INDUSTRIALIZATION AND FOREIGN TRADE

LEAGUE OF NATIONS
1945



National Library of Scotland
B000490000

LN. II. 1. (18)

ECONOMIC, FINANCIAL AND TRANSIT DEPARTMENT

INDUSTRIALIZATION AND FOREIGN TRADE

LEAGUE OF NATIONS
1945

479802



Series of League of Nations Publications

II. ECONOMIC AND FINANCIAL
1945.II.A.10

PRINTED IN THE UNITED STATES OF AMERICA

3500 Copies (P.2500; C.1000) 1–46

CONTENTS

PAGE

PREFACE 5

I. INTRODUCTION 7

Object of Enquiry, p. 7. Nature of Approach, p. 8. Nature of the Statistics on Production and Trade, p. 8.

II. BASIC FACTS AND PROPORTIONS. 11

Movement of World Manufacturing, p. 11. The Spread of Manufacturing, p. 11. Comparison between World Manufacturing and World Trade, p. 14. Trade of Highly Industrialized and Other Countries, p. 18. Differences in the Supply of Manufactured Articles, p. 20. Increased Demand for Manufactures Resulting from Higher Income, p. 23. Occupational Distribution of Population, p. 25.

III. THE NATURE OF INDUSTRIAL DEVELOPMENT 30

A Schematic Picture, p. 30. Industry and the International Division of Labour, p. 33.

IV. THE CONDITIONS FOR INDUSTRIAL DEVELOPMENT 35

The Densely Populated Countries, p. 35. The Sparsely Populated Countries, p. 38. The Special Problems of Smaller Countries, p. 40. Climatic, Institutional and Similar Factors, p. 43. Transportation, p. 45. The Rôle of Capital, p. 47. Advantages of a Small-scale, Decentralized Industry, p. 50. Comparison between the Growth of Industry and Population, p. 55. Industrialization and the Growth of Population in Densely Populated Countries, p. 58. The Risk of a False Start, p. 63. Financing by Foreign Capital, p. 66. Financing by Domestic Saving, p. 69. Industrialization and Tariff Protection, p. 72.

V. INDUSTRIALIZATION AND INTERNATIONAL TRADE 76

Introductory Remarks, p. 76. Effect of Industrialization on Foreign Trade under Normal Conditions, p. 77. Relationship between Domestic and External Trade, p. 79. Industrialization in Times of Disturbances in International Trade, p. 80.

VI. COMPARISON OF MANUFACTURING AND TRADE IN VARIOUS COUNTRIES. 82

Introductory remarks, p. 82. Manufacturing and Trade per Capita, p. 83. Changes in Manufacturing and Trade, p. 87. Comparison among Countries up to 1926/29, p. 91. Comparison among Countries after 1926/29, p. 94. An Important Qualification, p. 97. Industrialization and the Balance of Trade, p. 99. Competition between Industrial Countries in Third Markets, p. 106.

PAGE

VII. SUMMARY OF FINDINGS 116

Relationship Between Industrial Development and International Trade, p. 116. Conditions for Industrial Development, p. 120.

ANNEX

A. INDICES OF MANUFACTURING, 1870–1938 123

Nature of the Indices, p. 123. The National Indices, p. 124. The World Index, p. 127. Tables, p. 130. Notes Concerning the Computation of the National Indices, p. 144.

B. STATISTICS OF INTERNATIONAL TRADE, 1871–1938 154

World Trade in Manufactured Articles and Primary Products, p. 154. Trade in Manufactured Articles by Countries, p. 155. Trade in Primary Products by Countries, p. 156. Tables, p. 157.

PREFACE

This volume completes the series of studies on commerce and commercial policy which the Economic, Financial and Transit Department of the League of Nations has been issuing during the last few years, as part of its programme of post-war studies. Its purpose is to consider the influence of the industrialization of relatively undeveloped areas on the foreign trade of the more industrially advanced countries. On this question, though much has been written and ardent views are held, few authors have up to now attempted to marshal the evidence of the past in order to support their assertions. But this evidence, difficult to collate and elusive as it often proves to be, is of the utmost importance for those responsible for the formulation of commercial policy. For fears of the competition of nascent industrial countries with an abundance of cheap labour lead inevitably when aroused, whether by the interested or the ignorant, to clamorous demands for discriminatory or general protective measures. They create an atmosphere, moreover, likely to render the richer countries reluctant to aid the poorer countries by the export of capital or the provision of technical advice required for that industralization and they thus impede economic progress.

In order to ascertain how far these fears are justified, the growth of industry and trade in the world during the last seventy years is first traced in this volume and the nature and prerequisites of industrial development considered. From this broad survey certain tentative conclusions, both inductive and deductive, are reached. These conclusions are then checked and supplemented by a more detailed analysis of the statistical evidence concerning the effects of industrial growth in the past on the trade of the older countries.

The findings are summarized in the last chapter, and need not be repeated here. But to three of these findings it may be well to draw attention at once. They are:

first, that until about 1930 the growth of manufacturing, far from rendering countries independent of foreign manufactured goods, stimulated the import of such goods;

secondly, that again up to about 1930, those countries in which manufacturing developed most rapidly as a rule increased their imports of manufactured goods more than did other countries; and

thirdly, that after the breakdown of multilateral trade early in the 'thirties, this relationship between the growth of industry and of trade in manufactured goods was severed.

The problem of industrialization of less developed areas requires to be considered, therefore, in relationship with the general question of reviving and thereafter maintaining an effective working system of multilateral trade, and reference may with advantage be made in this connection to an earlier publication issued in this series under the title, *The Network of World Trade.*

The present volume, like *The Network of World Trade* and *Europe's Trade,* which preceded it, is mainly the work of Mr. Folke Hilgerdt.

I should perhaps add that in order to facilitate further research on this whole subject, the statistics employed, together with full explanatory notes, are given in an Annex.

A. LOVEDAY
Director of the
Economic, Financial and
Transit Department

League of Nations,
July 1945

LEAGUE OF NATIONS

Series of League of Nations Publications

II Economic and Financial

1945.II.A.10

INDUSTRIALIZATION AND FOREIGN TRADE

Corrigendum

Page 152, line 16 from end: for "September 1930", read "September 30th".

Page 153, lines 19, 20 and 22: for "Frichey", read "Frickey".

Page 166, Table XIII, United Kingdom and Ireland, imports, 1906-10: for "1,271", read "2,171".

CHAPTER I

INTRODUCTION

Object of the Enquiry

The principal object of the following study is to consider the effects of the industrialization of undeveloped countries on the foreign trade of the older industrial countries. These effects vary greatly, some of them being favourable and others unfavourable.

The risk which such industrialization presents to the older industrial countries is commonly apprehended and may be mentioned first. With the growth of manufacturing elsewhere, these countries are exposed to new competition and may lose markets. The loss may occur not only in exports to the countries where industry is being developed, but also, should this industry become competitive, in third markets; in time the competition may be felt even in the home market of the older countries. Such a loss of markets might seriously menace the prosperity of these countries and might conceivably even render it difficult for them to acquire the raw materials and foodstuffs which they need for supplying their own population with the necessities of life.

Advantages may, on the other hand, accrue to the older industrial countries in view of the fact that the spread of industry, to the extent that it involves an increase in the world's wealth, is likely to be accompanied by a rise and a diversification in the demand of the younger countries. While these countries are likely to satisfy a greater proportion of the standard qualities of consumers' goods than they did formerly through their own production, they may raise their purchases of foreign-produced higher qualities of such goods, or of whole classes of consumers' goods which, before industrialization, their inhabitants were not rich enough to procure. In addition, they will probably have to raise their imports of manufactured capital goods. Finally, the spread of industry creates fresh demand for industrial raw materials and other primary products exported by non-industrial countries. As the exports of these countries increase, so will their demand for foreign-manufactured goods; and exports from the older industrial countries should be favourably influenced by this new demand.

These possible advantages and disadvantages to the older industrial countries have inevitable repercussions on the less industrially advanced countries. Many of these countries suffer from poverty, cultural backwardness and political weakness and look to industrialization as the only road to a radical improvement in their conditions. But they

cannot be unconcerned with the effect their industrialization would have on economic conditions elsewhere. If the effect were unfavourable, then the advantage they derive from industrial growth might in the long run be offset to a greater or lesser extent by the fact that their foreign trade, which depends on prosperity in other countries, would suffer. Further, it is obvious that an economic development which takes place not in harmony with, but at the expense of, the interests of other countries, risks to undermine existing goodwill and increase friction in international relationships.

It may be assumed from the outset that the effects of the spread of industrialization on trade vary according to circumstances which at least to some extent are or can be brought under human control. The question therefore arises whether it is possible to indicate the conditions under which an industrial expansion in backward countries would be favourable also to the older industrial countries. While it would fall outside the scope of this enquiry to suggest a code of economic policy, it is hoped that the study may facilitate the formulation of policies from which all countries may profit.

Nature of Approach

The problem outlined above will first be studied in the light of summary information concerning the development of manufacturing and international trade, followed by a brief analysis of the nature of industrial development and the prerequisites for such development under different local conditions (Chapters I–V). As the reader will find, this general approach gives definite clues to the solution of the problem under review. The results thus obtained are further examined and corroborated in Chapter VI, in which the relationship between manufacturing and trade in manufactured articles in different countries in the past is examined in some detail.

Nature of the Statistics on Production and Trade

The chief statistical information employed refers to the volume of manufacturing production and the trade in manufactured articles. Details, largely of a technical nature, concerning the compilation of these statistics are given in the Annex. It may be useful, however, to indicate briefly here the nature and scope of the statistics.

"Industry" as usually conceived in economic literature includes both manufacturing and mining. To the extent that products of mining, such as ores and mineral oil, are refined in the producing countries, the mineral production is reflected in the manufacturing activity of these countries. To the extent that these products are exported, mining

does not compete with industry in other countries but only provides raw material for it. We are, therefore, not concerned with mining but only with manufacturing.

Even manufacturing, however, is a wider concept than the kind of industrial activity with which we are chiefly concerned. The apprehension felt in certain older industrial countries relates chiefly to the establishment elsewhere of industries producing highly manufactured articles of a kind that were previously imported. Certain manufacturing activities, such as baking and brewing, are tied to the local market to an extent that largely excludes international competition (except in certain cases); the spread of such activities can thus only have beneficial effects on established manufacturing elsewhere. The same is true of building and electric power generation which are, however, not manufacturing industries proper. Further, we are not (or at least not to any great extent) concerned with the processing for export of locally-produced primary goods in cases where the crude product cannot be economically exported, owing, for instance, to its bulkiness or perishable nature.[1] In this category fall, for example, certain smelter production (*e.g.*, of copper in the Congo and gold in the Union of South Africa), the sawing of wood and production of wood pulp (*e.g.*, in Finland and Sweden), the freezing or refrigeration of meat for export (*e.g.*, in Argentina), dairy production for export (as in Denmark and New Zealand), or production of raw sugar (as in Cuba and Java).

It is hardly possible, however, to draw a clear line of demarcation between the manufacturing which is thus tied to the local conditions of supply or demand and that which is not; and even if this were possible, separate figures concerning the volume of production in the two categories could not always be compiled without difficulty. Accordingly, we shall have to consider for each country the development of *total manufacturing*, that is, "industry," less mining, building and electric power generation.

For purposes of comparison the available national indices of manufacturing production, supplemented in certain cases by new estimates, have been brought together and combined into a world index for the period 1870–1938, with exclusion of the war years 1914–1919.

National series concerning the value of imports and exports of manufactured articles have also been collected, rendered comparable and divided by a common price index with a view to ascertaining changes in

[1] It should be pointed out, however, that there is no clear borderline between cases in which such processing of locally-produced primary products is an economic necessity and cases in which it is apprehended by the older industrial countries as a competitive activity.

quantum. Similar data for world trade in manufactured articles have been calculated from 1876.

The value and quantum of world trade in primary products over the same period have also been calculated, together with the value of such trade in a number of countries.

The statistics concerning manufacturing production, it should be observed, refer to a wider range of products than those recorded as "manufactured articles" in trade returns. Thus, manufacturing includes production of (i) numerous semi-manufactured or simply transformed articles, such as unworked metals, sawn wood, pulp, coke, cement, fertilizers, and (ii) manufactured foodstuffs, such as flour, bread, sugar and canned goods, which are included in the trade statistics under foodstuffs and thus grouped with "primary products."[1] A portion of the industry considered is thus not engaged in the production of manufactured articles proper; but this fact is not likely to affect appreciably the *relative movements* of the indices of manufacturing and trade; and it is with these movements that we are primarily concerned.

[1] On the other hand, a small portion of the manufactured articles entering into international trade are the product, not of manufacturing industry proper, but of handicraft or small-scale industry not included in industrial statistics.

CHAPTER II

BASIC FACTS AND PROPORTIONS

Movement of World Manufacturing

Diagram 1 displays the movement of the manufacturing indices for the world and the eleven principal industrial countries, and indicates the approximate magnitude of each country's manufacturing production in relation to that of the others. It is interesting to note that the world movement—calculated for quinquennia, so as not to be influenced by annual fluctuations—from the late 1870's up to 1913 appears on the diagram as an almost straight line rising at the rate of approximately 3½% per annum. Variations in the rate of industrial development within the various countries thus appear to have offset each other. It will be observed, however, that the annual index of world manufacturing (given in Annex A, Table III) during the same period shows irregular and possibly cyclical deviations from the trend.

The Spread of Manufacturing

Table 1 shows how the distribution of world manufacturing has changed as a result of differences in the rates of national growth.

The main changes in the distribution are not due to industrial growth in countries which at the beginning of the period considered (1870) were practically undeveloped. The most striking changes between 1870 and 1926/29 are the decline in the share of the United Kingdom from 32 to 9% of world manufacturing and the offsetting increase in that of the United States from 23 to 42%. There was also a decline in the shares of Germany, France and Belgium, offset in part by a rise in those of Italy, Canada and Sweden. Japan represented only a small fraction of 1% in 1870 but 2.5% in 1926/29. Industrial development over the same years in the category of "other countries" considered in the last column is obscured to some extent by the growth of industry in the United States. The share of these countries increased only from 12% in 1896/1900 to 13% in 1926/29. The last-mentioned percentage was divided roughly as follows:

	%
Eastern Europe	2.5
Other European countries not specified in the table	6
British Dominions other than Canada	2
China and southeast Asia	0.5
Latin American and certain other areas	2

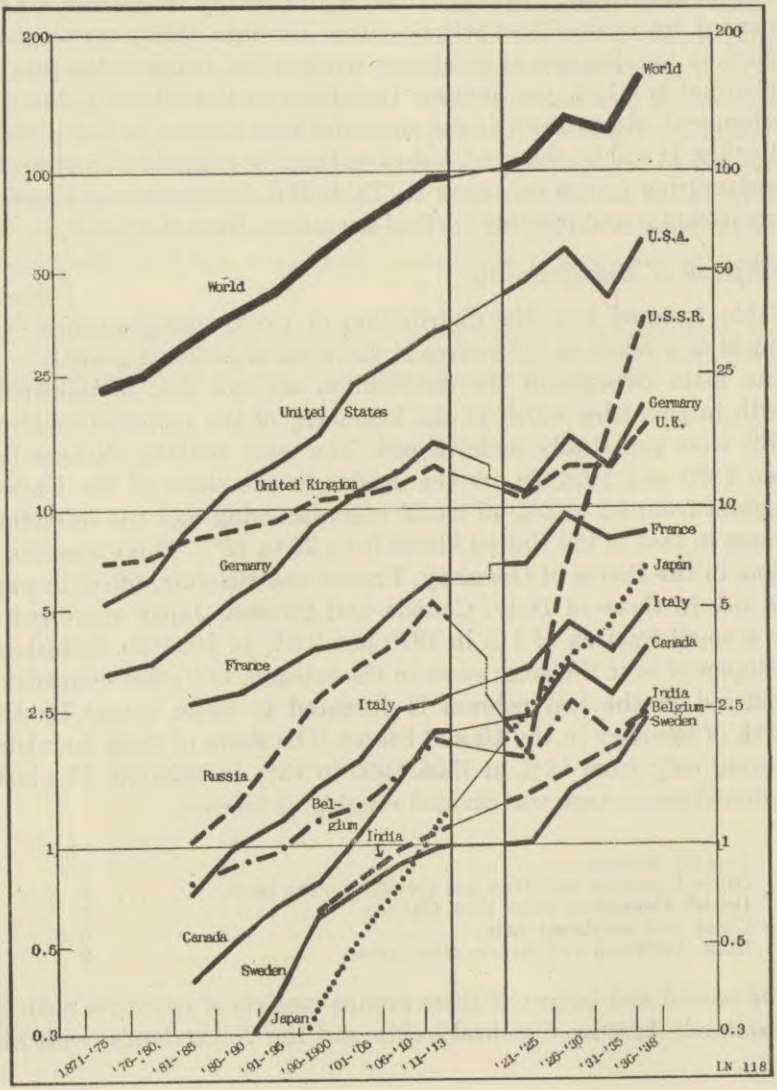
The second and largest of these groups consists of countries such as Switzerland, Austria, Czechoslovakia and the Netherlands, with old

Diagram 1. MOVEMENT OF MANUFACTURING PRODUCTION
(WORLD IN 1913 = 100)

Logarithmic scale. *Cf.* Annex, Table I.

Note. The curves show, for the periods indicated, the movements of the manufacturing production of the world and of each of 11 countries, representing together 88 % of world manufacturing production in 1913. The position of the curves reflects the approximate magnitude of each country's manufacturing production in relation to that of the others and of the world as a whole.

The vertical dotted lines in the space between 1911–13 and 1921–25 express shifts in the curves due to changes in territory after the 1914–18 war.



industrial traditions. Africa, Asia (excluding U.S.S.R.), Latin America, Oceania and southeastern Europe may be regarded as "economically young" areas; in 1926/29 these areas represented 69% of the world's population but only 10% of its manufacturing industry. Japan accounted for a fourth of all manufacturing in these areas and for the bulk of the increase in their share of world manufacturing during the preceding few decades. The contrast between these economically young areas and the rest of the world is further enhanced by the fact that a considerable share of their manufacturing industry is engaged in processing primary products for export (wool scouring, meat refrigeration, smelter production, etc.) rather than in the production of manufactured articles proper.

Table 1. PERCENTAGE DISTRIBUTION OF THE WORLD'S MANUFACTURING PRODUCTION

Period	United States	Germany	United Kingdom	France	Russia	Italy	Canada
1870	23.3	13.2	31.8	10.3	3.7	2.4	1.0
1881/85	28.6	13.9	26.6	8.6	3.4	2.4	1.3
1896/1900	30.1	16.6	19.5	7.1	5.0	2.7	1.4
1906/10	35.3	15.9	14.7	6.4	5.0	3.1	2.0
1913	35.8	15.7	14.0	6.4	5.5	2.7	2.3
1913[a]	35.8	14.3	14.1	7.0	[b]4.4	2.7	2.3
1926/29	42.2	11.6	9.4	6.6	[b]4.3	3.3	2.4
1936/38	32.2	10.7	9.2	4.5	[b]18.5	2.7	2.0

Period	Belgium	Sweden	Finland	Japan	India	Other countries	World
1870	2.9	0.4	—	11.0			100.0
1881/85	2.5	0.6	0.1	12.0			100.0
1896/1900	2.2	1.1	0.3	0.6	1.1	12.3	100.0
1906/10	2.0	1.1	0.3	1.0	1.2	12.0	100.0
1913	2.1	1.0	0.3	1.2	1.1	11.9	100.0
1913[a]	2.1	1.0	0.3	1.2	1.1	13.7	100.0
1926/29	1.9	1.0	0.4	2.5	1.2	13.2	100.0
1936/38	1.3	1.3	0.5	3.5	1.4	12.2	100.0

[a] The second line for 1913 represents the distribution according to the frontiers established after the 1914–18 war.
[b] U.S.S.R.

