

Part Two
ECONOMIC DEVELOPMENT OF SELECTED LATIN-AMERICAN
COUNTRIES

CHAPTER VI

ECONOMIC DEVELOPMENT OF ARGENTINA

I. Introduction

I. Nothing shows more clearly the broad lines of the economic development of Argentina than the simple curves of Chart 1. This chart covers two distinct periods divided by the world crisis of the 1930's. First, the period of the outward growth of Argentine economy, under the influence of the powerful forces of the world economy. Second, the present period of inward growth, when, in view of the weakening of those external forces, the country seeks within its own economy the impulse necessary for its development.

During the first period, which began in the second half of the last century, Argentina was closely tied to the world economic system. The rapid extension of the railways made accessible vast areas of fertile land, where large numbers of immigrants developed agriculture and increased exports with great rapidity. The country developed swiftly, its production increasing at a higher rate than the population. The population, in its turn, was able to absorb increasing imports, scarcely affected by the occasional devaluation of the currency, or tariffs, carefully devised so that international trade should not be prejudiced.

However, this rate of growth was not maintained throughout the years without interruption. It tended to slow down before the world crisis. New land could not be brought under cultivation to the same extent as before, nor did European demand continue to expand at its earlier rate. Other stimuli were needed to compensate for the insufficiency of the external forces promoting the development of the country.

Argentina had probably reached that stage in the development of primary producer countries in which the extension of technological progress, as was explained in the first section of this survey, imposes new forms of economic activity. In any case, the great changes brought by the world crisis certainly gave a decisive impetus to these new activities. During the 1930's, exports showed a declining trend for the first time. The terms of trade became extremely unfavourable, while the population continued to increase, though at a slower rate. In addition to all this, foreign investments decreased considerably. The problem of development therefore bore a very different aspect, which became clearer as the events of the 1930's

Table 1

ARGENTINA. INDICES OF ECONOMIC ACTIVITY

Year	Population (in thousands of inhabitants)	Net cumulative immigration	Length of railway track laid (in kilometres)	Index of quantum of exports (1937 = 100)	Total area under cereals and forage crops (in thousands of hectares)
1875	2,162	364.4	..	..	340.0
1876	..	381.8	..	..	..
1877	..	399.8	..	..	..
1878	..	427.9	..	..	..
1879	..	459.4	..	..	..
1880	..	480.6	2,516	..	..
1881	..	505.8	..	..	..
1882	..	548.6	..	..	..
1883	..	602.3	..	..	..
1884	..	665.6	..	..	..
1885	..	759.8	..	..	..
1886	..	839.0	..	..	..
1887	..	946.2	..	..	..
1888	..	1,085.0	..	..	..
1889	..	1,305.2	..	..	..
1890	..	1,335.6	9,432	..	..
1891	..	1,305.8	..	..	..
1892	..	1,335.2	..	..	..
1893	..	1,370.8	..	..	..
1894	..	1,410.1	..	..	..
1895	..	1,454.3	..	..	..
1896	..	1,543.6	..	..	..
1897	..	1,591.3	..	..	..
1898	..	1,632.9	..	..	..
1899	..	1,681.8	..	..	..
1900	4,607	1,732.2	16,563	27	5,957
1901	4,741	1,778.0	16,907	32	6,840
1902	4,872	1,794.6	17,377	30	7,203
1903	4,976	1,832.5	18,404	41	8,604
1904	5,104	1,927.0	19,428	47	10,168
1905	5,290	2,065.8	19,794	51	10,878
1906	5,524	2,264.2	20,560	44	12,525
1907	5,822	2,384.1	22,126	45	13,473
1908	6,046	2,560.2	23,741	57	15,017
1909	6,331	2,700.8	24,781	54	15,957
1910	6,586	2,903.2	27,994	48	15,650
1911	6,914	3,012.8	30,059	43	17,258
1912	7,148	3,218.9	31,461	63	18,708
1913	7,482	3,364.3	32,494	65	19,823
1914	7,949	3,303.3	33,510	49	20,705
1915	8,148	3,237.8	33,710	62	20,977
1916	8,354	3,190.9	33,821	54	21,112
1917	8,561	3,158.6	33,841	39	20,314
1918	8,775	3,149.3	33,841	56	21,771
1919	8,990	3,151.5	33,884	66	21,239
1920	9,220	3,186.5	33,884	64	21,782
1921	9,451	3,246.0	33,907	60	20,905
1922	9,681	3,334.2	34,024	73	20,023
1923	9,928	3,490.2	34,054	76	20,883
1924	10,174	3,605.8	34,220	94	22,076
1925	10,429	3,681.1	34,468	75	21,169
1926	10,691	3,771.6	34,623	84	22,461
1927	10,954	3,883.4	36,649	112	22,538
1928	11,231	3,969.6	36,986	104	23,149

Table 1 (continued)

Year	Population (in thousands of inhabitants)	Net cumulative immigration	Length of railway track laid (in kilometres)	Index of quantum of exports (1937 = 100)	Total area under cereals and forage crops (in thousands of hectares)
1929	11,510	4,058.9	37,583	104	25,207
1930	11,804	4,132.3	38,634	72	25,182
1931	12,098	4,148.1	39,191	100	26,547
1932	12,400	4,151.3	39,645	92	24,587
1933	12,710	4,155.7	40,101	88	25,071
1934	13,028	4,161.0	40,191	90	25,818
1935	13,354	4,182.1	40,587	95	26,622
1936	13,688	4,209.3	40,914	84	24,465
1937	14,093	4,253.2	41,215	100	26,634
1938	14,298	4,293.5	41,480	66	26,232
1939	14,686	4,299.6	..	83	26,624
1940	14,865	4,314.0	..	69	25,577
1941	14,985	4,331.0	42,889	63	26,766
1942	15,102	4,350.3	..	61	25,167
1943	15,318	4,357.0	..	63	24,439
1944	15,554	4,361.4	..	69	25,426
1945	15,787	4,364.5	..	69	24,138
1946	16,029	4,368.2	..	73	23,435
1947	16,108	4,414.3	43,666	79.4	24,431
1948	16,506	..	..	..	..
1949	16,696	..	..	..	..

Source: United Nations Economic Commission for Latin America.

Notes: The population figures for 1937 to 1947 are based on data in *Síntesis Estadística*; for the preceding years they were adjusted according to the growth of population between the 1914 and 1947 census.

The net number of migrants was calculated from data of the *Síntesis Estadística*, *Anuario de la Sociedad Rural*, 1928 and the *Anuario del Comercio Exterior de la República Argentina*, 1943-44.

The length of railway track was calculated from the *Anuario de la Sociedad Rural*, 1928. *La Economía Argentina*, by Emilio Llorens and Rafael García Mata, and from the *Economic Survey of Latin America*, 1948, United Nations Economic Commission for Latin America.

showed the difference between basic changes and those which were merely temporary and incidental.

The external dynamic impulse having slackened during those years, it was no longer feasible to continue to receive new immigrants; in fact, the spontaneous economic development was not able to absorb the natural growth of the active population. The traditional policy of free immigration gave way therefore to restrictive controls. At the same time, the import coefficient was readjusted and the composition of imports altered in order to develop domestic industry and so reinvigorate the vital impulse of the economy.¹

Industry prospered, expanded and acquired strength and this was achieved with the domestic savings of the country, since during those difficult times foreign investments were at a very low level.

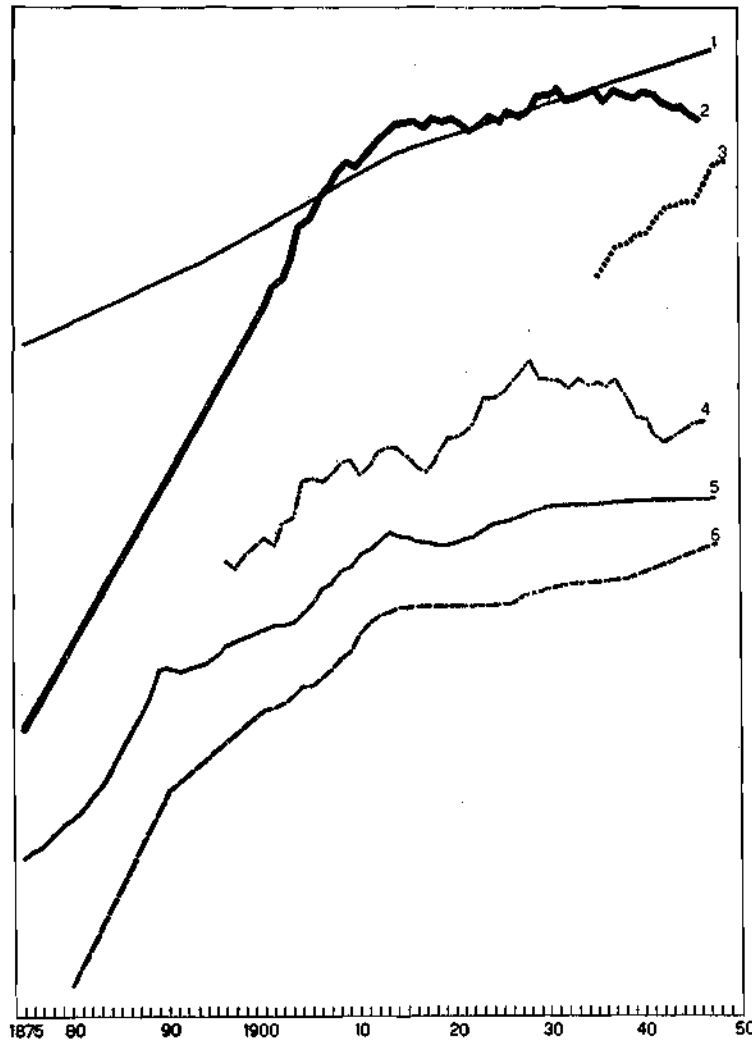
¹ The theoretical explanation of these phenomena of economic growth was given in part I of the present survey, and hence we need not enlarge upon this point here.

Chart 1

ARGENTINA:
 QUANTUM OF EXPORTS AND IMPORTS, TERMS OF TRADE AND CAPACITY TO
 IMPORT

1937 = 100

Semi-logarithmic scale



1. Population.
2. Total area under cereal and forage crops.
3. Index of quantum of industrial production.
4. Index of quantum of exports.
5. Net cumulative immigration.
6. Length of railway track laid.

Source: United Nations Economic Commission for Latin America.

The period of outward growth, however, had profoundly influenced ideas. The new attitudes gave rise to antagonism and opposition which, if they still persist in theory, are being removed in practice by the irresistible demands of facts.

One of these demands led to the introduction of foreign exchange controls. Employed first as a temporary measure, these controls became an instrument of economic policy with the object of strengthening the protection of industry and of guiding Argentine foreign trade through the unaccustomed channels of bilateralism.

2. During these vast changes in Argentine economy the industrial progress was already evident at the end of the 1930's. The Second World War was to put the new structure to a severe test. It passed this test well and the country realized how great was its advance since the world depression, in its determination to become less vulnerable to external fluctuations and uncertainties. At the same time, however, the events of these years revealed the weak points of the system. Critical situations arose as regards fuel, transport, iron, machinery and spare parts, chemical products, and other essential commodities, which would have become extremely serious had not a beginning been made in the very early days of the emergency to build up an Argentine merchant marine.

The emergency once over, it was natural that the need of further efforts to strengthen the economy should be recognized. There was at this time a boom in foreign trade and evident prosperity in internal activities: an atmosphere propitious to conceive and carry out plans, to revive old projects and formulate new and more ambitious schemes.

The large monetary reserves which accumulated during the preceding years of low imports and which continued to accumulate owing to exceptionally large exports, encouraged the intention to speed up industrialization of the country in order to meet its enormous potential capacity to consume and raise the standard of living. In order to do this every possible measure was taken: protection, easy credit, a large measure of State participation and facilities for heavy imports of capital goods. These and many other imports which reflected the pent-up demand of the war years, did not prevent the repatriation of the foreign debt; this had been begun before the war for the purpose of eliminating another of the vulnerable factors which the economic crisis of the 1930's had revealed in the Argentine economy. After the war this was possible on a larger scale at the same time that large balances of blocked sterling made it possible to realize the old Argentine ambition to own its railway system.

The remarkable contrast between the present situation in Argentina and those fairly recent years, despite the characteristics peculiar to Argentina, recurs in many other Latin-American countries which are also subject to violent fluctuations of an external origin in their balances of payments. The events of the war and post-war years had, in fact, hidden the funda-

mental problem of growth which had emerged during the 1930's. The more a country develops, the greater is its tendency towards disequilibrium in its balance of payments, if its internal development is not accompanied by a proportional increase of its capacity to export, as explained in the first part of this survey.

This is the basic problem of disequilibrium facing Argentina today, aggravated by certain incidental factors which will be considered later. Hence it should not occasion surprise that now, as in those years, measures have had to be taken to compress the import coefficient and further alter the composition of imports, while at the same time an effort is made to increase exports in accordance with an evident condition existing in these countries: exports must be increased, so that more capital goods and other commodities that are essential to economic development can be bought.

While these objectives are still in the stage of the process of being attained, capital formation was bound to decline. In any case, after such progress in achievement, ideas, and ambitions, a pause was necessary in order to review and consolidate what had been accomplished, and to determine which branches of economic activity had progressed perhaps too rapidly and in which others the impulse had not been sufficient.

There is much to be done in a country in the process of growth and such a pause affords time to strike a balance between the vast requirements of investment and consumption, and the limited resources with which they are to be satisfied.

Circumstances have thus imposed a selective process, in which agriculture is receiving particular attention. Industrialization seems to have assumed such proportions during the last few years that agriculture has not been able, by means of an adequate mechanization, to compensate for the attractions offered to workers by industry. For these and other reasons, agricultural production has declined, and Argentina has not been able to export as much as would have been possible in circumstances more favourable to this activity. Industrialization requires growing exports, and the Government has declared its intention to foster agriculture by means of higher prices and facilities for the importation of essential machinery.

After many years of reduced imports, the requirements of farm machinery are, in fact, very great. The same applies to transport equipment, which has been subject to considerable wear and tear for many years and which requires considerable investment if, in addition to improving the services, large savings of fuel are to be effected. Considerable investment is also necessary to increase the production of petroleum which has suffered from lack of equipment; the same is true of hydro-electric power. All this is particularly important in a country which imports a large part of the power it consumes. To this must be added the investment necessary for essential industries such as the paper and chemical industries and the large amounts required for the establishment of an iron and steel

industry. These investments add up to an amount which, in view of the limited available resources, will probably have to be spread over a period of years in order to satisfy all the requirements and ambitions. This spread over a period of years presupposes a system of priorities in which, at least in the cases in which economic outweigh other considerations, it would not be surprising if preference were given to those investments which permit the greatest saving of foreign currency in relation to the amount of the investment, since the more carefully foreign currency is husbanded, the more funds will be released for the import of capital goods.

3. Owing to the lack of recent statistical data, we cannot see the problems clearly nor form an opinion on the sound basis of facts. However, so far as investment is concerned, Argentina had reached a stage in which it could dispense with foreign investments, if not entirely, then at least to a sufficient extent not to make them essential to further economic development. Real *per capita* income in Argentina is high and its population has not increased as much as that of other Latin-American countries. Although Argentina is essentially an exporter of agricultural products, the proportion of the gainfully-employed population engaged in agriculture is relatively low. Furthermore, in spite of recent decreases, exports *per capita* continue to be among the highest of Latin America. The problem of investment in Argentina is therefore approaching that of the more highly developed countries. Moreover, as mentioned before, the industrial accomplishments of the 1930's were made possible largely by means of domestic savings, derived from non-inflationary sources. At present, with the level of employment much higher than at that time, industry having absorbed a large number of persons formerly in low productivity occupations, Argentina's real income would probably make it possible to form a sufficient volume of savings to satisfy the country's current investments requirements. This will be true all the more if labour productivity can be raised and if the propensity to consume does not prevail too soon over the need for investment.

Whatever methods circumstances may indicate to ease the present pressure on the balance of payments, the idea of doing without foreign loans is based on fundamental facts quite distinct from temporary considerations.²

² While this was being written, the United States Export-Import Bank announced the granting of a loan of 125 million dollars to Argentine banks, guaranteed by the Central Bank, for the payment of arrears on imports from the United States and other debts. The liquidation of these arrears required the payment of excessive sums and has now been eased by the extension of the term for 14 years. This is the second loan granted by this bank to Argentina. The first was granted in 1940, for 60 million dollars, to which was added an advance of 50 million dollars from the Treasury of the United States in order to relieve the pressure on the balance of payments at that time. As a result of the subsequent increase of exports, it was not necessary to draw on these credits. It should be mentioned that Argentina had recourse to them shortly after having repatriated 142 million dollars of the foreign debt, which reveals the extreme fluctuations of its balance of payments. The present credit also came shortly after the repatriation of public debts and foreign investments in Argentina equivalent to 293 million dollars in freely convertible currencies.

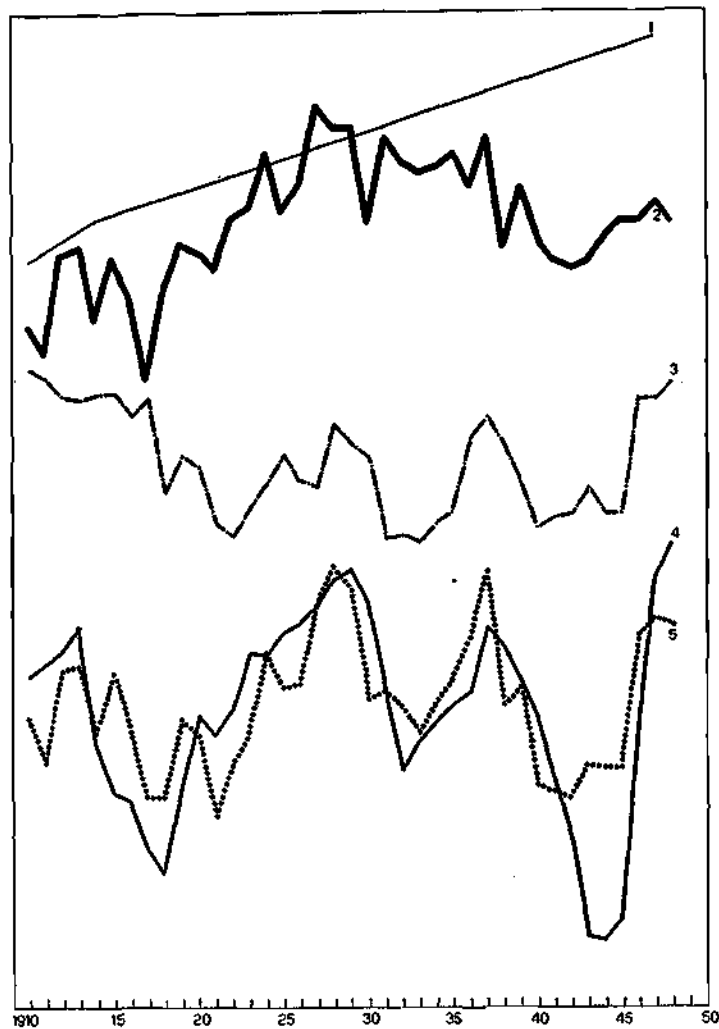
Chart 2

ARGENTINA

QUANTUM OF EXPORTS AND IMPORTS, TERMS OF TRADE AND CAPACITY TO IMPORT

1937 = 100

Semi-logarithmic scale



1. Population.
2. Quantum of exports.
3. Terms of trade.
4. Quantum of imports.
5. Capacity to import.

Source: United Nations Economic Commission for Latin America.

Everything depends on the rate at which the economic development is to proceed. Should Argentina wish to remedy all its deficiencies of capital speedily and push ahead all its plans by increasing investment to a very high level, its own resources would certainly prove insufficient. However, even if it could obtain large amounts of foreign capital, the question would arise how far investment can be forced without interfering with an orderly development of the economy and to what extent the higher financial commitments could be met without too great a strain on the future balance of payments.

Argentina is therefore faced with very interesting problems of development which must be examined in order to see its present difficulties in their perspective. In fact, the Argentine experience proves that difficulties of this nature are not incompatible with constructive action. During the serious crisis of the seventies of the last century, the cultivation of wheat was begun under tariff protection since the country could not continue to buy wheat abroad. Another serious crisis, that of the 1890's, gave rise to the first steps towards industrialization. The First World War witnessed the birth of new industries, which developed most vigorously during the great depression and the following war. The country's vast potential resources and the determination to use them effectively have always made it possible to overcome even the most serious obstacles.

II. Rate of economic development and its problems

1. CHARACTERISTICS OF ARGENTINE DEVELOPMENT

The two periods of Argentine economic development mentioned at the beginning of the present chapter are most markedly reflected in the movements of foreign trade: a sharp increase of the quantum of exports and imports before the great depression, followed by a steady decline in both; this decline continued from the 1930's until the present day with all the fluctuations peculiar to an economy which, despite its internal strengthening, continues to be subject to external pressures.

In the course of these variations the quantum of exports has during the last few years regained part of the considerable ground lost, first during the depression and afterwards during the Second World War. This can be seen in Chart 2. The quantum of exports reached its highest post-war level in 1947, but even so it was still 17.3 per cent below the 1925-1929 average.⁸ Subsequently exports again declined.

The resumption of the upward trend during the post-war years affected imports more strongly than exports, owing to the pent-up demand of the war years. Consequently, the fact that the peak levels reached by imports in 1947 and 1948, the last year for which statistics are available, surpassed

⁸ All the comparisons made in this and the following chapters relate to the annual averages of the periods compared.

Table 2

ARGENTINA. QUANTUM OF EXPORTS AND IMPORTS, TERMS OF TRADE, AND CAPACITY TO IMPORT

(Index numbers: 1937 = 100)

Year	Population (in thousands of inhabitants)	Quantum of exports	Quantum of imports	Export prices	Import prices	Terms of trade	Capacity to import
1910....	6,586	48	81.9	79.8	67.5	118.2	56.7
1911....	6,914	43	85.5	78.4	69.1	113.4	48.8
1912....	7,148	63	89.7	78.2	72.7	107.6	67.8
1913....	7,482	65	98.2	78.6	73.7	106.6	69.3
1914....	7,949	49	63.4	80.8	74.3	108.7	53.3
1915....	8,148	62	52.9	92.4	84.3	109.6	68.0
1916....	8,354	54	50.7	104.4	105.3	99.1	53.5
1917....	8,561	39	42.9	138.7	129.4	107.2	41.8
1918....	8,775	56	38.6	140.7	189.1	74.4	41.7
1919....	8,990	66	53.5	153.6	178.9	85.8	56.6
1920....	9,220	64	70.2	160.5	194.3	82.6	52.9
1921....	9,451	59	65.4	111.9	167.3	66.9	39.1
1922....	9,681	75	72.5	88.7	138.8	63.9	47.9
1923....	9,928	76	89.3	99.9	141.9	70.4	53.5
1924....	10,174	94	88.6	105.8	136.4	77.6	72.9
1925....	10,429	75	96.7	113.9	132.3	86.1	64.6
1926....	10,691	84	101.2	92.7	118.6	78.2	65.7
1927....	10,954	112	108.3	88.7	115.4	76.9	86.1
1928....	11,231	104	119.6	99.7	102.1	97.6	101.5
1929....	11,510	104	125.0	90.2	100.6	89.7	93.3
1930....	11,804	72	109.6	83.9	98.4	85.3	61.4
1931....	12,098	100	75.6	63.0	99.7	63.2	63.2
1932....	12,400	92	57.6	60.5	93.2	64.9	59.7
1933....	12,710	88	65.0	55.1	88.6	62.2	54.7
1934....	13,028	90	69.2	69.1	102.9	67.2	60.5
1935....	13,354	95	73.6	71.5	102.4	69.8	66.3
1936....	13,688	84	77.6	85.2	92.4	92.2	77.4
1937....	14,093	100	100.0	100.0	100.0	100.0	100.0
1938....	14,298	66	92.4	91.8	101.5	90.4	59.7
1939....	14,686	83	81.4	82.0	105.5	77.7	64.5
1940....	14,865	69	69.9	89.6	137.6	65.1	44.9
1941....	14,985	63	55.9	100.6	146.5	68.7	43.3
1942....	15,102	61	44.8	126.9	183.4	69.2	42.2
1943....	15,318	63	30.7	150.6	197.1	76.4	48.1
1944....	15,554	69	30.2	148.0	214.2	69.1	47.7
1945....	15,787	69	32.7	156.7	226.6	69.2	47.7
1946....	16,029	73	68.3	235.5	219.2	107.4	78.4
1947....	16,108	79.4	122.1	299.9	280.9	106.8	84.8
1948....	16,506	71.5	140.4	335.4	289.2	116.0	82.9

Source: United Nations Economic Commission for Latin America.

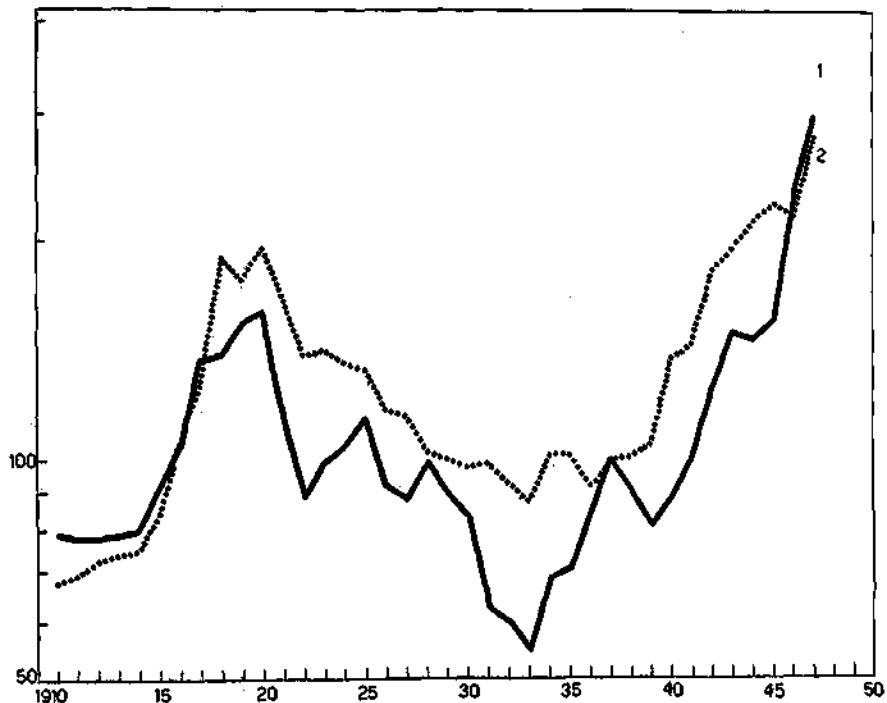
Note: The quantum indices of exports and imports from 1910 to 1924 were taken directly from the Foreign Trade Yearbooks. From 1925 to 1948 they were computed from basic data from the Foreign Trade Yearbooks, the *Sintesis Estadística Mensual* and *The Review of the River Plate*.

The indices of export and import prices were computed from basic data from the Foreign Trade Yearbooks.

In every case the terms of trade are the quotient between export and import prices.

In every case capacity to import is the product of the quantum of exports multiplied by the figure for the terms of trade.

Chart 3
ARGENTINA
INDICES OF EXPORT AND IMPORT PRICES
1937 = 100
Semi-logarithmic scale



1. Index of export prices.
2. Index of import prices.

Source: United Nations Economic Commission for Latin America.

those of 1925-29 for the first time does not prove that the tendency of imports to decline is ended. The index certainly seems to have fallen since then but it is too soon to make any conclusions concerning the direction that will probably be taken by the international forces which determine the demand for Argentine products.

This contrast between the period which precedes and that which follows the great depression, like the uncertainty of recent tendencies, is not peculiar only to the economy of Argentina. Both also occur in the development of the other Latin-American countries covered by this survey, as they are manifestations of international events of a general character. In each country studied the fundamental problem of development appears in similar terms: the increase of employment and real income have created a growing demand for imports of capital and consumer goods; this growing demand is the cause of the persistent tendency towards disequilibrium in the balance of payments, since the capacity to import has not increased at the same rate as the demand for imports. On the contrary, the decrease in the quantum of exports to which reference has been made earlier and the deterioration of the terms of trade have tended to reduce the existing capacity to import.

As pointed out in the introduction, this problem of balance of payments disequilibrium has reappeared in Argentina, as in other countries, in terms similar to those of the 1930's. These countries are, therefore, faced with the same necessity of altering the composition of their imports and of adjusting their total in relation to real income so that real income can continue to rise without thereby perpetuating the disequilibrium in the balance of payments.

Yet, though the need is general, the way in which the problem manifests itself varies from country to country according to the country's resources, its investment requirements and the nature of its foreign trade. In other words, these countries are all subject to a common denominator of development in relation to the conditions peculiar to world economy, but in each case there is a different situation which cannot be appraised correctly by means of broad generalizations.

Thus, while the other countries of Latin America, hampered by their dwindling capacity to import, endeavoured to develop their agricultural production in order to restrict (or at least not to increase excessively) their food imports, Argentina followed a different course. The problem there is not one of imports but of exports: the fact that exports declined enabled domestic consumption to increase more than production, so much so that this increase of consumption, after having first been a consequence of decreasing exports has, in some cases, become a determining factor. On the other hand, Argentina has no accessible source of iron and coal and hence has not been able to develop an iron and steel industry as other Latin-American countries have done. Some of the latter, though they must

import foodstuffs and will probably continue to do so, have been able to reduce imports of iron and steel and will presumably be able to reduce them still further.

We shall not dwell here on the question of changes in the composition of imports for this topic will be dealt with later. A few of the specific traits of the problem can be mentioned here, the better to understand the peculiarities of the economic development of each country.

The balance of payments disequilibrium which Argentina is trying to remedy by altering the composition of imports and compressing the import coefficient, is attended by another factor which first arose during the 1930's and has recently reappeared, perhaps more clearly than in the other countries. There is not only an insufficient volume of exports with which to pay for imports, but also a lack of proportion between what is exported to various countries and what is imported from them. This is an old problem of Argentine foreign trade which is illustrated in Chart 4 which shows exports to Europe and the United States in relation to total exports as well as imports from those areas in relation to total imports. The corresponding table shows the percentage distribution according to areas of Argentine foreign trade since 1927.

In 1927-29, before the great depression, Argentina sent 82 per cent of its exports to Europe and purchased scarcely 58 per cent of its imports from that continent. In this way it obtained a foreign exchange surplus which, in addition to covering financial services, enabled it to purchase from non-European sources much more than it sold to them. Thus, while 9 per cent of Argentine exports went to the United States, the Argentine purchased 25 per cent of its imports in that country. The situation for the rest of the Western Hemisphere was similar, though the figures were lower; Argentina sent 7 per cent of its exports and obtained 11 per cent of its imports from that area.

Those were the times of unrestricted multilateral trade, when it could never have occurred to anybody in Argentina to divert part of the imports from the United States to Europe when those from the United States were better suited to Argentine requirements. Yet that was what almost all of the Latin-American countries had to do under the compulsion of the great depression. It was probably more remarkable in Argentina because of the disproportion in the balance of trade which has just been noted and the endeavour of the great European countries importing Argentine products to bring it to an end.

The agreements which reflected this shift established a system which was frankly discriminatory and it is surprising that its effects on the volume of trade have been so moderate. Even though bilateral equilibrium was far from having been obtained during the 1930's, at least there was a mitigation of the disequilibrium. After all, during those years Europe still had reserves and dollar receipts with which to satisfy multilateral clearing arrangements.

