935	3,934	—	70	1,018	—	47	5,069	8,700
1936	3,886	—	40	2	8	50	3,986	6,500
1937	3,705	—	53	8	—	139	3,905	8,700
1938	3,935	—	58	4	—	200	4,197	8,200
Average 1934–38	*3,956*	—	*64*	*208*	*2*	*111*	*4,341*	*7,960*
1946	10,169	—	3,143	—	—	949	14,261	21,483
1947	7,664	—	3,280	—	—	556	11,500	22,033
1948	8,248	—	1,395	256	2	357	10,258	24,347
Average 1946–48	*8,694*	—	*2,606*	*85*	—	*621*	*12,006*	*22,621*
1949	6,273	6	2,028	187	31	468	8,993	28,433
1950	6,346	2	814	188	7	413	7,770	17,610
1951	8,541	6	508	8	6	782	9,851	33,023
Average 1949–51	*7,053*	*5*	*1,117*	*128*	*15*	*554*	*8,872*	*26,355*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 15. PERU: IMPORTS

(C.i.f. values in thousands of dollars)

	Argentina	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Uruguay*	*Zonal total*	*Grand total*
1934	1,847	11	27	1,811	—	1	3,697	39,936
1935	3,360	13	73	1,126	—	—	4,572	44,144
1936	4,323	9	102	1,236	—	4	5,674	50,386
1937	4,874	8	103	1,243	—	42	6,270	60,048
1938	3,636	7	61	1,195	—	169	5,068	59,498
Average 1934–38	*3,608*	*10*	*73*	*1,322*	—	*43*	*5,056*	*50,802*
1946	17,084	256	1,840	6,254	35	331	25,800	119,900
1947	17,816	462	1,137	4,751	72	229	24,467	132,700
1948	29,567	157	1,183	5,354	—	49	36,310	167,700
Average 1946–48	*21,489*	*292*	*1,387*	*5,453*	*36*	*203*	*28,860*	*140,100*
1949	7,928	23	344	2,666	17	65	11,043	167,097
1950	6,874	15	78	2,270	15	369	9,621	187,599
1951	11,215	259	3,410	3,588	—	247	18,719	279,196
Average 1949–51	*8,672*	*99*	*1,277*	*2,841*	*11*	*227*	*13,127*	*211,297*

SOURCE: *Foreign Trade Yearbooks.*

TABLE 20. QUANTUM OF LUMBER EXPORTS IN THE SOUTHERN ZONE

(Annual averages in metric tons)

	Argentine	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Total*
				A. Exports to the southern zone				
1934–38....	10,289	12	144,426	20,048	52,600	—	—	227,375
1946–48....	6,006	4,899	489,759	41,220	194,070	—	—	735,954
1949–51....	6,006[e]	5,844[a]	379,512	74,469[d]	197,990	—	—	663,821
1946–50....	6,006[e]	5,135[b]	429,950	54,520	203,436	—	—	699,047
1946–51....	6,006[e]	5,135[b]	434,635	54,520[c]	196,030	—	—	696,326
				B. Total exports				
1934–38....	103,261	28	210,602	26,437	52,600	4,568	—	397,496
1946–48....	17,370	4,899	620,169	48,910	195,103	4,246	—	890,697
1949–51....	17,370[e]	5,844[a]	619,498	96,213[d]	198,990	5,789	—	943,704
1946–50....	17,370[e]	5,135[b]	584,449	67,831	204,456	4,349	—	883,590
1946–51....	17,370[e]	5,135[b]	619,834	67,831[c]	197,047	5,017	—	912,234

SOURCE: *Foreign Trade Yearbooks.*

[a] Year 1949. [b] Average 1946–49. [c] Average 1946–50. [d] Average 1949–50. [e] Average 1946–48.

TABLE 21. VALUE OF LUMBER IMPORTS IN THE SOUTHERN ZONE

(Annual averages, in thousands of dollars)

	Argentina	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Total*
				A. Imports from the southern zone				
1934–38.....	3,392	95	—	1	—	150	772	4,410
1946–48.....	43,566	254	4	—	—	570	5,101	49,495
1949–51.....	42,967	132	—	—	—	228[a]	5,972[d]	49,299
1946–50.....	42,570	223[b]	2	—	—	485[b]	5,449	48,729
1946–51.....	43,266	223[b]	2	—	—	485[b]	5,449[c]	49,425
				B. Total imports				
1934–38.....	9,649	311	159	248	—	1,390	1,476	13,233
1946–48.....	50,965	926	103	242	—	2,499	5,968	60,703
1949–51.....	66,082	716[a]	229[d]	374	—	2,250[d]	6,849	76,500
1946–50.....	54,722	873[b]	153	260	—	2,399	6,547	64,954
1946–51.....	58,524	873[b]	153[c]	370	—	2,399[c]	6,409	68,728

SOURCE: *Foreign Trade Yearbooks.*

[a] Year 1949. [b] Average 1946–49. [c] Average 1946–50. [d] Average 1949–50.

TABLE 22. QUANTUM OF LUMBER IMPORTS IN THE SOUTHERN ZONE

(Annual averages, in metric tons)

	Argentina	*Bolivia*	*Brazil*	*Chile*	*Paraguay*	*Peru*	*Uruguay*	*Total*
				A. Imports from the southern zone				
1934–38..	208,390	3,759	—	8	—	12,554	46,691	271,402
1946–48..	627,382	4,018	602	1	—	14,554	91,891	738,448
1949–51..	630,009	2,768[a]	452	1	—	6,072[a]	95,280	734,582
1946–50..	618,824	3,705[b]	452	1	—	12,434[b]	93,227	728,643
1946–51..	628,695	3,705[b]	452	1	—	12,434[b]	93,227[c]	738,514
				B. Total imports				
1934–38..	433,667	15,357	933	7,342	—	94,685	74,941	626,925
1946–48..	701,479	16,741	1,515	2,594	—	55,828	102,521	880,678
1949–51..	832,012	15,246[a]	367	2,821	—	45,705	109,106	1,005,257
1946–50..	732,950	16,368[b]	1,228[c]	2,417	—	50,720	105,156	908,839
1946–51..	766,746	16,368[b]	1,228[c]	2,707	—	50,767	105,156[c]	942,972

SOURCE: *Foreign Trade Yearbooks.*

[a] Year 1949. [b] Average 1946–49. [c] Average 1946–50. [d] Average 1949–50.

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(53E2)

Printed in U. S. A.
700—March 1954—2950

Price: $U.S. 1.50; 11/- stg.; Sw. Fr. 6.00
(or equivalent in other currencies)

United Nations publication
Sales No.: 1953.II.G.4