The outstanding change recorded by the table between 1926/29 and 1936/38 is the increase in the share of the U.S.S.R. from 4.3 to 18.5%, at the expense particularly of the United States.

Comparison between World Manufacturing and World Trade

In Diagram 2 the movement of world manufacturing is compared with that of the quantum of the world's trade in primary products as well as manufactured articles and with the world's population.

In the upper part of this diagram the curves converge at 1913, which is the basis (= 100) employed. As this may convey the false impression that 1913 represents a year (not to say the only year) of "normal" relationships between trade and manufacturing production, the indices are shown in the lower part of the diagram on the basis of the average for the whole period of 56 years considered (1876–1913 and 1921–1938). The diagram may be studied in conjunction with the following figures:

	Indices (1913 = 100)			Percentage of 1876/80		Average annual percentage rate of increase from 1876/80	
	1876/80	1926/29	1936/38	1926/29	1936/38	to 1926/29	to 1936/38
World manufacturing	25	139	185	556	740	3.5	3.5
Quantum of world trade in:							
primary products..	31	113	117	365	377	2.6	2.3
manufactured articles.....	32	104	92	325	288	2.4	1.8
World population....	79	110	119	139	151	0.7	0.7

While over a period of hardly 60 years the world's population rose by little over one-half, world manufacturing was multiplied 7 times, trade in primary products almost 4 times, and in manufactured articles 2½ to 3 times.

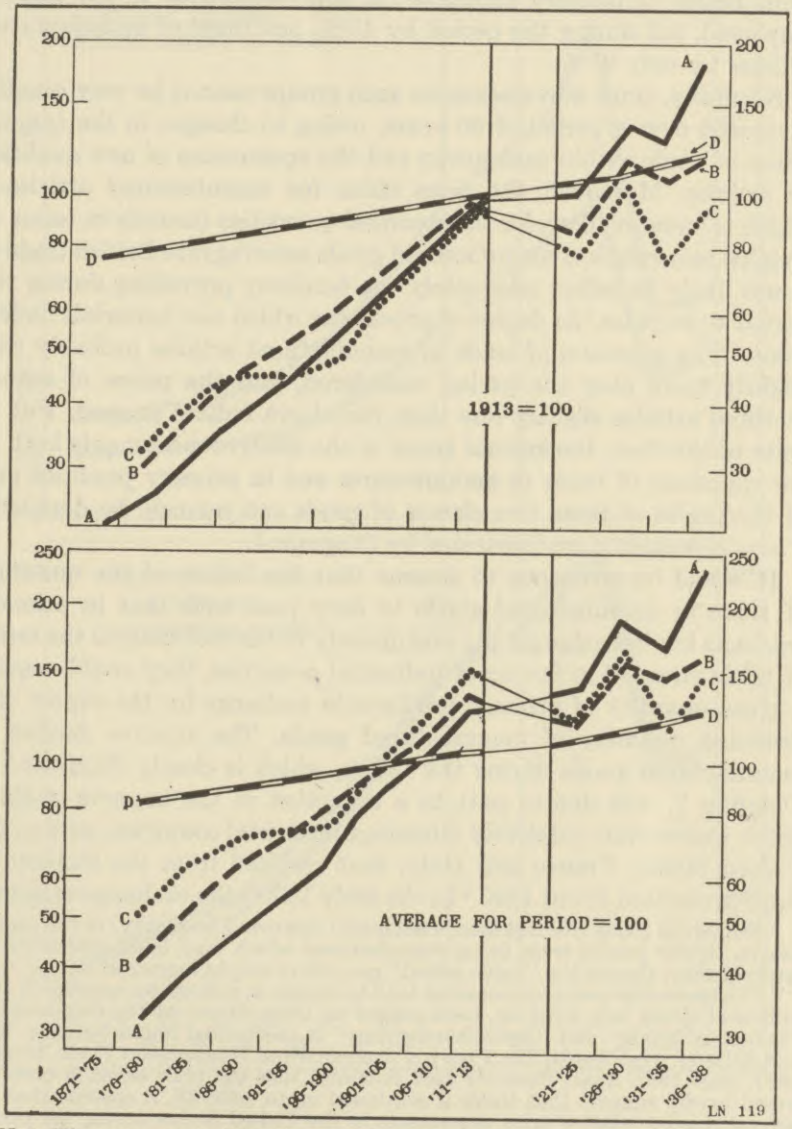
World manufacturing thus grew much more rapidly than world trade, particularly trade in manufactured articles. It will be observed, however, that this divergence between the indices was far more pronounced during the 1930's than earlier. While between 1926/29 and 1936/38 world manufacturing increased by over a third, world trade in primary products rose in quantum by only 3½% and world trade in manufactured articles declined by 13%.

Measured by value, world trade in manufactured articles during the period considered was about 60% of that in primary products, fluctuating only slightly above and below that percentage. The values have been plotted in the upper part of Diagram 3, and as the lower part of

Diagram 2. MOVEMENT OF WORLD INDICES FOR MANUFACTURING, INTERNATIONAL TRADE AND POPULATION

Logarithmic scale. *Cf.* Annex, Tables I, VII, VIII

A: Manufacturing production
B: Quantum of trade in primary products
C: Quantum of trade in manufactured articles
D: Population



Note. The upper part of the diagram shows the indices on the basis of 1913 = 100. In the lower part, the basis for each index is the average for the period 1876–1913 and 1921–38 (56 years).

the diagram shows, the parallelism between the two curves is remarkable. In terms of gold, trade in primary products in 1936/38 was 2.2 times, and that in manufactured goods 2.3 times greater than in 1876/80. The divergence between the quantum movements (Diagram 2) must thus be attributed chiefly to the changes in the price relationship. Prices of primary products (in gold) according to the indices employed, fell during the period by 45%, but those of manufactured articles by only 21%.

Naturally, price movements for such groups cannot be very exactly measured over a period of 60 years, owing to changes in the composition of trade within each group and the appearance of new qualities or articles. Moreover, the price index for manufactured articles—which is based on data for the recorded quantities (usually in terms of weight) and values of manufactured goods entering into British trade—is not likely to reflect adequately the tendency prevailing during the period to increase the degree of processing which raw materials underwent.[1] The quantum of trade in manufactured articles probably rose slightly more over the period considered, and the prices of manufactured articles slightly less than the above indices suggest. But in spite of this fact, the general trend of the relative movements both of the quantum of trade in manufactures and in primary products and of the prices of these two classes of goods can scarcely be doubted.[2] These movements are illustrated by Diagram 4.

It would be erroneous to assume that the failure of the quantum of trade in manufactured goods to keep pace with that in primary products has been due simply and directly to the fact that, as the terms of trade changed in favour of industrial countries, they could acquire a given quantity of primary products in exchange for the export of a declining quantity of manufactured goods. The relative decline in manufactured goods during the 1890's, which is clearly illustrated in Diagram 2, was due in part to a reduction in the imports of these goods into certain relatively advanced industrial countries, such as the United States, France and Italy, that resulted from the increase in tariff protection about 1890.[3] In the early 1930's the exchange of manu-

[1] Numerous goods (for instance, machinery) improved in quality; in the case of others, lighter grades were being manufactured which may have represented a lower quality, though the "value added" per unit of weight increased.

[2] The thesis that price relationships tend to change in a direction opposite to that indicated above has, however, been argued on the evidence of the movement of "industrial prices" and "agricultural prices" in the United States between 1850 and 1910 (*cf.* Manoilesco, *The Theory of Protection and International Trade*, London 1931, page 196). Apart from the fact, however, that the price series in question would hardly support that thesis if continued up to 1936/38, it appears that for several reasons relative price movements in the United States during the period 1870/1910 are not representative of those in the world market.

[3] *Cf.* pages 87 and 90.

Diagram 3. WORLD TRADE IN PRIMARY PRODUCTS AND MANUFACTURED ARTICLES, BY VALUE

Cf. Annex, Tables VII and VIII

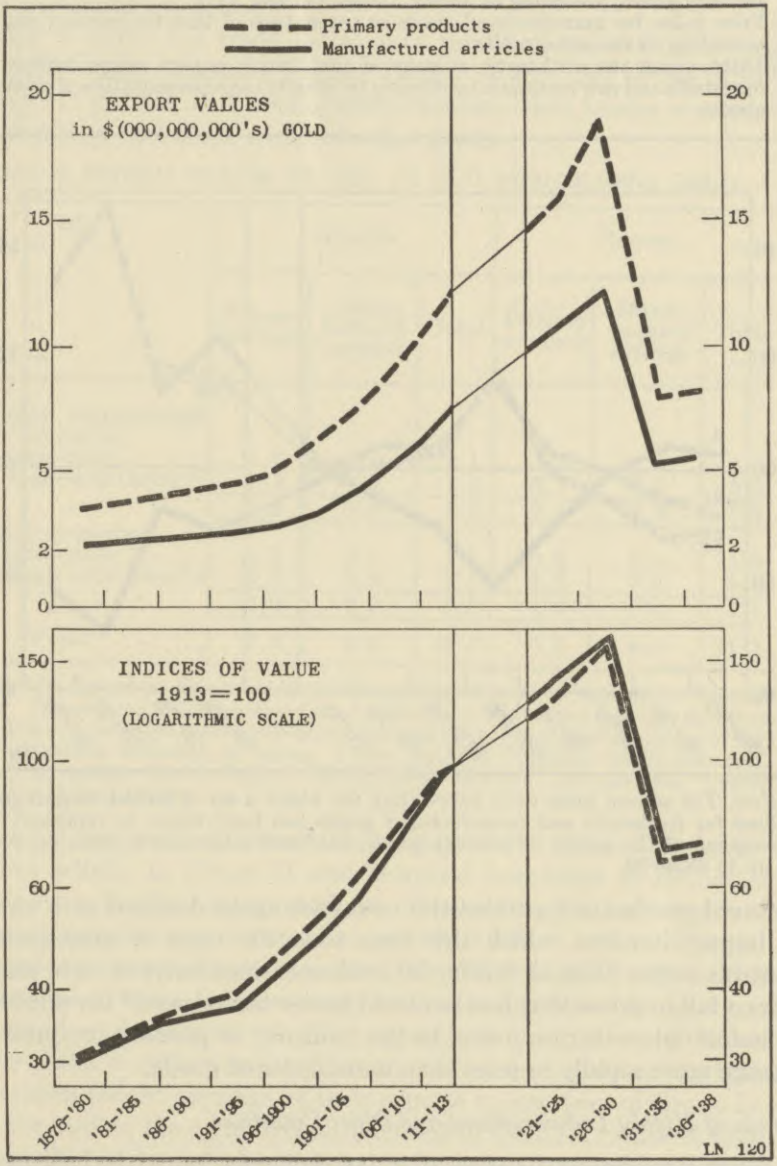


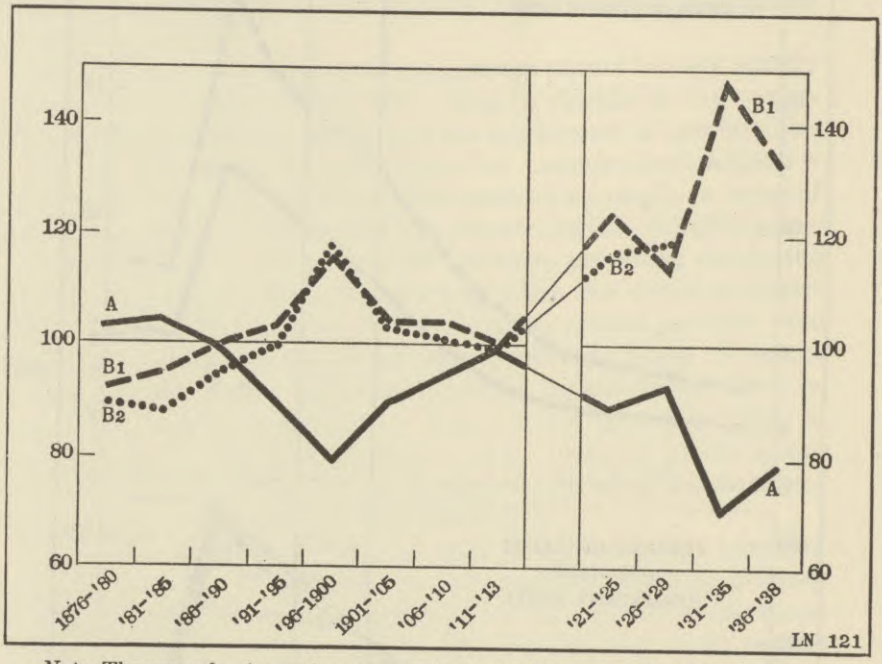
Diagram 4. RELATIVE PRICE MOVEMENTS AND TRADE

(Based on indices in Annex Tables VII and VIII)

A: Quantum index for world trade in manufactured goods as percentage of that in primary goods, according to Annex Tables VII and VIII.

B_1: Price index for manufactured goods as percentage of that for primary goods, according to the same tables.

B_2: Ditto, using the arithmetic average of the British import prices indices for foodstuffs and raw materials (according to Schlote) as representative of primary goods.



Note. The second price ratio curve (B_2), for which a set of British import price indices for foodstuffs and manufactured goods has been taken to represent the movement of the prices of primary goods, has been entered as a check on curve B_1 up to 1926/29.

factured goods among industrial countries again declined as a result of import barriers, which this time took the form of quantitative controls rather than of tariffs. On both occasions barriers were raised after a fall in prices that had rendered barter terms more "favourable" to industrial countries, owing to the tendency of primary products to change more rapidly in price than manufactured goods.

Trade of Highly Industrialized and Other Countries

When considering the effect of industrialization on trade, it is useful to have in mind a global picture of trade among highly industrialized countries, and between these and other countries. Naturally, any

division of the world into two such groups is bound to be somewhat arbitrary. It may be convenient to use the division employed in another publication of this Department which considers twelve countries as being highly industrialized.[1]

Table 2 shows the trade in primary products and manufactured articles of these countries (Group I) and of the rest of the world (Group II) in 1935, and distinguishes between trade among countries of each group and trade with the other group.

Table 2. WORLD TRADE IN 1935, IN OLD $(000,000,000's) GOLD

	Imports			Exports		
	Primary products	Manufactured articles	Total	Primary products	Manufactured articles	Total
I. Highly industrialized countries:						
Intra-trade.....	1.7	1.4	3.1	1.7	1.3	3.0
Trade with Group II	4.1	0.2	4.3	0.7	2.5	3.2
	5.8	1.6	7.4	2.4	3.8	6.2
II. Other countries:						
Intra-trade.....	1.2	0.4	1.6	0.9	0.4	1.3
Trade with Group I	0.8	2.6	3.4	3.6	0.2	3.8
	2.0	3.0	5.0	4.5	0.6	5.1
World.....	7.8	4.6	12.4	6.9	4.4	11.3

Note. The figures in this table have been adjusted so as to represent "frontier values" (imports c.i.f. and exports f.o.b.) in the case of all countries; this involved an addition to recorded world imports of 0.2 and to recorded world exports of 0.1.
The countries included in Group I are: Austria, Belgium, Czechoslovakia, France, Germany, Italy, Japan, Netherlands, Sweden, Switzerland, United Kingdom, United States.

Group I disposed of almost two-thirds of its exports of manufactured articles in Group II and absorbed four-fifths of the latter group's exports of primary products. Group I had a net import of primary products from Group II of (old) $3.4 billion and a net export of manufactured articles to the same group of (old) $2.3 billion. But comparison of these balances may be misleading since imports are valued c.i.f. and exports f.o.b. The countries of Group I owned three-fourths of the world's merchant marine, and to them accrued the bulk of the ocean freight earnings on their exports to countries of Group II, while the bulk of the ocean freight included in the c.i.f. values of their imports did not have to be paid for by the export of goods. Freight

[1] *Review of World Trade*, 1938, page 23. The twelve countries are specified in the note to Table 2.

earnings together with other income accruing to the countries of Group I—particularly the yield of capital investments in Group II—helped to cover the difference between the two balances in question.

The figures of Table 2 obtain their full significance only if account is taken of the fact that the highly industrialized countries represented only 21% of the world's population. Hence, while these countries accounted for only a third of the world's imports of manufactured articles, their imports per head were nevertheless twice that of other countries:

	Population (000,000's)	Import of manufactured articles $(000,000,000's)	Import of manufactured articles per head $
Highly industrialized countries	444	1.6	3.6
Other countries	1,651	3.0	1.8

Similarly, in the export of manufactured articles from the highly industrialized countries, the per capita purchases of other such countries ranked on the average twice as high as those of non-industrial countries.

Differences in the Supply of Manufactured Articles

The supply of manufactured articles in a country may be taken as equal to domestic production plus the net imports (or minus net exports) of such articles. The calculation of the supply is subject to technical difficulties; but approximate figures concerning the supply of what may be called "finished factory products other than foodstuffs" can be more readily estimated.

A few words should be said about the nature of this calculation. Only a few countries record their manufacturing production by value; and even if all of them did so, we should have to allow for the differences in price level which result, not only from artificial barriers to trade, but also from the fact that time and cost are involved in transporting goods from the cheapest market. We may, however, make a rough calculation on the basis of data for the United States and the United Kingdom, which both record manufacturing production by value.[1]

In 1926/29 the annual value of such production in these two countries amounted to just above $50,000 million. This figure represents the gross value of the articles produced, after eliminating "double counting" of products which enter two or more times into the recorded industrial output (in view of the fact that certain manufactured articles

[1] In the case of the United Kingdom, such statistics are only available for census years, a few years apart (*e.g.*, 1924, 1930, 1935); but values can be interpolated with the help of indices of prices and the volume of manufacturing.

are employed as materials in the manufacturing of others, for instance, yarn in the production of cloth, cloth in the production of apparel, etc.). According to the weight schedule employed when calculating the world manufacturing index (*cf.* Annex A), these two countries represented about 51% of the world's manufacturing. The total value (excluding double counting) of such manufacturing may thus be estimated at about $100,000 million. This figure includes the production of manufactured foodstuffs and certain coarse industrial products (such as cement and fertilizers) which are not recorded as manufactured when entering into foreign trade. In order to render the figure comparable with the value of "manufactured articles" entering into trade, these foodstuffs and coarse manufactures, estimated at about $25,000 million, have to be deducted. The proportion of this deduction does not appear to vary considerably from country to country; hence the distribution of the estimated remaining world production of $75,000 million may be made largely with the aid of the weight schedule just mentioned.[1]

The production values in question are shown for selected countries and groups of countries in column 2 of Table 3. Corresponding trade balances for manufactured articles are shown in column 3, after deduction of transport costs from imports (when such costs are included in the recorded amounts) so as to render the world balance equal to zero. It is not pretended that this table gives more than a rough idea of the amounts involved; but the error is not likely to be such as to affect the main conclusions that may be drawn from it.