Table 3

ARGENTINA. DISTRIBUTION OF FOREIGN TRADE

(Percentages)

Year	United States		Europe		Western Hemisphere (excluding United States)	
	Exports	Imports	Exports	Imports	Exports	Imports
1927.....	8.3	25.4	82.6	57.2	6.6	11.9
1928.....	8.3	23.2	83.8	60.5	6.5	10.7
1929.....	9.8	26.3	81.5	56.9	7.3	11.7
1930.....	9.7	22.1	80.1	60.8	8.5	12.7
1931.....	6.0	15.8	87.2	63.2	5.7	18.9
1932.....	3.4	13.5	91.6	63.0	3.8	15.2
1933.....	7.8	11.9	82.2	65.1	7.2	14.3
1934.....	5.5	13.2	85.0	64.7	8.3	13.0
1935.....	12.0	13.6	76.0	61.9	9.2	14.0
1936.....	12.2	14.4	73.6	62.1	11.5	13.3
1937.....	12.8	16.1	74.0	62.3	11.2	12.6
1938.....	8.5	17.5	76.6	59.8	11.7	14.3
1939.....	12.0	16.4	76.3	60.3	9.3	16.1
1940.....	17.7	30.0	65.0	38.1	13.3	22.0
1941.....	37.0	35.2	41.3	27.6	16.6	26.7
1942.....	28.5	31.2	44.6	31.0	21.2	30.8
1943.....	24.3	19.0	43.1	37.5	24.5	36.4
1944.....	22.7	15.1	49.0	22.5	25.4	51.8
1945.....	22.2	13.8	46.9	30.2	27.5	37.2
1946.....	15.0	28.5	62.3	35.0	16.1	30.8
1947 ^a	10.0	44.6	77.0	35.5	12.3	19.3
1948 ^a	9.8	38.0	78.5	40.6	11.0	20.7
1949 ^a	10.8	14.8	69.0	60.0	20.0	20.0

Sources: Until 1946, Dirección Nacional de Estadística y Censos.

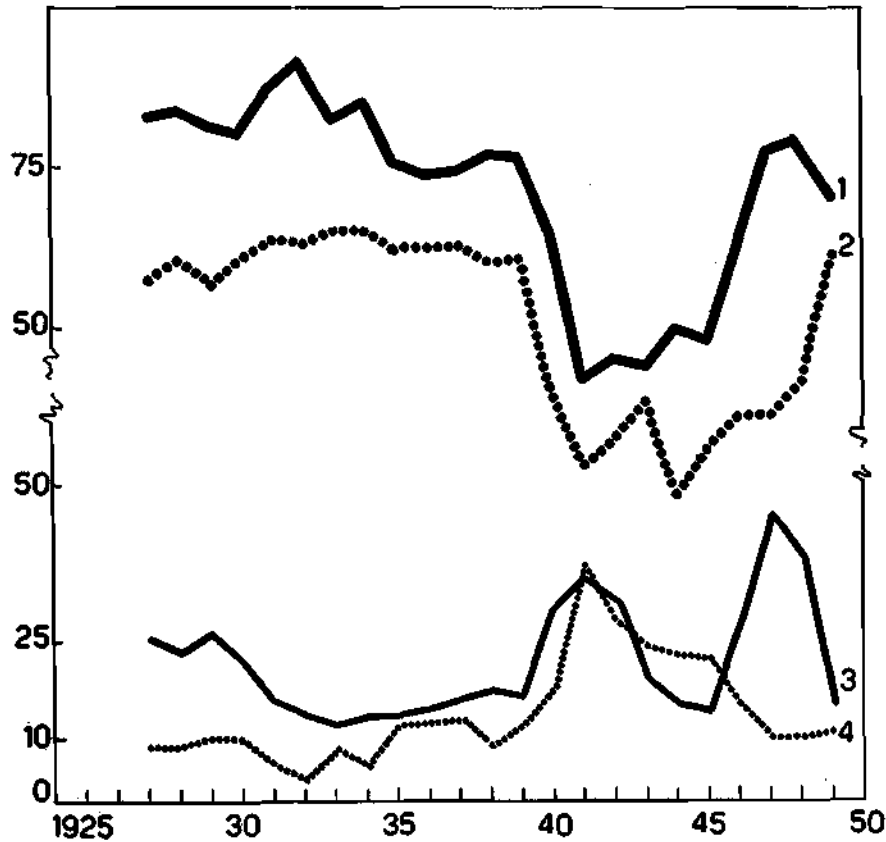
^a 1947 to 1948: Banco Central de la República Argentina. 1949: estimate based on partial data contained in the Presidential Message to Congress of 1 May 1950.

This situation has not, of course, prevailed during recent years. As soon as the United States was able to export in unlimited quantities a considerable disequilibrium again arose which soon led to consequences too well known to need further comment. It is sufficient to recall that these consequences necessitated measures similar to those of the 1930's, though even more severe, with a view to effecting the essential adjustments. The results of these measures were evident in 1949 and probably became still more so during the course of 1950 in view of the way in which the general problem of the dollar shortage has affected Argentina. Thus, in 1949 the volume of imports from Europe had nearly reached their depression level, while exports to Europe had decreased. But exports to the United States had returned to their former level while imports from it had dropped considerably. At the same time, trade between the other countries of America and Argentina increased notably.

Chart 4

ARGENTINA

SHARE OF EUROPE AND OF THE UNITED STATES IN ARGENTINA'S FOREIGN TRADE



1. Exports to Europe, percentages of total value exported.
2. Imports from Europe, percentages of total value imported.
3. Imports from the United States, percentages of total value imported.
4. Exports to the United States, percentages of total value exported.

Source: United Nations Economic Commission for Latin America.

However, the problem is by no means solved, since a solution of this kind aggravates the effects of the disparity between the demand for higher imports for the purposes of economic development, and the diminishing capacity to import. Imports from one country are not easily replaced by those from others. Furthermore, under the system of water-tight compartments, which once again dominates trade as it did in the 1930's. Argentina, in order to continue exporting, has to buy consumer goods

which it could well produce itself or dispense with, in order to acquire capital goods and other essential commodities in exchange. Multilateral trade would offer this amongst other advantages; but the position of Argentina today and a few years ago is clear proof that a country cannot of itself choose the most advantageous trade policy.

This situation is also significant so far as foreign investments are concerned. While Argentina cannot effect any appreciable increase in its exports to the United States or find a permanent source of dollars anywhere else in the world, the possibility of large dollar investments to speed up its economic development is limited by bilateralism.⁴

Still, Argentina seems to have reached a point in its economic development where the need for more capital is not so acute as in other countries at an earlier stage of development. The need for more capital is determined by three factors: first, the growth of the population; second, the diversion of under-employed labour from less productive occupations with relatively small capital into more productive occupations which require a greater amount of capital per man; and finally, the increase of capital per man in order to raise productivity.

As regards the first factor, Argentina's population, which had increased at an annual cumulative rate of 3.0 per cent between the census of 1869 and that of 1895, and by 3.7 per cent between the latter census and that of 1914, only rose 2.2 per cent between the 1914 census and the 1947 census. From this point of view, therefore, the need for capital is less than formerly.

The change which has occurred in the second factor is even more pronounced. As yet no detailed figures have been published of the last census, but it is believed in Argentina that the numbers gainfully employed in activities with a low level of productivity are relatively small owing to the absorption of a large part of such labour by the process of industrialization and the simultaneous expansion of other activities. It is estimated that of the increase of 600,000 persons which took place in industrial employment between 1937 and 1947, only a small number was accounted for by the natural growth of the population in the industrial zones. The remainder consisted of women and of persons from rural zones or small towns who were absorbed by industry. Immigrants also account for a part of the increase.

During those years agriculture contributed and continues to contribute a part of the labour force for the development of industry and other activities. Accordingly there is no real surplus of labour in agriculture; on the contrary, there is a shortage of manpower and efforts are now being made to remedy the situation by means of mechanization. It is difficult

⁴ See the remarks in the introduction to the present chapter concerning the role of foreign investments.

to say whether a high degree of mechanization of agriculture would release more labour. However that may be, in Argentina the proportion of labour employed in primary activities is relatively low, to judge by the sharp decline in the rural as compared with the urban population. According to the 1914 census, 52.7 per cent of the population lived in the country or in towns of fewer than 2,000 inhabitants, while in 1947, the proportion living in such areas was 38.6 per cent. Hence a high level of urbanization has been reached. In the United States the population living in the country or in towns of fewer than 2,500 inhabitants was 65 per cent of the total in 1890 and 43.5 in 1940. In the latter year, 68.8 per cent of the population of Brazil was rural; in Mexico, the corresponding figure was 64.9 per cent and in Canada in 1941, 45.7 per cent was rural.⁵

Accordingly in Argentina the problem of transferring active population from primary activities with a low productivity to others with a higher productivity and more capital per man is not very great. For the same reason one of the conditions which gave rise to the need for increased investment is also of less importance than in other Latin-American countries.

Finally, though there are no statistical data to confirm this, it is believed that production technique has progressed efficiently in Argentina and that though there is still a wide margin for improvement in comparison with the highly-developed countries, this margin is smaller than in the case of other Latin-American countries. This, too, means lower investment requirements than in the other countries, even though those of Argentina are still high. If immigration were stepped up greatly, the problem of investment would, of course, appear in a new form.

These are, among others which cannot be dealt with in this summary, the principal traits which characterize the problem of economic development in Argentina, apart from the denominator which it has in common with the majority of the Latin-American countries. These characteristics having been indicated, we can now consider the rate of development, in which, as in other countries, industrial growth has predominated.

2. DEVELOPMENT OF PRODUCTION AND SUPPLY OF GOODS

In Argentina there are no annual data for industrial production before 1935, so that this analysis of development of production must start in that year, though some estimates for previous years will be commented on later.

Between 1935 and 1948, the last year for which official data have been published, the growth of production has been somewhat more than double that of the population. While the latter increased by 23.6 per cent, the

⁵ United Nations, *Demographic Yearbook, 1948*.

index of total production rose 53.9 per cent. This sharp increase was due principally to the growth of manufacturing production as can be seen in Chart 5 and the corresponding Table 4, which include the main producing activities. The index of production shows an increase of 103.0 per cent in the period considered, though the rate of development was irregular as can be seen from the chart.

In 1935, manufacturing production was almost equal in value to that of agricultural production, but in 1948 it was nearly double, if both are calculated at constant prices. The chart offers a ready explanation for this. Agricultural production was nearly the same in 1948 as in 1935, having reached higher levels in the intervening years. Actually, the typically fluctuating agricultural series showed a slightly upward trend until the middle 1940's, but the figures for the last few years are again relatively low owing to the smaller area under cereals. The production of the livestock industry, on the other hand, was 42.5 per cent higher in 1948 than in 1935; its growth has also been irregular, since the index rose until 1943 and then remained practically stationary until 1948. In the case of the building industry, the index rose more steeply in the post-war years. After the strong impulse in the second half of the 1930's, this index fell until 1943 on account of the scarcity of materials during the war; after this, it rose sharply as a result especially of the large public works projects. Between 1935 and 1948 this index shows an increase of 71.4 per cent.

Finally, the production index includes mining, which, though it is a relatively unimportant part of total production, is significant in that it con-

Table 4

ARGENTINA. QUANTUM OF PRODUCTION
(Values at 1935 prices, in millions of pesos)

Year	Agriculture	Livestock	Mining	Manufacturing	Building	Total
1935.....	1,230	800	102	1,251	175	3,557
1936.....	1,000	890	112	1,400	192	3,589
1937.....	1,120	920	126	1,540	220	3,919
1938.....	940	890	133	1,610	257	3,833
1939.....	1,190	1,000	149	1,680	235	4,260
1940.....	1,130	970	170	1,730	229	4,230
1941.....	1,400	1,100	181	1,930	242	4,846
1942.....	1,310	1,200	194	2,130	220	5,049
1943.....	1,110	1,210	201	2,330	222	5,072
1944.....	1,450	1,130	207	2,410	272	5,462
1945.....	1,020	1,140	208	2,306	262	4,936
1946.....	1,095	1,140	191	2,322	275	5,023
1947 ^a	1,210	1,195	198	2,505	305	5,413
1948 ^a	1,235	1,140	200	2,540	300	5,475

Sources: *La Renta Nacional de la República Argentina*, Banco Central, 1946; *Síntesis Estadística Mensual de la República Argentina*, July, 1949; *Memorias of the Central Bank*, 1946, 1947 and 1948.

^a Recalculated from the indices published in the *Memorias of the Central Bank*.

sists mainly of the production of petroleum; chiefly on account of higher petroleum production, the mining index rose 96.1 per cent during the years stated.

The relative movements of the curves in Chart 5 and the absolute data in the corresponding Table 4 show that industrial growth was an important factor in the increase of production. It is actually due to industry that, despite the interruption in the development of agricultural production, the amount of goods available to the public has increased more than the population so that in 1948, 73 per cent more goods were available *per capita* for consumption and investment than in 1935 (see Chart 6).

Production and the supply of goods are not, of course, approximately equivalent magnitudes in countries where foreign trade represents a large share of economic activity. Part of the goods is exported and so helps to

Table 5 A

ARGENTINA. SUPPLY OF GOODS AND ITS COMPOSITION
(Values at 1935 prices, in millions of pesos)

Year	Production	Exports	Imports	Total supply of goods	Imports as per cent of the supply of goods
1925	2,814	1,238	1,540	3,116	49.4
1926	2,684	1,387	1,616	2,913	55.5
1927	3,032	1,850	1,728	2,910	59.4
1928	3,566	1,718	1,909	3,757	50.8
1929	3,494	1,718	1,995	3,771	52.9
1930	2,852	1,189	1,750	3,413	51.3
1931	2,899	1,652	1,207	2,454	49.2
1932	3,235	1,519	920	2,636	34.9
1933	2,951	1,453	1,037	2,535	40.9
1934	3,552	1,486	1,104	3,170	34.8
1935	3,557	1,569	1,175	3,163	37.1
1936	3,589	1,387	1,238	3,440	36.0
1937	3,919	1,652	1,597	3,864	41.3
1938	3,833	1,091	1,475	4,217	34.9
1939	4,260	1,392	1,299	4,187	31.0
1940	4,230	1,139	1,116	4,207	26.5
1941	4,846	1,040	892	4,698	19.0
1942	5,049	1,007	712	4,754	14.9
1943	5,072	1,040	490	4,522	10.8
1944	5,462	1,139	482	4,805	10.0
1945	4,936	1,139	522	4,319	12.1
1946	5,023	1,205	1,090	4,908	22.2
1947	5,413	1,312	1,950	6,051	32.2
1948	5,475	1,181	2,242	6,536	34.3

Source: United Nations Economic Commission for Latin America.

Notes: As from 1935, the net production series at constant prices published by the Central Bank was used.

For 1925-34, the gross production series of the *Revista de Economía Argentina* was used but it was converted to the net value by deflating the series by the cost of living index (1935 = 100) and it was adjusted to the series published by the Central Bank according to the average of the relationship in the period 1935-37 (years common in both series).

pay for imports, but there is no constant relation between exports and imports. On the contrary, the terms of trade vary considerably, which largely explains why, when these terms deteriorate, fewer imports can be purchased with the same amount of exports and the supply of goods is lower than production, while the opposite occurs when the terms of trade improve.

After this explanation, let us return to our subject. It has been said above that the *per capita* supply of goods increased considerably between 1935 and 1948, largely on account of the growth of industry. This fact, however, could lead to mistaken conclusions concerning the rate of economic growth during the last twenty-five years (which is the period we are dealing with), for it must not be forgotten that 1935 saw the beginning of the recovery which followed the world depression, so that during these years the indices of economic activity of all the Latin-American countries regained much of the ground lost during the crisis. In order to examine this development in better perspective, the indices of production and the supply of goods will be studied as from 1925.⁶ Both indices are superimposed during the period 1925-29, which is taken as a base; the curve representing the growth of population has also been drawn on the same base.

These indices show that after the decline of the depression several years elapsed before they reached levels approaching those attained before the crisis and until the relation existing between them and production was re-established.

Consequently, if production and the supply of goods increased much more than population after 1935, it must be remembered that during the depression they had declined while the population continued to grow. This

Table 5 B

ARGENTINA. SUPPLY OF GOODS AND ITS COMPOSITION

(Values at 1935 prices, in millions of pesos)

	Yearly averages			Percentage change compared with 1925-29	
	1925-29	1945-48	1948	1945-48	1948
Production	3,118	5,212	5,475	67.2	75.6
Exports	1,582	1,209	1,181	-23.6	-25.4
Imports	1,758	1,556	2,468	-11.5	40.4
Supply of goods	3,294	5,559	6,762	68.8	105.3
Imports as per cent of the supply of goods.....	53.6	25.2	34.3	-53.0	-36.0

Note: For sources and notes see Table 5-A.

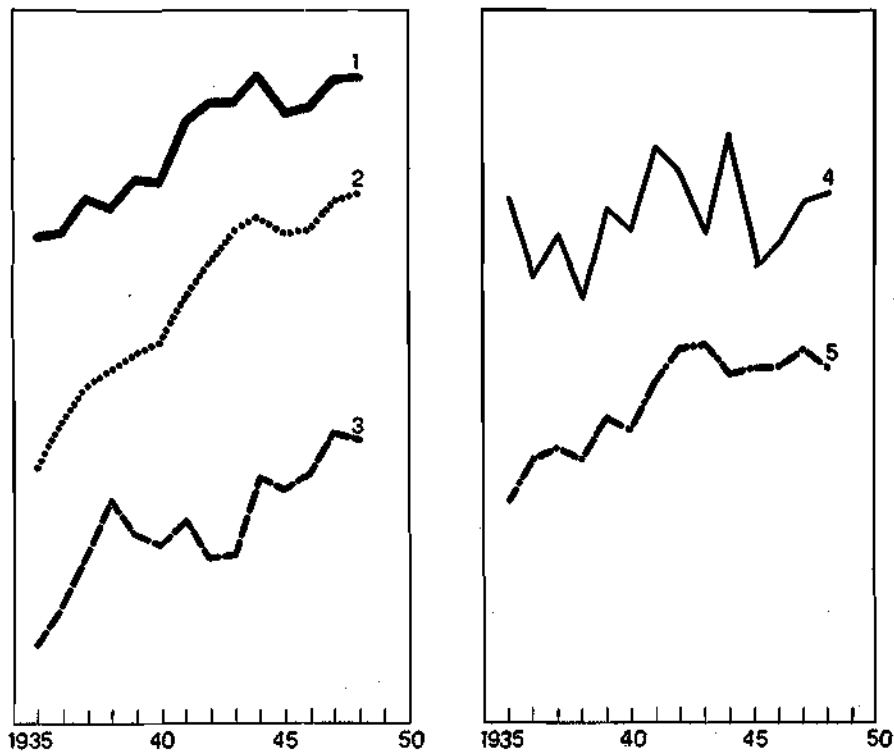
⁶ The index of total production between 1925 and 1935 was calculated from the figures of Bunge, in which the data for industrial production are rough estimates. From 1935 on, official figures were used.

Chart 5

ARGENTINA

PRODUCTION (TOTAL AND COMPONENTS)

Semi-logarithmic scale



1. Total production.
2. Industrial production.
3. Building.
4. Agricultural production.
5. Livestock production.

Source: United Nations Economic Commission for Latin America.

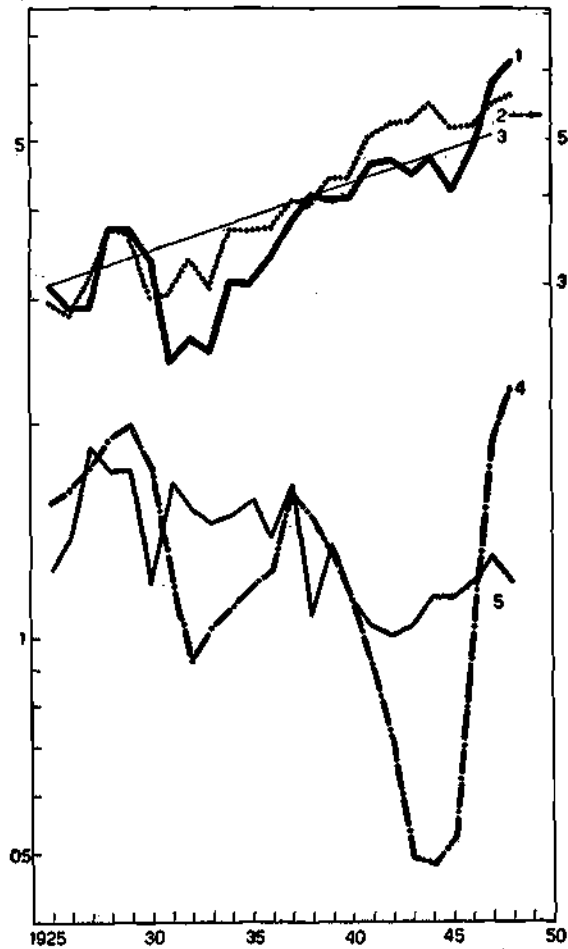
Chart 6

ARGENTINA

SUPPLY OF GOODS AND COMPOSITION THEREOF

Values at 1935 prices

Semi-logarithmic scale

Thousand millions
of pesos

1. Total supply of goods.
2. Production.
3. Population.
4. Imports.
5. Exports.

Source: United Nations Economic Commission for Latin America.

affects considerably the comparison made between the figures for recent years and those preceding the world crisis. In fact, according to Table 5 B the increment of total production between 1925-29 and 1945-48 was 67.2 per cent compared with the population increase during the same period, which was 46.9 per cent, the rate of growth of production is more moderate in that period than during the period following 1935.

Nothing could convey more briefly or strikingly the adverse effects of the great depression upon the Argentine economy. Despite the breadth of industrial development, the increase of production *per capita* compared with one five years before the crisis is not what it might have been in an economy of great vitality. It is not difficult to find the explanation. The growth of industrial production did not signify a corresponding increase in the supply of goods available to the population, but to a large extent went to fill the vacuum left by imports. These had diminished first owing to the adverse circumstances of the 1930's and later on account of the shortages of the Second World War. The volume of imports increased greatly during the last few years. In spite of this, however, the average of imports for 1945-48 was still 17.5 per cent lower than for 1925-29. This meant that *per capita* imports were 43.8 per cent lower, as is shown by the indices given in Table 6.

Table 6

ARGENTINA. IMPORTS AND POPULATION

Periods	Quantum of imports	Population	Quantum of imports per capita
1925-29.....	100.0	100.0	100.0
1930-34.....	68.4	113.2	60.4
1935-39.....	77.1	127.9	60.3
1940-44.....	42.0	138.3	30.4
1945-48.....	82.5	146.9	56.2

Source: United Nations Economic Commission for Latin America.

The causes of the decline in imports since 1925-29 were mainly the following: (a) the fall in the quantum of exports; (b) the deterioration of the terms of trade; (c) the shortages imposed by the war.

The combination of the first two factors determined the fluctuations of the country's capacity to import in function of exports and the terms of trade.

The corresponding indices are given in Table 7.

The contraction of exports after 1925-29 and the deterioration of their prices in relation to those of imports both explain why the capacity to import contracted so sharply during the following fifteen years, including the Second World War. During the war, the quantum of exports fell much

Table 7

ARGENTINA. CAPACITY TO IMPORT
(Index numbers) 1925-29 = 100:

<i>Periods</i>	<i>Quantum of exports</i>	<i>Terms of trade</i>	<i>Capacity to import</i>	<i>Quantum of imports</i>
1925-29.....	100.0	100.0	100.0	100.0
1930-34.....	92.3	79.8	73.3	68.4
1935-39.....	89.4	100.1	89.8	77.1
1940-44.....	67.8	81.0	55.1	42.0
1945-48.....	76.2	116.4	89.3	82.5

Source: United Nations Economic Commission for Latin America.

more than the capacity to import because of the difficulties of supply which marked that period. During the years 1945-48, on the other hand, the level of imports approached but did not equal the capacity to import. During 1945 and 1946, the war industries of the industrialized countries were being converted for peacetime production and it was not yet possible to purchase the goods that the country was able and wished to import. The improvement in the terms of trade from 1946 to 1948, as compared with 1945, strengthened the capacity to import which rose very nearly to its pre-depression level. This last development can be seen very clearly in Chart 2 at the beginning of this section. The terms of trade, which during the war had sunk to levels nearly as low as those of the great depression, improved so rapidly that in 1948 they were 35.4 per cent higher than during the five-year pre-depression period.

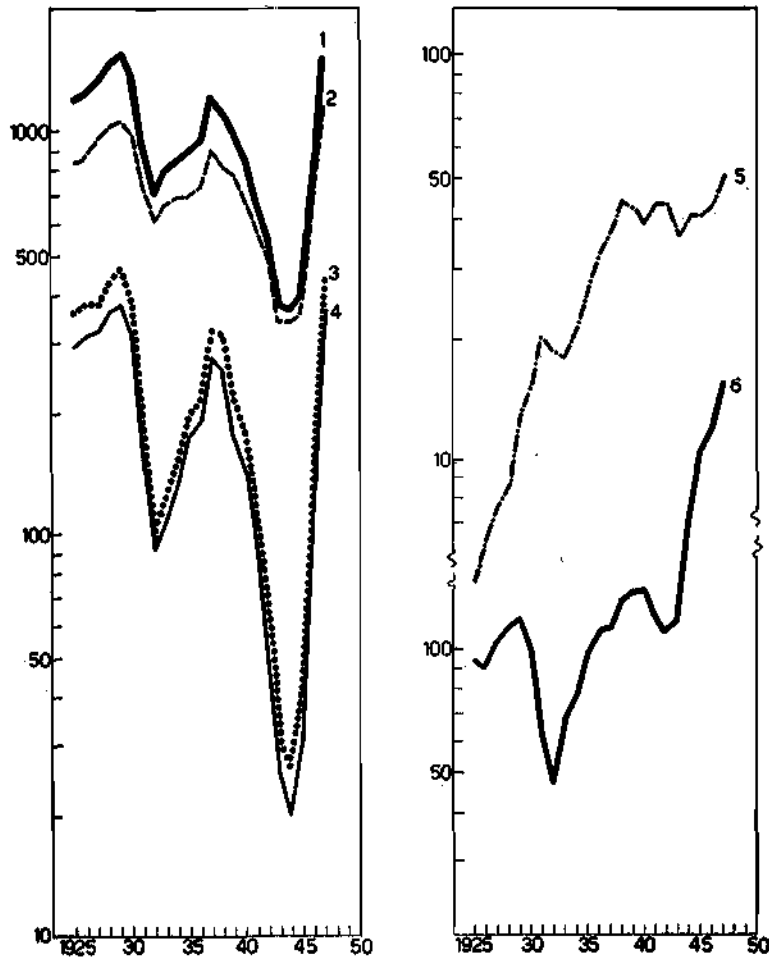
This improvement in the terms of trade was doubtless greater than that which occurred at the same time in other Latin-American countries. In addition to its direct significance it entails another equally interesting implication. This improvement, though very great, was barely sufficient to raise the Argentine terms of trade to the position they had held before the First World War, according to the official statistics for those years. In this connexion, the Chart shows how during the First World War and the years following it, the terms of trade suffered their first serious setback of the century. Though during the 1920's they made good part of the loss, the great depression brought a second serious setback followed by a further recovery, which was overtaken by the third setback which occurred during the Second World War. The fluctuations of this curve are characteristic. After the high levels reached by the terms of trade in 1947 and 1948, they again deteriorate. The question arises whether in this fourth setback they will fall to levels as low as those which had such an adverse effect on Argentine economy during the preceding crises, or if this time the forces of the world economy will be more favourable to Argentina.

Chart 7

ARGENTINA

INVESTMENT INDICES

Values at 1935 prices



1. Total imports.
 2. Imports of non-durable consumer goods.
 3. Imports of durable consumer goods.
 4. Imports of capital goods.
 5. Production of cement.
 6. Index of value added by the metallurgical, machinery and vehicle industries.
- Note: Except for curve 6 (which is an index with base 1935) the scale is in millions of 1935 pesos.

Source: United Nations Economic Commission for Latin America.

3. COEFFICIENT OF IMPORTS

It is evident that the supply of goods having increased as has already been seen, while imports fell, the ratio of the latter to the former had to be expressed in lower terms during the period under review. However, the decrease was not regular as can be seen in Table 5 A. The import coefficient, which had been fairly high before the crisis, fell during the depression, after which it rose again although it did not attain its previous high level. It fell sharply during the Second World War and during the postwar years it rose again equally sharply. This last high level has not been able to be maintained recently. Apart from the special circumstances affecting this development, it is probable that the country cannot maintain such a coefficient in view of the intensity of its economic development and its limited capacity to import.

4. LEVEL OF INVESTMENT

Until now, we have been considering the supply of goods as a whole without distinguishing between those intended for consumption and those for investment. Unfortunately, as regards the latter, the only complete data available are those for the import of capital goods; and where domestic production is concerned there are only data for cement and some incomplete figures for the production of iron and steel from imported scrap and from a small quantity of Argentine iron. But the production of machinery has been developing for some time in Argentina and assumed importance during the Second World War, spurred by necessity as were several other branches of the metallurgical industry which also produce capital goods. There are data relating to employment in these industries as from 1935. They are not sufficient, however, to build up an index of capital formation in Argentina. For this reason, Chart 7 only shows separate curves as follows: Imports of capital goods, domestic production of cement, and the index of the aggregate value of output of the metallurgical, machinery and vehicles industries (see Table 8).

These curves suggest the conclusion that already in the 1930's the considerable reduction of capital goods was partly offset by domestic production which increased appreciably during the war. It is not possible, however, to determine to what extent local production has compensated for the decrease of imports. A rough idea of the aggregate value of metallurgical production can be gained if to the official figure of the 1937 census, which was 238.4 million pesos, the percentage increase in employment between that year and 1948 is applied; this gives an aggregate value of about 308 millions. However, since metallurgical production includes many items which cannot be considered as capital goods, this figure cannot safely be compared to the level of 380.3 millions reached by capital goods in 1947 (calculated at 1937 prices).

Table 8

ARGENTINA. INVESTMENT INDICES

(In terms of volume)

Year	Imports				Domestic production of cement	Aggregate value of the metallurgical, machinery and vehicles industries 1935 = 100
	Total	Capital goods	Durable goods	Non-durable consumer goods		
	(Values at 1937 prices in millions of pesos)					
1925.....	1,194.0	294.6	359.9	834.1	5.0	94.4
1926.....	1,248.9	319.3	380.1	868.8	6.4	91.2
1927.....	1,337.2	328.7	382.0	955.2	7.6	104.4
1928.....	1,476.2	362.9	433.6	1,042.6	8.6	115.2
1929.....	1,544.0	378.8	467.1	1,076.9	12.9	122.3
1930.....	1,353.9	320.0	374.1	979.8	15.6	101.2
1931.....	933.5	164.8	188.8	744.6	20.3	62.4
1932.....	711.8	92.2	102.5	609.3	19.0	47.6
1933.....	803.0	111.3	125.1	677.9	18.4	68.2
1934.....	854.4	140.0	154.7	699.7	21.4	77.4
1935.....	909.0	178.6	201.2	707.8	27.3	100.0
1936.....	958.4	196.7	222.3	736.1	32.9	115.6
1937.....	1,234.7	281.9	327.7	907.0	38.2	117.1
1938.....	1,140.5	261.8	319.3	821.2	44.6	135.8
1939.....	1,004.8	182.7	220.8	784.0	42.7	142.7
1940.....	862.7	147.6	177.5	685.2	39.6	143.7
1941.....	690.2	90.6	105.9	584.2	43.9	126.2
1942.....	550.4	51.7	61.0	489.4	43.3	113.5
1943.....	379.6	26.0	31.1	348.4	36.3	120.8
1944.....	373.1	20.4	26.9	346.3	41.4	216.8
1945.....	403.5	32.0	43.2	360.3	41.4	313.1
1946.....	843.0	133.6	153.5	689.5	43.5	358.7
1947.....	1,507.6	366.1	425.2	1,082.4	51.2	471.6

Source: United Nations Economic Commission for Latin America.