The last three columns of this table bring out in a striking fashion the large inequalities in the production of finished articles per head of population in countries of different structure and the failure of foreign trade to make up for these inequalities. It is true that the chief industrial countries are net exporters of industrial products. But a considerable share of their exports is absorbed by countries with an industrial production per head of population that is well above the world average. The heaviest imports per head of finished products are recorded by the British Dominions (Group 4 in the table) where the average industrial production per head, though lower than in the United States and the United Kingdom, is on a level with that in most typical industrial countries. In the countries where the production per head is small,

[1] The weights in question refer to the "value added" to the raw materials employed, rather than to the gross value of the products. Available data suggest, however, that the relationship between value added and gross value does not usually vary much from country to country. Certain of the weights had to be slightly adjusted on account of the fact that the period considered in the Table is 1926–29 whereas the weight schedule refers to 1925–29.

imports usually account for a considerable proportion of the supply; but the supply per head nevertheless usually remains at a fraction of what it is in industrially developed countries.

Table 3. ROUGH ESTIMATE OF THE SUPPLY OF FINISHED FACTORY PRODUCTS OTHER THAN FOODSTUFFS IN 1926/29

(Annual averages)

Country or group	Population (000,000's)	$(000,000,000's)			$ per head of population		
		Production (gross value)	Net imports (+) or exports (−)	Supply (col. 2 + col. 3)	Production (gross value)	Net imports (+) or exports (−)	Supply (col. 5 + col. 6)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
1. United States	120	31.5	−1.0	30.5	262	− 8	254
2. United Kingdom	45.5	7	−1.9	5.1	154	−42	112
3. Germany	64.5	8.6	−1.5	7.5	134	−23	111
4. Four British Dominions[a]	25	3	+1.1	4.1	120	+44	164
5. France	40.5	4.9	−1.0	3.9	121	−25	96
6. Six minor industrial countries[b]	47	5.4	−0.7	4.9	115	−15	100
7. Italy	40.5	2.5	−0.1	2.4	62	− 2	60
8. Eight developed but not highly industrialized countries[c]	35	1.6	+1.2	2.8	46	+34	80
9. Japan	62	1.9	−0.2	1.7	31	− 3	28
10. U.S.S.R.	149	3.2	+0.1	3.3	21	+ 1	22
11. Rest of world except China and India	541	4	+3.3	7.3	7	+ 6	13
12. China and India	790	1.4	+0.7	2.1	2	+ 1	3
World	1960	75	—	75	38	—	38

[a] Australia, Canada, New Zealand, Union of South Africa.
[b] Austria, Belgium, Czechoslovakia, Netherlands, Sweden, Switzerland.
[c] Argentina, British Malaya, Chile, Cuba, Denmark, Finland, Ireland, Norway. (Certain of these countries are industrially undeveloped but have an advanced economy of the colonial type.)

Note. The countries are arranged in the order of the production per head of population (col. 5).

While the annual supply of the factory products considered in the United States exceeded $250 per head of population and in all the countries belonging to Groups 1–10 amounted on the average to $104 per head, in the remaining two groups (11 and 12), which represent two-thirds of the world's population, it was less than $7 per head. Even of this small supply imports accounted for the minor share.

A simple calculation shows why the countries of the last-mentioned

two groups cannot count upon trade to solve their problem of supply. Suppose the supply per head in these countries were to be raised through imports to only half the average level of the countries of the first 10 groups, or to $52 per head. Their imports of manufactured articles would then have to increase sixteen times to $69,000 million—a figure corresponding to twice the annual value of all goods (primary products as well as manufactures) entering into world trade in 1926–29, or to the total annual factory production in the rest of the world during the same period. It is difficult to conceive how these countries could increase their exports of primary products to anything near to the amount required to finance imports of such magnitude.

It is not necessary to press this comparison; it is obvious enough that there is in practice no possibility of obliterating the big differences among countries in the supply of factory-made products through international trade. Except in the case of certain countries with which we shall deal on a subsequent page, a plentiful supply of manufactured articles must depend principally on domestic manufacturing.

Increased Demand for Manufactures Resulting from Higher Income

The use of mechanical power and appliances, which is essential to industrial production, leads to an increase in output and hence in income and consuming power. This increase, however, is accompanied by changes in the nature of consumption that help to explain the central rôle of manufacturing in the industrialization process.

Certain of these changes may be conveniently illustrated by figures concerning the per capita expenditure of persons belonging to different income groups in a given year. Summary information of this kind is given in Table 4 referring to the United States in 1935/36 and Table 5 referring to Peiping, China, in 1931. The striking similarity revealed by these tables in the behaviour of consumers in such different environments suggests that the trends we are considering are of almost universal application.

We notice first a rapid rise in savings as income increases. In the United States, expenditure in the lowest income group in which many persons were temporarily earning no income and in emergency cases received relief, exceeded income by almost half, while in the highest group 19% of the income was saved. In Peiping savings increased from 6% in the lowest to 15% of income in the highest of the income groups considered.

It may be concluded that the financing of industrial development is facilitated by the rise in savings that results from higher average incomes.

Table 4. AVERAGE PER CAPITA EXPENDITURE IN THE UNITED STATES AT DIFFERENT INCOME LEVELS IN 1935/36

Range of family income, in $....	under 500	1,000–1,250	1,500–1,750	2,000–2,500	3,000–4,000
Average income per family, in $.	312	1,120	1,612	2,221	3,394
Average income per person, in $.	84	280	413	555	828
Average expenditure per person in $, for:					
Food	54	109	135	156	189
Manufactured goods other than food	21	66	98	142	202
Other expenditure	49	107	154	199	277
Total expenditure	124	282	387	496	668
Average savings (+) or borrowing, relief, etc. (−) per person	−40	−2	+26	+59	+160
Percentage distribution of expenditure:					
Food	44	38	35	31	28
Manufactured goods other than food	17	23	26	28	30
Other expenditure	39	39	39	41	42
Total	100	100	100	100	100
Expenditure expressed as a percentage of that in the lowest income group:					
Food	100	202	250	289	350
Manufactured goods other than food	100	314	467	676	962
Other expenditure	100	218	314	406	565
Total	100	227	312	400	539

Note. The figures are derived from *Family Expenditures in the United States*, National Resources Committee, Washington, 1941.

Further, we observe an increase in the share of expenditure devoted to manufactured articles. In the United States, that share rose from 17% in the lowest income group to 30% in the highest; in Peiping, it rose from 4% to 27%. In both cases the expenditure on manufactured articles exceeded the expenditure on food in the highest income group. While total expenditure rose between five and six times in the United States, that on manufactures increased almost ten times. In Peiping, total expenditure increased almost ten times but the expenditure on manufactured articles sixty-nine times.

The share in total expenditure of items other than food and manufactures also increased with income (except in the lower income groups) but not as rapidly as that of manufactured articles. The share of foodstuffs fell off in both countries. There can be no doubt, however, that if it had been possible to divide "food" into raw and industrial products (the latter being represented by sugar, flour, canned goods, etc.) the share of the industrial products would have been found to increase at the expense of the raw products.

The expenditure on manufactured articles also changes in composition when income increases. In the United States, for instance, expenditure on durable consumers' goods is relatively greater in the higher than in lower income groups. Also there can be no doubt that

Table 5. AVERAGE PER CAPITA EXPENDITURE IN PEIPING (CHINA) AT DIFFERENT INCOME LEVELS IN 1931

Range of family income, Chinese $....	60–120	180–240	360–420	600–720	1,200–1,500	2,100–2,400
Average income per family, Chinese $.	104	215	387	642	1,372	2,228
Average income per person, Chinese $.	34.7	52.3	92.2	173.6	268.9	420.4
Average expenditure per person, in Chinese $ for:						
Food	21.1	31.3	45.6	63.4	85.9	93.8
Manufactured goods other than food	1.4	3.2	11.5	25.5	59.0	96.2
Other expenditure	10.1	14.1	22.3	58.4	101.7	168.2
Total expenditure	32.6	48.6	79.4	147.3	246.6	358.2
Average savings per person	2.1	3.7	12.8	26.3	22.3	62.2
Percentage distribution of expenditure						
Food	65	64	57	43	35	26
Manufactured goods other than food	4	7	15	17	24	27
Other expenditure	31	29	28	40	41	47
Total	100	100	100	100	100	100
Expenditure expressed as a percentage of that in the lowest income group:						
Food	100	148	216	300	407	445
Manufactured goods other than food	100	229	821	1,821	4,214	6,871
Other expenditure	100	140	221	579	1,007	1,665
Total	100	149	244	452	756	1,099

Note. The figures are derived from Sidney D. Gamble, *How Chinese Families Live in Peiping;* (Funk and Wagnalls Co.) New York and London 1933.

the demand for each kind of manufactures (furniture, clothing, etc.) is more varied and oriented towards finer qualities in the higher income groups.

In a country where the great bulk of the population lives near subsistence level, the demand is naturally concentrated on simple necessities of life. As average incomes increase, there arises an effective demand for "everything." As domestic industrial production is necessarily limited to certain kinds of goods, the demand becomes oriented in part towards foreign products. Naturally, the smaller the country in question, the more limited is likely to be the number of manufactured articles that can be industrially produced in it and the greater the proportion of the demand that tends to be spent on imported goods.

Occupational Distribution of Population

The differences in industrial development are reflected in the distribution of population by occupation. Percentage figures of this kind are supplied in Table 6. Variations in statistical methods and practice detract from the exactitude of the figures which, in addition, refer to different years of the inter-war period. In the case of several countries only the share of the total population "dependent on" agriculture could be indicated. But, though the percentages shown for different countries are thus not strictly comparable, they illustrate with suffi-

cient accuracy both the difference among countries in occupational distribution and, by implication, the changes in such distribution that result from economic development.

The countries have been rather arbitrarily divided into four groups. The first group comprises twelve typical industrial countries. In the

Table 6. PERCENTAGE DISTRIBUTION OF THE GAINFULLY OCCUPIED POPULATION

Country	Year	Agriculture, fishing (1)	Mining (2)	Manufacturing, handcraft (3)	Commerce and transport (4)	Administration, domestic service, etc. (5)
1. *Typical industrial countries*						
United Kingdom	1930	7	5	32	23	33
Belgium	1930	17	6	42	21	14
Netherlands	1930	21	2	36	23	18
Switzerland	1930	21	—	45	19	15
United States	1930	22	2	30	27	19
Czechoslovakia	1930	28	2	40	14	16
Germany	1933	29	4	36	19	12
Austria	1934	32	1	33	16	18
Sweden	1930	36	1	31	18	14
France	1931	36	2	32	17	13
Italy	1936	48	1	28	13	10
Japan	1930	50	1	19	20	10
2. *Other industrial countries*						
Australia	1933	20	2	30	24	24
New Zealand	1936	28	—	24	26	22
Argentine	1930	30[b]	.	.	.	.
Canada	1931	31	2	25	23	19
Norway	1930	35	1	26	22	16
Denmark	1930	36	—	28	18	18
South Africa:						
White population	1936	26	4	23	30	17
Others	1921	75	6	5	2	12
3. *Less industrialized countries*						
Chile	1930	38	6	22	16	18
Uruguay	1930	44[b]	.	.	.	.
Ireland	1936	48	—	15	13	24
Cuba	1919	49	—	20	16	15
Portugal	1930	51	1	18	9	21
Palestine	1931	51	1	15	15	18
Hungary	1930	54	1	23	10	12
Greece	1928	54	—	16	12	18
Spain	1920	56	2	19	8	15
British Malaya	1930	56[b]	.	.	.	.
Finland	1930	64	—	14	7	15
Poland	1931	65	1	16	8	10
Estonia	1934	66	—	15	7	12
Latvia	1935	67	—	15	8	10
U.S.S.R	1930	67[b]	.	.	.	.

Table 6. PERCENTAGE DISTRIBUTION OF THE GAINFULLY OCCUPIED POPULATION (*Continued*)

Country	Year	Agriculture, fishing (1)	Mining (2)	Manufacturing, handicraft (3)	Commerce and transport (4)	Administration, domestic service, etc. (5)
4. *Countries lagging in industrial development*						
Egypt	1927	67	—	11	12	10
Mexico	1930	68	1	13	7	11
French Indo-China	1930	71[b]	.	.	.	.
India[a]	1931	72	—	11	7	10
Thailand	1930	72[b]	.	.	.	.
Colombia	1930	72[b]	.	.	.	.
Venezuela	1930	72[b]	.	.	.	.
China	1930	70–75[b]	.	.	.	.
Netherlands Indies	1930	73[b]	.	.	.	.
Peru	1930	74[b]	.	.	.	.
Brazil	1930	75[b]	.	.	.	.
Philippines	1930	76[b]	.	.	.	.
Iran	1930	76[b]	.	.	.	.
Roumania	1930	78	—	7	5	10
Yugoslavia	1931	79	—	11	4	6
Lithuania	1923	80	—	6	3	11
Bulgaria	1934	80	—	8	4	8
Turkey	1935	82	—	8	4	6

[a] Men only.

[b] Share of total population dependent on agriculture around 1930. Figures supplied by the Office of Population Research, Princeton University.

Note. Within each group, the countries are arranged in the order of the percentages in Col. (1). The comparability of the figures is impaired by differences in statistical methods.

majority of these, less than a third of the population is engaged in agriculture. A higher proportion is recorded by Sweden and France, which retain a considerable peasant population producing largely for household consumption, by Italy, the southern part of which is not highly developed, and by Japan, where the industry is relatively young. In three of these countries, at any rate, the agricultural land is largely scattered over hilly or mountainous areas so as to hamper the use of modern machinery in agriculture.

The next group includes four British Dominions, the Argentine and two Scandinavian countries (Denmark and Norway). These countries differ from the typical industrial countries in as much as they exchange domestic primary products to a large extent against foreign-produced manufactures. Their manufacturing industry proper works almost wholly for the domestic market. There is, however, in these countries some processing of domestic raw materials for export, for instance,

meat refrigeration in New Zealand and the Argentine, the dairy industry in these two countries and in Denmark, and metal smelting in Canada. The share of population engaged in agriculture in these countries is on the same low level as in the previous group.

The third group represents countries with a higher share of agricultural population (up to two-thirds). The economy of these countries is only developed to a limited extent. The most important country of this group is the U.S.S.R., whose economy during the inter-war period was in a stage of rapid transition. The share of the population dependent on agriculture in the U.S.S.R. is estimated to have fallen from 78% in 1926 to 67% in 1930 and 54% in 1939. Several of the countries in this group are relatively small. In some of them industrial development beyond a certain point may have been hampered by the limited size of their domestic market.[1]

In the last group the share of population engaged in agriculture exceeds two-thirds. There is little industrial development, and both domestic and foreign commerce are small in relation to the population. The group includes the majority of the world's tropical countries—of which some are not specified in the table—and also several countries of the temperate zones, such as China, Egypt, Roumania and Yugoslavia.

The table clearly indicates that the industrialization process does not simply result in the absorption by industry of part of the agricultural population. The chief fact brought out is that, as the share of population engaged in industry increases, so does that in all the other big occupational groups except agriculture. In particular, the population engaged in commerce and transport increases along with that in manufacturing.

Mining (column 2) is specified in the table because it represents a type of primary production which, unlike agriculture, depends wholly on commercial exchange. In countries which lag behind in economic development, mineral production is either insignificant or reserved for export.

The borderline between handicraft and manufacturing industry can only be arbitrarily drawn. The absolute number of persons engaged in these two occupations, which are grouped in the table, is frequently almost twice as high as that engaged in manufacturing according to industrial censuses. These censuses, however, do not usually include enterprises of a small size (for instance, with less than five or ten workers). In the early phases of industrial development, handicraft proper frequently declines, as it cannot compete with industrial manufacturing. Later on, it would appear, many handicraft professions

[1] *Cf.* page 40.

expand—not in competition with factory production but because they supplement such production. The painter, the plumber, the tailor, the mechanic in the small garage and many other craftsmen fill important functions in connection with the distribution or use of factory-made products.

The figures in the last column are far from comparable; but they illustrate the fact that economic development brings about many new administrative tasks and opens opportunities for liberal professions, particularly during the early stages of industrialization. Later on, the expansion of the occupations grouped in this column appears to be checked through the absorption of persons in domestic service by industry and commerce.

CHAPTER III

THE NATURE OF INDUSTRIAL DEVELOPMENT

A Schematic Picture

The analysis just made indicates that the industrialization process is not confined to the establishment of a manufacturing industry but involves a change in the whole economic structure of the country concerned. This change may be briefly characterized as implying an extended division of labour complemented by a system of distribution and exchange of goods functioning in a developed "money economy."

Since the latter part of the eighteenth century more and more countries have entered upon this process. A number of them have attained a highly industrialized economy; certain countries are in the midst of rapid transition while others linger in the process. The starting point, too, has varied. Certain countries recently settled by a white population—Australia may be mentioned as an example—were from the outset imbued with Western economic concepts; in them industrialization has given rise to economic growth rather than structural change. Other countries have had to travel the longer road from a more primitive economy.

The last-mentioned countries are naturally best suited to illustrate the changes caused by industrialization. It may be well to observe, however, that even before Western impulses towards commercialization and industrialization made themselves felt in these countries, their economy was seldom primitive in the sense that there was no division of labour and no exchange of goods. In fact, administration and defence, and the taxation which these functions require, at an early stage create the need for markets in which goods can be bought and sold and for the processing of primary products through professional handicraft.

This early development, however, does not proceed beyond a certain point, owing to the low productivity of labour before the mechanization of transport and production. The agriculturist has no big surplus available for sale. Production in handicraft is too small to permit of a more than frugal supply of processed products of simple kinds. Moreover, handicraft produces on a small scale for a narrow local market and usually draws largely upon the local supply of raw materials. The existence of money does not mean that there is a money economy; and the existence of some local exchange of goods does not imply that the economy is commercialized. The prevalent type of economy at this stage is sometimes characterized as "village economy," as in it the

village represents the chief market for the goods produced for sale or exchange and in a sense forms an economic unit.

The first strong impulses toward a modernization of such an economy are likely to be imparted by external trade. Such trade usually depends on the establishment of a domestic market in which the export products are sold and the import products bought. It brings new standards of modern comfort to vast areas. The emergence of markets for goods entering into trade is possible only with the establishment of a system of transportation, however incomplete. In many countries railways were built originally with a view to carrying goods entering into foreign trade. Particularly in the tropics, railways and other means of communication have been essential for the establishment of order and of social and humanitarian reform, and upon them depends the ability to supply foodstuffs when famine threatens owing to a failure of crops in some area. Everywhere they have played an important part in economic progress.