As regards these imports, the chart shows the extent to which world prices affected investment in Argentina. Though there has been a considerable substitution, it is evident that this only took place in certain aspects, and that fundamentally Argentina had to continue to import vast quantities of these goods. Imports of capital goods in 1932, in the trough of the depression, were scarcely a quarter of the peak reached in 1929. In 1937 and 1938, they again reached high levels, but still considerably lower than those before the depression. During the war, only very small quantities of capital goods could be imported, so that when the supply was renewed these imports increased rapidly. In 1947, after a lapse of eighteen years, the 1929 level was reached again.

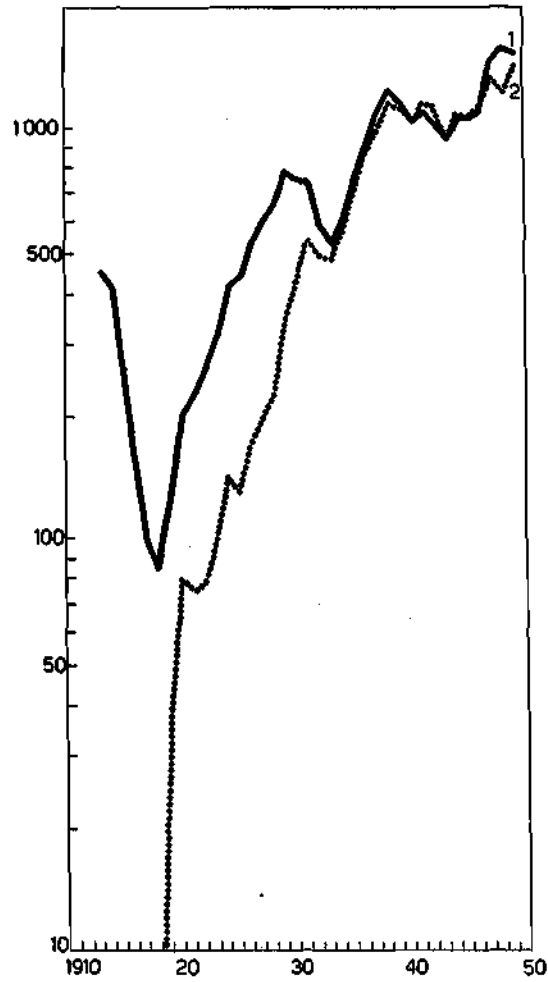
In spite of this, imports of capital goods have not attained the position they held before the depression in relation to the total supply of goods, because of the growth of the latter. Thus, while in 1925-29 these imports represented 10.2 per cent of the total, in 1947 they only represented 6.3 per cent.

Chart 8

ARGENTINA
CONSUMPTION OF CEMENT

Semi-logarithmic scale

Thousands
of tons



1. Consumption of cement.
2. Production of cement.

Source: United Nations Economic Commission for Latin America.

Table 9

ARGENTINA. CONSUMPTION OF CEMENT

(Thousands of tons)

Year	Production	Consumption	Year	Production	Consumption
1913.....	2.9	456.1	1932.....	502.3	588.2
1914.....	3.5	411.2	1933.....	486.9	529.9
1915.....	4.2	239.3	1934.....	566.3	605.9
1916.....	5.1	159.5	1935.....	721.6	752.4
1917.....	5.1	102.5	1936.....	869.3	892.8
1918.....	4.2	85.5	1937.....	1,010.3	1,109.4
1919.....	36.8	128.1	1938.....	1,179.4	1,254.3
1920.....	79.3	203.9	1939.....	1,130.5	1,155.3
1921.....	75.8	229.0	1940.....	1,048.7	1,049.7
1922.....	78.4	263.9	1941.....	1,160.1	1,128.3
1923.....	98.6	319.1	1942.....	1,145.4	1,050.3
1924.....	142.5	412.7	1943.....	959.5	959.5
1925.....	132.7	443.9	1944.....	1,095.3	1,078.8
1926.....	169.2	527.3	1945.....	1,095.3	1,084.1
1927.....	200.9	601.2	1946.....	1,150.3	1,120.3
1928.....	228.1	668.9	1947.....	1,353.2	1,481.2
1929.....	343.4	787.5	1948.....	1,251.8	1,593.8
1930.....	412.2	755.3	1949.....	1,445.9	1,538.1
1931.....	537.8	744.7			

Source: United Nations Economic Commission for Latin America.

Note: Data taken from the *Anuarios de Comercio Exterior* and from *La Industria del Cemento Portland en la Argentina*.

III. Development of agriculture

1. AGRICULTURE AND INDUSTRIAL DEVELOPMENT

The forces of world economy in the long period of economic expansion preceding the great depression combined in a vast experiment in the agriculture of Argentina. This was made possible by the convergence of all the favourable conditions for large-scale production: an abundance of well situated fertile land and the absence of an old-established agrarian population cultivating it with traditional methods for its own subsistence. Such favourable circumstances, together with a temperate climate, attracted large numbers of immigrants from the over-populated countries of Europe and offered a propitious field for foreign investment.

In this way an essentially capitalistic agriculture developed without limitations of any kind. It was capitalistic both in its ability to adopt the best machinery for cultivation and the best methods of raising cattle, and in possessing the other conditions for suitable production for the world market: great flexibility to adjust itself to the changing circumstances of this market and great mobility of the factors of production. The use made of the land encouraged this type of production: always mindful of the changes in prices and of the profit motive, the entrepreneurs changed

from cattle to crops and back again, more manpower being used to cultivate the land or more cattle being raised, displacing surplus labour in order to increase economically the output of meat. The mobility of the factors of production was great, and the population was precariously rooted in the land. This mobility was not limited to the internal sector of the economy, but spread into the international sphere: at harvest time, particularly before the First World War, a large number of labourers from southern Europe used to come to Argentina to work in the fields and then return with sizeable savings.

In such favourable circumstances the expansion of agricultural production was considerable and before the great depression 25.8 million hectares were under cultivation, whereas at the beginning of the century less than 6.5 million hectares were so used. The experiment was a successful one: Argentina possessed a great production capacity that was ready to respond to the growing stimulus of foreign demand. The great depression, however, marked the end of this experiment. For the first time since it had become part of the world market, Argentina, after having increased uninterruptedly its capacity to produce cereals and meat, found itself in a position where not only production could not continue to expand at the previous rate, but where the production capacity it had attained, both in terms of manpower and of land, was greater than world demand.

In the unfavourable economic circumstances of the 1930's a better balance between the two interdependent branches of the economic system, agriculture and industry, was established and the industrialization process gained force. Agriculture and cattle-raising no longer needed to increase their labour force; on the contrary they could dispense with part of it owing to the reduction in the area sown and the increase in mechanization which continued to progress, though at a slower pace than before. Thus manufacturing entered into the phase in which it absorbed manpower from other occupations so that despite the continued expansion of industrial production during the war and immediate postwar years agricultural output was not affected by the draining away of some of its labour. However, the war interrupted the expansion of mechanization in agriculture while in the following years it did not receive a sufficient incentive to recuperate this loss and to resume its prewar growth. In this way the time came when the draining off of farming population into industry and other occupations became a decidedly unfavourable factor for agriculture.

In other words, an equilibrium between manufacturing and agriculture had already been reached under existing technological conditions, so that the continuation of the process was bound to work to the detriment of agricultural output. Industrialization, which tended to correct the serious disequilibrium of the 1930's, had led to a disequilibrium in the opposite direction.

Yet, considering the needs of the country, it should not be concluded that Argentina was being over-industrialized. On the contrary, Argentina needs to increase its manufacturing production to improve the standard of living of its population and to strengthen its economic structure which, though in a smaller measure than before, is still vulnerable to external fluctuations and emergencies. To achieve both these ends, however, it must import capital goods, which it also needs to improve its transport facilities and expand power production. But at the same time it must re-equip its agriculture. Economic realities, however, have demonstrated once more that the country's capacity to import capital goods is limited, so that the necessity could not be avoided of selecting imports in a manner that would best meet the requirements of increased production and of an adequate balance between its various branches.

In this way the development of Argentine agriculture is different from that in the other Latin-American countries. In the other Republics, economic development is hampered by the generally known limitations of agriculture in the way of expanding and supplying the population with an increasing volume of foodstuffs. In contrast, in Argentina, after the temporary difficulties affecting agriculture have been removed, there would be an ample margin to meet domestic requirements and foreign demand as well, unless radical changes occurred in the world economy which would lead to new developments as strong and constant as before. The characteristics of agricultural development of Argentina will become clearer after the following analysis of the conditions in which it developed.

(a) *Conditions of agriculture*

In 1948 the total cultivated area was estimated to be about 21.7 million hectares, after reaching a high point of 28.4 million in 1939. Some time ago, the Ministry of Agriculture calculated that the cultivated area could expand to 64 million hectares; however this increase would be attained mainly at the expense of pasture land already used for cattle-raising and would consist only to a relatively small extent of new lands to be gained for production by means of irrigation and other improvements (see Table 10).

Table 10

ARGENTINA. PRESENT CULTIVATED AREA AND POTENTIALLY CULTIVABLE AREA

Land Utilization	Present area	Potential area	Difference
	(Millions of hectares)		
Agricultural land	144	152	8
Under cultivation	22	64	42
Pasture land	122	88	-34
Forests	90	90	—
Unproductive land	45	37	- 8
TOTAL	279	279	—

Source: Argentine Ministry of Agriculture.

According to the above data, the total agricultural area (tilled and pasture land) was estimated at some 144.6 million hectares. This considerable expanse is utilized by two quite different types of agriculture: the production of cereals and meat which takes place along the Atlantic seaboard and in the centre of the country, and the production of industrial and special crops which has developed in the northern regions and in the vicinity of the Andes.

It is the production of cereals and meat which has given Argentina its outstanding position as an exporting country. This type of agriculture utilizes 55 million hectares, where a number of favourable conditions for large-scale production are combined: (a) the soil is rich and deep; (b) the annual rainfall is between 600 and 900 millimetres, making irrigation unnecessary except in the case of irrigation by means of pumps which is used on small plots growing fruits and vegetables in the neighbourhood of the cities. On the other hand in some areas drainage works are necessary. There are nevertheless periodic droughts which in 1949-50 caused serious damage to agriculture; (c) weather conditions are favourable and only in exceptional years are there frosts; consequently the cattle are in the open during the entire year and are fed with green fodder; (d) the terrain is even and exceptionally well suited to mechanization; (e) no fertilizers are required, at least not in the present stage of extensive cultivation; the natural fertility of the soil is maintained by the continuous rotation of crops and pastures; fields grown with alfalfa and used for cattle raising are thus serviceable for agriculture after some years; (f) erosion is not so serious as in other countries except in marginal regions, where because of high prices or lack of experience land which should always have been used for pasture has been put under cultivation. The Ministry of Agriculture is seeking to correct this situation.

Two-thirds of the total population of the country live in the part that contains this agricultural land, and roads and railways are concentrated there. This area produces nearly all of Argentina's output of meat and grain, by means of extensive cultivation.

The sector of agriculture dedicated to special crops exists under different ecological conditions which vary according to latitude, climate and the configuration of the land. It comprises productive areas irregularly scattered throughout the vast territory beyond the belt occupied by cereal and meat production. These do not combine all the favourable factors for this type of production: either rainfall is insufficient, or the temperatures are extreme or the land surface is too broken or covered by forests or marshes. It is there that irrigation has brought under cultivation 900,000 hectares of formerly unproductive land. In general the methods of production are intensive and fertilizers are used on irrigated land.

From the economic standpoint there is also a substantial difference between the two types of agriculture. Whereas the extensive production

of cereals and meat has developed principally under the stimulus of foreign demand, the production of industrial and special crops has been chiefly oriented to the domestic market. This accounts for the fact that whereas there has been a decrease in the area utilized by the first type of agriculture since the great depression, it has increased considerably in the second type, even though the latter constitutes only a small part of the total cultivated area in the country. This has affected the immigration current. Those who before the First World War sought agricultural occupation went preferably into the production of cereals and meat which at that time was in full growth; since then it has been mainly the production of industrial and special crops that has attracted new immigrants.

(b) Mechanization of agriculture

Mechanization had made great progress in the export sectors of agriculture before the great depression, particularly in the 1920's. There were a number of favourable conditions: (a) the flat land, as already indicated; (b) the extensive character of agriculture and the growing demand, which stimulated the cultivation of the greatest possible area of land; (c) the system of land tenure which permitted the selection of suitable areas for the use of machines, without the limitations imposed in other countries by too small holdings; and (d) the prosperity of agriculture, which meant that at that time the necessary savings could be made for a satisfactory volume of capital investment.

However, there were limitations of an economic nature which contributed to restrict the use of tractors. Firstly, the relatively abundant and cheap labour which was available to Argentine farming until a few years ago; and secondly, the relative advantage of using draught horses. This explains why the tractor has been used less in Argentine agriculture than threshing machines, harvesters and other machinery. But in recent times, the absorption of labour by the cities, to which reference has already been made, has finally increased farm wages so that draught animals have become uneconomical in relation to labour costs, requiring their replacement by tractors. Still, Argentina has a serious fuel problem, and while the horse consumes energy produced at a very low cost on pasture lands, the increase of tractors will require more imports of liquid fuel, at least so long as domestic production is not considerably increased. On the other hand, the replacement of horses will free the pasture land which supports them.

The mechanization of agriculture has a long history. Even before the First World War harvesters were brought, first from Australia and later from the United States, but it was in the 1920's that mechanization became widespread. This is seen in Table 11, which shows imports of tractors, harvesters and other agricultural machinery.

During the great depression, imports dropped to very low figures. But as soon as agricultural prices improved during the subsequent

Table 11

ARGENTINA. IMPORTS OF THE PRINCIPAL CATEGORIES OF AGRICULTURAL MACHINERY

Year	Tractors	Grain-drills	Harvesters	Butter-making machines	Shearing machines and spares	Fanning mills
	Units	Units	Units	Units (tons)	Units (tons)	Units
1925	2,952	29,576	1,352	520	58	154
1926	2,676	28,119	4,565	538	49	788
1927	1,213	14,496	5,033	381	52	287
1928	1,439	12,851	1,240	331	169	430
1929	2,754	31,743	3,000	302	109	591
1930	2,041	27,378	2,011	162	60	421
1931	253	2,418	305	78	8	32
1932	4	207	176	65	5	3
1933	7	451	7	40	6	2
1934	26	1,228	497	45	10	225
1935	82	3,227	1,500	52	28	250
1936	682	6,633	580	77	23	213
1937	3,300	10,149	1,443	100	25	151
1938	5,041	15,088	3,212	52	25	375
1939	1,070	4,340	2,342	58	12	135
1940	934	1,644	1,098	22	22	150
1941	366	134	60	70	14	—
1942	98	161	—	115	22	1
1943	—	—	5	6	25	—
1944	2	—	—	8	18	—
1945	—	1	32	39	9	—
1946	765	480	268	36	15	—

Year	Grain shellers and cutters—steam power	Spraying machines	Threshers	Spares for agricultural machinery	Shellers
	Units	Units	Units	Units (tons)	Units
1925	512	5,050	948	4,051	270
1926	733	7,170	653	7,366	435
1927	395	9,339	751	5,209	393
1928	90	11,332	810	63	797
1929	137	10,685	650	336	1,307
1930	106	4,295	110	2,571	579
1931	25	2,196	3	506	344
1932	2	732	2	554	163
1933	—	651	2	1,362	177
1934	1	468	2	1,714	85
1935	—	1,359	4	3,264	211
1936	1	1,087	21	2,645	218
1937	8	1,387	72	4,536	476
1938	4	1,064	138	5,613	243
1939	2	863	181	3,619	131
1940	1	454	3	2,396	103
1941	7	197	1	1,350	98
1942	—	241	—	558	43
1943	—	—	—	666	10
1944	—	—	—	1,038	—
1945	—	169	—	810	13
1946	2	1,080	32	1,350	94

Source: Argentine Foreign Trade Yearbooks (*Anuarios de Comercio Exterior Argentina*).

recovery, imports of machinery were renewed, as the farmers dreamed of a return to the prosperous pre-depression days. During 1935-39, these imports were 7.7 per cent of total capital goods, while in the 1920's they had only accounted for 6.1 per cent.

This shows that, even after such adverse conditions as prevailed during the 1930's, Argentine agriculture was ready to continue its process of mechanization as soon as favourable circumstances permitted. In fact, it can be observed from Table 12, that in 1933, the worst year of the crisis, 102 tons of cereals were necessary to buy a tractor as against 47 tons in 1928. In 1937 the ratio was favourable once more, having declined to 67 tons, although not to the same extent as formerly, and at that time the incentive to mechanize was revived.

Table 12

PRICE OF ONE TRACTOR IN TERMS OF GRAIN

Year	Factory price	Price in	Price of	Tons of cereals
	FOB ^a	Argentina	cereals	per tractor
	(U S dollars)	(Pesos)	(Pesos per ton)	(Metric tons)
1928.....	1,020	4,500	95.40	47
1933.....	850	4,900	47.80	102
1937.....	975	6,465	96.60	67
1940.....	940	8,650	59.00	146
1947.....	1,660	15,525	140.50	110
1950.....	2,450	36,745	190.20	193

^a Tractor of 30-40 h.p.

Source: The prices of the tractors are taken from data supplied by the main distributors; those for grains are from official sources.

The war once again interrupted the trend toward mechanization. After the war there were years of extraordinary prosperity for agricultural exports. But, as is known, the rise in foreign prices has been reflected only slightly in those paid to the producers. Consequently, to buy the same tractor as before, 110 tons of grain were required in 1947 and 193 in 1950 (before the recent increase in prices), that is, four times as much as in 1928. Imports of agricultural machinery in 1947, the last year for which statistics are available, while representing a considerable increase over former years, do not reach the volume necessary to compensate for the consequences of long years of disinvestment.

It is estimated that about 85 per cent of the farmers use combine harvesters and 30 per cent have tractors. But a large part of this machinery has been subject to long and intense use which seriously reduces its efficiency. According to an authoritative sample survey, two-thirds of the tractors in existence were acquired before the war; for ploughs, this proportion was 87 per cent; for combine harvesters, a similar proportion; and for agricultural machinery as a whole, about 84 per cent. Moreover,

the lack of spare parts aggravated the consequences of the obsolescence of the machinery.

While domestically produced agricultural machinery is making its appearance in ever increasing numbers, it is not yet made in sufficient volume to remedy the deficiency of imports. Moreover, the producers must import motors and essential parts.

To offset this unfavourable situation and its effects on agricultural production, the State has recently adopted two measures: it has raised the price paid to the farmer for agricultural produce at the expense of its own profit through sales abroad (this profit has already declined appreciably due to the drop in world prices), and has granted import permits amounting to 27 million dollars for the most urgently required machinery and spare parts.

It is recognized, however, that a broad programme of re-equipment and expansion of the mechanization of agriculture would require a considerably greater outlay. As can be seen from Table 13, there are at present some 27,000 tractors and some 40,000 combine harvesters in use. It is estimated that it would be necessary to import an additional 40,000 tractors in the present decade, together with their complement of ploughs, cultivators, and grain drills. Moreover, from 15,000 to 20,000 combine harvesters and from 10,000 to 15,000 maize harvesters would be necessary. The import of this machinery would require from 300 to 350 million dollars, according to authoritative commercial circles.

Attempts are being made at the present time to stimulate the domestic production of machinery, which at present supplies hardly 8 per cent of requirements, and if these efforts were successful, a large part of these imports could be eliminated.

Should the imports of tractors be carried out, there would be a tractor for every 350 to 400 hectares, instead of the present average of one for every 878 hectares. In the United States there is a tractor for every 80 hectares.

Table 13

ARGENTINA. NUMBER OF TRACTORS IN RELATION TO THE CULTIVATED AREA				
Year	Hectares cultivated (millions)	Number of machines in use		Hectares per tractor
		Tractors	Harvesters	
1919-20	23.0	253	797	90,909
1929-30	26.7	16,220	28,656	1,646
1939-40	28.4	23,540	42,729	1,206
1949-50	23.7	27,000	40,000	878

Maize harvesters, which are included in the import data, have only been used experimentally up to now and all the harvesting used to be done entirely by hand. But experts believe that, in view of the labour shortage, it will be necessary to continue using these machines in order to continue ex-

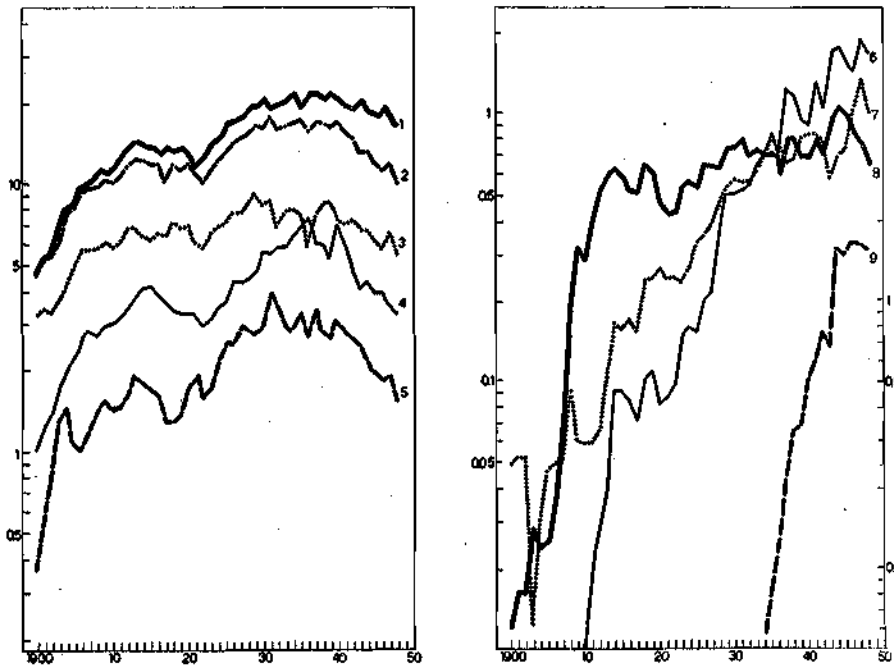
Chart 9

ARGENTINA

AREA SOWN WITH GRAIN

In millions of hectares

Semi-logarithmic scale



1. Total area sown with grain.
2. Area sown with wheat, linseed and maize.
3. Area sown with wheat.
4. Area sown with maize.
5. Area sown with linseed.
6. Area sown with rye.
7. Area sown with barley.
8. Area sown with oats.
9. Area sown with sunflower.

Source: United Nations Economic Commission for Latin America.

porting maize. However, there are some difficulties to be overcome; firstly, this machine has been perfected in the United States to harvest high-yielding hybrid maize; secondly, there would have to be a greater distance between rows than is customary in Argentina, for which proper seed-drills and cultivators will be required. It will, therefore, be necessary to expand the use of hybrid maize and modify cultural practices, so that large-scale mechanization can be introduced. It is estimated that the use of the maize harvester could reduce the cost of harvesting by 50 per cent, with yields of 2,500 kgs. per hectare and still more, if the yield is higher. It is reported that recent experiments have been made with domestic harvesters, with satisfactory results.

The harvesting of cotton, like that of maize, is also carried out by hand. This has recently been a source of concern owing to the labour shortage. Experiments are also being made to use mechanical picking machines, which, if successful, would help to free a considerable portion of the labour force.

2. DEVELOPMENT OF PRODUCTION

(a) *Grains (including linseed and sunflower seed)*

In the analysis of the development of production, Argentine agriculture will be considered under two separate heads. One of them comprises the production of grains and meat, both directed mainly towards the foreign market, and the other comprising industrial crops, directed mainly to the domestic market. Some idea of the importance of these two branches of agriculture can be seen from Table 14.

Changes in the production of grains may be noted first. For this purpose Chart 9 (Table 15 A) has been prepared. In it are shown, first, the curves of the sown area of the grains as a whole, and second, the curves of the sown area for the main grains. In Table 15 B the pertinent figures are shown in a summarized form.

The fluctuations in the total area sown reflect the events already referred to, that is, a vigorous growth which was interrupted by the First World War, and which began again in the 1920's until the impact of the great depression.

From the other curves it can be seen how these events affected the principal grains. The sown area increased for all of them before the depression. However, it did not affect all of them to the same degree: while maize continued to rise for a while, wheat, which had for years been suffering from world over-production, showed an immediate drop, as did linseed; in the second half of the 1930's there was a reaction, mainly caused by the drought in the United States and the general recovery of the Argentine economy; but this was a temporary event and the 1940's were characterized by a definite and persistent decline which has led to the very low levels of recent years.

Table 14

ARGENTINA. QUANTUM OF AGRICULTURAL PRODUCTION AT 1937 PRICES
(Changes between 1925-29 and 1945-48)

Product	Yearly averages			Percentage change compared with 1925-29	
	1925-29	1945-48 (thousands of pesos)	1948	1945-48	1948
<i>Grains and meats</i>	2,605,889	2,488,325	2,839,387	- 4.5	8.9
<i>Grains</i>	1,758,583	1,457,563	1,774,356	-17.1	0.9
Wheat	894,274	669,426	880,182	-25.1	- 1.6
Maize	480,440	309,868	400,610	-35.5	-16.6
Linseed	285,079	144,421	146,010	-49.3	-48.8
Sunflower	183	148,037	157,669		
Oats	57,169	52,387	49,600	- 8.4	-13.2
Barley	24,286	64,521	63,050	165.7	159.6
Rye	15,300	40,096	53,715	162.1	251.1
Rice	1,852	28,807	23,520	1,455.4	1,170.0
<i>Meat (including exports of live animals)</i>	847,306	1,030,762	1,065,031	21.6	25.7
Meat	828,095	983,984	1,018,988	18.8	23.0
Exports of live animals	19,211	46,778	46,043	143.5	139.7
<i>Wool</i>	231,008	361,038	322,590	56.3	39.6
<i>Industrial crops</i>	138,060	265,801	275,967	92.5	99.9
Sugar-cane	63,328	90,464	88,913	42.8	40.4
Wine	33,347	42,350	42,350	27.0	27.0
Peanuts	11,123	25,559	23,400	129.8	110.4
Tobacco	3,993	12,540	7,865	214.0	97.0
Yerba maté	3,065	17,982	19,656	486.7	541.3
Cotton	23,204	76,906	93,783	231.4	304.2
GRAND TOTAL :*	3,022,277	3,179,518	3,503,048	5.2	39.6

Source: United Nations Economic Commission for Latin America.
* Includes potato production.

Table 15-A

ARGENTINA. AREA SOWN WITH GRAINS
(In thousands of hectares)

Year	Total*	Wheat, linseed, maize	Wheat	Maize	Linseed	Rye	Barley	Oats	Sun- flower
1920	13,415	12,123.0	7,045.0	3,312.0	1,766.0	83.1	270.9	931.0	..
1921	12,462	11,280.0	6,076.1	3,273.9	1,930.0	88.4	249.5	834.0	..
1922	11,521	10,309.8	5,763.0	2,971.8	1,575.0	97.8	251.0	852.0	..
1923	12,958	11,502.1	6,578.0	3,177.1	1,747.0	148.0	242.5	1,059.3	..
1924	14,125	12,568.8	6,951.5	3,435.4	2,181.9	163.5	277.2	1,111.8	..
1925	15,034	13,466.9	7,200.5	3,707.7	2,558.7	157	334	1,071	..
1926	16,440	14,575.4	7,769.0	4,297.0	2,509.4	203	364	1,293	..
1927	16,942	15,038.5	7,800.0	4,289.0	2,949.5	220	396	1,283	..
1928	17,699	15,574.0	8,373.0	4,346.0	2,855.0	362	480	1,279	..
1929	19,366	16,816.9	9,219.0	4,788.0	2,809.9	516	543	1,487	..

Table 15 A (continued)

Year	Total*	Wheat, linseed, maize	Wheat	Maize	Linseed	Rye	Barley	Oats	Sun- flower
1930	19,427	16,802.5	8,285.6	5,647.4	2,869.5	522	587	1,511	..
1931	20,836	18,127.7	8,613.0	5,575.0	3,939.7	535	576	1,593	..
1932	18,901	16,350.5	6,999.0	5,855.0	3,496.5	558	582	1,404	..
1933	19,665	16,888.0	8,009.0	5,884.0	2,995.0	657	629	1,478	..
1934	20,201	17,244.8	7,957.3	6,514.0	2,773.5	716	721	1,443	57
1935	21,127	17,920.9	7,613.0	7,028.9	3,279.0	864	815	1,428	84
1936	18,910	16,040.0	5,750.0	7,630.0	2,660.0	708	785	1,195	124
1937	21,237	17,383.2	7,792.8	6,091.2	3,499.9	1,269	679	1,619	207
1938	21,224	17,313.4	8,384.0	6,065.9	2,863.5	1,199	693	1,608	319
1939	20,265	16,628.3	8,620.9	5,300.0	2,707.4	976	835	1,401	333
1940	21,264	17,492.3	7,216.8	7,200.0	3,075.5	929	857	1,395	506
1941	20,532	16,057.0	7,084.8	6,097.6	2,874.6	1,346	868	1,596	574
1942	19,167	15,030.0	7,300.0	5,000.0	2,730.0	1,077	798	1,424	750
1943	18,541	13,485.5	6,873.0	4,138.5	2,474.0	1,767	589	1,936	674
1944	19,874	13,507.0	6,811.0	4,412.0	2,284.0	1,825	718	2,147	1,574
1945	18,234	12,245.0	6,232.0	4,017.0	1,996.0	1,615	761	2,011	1,492
1946	17,585	11,578.0	5,762.0	3,951.0	1,865.0	1,504	1,043	1,708	1,638
1947	18,781	12,190.0	6,673.0	3,612.0	1,905.0	1,944	1,371	1,570	1,609
1948	16,154	10,396.0	5,462.0	3,351.0	1,583.0	1,766	1,049	1,317	1,533

Source: United Nations Economic Commission for Latin America.

* The total for the area sown with grains includes that sown with rice and birdseed.

Table 15 B

ARGENTINA. AREA SOWN AND PRODUCTION OF GRAINS

(a) Area sown

(In thousands of hectares)

Grains	Yearly averages				Percentage change		
	1905-09	1925-29	1945-48	1948	1925-29 over 1905-09	1945-48 over 1925-29	1948 over 1925-29
	Wheat, linseed, maize	9,572.8	15,094.3	11,602.2	10,396.0	57.7	-23.1	-31.1
Wheat	5,618.7	8,072.0	6,032.2	5,462.0	43.7	-25.3	-32.3
Maize	2,709.7	4,285.5	3,732.7	3,351.0	58.2	-12.9	-21.8
Linseed	1,244.4	2,736.5	1,837.3	1,583.0	119.9	-32.9	-42.2
Rye	6.4	291.6	1,707.3	1,766.0	4,456.2	485.5	505.6
Barley	60.4	423.4	1,056.0	1,049.0	601.0	149.4	147.8
Oats	257.7	1,282.6	1,651.5	1,317.0	397.7	28.8	2.7
Sunflower	..	..	1,568.0	1,533.0	..	..	..
TOTAL*	9,897.4	17,096.2	17,688.5	16,154.0	72.7	3.5	- 5.5

(b) Production

(In thousands of tons)

Wheat, linseed, maize	8,824.0	15,684.5	10,562.9	13,505.0	77.7	-32.7	-13.9
Wheat	4,301.8	6,769.6	5,067.5	6,663.0	57.4	-25.1	- 1.6
Maize	3,660.8	7,075.7	4,563.6	5,900.0	93.3	-35.5	-16.6
Linseed	861.4	1,839.2	931.8	942.0	113.5	-49.3	-48.8
Rye	1.4	148.4	388.9	521.0	960.0	162.1	251.1
Barley	25.9	321.2	853.4	834.0	1,140.0	165.7	159.6
Oats	253.6	922.1	844.9	800.0	263.6	- 8.4	-13.2
Sunflower	..	1.1	873.4	930.2	..	79,300.0	84,463.6
TOTAL*	9,104.9	17,086.1	13,660.7	16,702.2	87.6	-20.0	- 2.2

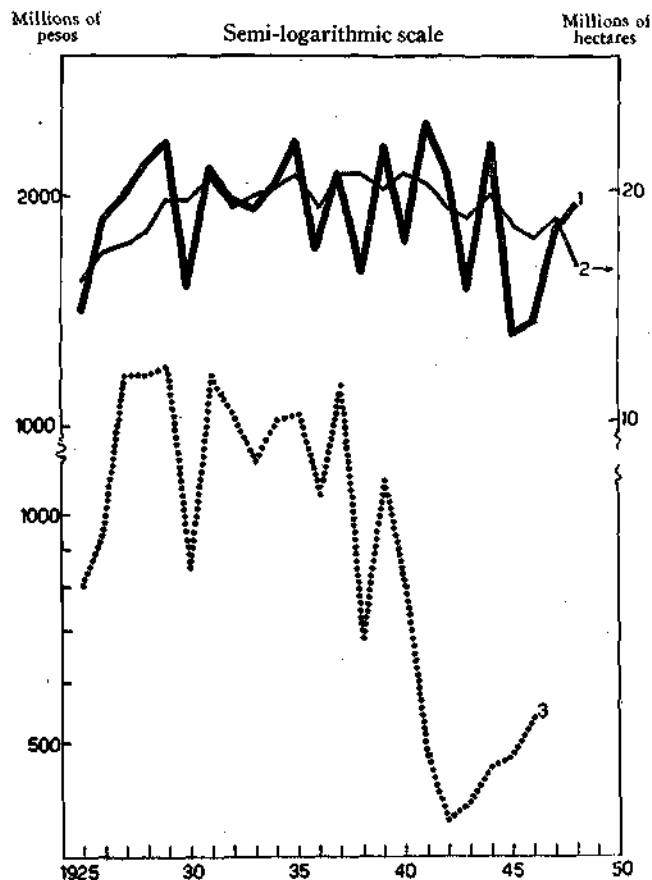
Source: United Nations Economic Commission for Latin America.

* Includes area sown with and production of rice and birdseed.

Chart 10

ARGENTINA

SOWN AREA AND VALUE OF GRAIN PRODUCED AND EXPORTED



1. Total value of grain production.
2. Total area sown with grain.
3. Total value of grain exported.

Source: United Nations Economic Commission for Latin America.

But while the area utilized by the three basic crops, wheat, maize and linseed, declined, cereals for fodder, i.e., oats, barley and even rye became more important. This may be due to the growth of the livestock industry and dairying in that period. Also, the sunflower crop expanded rapidly to meet the domestic demand for edible oils, as a result of the development of this important industry.

The expansion of these and other crops (which until then had occupied a very secondary place) at the expense of the traditional crops, has

contributed to a greater diversification of agriculture, making it less vulnerable to climatic and economic factors, and at the same time making a notable contribution to the better supplying of the country's needs.

Table 16

ARGENTINA. AREA SOWN WITH CEREALS AND FODDER
(In thousands of hectares)

Year	Total	Grains	Alfalfa and other fodder	Year	Total	Grains	Alfalfa and other fodder
1900.....	6,137	4,689	1,268	1926.....	23,036	16,440	6,021
1901.....	7,022	5,328	1,512	1927.....	23,108	16,942	5,596
1902.....	7,394	5,571	1,632	1928.....	23,766	17,699	5,450
1903.....	8,812	6,874	1,730	1929.....	25,863	19,366	5,841
1904.....	10,365	7,995	2,173	1930.....	25,882	19,427	5,755
1905.....	10,990	8,375	2,503	1931.....	27,264	20,638	5,711
1906.....	12,754	9,541	2,884	1932.....	25,321	18,901	5,686
1907.....	13,696	9,936	3,537	1933.....	25,824	19,685	5,408
1908.....	15,263	10,380	4,657	1934.....	26,635	20,201	5,617
1909.....	16,248	11,275	4,682	1935.....	27,549	21,127	5,452
1910.....	15,946	10,943	4,707	1936.....	25,489	18,910	5,555
1911.....	17,565	11,857	5,401	1937.....	27,670	21,237	5,397
1912.....	19,082	13,078	5,630	1938.....	..	21,224	..
1913.....	20,202	13,989	5,834	1939.....	..	20,265	..
1914.....	21,149	14,070	6,635	1940.....	..	21,264	..
1915.....	21,361	13,604	7,373	1941.....	27,334	20,532	5,700
1916.....	21,539	13,507	7,525	1942.....	26,251	19,167	6,000
1917.....	20,737	12,695	7,619	1943.....	25,602	18,541	5,898
1918.....	22,208	13,718	8,055	1944.....	26,707	19,874	5,552
1919.....	21,700	13,166	8,073	1945.....	25,429	18,254	5,904
1920.....	22,266	13,415	8,367	1946.....	24,728	17,585	5,850
1921.....	21,397	12,462	8,443	1947.....	25,695	18,781	5,650
1922.....	20,498	11,521	8,502	1948.....	..	16,151	..
1923.....	21,407	12,958	7,925	1949.....	..	..	..
1924.....	22,689	14,125	7,951				
1925.....	21,744	15,034	6,135				

Source: *Revista Económica Argentina*, 1943; *Anuario Sociedad Rural Argentina*, 1938; *Síntesis Estadística Mensual*, 1948.

Table 17

GRAIN YIELDS

(In kilogrammes per hectare harvested)

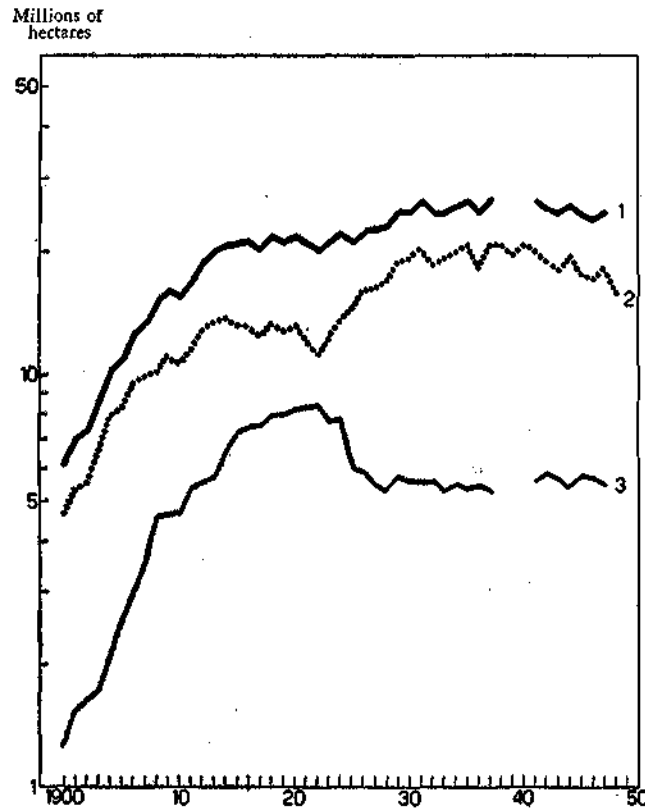
Grains	Yearly average			Percentage change 1945-47 compared with 1925-29
	1925-29	1935-39	1945-47	
Wheat	883	942	1,125	27.4
Maize	1,987	1,760	1,982	- 0.3
Linseed	718	626	688	- 4.2
Sunflower .....	..	885	759	-14.2*

Source: United Nations Economic Commission for Latin America.
* 1945-47 over 1935-39.

Chart 11

ARGENTINA

TOTAL AREA SOWN WITH CEREALS AND FODDER



1. Total area sown with cereals and fodder.
2. Area sown with cereals.
3. Area sown with alfalfa and other fodder.

Source: United Nations Economic Commission for Latin America.

The sown area for all grains (cereals and oilseeds) reached a peak of slightly more than 21 million hectares in the 1930's. In 1948, according to the figures available, the total had been reduced to some 16 million hectares. It would appear that this decline has continued subsequently, although it is hoped that with the recent steps taken to encourage agriculture, this trend will be reversed. The influence of these developments on production is shown in Chart 10.

Argentina, before the great depression, was characterized by the rapid outflow of its surplus grains to the international market. The depression and the Second World War brought, among others, a serious problem:

that of the accumulation of temporarily unsalable stocks. The State was obliged to acquire the harvests until it was possible to export them or divert them into domestic consumption. As regards the latter, it should be remembered that during the war large quantities of the maize as well as a part of the wheat surpluses were consumed as fuel, with the object of attenuating the serious shortage of fuel during those years.

To give an idea of the degree to which part of agricultural production was used as fuel, the *Comité Argentino de la Energía* indicates that in 1943, 100,000 tons of maize, 1,700,000 tons of wheat and 1,500,000 tons of linseed were burnt, and that the electric power plants during the Second World War used about 3 million tons of cereals, 600,000 tons of flax and linseed, and 150,000 tons of linseed oil.

Production figures show a trend similar to that of the sown area, except for changes resulting from weather changes, since there has been no tendency to increase yields, except in the case of wheat. In Table 17 the averages for the years 1935-39 and 1945-47 are compared with the average for 1925-29.

It has been stated elsewhere that agriculture, since the last war, has not been stimulated by the extraordinarily favourable conditions of the international market. In view of the relatively low prices paid locally for its products, agriculture could not compete favourably with industry to keep the labour which migrated from rural areas, nor could it, as was seen above, substitute machinery for labour. The State has recently proposed to obtain a 35 per cent increase in agricultural production, and with this aim it has raised the purchasing prices of grains between 20 and 30 per cent, it has encouraged the grant of credit and has granted foreign currency for importing machinery, as described above.

(b) *Meat production*

The areas which in the 1940's ceased to be used for grain production were utilized by the livestock industry and part of it was sown for this purpose with alfalfa and other forage crops. Consequently, in the last few years there has been a trend similar to that which had taken place during the second decade of this century, above all as a result of the First World War: the area under grains declined and the pasture land increased although not to a great extent. Nevertheless, this development did not take place in the case of the area under alfalfa to the same extent as in the second decade, since the increase in that area does not compensate for the decline of the grain area. This would imply that part of the land was left with natural grasses or forage crops not included in the statistics. The figures for cattle and sheep indicate this change, as will be seen from Table 18. The cattle population rose by 24 per cent between 1937 and 1947, and sheep by 16 per cent. On the other hand, hogs, which are much less important, declined by 25 per cent. Stimulated by the favourable

situation created by the low price of maize in the early part of this ten-year period, hog raising increased to an extraordinary degree but when the situation was reversed in 1945 and 1946, hog numbers were greatly reduced and with them slaughtering, which fell to very low levels in recent years. Recently there has been a trend towards restoring hog numbers, but this trend has been halted owing to the drop in prices resulting from the decline in foreign demand.

Table 18

ARGENTINA. LIVESTOCK
(In thousands of head)

Year	Cattle	Sheep	Hogs
1922.....	37,065	36,209	1,437
1930.....	32,212	44,413	3,769
1937.....	33,207	43,883	3,966
1942.....	31,460	50,902	5,707
1947.....	41,268	50,857	2,981

Source: Official statistics.

The increase of 7.4 million head for cattle between the years referred to, required a corresponding area for their support so that the land under crops diminished from 25.7 million hectares in 1936-37 to 18.5 million in 1946-47. After that year the cultivated area appears to have continued to decline sharply for the reasons explained elsewhere, but there are no recent figures to verify the proportion by which this decline may have been compensated for by the increase of livestock numbers.

The 41.3 million head of cattle calculated in 1947 constitute the highest figure since the first census some sixty years ago.

Table 19

ARGENTINA. CULTIVATED AREA AND LIVESTOCK NUMBERS IN THE PRINCIPAL AGRICULTURAL PROVINCES

Province	Cultivated area (Millions of hectares)			Increase of cattle between 1937 and 1947 (Millions of head)	Hypothetical requirement of pasture for livestock increase (Millions of hectares)
	1936-37	1946-47	Decline		
Buenos Aires	10.7	8.4	-2.3	3.7	3.7
Córdoba	6.4	4.6	-1.8	1.1	1.3
Santa Fe	4.7	2.8	-1.9	1.8	1.8
La Pampa	2.0	1.4	-0.6		0.6
Entre Ríos	1.9	1.3	-0.6	0.8	0.8
TOTAL	25.7	18.5	-7.2	7.4	8.2

Source: Official statistics.

Table 20

ARGENTINA. ESTIMATED LIVESTOCK PRODUCTION
(In thousands of tons)

Product	Year			Percentage change 1948 compared with 1936-39
	1936-39	1943	1948	
<i>Meat</i>	2,000	2,320	2,450	22.5
Beef	1,700	1,690	2,050	20.6
Mutton	180	280	220	22.2
Pork	120	350	180	50.0
<i>Hides</i>				
Cattle	162	147	178	9.9
Sheep	30	49	54	80.0
<i>Wool</i>	168	233	215	28.0
<i>Dairy products</i>				
Butter	32	47	51	59.4
Cheese	40	66	83	107.5
Casein	20	29	25	25.0

Source: United Nations Economic Commission for Latin America.

Table 21

ARGENTINA. QUANTUM OF LIVESTOCK PRODUCTION AND EXPORTS
(Values at 1937 prices, in millions of pesos)

Year	Total production	Quantum of total exports	Quantum of exports of meat, by-products and live animals	Quantum of exports of wool
1925.....	1,109.0	590.3	420.6	169.7
1926.....	1,124.0	606.6	382.9	223.7
1927.....	1,120.5	648.0	408.2	239.8
1928.....	1,037.2	523.5	331.1	192.4
1929.....	1,000.8	512.0	315.0	197.0
1930.....	1,014.2	508.8	302.4	206.4
1931.....	951.1	467.6	255.1	212.5
1932.....	984.3	451.0	247.5	203.5
1933.....	1,010.4	509.9	261.3	248.6
1934.....	1,030.8	449.6	274.3	175.3
1935.....	1,067.2	502.9	280.5	222.4
1936.....	1,081.8	513.0	291.8	221.2
1937.....	1,131.1	535.2	350.5	184.7
1938.....	1,119.5	534.7	292.7	242.0
1939.....	1,186.0	567.9	327.1	240.8
1940.....	1,143.4	515.7	290.6	225.1
1941.....	1,314.5	656.2	376.2	280.0
1942.....	1,329.1	585.4	400.9	184.5
1943.....	1,333.6	581.2	403.6	177.6
1944.....	1,439.4	728.1	435.1	293.0
1945.....	1,362.3	611.5	335.1	276.4
1946.....	1,355.1	691.5	333.8	357.7
1947.....	1,462.2	699.1	392.0	307.1
1948.....	1,387.6	749.3	356.2	393.1

Source: United Nations Economic Commission for Latin America.

Note: Exports are calculated at domestic market prices.

The figures for 1948 are provisional.

Basic data: *Anuarios del Comercio Exterior*.

Table 22

ARGENTINA. PRODUCTION, EXPORT AND CONSUMPTION OF BEEF

(Values at 1937 prices, in millions of pesos)

Year	Cattle production			Cattle exports			Meat consumption
	Cattle slaughtered	Cattle exported on the hoof	Total	Meat	Live cattle	Total	
1925	849.8	14.3	864.1	363.0	14.3	377.3	486.8
1926	782.8	19.1	801.9	325.4	19.1	344.5	457.4
1927	783.3	18.7	802.0	347.7	18.7	366.4	435.6
1928	685.7	16.8	702.5	269.1	16.8	285.9	416.6
1929	664.0	16.6	680.6	247.8	16.6	264.4	416.2
1930	647.2	12.8	660.0	232.4	12.8	245.2	414.8
1931	611.7	3.1	614.8	202.0	3.1	205.1	409.7
1932	615.7	3.0	618.7	197.0	3.0	200.0	418.7
1933	640.8	3.9	644.7	207.7	3.9	211.6	433.1
1934	664.2	7.8	672.0	214.0	7.8	221.8	450.2
1935	688.0	6.6	694.6	218.9	6.6	225.5	469.1
1936	681.5	7.4	688.9	226.7	7.4	234.1	454.8
1937	737.8	7.3	751.1	284.7	7.3	292.0	453.1
1938	719.5	12.6	732.1	224.5	12.6	237.1	495.0
1939	779.0	13.8	792.8	263.2	13.8	277.0	515.8
1940	738.9	13.0	751.9	224.4	13.0	237.4	514.4
1941	807.6	12.4	820.0	294.4	12.4	306.8	513.2
1942	769.2	15.8	785.0	280.8	15.8	296.6	488.4
1943	720.1	25.6	745.7	245.0	25.6	270.6	475.1
1944	741.5	25.1	766.6	235.3	25.1	260.4	506.2
1945	677.0	42.7	719.7	146.5	42.7	189.2	530.5
1946	744.5	35.0	779.5	176.1	35.0	211.1	568.4
1947	896.2	38.3	934.5	251.3	38.3	289.6	644.9
1948	882.2	39.8	922.0				

Source: United Nations Economic Commission for Latin America.

Table 23

ARGENTINA. CULTIVATED AREA; INDUSTRIAL CROPS

(In thousands of hectares)

Year	Sugar-cane	Wine	Peanuts	Tobacco	Yerba mate	Cotton	Total
1925	122	137	53	8	9	105	434
1926	131	114	60	9	19	110	443
1927	122	120	53	5	34	72	406
1928	122	131	56	9	33	85	436
1929	141	136	54	11	34	99	475
1930	142	142	46	13	36	122	501
1931	143	144	50	13	37	127	514
1932	144	147	51	15	49	136	542
1933	145	148	86	14	45	138	576
1934	145	150	90	12	46	195	638
1935	147	150	80	22	50	286	735
1936	148	150	99	16	63	368	844
1937	188	127	127	11	63	376	892
1938	188	126	122	12	63	424	935

Table 23 (continued)

Year	Sugar-cane	Wine	Peanuts	Tobacco	Yerba mate	Cotton	Total
1939.....	187	136	81	19	63	407	893
1940.....	188	138	89	20	63	365	863
1941.....	190	139	75	22	65	337	828
1942.....	187	139	74	17	65	330	812
1943.....	213	141	124	19	66	364	927
1944.....	230	145	159	20	66	403	1,023
1945.....	240	148	177	22	66	382	1,035
1946.....	252	157	182	28	66	375	1,060
1947.....	250	159	146	30	66	397	1,048
1948.....	250	159	190	23	66	412	1,100

Source: United Nations Economic Commission for Latin America.

As a result of the increase in cattle and sheep, the total production of the livestock industry has increased, as well as the export of meat and by-products, and wool, as shown in Chart 12. The principal groups of cattle production are shown in Table 20.

(c) *Industrial crops*

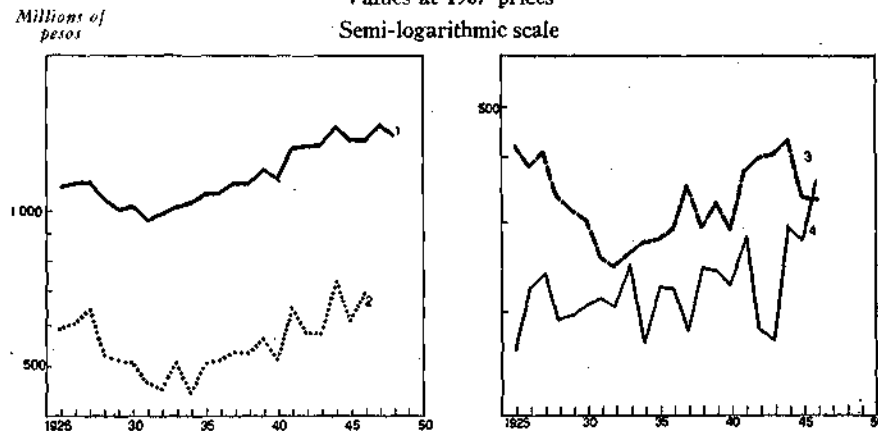
In contrast to grain production, industrial crops which are directed mainly to domestic consumption have increased considerably, as can be seen from Chart 14 and Table 24.

Chart 12

ARGENTINA

QUANTUM OF LIVESTOCK PRODUCTION

Values at 1937 prices
Semi-logarithmic scale



1. Total production of livestock.
2. Quantum of total cattle exports.
3. Quantum of exports of meat, by-products and live animals.
4. Quantum of exports of wool.

Source: United Nations Economic Commission for Latin America.

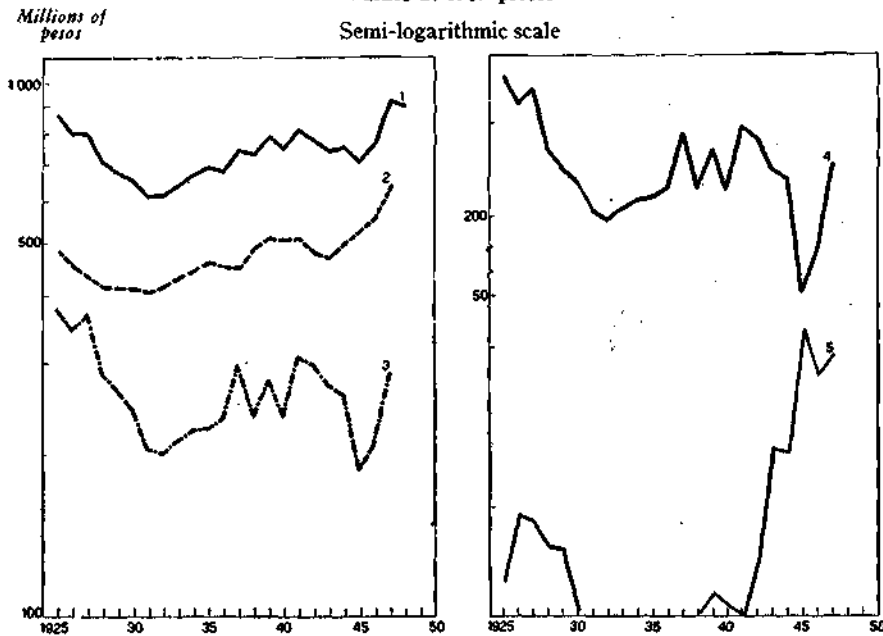
Chart 13

ARGENTINA

PRODUCTION OF BEEF CATTLE

Values at 1937 prices

Semi-logarithmic scale



1. Production of beef.
2. Consumption of beef.
3. Export of beef and live cattle.
4. Export of beef.
5. Export of cattle on the hoof.

Source: United Nations Economic Commission for Latin America.

Table 24

ARGENTINA. AREA SOWN WITH, AND PRODUCTION OF INDUSTRIAL CROPS

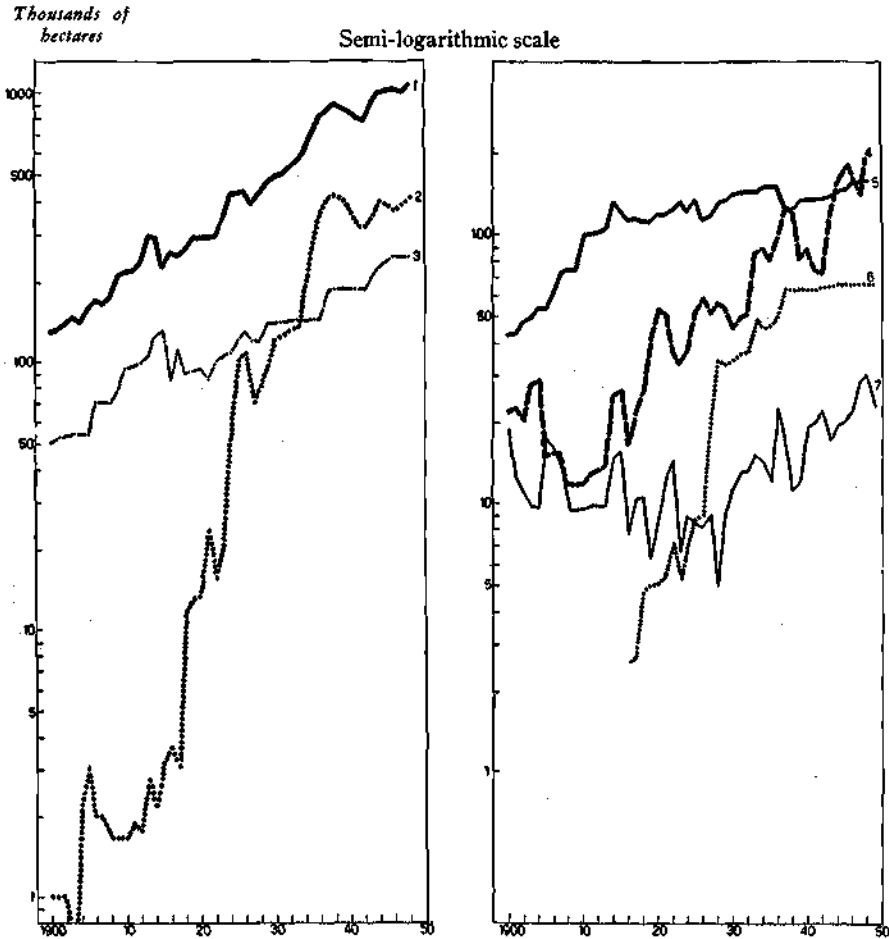
	Peanuts	Cotton	Tobacco	Sugar- cane	Yerba mate	Wine grapes	Total
(a) Area sown (In thousands of hectares)							
1905-09.....	13.8	2.1	13.5	69.1	0.1	67.7	166.3
1925-29.....	55.2	94.1	7.9	127.8	20.7	127.6	430.4
1945-48.....	173.7	391.5	25.8	248.0	66.0	155.8	1,060.8
(b) Production (In thousands of tons)							
1905-09.....						321.8	
1925-29.....	57.0	73.1	7.3	5,115.4	16.8	866.2	6,135.8
1945-48.....	131.1	205.3	22.8	7,307.3	98.8	1,100.0	8,865.3

Source: United Nations Economic Commission for Latin America.

Chart 14

ARGENTINA

AREA UNDER INDUSTRIAL CROPS



1. Industrial crops.
2. Cotton.
3. Sugar
4. Peanuts.
5. Wine.
6. Yerba mate.
7. Tobacco.

Source: United Nations Economic Commission for Latin America.

(d) Other crops for domestic consumption

While these other crops, like the industrial crops, are mainly for domestic consumption, they are presented in a separate group because they are cultivated throughout the agricultural land of the country, both

in the regions where grains and meat predominate and in those specializing in industrial crop production. The figures for the more important of these crops are given in Table 25.

Table 25

ARGENTINA. PRODUCTION OF OTHER CROPS FOR DOMESTIC CONSUMPTION

Product	Yearly averages			Per cent change 1947-48 compared with 1937-39
	1937-39	1943-44	1947-48	
Potatoes and sweet potatoes	885	1,180	1,210	36.7
Fruits	480	1,050	930	93.8
Tomatoes	..	190	165	..
Pulses*	80	125	130	62.5

Source: United Nations Economic Commission for Latin America.

* Includes beans, peas, lentils and chickpeas.

Table 26 A

ARGENTINA. AREA SOWN, PRODUCTION AND CONSUMPTION OF GRAINS

Year	Sown area (In thousands of hectares)	[Values at 1937 prices, in millions of pesos]		
		Production	Exports	Consumption
1925	15,034	1,252.3	801.8	450.5
1926	16,440	1,652.5	940.8	554.8
1927	16,942	1,805.3	1,524.6	406.7
1928	17,699	1,972.8	1,519.3	407.5
1929	19,366	2,110.1	1,557.9	563.4
1930	19,427	1,366.5	850.9	404.0
1931	20,836	1,957.4	1,513.4	437.1
1932	18,901	1,783.5	1,346.7	556.8
1933	19,665	1,728.2	1,174.8	527.8
1934	20,201	1,857.4	1,322.1	511.2
1935	21,127	2,132.3	1,361.2	638.7
1936	18,867	1,528.0	1,071.4	498.5
1937	21,174	1,922.7	1,482.0	663.6
1938	21,155	1,428.2	688.3	614.2
1939	20,206	2,108.1	1,109.9	611.5
1940	21,213	1,568.7	802.9	1,099.1
1941	20,473	2,261.1	491.2	836.2
1942	19,113	1,924.9	400.0	1,784.1
1943	18,493	1,356.2	423.4	1,321.6
1944	19,837	2,116.3	468.7	1,566.1
1945	18,176	1,190.1	485.6	1,318.7
1946	17,520	1,235.0	544.2	690.8
1947	18,733	1,630.8	688.0	942.8
1948	16,110	1,774.3	582.4	1,191.9

Source: United Nations Economic Commission for Latin America.

Note: Consumption is the difference between production and exports, at domestic market prices, plus stock brought forward from the preceding year, less the surplus of the year in question.

Table 26 B

ARGENTINA. AREA SOWN, PRODUCTION AND CONSUMPTION OF GRAINS

(Values at 1937 prices, in millions of pesos)

Items	Yearly averages			Percentage change compared with 1925-29	
	1925-29	1945-48	1948	1945-48	1948
Area sown (thousands of hectares)	17,096	17,635	16,110	3.2	- 5.8
Production (value)	1,759	1,458	1,774	- 17.1	0.8
Exports (value)	1,269	575	582	- 54.7	- 54.1
Consumption (value)	476.6	1,036	1,191.9	117.4	150.1

Source: United Nations Economic Commission for Latin America.

(e) Export and domestic consumption of agricultural commodities

It has been seen that the production of grains had declined considerably in 1945-48 in comparison with 1925-29. But since exports show a more pronounced decrease, it is still not surprising that domestic consumption of these products should have been able to increase as is shown in Chart 10 and in Table 26 B.