The external trade under consideration naturally consists chiefly of the exchange of national primary products against foreign industrial articles.[1] Countries engaged in such an exchange, but without a manufacturing industry of their own, are said to have a colonial economy. Such an economy is in fact a mixture of a trading and a primitive economy, for the amount of goods entering into commercial exchange is limited. The supply of industrial products is limited to what can be imported in exchange for primary products sold abroad (disregarding foreign borrowings, if any, and such services as these countries may be able to render abroad). The share of the primary products available for export is necessarily limited. As a general rule the bulk of the agricultural output is required to feed the domestic population; moreover, certain goods which might be produced are too bulky or perishable to be exported. Difficulties in establishing economical means of transport from internal producing areas frequently limit the export of agricultural products and hamper the exploitation of mineral and other resources. In countries in which this is the case and in which there is no manufacturing industry, only a minor portion of the primary production can be exchanged against manufactured articles; the economy thus remains for the most part primitive. It may be added that the commercialization that occurs as a result of the import of industrial products may be offset to a certain extent by the decline of domestic handicraft, the products of which are frequently not able to compete with factory-made goods.

[1] It is appropriate here to disregard the export of products of handicraft (*e.g.*, textiles and porcelain from China and India) which took place before industrial production elsewhere had become competitive.

When a manufacturing industry is established, the process of commercialization takes on a new aspect. Industry and those engaged in it become buyers of raw materials and foodstuffs. The agricultural population thus has to produce for sale within the country. With the rise in the share of the agricultural output that is brought into commercial exchange, productivity in agriculture is likely to increase—the yield per unit of area because production can be more specialized and hence better adapted to the nature of soil and climate in different areas, and the output per person occupied because more agriculturists can make use of mechanical equipment. Production tends to expand owing to the establishment of an absorptive market and becomes governed by market prices.

Urbanization goes together with industrialization. Towns, which during the pre-industrial period function as centres of administration and foreign trade, increase greatly in number and size when they become sites of manufacturing production and of the developed domestic trade that results from such production.

It is frequently most economical to meet locally an industrial town's requirements of foodstuffs which are bulky or perishable, for instance, potatoes, meat and milk. This fact helps to restrict the growth of cities and disperse industrial towns over the country. The town with its surrounding countryside, however, does not replace the village as an economic unit. Many raw materials and foodstuffs must be obtained from distant producing centres. Moreover, factory production usually becomes most economical when carried out on so large a scale that the products have to be disposed of over a considerable area, varying according to the nature of the products, the technique of production employed (which in its turn depends largely on the wage level) and many other factors. Both the supply to industrial centres and the distribution of their products requires a denser network of transportation than is needed during the colonial stage of the economy, and the services of numerous wholesalers and retailers.

The fact that goods are thus produced largely for sale implies that they are exchanged through the intermediary of money against each other or against services, or delivered to meet financial payments. In the complex pattern of transactions that thus occurs, the exchange of primary against manufactured products is naturally of central importance, particularly during the early stages of industrial development.

By focussing our attention on this type of exchange, we may form a notion of the relationship between domestic manufacturing and imports of manufactures. Primary production may be considered as divided into exportable and non-exportable. The former can, at least

in part, be used for financing imports of manufactured articles; the latter cannot, and its entrance into domestic trade depends largely on the existence of a domestic industry against the products of which it may be exchanged. It may be added that the drainage of labour from agriculture to industry is frequently a prerequisite for the formation of an agricultural surplus available for sale in the home market.

The development of a domestic industry thus tends to expand the market through the establishment of new circuits of exchange rather than to shift the sales in a market of a given scope from foreign to domestic supplies. Domestic manufacturing thus operates to supplement rather than to replace imports.

The importance of this conclusion, which will be verified by the statistical analysis in Chapter VI, is not reduced by two observations which have to be made here, though their implications can be gauged only at a later stage of our analysis.

First, the exportable and non-exportable shares of the primary production are not rigidly fixed. They are subject to change over short periods owing to variations in crops and business conditions, and over longer periods owing, for instance, to changes in the technique of production or transport at home and abroad. In particular, they are influenced by domestic economic development, which is likely to involve not only manufacturing but also rationalization and expansion of primary production.

Secondly, it is obvious that the domestic and the foreign exchanges of goods do not take place in separate compartments. The agriculturist can buy foreign manufactures even if he produces for the home market, and domestic manufactures even if he produces for export. Hence, there is necessarily price competition between the imported and the domestically-produced articles if they are of the same kind. We shall deal with this matter in connection with commercial policy, as in normal times the price competition is usually influenced by protective tariffs.

Industry and the International Division of Labour

Production of numerous industrial raw materials, dependent as it is on climate, soil and the scatter of mineral wealth, is so specialized as to render international division of labour a necessity. It is no wonder, therefore, that industry more than anything else has favoured the integration of national economies through the development of international trade, and thus contributed to the formation of a world economy.

The nature of such an economy, and the extent of the international division of labour that is required for its functioning, is sometimes misunderstood. Thus, it is frequently assumed that in a rational world —that is, one in which each country specializes in the branches of production in which it is most efficient—certain countries are naturally manufacturing and others primary-producing and that the spread of manufacturing to the latter countries would at once reduce the world's productivity, curtail international trade and to that extent damage the former countries.

Such a degree of international division of labour, however, would result only if goods could be moved without hindrance, cost or loss of time from one place to another, and if the world's population were distributed over the globe exclusively on the basis of economic considerations.

Neither of these conditions is fulfilled. Improvements in methods of transport have rendered it easier to move goods, but even the reduced cost and time required by transportation remains a major factor in the location of production. Most countries have to draw primarily upon their domestic production, particularly for their requirements of foodstuffs. Legal restrictions on the movement of goods over frontiers are in part responsible for the economic structure of each country, and while it may be hoped that many of the trade restrictions that grew up during the 1930's will sooner or later be abolished, it would be unrealistic to anticipate the abolition of tariff protection. Populations are unevenly distributed, and prevailing birth and death rates tend to increase existing disequilibria rather than to reduce them. Migration of the nature and magnitude the world has known in the past would not suffice to redistribute populations in accordance with developed economic resources; moreover, the political, administrative and sentimental obstacles to emigration from over-populated countries are probably stronger than in the past and likely to remain so.

The nature of the problem with which we are concerned is determined largely by the limits thus set to the international division of labour. Non-industrial countries can profit from such division of labour only to the extent they enjoy a surplus of their production that can be exported in exchange for foreign manufactures. Figures analyzed on a previous page[1] clearly indicate that in the majority of non-industrial countries this surplus is not large enough to ensure them a plentiful supply of imported manufactures.

[1] Page 22 (Table 3).

CHAPTER IV

THE CONDITIONS FOR INDUSTRIAL DEVELOPMENT

Given the fact that a country can usually secure a high degree of economic well-being only with the aid of domestic industry, it is natural that almost all countries should be anxious to possess a manufacturing industry. The differences among countries in level as well as speed of industrial development are striking, however, and can be explained only by inequalities in their natural conditions and institutional background.

As the conditions for industrial progress are in fact not alike in any two countries, a short study of the problems involved is bound to be confined to generalizations. In the following pages we shall consider first certain groups of countries in which these conditions present common features, and then proceed to deal with aspects of social and economic organization which have frequently proved stumbling blocks on the road to industrialization.

The Densely Populated Countries

A country's industrial development depends in large measure on the relationship between its natural exploitable resources and the size of its population. The value of natural resources in the form of agricultural land, usually the chief resource, forests, mineral deposits, etc., is determined largely by climate and accessibility (geographical position, nature of terrain, etc.). For brevity we shall refer to the countries having a large population in relation to their exploitable natural resources as "densely populated," though the average number of inhabitants per unit of area may not necessarily be very great, and to those with a small population in relation to their natural resources as "sparsely populated."

Naturally, any grouping of this kind must be arbitrary. Certain countries are bound to be border cases wherever the line of division is drawn. Our analysis will be confined in the main, therefore, to the more typical undeveloped countries within each group.

The principal densely populated countries are China and India, together representing about 40% of the world's population. Among other countries belonging to this group are the Netherlands Indies,[1] Egypt, a number of states and colonies in the Caribbean area and finally, the eastern European countries from Poland in the north to

[1] Or rather, Java in the Netherlands Indies.

Greece in the south which, though in various stages of development, lag behind the countries of northwestern Europe. It is convenient, however, not to include in this group non-industrial countries with an advanced type of agriculture, such as Denmark[1] or countries with a highly developed colonial economy.

The economic situation of the countries under consideration may be briefly reviewed. The great bulk—usually 70–80%—of the population is engaged in agriculture, and yet agricultural production does not yield a great surplus available for export. Income and capital formation are low, and exploitation of natural resources for export has frequently to be financed in large part by foreign capital; hence part of the proceeds from exports is not available for purchases abroad. The supply of labour is not sufficiently or economically utilized. Inadequate methods of agricultural production are due in part to the social organization. As a rule modern agricultural equipment could not be used economically without a radical change in the structure of agriculture, for the holdings are usually very small and each holding is frequently composed of several strips of land separated from each other. This fragmentation of land tends to increase under the prevailing laws of inheritance. But even where there are big landowners as, for instance, in certain parts of India, the openings for modernized agricultural production for sale is limited by difficulties of transport and the absence of an efficient demand in the local market. It is significant that in many backward countries a modernized type of agriculture is confined to production for sale in foreign markets. In tropical countries plantation agriculture falls within this category. The methods of production for the domestic market are generally old-fashioned and inefficient, leaving little surplus for marketing, and this is true irrespective of whether the cultivator owns the land, has tenancy rights or is a sharecropper.[2] The great bulk of the agriculturists and their families are unable to raise their food standards much above a bare subsistence minimum.

The poverty that prevails in these countries constitutes a hindrance to economic progress—it is, in a manner, its own cause. It contributes to an ignorance which frequently dulls the desire for social and technical improvement; it keeps down the demand for goods and renders savings inadequate for the investment required in a progressive economy.

[1] Danish agriculture is in certain respects similar to manufacturing—imported and domestic vegetable materials (oil cake, cereals, etc.) are turned into animal products (bacon, butter) for export.

[2] *Cf.* Parekunnel J. Thomas, *The Agrarian Situation in India*, in *International Labour Review* for October 1944.

Yet it must be assumed that more efficient utilization of labour and land would break the deadlock and alleviate the poverty. Plans to achieve this usually attribute an important rôle to industrial development. Such development would have to coincide with the reorganization of agriculture; undersized agricultural units would have to be increased to economical size, methods of cultivation to be improved and equipment modernized. Agricultural production would thus increase at the same time as part of the population at present inefficiently engaged in agriculture could be employed in industry and trade. A market would arise in which agricultural products would be exchanged, through the intermediary of money, against domestic manufactures and services; and there would be a general increase in living standards.

The margin for increase in the agricultural production is usually considerable. Agricultural yields per unit of area are generally low in spite of the abundant use made of human labour. While in northwestern Europe wheat usually yields between 23 and 30 metric quintals per hectare, the yield in eastern Europe varies between 9 and 12 quintals; in China it is usually about 11 and in India just above 7 quintals. Similarly, industrialized Japan enjoys yields of rice, tobacco and tea that are two to three times those of her non-industrialized neighbours. Diagram 5 illustrates the relationship between a low yield of wheat and an underdeveloped economy, as reflected in the share of population engaged in agriculture in densely populated countries including those which are highly industrialized.[1] Use of modern machinery or of fertilizers also permits of utilizing certain soils which otherwise cannot be successfully cultivated.[2] The area of land available for new cultivation naturally varies from country to country.

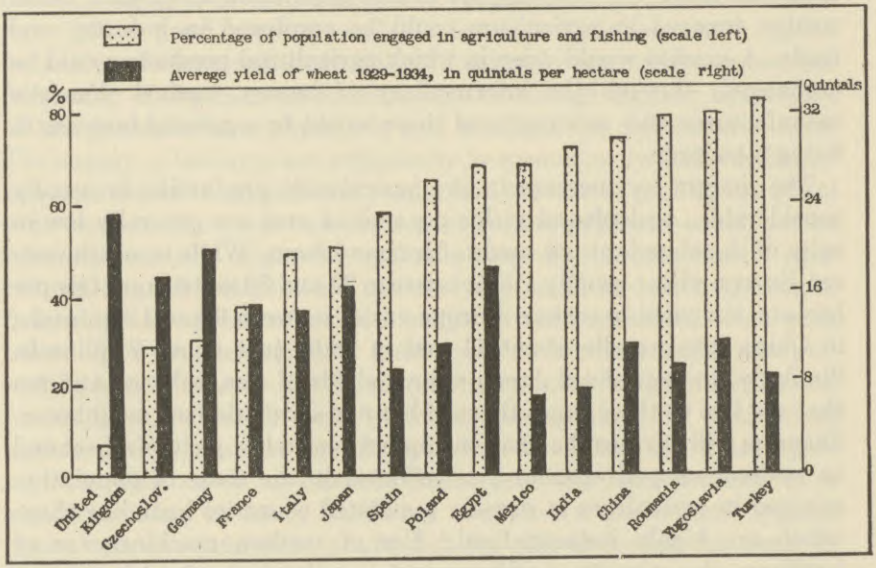
But while the primary production would be likely to increase with industrialization, so would the demand for foodstuffs and raw materials. A considerable proportion of the population in the countries concerned is underfed and can be efficiently engaged in productive work only if the consumption of foodstuffs per head increases. The need for foodstuffs would also increase on account of the growth in population which can be expected to occur during the process of industrialization. Further, additional exports are usually necessary

[1] In sparsely populated agricultural countries (not shown in the Diagram) a high degree of economic development is not necessarily accompanied by high agricultural yields per unit of cultivated area. The mechanization of agriculture in such countries permits of raising production by increasing the area under cultivation rather than average yields.

[2] In China, where animal power for traction is lacking, the average area in tillage per head of the agricultural population is very small owing to the amount of labour required for cultivation with the hoe. Such cultivation is not possible unless the soil is relatively fertile.

to meet the requirements of foreign currency, for as our statistical analysis will show, industrialization is not likely to cause a reduction in the import of manufactured articles. Rather, such imports are likely to increase, and imports of industrial raw materials may also be necessary.

Diagram 5. DENSELY POPULATED COUNTRIES: POPULATION STRUCTURE AND YIELD OF WHEAT



Note. The shares of population engaged in agriculture and fishing are according to Table 6. Countries in that table with less than 10 million inhabitants are omitted.

Sooner or later, however, the densely populated countries are likely to become increasingly dependent upon the export of manufactured articles. Even countries such as India and China, in which the manufacturing per head of population is extremely small, normally export a considerable proportion of the manufactured articles they produce.

The Sparsely Populated Countries

The sparsely populated countries—or rather, the countries with a population that is small in relation to their natural resources—are economically better placed than those of the previous group. Whether agricultural land or mineral wealth represents their chief resource, the productivity of labour is generally relatively great. Yet, economic conditions in the countries of this group vary within wide limits.

Most advanced are a number of temperate countries which for various reasons—such as remoteness and geographic isolation, aridity or erratic rainfall—only became widely settled during the last hundred years. The successful exploitation of certain of these areas was made possible by the development of implements suitable for extensive agriculture, of new varieties of cereals, etc. and of transport (railways, steamships, refrigeration) making it possible to sell in distant markets. From the pioneer stage, social organization and productive activities were adapted to the needs of a progressive commercialized economy; hence economic growth was unhampered by the legacy of the past. Export of either agricultural commodities or other primary products was from the outset an essential factor in the economy of the countries concerned. But domestic manufacturing soon began to develop alongside of the import of manufactured articles from abroad. Countries such as Canada, Australia and New Zealand, occupying a much higher proportion of their population in manufacturing, commerce and transport than in agriculture may, in fact, be regarded as highly industrialized.

Owing partly to the high productivity of agricultural labour in countries of the type now considered, industrial wages are high. Tariffs on manufactured articles are usually employed with the double object of compensating for high labour costs and protecting the income and the standard of living of the wage-earner. Two factors usually tend to check the one-sided development of primary production for export. The exploitable natural resources of the countries concerned, however prolific, are limited; sooner or later, therefore, expansion is checked by a decline in marginal productivity. Secondly, the international demand for most primary products is not very elastic. Hence, increased exports from a country which is a principal supplier to the world market of a given commodity would soon force the price below the level at which production is profitable. Both these limiting factors have made themselves felt to an increasing extent in recent decades. The former, of little importance as long as plenty of new land was available, has increased in significance with the settlement of most areas suitable for cultivation without heavy expense for irrigation and clearing. The latter has been felt particularly since the fall in world market prices in the early 1930's rendered much primary production for export unprofitable.

The population which can be profitably employed in a given agricultural production has been reduced by technical progress which, at the prevailing wage rates, has implied increased substitution of machinery for labour. As the total population of the countries con-

cerned has increased at a rapid rate,[1] the productive employment of the population has called for a rapid growth of the manufacturing industry.

Besides the advanced countries now dealt with, there are others, however, in which conditions have been less favourable for economic development. Climate and hygienic conditions in tropical areas—Central Africa and the Amazon Valley in Brazil may be mentioned as examples—are frequently such as to offer great resistance to economic progress and discourage settlement by immigrants. In mountainous regions such as fill many of the minor Latin-American republics, the agricultural land is not so well suited for cultivation by modern methods, and the growth of both foreign and domestic commerce is checked by the difficulty of establishing networks of transportation by rail and road.

The Special Problem of Smaller Countries

Industrial development in countries with a relatively small population, whether that population is abundant or sparse in relation to local natural resources, presents a special problem. Industrial production cannot be carried out on too small a scale; hence it requires a market of a certain size, varying according to the nature of the products, the technique employed and other factors. Protective tariffs and other barriers to trade tend to restrict exports of manufactured goods except in countries producing at very low cost; usually, therefore, manufacture depends very largely on sales in the domestic market. If that market is small, it may not permit of the production of more than a small number of articles on an industrial scale.

At first sight this conclusion may seem to be incompatible with the facts that present themselves for five of the typical industrial countries—Austria, Belgium, the Netherlands, Sweden and Switzerland—have only between four and nine million inhabitants. The early growth of modern industry in these countries, however, took place under conditions which may not recur. In a sense, these five countries belong to an integrated European industrial economy which developed during a period when tariffs were relatively low while the tendency towards large-scale production had not yet come into full play. They are situated between or near bigger industrial states, of which the United Kingdom actually admitted manufactured articles duty-free up to 1932; Austrian products, moreover, were until 1919 admitted free of

[1] This increase has continued even after the decline in immigration, for the death rate has been very low owing largely to the fact that the share of the older age groups in the population is still relatively small.

duty over the whole former Austro-Hungarian Empire, with several times the population of the Austria of the inter-war period. These countries were able to develop highly specialized manufacturing industries dependent on a wide export market, such as the manufacture of watches in Switzerland, of window glass in Belgium and of ball-bearings and separators in Sweden. They enjoyed large incomes on account of "invisible items" in their balance of payments (the Netherlands from colonial investments, Switzerland and Austria from tourists and Sweden and the Netherlands from shipping) which helped them to finance imports of such manufactured articles as could be produced more cheaply by their industrial neighbours.

Moreover, the size of the market which a country with a given population constitutes depends on the degree of its industrial development. Each of the five European countries mentioned absorbs many times the amount of manufactured articles that may be marketed in a typical undeveloped agricultural country of similar population. There are countries representing so small a market that there is little economic incentive for industrial development; but if such development could be carried out in one stroke, it would be tantamount to the formation of a market big enough to support it.[1]

Few countries, however, represent a market too small to sustain factory production of a limited number of simple articles of general consumption. If other conditions are favourable, manufacturing production may thus develop up to a point determined in part by technical factors.

Thus, as in undeveloped countries wages are usually low, it frequently pays to employ a less advanced machine technique and relatively more labour than in industrial countries.[2] This tends to render production on a smaller scale economical and hence to reduce the disadvantage of the small market.

It may be added that technical developments, which during the greater part of the last century favoured the growth of enterprises and of the scale of production, have of late been undergoing a change. As long as steam power was the chief form of energy available, manufacturing enterprises tended to grow in size because the economy of such power increases rapidly with the size of the engines used. The substitution of electric motors and internal combustion engines since about 1900 for the steam engine as a source of power has tended to reduce the economical scale of production units in certain industries. The develop-

[1] By concentration of the production, this difficulty may be overcome to a certain extent. If the market is limited, it may be of importance, for instance, that it should not be divided among too many domestic producers.

[2] For further discussion see pages 49 *ff.*

ment of certain types of adjustable machine tools connected with the use of electric power has worked in the same direction. But this tendency has not affected all industries alike. Thus, in the engineering industry the advantage of large-scale production appears to have increased with the introduction of the "assembly line" and the growing complexity of the products, and other heavy industries have also been influenced in a similar manner. But as the heavy industry is likely, under all circumstances, to play a minor rôle in agricultural countries of small size, it seems probable that technical developments have in recent decades on the whole tended to facilitate their industrialization.

Nevertheless, the limitation of the domestic market restricts industrial development in varying degrees in all but a few of the some two hundred tariff areas of the world. In certain countries the disadvantage is not substantial and is met, at least in part, by protective tariffs which increase the domestic prices of the articles in question so that production becomes profitable on a smaller than optimum scale. The smaller the market, however, the more difficult it becomes to maintain such production without having recourse to tariffs so high that the cost of living is unduly raised and the country's competitive power in the export market for primary products seriously reduced. Numerous colonial areas and many minor independent countries, therefore, have had to forego industrial development or be content with insignificant manufacturing activities. Except in cases where a substantial proportion of their primary production can be exported in exchange for manufactured goods, these small territorial units are likely to remain "backward" without means of modernizing their economy.

In the past, the chief remedy to such a disadvantage has been the creation of a larger unit through political amalgamation or customs unions. Each of the present dominions of Canada, Australia and the Union of South Africa, for instance, consisted once of a number of disunited states with their own tariff barriers against their various neighbours. The emergence of a united federated region, occurring in Canada in 1867, in Australia in 1901 and in South Africa in 1910, greatly improved the conditions for industrial development and for economic growth in general in the areas concerned.

At the present time much attention is being paid to the possibility of grouping undeveloped colonial areas into regions that might form economic units large enough to permit of industrial development. Evidence of the interest in "colonial regionalism" may be found in the preparations to unify the administration of certain British colonial areas.[1]

[1] Excerpt from statement in the House of Lords on August 1, 1944, by the Par-

Such "colonial regionalism" may not necessarily aim primarily at industrialization, and may take many forms. It is open to question, however, whether anything short of a customs union among the areas of each region would contribute greatly to industrial development.

In principle, the problem discussed applies to independent states as well as colonial areas, though in their case the political considerations involved in regional arrangements are of another nature. Examples of the drawbacks of too small a national market may be found both in the Latin-American republics and among the states of eastern Europe. In most of these countries, however, the population would be big enough to provide a market for a great variety of manufacturing industries once a high degree of economic development were attained.

Climatic, Institutional and Similar Factors

The economic backwardness of certain tropical and subtropical areas is sometimes attributed to a climate unsuitable to the exertion of human energy or to the natural indolence of the races which populate them. This view, however, may well be questioned. If it is true, it would imply that these areas would be more or less barred from economic progress. Where there is a marked lack of energy in a population, there is frequently a wholesale infection by diseases, usually malaria or hookworm, which cause apathy, lack of stamina and inefficiency and moreover reduce the body's resistance to numerous other diseases which frequent the areas in question. In India and several other countries this state of affairs is undoubtedly responsible in large measure for the slowness of economic growth.[1] Much progress has been made in recent years in the fight against malaria and tropical diseases; but complete success may depend on sanitary and hygienic measures requiring for their application a general improvement in living conditions which can only be attained when national production and income are raised.

Another kind of check to economic development is connected with the inertia of the social systems, usually anchored in religious and

---

liamentary Under-Secretary of State for the Colonies:

"The noble Viscount, Lord Trenchard, dealt with the grouping of colonies and the formation of larger groups . . . I can assure him that our minds are working along those lines. The mere fact of the appointment of a Resident Minister to deal with all West African Colonies, the fact of the establishment of the Governors' Conference in East Africa and the appointment of a Development Officer and a Joint Planning Officer for West Africa as a whole shows that we are certainly not tending towards a breakup but that the tendency is all the other way. Further than that I cannot go at the moment."

[1] For details, see L. C. A. Knowles, *The Economic Development of the British Overseas Empire*, Vol. 1, (London 1928), pages 251–258.

moral conventions of long standing, that prevail in many agricultural countries with an ancient civilization, particularly those with a relatively dense population. The economic history of Western Europe and Japan gives an indication of the institutional change which is likely to be required for an industrial development that depends on entrepreneurial activity and is governed by market prices. Feudalism, serfdom, caste systems, economic class privileges and other social arrangements impeding the free application of labour and capital may have to be radically modified. The fragmentation of land holdings has to be overcome by the formation of compact farms. With industrialization the economic rôle of the village is likely to be reduced, and that of the town to be increased. As labour is drained from the farms and an increasing share of the agricultural production is raised for sale, traditional methods of cultivation have to be abandoned and new ones introduced. Experience is frequently a condition for success in the new occupations (industry, commerce, etc.) as well as in agriculture. For knowledge to take the place of tradition, education has to be improved.

The centralization of economic life which industrialization implies is in many ways foreign to the social organization of the countries under review. Particularly in the Orient the resistance which this organization offers to industrialization is reflected in the difficulty experienced by big industry in maintaining a stable supply of skilled labour. "The labour turnover is high and continued replacement of the workers necessary, since they are likely, after a year or two in the factory, to return to their villages."[1] Life in the Orient centres around the family group (or joint family), which fills an important social function but risks being broken up by industry before new social institutions have been established that can give the individual the protection he enjoyed in the group. The danger is all the greater as the change in living conditions, the migration to industrial towns and new inequities in the distribution of income give rise to social problems of a kind and magnitude previously unknown. New tools of central and local government have to be developed to cope with the social conditions in a "progressive" society.

These are revolutionary changes which are likely to give rise to serious friction. But where they do not occur, industrialization will not make headway. It will be hampered, for instance, by an apparent insufficiency of the demand for industrial products, by scarcity of capital available for industrial investments, or by the inability of domestic industry to compete with foreign exporters, and these

[1] J. E. Orchard, *The Social Background of Oriental Industrialization; Its Significance in International Trade.* (In *Explorations in Economics, Notes and Essays Contributed in Honor of F. W. Taussig,* New York and London, 1937).

economic difficulties are likely to persist so long as the social adjustment required for industrial development has not taken place.

Such adjustment will probably prove less difficult where the contacts with the western world have been relatively close. But it should not be concluded that the countries we consider are best served by copying the institutions, ways of living and economic organization of the advanced industrial nations. The extent to which their social system will have to be changed depends in large measure on the nature and organization of the industry that is being developed. If the concentration of manufacturing in big plants in a limited number of industrial areas is avoided, and production is carried on in relatively small plants, spread over the country and working for the local rather than the national market, the urbanization which usually accompanies industrialization may be avoided to a certain extent, and with it certain kinds of institutional change. It is, as we shall find, just in the group of countries now under consideration that such decentralization of industry is most practicable from a purely economic point of view.

So far we have only considered the direct short-run effect of social traditions upon industrial development. Another effect, less direct and obvious but equally important, lies in the tendency of such traditions to favour a growth in the populations of the countries considered that, if unchecked, may render the transition to a dynamic economy difficult or impossible. But as there are also other factors influencing the population growth, we may with advantage reserve our judgment on this point for a later stage of our analysis.

Transportation

As mentioned already, manufacturing cannot develop in the absence of a system of domestic transport and communications. Foreign trade is likely to give the first impulse to the improvement of transport facilities. In particular, railways are constructed for conveying primary products from the points of production to ocean ports. The inflow of foreign funds resulting from exports helps to finance the construction and attract the foreign capital that may be required. A manufacturing industry working for the home market, however, exchanges its output in large part against such primary products as are not exported. The railway lines and roads it requires are not necessarily identical with those built in the interest of foreign trade. When they are, industrial development is greatly facilitated; when they are not, such development is retarded by the necessity of making heavy additional investment for the extension of transport facilities.

Certain shortcomings of the pre-industrial development of railways

are easily recognizable. The lines are likely to fan out from ocean ports to producing areas; but there are frequently inadequate connections between the lines serving different ports. The railways in question sometimes cannot be easily welded together so as to form a national system, particularly when they have different gauges. This problem is of importance in Australia, Brazil, China and many other countries. The use of several gauges, which frequently occurs in countries where railways are engaged largely in conveying goods entering into external trade, is illustrated by the figures for South American republics in Table 7.

Table 7. RAILWAYS ACCORDING TO GAUGE IN SOUTH-AMERICAN REPUBLICS

Country	Railway lines in miles (000's)	Percentage distribution of the mileage of railways with a gauge in metres of: 1.675	1.60	1.435	1.067	1.00	0.914	0.762	0.75	0.698	0.60
Argentine	27.60	55	—	7	—	35	—	—	1	—	2
Brazil ...	21.30	—	7	—	—	90	—	2	—	—	1
Bolivia ..	1.41	—	—	—	—	98	—	2	—	—	—
Chile....	5.81	30	—	8	6	45	—	8	—	—	3
Colombia	4.12	—	—	—	0.5	22	77	0.5	—	—	—
Ecuador .	0.78	—	—	11	68	—	4	—	17	—	—
Paraguay	1.04	—	—	57	—	5	—	34	4	—	—
Peru	2.12	—	—	59	—	—	30	5	2	—	4
Uruguay.	1.88	—	—	99	—	—	—	—	1	—	—
Venezuela	0.76	—	—	—	44	5	17	8	—	—	26

Source: Foreign Commerce Weekly, July 15th, 1944.

The development of transport facilities for export is further limited by the fact that transport costs render production uneconomical if the distance to ports is great. An estimate by an expert[1] gives a rough indication of the limits which transportation sets to mineral production outside Europe, North America and certain other areas where transportation is highly developed and the production is absorbed largely by local manufacturing. As a general rule in normal times coal, iron ore and phosphates are exploitable only within a zone of about 100 kilometres (60 miles) from the sea coast and mineral oil within a distance of 250 kilometres (150 miles) from the coast. Manganese and chromium ores can be worked at a greater distance from the coast than iron ore; zinc and lead ores still further away. But the only base metals which can be economically mined over the greater part of the world—that is, even when the distance to the coast is great—are copper and tin. Naturally, the distance from the coast at which a

[1] Professor Ivar Högbom in "Development of World Production of Raw Materials" (Annex to *Report of the Committee for the Study of the Problem of Raw Materials*, League of Nations Publications A.27.1937.II.B).

given mineral deposit can be worked is modified by factors such as the cost of constructing and operating a railway in the country concerned and the grade of the ore.

The export of agricultural products is subject to limitations of a similar nature, though when productivity is high and the surplus available for sale great, cereals and other nonperishable products can be economically carried over considerable distances. But there is an important difference between the means of transportation developed to carry mineral and agricultural exports. A railway connecting an exploited mineral deposit with a port does not branch out to cover a wide area as do railways collecting agricultural products. In countries such as the Argentine, Canada and the United States, the manufacturing industry has greatly profited from the extensive and closely woven networks of railways and roads originally established principally to convey agricultural exports. The smaller the agricultural surplus per unit of area, the less likely is a pre-industrial development of transportation. In certain densely populated countries a sparse railway system suffices to take care of the surplus production, and a large share of the population inhabits villages communicating with the outside world only by winding trails. Even if the excess population of such villages were drained off to industry and cultivation improved so as to increase the agricultural surplus, the exchange of this surplus against factory-made goods would have to wait for the establishment of an appropriate system of transportation. It should be observed, however, that the task of creating such a system has been greatly facilitated in recent decades by the use of motor vehicles and may be further facilitated in the near future by the development of air transportation.

The Rôle of Capital

Industrial production must be preceded by investment in mechanical power and equipment, transportation, buildings, public utilities, etc.

The statistical information available is not sufficient to illustrate the relative importance of investment in different countries; but a few figures may help to indicate the nature of the problem. In the United States in 1929 the amount of capital invested[1] in agriculture represented approximately 3.1 times the contribution by agriculture

[1] Capital assets, excluding farm lands, forests, mines and similar natural wealth, according to W. R. Ingalls, in *The Annalist* for October 23, 1931. Comparison is made with the national income according to official valuations.

to the annual national income; the corresponding coefficient for mining was 3.3, for transport and communications 4.8, for electric light, power and gas, 12.2. That for manufacturing—which represented a larger investment than any other group—was 2.6, if no account is taken of investments in raw materials in process of manufacture, in transport, in warehouses, etc. If half the value of such materials is assumed to represent investment in manufacturing, the coefficient for manufacturing is raised to 3.5.[1] The figures for trade, banking and insurance (under the same assumption) was 2.6; that for all the groups now mentioned (which represented 71 per cent of the total national income of the United States) was 3.9.

The use of capital is less in other industrial countries. Investment in the manufacturing industry largely determines the average output per head of the persons employed. The average output per head in manufacturing is far greater in the United States than in the other chief industrial countries,[2] and this superiority is due in part at least to the use of a more advanced technique requiring heavier capital investment.

In the United States manufacturing production increased approximately fifteen times between 1870 and 1938, while the number of wage-earners rose only four to five times, and that of man-hours only two to three times. The output per man-hour over the period may have risen as much as six times[3] as the use of mechanical power and labour-saving machinery was increased. No reliable data are available concerning the changes in the amount of capital invested in manufacturing over the whole period, but according to censuses of manufacturing the rate of increase between 1869 and 1914 in what appears to be the book value of capital employed was twice that in the net value o production.[4] Between 1914 and 1939 the volume of production doubled though the number of man-hours was reduced.

It should not be assumed that improvements in the technique of production necessarily cause an increase in the share of capital in the

[1] Figures given by Charles A. Bliss in "The Structure of Manufacturing Production" (National Bureau of Economic Research, New York, 1939) suggest a somewhat lower coefficient (about 2.5).

[2] The net physical output per head of operatives in factory trades in the United States in 1937 was two times that in Germany in 1936 and two and a quarter times that in the United Kingdom in 1935. (Figures quoted from R. L. Rostas, "Industrial Production, Productivity and Distribution in Britain, Germany and the United States," in the *Economic Journal* for April 1943).

[3] Between 1899 and 1939 the output per man-hour increased about three times, according to a calculation by Solomon Fabricant, *Employment and Manufacturing* (National Bureau of Economic Research, Inc., New York, 1942), page 331.

[4] Between 1914 and 1919, which is the last year for which the amount of capital is recorded, the net value of production increased more rapidly than that in the capital employed, but this appears due entirely to the increase in the cost of production during the First World War.

cost of production. A machine which is "labour saving" (that is, substituting capital for labour) is naturally likely to occasion such an increase. Inventions, however, are frequently "capital saving," that is, they lead to the replacement of one technical device by another which is as (or more) efficient but requires less capital outlay. Capital-saving devices tend to reduce the share of capital in the cost of production; but they also encourage the substitution of capital for labour in enterprises which had not attempted such substitution before the device was available.

The extent to which the substitution of capital for labour is economically advantageous depends, however, upon the cost of labour. Distinction has to be made, therefore, between countries in which labour is relatively scarce and those in which it is plentiful.

In sparsely populated countries with an advanced economy, industrialization frequently coincides with agricultural settlement and is likely to absorb available labour resources and even encourage immigration. Wage rates are likely to be relatively high, and industrial production, in order to be economical, must apply a highly developed technique. Actually, the technique employed is likely to be copied from advanced industrial countries, and new industries are sometimes established full-fledged, and, as it were, without historical development. The capital required is thus relatively great, and this not only in industry but also in agriculture. The high productivity, however, facilitates saving, and where primary production is largely for export, it may be developed in large measure by means of foreign capital.

In densely populated agricultural countries, and in "backward" countries generally, industrialization is likely to proceed along other lines. Standards of living, and hence industrial wages, in these countries are low from the outset and are not lifted rapidly to a high level. Economic development occasions a movement of labour away from agriculture and handicraft; hence it is advantageous to use much labour and little capital. Naturally, labour and capital cannot be combined in arbitrary proportions, and there are industries in which the technique of production and hence the use of capital cannot be greatly varied. But in the chief industries producing articles for consumption a choice can be made between more or less mechanized processes of production. The following figures quoted from an Indian study illustrate the range within which the use of capital may vary in the weaving industry.[1]

[1] A. I. Qureshi: *Post-war Construction.* (India Book House, Hyderabad-Deccan), quoting, it appears, articles by Dr. Lokanathan in the *Eastern Economist.* The figures in the last column, here calculated from those in the preceding columns, are slightly different from those given in the study quoted.

Method of production	Capital investment per worker Rupees	Output per worker Rupees	Ratio of capital to output	Amount of labour employed per unit of capital
1. Modern mill (large-scale industry)	1200	650	1.9	1
2. Power loom (small-scale industry)	300	200	1.5	4
3. Automatic loom (cottage industry)	90	80	1.1	13
4. Hand loom (cottage industry)	35	45	0.8	34

The small-scale enterprise, according to this table, employs four times as many workers per unit of capital as the large-scale, and total output per unit of capital is 23% higher than in the large-scale enterprise, though the output per worker is 69% lower.

Naturally the use of a technique requiring relatively little capital and much labour does not necessarily mean that the production in each plant must be on a small scale. A large plant may use the same type of mechanical equipment as a small, though it must use more of it. Generally, however, the very reason for establishing a large plant is that it permits of the use of a more highly capitalized technique than is possible in plants with a small production. Unless such a technique is more profitable, plants may with advantage be not only small but dispersed over the area of the country concerned. Technical changes referred to on a previous page,[1] in particular the substitution of electrical for steam-power, have tended to render small plants more economical and also contributed directly to the dispersal of manufacturing. As long as steam power was used, the relatively high cost of transporting coal, particularly by land, tended to concentrate industrial production in areas near coal-producing centres or trading ports. The ease with which electrical energy can be distributed to places at a considerable distance from where it is generated has rendered possible a decentralization of such light industries as may with advantage be situated near local markets for their products.

Advantages of a Small-scale Decentralized Industry

The technical changes just mentioned have in many cases increased the competitive power of the small and middle-sized plants representing an investment which is small both in terms of money and in proportion to the value of the goods produced. They have opened up new possibilities for industrial development in backward countries and areas.

[1] Page 41.