Table 27 A

ARGENTINA. AGRICULTURAL AND LIVESTOCK PRODUCTION AND CONSUMPTION

(Values at 1937 prices, in millions of pesos)

Year	Agricultural and livestock products			Agricultural products		
	Production	Consumption	Exports	Production	Consumption	Exports
1925	2,538.4	1,110.9	1,427.5	1,429.4	592.2	837.2
1926	2,967.9	1,194.5	1,616.5	1,843.9	677.1	1,009.9
1927	3,108.1	989.8	2,244.3	1,987.6	517.3	1,596.3
1928	3,199.0	1,050.0	2,103.0	2,161.8	536.3	1,579.5
1929	3,297.9	1,174.3	2,134.8	2,297.1	685.5	1,622.8
1930	2,582.3	1,038.2	1,432.5	1,568.1	532.0	923.7
1931	3,126.9	1,086.2	2,033.8	2,175.8	602.7	1,566.2
1932	2,950.4	1,220.9	1,849.5	1,966.1	687.6	1,398.5
1933	2,941.5	1,189.1	1,726.8	1,931.1	688.6	1,216.9
1934	3,116.7	1,273.6	1,819.0	2,085.9	692.4	1,369.4
1935	3,437.5	1,373.1	1,932.0	2,370.3	808.8	1,429.1
1936	2,870.6	1,270.9	1,641.6	1,788.8	702.1	1,128.6
1937	3,249.6	1,440.0	2,032.5	2,118.5	844.1	1,497.3
1938	2,809.4	1,431.3	1,252.4	1,689.9	846.5	1,717.7
1939	3,563.6	1,469.6	1,707.3	2,377.6	851.5	1,139.4
1940	3,010.4	1,964.4	1,379.3	1,867.0	1,336.7	863.6
1941	3,841.8	1,666.0	1,242.1	2,527.3	1,007.7	585.9
1942	3,576.1	2,774.6	1,060.7	2,247.0	2,030.9	475.3
1943	3,030.0	2,292.5	1,126.3	1,696.4	1,540.1	545.1
1944	3,950.2	2,529.0	1,338.9	2,510.8	1,818.5	610.8
1945	2,868.8	2,259.5	1,223.5	1,506.5	1,508.7	612.0
1946	2,933.7	1,608.8	1,324.9	1,578.6	945.2	633.4
1947	3,412.5	1,972.9	1,439.6	1,950.3	1,209.8	740.5
1948	3,503.0	2,122.4	1,380.6	2,115.4	1,484.1	631.3

Source: United Nations Economic Commission for Latin America.

Note: Consumption is adjusted for changes in stocks.

Table 27 B

ARGENTINA. PRODUCTION AND CONSUMPTION OF AGRICULTURAL AND LIVESTOCK PRODUCTS

(Values at 1937 prices, in millions of pesos)

	Yearly averages			Percentage change compared with 1925-29	
	1925-29	1945-48	1948	1945-48	1948
<i>Agricultural and livestock products</i>					
Production	3,022.3	3,179.5	3,503.0	5.2	15.9
Exports	1,905.2	1,342.2	1,380.6	-29.6	-27.5
Consumption	1,103.9	1,190.9	2,122.4	80.4	92.3
<i>Agricultural products</i>					
Production	1,944.0	1,787.7	2,115.4	- 8.0	8.8
Exports	1,329.1	654.3	631.3	-50.8	-52.5
Consumption	601.7	1,287.0	1,484.1	113.9	146.6

Source: United Nations Economic Commission for Latin America.

Note: Consumption is adjusted for changes in grain stocks.

Chart 15

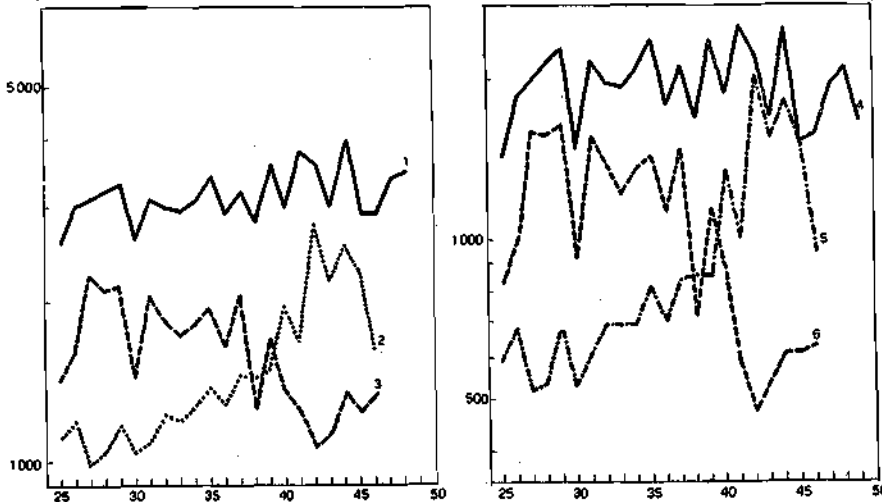
ARGENTINA

PRODUCTION AND CONSUMPTION OF AGRICULTURAL AND LIVESTOCK PRODUCTS

Values at 1937 prices

Millions of pesos

Semi-logarithmic scale



1. Total agricultural and livestock products.
2. Total consumption of agricultural and livestock products.
3. Total exports of agricultural and livestock products.
4. Total agricultural production.
5. Consumption of agricultural produce.
6. Exports of agricultural produce.

Source: United Nations Economic Commission for Latin America.

Between 1925-29 and 1945-48 the domestic consumption of grains increased by 117.4 per cent. It should be noted, however, that sunflower is included among these grains, and is used to manufacture oils which substitute for other imported oils; rice which displaces imports, is also included. Without these two products, the increase in domestic consumption amounts to 82.1 per cent.

For meat, domestic consumption has increased more than production, at the expense of exports.

Among industrial crops, if the increase in consumption was less than in production, this was due to exports of cotton and peanuts. Chart 15 shows the breakdown of total domestic consumption of agricultural and livestock products and of purely agricultural products. (See Tables 27 A and 27 B.)

Table 28

ARGENTINA. INDICES OF CONSUMPTION OF SOME INDUSTRIAL PRODUCTS
AND SOME FARM PRODUCTS

Year	Industrial products			Agricultural and livestock products			
	Cotton textiles (tons)	Gasoline (thousand cubic metres)	Cement (thousand tons)	Meat	Sugar	Wheat flour	Coffee
	(in thousands of tons)						
1925.....	45,854	400	443.9	1,200	330	1,018	20.1
1926.....	47,272	522	527.3	1,133	330	1,022	23.3
1927.....	45,669	561	601.2	1,093	330	1,125	24.5
1928.....	54,340	695	669.0	1,105	350	1,162	24.5
1929.....	53,853	929	787.5	1,078	350	1,152	24.8
1930.....	44,784	950	755.3	1,124	385	1,126	25.4
1931.....	36,712	959	744.7	1,020	347	1,226	22.9
1932.....	40,089	855	588.2	1,076	358	1,237	17.6
1933.....	47,676	805	530.0	1,150	346	1,241	23.3
1934.....	50,452	902	605.8	1,253	370	1,305	18.4
1935.....	56,921	964	752.4	1,340	371	1,347	22.6
1936.....	53,183	955	892.8	1,348	404	1,294	22.3
1937.....	62,984	1,157	1,109.4	1,428	404	1,324	22.7
1938.....	60,451	1,219	1,254.3	1,456	412	1,451	27.7
1939.....	52,200	1,372	1,155.3	1,476	425	1,430	25.1
1940.....	56,901	1,286	1,049.7	1,449	480	1,385	25.4
1941.....	55,194	1,342	1,128.3	1,448	415	1,423	34.6
1942.....	73,195	1,309	1,050.3	1,396	465	1,455	23.1
1943.....	64,465	1,199	959.5	1,400	478	1,509	27.2
1944.....	75,904	1,108	1,078.8	1,429	502	1,602	35.2
1945.....	72,543	1,038	1,084.1	1,483	507	1,727	30.5
1946.....	70,254	1,344	1,120.3	1,624	574	1,765	35.3
1947.....	88,500	1,637	1,481.2	1,782	581	1,889	..
1948.....	92,832	1,887	1,593.8	1,955	567*	1,957	..

Source: United Nations Economic Commission for Latin America.

Notes: Data prior to 1940 are from *El sub-consumo de alimentos en América del Sur* by Emilio Llorens. Starting from that year, they have been supplemented by data from various official sources.

The figures for meat consumption from 1925-28 and from 1940-48 are estimates based on the number of animals slaughtered for domestic consumption at the rate of a meat yield of 270 kilogrammes per head for cattle, 16 per head for sheep and 80 per head for hogs.

Coffee consumption is taken from the *Anuarios del Comercio Exterior*.

* Estimated on the basis of production.

Chart 15 shows the breakdown of consumption of agricultural and livestock products. (See Table 27 B.)

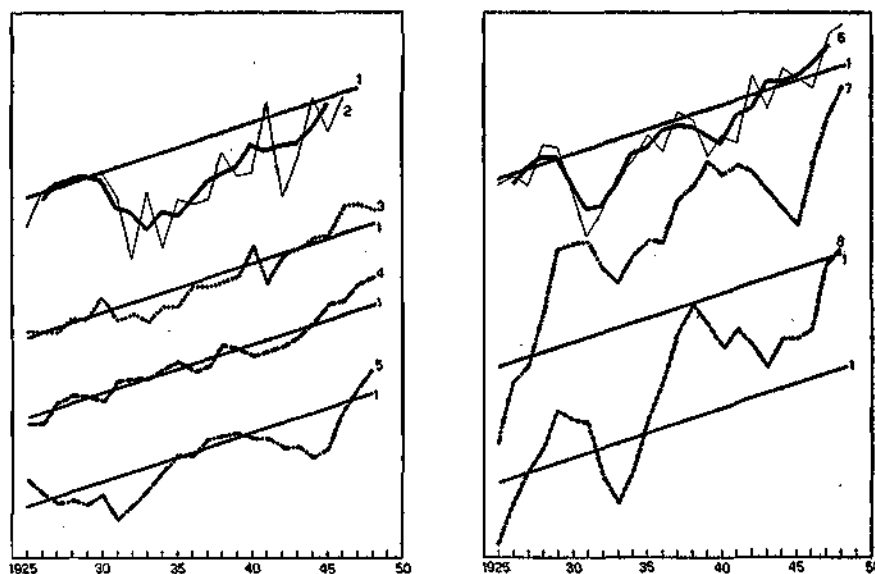
The accompanying Chart 16 shows the consumption of some of the agricultural and livestock commodities compared with that of some manufactured products. The pertinent data may be found in Table 28.

Chart 16

ARGENTINA

CONSUMPTION OF CERTAIN FARM PRODUCTS AND OF CERTAIN INDUSTRIAL PRODUCTS

Semi-logarithmic scale



1. Population.
2. Consumption of coffee in thousands of tons.
3. Consumption of sugar in thousands of tons.
4. Consumption of wheat or flour in thousands of tons.
5. Consumption of meat in thousands of tons.
6. Consumption of cotton textiles in thousands of tons.
7. Consumption of gasoline in thousands of cubic metres.
8. Consumption of cement, in thousands of tons.

Source: United Nations Economic Commission for Latin America.

IV. Development of imports

In the case of Argentina, owing to the lack of published statistics after 1947, it has not been possible to carry the analysis of imports to 1948 or even 1949, as has been done with other Latin-American countries. The data available for the post-war period therefore cover too short a period to enable us to draw any conclusions with regard to imports during

that period, as compared with imports before the crisis and in other representative periods. In 1947 an exceptional volume was imported on account of the pent-up demand of the war years; it cannot therefore be taken as representative of Argentina's normal import requirements. Foreign exchange for imports was granted very liberally in 1947 and hence many imports increased which subsequently had to be reduced, either to stimulate domestic production or simply because such imports had to wait for better times. As we have no data relating to 1948 and 1949 we cannot study these interesting developments, nor can we learn what changes are taking place in the composition of Argentine imports in comparison with representative earlier periods. This analysis will therefore be incomplete, but it may at least give an idea of the more important trends which have appeared in the process of readjusting Argentine imports after the world crisis.

This readjustment is conditioned by a most important fact which has already been referred to: the contraction of the capacity to import after the world crisis. Accordingly, Argentina has had to cut down certain

Table 29 A

ARGENTINA. CHANGES IN THE QUANTUM OF IMPORTS OF SELECTED COMMODITIES

(Values at 1937 prices, in thousands of pesos)

Year	Food-stuffs, beverages and tobacco	Textile fibres and textile manufactures	Chemical and pharmaceutical products	Metals and metal manufactures	Woodpulp, paper and cardboard	Fuels and lubricants	Rubber and rubber manufactures	Miscellaneous	Totals
1925	132,949	192,194	36,516	38,147	53,316	221,517	22,602	136,871	834,116
1926	124,753	197,875	37,437	40,546	51,921	245,758	26,071	144,432	868,793
1927	129,495	194,242	39,500	50,623	56,488	276,940	33,793	174,132	955,213
1928	137,444	227,243	45,654	60,872	65,089	289,293	33,401	183,616	1,042,612
1929	143,545	217,319	48,119	58,028	66,831	326,936	39,577	176,581	1,076,936
1930	138,545	182,978	42,663	55,594	63,928	322,301	31,666	132,180	979,855
1931	124,537	154,358	37,009	46,047	52,150	229,469	24,173	76,909	744,652
1932	88,912	148,537	32,282	25,438	49,795	156,281	19,741	88,290	609,276
1933	105,122	182,070	38,749	34,172	53,339	193,207	23,213	48,054	677,926
1934	79,444	189,007	40,525	38,545	58,510	163,813	28,701	101,138	699,683
1935	65,297	196,235	44,360	35,372	59,524	177,382	25,081	104,555	707,806
1936	89,792	187,154	44,966	41,537	64,912	184,109	26,279	97,395	736,144
1937	108,665	221,641	52,167	54,560	79,870	220,089	40,369	129,600	906,961
1938	92,320	186,971	45,111	43,269	64,150	230,682	32,784	125,933	821,220
1939	86,398	141,325	50,046	52,242	68,424	231,601	39,357	114,568	783,961
1940	81,966	124,533	47,685	51,423	62,941	185,819	37,197	93,626	685,190
1941	76,042	81,382	39,435	47,662	54,072	151,107	44,185	90,356	584,241
1942	61,866	100,878	43,402	36,407	63,986	85,705	12,094	85,017	489,355
1943	59,746	51,673	47,784	17,119	49,128	55,012	2,403	65,552	348,417
1944	79,242	45,599	28,039	11,738	53,652	48,912	2,751	76,332	346,265
1945	68,927	34,111	37,227	25,561	57,663	57,842	3,528	75,474	360,333
1946	69,464	42,713	45,996	42,616	87,694	260,690	59,814	80,504	689,491
1947	77,105	120,152	65,604	94,842	110,933	342,025	160,044	111,695	1,082,400

Source: United Nations Economic Commission for Latin America.

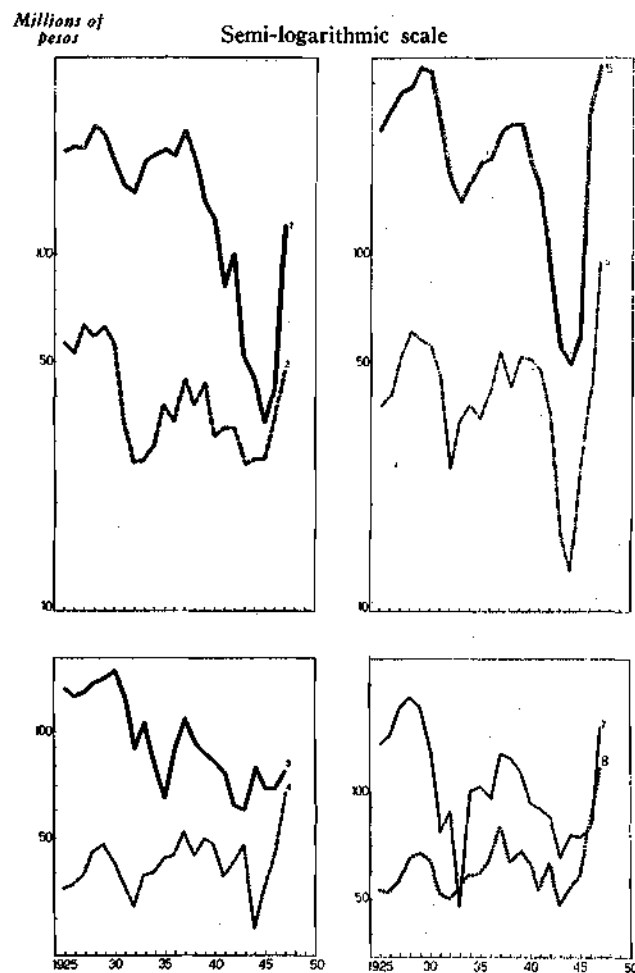
Note: The values correspond to the customs valuations of 1937 according to the *Anuarios del Comercio Exterior*.

Chart 17

ARGENTINA

QUANTUM OF IMPORTS OF SELECTED COMMODITIES

Values at 1937 prices



1. Textile fibres and textile manufactures.
2. Wood and wood manufactures.
3. Foodstuffs, beverages and tobacco.
4. Chemical and pharmaceutical products.
5. Fuels and lubricants.
6. Metals and metal manufactures.
7. Miscellaneous.
8. Paper, cardboard and their manufactures.

Source: United Nations Economic Commission for Latin America.

imports severely for the sake of increasing others which were indispensable, and to reduce less drastically imports which could not be replaced by national production. An approximate idea of this readjustment is given in Table 29 A, calculated at 1937 prices, and in Chart 17.

Table 29 B

ARGENTINA. CHANGES IN THE QUANTITATIVE COMPOSITION OF IMPORTS
(Averages for 1925-29 as compared to 1945-47)

Products	Yearly averages		Increase or decrease
	1925-29	1945-47	
<i>Imports which increased</i>			
Fuels and lubricants	272,088	220,186	- 19.1
Pulp, paper, etc.	58,729	85,430	45.5
Chemical products	41,445	49,609	19.7
Rubber and rubber manufactures	31,089	74,462	139.5
Metals	49,643	54,340	9.5
<i>Imports which decreased as a result of the development of domestic production</i>			
Textiles	205,775	65,659	- 69.1
Foodstuffs	133,637	71,832	- 46.2
Skins and hides	6,762	4,297	- 36.5
Oils and fats	4,446	3,367	- 24.3
Miscellaneous	83,844	81,551	- 2.7
<i>Durable goods</i>			
Capital goods	336,852	177,233	- 47.4
Other durable goods	67,675	30,067	- 55.6
TOTAL IMPORTS	1,360,069	918,033	- 32.5

Note: For sources and notes, see Table 29 A.

1. IMPORTS WHICH HAVE INCREASED

An analysis will first be made of the imports which increased in volume notwithstanding the contraction of the capacity to import.

The most important category comprises fuels and lubricants. As can be seen from Table 30, it is true that average imports of these articles were lower in 1945-47 than in 1925-29, but that was because imports were abnormally low during 1945 and 1946, for well-known reasons. In 1947 they reached a level more in proportion with the requirements of economic development and (according to incomplete information) remained high during 1948 and 1949, despite the severe limitations imposed on other commodities. Hence this group was bound to be among those groups the imports of which increased.

The group next in importance to fuels is that comprising paper, cardboard and pulp for their manufacture. These are products which have increased to a greater or lesser extent in keeping with economic development in all the Latin-American countries reviewed in the present survey. In the case of Argentina, the increase of 1945-47 over 1925-29 was 45.5 per cent, distributed as indicated in Table 31.

Table 30

ARGENTINA. IMPORTS OF FUELS AND LUBRICANTS

(Values at 1937 prices, in millions of pesos)

Products	Yearly averages			Percentage change compared with 1925-29	
	1925-29	1945-47	1947	1945-47	1947
	Crude petroleum	35.6	107.7	169.8	202.5	376.9
Fuel, diesel and gas oil..	21.9	64.6	94.3	195.0	330.6
Coal	79.9	26.5	30.9	-66.8	-61.3
Gasoline and kerosene ..	105.0	13.4	32.0	-87.2	-69.5
Lubricants	27.3	5.8	9.8	-78.8	-64.1
Other products	2.4	2.2	4.9	- 8.3	104.2
TOTAL	272.1	220.2	342.0	19.1	25.6

Source: United Nations Economic Commission for Latin America.

As yet no newsprint is manufactured in Argentina, a circumstance which explains the increase of imports. On the other hand, printing and wrapping paper, as well as cardboard are made in the country, and in these cases the increases show that domestic production has been insufficient to meet the growth of consumption. This is a problem of concern to the country, which it is attempting to solve, as will be seen from the section dealing with industry.

The next group of products whose import has increased considerably is that of rubber and rubber manufactures; in 1945-47 the figures for it were

Table 31

ARGENTINA. IMPORTS OF PAPER, CARDBOARD AND THEIR MANUFACTURES

(Values at 1937 prices, in millions of pesos)

Products	Yearly averages			Percentage change compared with 1925-29	
	1925-29	1945-47	1947	1945-47	1947
	Newsprint	23.7	32.5	44.8	37.1	89.0
Printing paper	15.2	17.5	21.7	15.1	42.8
Wrapping paper	2.8	14.5	17.0	417.8	507.1
Cardboard	4.1	5.7	7.4	39.0	80.5
Cigarette paper	1.1	1.4	1.8	27.3	63.6
Wood pulp	2.3	5.0	6.5	117.4	182.6
Other products	9.5	8.8	11.7	-17.4	-23.2
TOTAL	58.7	85.4	110.9	45.5	88.9

Source: United Nations Economic Commission for Latin America.

Note: The total given for 1947 is slightly lower than actual figures, owing to lack of data relating to several rather insignificant items.

139.5 per cent above the average for 1925-29. This is a change in composition typical of the cases where it is not possible to develop all the stages of production in the country, owing to the lack of raw materials, as can be seen from Table 32. There has been a sharp increase in the imports of raw materials, as well as of tyres and inner-tubes for motor cars, and other rubber articles, as a result of the development of manufacturing. It is interesting to note the low level to which imports of this group fell during 1940-44, due to the wartime shortages—19.7 million pesos at 1937 prices, as against 31.1 million in 1925-29, which explains the sharp rise of these imports to 74.5 million in 1945-47 in order to satisfy pent-up demand.

Table 32

ARGENTINA. IMPORTS OF RUBBER AND RUBBER MANUFACTURES

(Values at 1937 prices, in millions of pesos)

Products	Yearly averages				Percentage change compared with 1925-29	
	1925-29	1940-44	1945-47	1947	1945-47	1947
Motor-tyres	18.6	0.6	28.8	51.6	54.8	177.4
Inner-tubes	6.5		3.9	7.0	- 40.0	7.7
Natural rubber	1.3	17.8	40.8	102.9	3,038.5	7,815.4
Others	4.7	1.3	1.0	0.5	- 78.7	- 89.4
TOTAL	31.1	19.7	74.5	152.0	139.5	420.9

Source: United Nations Economic Commission for Latin America.

Chemical and pharmaceutical products comprise another group the import of which usually increases in countries in the process of development. This has occurred in Argentina despite the reduction or disappearance of several imports which have been replaced by domestic production, as can be seen from Chart 18. If each of the groups of products is examined separately, there are no very large amounts. Apart from the fact that the total is considerable, the importance of many of these products is that they are essential not to one specific industry but to a group of industries. A shortage therefore causes serious difficulties of which there was frequent evidence during the war. In this connexion it is easy to understand the desire of Argentina to develop the production of sulphuric acid without having to depend on imported sulphur, as will be seen later. The same is true in the case of caustic soda, the imports of which continue to rise despite the development of domestic production. Imports of cattle dips show a persistent rise, which is explained by the requirements of the livestock industry.

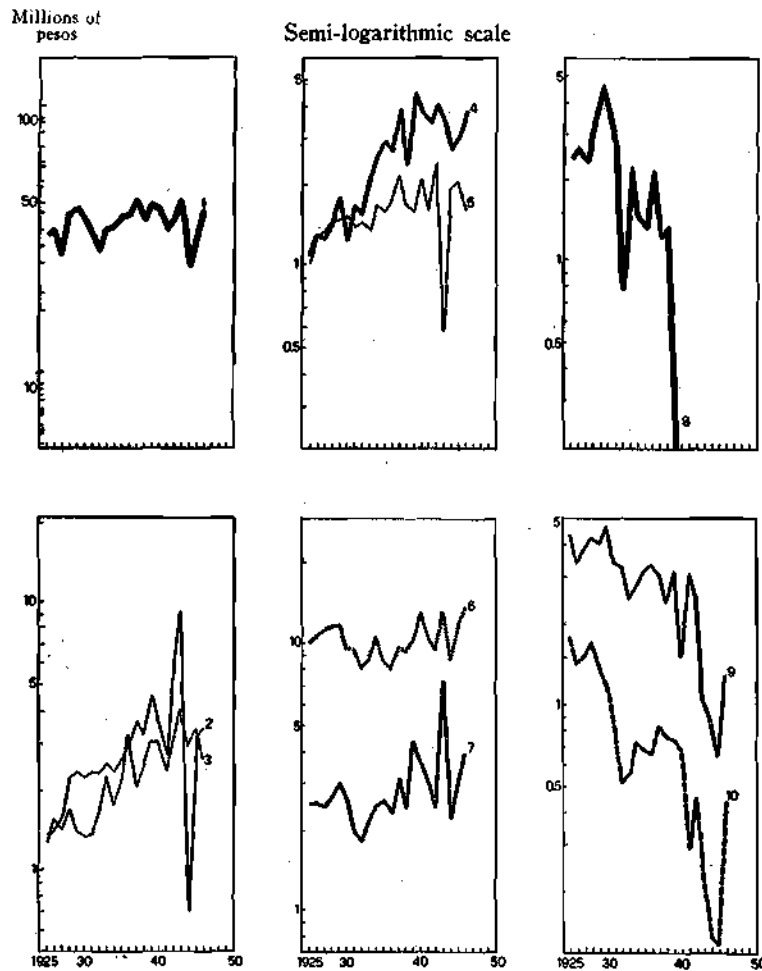
There have been similar changes in the composition of imports of pharmaceutical products; some branches of domestic production have

Chart 18

ARGENTINA

IMPORTS OF CHEMICAL AND PHARMACEUTICAL PRODUCTS

Values at 1937 prices



1. Total imports of chemical and pharmaceutical products.
2. Imports of caustic soda.
3. Imports of sulphur.
4. Imports of dyes.
5. Imports of calcium carbide.
6. Imports of cattle dips.
7. Imports of sodium carbonate.
8. Imports of tartaric acid.
9. Imports of resin (dark and light).
10. Imports of varnishes.

Source: United Nations Economic Commission for Latin America.

prospered while in others imports have increased or new imports have appeared. Details of this group are given in Table 33.

Table 33

ARGENTINA. IMPORTS OF CHEMICAL AND PHARMACEUTICAL PRODUCTS
(Values at 1937 prices, in millions of pesos)

Products	Yearly averages			Percentage change compared with 1925-29	
	1925-29	1945-47	1947	1945-47	1947
Cattle dips	11.0	13.9	15.7	26.3	42.7
Ammonia	1.0	0.6 ^a	..	-60.0 ^a	..
Sulphur	1.5	3.7	5.2	146.7	246.7
Caustic soda	1.8	3.6	3.9	100.0	116.7
Solvay soda	2.6	4.6	6.8	76.9	161.5
Resin	4.0	1.3	1.8	-67.5	-55.0
Calcium carbide	1.3	1.8 ^a	..	38.5 ^a	..
Dyes	1.4	4.1	5.3	192.8	278.6
Tartaric acid	3.1	..	..	..	..
Paints	2.2	1.3 ^a	..	-40.9 ^a	..
Others	11.4	14.7	26.9 ^b	-28.9	-136.0
TOTAL	41.3	49.6	65.6 ^b	19.2	58.4

Source: United Nations Economic Commission for Latin America.

^a Average 1945-46.

^b Since the relevant *Anuario* is not available, the figure corresponds to a different sample, and therefore the figures under the item "Others" have been estimated, so as to adjust the total value of the group to the 1937 level.

The increase in the group of metals and metal products is less marked than that in other groups between 1925-29 and 1945-47. Here too, the diversion of imports from manufactures to raw materials or semi-manufactured goods has enabled the growing requirements to be met without a corresponding increase in the value of imports expressed in constant prices. Table 34 shows the increase in the most important of these articles; it should be noted that iron and steel have not been included in this group but in that of capital goods.

2. IMPORTS WHICH HAVE DECREASED AS A RESULT OF THE INCREASE IN DOMESTIC PRODUCTION

An important distinction must be made in the imports that have decreased. On the one hand, there are those the reduction of which was to a great extent or even more than compensated by the development of domestic production. The most important of these, namely, textile fibres and foodstuffs, will be analysed below. On the other hand, there are the imports of capital and durable goods which have been reduced owing to the contraction of the capacity to import.

Table 34

ARGENTINA. IMPORTS OF METALS AND MANUFACTURES

(Values at 1937 prices, in millions of pesos)

Products	Yearly averages			Percentage change compared with 1925-29	
	1925-29	1945-47	1947	1945-47	1947
Tinplate sheet	10.5	14.4	22.6	37.1	115.2
Copper wire	16.7	3.7	2.5	- 77.8	- 85.0
Copper and bronze tubes ...	2.5	0.4	1.5	- 84.0	- 40.0
Copper and bronze ingots ...	2.9	15.2	28.2	424.1	872.4
Lead ingots and sheets	8.0	6.2	14.5	- 22.5	81.2
Tin bars	1.6	0.5	1.0	- 66.8	- 37.5
Zinc ingots	2.8	2.1	2.8	- 25.0	
Other products	4.6	11.8	21.7	156.5	371.7
TOTAL	49.6	54.3	94.8	9.5	91.1

Source: United Nations Economic Commission for Latin America.

It is surprising to find in the textile group that though the cotton and woollen textile industries are already developed in the country, imports of these commodities during 1945-47, and especially during 1947, were considerable for the following two reasons: the inability of domestic industry to meet the increase in demand deriving from the rise in real income; and the influence of the pent-up demand for articles which are not produced in the country. Since then the country's productive capacity has expanded and the problem now is rather how fully to employ this capacity when the importation of certain textiles must continue under agreements signed with supplier countries.

Imports of rayon yarn increased considerably; although its manufacture was begun during the war with domestic cellulose, this is not yet sufficient to meet domestic requirements.

Imports of jute and sacking, on the other hand, have declined since before the world depression, for two reasons: cereals are now handled in bulk and stored in elevators, and it is not necessary to use jute or other sacks; and also cotton sacks manufactured in the country are employed.

As regards the group including foodstuffs, tobacco and beverages, imports declined considerably between 1925-29 and 1945-47, but still represent a large share of total imports. For obvious reasons, some imports such as coffee, cocoa and tea cannot be reduced, and others, for example some kinds of fresh fruit, are imported principally from neighbouring countries with which Argentina is anxious to maintain a high volume of trade. Details of the principal items are given in Table 35.

In contrast to those articles the imports of which increased for the reasons given above, there are others which showed a sharp drop in imports as a result of domestic production of commodities such as edible

Table 35

ARGENTINA. CHANGES IN THE IMPORTS OF FOODSTUFFS, BEVERAGES AND TOBACCO

(Values at 1937 prices, in millions of pesos)

Products	Yearly averages			Percentage change compared with 1925-29	
	1925-29	1945-47	1947	1945-47	1947
FOODSTUFFS					
<i>Imports which increased</i>					
Coffee	10.2	14.6	15.2	43.1	49.0
Cocoa	3.0	6.4	6.0	113.3	100.0
Tea	3.8	3.9	5.4	2.6	42.1
Bananas	1.2	1.8	2.3	50.0	91.7
Oranges and tangerines..	1.4	10.4	10.4	642.8	642.8
<i>Imports which decreased</i>					
Edible oils	28.3	..	..	..	..
Rice	18.3	..	..	..	..
Sugar	3.6	7.2 ^a	..	100.0 ^a	..
Yerba mate	28.9	10.1	11.4	- 65.1	- 60.6
Apples and pears	4.9	..	..	..	..
TOBACCO					
Leaf tobacco	16.9	11.4	11.2	- 32.6	- 33.7
Tobacco products	1.4	1.1	1.8	- 21.4	28.6
OTHER COMMODITIES					
	11.7	4.9	13.4	- 52.1	- 14.5
TOTAL	133.6	71.8	77.1	- 46.2	- 42.3

Source: United Nations Economic Commission for Latin America.