The importance of this fact may be illustrated by an example. In the Netherlands Indies attempts to establish large-scale manufacturing during the 1920's failed, owing largely to the lack of markets ready to absorb its products. In the 1930's, however, a successful development of the small-scale industry was achieved. This industry required a very small capital outlay and was based largely on the use of cheap labour. The factories established were small and could be spread over the country without giving rise to urbanization; hence the maintenance of a supply of trained workers did not present the problem it usually does in the Orient where workers so frequently abandon the factories after having worked there a certain time, in order to return to their villages. While the small-scale industry was thus adapted as nearly as possible to traditional forms of living, it assumed in certain respects the economic rôle of the old handicrafts and thus helped to restore the local economic equilibrium of the village. The competitive strength of this industry was obvious from the fact that the market prices of numerous goods were lowered and that import tariffs could be maintained at the previous low rates.[1] To a large extent, the small industry produced for customers that would not have been able to buy imported goods. With the ensuing commercialization of the economy, a large-scale industry began to develop in the towns; but it was largely confined to the production of certain higher-quality goods and was supplementary to rather than competitive with the small-scale industry. The industrialization programme was integrated with a social and educational programme.[2]

In the Netherlands Indies, however, industry is still in the early stages of growth. But Japan, which is the only Asiatic country which has succeeded in creating a highly developed industry, has also availed itself of the advantages of small-scale manufacturing. Large sections of the Japanese industry appear to have developed originally from pre-industrial handicraft, and the small plant probably retains a greater relative importance in Japan than in any other industrialized country. In 1930 53% of the population engaged in industry and handicraft was occupied in work-places employing less than five persons. Corresponding figures for a number of important branches of industrial production were (in the earlier 1930's): silk textiles, 66%; woollen textiles, 23%; hosiery, 45%; porcelain, 57%; electric lamps,

[1] It is significant that an import restriction introduced with a view to facilitating the industrial development did not affect manufactured goods, but rice. A government monopoly on the import of that commodity was established in order to raise its price and thus restore the purchasing power of the agricultural population.

[2] For more details, see Peter H. W. Sitsen, *Industrial Development of the Netherlands Indies* (Bulletin No. 2 of the Netherlands and Netherlands Indies Council of the Institute of Pacific Relations).

35%; bicycles, 58%.[1] The small average size of the plants in industry as a whole has favoured the use of a system of production which has required relatively small capital outlay, and has thus greatly facilitated the financing of industrial expansion. Since the transition from handicraft to small-scale factory production is of so recent date, it was greatly facilitated by the utilization of electric power. It is interesting to note, however, that while technically the production is decentralized and carried out in small plants, it is frequently dominated by large financial and commercial concerns which provide the plants with resources and direct their activities. There is also in Japan a substantially large-scale industry, engaged particularly in cotton textile production and in engineering, a fact which helps to explain why urbanization has proceeded in Japan at a rapid rate.

To the extent that industrial production is carried out on a small scale, it does not necessarily involve expensive urbanization. Thus capital requirements are reduced not only because the industrial machinery and plant are relatively simple but also because the decentralized industry does not involve urbanization and hence does not demand large investments in housing and public utilities.[2] Furthermore, as the products are not disposed of over a wide area, each plant depends much less on transportation facilities than it would were it working for the whole national market; hence, the transportation system may be simpler and require less capital.

Where small-scale production is economically possible, it presents various advantages in addition to those of not requiring too radical a change in social organization and involving a relatively small capital outlay. Its importance for countries that represent a market too small to form the basis for large-scale production is obvious and has been referred to on a previous page. Within each country the range of products which can be produced for the national market is wider the smaller the scale on which economical production is possible.

The small-scale industry, owing both to its methods of production and its close connection with the local market, enjoys a competetive advantage in its ability to adjust the nature and the quantity of its output to local demand, while the large-scale industry has to produce in large measure for storage in anticipation of a demand which may not be forthcoming. For these and other reasons decentralization tends to reduce the violence of business cycle fluctuations and to check their

[1] *Cf.* J. C. Allen, *Japanese Industry, Its Organization and Development to 1937* in *The Industrialization of Japan and Manchukuo, 1930–40*, edited by E. B. Schumpeter (New York, 1940).

[2] The generation of electric power is likely to be required, but such power is nowadays a necessity also for large-scale production.

spread from one area to another. But even to the extent that such fluctuations are not prevented, their social and economic drawbacks are reduced. Workers in a decentralized small industry are more likely to own their homes or to be small landholders, and in this or in other ways not be entirely dependent on their wage income. The risk of unemployment on account of fluctuations in industrial activity is much less grave to them than to the dispossessed workers in big industrial towns or agglomerations.

In the underdeveloped agricultural countries with a heavy population pressure on the land it is important that industrialization should relieve this pressure. The object is not easily attained, for the population has a strong tendency to increase as living conditions improve. Moreover, while workers are absorbed in industry and trade there sometimes occurs a shift of population from those handicrafts that are unable to compete with industrial manufacture.[1] The capacity of industry to absorb labour, however, is related inversely to the degree of capitalization. The figures on page 50 indicate that in the weaving industry small-scale production with the aid of power looms has to employ three times as many workers as the large-scale modern mill for a given output. The choice of a system of production involving the use of a large proportion of labour and a small proportion of capital per unit of output is particularly advantageous during the early stages of industrialization because it makes it possible both to utilize more fully the available supply of labour and to husband the limited supply of capital. Later on, as the supply of idle labour is reduced and that of capital increased, there may be a gradual transfer to types of production requiring more capital.

The competitive power of small-scale industry seldom has its origin in lower cost of production. It is true that small-scale industry frequently enjoys an advantage as regards particular cost elements. Thus, small or middle-sized plants dispersed over agricultural areas where surplus labour is available may be able to hire labour at lower rates than the large-scale industry in towns where costs of living are higher. They may frequently be able to acquire locally-produced raw materials at lower prices than big plants in towns since average freights to the factory decline with the average haul. But the reduction of manufacturing costs in large plants through the use of mechanical devices suitable only for large-scale production usually more than offsets the gains of the kind just mentioned that accrue to the small-scale industry.

[1] During later stages, however, occupations in handicraft professions are likely to increase (see page 28).

This industry would seldom be competitive, therefore, if its dispersal did not imply a reduction in the cost of distribution, including that of sale in the factory as well as in wholesale and retail trade. Even a small percentage saving on this item may be important, since in the case of products of large-scale manufacturing distribution costs frequently account for the great bulk of the retail price. The more concentrated the manufacturing, the wider becomes the area over which the products have to be sold and the greater the cost of distribution. In many cases the products of small industries can be sold directly from the plant to the consumer at a price which is not raised by freights and profits of middlemen. It is obvious, however, that such an advantage accrues to small-scale producers only if they refrain from disposing of their products over a wide market. The splitting up of centralized production of a given article among several small plants which all compete with each other in the same market would increase distribution costs.

But the justification of the small-scale decentralized industry from an economic point of view is not entirely a question of competitive ability. To show this it is necessary to consider briefly the relationship between industrial organization and social security. It was pointed out above that since a worker in the decentralized small industry is usually not wholly dependent on his wage income, he is much less gravely affected by unemployment than is the dispossessed worker in large-scale industry located in big towns. In addition, there is reason to believe that he would be less frequently unemployed. The exchange of locally produced manufactures against locally produced raw materials and foodstuffs is naturally not greatly affected by disturbances in the wider and closely integrated markets (national and international) upon which large-scale industry necessarily depends. In other words, the compartmentation of economic life which local small-scale production involves, has a stabilizing effect on business fluctuations of the major, cyclical type. The greater social security involved in such production is frequently sacrificed because the large-scale industry proves more competitive. The State, however, nowadays usually assumes the responsibility for a certain degree of social security, implying the support of the unemployed or of enterprises in times of depression. The expenditure involved is borne by the society as a whole and is thus not entirely included in the prices at which this industry can offer its products. The competitive advantage which thus accrues to the large-scale industry does not necessarily imply that, from the point of view of the society as a whole, this industry is economically superior to small-scale production. It would be so only if it were able to compete after being charged with the entire cost of affording a degree of social

security equal to that which would prevail under a system of small-scale production.

A country confining itself in the main to developing small-scale industry will, of course, be exposed to competition in its domestic market from countries with a large-scale manufacturing industry operating at low unit costs. This may delimit the extent to which a continued development of the small-scale industry is economically possible. But it may be observed that in a country which does not have to carry the institutional and financial burden of an extensive large-scale industry, taxation, manufacturing costs and prices of goods generally are likely to be relatively low—a fact which strengthens its competitive position.

It is thus obvious that a decentralized industry offers considerable economical, financial and social advantages to countries which are in the early stages of industrial development and lack the capital, mineral resources or extensive market that are required for the rapid growth of heavy industries.

Comparison between Growth of Industry and Population

Table 8 gives figures illustrating the numerical relation between industrial and demographic expansion in countries for which the relevant data are available over a considerable period of time. The figures show, for five periods varying in length between ten and fifteen years, to what extent the average annual increase in manufacturing (a) is reflected in an increase in population (b), and to what extent in an increase in manufacturing per head of population (c).[1]

The majority of the countries shown in this table are highly industrialized, and the greatest relative expansion in total manufacturing as well as manufacturing per capita occurred before or around the turn of the century when the share of their populations engaged in industry was still increasing rapidly. The approach to industrial maturity as well as World War I and the economic depression of the early 1930's have since tended to check their industrial expansion. In certain of the countries shown, however—particularly the U.S.S.R., the United Kingdom, Sweden and Finland—industrial productivity showed a marked upward movement during the 1930's.

In the United States between the early 1870's and the late 1890's the great increase in manufacturing was accounted for to almost the same extent by the growth in population as by the increase in manu-

[1] It should be observed that the increase in manufacturing (a) is sometimes slightly higher than the total of that in population (b) and in manufacturing per capita (c), the true relationship between the figures not being $a = b + c$, but $(100 + a) \times 100 = (100 + b) \times (100 + c)$.

Table 8. PERCENTAGE AVERAGE ANNUAL INCREASE (+) OR DECREASE (−) IN MANUFACTURING AND POPULATION

a: manufacturing
b: population
c: manufacturing per head of population

		1871/75–1881/85	1881/85–1896/1900	1896/1900–1911/13	1911/13–1926/29	1926/29–1936/38
United States	a	+5.1	+4.2	+5.2	+3.8	+0.2
	b	+2.3	+2.1	+1.9	+1.5	+0.8
	c	+2.7	+2.1	+3.2	+2.3	−0.6
Germany	a	+2.7	+5.1	+4.0	+0.9	+2.2
	b	+1.0	+1.1	+1.4	+0.5	+0.5
	c	+1.7	+3.9	+2.5	+0.4	+1.7
United Kingdom and Ireland	a	+1.6	+1.8	+1.6	−0.03	+2.9
	b	+1.0	+0.9	+0.9	+0.4	+0.4
	c	+0.6	+0.9	+0.7	−0.4	+2.5
France	a	.	+2.5	+3.5	+2.0	−1.0
	b	.	+0.1	+0.2	−0.1	+0.2
	c	.	+2.4	+3.3	+2.1	−1.1
Russia-U.S.S.R.	a	.	+6.6	+4.8	+2.3	+20.2
	b	.	+1.4	+1.8	+0.7	+1.3
	c	.	+5.1	+2.9	+1.6	+18.7
Italy	a	.	+4.9	+4.3	+3.5	+1.0
	b	.	+0.6	+0.7	+0.6	+0.9
	c	.	+4.3	+3.6	+2.9	+0.1
Canada	a	.	+4.7	+7.5	+3.0	+1.1
	b	.	+1.1	+2.6	+1.8	+1.4
	c	.	+3.6	+4.8	+1.2	−0.3
Belgium	a	.	+3.0	+3.9	+1.9	−1.1
	b	.	+1.0	+0.9	+0.3	+0.4
	c	.	+2.0	+2.9	+1.5	−1.5
Japan	a	.	.	+9.0	+7.6	+6.6
	b	.	.	+1.2	+1.3	+1.6
	c	.	.	+7.7	+6.2	+4.9
Sweden	a	+4.7	+8.2	+3.6	+2.3	+5.5
	b	+2.6	+0.6	+0.7	+0.6	+0.3
	c	+2.1	+7.6	+2.9	+1.7	+5.1
India and Burma	a	.	.	+4.3	+2.7	+4.9
	b	.	.	+0.5	+0.5	+1.3
	c	.	.	+3.8	+2.1	+3.5
Finland	a	.	+8.5	+4.4	+4.6	+4.7
	b	.	+1.3	+1.4	+0.8	+0.7
	c	.	+7.1	+2.9	+3.8	+4.0

facturing per head. There can be little doubt that in these years the rapid growth of population hastened the pace of United States industrialization. Natural resources available for exploitation were plentiful and a considerable share of the increase in population resulted from the influx of immigrants who had reached productive age. Productivity was thus high, and so were the savings that could be employed for industrial expansion. In Canada similar conditions prevailed between the late 1890's and the late 1920's. In general, it appears—and this conclusion is of importance—that in sparsely populated countries a rapid increase in population especially through immigration contributes to industrial growth.

In many densely populated countries, on the other hand, industrial expansion during the last century has caused (rather than been caused by) a growth in population. The United Kingdom and Belgium, which would not have been able to support their present population were it not for their industrial production, are typical cases. In Japan, a considerable growth in population was rendered possible by the high rate of industrial development between the late 1890's and the late 1930's. Naturally, in cases like these, foreign trade is an essential condition for the expansion of industry as well as population, for where natural resources are relatively scarce there is a high dependence on imported foodstuffs and raw materials and hence on the export of manufactured articles.

As industry becomes highly developed, the increase in population is likely to slow down as a result of a decline in fertility.[1] In several highly industrialized countries shown in the table the annual increase in population during the last period considered was less than half of what it had been around the turn of the century. As long as the decline affects chiefly the young age groups, the population of productive age will continue to grow at a relatively rapid rate and its share in the total population will increase. The slowing up of population growth will thus not necessarily check the expansion of industry, and the expansion that occurs will be reflected largely in an increased per capita supply of manufactures.

The only clearly undeveloped densely-populated country shown in the above table is India. Since the turn of the century the rate at which manufacturing in India has expanded has been several times greater than that of the growth in her population and has been similar to that in several countries with a flourishing industry. It would be erroneous, however, to conclude from the figures that India's industrialization proceeded rapidly enough to solve her economic problem. In fact, the

[1] *Cf.* page 59.

level of industrial production in India is still, after the growth that has taken place, extremely low. This is illustrated by Table 9, showing manufacturing production per head of population in dollars at stable (1926/29) prices since 1896/1900. It will be observed that while India's production per head between the late 1890's and the late 1920's increased at very much the same speed as that of the United States, it amounted to only 1% of that of the United States. Over the whole period shown it increased little more than three times (while that of Japan rose 11 times); and at the end of the period it had not yet reached the figure for Japan in 1896/1900.

Table 9. APPROXIMATE MANUFACTURING PER HEAD OF POPULATION IN FOUR COUNTRIES

(In $ at 1926/29 prices)

	United States	Germany	Japan	India
1896/1900	160	120	5.70	1.50
1901/05	210	130	8.50	1.90
1906/10	230	150	12	2.30
1911/13	250	170	16	2.50
1921/25	300	130	31	3.10
1926/29	350	180	41	3.50
1931/35	240	140	48	3.90
1936/38	330	210	65	4.90

If we assume that India's population and manufacturing were to continue to increase at the same average rates as during the period covered by Table 9, it would take some ninety years before the manufacturing per head would reach the figure of Japan in 1936/38 (which was still only one-fifth of that of the United States). Meanwhile, the population, which is already extremely dense, would have increased by four-fifths. Obviously, a much more rapid development of manufacturing is required. The speeding up of the rate of industrialization in densely populated countries, however, is rendered difficult both by the density of the population and by the propensity of the population to expand as conditions permit so as to offset in part the increase in well-being which industrialization brings about. The question will be considered in greater detail below.

Industrialization and the Growth of Population in Densely Populated Countries[1]

Before under-developed but densely settled countries came under the influence of western industrial and administrative technique, their

[1] Among recent studies consulted for the brief exposition in the following few pages should be mentioned articles by I. B. Taeuber, E. G. Beal, K. Davis and F. W. Notestein in *Demographic Studies of Selected Areas of Rapid Growth* (Milbank

populations appear as a rule to have been changing only slowly. High death rates, particularly in the younger age groups, resulted from the prevailing social, economic and hygienic conditions. High birth rates accordingly were a necessity for the survival of the society; hence in almost all such countries, law and custom, religion and convention have required the maintenance of a high fertility.

The balance between the high death and birth rates is disturbed in various degrees by western influences, which make themselves felt through the establishment of greater personal and economic security, improved hygiene and in general more efficient methods of administration and production. Mortality then declines, but the traditions and social values which tend to maintain fertility are not necessarily affected; hence there arises a considerable surplus of births over deaths, and the population increases rapidly as long as the means of subsistence and other conditions permit.[1]

An increase in population of the kind now considered may be divided into two components. A given decline in mortality is equivalent to a rise in the average life expectancy at birth, and such a rise implies a corresponding increase in the population for a generation or two after the initial change. But besides this direct and non-recurrent effect upon the population, the decline in mortality tends to bring about a cumulative increase through its influence upon births. The death rate of infants and children under 15 years drops the most. Consequently, an increasing number of the children born enter the reproductive age. With this increase in the "parental stock," there naturally occurs a rise in the number of births as long as fertility remains unchanged; hence each generation entering into reproductive age tends to become more numerous than that which preceded it. This tendency is obviously not affected by a discontinuation of the decline in mortality through which it was released.

To a greater or lesser extent, however, the effect of such a tendency upon the size of the population may be offset by a decline in fertility. In fact, such a decline is the only factor which could prevent a growth in the average size of the family when infant and child mortality is reduced. In the highly developed western countries fertility appears to have begun declining in the second half of the nineteenth century.

Memorial Fund, New York, 1944); F. W. Notestein, *Population—The Long View*, in *Food for the World* (editor, Th. W. Schultz); J. Lindberg, *Food Supply under a Program of Freedom from Want*, in *Social Research* for May 1945; A. V. Hill, *Health, Food and Population in India*, in *International Affairs* for January 1945.

[1] We disregard here the cases of decline in the population which frequently occurred during earlier periods as a result, for instance, of infectious diseases of the Western World to which the native population of the countries considered was highly susceptible, or of economic exploitation.

The causes of this decline include elements as different as the tightening of sexual morals in the Victorian era, the growing feeling of responsibility among parents for the education and prospects of their children, wider knowledge and better methods of birth control and the wish to raise personal consumption standards by keeping the family small. Under the influence of such factors, birth rates have in the majority of industrial countries fallen to levels which, in the long run, will not even permit of the maintenance of a stable population.

In certain underdeveloped but densely settled countries the population has increased considerably during the last few generations. Thus, in India the increase amounted to 54% between 1871 and 1941 and 28% between 1921 and 1941. Java's population increased over three times between 1860 and 1930. But it is less the increase itself than the absence of evidence of any substantial decline in fertility that renders the population problem so important in the densely settled agricultural countries with an ancient civilization not closely integrated with that of the West. The increase has been due to a limited decline in the mortality of the lower age groups and tends to be self-perpetuating since it occasions a steady growth in the parental stock. Mortality in many of the countries under consideration is still about twice as high as in industrial countries; hence there is much room for fresh impulses leading to an accelerated population growth. But even without such impulses there is no end of the growth in sight, except that which may result from increased mortality through warfare, famine or disease.

The modern influences have in such cases been confined to "external" matters such as the technique of production and hygiene, and have not penetrated the traditions and social values—deeply entrenched and resistant to change over short periods—that determine the high fertility.