Note: The figure for other commodities for 1947 was estimated so as to adjust the total value to the 1937 level.

^a Average, 1945-46.

oils, rice and yerba mate. The same has occurred in the case of sugar, with the exception of the last few years, when, despite a great expansion, production was not able to meet the growing demand.

As regards tobacco, domestic consumption has increased to a very large extent, but it is still necessary to import special types for mixtures.

So far as beverages are concerned, the domestic production of wines had already reduced imports to an insignificant proportion of consumption in 1925-29; this accounts for the small importance of this item.

3. IMPORTS OF CAPITAL GOODS AND OTHER DURABLE GOODS

The changes which have taken place in the imports of capital goods have already been dealt with in another section. We shall only examine in detail here the changes in the main items of this category of goods, and in durable consumer goods, as shown in Table 36.

It should be noted that, notwithstanding the sharp rise of imports in 1947, in the period 1945-47 none of the sub-groups exceeded the average

of 1925-29. In spite of the fact that it is an exceptional year, 1947 gives an idea of the magnitude of unsatisfied demand during the war and of its connexion with the recent development of the Argentine economy. Thus, within the sub-group of transport and communications equipment, the import of passenger-cars showed a heavy increase in that year compared to the average for 1925-29. The machinery and spare parts sub-group also increased considerably, but less than the population, while the import of engines and dynamos decreased; this can probably be explained by the development

Table 36

ARGENTINA. QUANTUM OF IMPORTS OF DURABLE GOODS

(Values at 1937 prices, in millions of pesos)

Goods	Yearly averages			Percentage change compared with 1925-29	
	1925-29	1945-47	1947	1945-47	1947
Capital goods ^a	336.8	177.2	366.0	- 47.3	8.7
Machinery in general	58.0	34.5 ^b	67.9 ^a	- 40.5 ^b	17.1 ^a
Motors and generators	7.0	2.4	4.6	- 65.7	- 34.3
Miscellaneous machinery and spares	36.1	26.0	51.0	- 28.0	41.3
Miscellaneous	14.9	6.1	12.3 ^a	- 59.1 ^a	- 17.4 ^a
Agricultural machinery	36.4	10.5	23.4 ^c	- 71.2	- 35.7 ^c
Tractors	8.0	6.1	15.6	- 23.8	95.0
Harvesters and threshers	17.5	2.2	4.9	- 87.4	- 72.0
Spares	4.2	1.9	2.9	- 54.8	- 31.0
Miscellaneous	6.7	0.3	..	- 95.5	..
Transport and communications material	45.3	33.4	88.2	- 26.3	94.7
Railroad material	36.6	4.0	8.2	- 89.1	- 77.6
Lorries, and spares	7.0	23.5	63.4	235.7	805.7
Miscellaneous	1.7	5.9	16.6	247.0	876.5
Iron and steel	117.1	64.4	120.2	- 45.0	2.6
Plates, bars and sheets	41.8	15.8	30.8	- 62.2	- 26.3
Ingots	1.3	4.1	7.9	215.4	507.7
Non-fabricated steel	6.2	8.5	16.6	37.1	167.7
Wire	15.4	12.8	22.3	- 16.9	44.8
Structural steel	20.9	5.9	10.6	- 71.8	- 49.3
Pipes	27.7	10.8	23.7	- 61.0	- 14.4
Miscellaneous	3.8	6.5	8.3	71.0	118.4
Other building material	38.2	7.7	8.9 ^a	- 79.8	- 76.7
Cement	16.7	..	..	..	..
Sand	5.6	4.7	5.7	- 16.1	1.8
Plate glass	3.4	2.0	3.2	- 41.2	- 5.9
Miscellaneous	12.5	1.0	..	- 92.0	..
Other durable goods	66.7	28.7	55.2	- 57.0	- 17.2
Passenger automobiles	55.5	10.6	25.3	- 80.9	- 54.4
Miscellaneous	11.2	18.1	29.9	61.6	167.0
TOTAL	404.5	207.3	425.2	- 48.8	5.1

Source: United Nations Economic Commission for Latin America.

^a Excludes mining machinery and equipment, and boilers.

^b Mining machinery and equipment for 1945-46 only.

^c Excludes ploughs and spare parts.

^d Excludes marble, colour glass and wall tiles.

^e The total figures are for total capital goods imports and are therefore greater than the sum of the sub-totals which correspond to samples only.

Chart 19

ARGENTINA

FUEL CONSUMPTION IN TERMS OF PETROLEUM EQUIVALENT, THOUSANDS OF TONS

Semi-logarithmic scale



1. Total power consumption.
2. Population.
3. Consumption of domestically produced fuel.
4. Consumption of imported fuel.

Source: United Nations Economic Commission for Latin America.

of domestic industry. The increase of iron and steel imports is very small; here the development of the domestic metallurgical industries is apparent, since there is a large increase in the import of raw materials and a decline in the imports of fabricated iron and steel.

All the sub-groups of capital goods which have been mentioned, show an increase. Imports of farm machinery and building materials, on the other hand, decreased during 1947 as compared with the average of 1925-29. The case of farm machinery has been explained elsewhere. As regards building materials, with the exception of iron which has already been considered, the reduction in imports both of cement and of other products, is of course due to the development of domestic production.

The import of durable consumer goods also shows a decline in 1947 in comparison with the pre-depression five-year period. It is interesting to note that, despite pent-up demand, imports of passenger-cars in 1947 were only half those of the earlier period, while imports of other durable consumer goods, chiefly refrigerators, electrical household goods, etc., showed a considerable increase.

V. Development of fuel and power

1. CONSUMPTION OF ENERGY

(a) *Estimated consumption*

The problem of energy in Argentina is characterized by two facts which make its solution difficult: on the one hand, energy consumption has always been greater than domestic production; on the other, both the existing and potential sources of energy are located at great distances from the main centres of consumption, which in turn are the most densely populated areas of the country.

The country's industrial development, together with the rising of the standards of living, also increased demand for energy to a greater degree than the growth of the population and than the domestic production of fuels, as may be seen in Chart 19.

In 1944-48, the consumption of energy measured in terms of petroleum equivalent, had reached an average of 12,955,000 tons, that is, 70.6 per cent more than in 1925-29. During the same period the population increased by 45.9 per cent.

Of the quantity of energy consumed in the post-war years (1946 to 1949), it may be estimated that about 40 per cent was accounted for by imported fuel. Argentina has always been deficient in sources of energy and in the last quarter of the century has had to import between 40 and 50 per cent of its consumption, except during the most severe phase of the great depression and during the war, when it had to reduce such imports and use its own sources intensively.

In this sense, the period of the Second World War is a good illustration of the effort imposed by necessity: domestic production at that time supplied almost the whole of consumption, in spite of the steady increase of the latter. In order to achieve this, it was necessary to turn to sources which it would not have been economical to use in normal times, such as the asphaltites of the province of Mendoza or the unexportable surpluses of cereals and oil seeds. It was also necessary to intensify the consumption of fuel wood, to the detriment of the already reduced forest reserves,⁷ apart from rationing the consumption of energy.

Once normal conditions were re-established, since the substitution of petroleum and coal by vegetable fuels was not desirable for the country

Table 37

ARGENTINA. FUEL CONSUMPTION
(In terms of petroleum equivalent)

Year	Fuels			Percentage distribution	
	Produced in the country	Imported (In thousands of tons)	Total	Domestic fuels (Per cent of total)	Imported fuels
1925	3,943	2,711	6,654	59.2	40.8
1926	4,293	2,709	7,002	61.3	38.7
1927	4,467	3,528	7,995	55.8	44.2
1928	4,462	3,625	8,087	55.1	44.9
1929	4,388	3,834	8,222	53.4	46.6
1930	4,178	3,877	8,055	51.8	48.2
1931	4,636	3,213	7,849	59.0	41.0
1932	4,791	2,726	7,517	63.7	36.3
1933	4,874	2,732	7,606	64.0	36.0
1934	5,131	3,109	8,240	62.5	37.5
1935	5,191	3,342	8,533	60.8	39.2
1936	5,375	3,512	8,887	60.4	39.6
1937	5,391	3,911	9,302	57.9	42.1
1938	5,088	4,107	9,195	55.3	44.7
1939	5,719	3,929	9,648	59.2	40.8
1940	6,140	3,342	9,482	64.7	35.3
1941	7,597	2,797	10,394	73.1	26.9
1942	9,351	1,529	10,880	86.0	14.0
1943	11,026	802	11,828	93.2	6.8
1944	11,660	814	12,474	93.5	6.5
1945	11,400	1,100	12,500	91.2	8.8
1946*	8,900	4,000	12,900	69.0	31.0
1947*	8,700	4,700	13,400	64.9	35.1
1948*	7,200	6,300	13,500	53.6	46.1

Sources: From 1925 to 1942 inclusive, *Instituto de Estudios Económicos del Transporte*; from 1943 to 1945, Argentine Committee of the World Energy Conference; 1948, Estimate of Ingeniero D. Levin in his report: *Explotación de Combustibles en la República Argentina*; 1946 and 1947: Total consumption calculated by interpolation by the Research Centre, United Nations Economic Commission for Latin America; import of fuels calculated according to information from the *Dirección Nacional de Investigaciones, Estadísticas y Censos*.

* The figures for 1946, 1947 and 1948 are provisional.

⁷ According to the *Comité Argentino de Energía* 100,000 tons of maize, 1,700,000 tons of wheat and 1,500,000 tons of flax and linseed were burnt in 1943. From 1939 to 1945, according to the same source, the electric power plants used about 3 million tons of cereals and 600,000 tons of linseed and oil seeds.

either technically or economically, imports were renewed as soon as it was possible to do so. Thus they once more constitute the source of almost half the consumption of energy and entail a considerable outlay of exchange, which has contributed to the foreign disequilibrium of the country. Thus the Government's preoccupation with this subject can be understood, as can also its priority in economic plans.

(b) *Comparison with other countries*

In order to compare Argentina's consumption of energy with that of the rest of the world, the information contained in *Energy Resources of the World*, a publication of the United States Department of State, can be used. Even though the data contained therein are somewhat incomplete as regards Argentina, since they do not comprise all the fuels of vegetable origin (fuel wood, charcoal and waste products), the comparison with other countries is sufficiently valid to give an approximate idea of Argentina's position in the world. The source mentioned above estimated energy consumption in Argentina at 17,455 million kilowatt-hours in 1937, which is approximately equivalent to 7.1 million tons of petroleum, instead of the 9.3 millions estimated by the most reliable estimates in the country. Argentine consumption therefore represents about 0.5 per cent of world consumption, estimated at 3,500,000 million kilowatt-hours electricity equivalent for that same year. Argentina would have consumed then, per inhabitant, 1,366 kilowatt-hours. (Actually, the readjusted figure for Argentina would give a *per capita* consumption of 1,630 kilowatt-hours). Argentina would thus occupy a prominent place in South America, but would be considerably outdistanced by the United States (10,236 kilowatt-hours per inhabitant); Canada (8,263 kilowatt-hours) and some European countries (France, 3,642; Switzerland, 3,009 kilowatt-hours).

The said publication also estimated the consumption of animate energy—the output of the inhabitants engaged in productive work and of the animals used. During 1937, the consumption of this source of energy in Argentina is estimated as equivalent to 6,736 kilowatt-hours. Calculating the total energy used for productive purposes (which does not include energy consumed for domestic and commercial purposes, in public services, a small part of the energy used in agriculture, and losses and amounts in reserve), the following figures would be reached:

Table 38

ARGENTINA. CONSUMPTION OF ENERGY FOR PRODUCTIVE PURPOSES			
Sources of energy	Total consumption (millions of kWh)	Percentage of total	Consumption per capita (kWh)
Animate	6,736	33	528
Inanimate	13,687	67	1,072
TOTAL	20,423	100	1,600

Source: *Energy Resources of the World*.

In 1937, total energy, animate and inanimate, consumed in the world was 1,250 kilowatt-hours *per capita*; 87.6 per cent of this total corresponded to inanimate energy. In the United States, the average was 6,996 kilowatt-hours, with 97.6 per cent of inanimate energy.

These figures reveal the relatively small degree of mechanization in Argentina, and show how much room there still remains for progress in the use of inanimate energy.

(c) *Types of fuel consumed*

The sources of the energy consumed in Argentina may be classified in five groups: (a) liquid mineral fuels; (b) solid minerals; (c) vegetable fuels; (d) gases; (e) hydro-electric power.

Table 39

ARGENTINA. DISTRIBUTION OF THE ENERGY CONSUMED BY TYPE OF FUEL

Year	Quantities (In terms of petroleum equivalent, in thousands of tons)					Per cent distribution				
	Liquid mineral fuels	Solid mineral fuels	Vegetable fuels	Hydro- electric power	Gases	Liquid mineral fuels	Solid mineral fuels	Vegetable fuels	Gases	Hydro- electric power
1925...	1,561	2,024	2,929	140	..	23.4	30.5	44.0	2.1	..
1930...	3,015	2,142	2,704	194	..	37.4	26.6	33.6	2.4	..
1935...	3,365	1,887	2,829	452	..	39.4	22.2	33.1	5.3	..
1940...	4,707	1,426	2,955	394	..	49.6	15.1	31.2	4.1	..
1944...	3,500	749	7,582	594	49	28.1	6.0	60.7	4.8	0.4
1948...	8,300	1,000	3,500	650	50	62.0	7.0	26.0	5.0	less than 0.5

Sources: 1925 to 1949, *Instituto de Estudios Económicos del Transporte*; 1944, "Balance of calories", for that year, calculated by the Argentine Committee of the World Conference on Energy; 1948, Estimate by Ingeniero D. Levin, *op. cit.*

As may be seen from Table 39, with the sole exception of 1944, which represented the period of the war, there is a clear trend towards rapid increase, both in absolute as well as relative terms, in the consumption of liquid mineral fuels, which comprise petroleum and its derivatives. On the other hand, the consumption of solid mineral fuels (coal and coke) declined. This trend is not the result of any policy. On the contrary, on repeated occasions, attention had been called to the high percentage represented by petroleum in the consumption of fuels, and attempts had been made to reduce it.

While the ratio of coal to petroleum consumption averaged 3.5 in the world, in Argentina it averaged 0.5 during the last ten years prior to the Second World War, mainly due to the excessive use of fuel-oil by the railways and in industries where experts consider that from the national standpoint preference should be given to the use of vegetable fuel and coal. On the other hand, the ratio of fuel-oil to motor spirits consumption

declined during the last decade from 5.1 to 2.7 while in the other consuming countries, the average was 3 to 5.⁸

The preference for fuel-oil, apart from being founded on the convenience and ease with which this fuel can be used and stored, also stems from the fact that Argentina lacks coal resources which can be worked economically, and that fuel-oil is more convenient to import than coal. This is one of the determining factors in the policy of fuel imports, shown by the granting of exchange and in the compensating agreements.

(d) *Distribution of consumption*

There are no complete statistics regarding the distribution of fuel consumption in Argentina, according to use. The partial estimates available, however, make it possible to obtain an idea of this distribution. In 1925, according to the *Instituto de Estudios Económicos del Transporte*, the railways accounted for 23.2 per cent of total consumption, road transport 4.4 per cent and the remainder corresponded to industry and household uses. For 1935 and 1937, the same Institute gave the following distribution:

Users	1935	1937
	(Percentages)	
Railways	18.2	18.2
Motor transport	7.8	8.7
Petroleum fields	5.3	4.0
Electric power plants	7.7	8.3
Industries	16.4	17.2
Household and other uses	44.6	43.6
	100.0	100.0

This distribution differs slightly from that calculated for 1937 in *Energy Resources of the World*, where the consumption assigned to commercial and domestic uses would appear to have been under-estimated, while that corresponding to industries and railways would be over-estimated, the consumption of vegetable fuels not having been taken into account.

There are also private estimates for 1942, and a forecast for 1955:⁹

Users	1942	Forecast for 1955
	(Percentages)	
Railways	18.1	14.6
Motor vehicles (incl. aircraft)	8.1	14.4
Electric power plants	12.6	11.4
Navigation	4.1	5.5
Petroleum fields and refineries	6.3	4.6
Building industry	3.6	9.3
Industry and agriculture	25.0	22.1
Household uses	15.0	12.1
Various	7.2	6.0
	100.0	100.0

⁸ M. Vila and E. Cánepa, in *Necesidades de Energía del país*, report submitted to the Third Argentine Engineering Congress, Córdoba, 1942.

⁹ J. O. Martínez: *Planificación general para el aprovisionamiento de combustibles en la Argentina en los próximos diez años, 1945-55*, Buenos Aires, 1945.

From the foregoing data it can be inferred that the main consumption is by goods-producing activities (industry and agriculture), with transport occupying the second place.

2. PETROLEUM

(c) Production

Argentina produces part of the petroleum it consumes. In 1907, petroleum was found for the first time in Argentine territory; the deposit was located at Comodoro Rivadavia, Patagonia, a region which continues to be the main petroleum-bearing area in the country. Later new sources were discovered in the territory of Neuquén and in the provinces of Salta, Jujuy and Mendoza. Proven reserves amount to 50 million cubic metres, but authorized sources estimated in 1942 the country's petroleum wealth at 955 million cubic metres. Subtracting from this figure the petroleum extracted up to 1940, a reserve of 920 million cubic metres is obtained.¹⁰

Production increased constantly, up to 1943; since then, mainly due to the difficulty in obtaining equipment, production has declined. However, since the end of the war, it has tended to rise again.

At the present time, over 70 per cent of production is derived from *Yacimientos Petrolíferos Fiscales (Y.P.F.)*, a State entity, and the rest

Table 40

ARGENTINA. PETROLEUM PRODUCTION
(In thousands of cubic metres)

Year	Production
1910.....	3.3
1915.....	81.6
1920.....	262.5
1925.....	952.2
1930.....	1,431.1
1935.....	2,273.0
1940.....	3,276.5
1941.....	3,499.7
1942.....	3,768.5
1943.....	3,948.4
1944.....	3,852.1
1945.....	3,637.5
1946.....	3,307.2
1947.....	3,473.3
1948.....	3,692.1

Sources: Until 1947, *Dirección General de Estadísticas y Censos*; for 1948, Report of the *Ministerio de Industria y Comercio*, August 1949.

¹⁰ E. Cánepa, *La reposición de las fuentes de energía en la Argentina*, submitted at the Third Argentine Engineering Congress, Córdoba, 1942.

from private enterprises, in some of which foreign capital participates. The State share in petroleum extraction has been increasing since 1934, when it represented 58.4 per cent of the total.¹¹

Yacimientos Petroliferos Fiscales, which with an initial capital of 8.6 million pesos, has been able to reinvest 354 million pesos of profits and to form reserves of over 800 million pesos (at the end of 1947), has drilled 4,417 wells, of which 2,695 produce petroleum, 15 gas, 1,023 are abandoned or about to be abandoned, and the remainder are being drilled or surveyed, or are in reserve.¹² The entity possesses refineries, installed in various parts of the country, and a fleet of tankers, to import the necessary crude oil.

(b) *Imports and consumption*

The deficit between consumption and production is covered by imports of crude petroleum and various derivatives, particularly fuel-oil.

Imports of crude petroleum have tended to rise, but with sharp fluctuations, owing to supply difficulties which, during the war, were due to lack of transport and after the war to foreign exchange shortage.

The imported crude petroleum is processed, together with that from domestic deposits, in the Y.P.F. refineries and in those of the privately

Table 41

ARGENTINA. IMPORTS OF CRUDE PETROLEUM

(In thousands of cubic metres)

Year	Imports
1945	170
1946	1,084
1947	1,370
1948	2,080
<i>Yearly averages</i>	
1925-29	294
1930-34	350
1935-39	664
1940-44	376
1945-48	1,176

Source: *Dirección Nacional de Estadística y Censos*, years 1940 to 1948; report of the *Ministerio de Industria y Comercio*, August 1949.

¹¹ This trend should logically become more pronounced, since the new Constitution, sanctioned in 1949, stipulates in article 40: "Minerals, water falls, petroleum fields, coal fields, gas deposits, and other natural sources of energy, with the exception of vegetable sources, are the imprescriptible and inalienable property of the Nation, with the pertinent participation in the yield thereof that may be agreed on with the Provinces."

¹² In order to speed the drilling of wells, and taking into account the difficulty of obtaining the necessary equipment, *Yacimientos Petroliferos Fiscales* contracted with the Drilling Exploration Company of Nevada, for drilling a minimum of 40 wells with a depth of up to 3,500 metres.

owned companies. The refining capacity of the former, which was some 8,000 cubic metres daily in 1943, has been increased to 10,000 cubic metres. With the additions which are being carried out, it is expected to reach 17,000 cubic metres daily by the middle of 1950, and 22,000 by the beginning of 1951. Taking into account the refineries belonging to privately owned companies, Argentina will at that time have a capacity for processing 8.5 million cubic metres per year, which amount is much greater than those of the last ten years.

Table 42

ARGENTINA. CRUDE PETROLEUM PROCESSED BY THE REFINERIES

(In thousands of cubic metres)

Year	Government refineries	Privately-owned refineries	Total
1940	2,041	1,849	3,890
1941	2,259	1,915	4,174
1942	2,403	1,688	4,091
1943	2,716	1,360	4,076
1944	2,585	1,327	3,913
1945	2,526	1,307	3,833
1946	2,433	1,959	4,392
1947	2,687	2,093	4,780
1948	3,232	2,386	5,618

Source: Ministry report submitted to the Chamber of Deputies on 25 August 1949.

Until the afore-mentioned capacity is reached—the present capacity being estimated at 6.5 million cubic metres—Argentina has to import large quantities of petroleum products as well, in order to meet the growing consumption.

Table 43

ARGENTINA. IMPORTS OF PETROLEUM PRODUCTS

(In thousands of cubic metres)

Year	Fuel-oil	Diesel oil	Gas oil	Motor spirits
1940	1,082	239	184	2.7
1941	1,101	262	46	0.7
1942	642	70	16	0.2
1943	248	53	..	..
1944	249	9	..	..
1945	379	21	2	0.4
1946	2,135	222	3	20.2
1947	2,508	76	7	136.3
1948	2,734	86	17	254.2

Source: *Anuarios del Comercio Exterior* for 1947 and 1948. Report of the *Ministerio de Industria y Comercio*, August 1949.

Until 1949, imports of petroleum and petroleum products came from the Dutch Antilles, Venezuela, Colombia, Peru, the United States and Arabia, and were, in general, payable in dollars. Since the signing of the last Anglo-Argentine agreement, imports come from the Near East (Iran and Iraq), and payments are made in pounds sterling. This is an advantage for Argentina, since it possesses surpluses of that exchange, thanks to its favourable terms of trade with the sterling area. However, from the technical point of view, petroleum from the Near East has the disadvantage of its sulphur content (1.4 per cent) being higher than that of American petroleum (1.0 per cent). The Argentine Government is trying to remedy this difficulty by building refining units with a capacity for 4,000 cubic metres per day, specially adapted for the processing of crude petroleum with a high sulphur content.

3. OTHER FUELS

(a) *Solid mineral fuels*

As regards solid mineral fuels, particularly coal, the situation in Argentina is much less favourable than that of petroleum. Almost the entire consumption of coal has to be covered through imports. These remained at about 3 million tons per year, between 1925 and 1939, and on an average represented 25 per cent of the total fuel consumption. Before that, coal occupied a more important place. The maximum volume imported, including coke, was 3.8 million tons, in 1913. During the First World War, net imports dropped to 626,500 tons, in 1917. From 1918, they increased, until a new high was reached in 1927, with 3.3 million tons. The great depression reduced imports to 2.3 million tons in 1932, and the recovery which followed passed the 3 million ton mark again in 1937. During the Second World War, supplies from abroad decreased, until they dropped to a minimum of 560,000 tons, in 1942.

This lack of supplies led to the working of domestic deposits, without taking economic considerations into account. In Neuquén and Mendoza, small coal and asphaltite mines were worked, with the following results:

Table 44

ARGENTINA. PRODUCTION OF SOLID MINERAL FUELS
(In thousands of tons)

<i>Year</i>	<i>Coal</i>	<i>Asphaltite</i>
1940.....	9.1	..
1941.....	17.2	..
1942.....	56.4	..
1943.....	7.5	113.1
1944.....	4.6	98.6
1945.....	3.3	135.3
1946.....	2.5	83.8
1947.....	13.9	80.9

Source: Dirección Nacional de Estadística y Censos.

Coal imports were re-established after the war, although they did not reach the pre-war volume. In 1947, the last year for which statistics have been published, 1.2 million tons were imported. In the last Anglo-Argentine agreement, imports of 1.5 million tons were stipulated for the period between July 1949 and July 1950.

The Argentine Government bases great hopes on increasing domestic coal production, through the working of the Rio Turbio deposits, located in the territory of Santa Cruz, whose proven reserves are around 250 million tons. The quality of the Rio Turbio coal is satisfactory; its calorific value exceeds 6,200 calories per kilogramme and its ash content is about 12 per cent. The location of the deposit, in the far southwest of the country, far from consuming centres and some 400 kilometres from the nearest harbour, constitutes the main difficulty for economic production.¹³

(b) *Vegetable fuels*

Fuelwood, charcoal and vegetable waste products are included in this group. Under exceptional circumstances, during periods of emergency, wheat, maize and linseed oil have been burnt, as has already been indicated.

Fuelwood, which has always represented a high percentage in the energy consumed, comes from the forest regions of the north and northeast of the country. The total area covered with exploitable forests is estimated at 32 million hectares, with a potential volume of 700 million tons of fuelwood. It has been calculated that by rational exploitation and re-forestation, 14 million tons of fuelwood per year could be extracted.

Actual consumption is very close to that figure, but the exploitation has been carried out without any reforestation. In 1942, during the war emergency, 11.7 million tons of fuelwood and charcoal were consumed (the latter being expressed in its fuelwood equivalent), and the energy so generated represented 31.2 per cent of total consumption. In 1943, the consumption of fuelwood and charcoal was 16.5 million tons, or 37.2 per cent of total energy consumption. In 1947, the last year for which statistics are available, the consumption of fuelwood and charcoal declined to 9.5 million tons.

The consumption of fuelwood, which tends to increase slowly in normal times, presents two problems: that of transportation and that of maintaining the forest reserves. These problems have been recognized by the Argentine Government, but their solution presents difficulties.

¹³ In the Presidential Message addressed to the National Congress on 1 May 1950, it was stated that in 1949, owing to transport difficulties in the region, 25,885 tons of coal were extracted to fill local needs. To overcome this drawback, the Government hopes in the course of 1951 to build a railway line of 0.75 metres gauge, which would permit the shipping of 12,000 tons of coal daily.

The other vegetable fuels come under the category of waste products and are consumed locally. They consist mainly of waste matter from the manufacture of industrial and agricultural products. Altogether, this group of fuels represented a sixth of the total consumed in Argentina, and was equivalent to 1.2 million tons of petroleum.¹⁴

The consumption of another vegetable fuel is tending to increase, through the Government's efforts to encourage its production and use. This is alcohol, obtained from distilling vegetable matter. Up to now, its consumption has not been of any great importance in the total (its peak in 1941, of 15,205 tons, was equivalent to 9,100 tons of petroleum). The Government hopes to promote the use of this fuel and has planned steps for achieving this. One of these consists in the manufacture of ethylic alcohol from maize; it is hoped to produce 250 million litres of alcohol, to be mixed with gasoline in a proportion of 20 per cent with the object of obtaining a domestic motor spirit which will permit a reduction of imports. Through an international tender in which companies from the United States, Brazil and Europe participated, the building of five distilleries in various parts of the country was awarded to take place over a period of four years. The cost of these plants will be 320 million pesos; through the production thus obtained, it is estimated that it will be possible to save some 66 millions in exchange per year, at the present price of imported gasoline.¹⁵

(c) Gas fuels

The consumption of natural gas has represented about 4 per cent of the fuel consumption. Apart from natural gas, residual gas is used in Argentina, derived from the petroleum distilleries, liquid gas, and artificial gas. These gas fuels have accounted for between 6 and 5 per cent of total consumption.

Since the State took charge of the different enterprises producing and distributing gas, sales to private users has increased, so that in the Federal capital alone 386,000 consumers are serviced, as against 155,000 in 1945, when the British gas company was expropriated.

One of the first measures was to use gas from the petroleum distilleries, transporting it by short gaspipes built between La Plata and Buenos Aires and between Tupungato and Mendoza, to the consumption centres. However, the work of major importance carried out has doubtless been the

¹⁴ To calculate the consumption of these fuels, the *Instituto de Estudios Económicos del Transporte* used the following averages:

Bagasse: 27 per cent of the cane ground in the sugar mills;

Bran: 25 per cent of the production of maize as grain;

Quebracho sawdust: 3 times the quebracho extract exported;

Sunflower husks: 46 per cent of the seed used by the oil industry;

Peanut shells: 50 per cent of the seed used by the oil industry;

Rice husks: 25 per cent of the clean rice.

¹⁵ Ministry report of 25 August 1949.

building of the gas pipeline from Comodoro Rivadavia to Buenos Aires, for the transport of some 350,000 cubic metres daily of natural gas, which formerly was partly consumed locally, or was allowed to go to waste. The pipe-line is some 1,600 kilometres long, with only one repressuring plant, and a capacity of 340,000 cubic metres daily. When fifteen intermediate repressuring plants have been installed, capacity will be able to reach 1.2 million cubic metres per day.

According to official estimate, in 1951, the year in which it is planned to distribute 188 million cubic metres, or 1,800 million calories, an economy of 62 per cent will be achieved, through replacing other fuels used in households such as kerosene, charcoal, fuelwood and electricity, by natural gas. The consumption of these other fuels would have entailed a use of 5,000 million calories, if the proportions consumed of each fuel remained the same.¹⁶

The Argentine Government proposes to continue building gas pipes and oil pipes, the network of which will be extended over a length of 3,200 kilometres, when those in course of construction are completed. At present 1,980 kilometres of that network are already in operation.

4. ELECTRIC POWER

(a) *Hydro-electric power*

Argentina is not as advanced in the matter of water power as in the use of other sources of energy. Nevertheless, the Argentine hydro-electric potential was calculated at 20 million kilowatts, many years ago. This estimate has been verified by new surveys, which distribute the country's hydro-electric resources as follows:

<i>Region</i>	<i>Millions of kW</i>
Northern	2.5
Western	3.2
River	3.8
Central	0.5
Southern	10.0
	20.0

Naturally, this is a theoretical potential. Taking into consideration the permanent water flows, the potential would be reduced to 3 million kilowatts, which, used at the rate of 4,000 hours per year, could generate 12,000 million kilowatt-hours, equivalent to 4.2 million tons of petroleum. The Department of State of the United States has estimated that the full use of Argentina's hydro-electric reserves would yield 32,240 million kilowatt-hours.¹⁷

¹⁶ Estimate based on the fact that household consumption requires 100 calories of natural gas, 167 calories of manufactured gas, 238 of kerosene, 400 of charcoal, and 485 of electricity, in order to obtain the same heating value.

¹⁷ *Energy Resources of the World, op. cit.*

Whatever the figure at which all the reserves are finally estimated, experts agree that a million kilowatts might be utilized without difficulty, with a possible production of 4,000 million kilowatt-hours. It is surprising that with resources of such magnitude, in 1945 there was an installed capacity of only 46,000 kilowatts. There are two reasons for this small development. In the first place, the fact that the main waterfalls (Iguazú, Apipé, Salto Grande) are situated at relatively great distances from the most important centres of population, entails the building of extensive transmission lines so that until a few years ago, the technical-economic problem could not have been solved. In the second place, the installation of electricity generating facilities requires heavy capital investments, which would have made it necessary to postpone other more urgent requirements.

The Government, in its Five Year Plan, has included various electricity projects. The capacity of the works already built or under construction (August 1949) amounted to 159,500 kilowatts. The projects approved comprise a total of 595,000 kilowatts, corresponding to an annual production of 711 millions and 2,084 million kilowatt-hours respectively. The total production calculated is equivalent to 1.4 millions tons of coal and represents an annual saving of 125.8 million pesos, with a corresponding saving in foreign exchange.¹⁸

(b) *Thermo-electricity*

As has been shown above, hydro-electric energy is not of any great importance in Argentina at the present time. Since thermo-electricity constitutes a transformation of the energy contained in the fuels required to generate it, it would not be relevant to deal with it here. Nevertheless, it is interesting to consider it as an indicator of the country's economic development.

Until the end of the First World War, there was very little electrification in Argentina. In 1900, the total production of electric power has

Table 45

ARGENTINA. PRODUCTION OF ELECTRIC POWER

Periods	Yearly average (In millions of kWh)	Yearly increase per cent
1925-29	1,128	
1930-34	1,563	7.7
1935-39	2,171	7.8
1940-44	2,803	5.8
1945-48	3,460	5.8

Sources: United Nations Economic Commission for Latin America, based on reports from the *Asociación de Productores y Distribuidores de Electricidad*; *Dirección General de Estadística y Censos*.

¹⁸ Ministry report of 25 August 1949.

been estimated at 30 million kilowatt-hours, which would give an average of only 6.5 kilowatt-hours *per capita*. In 1910, electricity production was estimated at 200 million kilowatt-hours, and in 1920 at 520 millions, that is, a *per capita* consumption of 30 and 61 kilowatt-hours, respectively. Since then, the production of electric power has developed rapidly.

The Second World War, which created supply difficulties since the electric plants depend to a large extent on imported mineral fuels, somewhat lessened the growth of electricity production. But from 1945 on, a new development took place, which partly offset the lower rate of increase of the war years. Production in 1949 can be estimated at 4,125 million kilowatt-hours, that is, practically double the power produced in 1936. The *per capita* consumption was 250 kilowatt-hours, which can be considered low. To the power produced by public utilities should be added that produced for private use, which is important, particularly in industry.

According to the 1937 industrial census, electric power used by manufacturing establishments during that year consisted of 385.6 million kilowatt-hours generated in their own plants and 510 million were purchased from public utilities, that is, a proportion of 43 and 57 per cent respectively. This proportion has remained almost stable. In 1941, the last year for which data are available, power produced by the industrial consumers themselves was 593 million kilowatt-hours, and that purchased was 670 million kilowatt-hours, or 47 and 53 per cent respectively.

No data are available for later years. There are reasons to believe, however, that the consumption of electric power produced for private use increased considerably, because of the difficulties encountered by public utilities in meeting the demand, since they have been unable to expand their installations in the necessary measure.

Altogether, the degree of electrification in Argentina is slight, in comparison with other countries, since only 10 per cent of the total consumption of energy corresponds to electricity. It may be supposed that this degree of electrification will tend to rise in the next few years, as the handicaps encountered by the electric plants for the enlargement of their installations disappear and, above all, as the plan for using hydro-electric sources is put into practice. Then electricity could represent between 15 and 20 per cent of the energy consumed.

According to the trend shown by the statistics for 1924 and 1942, it has been calculated that by 1955, production would be 6,350 million kilowatt-hours.¹⁹ It is estimated that by rationalizing the consumption of energy, another 1,880 million kilowatt-hours could be added to this supply, with which to replace the consumption of certain fuels, electrify the railways and increase the use of electricity in homes. All this would mean a

¹⁹ Ingeniero G. Sorojovich, *Planificación general para el aprovechamiento de combustible y energías en la República Argentina en los próximos 10 años*, Buenos Aires 1945.

probable total consumption of 8,230 million kilowatt-hours, that is, a *per capita* consumption of 500 kilowatt-hours, a goal which the experts believe can be reached between 1955 and 1960.²⁰

5. PROSPECTS

The prospects for the supply of energy in Argentina for the near future may be summed up as follows:

(1) By 1955 total consumption will amount to the equivalent of about 16 million tons of petroleum. In 1945, experts calculated the consumption for 1955 as equivalent to 16.4 million²¹ and 16.0 million²² tons of petroleum.

(2) The amount of fuel which should be imported in 1955 will vary between the equivalent of 6 and 7 million tons of petroleum. The minimum amount to be imported will be equivalent to 5.6 million²² tons of petroleum, in the event that intensive exploration, drilling of wells and production of domestic petroleum is successfully carried out, even though this might be difficult to achieve under present circumstances.

(3) Faced by the problem presented by the high proportion of fuels to be imported, Argentina can be expected to develop its own sources to the best of its ability. In this sense the development of hydro-electric resources can be particularly expected in the next few years, the Government paying special attention to this.

(4) Argentine experts advocate rationalization in the consumption of fuels. According to the *Ministerio de Industria y Comercio*, only by rationalizing the use of fuels, it would be possible annually to save 2,565,000 tons of petroleum or their equivalent. The Ministry proposes to achieve this rationalization through the rapid renewal and modernization of the locomotives. Among the measures projected are the following:

(a) Substitution of "diesel oil" for the consumption of motor fuels in vehicles whose carrying capacity is 5 tons or more;

(b) Rational utilization of the electric power used in transport, and the modernization of the railway system;

(c) Substitution of river transport for railway freight in the regions close to the littoral (Paraná and Uruguay Rivers);

(d) Encouragement for the installation of charcoal gazogenes;

(e) Encouragement for the installation of steam generators and other burners which can use either solid mineral fuels, vegetable fuels or waste products indiscriminately;

²⁰ Ingeniero J. O. Martínez: *Planificación general para el aprovechamiento de combustible y energías en la República Argentina en los próximos 10 años*, Buenos Aires 1945.

²¹ Ingeniero G. Sorojovich, *op. cit.*

²² Ingeniero J. O. Martínez, *op. cit.*

(f) Regulations to the effect that every new building shall have generators of this type which would also be connected with the gas distribution system;

(g) Reafforestation;

(h) Compulsory use of domestic motor fuels (a mixture of gasoline and alcohol);

(i) Interlinking of hydro-electric plants, in Greater Buenos Aires.

(5) In view of the tendency clearly indicated in Table 37, of the growing predominance of petroleum derivatives in total fuels used, and since neither hydro-electric power nor gas fuel power can satisfy more than a maximum each of 8 per cent of the country's requirements, it is to be hoped that during the next ten years at least, the fuel and power policy will be mainly aimed at increasing the supply of petroleum, both by increasing domestic production and by importing the further quantities required to help in satisfying the consumer needs.

VI. Development of industry

1. RATE OF INDUSTRIAL GROWTH

The significance of the 1930's in the development of Argentine industry has been described elsewhere. Unfortunately no annual data are available prior to 1935 with which to compare the different phases of growth over a period of time. It is known, however, that the substantial increases in customs tariffs introduced in 1931, the year in which a definite protectionist policy was adopted, and the exchange restrictions imposed at the end of 1933 acted as a powerful factor in stimulating manufacturing production.

However, it would be a mistake to believe that Argentine industry began to develop in those years. The 1914 census, in fact, had already registered some 362,300 persons as employed in industry; this category was increased by barely 28 per cent in the twenty-one years between 1914 and 1935, reaching 463,000 persons, while in the brief period between 1935 and 1940, the number of persons gainfully employed in industry rose to 710,400, thus showing a 53 per cent increase. It is estimated that this figure will exceed 1,250,000 persons in 1950, revealing a further increase of 76 per cent.

It should be observed, however, that the relatively slow rate of increase between 1914 and 1935 is not representative of industry in general, but of some of its branches, that is, food products, beverages and tobaccos; forestry products; hides; stones; clays and ceramics. The influence of export activities is evident in several of these branches. On the other hand, the textile and other industries grew with considerable intensity.

By the time of the 1930's, therefore, a certain amount of industrial experience was already available which facilitated the growth of production, when the serious decline in exports and the deterioration in the terms of trade forced the country to dispense with a considerable part of its usual imports.

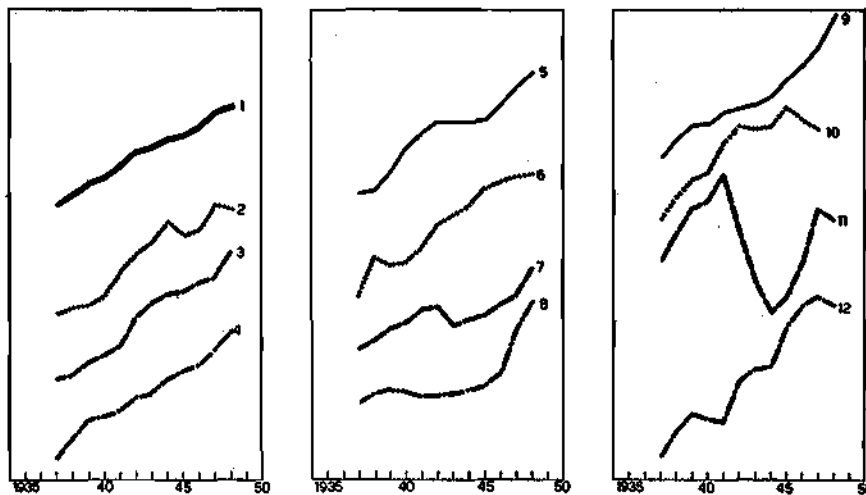
Chart 20

ARGENTINA

INDEX OF INDUSTRIAL EMPLOYMENT

1943 = 100

Semi-logarithmic scale



1. Index of total industrial employment.
2. Foodstuffs, beverages and tobacco.
3. Textile fibres and manufactured products thereof.
4. Leather and manufactured leather goods.
5. Paper, cardboard and manufactured products thereof.
6. Stone, earth, glass and ceramics.
7. Metals and manufactured metal goods.
8. Machinery and vehicles.
9. Petroleum, coal and derivatives thereof.
10. Quarries and mines.
11. Rubber and manufactured rubber goods.
12. Chemical products, oils and paints.

Source: United Nations Economic Commission for Latin America.

The attempts at an anti-cyclic policy, hitherto untried in Argentina, constituted another favourable factor in industrial expansion during these years. This policy, which in developed countries is put into practice by means of public works, in Argentina took the form of crop purchases. Whenever exports of the principal cereals were hindered by the adverse situation of the international market, both during the 1930's and the

Table 46

ARGENTINA. INDEX OF PERSONS EMPLOYED IN INDUSTRY

(1943 = 100)

Year	Gen- eral level	Food- stuffs, bever- ages and tobacco	Textile fibres and manu- factures	Machin- ery and vehi- cles	Metals and metal manu- factures	Leather and manu- factures	Quar- ries and mines	Stone, earth, glass and ce- ramics	Chem- ical prod- ucts, oils and paints	Petro- leum, coal and their deriva- tives	Rubber and rubber manu- factures	Paper, card- board and their manu- factures
1937	79.3	74.5	72.7	96.3	91.1	76.7	69.3	71.8	70.0	80.8	108.7	74.4
1938	82.7	76.5	73.7	99.9	94.4	83.0	75.5	84.5	77.4	86.4	122.3	75.5
1939	86.0	77.4	77.9	102.1	98.7	89.4	81.6	82.0	83.7	91.9	135.4	81.3
1940	88.1	80.3	80.3	101.0	101.8	91.3	84.1	82.8	81.6	92.8	139.6	89.7
1941	92.8	88.7	83.6	98.7	107.5	93.5	94.5	87.6	80.7	96.9	154.2	95.5
1942	98.0	95.4	93.9	98.9	108.6	97.9	101.9	96.2	95.2	98.1	122.9	100.1
1943	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1944	104.0	108.6	103.5	101.6	103.0	106.9	101.3	104.5	100.7	103.5	88.2	100.6
1945	105.1	102.5	104.9	103.0	104.4	110.3	110.0	112.5	119.0	110.8	94.2	101.0
1946	108.6	105.4	108.5	108.2	110.0	113.3	104.0	116.0	130.5	117.6	109.2	108.3
1947	116.5	117.4	111.0	129.2	114.0	110.0	100.3	117.4	136.2	126.7	136.2	116.4
1948	118.3	114.2	122.7	146.7	126.9	118.1	..	117.8	131.7	144.2	130.3	122.9

Source: *Síntesis Estadística Mensual de la República Argentina*.

Note: The 1948 figures are estimated on the basis of the change in quantum of industrial production between 1947 and 1948.

Second World War, the State either purchased the crops for resale at a more favourable period, or else diverted them to the domestic market; this occurred principally with maize which, since it could not be exported during the war, had to be used as fuel and fodder. If aggregate purchasing power had not been maintained in this way, the contraction of demand would have had a very unfavourable effect on the newly developing industry, in view of the direct and indirect importance of the demand of the farming population.

The Second World War offered new incentives to the process of industrialization. On the one hand, the closing of important markets which had been the source of Argentina's imports, opened the market and that of neighbouring countries to domestic production of certain manufactures. On the other hand, the large numbers of refugees of all kinds and of varied technical qualifications constituted a valuable technological contribution. This flow of immigration also led to the establishment of new factories with equipment brought into the country by the immigrants themselves. This explains why, at the end of 1946, according to the figures of the 1947 preliminary census survey, there were 100,000 industrial establishments, that is, twice the number which had existed in the country ten years before.

Finally, in the post-war period, assisted by a definitely protectionist policy and encouraged by the Government and the considerable imports of capital goods, Argentine industry entered upon its phase of final consolidation.

The convergence of all these favourable factors explains the sustained growth observed in the total index of industrial employment and in the indices of its main branches. This growth has not proceeded at a constant rate, as may be observed in Chart 20.

2. SOME CHARACTERISTICS OF ARGENTINE INDUSTRY

The most recent and complete data which can be used to analyse Argentina's industrial structure are those provided by the 1941 industrial statistics. According to this source, out of approximately 60,000 establishments, 70 per cent were small workshops or factories operated directly by the owner himself or with less than five workers. The rest, which included 90 per cent of the total workers employed, were distributed as follows:

Table 47

ARGENTINA. INDUSTRIAL ESTABLISHMENTS ACCORDING TO THE NUMBER OF WORKERS EMPLOYED IN 1941

Number of workers employed		Number of establishments	Percentage of total	Total number of workers (In thousands)
From 6 to 25.....	11,987	72.8	134.6	
From 26 to 50.....	2,163	13.1	76.7	
From 51 to 100.....	1,197	7.3	83.8	
From 101 to 250.....	773	4.7	118.9	
From 251 to 500.....	211	1.3	73.6	
From 501 to 1,000.....	90	0.5	60.9	
1,001 and over.....	56	0.3	113.5	
TOTAL		16,477	100.0	662.0

Source: Dirección Nacional de Estadística y Censos.

Some 40 per cent of the workers employed by industry were in those branches which supplied the basic needs of the population, that is food and clothing, and the gross value of production of these industries accounted for 55 per cent of the total. In order of importance, both by reason of the number of workers employed and the value of production, these were followed by metal manufacture and machinery and vehicles. It is not possible to establish in what direction and to what extent this structural composition of Argentine industry has been modified since 1941, but according to certain indications, it is probable that the importance of establishments engaged in the manufacture of metals, machinery and chemical products has increased.

It may also be assumed that when the new establishments which have been recently installed or are in process of installation, enter into full production, the relative contribution of the food industry will decline, since it appears to have reached saturation point, while the importance of textiles and other manufactures will increase.

Table 48

ARGENTINA. RELATIVE IMPORTANCE OF THE PRINCIPAL MANUFACTURING GROUPS IN 1941 AND 1943*

(Establishments with 5 or more workers)

Industries	Workers employed		Value of production	
	1941	1943 (Percentage of total)	1941	1943
Food products, beverages and tobaccos	23.0	22.6	37.9	37.1
Textiles and their manufactures	17.6	17.9	16.5	18.4
Forestry products and their manufactures	8.2	9.7	3.7	4.6
Paper, cardboard and their manufactures	2.0	2.0	1.9	2.1
Printing, publishing, etc.	3.9	3.4	3.6	3.2
Chemical and pharmaceutical goods, oils and paints	3.4	3.9	5.3	5.8
Petroleum, coal and derivatives	0.7	0.6	4.4	3.1
Rubber and rubber manufactures	1.4	0.5	1.4	0.7
Leather and leather manufactures	4.0	4.4	3.5	4.1
Stone, sand, glass and ceramics	4.5	4.7	2.8	3.2
Metals and metal manufactures, excluding machinery	9.7	8.8	8.0	7.3
Machinery and vehicles	11.2	10.5	7.5	6.6
Miscellaneous	10.4	11.0	3.5	3.8
TOTAL	100.0	100.0	100.0	100.0

Source: Dirección Nacional de Estadística y Censos.

* Excluding electric power plants, building enterprises, quarries and mines.

The predominance of the food and clothing industries is reflected in the proportion of raw materials of foreign origin which Argentina consumes and which, owing to conditions brought about by the war, gradually declined until they represented less than 17 per cent of total raw materials in 1943. It is possible that once the flow of imports is re-established, the proportion of imported raw material will rise again, though not to the pre-war levels, in view of the strong development of domestic production which will partly or totally replace raw materials formerly imported. However, at present, it is probable that in spite of present restrictions, the proportion of raw materials of foreign origin will be greater than in 1943, when industry in its effort to fill the gaps which imports left in the local market had to resort to substitutes and waste products which are no longer used.

It is obvious that these ratios which reflect the dependence of industry in relation to imported raw material²³ cannot be regarded as all-important. There have been many instances of highly industrialized countries possessing on their own territory only a part of the raw materials which they require. Nevertheless, a large proportion of the raw materials required by Argentine manufacturing is found on the national territory, and it may be assumed that eventually the exploration and development of its natural

²³ In certain cases the lack of a product of slight volume and value within the whole could paralyse important sectors of industry.

Table 49

ARGENTINA. PROPORTION OF MATERIALS OF DOMESTIC ORIGIN UTILIZED BY ARGENTINE INDUSTRY

Industries	Years	
	1939 (Percentage)	1943
Foods, beverages and tobacco	93.5	95.6
Textile fibres and manufactures	62.2	80.2
Forestry products and their manufactures	51.2	56.5
Paper, cardboard and their manufactures	55.6	71.0
Printing	33.9	41.3
Chemical products	69.5	73.4
Petroleum	63.4	90.9
Rubber and rubber manufactures	29.0	46.6
Leather and leather manufactures	94.1	96.8
Stone, sand, glass and ceramics	64.1	78.8
Metals and metal manufactures	31.7	59.1
Machinery and vehicles	25.8	56.8
TOTAL	71.6	83.4

Source: Dirección Nacional de Estadística y Censos.

wealth will permit the increase of their production during emergencies, as in the case of iron, which will be examined later.

The value added by the manufacturing industry varies considerably in its different branches. Thus, in foods, beverages and tobaccos, where the processing of agricultural products is not complicated, it barely exceeds 10 per cent of the gross value of the finished products, whereas at the other end of the scale stand the manufacture of machinery and vehicles, and the printing industry, in which the value added exceeds 50 per cent. On the average, the net value contributed by manufacturing is approximately 35 per cent, of which salaries and wages constitute 55 per cent.

Table 50

ARGENTINA. VALUE ADDED BY MANUFACTURING AS A PERCENTAGE OF THE GROSS VALUE OF OUTPUT

Year	Value added	Wages and salaries as a percentage of value added
1937	35.1	57.8
1939	37.7	55.5
1941	34.4	57.8
1943	34.5	55.1

Source: Dirección Nacional de Estadística y Censos.

A brief consideration of the main branches of Argentine industry follows, in which their recent development or possibilities thereof will be examined.

3. TEXTILE INDUSTRY

All three branches of the textile industry are highly developed in Argentina. They depend only to a very slight extent on imports of raw materials and are in a position to meet almost all demand except that for high grade textiles. The manufacture of the latter is not economic because of their limited market; furthermore it has been thought necessary to maintain imports of such textiles in view of the country's trade commitments.

(a) Cotton

The cotton textile industry was established in Argentina long before the First World War, with imports of yarns used in weaving the coarse fabrics for alpargatas (canvas sandals) and making of wicks for candles. Later, progress was gradually made in other textiles, and during the First World War, in order to replace the missing imports, the first yarn factory was established. During the 1920's, the production of cotton was developed, so that at the beginning of the great depression there were five spinning mills in the country. On the whole, development has been relatively slow, as can be seen from the fact that in 1930 domestic production of these textiles barely supplied 8.8 per cent of total consumption.

In this, as in other instances, intense development coincided with the depression and was accentuated later. Before the Second World War the number of spinning mills exceeded 22, 10 more being added during the conflict, and others later. Thus the 8.8 per cent of total consumption supplied by domestic industry in 1930 expanded to such an extent that in 1940, its output equalled 56.9 per cent of total consumption and in 1945, 86.4 per cent. By 1950, total demand for textiles was met by domestic production, except for certain fine fabrics made with yarns of higher than 30 counts.

Table 51

ARGENTINA. COTTON TEXTILE CONSUMPTION				
	1930	1935	1940	1945
(Percentage of total)				
Domestic production	8.8	26.2	56.5	86.4
Imports	91.2	73.8	43.5	13.6

Source: "La industrialización de fibra de algodón en la República Argentina", Dirección de Algodón (Secretaría de Industria y Comercio), 1947.

It was only recently that the cotton textile industry concluded its period of intense expansion, by satisfying the bulk of the domestic demand and substituting its products for goods which the country could not continue importing, for reasons which have already been explained. It has entered at present upon a stage of gradual development which will become more apparent with the increase of the population and the growth of industry and its progressive adoption of new technical methods.

An appreciable effort in the direction of investment was required on the part of industry in order to complete this first stage, as these figures show: the 215,000 spindles installed by 1935 increased to 480,000 by 1947; the number of looms increased even more—from 3,650 in 1935 to 14,250 in 1945; this expanding tendency persisted still later although no data making it possible to give figures for the increase are available for the more recent period.

Production was estimated at 63,000 tons of yarn in 1946, and the target fixed by the Government plan for 1951 is 80,000 tons.

This rapid development shows that Argentina, unlike other Latin-American countries, has no problem of obsolete equipment, since 90 per cent of the spindles were installed after 1930. Nevertheless, during the war there was a certain reduction in the number of looms, since the effort to increase their quantity resulted principally in the purchase of looms, with the result that the proportion of automatic looms to non-automatic looms dropped from 54.2 per cent in 1939 to 32.9 per cent in 1945. The heavy imports in recent years have tended to correct this fact and the over-aged looms have given a certain reserve capacity for periods of emergency.

An interesting feature is observed in studying the organization of the textile industry. Small spinning establishments of less than 10,000 spindles, which constitute half of the total number of spinning mills, account for barely 18 per cent of production, whereas 97.6 per cent of the weaving mills are small establishments which contribute a third of production, the other two-thirds being contributed by the remaining 2.4 per cent. These small independent establishments work for the large ones, which in this way simplify their administrative problems to a certain extent, without any reduction of technical efficiency, since it is said that the productivity of the small weaving mills is satisfactory.

No data are available for the productivity of the Argentine textile industry such as those contained in the textile survey which is being carried out by the secretariat of the United Nations Economic Commission for Latin America in various Latin-American countries. Some details of the preliminary results of this survey are given in the chapters of this review dealing with Brazil, Chile and Mexico. However, it would appear that in Argentina the productivity of labour has declined, judging from official concern in this field. Labour productivity declined by about 20 per cent between 1939 and 1947. On the other hand, the output of mechanized installations increased by 23 per cent between those years, due to the fact that the need for greater production and the shortage of machinery led the factories to work three shifts, and even to keep the machinery in continuous use without paying proper attention to its maintenance; this led to excessive wear and tear.

(b) *Wool*

In the woollen textile industry the process of development and integration has been similar to that described. Table 52 shows the quantities of washed wool, its domestic consumption and the production of woollen yarns.

Table 52

ARGENTINA. PRODUCTION AND CONSUMPTION OF WASHED WOOL
AND PRODUCTION OF WOOLLEN YARNS

Year	Production of washed wool	Domestic consumption of washed wool	Production of woollen yarns
		(In thousands of tons)	
1935	23.6	7.4	..
1936	24.7	11.8	..
1937	22.8	10.9	..
1938	25.1	11.4	..
1939	31.7	13.2	12.3
1940	38.6	12.9	..
1941	44.8	14.2	..
1942	52.8	19.4	16.2
1943	60.6	23.8	19.5
1944	60.5	25.6	20.7
1945	65.6	26.5	22.5
1946	67.3	31.8	25.4
1947	60.8	33.1	26.5

Source: Dirección Nacional de Estadística y Censos.

Though the number of spindles installed did not increase as much as in the cotton industry during the war years, it has shown a considerable growth recently. The spindles in use totalled 146,500 in 1935 and amounted to 211,000 ten years later. By 1947 this figure had risen to 280,000, and when all the machinery imported has been installed, it is estimated that the total number of spindles will attain the 540,000 mark. The woollen industry will thus be in a position to satisfy the greater part of the demand for worsteds, except for very fine qualities, which are mainly imported from Great Britain. Before the beginning of the last war, the woollen textile industry's principal output consisted of carded fabrics; with the development of combed fabrics the integration of this industry will be complete.

(c) *Rayon*

The rayon textile industry began in Argentina before the great depression, with imported yarn. However, the manufacture of the latter was only undertaken in the second half of the 1930's. In 1937 the first acetate rayon yarn factory began operations, and was followed in 1938 by a viscose yarn factory using imported raw materials. The best technique was adopted in both establishments, but soon after they began production, war broke out, giving rise to considerable difficulties in connexion with supplies of their essential raw material. The paper industry, which had long

since been established in Argentina, came to the assistance of the new rayon industry, undertaking the manufacture of cellulose with floss from cotton seed linters for the production of viscose yarns. Cellulose production reached 4,200 tons yet this proved insufficient, as will be seen from the fact that as soon as imports could be resumed, they expanded considerably, but did not attain pre-war levels.

At the present time, the capacity of the viscose yarn factory is being enlarged, and is expected to reach 6,000 tons. Production of nylon and cellophane is also envisaged for the near future.

In 1947 total consumption of rayon textiles was estimated at slightly under 8,000 tons, as against 6,000 tons ten years earlier. The difficulties created by the war and the limited capacity for the production of raw material contributed to the fact that for articles of this order, the increase, comparatively speaking, has not been very great. Undoubtedly there is a very large potential market, since rayon consumption *per capita*, in comparison with other Latin-American countries, is still very low in Argentina.

4. METALLURGICAL INDUSTRIES

The metallurgical industries showed the greatest development recorded for industry in the 1930's and considerable future expansion is anticipated in this sector in view of factors mentioned elsewhere. This development has taken place in three branches: (a) iron and steel; (b) other metals; and (c) engineering.

(a) *Iron and steel*

It was calculated that before the war Argentina's annual consumption of iron and steel was one million tons, about half of which consisted of rolled products used directly or indirectly as raw material, 30 per cent of articles manufactured with rolled steel and 20 per cent of ingots, manufactured articles and machinery.

The drastic decline of imports during the Second World War created a serious supply problem. The country, however, had been acquiring experience in iron and steel manufacturing. The import restrictions of the 1930's multiplied the number of small establishments, in which technical skill and training of labour were developed gradually but did not affect the large shops that had been established for many years. Large stocks of scrap-iron were accumulated in the country, their export having been prohibited by far-sighted measures. Consequently, when the shortages caused by the Second World War were felt, these stocks could be used and others accumulated, under the pressure of need, to begin emergency production so that the iron and steel and other metals industries and the production of machinery could help industry generally and building to expand in the manner described elsewhere.

Production of rolled iron as part of this development is remarkable, not only by reason of its growth in the past, but also because of its present achievements. The total output of rolled products, which in 1939 was 18,000 tons, by 1944 had already reached 150,000 tons. It should be noted that this was obtained exclusively by use of the scrap-iron stocks. In 1949, production of rolled steel had risen to 250,000 tons, according to rough estimates.

Two modern rolling mills are under construction or else in operation already, as well as plants for the manufacturing of drawn wire products, and seamless and other pipes which should raise production between 1952 and 1953 to over 500,000 tons. These estimates are as follows:

<i>Products</i>	<i>Tons</i>
Rolled products	250,000
Drawn wire products	75,000
Pipes	136,000
Drums	15,000
Structural steel	35,000
TOTAL	511,000

Whilst fully recognizing the significance of such progress, which has enabled domestic production to meet demand and in some cases, such as the production of pipe, even surpass its limits, at the same time, it is necessary to remember that the iron and steel industry is still faced with a serious difficulty. An attempt to solve this problem has been made in the Iron and Steel Plan, to which further reference will be made. Under this plan the production of pig-iron is contemplated.

In view of the desirability of assessing the country's resources for the purposes of any such scheme, various investigations were carried out, particularly just before the eve of the outbreak of the last war. Although all the surveys contained discouraging reports regarding deposits of the exploitable iron ore required for the installation of a basic industry, the establishment of secondary industries, such as rolling, was viewed with favour. This attitude was justified by the substantial reserves of scrap, domestic production of liquid fuels and imports of iron ingots and other essential materials. The *Fábrica Militar de Aceros* (Military Steel Plant) was established in 1937, on the basis of these reports, and soon after the whole steel-rolling industry began to expand.

With the introduction of this industry, an increasing supply of pig-iron became even more essential. Consequently, regardless of costs, the *Dirección General de Fabricaciones Militares* (General Administration of Military Manufactures) pressed forward its attempts to develop the iron-ore deposits discovered in the Cerro de Zapla (Jujuy) and mining started there in 1945. Deposits of all the necessary raw materials, excepting coal, were located in the vicinity. The fuel problem was solved by adapting the results of successful experiments carried out in Sweden and other countries involving the use of charcoal from adjacent forests.

The annual productive capacity of the blast furnace established in the Zapla region is 25,000 tons of pig-iron (in practice some 20,000 tons), which is obviously highly insufficient in relation to total domestic demand.²⁴ Two additional blast furnaces of a similar type will be built there, enabling the total output to be trebled. Notwithstanding, Argentina's Steel Plan regards this blast furnace simply as a pilot plant, to be the forerunner of the great basic industry which it is planned to establish in San Nicolás (Province of Buenos Aires) along the lines set forth in the Steel Plan. This plan, fundamentally, consists of three parts:

First: Production of pig-iron (ingots for smelting purposes). Since it is considered that the cost of production of domestic pig-iron is greater than that of imported raw materials, the plan envisages the use of domestic raw materials in the manufacture of pig-iron, and also the installation of two blast furnaces, in the littoral. These would use metallurgical coke. In this respect the Zapla blast furnace would represent a guarantee that Argentina would not be completely deprived of raw material, even if imports thereof were to be completely suspended.