It is by no means clear how the countries concerned will be able to find a way out of a situation in which living standards remain at or little above subsistence level and any growth of the national product appears to occasion an increase in population rather than in individual wellbeing and investment. One suggestion that has been made is that these countries should follow resolutely in the steps of the highly developed countries, hasten their industrialization and urbanization, transferring of a large share of the younger population from the villages to towns. The social traditions and sanctions attached to the village and family system would thus be broken, and a growing proportion of the population would tend to adopt a standard of values in which high fertility and big families would be rated lower than the wellbeing of

the individual. The immediate result would be a reduction in deaths and an acceleration of the population growth; but there would also be an accelerating decline in fertility until, finally, the growth would slow down as in industrial countries.

It is doubtful, however, whether urbanization is the best method of creating a standard of values favourable to a decline in fertility. Our previous analysis has suggested that industrial concentration and wholesale urbanization in the countries concerned would be financially wasteful and have undesirable social and economic effects, and that recent technical developments have favoured the growth of a decentralized industry compatible with village settlement. Even an industrialization of this kind would be coupled with commercialization and a change in living conditions, and it would be surprising if it were not to affect popular attitudes to questions of welfare and family size.

Among densely populated countries which have recently become industrialized, Japan takes a predominant place. The demographic statistics of that country record an increase in both death and birth rates from the late 1860's, when the industrialization process may be considered to have begun, up to 1920; but it is open to question whether this increase, so contrary to what occurred in other industrial nations, is not due simply to more complete recording of births and deaths. There is little doubt, however, that the population roughly doubled during this period. In the 1920's and 1930's there was a clear decline in death rates as well as in fertility, and the gross reproduction rate fell off. Yet the population increase was in full swing at the end of the inter-war period and, so far as determined by demographic trends, likely to continue for a long time. As was mentioned on a previous page,[1] extensive urbanization has taken place in Japan; at the same time, however, the small-scale decentralized industry probably is more important than in any other industrialized country.

In certain respects, conditions in Japan have undoubtedly been exceptionally favourable to industrial development. The Japanese population is probably more responsive to social and economic change than is that of many densely populated countries in which the way of living has seldom been greatly affected by administrative measures. Furthermore, no area in Japan is very distant from ocean ports, and foreign commercial and cultural influences could thus penetrate more rapidly and thoroughly than, for instance, in China or India.

Another factor of importance may have been the suddenness of the impact of western civilization after 1868. Up to that time, external influences in Japan had been very restricted, and economic progress as

[1] Page 52.

well as population increase had been slow. When the isolation was broken, application of the accumulated wealth of western knowledge and methods of production appears to have caused an increase in production rapid enough to outweigh by far the rise in population that naturally occurred simultaneously.[1] A considerable part of the national income could thus be made available for raising the standards of consumption and for investment.

The question whether other densely populated and economically backward countries will be able to follow the example set by Japan, will depend in the first instance on their ability to mobilize the will and resolution required. In certain of them demographic and geographical conditions are undoubtedly less favourable than were those of Japan at the corresponding stage of her development. It may be observed, however, that these nations, owing to improvements in the technique of production and transportation[2] during the last few decades enjoy certain advantages which were not available to Japan in the earlier stages of her industrial growth. Further, the usual attitude nowadays with regard to industrialization is not to wait for a spontaneous but relatively slow development of the kind experienced, for instance, in western Europe during the last century. Deliberate government action going far beyond the simple measures—such as protective tariffs—then employed is called for not only to initiate and support industrial growth but to regulate its scope and pace and integrate it with broad programmes of social welfare. The breathtaking pace at which a government-planned industry may expand under certain conditions has been amply illustrated by the U.S.S.R., which during the inter-war period became the laboratory for a new approach to the problem of industrial development. The success of the Soviet experiment has aroused new hope among many undeveloped countries of making rapid economic advance. Certain of the experiences gained by the U.S.S.R. began to be applied elsewhere in the 1930's, and several countries are eager to begin carrying into practice more or less extensive plans for rapid development.

These plans naturally take into account the difference in the political systems that exist between them and the Soviet Union and hence allow of varying degrees of entrepreneurial freedom. It is important to remember, however, that the Union embarked upon its industrialization

[1] It may be pointed out that certain other densely settled countries are still largely isolated from western influences, though not so much by political circumstances as by difficulties of transport. Even in China and India such influences have, in the main, been confined to areas near the sea coast, railways and navigable rivers.

[2] *Cf.* pages 41 and 47.

programme with a much greater wealth of undeveloped agricultural and mineral resources of various kinds in relation to its population than is available in the countries we now have in mind. However important, therefore, the Soviet experiment does not shed much light on the particular problem we have discussed in the last few pages. In the densely populated countries a successful programme of rapid industrialization may have to be combined with a programme of checking excessive population growth. Such a programme would have to include a special educational effort and various measures of social engineering not yet put to the test. The problem is not easy, but it has to be faced squarely, and upon its solution depend the economic prospects of countries representing half the world's population.

The Risk of a False Start

The agricultural countries aspiring to industrial development have the advantage of being able to draw upon the vast fund of knowledge and experience accumulated by industrial nations. Their tasks in matters of hygiene, education, administration, management and technique of production should thus be greatly facilitated. The pace of their development ought to be hastened by their ability to utilize devices which in the older industrial countries emerged as the result of decades of research and experimenting.

It has become increasingly clear, however, that undeveloped countries utilizing certain results of western knowledge and technique but not ready to assimilate western civilization with their own run the risk of paying a heavy price for the influences to which they are subjected. The risk materializes if these influences fail to bring about the process of self-propelling development so characteristic of the western type of civilization. The most obvious cases of such a "false start" occur when the impulses received tend to raise the population at the same or a higher rate than the national product.

We may consider the control—in itself highly desirable—of disease or periodical famine caused by flood or drought. Such a control tends to reduce the death rate and increase the size of the population in the manner analyzed above. Unless production is increased accordingly, average incomes cannot be maintained. Not only is the continued reduction in death rates checked (if the population originally lived near the subsistence level), but the savings available to finance industrial expansion will decline.

We may also consider an expansion of agricultural production, for example through improved methods or the cultivation of new land,

that is counterbalanced by an increase in population. After this increase the country is hardly in a better position to embark upon a progressive programme. Its position may, in fact, be worse, for part of its limited productive resources has been used to support a larger population rather than to bring about a rise in the average output and capital formation per inhabitant.

This may be of minor importance as long as there are still plenty of unused natural resources at hand. It is true that the amount of potential resources is never exactly known and is likely to increase with discoveries and technical progress. The difference among countries in natural wealth is nevertheless very real and no country in which such wealth has proved relatively scarce in the past could afford to base its economic policy on the hope of new discoveries. It is imperative, therefore, that underdeveloped countries whose known potential resources are limited should make the mobilization of those resources coincide with the transition to a progressive economy. The more the population is allowed to grow before such an economy is initiated, the more difficult the transition becomes. In certain countries the stage may be passed where it will occur spontaneously; it will then have to be carefully planned and pursued with the aid of government intervention and support.

Some measure of the extent to which under-developed countries have succeeded in initiating the transition may be found in data concerning the change in their gainfully occupied population. It may be said with some justification that when in densely populated countries industry, transport, commerce and similar professions absorb more than the whole increase in population (thus reducing the number of people dependent on agriculture), the industrialization process is well under way, but that when this is not the case and the pressure on the land increases, the process is in its early stages with the outcome still in doubt. In sparsely populated countries where potential resources are great relatively to population, on the other hand, the expansion of the agricultural population may coincide with a successful industrialization. Unfortunately, statistical practice varies from country to country, and in certain countries from one census to another; hence the figures in Table 10, allow only of tentative interpretation.

Eastern and southeastern Europe, which according to various indications is much nearer to embarking on what may be called a dynamic development than, for instance, the Asiatic agricultural countries, appears a far from homogeneous area. In Bulgaria and Greece the great bulk of the increase in the gainfully occupied population during the period considered was absorbed by agriculture, while in Yugoslavia

less than half the increase appears to have been so absorbed and in Poland and Hungary the agricultural population was actually reduced.

Table 10. CHANGES IN GAINFULLY OCCUPIED POPULATION

Country	Period	Increase (+) or decrease (−) in gainfully occupied population (000's)			Percentage share of total increase absorbed by		
		In agriculture	In other occupations	Total	Agriculture	Other occupations	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Estonia.....	1920–1934	+ 36	+ 4	+ 40	90	10	100
Mexico[a].....	1921–1930	+ 143	+ 25	+ 168	85	15	100
Bulgaria.....	1920–1934	+ 602	+ 231	+ 833	72	28	100
Greece.....	1920–1928	+ 550	+ 329	+ 879	63	37	100
India[a].....	1921–1931	+2,500	+2,000	+4,500	55	45	100
Latvia[b].....	1928–1935	+ 35	+ 30	+ 65	54	46	100
Yugoslavia[b]..	1921–1931	+ 259	+ 320	+ 579	45	55	100
Finland.....	1920–1930	+ 75	+ 168	+ 243	31	69	100
New Zealand.	1921–1936	+ 36	+ 99	+ 135	27	73	100
Chile.....	1920–1930	+ 13	+ 97	+ 110	12	88	100
Australia.....	1921–1933	+ 57	+ 493	+ 550	10	90	100
Poland.....	1921–1931	− 518	+2,001	+1,483	−35	135	100
Hungary.....	1920–1930	− 96	+ 272	+ 176	−55	155	100
Norway.....	1920–1930	− 58	+ 155	+ 97	−60	160	100
Ireland.....	1926–1936	− 30	+ 67	+ 37	−81	181	100

[a] Men only, approximate figures (inclusion of women would render the figures inaccurate on account of a change in statistical practice).

[b] The method of classification was not the same in the two censuses considered, but the figures quoted are believed not to be greatly affected by the change.

Note. The countries are arranged in the inverse order of the percentages in col. 5.

The figures for India indicate that 55% of the increase in the gainfully occupied male population between 1921 and 1931 was absorbed by agriculture. There are reasons to believe that in reality the percentage absorbed by agriculture was higher. The bulk of the increase in other occupations is not accounted for by industry, trade or transport, but by domestic services and "insufficiently described occupations." Partial information available for 1941 suggests that during the 1930's agriculture continued to absorb the bulk of the increase in the number of male workers. The statistics available for the whole period 1911–1941 do not reveal any clear tendency of decline in the share of population dependent upon agriculture.

Financing by Foreign Capital

Our reasoning has suggested, and our statistical analysis will confirm, that under normal conditions industrialization is not likely to cause a reduction in the import of manufactured articles. Such imports may in fact rise, owing for example to the increased demand for machinery and other equipment, as may the import of industrial raw materials. Though exports are also likely to expand, the supply of foreign currency may tend to become scarce. A short supply of foreign currency frequently appears together with a shortage of domestic savings. The inflow of foreign capital operates to ease both these types of deficiency.

Care is required, however, in planning the financing of industrial development with the aid of foreign capital. It appears that such capital prefers investment in government securities, public utilities, banks and plantations, mines or other industries working for export. Among the last-mentioned we find a number of manufacturing industries engaged in what may be described as processing locally-produced primary products for export.[1] But the typical manufacturing industries working chiefly for the domestic market do not appear to attract foreign capital.

This may be illustrated by a few figures. In the Argentine foreign long-term investments in 1941 have been officially estimated at 9,057 million pesos; of this amount 20% was in public debt, 65% in railways and other public utilities, 1% in agriculture, 5% in land, insurance and commerce, 3% in meat-packing houses (a typical export industry), and only 6% in "manufacturing industries" (certain of which were undoubtedly producing for export). In Canada total long-term foreign investments in 1937, according to an official estimate, amounted to $6,765 million, of which amount 25% represented government securities, 35% public utilities, 20% financing, distribution, real estate, etc., and 20% manufacturing; but of the last-mentioned amount the great bulk was in typical export industries (not far from two-thirds were in wood, paper and metal industries alone). Even in China, where foreign industrial enterprises were long able to be established under very favourable conditions,[2] manufacturing in 1931 represented only 16½% of the total foreign investments, which amounted to U.S.$2,261 million.[3]

Countries dependent on foreign financing sometimes complain of this orientation of foreign capital which is said to give them a lopsided

[1] *Cf.* page 9.

[2] Many factories in treaty ports could be regarded as foreign factories on Chinese soil, working for the market of the interior of China, or for export from China.

[3] C. F. Remer, *Foreign Investments in China*, New York 1932.

economy of the colonial type rather than a well-balanced all-round development.[1] The orientation of foreign capital investments must be determined, however, by the effect the investments are likely to have on the capacity of the receiving country to transfer dividends or debt service payments abroad. Investments in export industries, or in public utilities that facilitate exports (such as railways from production centres to ports), clearly help to raise the transfer capacity. But investments in manufacturing for the domestic market would have no obvious effect on the transfer capacity, since such manufacturing normally tends to create new circuits of domestic exchange which do not necessarily affect the balance of trade in either direction, and in particular do not normally tend to reduce the import of manufactured goods. Foreign investors thus cannot be blamed for the orientation of capital imports. The predominance among the objects for foreign investment of activities tending to raise exports is due in large measure to the incentive of high capital yields during the early period of modern development when exports and communications are being expanded while domestic savings are still small.

Indirectly, the inflow of capital for the development of other activities favours industrialization. If foreign capital is engaged, for instance, in building a railway intended to carry agricultural exports, those employed in the construction and later in railway transportation and agriculture will exercise a demand from which domestic manufacturing will profit; the railway will also serve the transportation of domestic manufactured goods; and use of foreign rather than domestic capital for the construction will release domestic savings for investment in manufacturing.

When later the stage is reached in which manufacturing for the home market tends to absorb the bulk of the new investments in the country concerned, the attraction of foreign capital may be weakened by the decline in returns that results from the exhaustion of the most profitable investment opportunities and by the growth of domestic savings. But even when such capital continues to enter in large amounts, it may still prefer investment in activities other than manufacturing, and this for various reasons among which may be mentioned the difficulty of absentee-control in many branches of manufacturing.

Under certain conditions, foreign investments in manufacturing are likely to be relatively more important than the above observations suggest. Thus, the increase in tariffs and other barriers to imports in

[1] *Cf.* Leland H. Jenks, *British Experience with Foreign Investments*, in *The Journal of Economic History* (New York) for December 1944.

many countries during the 1930's induced manufacturing enterprises in exporting countries to establish branches or subsidiaries for production within the borders of countries to which they were no longer able to export. In such cases, the prerequisite for the transfer of the yield of the capital involved was obviously the reduction in imports brought about by the new import restrictions. But as the object of these restrictions was usually to economize the scarce supply of foreign currency, the transfer of yields was frequently rendered difficult and the risk carried by the foreign investor thus enhanced. Under such conditions investments are usually likely to occur only if the anticipated profits are relatively high.

The majority of non-industrial countries outside Europe have become less dependent on foreign capital for their future development as a result of the radical improvement in their financial position in the course of World War II. They have redeemed a considerable share of their long-term debt, particularly that due to the United Kingdom, and in addition accumulated sterling and dollar assets. Their debt service payments due abroad have thus been greatly reduced; and they will for some time be able to meet part of their requirements of foreign currency for the purchase of foreign capital goods by drawing on such part of their reserves as are liquid.

The need for capital especially in certain densely populated countries is likely, however, greatly to exceed their readily available domestic supplies and liquid foreign assets if large-scale programmes of industrialization are undertaken.

It would take us too far to consider under what conditions a capital inflow is likely to occur and serve the interest of debtor and creditor country alike; but one aspect of this question may be briefly dealt with, since its importance was amply brought out by events during the 1930's. The profitability of international investments depends in large measure on the ability of debtor countries to dispose of their specialized exports in the "world market" and to employ their excess of exports wherever it arises for payment of dividends and debt service to the creditor countries. The payments in question are rendered possible largely by the triangular, or rather multilateral, trading transactions.[1] The breakdown in the 1930's of the system of international trade and multilateral settlement of accounts hindered the transfer of capital yields and to that extent removed the very incentive to make new international investments. The amount of such investments accordingly declined, and a tendency arose to liquidate the outstanding

[1] *Cf. The Network of World Trade* (L.o.N. Publication 1942.II.A.3), particularly pages 73–97.

investments, even at a loss. A working system of international trade and settlement, allowing of indiscriminate transfer of payments arising out of current transactions, is thus a condition for large-scale financing by means of foreign capital.

Financing by Domestic Savings

To the extent that it cannot be financed by foreign capital, industry must lean heavily during the first stages of its growth on capital formation in agriculture. This is likely to present a problem in the densely populated countries. It should not be concluded, however, that because average living standards in these countries are close to subsistence minimum there are no reserves of income that can be tapped and turned to productive use. Actually there is frequently in primitive peasant economies a surplus income which cannot easily be used for raising consumption standards or for productive investment. The saving which thus occurs is likely to take the form of unproductive investment in buildings or the acquisition of treasure for personal ornament or hoarding.[1] Even in more advanced types of predominantly agricultural economies where agricultural surpluses can more readily be marketed, it is usual to encounter very low standards of living among a peasantry not devoid of means in the form of hoarded notes or banking deposits. The fact that such savings yield no or relatively small return has a double significance: neither are they of great importance for the economy of the agricultural production or for the standard of living of the owners, nor are they, in the form they have taken, fully available for long-term investment in industry, transport, etc.

These savings are naturally limited in amount. Agricultural productivity and hence savings could be increased, however, by measures which do not involve a prior capital outlay. The low productivity in agriculture is a result, not only of the lack of modern equipment, but also of obsolete methods and ignorance, for example with regard to the rotation of crops.

Further, it is obvious that just in the countries where the equipment used, in agriculture as well as in other pursuits, is very simple, a given capital investment implies a relatively great increase in productivity. A wheel hoe, for instance, represents a very small outlay but neverthe-

[1] Naturally, hoarding of precious metals, jewelry, etc., may serve the object of accumulating a reserve that can be employed for consumption when crops fail as frequently is the case in certain of the countries concerned. It may be observed, however, that in many of the areas in question the local supply of foodstuffs is limited by the absence of adequate transportation facilities and that hoarding accordingly is of limited value as an insurance against famine threatening whole areas.

less may enable an agriculturist to cultivate several times the area he can manage with an ordinary hoe. Even minor investments may thus greatly increase the agricultural surplus and savings.

The conclusion that might be drawn from these considerations is that the possibility of raising capital for industrial investment in a country where there is hardly any margin for the compression of consumption is by no means as small as might appear at first sight. This does not mean that the capital in question is freely available for industrial expansion. Its effective utilization depends in large measure on action taken or sponsored by government authorities. Such action will necessitate education, persuasion and administrative skill and may be rendered difficult by the lack of response from a tradition-bound and largely illiterate population. Further, part of the savings now referred to may have to be reserved for the development of transportation and other public utilities. Unless transportation facilities and power are widely distributed, the industrialization process may risk being confined to certain easily accessible areas and the hope for a radical amelioration of the nation's economy be frustrated.

But let us assume that the initial difficulties have been successfully overcome and that an industrial growth has begun on a comparatively broad front. To an increasing extent the further development must be financed by capital formation in industry itself or within activities (particularly commerce) closely dependent on industry. For a rapid industrial growth it is important that a considerable proportion of the increase in the national income that occurs is saved and invested.