Second: Production of about 315,000 tons of steel a year, in semi-finished articles. The figure mentioned corresponds to initial production, which would be gradually raised to 600,000 tons, and then to one million tons, when the whole plan has been executed. In the first stage four Siemens-Martin furnaces would be installed, with a capacity of 160 tons each.

Three: Processing of semi-finished products (steel ingots), in the production of articles of general use (structural steel bars, plates, sheet, pipes, tin-plate, etc.). This final section of the plan would depend mainly on private enterprise. The previous stages would supply material for the production of finished goods, at prices comparable to those for imported semi-manufactures. The plan proposes to compensate producers for differences between cost and selling prices; it has been estimated that these subsidies would entail an outlay of 85 million pesos, over a period of ten years. It should be noted that in the joint corporation organized for this purpose by the State the iron and steel manufactures and ARMCO (the United States firm supplying technical advice and equipment) 51 per cent of the capital is held by the *Dirección General de Fabricaciones Militares*.²⁵

²⁴ In 1949 according to estimates, imports of pig-iron amounted to 100,000 tons.

²⁵ The Presidential Message of 1 May 1950 refers to the present development of the plan in the following terms: "The programme of work established in Argentina's Steel Plan is being actively carried out with the aid of the steel manufacturers, who are collaborating with substantial investments and a positive attitude as regards the re-equipping and modernization of their plants, or, alternatively, of the need to build new factories for the processing and finishing of goods."

"The difficulties involved in acquiring the substantial amount of foreign exchange required to install the basic plant and another for plate, sheet and tin-plate, have thus far prevented the contracting of the respective machinery".

"Attempts are being made to obtain deferred payment terms for these installations, so that they will only have a limited influence on the availability of exchange."

The future position with regard to obtaining pig-iron may be improved in Argentina since the discovery of a new iron deposit at Sierra Grande, close to the sea (Gobernación de Río Negro).²⁶

Until 1940, when a steel mill added two 20-ton capacity Siemens-Martin furnaces to its rolling mills, there were only two similar enterprises in Argentina, established under exceptional circumstances. One, founded in 1908, had a furnace of 9 tons per charge, to roll double-T shapes exclusively, and relied on the protection of the existing high tariff. The other was the *Fábrica Militar de Aceros*, with a furnace of 12 tons per charge, created in 1937 to supply requirements of the Argentine Army. Some attempts made between these two dates failed and in view of the almost total disappearance of foreign competition on the outbreak of the war, the incipient domestic industry was left to meet demand by itself.

In 1941 another undertaking put a 15-ton Siemens-Martin furnace into operation,²⁷ with its corresponding rolling equipment. To give an idea of the way in which equipment had to be improvised, let us point out that only one of the new enterprises managed to import its complete equipment; others acquired parts in Brazil and Chile and completed the installations in Argentina. When used equipment was unobtainable either inside or outside the country, it had to be manufactured under difficult conditions.

Table 53

ARGENTINA. PRODUCTION OF ROLLED STEEL

(In thousands of tons)

Year	Bars		Shapes, plates and sheets				Total
	For reinforced concrete	For wire-drawing	Sheet	Small plates	Rods	Strip iron	
1939.....	7.0	..	..	2.0	9.0	..	18.0
1940.....	12.0	..	..	4.0	8.0	..	24.0
1941.....	33.0	..	..	4.0	8.0	..	45.0
1942.....	38.5	..	3.0	5.0	7.0	..	53.5
1943.....	47.0	4.0	5.0	8.0	8.0	1.5	73.5
1944.....	105.0	15.0	8.0	11.5	8.0	2.5	150.0

Source: Banco Central of the Argentine Republic, *Informe preliminar sobre los efectos que tendría en las actividades industriales internas la libre reanudación de las importaciones*, Buenos Aires, 1945, page 31.

²⁶ The afore-mentioned message adds: "On the basis of present information, it may be stated that its reserves are considerable. The ore content is higher than 58 per cent. The veins discovered extend for more than ten kilometres and their depth varies from 6 to 20 metres."

"The programme established for the first stages called for twenty-two borings with Sullivan machines, that is, 2,600 metres of sounding; these drillings reveal a mineral mass of great volume, which was later confirmed by magneto-metric findings. It is proposed to start the first mining operations at the end of the present year (1950)."

²⁷ The capacity of Siemens-Martin furnaces is given in tons per charge.

Annual requirements of rolled iron and steel, expressed in terms of average pre-war imports, were as follows:²⁸

<i>Rolled products</i>	<i>Tons</i>	<i>Per cent of total</i>
Bars for reinforced concrete	180,000	36
Sheet	110,000	22
Bars for wire-drawing	75,000	15
Miscellaneous structural steel	67,000	13
Other rolled products	68,000	14
TOTAL	500,000	100

As may be seen from Table 53, the consumption of bars for reinforced concrete was the most important item. If requirements for rolled products are also considered according to the source of demand, it will be seen that two-thirds were accounted for by the building industry. The iron and steel industry consumed a certain amount of round structural steel for different manufactures, and, finally, the supply of rails and certain quantities of other rolled products was wholly absorbed by transport undertakings.

In its early stages, this industry's main task was to meet demand by satisfying the requirements of its most substantial sector, that is, of the consumers of steel rods for reinforced concrete. On the other hand, it was only natural this should be the case since building is precisely the most simple process and marks the period at which industrialization generally begins. It is, moreover, the article of highest consumption, concentrated within narrow limits. Certain types of rolled products were only produced in small quantities, and it was not possible to manufacture certain others with the equipment available. This led, for instance, to a marked shortage of sheet, strip iron and tin-plate during this whole period. The industry's expansion in the post-war period has followed the trend already outlined, even though the volume of production has increased year by year.

The Argentine rolling-mills, like the country's textile mills, are still increasing their production capacity. According to available information, no new enterprises are contemplated. Since the end of the war, almost all the rolling-mills have renewed and modernized their equipment. The most notable examples, in that they also entail the addition of modern equipment of high productive capacity, are provided by the expansion of two enterprises now being developed. One of them has recently installed a new Siemens-Martin furnace with a 30-ton capacity and the other is increasing the capacity of its 25-ton furnace to 35 tons. Moreover, the installation of two additional furnaces, of the same size, is under consideration. If the existing furnace capacity of the Argentine sheet steel industry is considered together with the additions that have been made or are under consideration, a 35 per cent increase of capacity can be expected by 1952.

This is only a rough estimate since there is no exact correspondence between the capacity of the furnaces and of the rolling equipment owing

²⁸ Banco Central de la República Argentina "Informe sobre el Mercado Local e Industria Nacional de Laminados de hierro y acero" (Report No. 2), Buenos Aires, May 1945, page 5.

to the manner in which this industry developed and also since its post-war reorganization has not yet been completed. This lack of balance has certainly been more pronounced whenever imports of sheet steel as raw material were heavy.

On the other hand, if the increased capacity that is expected to be installed in the next few years is taken into account, Argentine production of sheet steel in 1952-53 will amount to slightly more than 500,000 tons, as has been indicated above.

(b) *Other metals*

In addition to the processing of steel, the rolling of copper and copper wire-drawing have also expanded on the basis of imported raw materials, together with other subsidiary industries processing this metal. Similar efforts have been made in the case of other metals. In this way a recently installed plant producing aluminium sheet and shapes will be able to satisfy total domestic demand which amounts to about 6,000 tons. The present consumption of some 15,000 tons of electro-thermic and electrolytic zinc will be also met by domestic production using Argentine raw materials.

(c) *Machinery production*

At the beginning of the Second World War, Argentina had a large number of shops where simple machines were being built, where repairs were carried out, and machine parts were manufactured. Progress had been made particularly in the production of reapers and other agricultural machinery, utilizing imported motors and a number of parts. It is for this reason that such enterprises could not expand production as did other branches of the machine industry during the war. In any case, a certain amount of machine-building experience had been accumulated which proved to be extremely useful when import shortages made it necessary to copy foreign machinery of all kinds and to recondition existing equipment in order to meet the demands of the manufacturing industry and of transport.

The most important result of this improvised expansion of capital goods production was in the field of textile machinery, electric motors (up to 30 horse-power) and in lathes and other simple machine-tools. To this should be added the progress in certain lines of production which were already in existence before the war, particularly in machinery and equipment for the following: flour mills, grain elevators, bakeries and the sugar, wine, cigarettes and vegetable oils industries. Similar progress was made in the production of machinery and equipment for elevators, graphic arts, pumps, internal combustion engines, weighing machines, etc.

The Argentine metallurgical industries are particularly sensitive to foreign trade owing to their great dependence upon imports of raw materials as can be seen when the influence of raw materials upon production costs, and the proportion of imported raw materials in their total requirements, are taken into account.

Table 54

ARGENTINA. PROPORTION OF RAW MATERIALS TO COSTS, AND PROPORTION OF RAW MATERIALS TO TOTAL REQUIREMENTS IN SELECTED INDUSTRIES

Industry	Percentage cost of:		Percentage of raw materials imported to total requirements
	Raw materials	Wages	
Foodstuff industries	78.0	11.3	5.0
Textiles	67.5	19.0	28.8
Metallurgy	61.5	21.8	62.8

Source: *Estadística Industrial* (1941).

The above figures show that metallurgy depends upon imports to a much higher degree than the two other great branches of the manufacturing industry. At present this dependence is increasing as a result of the growing shortage of local scrap, caused by the intensive use made of this material. This dependence of metallurgy upon foreign sources is even greater with regard to equipment which except for some machine tools is obtained from abroad, whereas several sectors of the food-processing and of the textile industries can rely to a greater extent upon domestic sources in this respect.

5. CEMENT INDUSTRY

The effects of Argentine cement production on domestic consumption acquired significance in 1919, when a large modern plant was installed as a subsidiary of a United States concern. It expanded rapidly until it was able to meet a large part of domestic demand during the 1930's. At present there are in Argentina six enterprises with eleven plants located in six provinces. The development of cement production and consumption during the last twenty years is shown in Table 55.

It should be noted that during the 1930's cement imports were completely exempted from customs duties, since they were intended for certain public works or for privately-owned railways which had been granted this privilege under special legislation.

In 1939-1946 demand was met completely by the Argentine cement industry, despite the serious difficulties encountered when it became necessary to replace fuel-oil by substitute fuels. However, in subsequent years, this industry has been unable to keep pace with consumption and relatively large amounts of cement had to be imported. At present, supply, including imports, does not meet demand, which is estimated at between 1.8 and 2.0 million tons yearly. There are several reasons for this. First, demand increased considerably because of large-scale public works and industrial construction. Secondly, on several occasions during the war the industry had difficulty in arranging transport to consumers and at the same time it could not store cement for a long period of time without impairing its quality. Furthermore, the ceiling prices that had been established for

Table 55

ARGENTINA. CEMENT PRODUCTION AND CONSUMPTION

(In thousands of tons)

Year	Production	Consumption
1930.....	412.2	755.3
1931.....	537.8	744.7
1932.....	502.3	588.2
1933.....	486.9	529.9
1934.....	566.3	605.9
1935.....	721.6	752.4
1936.....	869.3	892.8
1937.....	1,010.3	1,109.4
1938.....	1,179.4	1,254.3
1939.....	1,130.5	1,155.3
1940.....	1,048.7	1,049.7
1941.....	1,160.1	1,128.3
1942.....	1,145.4	1,050.3
1943.....	959.5	959.5
1944.....	1,095.3	1,078.8
1945.....	1,095.6	1,084.1
1946.....	1,150.3	1,120.3
1947.....	1,353.2	1,481.2
1948.....	1,251.8	1,593.8
1949.....	1,445.9	1,538.1

Sources: Argentine Foreign Trade Yearbooks (*Anuarios de Comercio Exterior*) and *La Industria del Cemento Portland en la Argentina*.

cement did not stimulate expansion of the industry. This, together with the present shortage of foreign exchange which makes it difficult to obtain refractory materials, equipment and spare parts, explains the fact that the actual output of the cement industry in 1949 amounted to only 1,445,900 tons, despite its theoretical capacity of 2 million tons per year and its working capacity of 1.7 million tons.

6. PAPER INDUSTRY

The paper industry in Argentina is one of the oldest in the country, the production of wrapping paper and cardboard having been begun there at the end of the nineteenth century.

In the same way as several other industries, the Argentine paper industry at first comprised only the final stages of the manufacturing process. Production of the raw materials was undertaken only recently. This dependence upon imported raw materials explains the specialization of the industry in those grades of paper which allow a greater utilization of waste-paper as raw material. Furthermore, certain structural characteristics of the most prominent enterprises in the industry should be noted, as well as the situation brought about in the Argentine paper market by customs tariffs. When the present tariffs were put into effect, high customs duties were already in force which protected the manufacture of wrapping paper. Actually the degree of tariff protection was considerably higher than had been foreseen since the tariffs established for the various grades of paper were always

higher than their actual import values. Thus, for instance, the 42 per cent *ad valorem* tariff upon the official value of imports represented a 71 per cent surcharge upon its actual import value.²⁰ This degree of protection favoured the development of the production of low grade paper and cardboard since the incidence of the customs tariff was highest on low-cost grades.

It should not be assumed however that the Argentine paper industry developed without foreign competition. On the contrary, the exemptions granted since 1917 to imports of newsprint gave rise to a large volume of imports of paper which, instead of being used for printing, was diverted into commercial channels as wrapping paper. This was precisely the product which constituted the major part of the output of the growing domestic industry.

During the last war, the domestic paper industry had already taken firm root, and was able to expand considerably in the face of Swedish competition in the Argentine market. The production of mechanical and chemical pulp in Argentina is much more recent than the paper industry itself, even though attempts at producing pulp from esparto grass were made when the first paper factory was established. This attempt was abandoned in 1893 but in 1931 the production of chemical pulp was started by a factory utilizing wheat straw and other domestic raw materials, and adopting a process of Italian origin. On various occasions the production of mechanical pulp was also attempted using willow and poplar wood. This process was started in 1913 and was interrupted after the First World War. The second attempt in 1917 failed again, the factory being dismantled and subsequently sold to Chile. At present, production of mechanical pulp is carried out in conjunction with chemical pulp and the expansion of its output is largely due to the considerably higher customs tariffs upon imports of wood pulp imposed in 1931. Estimated production, imports and consumption of paper are shown below:

Table 56

ARGENTINA. CONSUMPTION, PRODUCTION AND IMPORTATION OF PAPER
(In thousands of tons)

Type of paper	Consumption	Production	Imports
Newsprint	130.0	7.0	123.0
Printing paper	60.0	42.0	18.0
Wrapping paper	80.0	72.0	8.0
Cardboard	60.0	55.0	5.0
Special grades of paper..	20.0	8.0	12.0
TOTAL	350.0	184.0	166.0

Sources: Banco Central de la República Argentina, *Informe preliminar sobre efectos que tendría en las actividades industriales internas la libre reanudación de las importaciones*, Buenos Aires, pages 14-16.

²⁰ *Industria del papel y las posibilidades de expansión a base de materias primas nacionales*, page 85.

As can be seen above, domestic production of wrapping paper and cardboard covers a considerable part of demand, this share being much smaller in the case of printing paper and of special grades of paper. On the other hand almost all the newsprint consumed is imported. Such imports reached their peak in 1947 with 153,000 tons of newsprint. Foreign exchange shortages made it necessary to reduce newsprint imports to slightly over 100,000 tons in 1949. This circumstance has led the Government to study the possibility of the domestic manufacture of newsprint. At present experiments are being carried out with various raw materials such as sugar-cane bagasse.

7. CHEMICAL AND PHARMACEUTICAL INDUSTRY

Taken as a whole, the chemical industry in Argentina started with the more common household items such as soap, candles, matches, dyes, lyes and similar products. Many of these industries had already been established during the past century. In numerous cases the raw materials were imported and subsequent development of these industries tended to encompass the production of such materials. Thus, the country's economic development has stimulated the expansion of old established branches of the chemical industry in Argentina. However, in various sectors of its chemical industry, dependence upon imported materials is a characteristic. Before the Second World War it was estimated that one-third of the raw materials used by the chemical industry as a whole were imported. Table 57 below shows the changes in the quantum of imports of chemicals and pharmaceutical products and the expansion in the Argentine chemical industry since 1937, in terms of employment.

Table 57

ARGENTINA. CHEMICAL AND PHARMACEUTICAL INDUSTRY

(Index numbers: 1937 = 100)

Years	Employment in the chemical industry ^a	Quantum of imports of chemical and pharmaceutical products ^b
1937.....	100.0	100.0
1938.....	110.6	86.5
1939.....	119.6	95.9
1940.....	116.6	91.4
1941.....	115.3	75.6
1942.....	135.9	83.2
1943.....	142.9	91.6
1944.....	143.8	53.7
1945.....	170.0	71.4
1946.....	186.4	88.2
1947.....	194.6	172.8

^a *Memorias* of the Central Bank of the Argentine Republic.

^b United Nations Economic Commission for Latin America.

Of the basic chemical products manufactured only the production of sulphuric acid is worth mentioning, and among alkalis only caustic soda, since there is no production of commercial soda ash. Table 58 shows production, imports and consumption of caustic soda and of solvay soda.

Table 58

PRODUCTION, IMPORTS AND CONSUMPTION OF CAUSTIC SODA AND SOLVAY SODA

(In metric tons)

Year	Caustic soda			Solvay soda consumption (Imports)
	Production	Imports	Consumption	
1925.....	..	7,666	7,666	22,925
1926.....	..	7,768	7,768	23,102
1927.....	..	8,826	8,826	22,530
1928.....	..	12,454	12,454	24,562
1929.....	..	13,016	13,016	27,409
1930.....	..	12,431	12,431	24,150
1931.....	..	13,048	13,048	17,867
1932.....	..	13,025	13,025	16,737
1933.....	..	14,022	14,022	20,159
1934.....	..	13,138	13,138	22,733
1935.....	..	14,834	14,834	23,798
1936.....	..	16,832	16,832	21,434
1937.....	..	20,609	20,609	28,747
1938.....	1,790	18,138	19,928	22,336
1939.....	3,000	25,003	28,003	38,894
1940.....	4,430	20,224	24,654	32,687
1941.....	4,380	15,072	19,452	27,408
1942.....	5,250	33,297	38,547	22,561
1943.....	4,800	50,609	55,409	65,796
1944.....	5,052	3,955	9,007	20,568
1945.....	6,061	17,998	24,059	20,034
1946.....	9,800	19,268	29,068	35,902

Source: United Nations Economic Commission for Latin America.

Sulphuric acid production has developed entirely upon the basis of sulphur imports owing to the inadequate supplies and high cost of domestic sulphur, deposits of which are located at great distance from the centres of consumption. It seems however that the shortage of domestically produced sulphur will be eliminated by utilizing by-products from the roasting of zinc produced in the country. In fact, a corporation has been organized with the participation of the Argentine Government, the United States enterprise which owns the zinc mine and Argentine capital, which will produce electrolytic zinc and obtain sulphuric acid in the process.

Caustic soda is produced in Argentina by the electrolytic process. Further to the high production cost resulting from its considerable consumption of electric power, the small demand for the chloride thereby obtained is limiting increased production of caustic soda. Thus domestic production accounted for only one-third of the estimated 40,000 tons of caustic soda consumed in 1949.

There are various projects calling for the expansion of existing caustic soda plants and for the installation of new ones. Among the latter, one is to be located in Buenos Aires, another near the hydro-electric plant in the province of Córdoba, a third in the *Gobernación de Río Negro*, and a fourth in the province of Tucumán. Should these projects be carried out it can be expected that domestic production will shortly be able to meet demand.

Output of pharmaceutical products has expanded considerably in Argentina and it is estimated that it meets a very appreciable part of consumption. Among the principal items organic therapeutic products should be specially mentioned since abundant supplies of raw materials for their manufacture are available from the meat-packing industry. The production of penicillin was started recently and now entirely meets domestic demand for this antibiotic.

VII. Notes on the economic development of Argentina

1. In Argentina, after the post-war boom, the problems of economic development have reappeared in a way which does not differ substantially from that of the 1930's, in spite of the intensive growth of the country. The conditions imposed by these problems could be summarized as follows: (a) The need to change the composition of imports and reduce their coefficient in relation to real income, in order to increase investment; to increase income and strengthen the economic structure, rendering it less vulnerable to external fluctuations and emergencies; (b) the need to increase imports from those areas of the world to which Argentina can export its competitive products under favourable conditions; (c) the need to enter into economic agreements with neighbouring countries in order to expand their respective markets for the purposes of industrial development.

The reappearance of these problems has revealed the persistence of certain fundamental facts in the absence of which it would be difficult to explain some long-run trends of economic policy, despite the radical changes which have taken place in other aspects of the national life.

This continuity was already evident at the beginning of the war, when, the experience of the 1930's still fresh in the memory, it was attempted to make reasonable provision for future events. This is the impression given by certain authoritative statements of those times, which, when compared with more recent ones, indicate the underlying conditions of Argentina's economic development. During the war in 1942 a publication of the Central Bank of Argentina stated the following:

"The country will find that an important part of its consumption and of the requirements necessary for its economic activity will be obtained through the efforts of its own industry." It was added that "it will no longer be necessary to continue to import as before those goods that can

be reasonably produced at home. But we shall still have to import large quantities of other goods not only because we need them, but also because it is essential to continue to import in order to continue to export. The problem does not therefore consist of reducing exports, but in changing their composition; in other words, the structure of imports must be altered in such a way that, without prejudice to its industry, the country might import the many goods that it needs and does not produce, and in as wide a measure as its exports will permit.

"Thus, our industrial development and foreign trade, far from being incompatible, can complement each other in order to further the national economy and insure conditions favourable for a more intensive population expansion through immigration and the natural growth of its inhabitants."

Further on, the nature of the problem was discussed as follows:

"The problem concerns the best use of the foreign exchange earned by our exports. Since it is no longer necessary to import the same amount as before of manufactured goods or of the materials now produced in the country, it will be possible to devote a greater amount of foreign exchange to the importation of capital goods necessary to the development of industry, of transport and of economic activity in general. This is necessary both on account of its organic growth and in order to offset the great disinvestment to which the means of production and the transport system are now subject: railway and city transport equipment, motor vehicles, commercial aviation equipment; machinery and implements for industry and agriculture and other materials essential to the development and security of the country."³⁰

A few years later, when the war was over, it was stated in the annual report of the Central Bank for 1946 that there would be "considerable import requirements, but which would evidently not be of the same nature as formerly when industry had not reached its present level of development and before the existence of public works projects and private construction which have already been put into execution".

Later on, the notion of altering the composition of imports is stressed even more clearly when it is said that "in view of the heavy requirements for imports of raw materials and equipment for industry and transport for purposes of renovation and expansion, it is logical that the available foreign exchange should not be employed to import goods which can be satisfactorily provided by domestic industry. In this way not only is the best use made of monetary reserves, but Argentina labour is protected. . ." It is finally added that this policy regarding imports "tends to create in the country, on the basis of more diversified and highly developed industries, conditions which will permit full employment for existing labour and a sound basis upon which immigrant labour can maintain a high level of wages without prejudice to the industrial economy. . ."³¹

³⁰ *Memoria del Banco Central de la República Argentina*, 1942, pages 30, 31 and 32.

³¹ *Ibid.*, 1946, page 36.

2. The experience of the 1930's showed that the country was able to rely on its own resources to increase investment. In this connexion, the annual report for 1942 pointed out that "the greater the proportion of foreign exchange spent on importing capital goods or real capital, the smaller the need to seek additional exchange by means of foreign loans or to rely upon foreign investments in order to promote greater economic development. In Argentina a large part of foreign investments have been made, in the last analysis, in the form of imports of capital goods. If we were to devote to the latter an increasing part of our own foreign exchange while expanding local production of other goods, we should achieve the same results together with a considerable strengthening of the national economy".

Finally, the relation between this selective policy relative to foreign exchange and the necessity to render the economy of the country less vulnerable to external variations was pointed out: "The better utilization of foreign exchange is of still further significance in a country, the exports of which are subject to continuous and wide fluctuations. If the country were to produce the greater part of the manufactured goods required for consumption and normal activities, our imports during periods of scarcity of foreign exchange such as it has recently gone through, could be limited to a great extent to the materials essential to industry and economic activity, as is the case today for other reasons. Imports of capital goods could be made during periods of prosperity and of abundant foreign exchange, at the same time it would be possible to import the unessential goods which it was not possible to purchase when there was a scarcity of exchange. We must learn from the lessons of the present emergency, concerning both imports and the possibilities afforded by monetary and financial policy to bring about gradually the maintenance of an intensive rate of economic activity with the minimum repercussions of external fluctuations."³²

The same notion reappears in the report for 1946 when it is stated that, by means of the policy of imports and industrialization, it would be possible to achieve "the strengthening of the internal market in order to avoid the disequilibria and maladjustments resulting from the country's dependence on foreign markets for the sale of agricultural products".³³

3. Argentina's economic problems therefore revolve about certain basic facts, imposed to a great extent by external circumstances. After the events of the depression years Argentina's foreign trade assumed a different aspect. The report for 1941 included an interpretation of the facts which, since these have remained unchanged, corresponds faithfully to present circumstances.

Argentina, like other Latin-American countries, and without taking into account some principal countries of the world, has been compelled to

³² *Memoria del Banco Central de la República Argentina*, 1942, pages 32 and 33.

³³ *Ibid.*, 1946, page 37.

return to the system of bilateral trade which it had begun during the 1930's. The following quotations show clearly that this was imposed by circumstances rather than adopted by choice. They state that bilateral agreements "were due not so much to a deliberate intention to adjust trade and international payments to new patterns different from those that had prevailed for a long time, as to the force of circumstances". The same report added that barter or compensation agreements "are considered in economic negotiations when the purchasing countries lay down as a condition for the continuation of their purchases that the supplying country purchase from them, in exchange, merchandise which together with financial services is to represent an equivalent amount. In this way, an attempt is being made at bringing in equilibrium the trade balance or the balance of payments between pairs of countries. The fact that this is as absurd from the theoretical standpoint as it is cumbersome from the practical point of view did not prevent the gradual expansion of the bilateral system. In the countries which started upon this course, the principal aim was to secure markets for their exports in those countries where the magnitude of their purchases carried weight. It is possible that specific interchange problems between pairs of countries were solved in this way. However, in the measure in which the system expanded a new limiting factor was added to those that already before were depressing world trade.

"Thus, our imports ceased in good part to be oriented by considerations relative to price, quality or consumer preference, being forcibly directed to those countries where we had available foreign exchange assets. This foreign exchange no longer could be used freely to make payments or purchases in other countries, but had to be used in the country where it had been earned as a result of the purchases of the latter. In this way the foreign exchange permit, in addition to being an instrument for the restriction of imports, also became a selective instrument, and on the basis of experience, it can be asserted that the latter function became often more important than the former.

"Consequently, since foreign balances could not be used in other countries, the only logical solution imposed by bilateralism was to restrict imports from those countries which did not purchase Argentine products in sufficient amounts as to pay our imports and financial services with the exchange thus earned. Such was, in brief, the story of our economic relations with the United States since the great depression until recent times. The restrictions varied in intensity: they would be eased when larger exports were made or abundant investments were forthcoming and they would be tightened when circumstances were unfavourable, either by means of direct controls or by exchange rate fluctuations."²⁴

The influence of these developments in Argentina had been so profound that in those years it was already doubted whether a rapid return to

²⁴ *Memoria del Banco Central de la República Argentina*, 1941, pages 9, 11 and 12.

multilateralism could be made at the conclusion of the war. In this way, in addition to these considerations it was queried whether "Great Britain after the enormous financial effort made during this war will be disposed to abandon rapidly the system of blocked sterling and to do without compensation agreements, the technique of which is being progressively perfected". It was also stated that if such agreements were continued the country would again be obliged "to divert as much as possible its import requirements to Great Britain to the detriment of the competition other countries might offer". This would be necessary even though from the Argentine standpoint "the desirability of buying in the most advantageous market, as long as means for payments are available" was evident. It was further added that the same would take place with the principal countries of the European continent with which Argentina had maintained important trade relations: "We would return thus, under the pressure of circumstances, to the system of balancing our foreign trade in separate channels, and to use foreign exchange permits for restrictive and selective purposes."

Actually, a few years later, it was necessary to return to bilateralism under the pressure of events. This was explained in the *Memoria* for 1948, which stated that circumstances "are compelling us at present to channel imports from those countries which are purchasing Argentine products, since this is the only way in which we can supply ourselves with goods without loss to our gold and foreign exchange assets. In this sense it must be recognized that the basic structure of our foreign trade and the present inconvertibility of the exchange we received in payment for our exports lead us by necessity to make the best use possible of bilateral commercial agreements, even though we are aware of the fact that by such a policy the country cannot attain all of the benefits which the restoration of multilateralism in international trade would make possible. In fact, this policy of bilateral agreements which stems from the necessity of selling our exports and of maintaining our imports, is not without some detriment to the development of our national economy."³⁵

4. The agreement with neighbouring countries is another declared objective of Argentina's economic policy. Argentina has an enormous capacity for the production of cereals and meat, and if the experience of the last twenty years is taken into account, it is understandable that it should seek markets in neighbouring countries and in other Latin-American republics, as a partial compensation at least for the insufficient outlets found in the great manufacturing countries. The problem of food is becoming more acute in various Latin-American countries as standards of living are being raised by industrialization. It is true that they can increase foodstuff production, although at relatively high costs, in the same way as Argentina might develop certain high-cost lines of production, such as iron and coal, for instance. There exists, therefore, obvious possibilities for complementary trade between these countries which improve with industrialization. The interchange of foodstuffs and raw materials for

³⁵ *Memoria del Banco Central de la República Argentina*, 1948, pages 10 and 11.

manufactures, such as had taken place in times of a relatively free world trade, could hardly offer a permanent solution for such problems among the Latin-American countries. Actually there is no basic reason preventing a growing interchange of manufactured goods which on a reciprocal basis would open to each country the market of the other for its specialized products. Such is the case of the products of those industries which have shown their competitive ability, and which could count with the vast potential market of the Latin-American countries.

5. Of course, trade with Europe is still a problem of primary importance for Argentina. Also in this case, circumstances have demonstrated again how many complexities beset economic development. It is very natural that Argentina should attempt to promote certain industries, such as textiles, which can easily be expanded by making use of the plentiful supply of domestic raw materials, as this would free it from the need to import the commodities in question and would enable it to import capital goods and other articles for national economic development. It is also natural that countries exporting the goods Argentina seeks to produce—and important purchasers of Argentine products—should try to continue exporting those goods thus utilizing their existing production capacity. Even more, the long-established aim of Argentina to export processed commodities instead of its traditional raw materials meets with understandable resistance among purchasing countries which intend to retain for themselves the relatively high profits derived from industrial processing.

As a result, Argentina, together with the other Latin-American countries, is meeting with difficulties in its attempt at changing the composition of its imports as well as its exports, a change which is required in order to meet better the requirements of economic development. These difficulties, however, are inherent in the present modes of economic development of the Latin-American countries which, as explained in part one of the present survey, are determined by the spread of production techniques. Earlier forms of development have already been surpassed except in regions which in other parts of the world are open to the economic expansion of the great countries. It could not be expected, therefore, that in order to avoid such difficulties, a return can be made to a bygone system of international trade in which the Latin-American countries would concentrate on exporting primary commodities in exchange for goods which the industrial centres found profitable to sell.

Accordingly, a general and explicit acknowledgment of this fact, of the unavoidable need for internal growth, in the present stage of the world economy, leads to these difficulties and complexities. Their solution offers a vast field for each country's experience as well as for the new instruments of international economic co-operation.