The proportion that can be invested depends in part on the social and economic organization of the country concerned. Where the industrial expansion results from free entrepreneurial activity, only a minor part of the increase in income is likely to be used for investment, for the very incentive to continued expansion is then derived from the growth in the demand for consumers' goods. Where the government directly or indirectly assumes the entrepreneurial risk, and is concerned rather with an ultimate increase in national productive capacity than in immediate profits, it may be willing to devote a greater share of the increase in national income to investment. This naturally implies that average consumption standards are prevented from increasing as much as they would otherwise have done, either by the maintenance of a lower level of real wages than would have established itself in a free labour market or by levelling out the differences in income distribution that, in a society of free enterprise, serve as an instrument of capital formation. Moreover, if investment is to increase and not decrease

the national income, the government must like the individual be concerned—though not necessarily so immediately—with the profitability of the enterprises it stimulates.

In most countries neither of these two methods of financing exists in a pure and exclusive form. Even in countries where most business is in private hands, public utilities are frequently dependent on government financing. In certain countries government credits are available also for industries of particular importance to the national economy. But even where industries are financed exclusively by private capital, they are likely to enjoy government support or protection which frequently (though not always) tends to bolster investment at the expense of consumption. This may be true, for instance, of protective tariffs which, by raising the price of consumers' goods, render production and investment profitable where they would otherwise not be so.

Another problem in addition to those connected with the sacrifice of current consumption arises when there is a rapid acceleration of the industrialization process, namely how to acquire the necessary supply of foreign currency. Unlike loans raised abroad, domestic saving does not necessarily add to the supply of foreign currency. Investments in public utilities and industry, however, can be made only with the aid of imports, for countries without a highly developed industry are seldom able to produce complicated types of machinery, instruments and similar equipment, and many of them lack the natural prerequisites for producing structural iron and steel and similar kinds of capital goods. The rise in the import of capital goods will not necessarily be offset by a reduction in the import of consumers' goods, and the import of raw materials may have to be raised. To what extent exports will increase will depend on a number of circumstances. The risk of pressure on the balance of payment naturally varies with the pace of industrialization. A rapid industrialization is likely to entail considerable regulation of the external trade and, where conditions permit, steps to hasten the domestic production of capital goods.

The extent to which capital imports may ease the situation is obvious. A considerable share of any investment in transport, plant, etc., represents the cost of domestic labour and raw materials. If one-third of a given investment financed by foreign capital is represented by imported material, the capital import may take care of the foreign currency requirements for three similar investments. The supply of foreign capital even on a small scale thus contributes greatly to the domestic capital formation. The maintenance of capital imports, and hence of a system of trade among countries that permits of international investments at small risk and low yields, must be a major

concern to countries in an early stage of economic development, even though they depend predominantly on domestic savings.

Industrialization and Tariff Protection

Import restrictions have long been applied as a means of favouring domestic industry. In the days of mercantilism in western Europe, the manufacturer was frequently protected by import prohibitions and concessions, thus enjoying a virtual monopoly on the domestic market. At the same time, however, he was bound by minute regulations concerning the quality and the price of his products and his relations to the labour market. The rapid changes that occurred in methods of manufacture during the "industrial revolution," however, made it necessary to abolish many of these controls owing to the stifling influence which they had on personal initiative and on the efficiency of production. Hence, during the greater part of the nineteenth century import prohibitions were gradually removed and replaced by import tariffs imposed in large measure for revenue purposes only. The trend changed however, during the last few decades of the century, and protective tariffs became the outstanding instrument of commercial policy in the majority of countries and remained so up to the early 1930's.

The effect of such tariffs on industry and trade has been hotly debated. It is difficult to draw conclusions from historical evidence, for the period during which modern tariff protection developed was also one during which international trade grew rapidly as the result of successive improvements in transportation. In western Europe cereals, meat and industrial raw materials from overseas became available at prices with which domestic producers could not compete. Except in the United Kingdom, agricultural tariff protection served to absorb the shock of the fall in prices and to mitigate the pressure on agriculture. Nevertheless, there was a large efflux of population from domestic agriculture. Part of this efflux was absorbed by emigration, part by industry, transport, etc. Industrial tariff protection may be regarded as an attempt to hasten this process. In the last decade of the century prices began to rise and emigration from industrial nations to slow down; but the tariff protection which had contributed to shape national price structures remained and was in many countries further increased.

There is no evidence of a positive correlation between the height of protective import tariffs on manufactured articles in different countries and the growth of their manufacturing industry.[1] The absence of such

[1] A comparison was made between the movement of manufacturing indices and the relative height of the tariffs on manufactured articles in various countries in 1913 and 1925, as recorded in *Tariff Level Indices* (L.o.N.Publications 1927.II.34). It did not reveal any clear effect of the tariff on manufacturing.

evidence, however, should not be taken as an indication that the tariff does not promote industrial growth. In certain countries and in varying degrees the tariff on manufactured articles represents a compensation for the increase in manufacturing costs caused by the tariff on foodstuffs and raw materials; the rates imposed accordingly do not necessarily reflect the degree of protection proper. Since manufacturing costs vary, a relatively high tariff in one country may have no greater protective effect than a low tariff in another.[1] It may well be, too, that the extent to which tariff protection favours manufacturing increases only up to a point, so that a very high protection has no greater effect than a low one (or perhaps even a smaller effect).

A newly established manufacturing industry may frequently find it difficult to sell its products in competition with imported manufactures. Its competitive ability may be improved for a time by currency depreciation or deflation of domestic prices. Both currency depreciation and price deflation tend to reduce the cost (in relation to that borne by the foreign competitor) of certain factors of production, such as labour and domestic raw materials. But it should be observed that any possible reduction in cost from such measures may be insufficient to compensate for high costs due to technical backwardness or lack of managerial skill. Furthermore, both currency depreciation and price deflation have the disadvantage of causing a deterioration in the terms of trade of the country concerned; currency depreciation also tends to reduce confidence in the economic stability of the country in which it occurs and to discourage capital imports, while price deflation necessitates difficult adjustments and causes business contraction.

The almost universal use of protective import duties on manufactures in countries wishing to develop their industry may be explained largely by the advantage which the use of such duties presents in comparison with the monetary measures just referred to. They permit of adjustment without lowering either the exchange value of the currency or domestic prices. By raising the prices of the imported goods they tend to render domestic production competitive, at the same time as they discourage imports and hence ease the foreign payments situation. They permit of a discrimination not possible in the case of purely monetary measures: the duties can be varied according to the nature of the commodities and the degree of transformation; and unless bound by commercial treaties, they can be raised or lowered

[1] The variations in manufacturing costs are frequently caused by the tariff itself. Any tariff has a tendency in time to lose part of its protective effect by causing a general increase in domestic costs. Its protective effect particularly during the period following immediately upon its establishment may nevertheless be of decisive importance.

according to circumstances. They thus represent an instrument by which both the speed and the direction of the industrialization process can be influenced.

On the other side of the ledger, however, are inconveniences which are frequently overlooked. Tariffs, particularly if extended to a large number of commodities, are likely to cause a general increase in domestic prices and costs which will have an adverse effect on exports. There is also the risk that they may lead to the establishment of industries which are clearly uneconomical and may hamper subsequent industrial growth.

While the tariff is one and may be a necessary tool to bring industrialization about, it is not the only tool. It is one on which governments have tended to rely too much, ignoring or sacrificing other instruments of policy. But in fact, with the force of competition and the efficiency of production in the highly industrialized states and the cheapness of modern means of transport, any government anxious to initiate or accelerate industrialization at home must formulate and carry out a much broader and more constructive programme than is implied by the negative action of rendering foreign goods difficult to purchase through the imposition of high tariffs. As we have shown already, it must gradually construct an appropriate and efficient network of communications; it must in most cases promote the provision of power needed for mechanical production; it must afford adequate opportunities for general and for technical education; it must promote the spread of scientific knowledge. Without such fundamental measures of adaptation—and many more could be added to the list—the progress of young industry, however highly protected, will be but slow and halting. A tariff diminishes or abolishes the difference between the prices of imports and domestic goods by raising the former. The same result may be achieved by lowering the latter, that is, by lowering the costs of production. All the general measures mentioned above are designed for this purpose. But governments may in addition apply specific measures to the benefit of particular industries and thus more definitely protective in character. They may stimulate industries by affording credit facilities, by the remission of taxes on new undertakings or by direct financial aid to such undertakings. The success of their policy will be measured by the rapidity with which such special assistance can be withdrawn. "A permanent subsidy, whether direct or indirect, is a proof of uneconomic use of resources which can be justified, if at all, only on non-economic grounds."[1]

[1] *Economic Stability in the Post-War World* (League of Nations Publications 1945 II. A. 2), page 219.

Each article the domestic price of which is increased through the tariff helps to raise the level of prices within a country and hence to increase the cost of living, wages and production costs generally. In order to obtain a measure of the tariff protection that accrues to the producer of a given article, it is necessary to deduct this increase in production costs from the increase in the price of the article itself.[1] Obviously, the fewer the articles (agricultural as well as industrial) that are subject to duty, and the lower the duty on each article, the less production costs are increased and the more efficient the duties that are levied. Hence, the tariff should preferably be limited to those articles the production of which it is intended to protect and possible to protect with success; further, the tariff should in no case be substantially higher than is required for starting or maintaining profitable production. An indiscriminate protective tariff on almost all products is likely to defeat its own purpose.

To the extent that the tariff raises domestic costs of production, it naturally also affects exports. For this reason too, the tariff should be limited in scope and height. This is all the more important as upon exports is likely to depend the import of raw materials, capital equipment and various other commodities which countries with a growing industry have to procure from abroad. In the majority of countries, domestic and foreign trade are so closely connected that economic policy to be successful must permit of the harmonious development of both, side by side.

Too frequently the tariff overshoots the mark. It may be high enough to lead to a considerable and lasting reduction of imports; and it may aim deliberately at developing domestic manufacturing at the expense of imports. From such curtailment of trade countries may well derive a new incentive to the development of their manufacturing industry. But this development is then achieved in a manner that brings the economic interests of industrial and non-industrial countries into conflict. Hence, their relations may become menaced by economic warfare of the kind we knew in the 1930's. In the following two chapters we shall have occasion to revert to this question.

[1] This increase, it should be observed, is frequently less than the amount of the duty.

CHAPTER V

INDUSTRIALIZATION AND TRADE

Introductory Remarks

The object of the foregoing analysis has been to give a basis sufficiently wide for judging the effect of the spread of manufacturing to new areas upon international trade. This effect, it is evident, is likely to vary according to circumstances; accordingly, the final judgment must depend largely on a comparison between actual movements of manufacturing and trade in different countries. Before entering upon a statistical study of this kind, however, it may be of value to consider the effect of industrialization on trade in the light of the analysis already made.

The factual background may first be briefly recalled. A limited number of "older" and highly developed industrial countries depend upon the export of manufactured articles to other countries. Among the last-mentioned countries there are a few—the British Dominions may be mentioned as an example—which are prodigious producers of primary products for export and heavy consumers of imported manufactured articles and at the same time possess a developed manufacturing industry. Their industrial growth, at least up to World War I, was closely linked with the growth of their foreign trade. Their importance as markets for the manufacturing industry of the "older" countries may be roughly gauged by the facts that the net import of manufactures into the British Dominions in 1926/29 was about 50% larger than that into China and India with thirty times their population (but by far not so industrially developed) and that their net import of manufactures per capita was 40–50 times greater than that of the last-mentioned two countries.

So striking a difference in ability to import manufactured articles does not always exist between countries on different levels of industrial development; but, the indications are that, on the whole, the older industrial countries have profited greatly from industrial development elsewhere, and it is natural to conclude that they would profit from further industrialization of undeveloped countries.

The problem is, however, rendered more intricate by recent disturbances in the harmony which once existed between domestic economic growth and foreign trade, disturbances which have sometimes led countries to develop their industrial production at the expense of imports and hence of older industrial countries. There is nothing to indicate that countries would have been led to do this had industriali-

zation proceeded in undisturbed conditions; the cause of the trouble lay in war and international disorders during which the channels of trade were blocked. Thus, after commercial, financial and monetary relations between countries had been upset by the 1914–18 war, there were instances of a discord between national development and foreign trade. A real conflict did not develop, however, until during the depression of the early 1930's the system of international trade with its interlocking and integrating multilateral trading channels broke down and drastic import restrictions were introduced in numerous countries with the triple object of easing foreign payments difficulties, protecting industry or agriculture (or both) and reducing unemployment. There is obviously reason to make clear distinction between industrialization pursued under the impact of such events and that which is likely to occur under conditions of regular growth and normal international relationships.

Effect of Industrialization on Foreign Trade under Normal Conditions

Certain effects of the spread of industry on trade are not open to doubt. Since the nature of the primary products, particularly industrial raw materials, that any country can produce depends on its natural resources, the dispersal of industry is likely to lead to an increased exchange of primary products. Similarly, owing to the diversification of the demand for manufactured articles which occurs when average incomes increase, the spread of industry normally causes an increased international exchange of manufactured articles.

Important as both these types of exchange are, the trade with which we are primarily concerned is that involving an exchange of manufactured articles against primary products between the older industrial countries and other countries. It is obviously the maintenance of this trade that is of principal importance for these older countries.

Various facts suggest that the countries in the process of industrialization have a strong interest in pursuing this type of exchange. While unlikely to be able to export manufactured articles on a large scale, their demand for manufactured articles remains great and indeed increases, in particular their demand for capital goods such as railway equipment and industrial machinery. In fact, these countries frequently encounter difficulties in financing their purchases abroad out of current transactions and have to rely in part on capital imports. The need for a large supply of foreign currency naturally tends to stimulate their exports of primary products. There may be a tendency to divert part of these exports in the direction of other countries that are in the process of industrial growth, and there will be increased domestic

consumption of primary products. But exports to the older industrial nations generally increase also, for industrialization is likely to lead to rationalization of primary production and to be accompanied by an improvement in internal transportation which will open up outlets for areas which were previously isolated from foreign markets. Further, their new industries depend as a rule to a large extent on the production of domestic raw materials that cannot be economically exported.[1]

In countries where the supply of foreign currency is very short—owing, for instance, to the scarcity of natural resources that can be exploited for export—the development of manufacturing may well cause a shift in imports from manufactured articles to foodstuffs or industrial raw materials of kinds that cannot be produced in the country concerned. This, however, is likely to increase the ability of the countries exporting such products to raise their purchases of manufactured articles so that, on balance, the older industrial countries will not be adversely affected. For similar reasons even the export of manufactured articles from recently industrialized countries will have secondary effects which partly or wholly offset the adverse influence of this competition upon the older industrial countries.

Normally the continuation of imports of manufactured goods after the process of industrialization has got under way is likely to be encouraged by the ease in the balance of payments that usually accompanies the approach to industrial maturity and by the increased demand for goods resulting from higher incomes.

Naturally, however, this whole evolution only implies that the total export of manufactured articles from all the older industrial countries taken together is unlikely to decline because of industrial development elsewhere. These exports will change in character—machinery and other capital equipment will increase in importance, and the diversification of demand will cause a diversification in the import of consumers' goods. Hence, the older industrial countries are likely to be differently affected. Even if, taken together, they gain, certain of them may lose. In fact, wherever export industries become unprofitable on account of the shifts in demand that result from industrialization in the importing countries, some loss will be suffered even though there may be a net gain, and such loss will not be confined to countries with falling exports. Any rapid industrialization, therefore, even when it does not lead to a decline in trade, is likely to cause friction and to have certain unfavourable effects on the economy of

[1] A typical example is afforded by mineral production which, as long as carried out for export, is usually confined to narrow coastal areas (*cf.* page 46). Once the mineral products become the object of domestic manufacturing, deposits not conveniently located in relation to ports can be utilized.

older industrial countries. In the past, however, there have been comparatively few cases of rapid industrialization, and the slower the process is the easier will be the necessary adaptation. Particularly in the densely populated countries, the lack of adequate domestic savings, the difficulty of attracting large amounts of foreign capital for investment in manufacturing industries proper and the inertia of the existing social organization generally leave only a narrow margin for economic progress.

Relationship between Domestic and External Trade

It may be useful to recall the schematic analysis of the process of industrialization made on an earlier page.[1] The growth of manufacturing, we found, was but one aspect of a change in which the modernization of primary production and the commercialization of the domestic economy enter as necessary elements. The utilization of mechanical processes is accompanied by domestic division of labour and an increase in total production. The exchange on the home market of manufactured articles against agricultural products, labour, transportation and other services becomes the basis for an integrated national economy.

Let us consider for a moment how the industrial development would proceed if it were to take place at the expense of imports from the older industrial nations. In such a case the manufactured articles produced would, during the early stages of industrial growth, be exchanged against primary products previously exported. Foreign trade would thus be short-circuited, and the manufacturing industry would develop, up to a point, without any increase in the amount of primary products produced for sale.

We have already indicated[2] certain of the reasons why the countries are likely to avoid such a short-circuiting of their foreign exchange of goods in times when international trade functions in a normal manner. It may be added that, particularly in the densely populated countries, the manufacturing most likely to develop will produce on a small scale and be decentralized, disposing of its products in limited local markets rather than over the whole national area. Hence, it is likely to direct itself largely to customers which before the industrialization were unable to exercise any considerable demand for industrial products.

Import restrictions on manufactured articles naturally tend to favour domestic industry at the expense of imports. But as we have found, the protective tariff of moderate height, aiming only at rendering

[1] *Cf.* pages 30–33.
[2] *Cf.* page 77.

the domestic manufacturing competitive, has a limited and possibly temporary restrictive effect on imports.

Effect of Industrialization in Times of Disturbances in International Trade

As we mentioned above, the conclusions now drawn do not always hold true of the period which has elapsed since the collapse of the international trading system in the early 1930's. While industrial development under conditions of commercial disorganization has little in common with the normal growth that characterized the preceding period, there is nothing abnormal or unexpected in the manner in which countries react to the collapse of trade.

If, as a result of a breakdown in the system of international trade a country finds itself unable to sell its exports at profitable prices, it will be unable to import as much as heretofore. If the goods it used to import are manufactured and there are reasons for believing that recovery will be slow in coming, it may attempt to produce them itself, both in order to provide the home market with needed supplies and to mitigate the unfavourable effect of reduced exports on employment and domestic conditions in general. Once it has succeeded in this, it is likely to be reluctant to discontinue the new production and to write off the investment in it. It may, in fact, be anxious to continue this production even if it is clearly uneconomical, unless there are strong guarantees that an emergency similar to that which provoked the production will not recur. If import restrictions are considered necessary for the desired reorientation of production, they are likely to be established.

It is true that in such a case the country in question will damage the interests of other countries and may thus give rise to similar action by these countries. If it does so and restrictive policies become generalized, the situation is likely to continue to deteriorate even after the initial cause of the deterioration has disappeared.

International disturbances of this kind sometimes give an impulse towards industrialization to countries lagging behind in economic development. But the economic progress they have achieved in times of troubled international trade relations has usually been dearly bought in terms of human sacrifice; and at least part of the industry built up under such conditions is likely to be found unable to survive or excessively costly to preserve once normal international relationships are restored.

The moral of these reflections is obvious. All countries have a common interest in promoting an economic development in others that

does not run against sound international trade relations. Economic disturbances resulting from wars and major depressions have a tendency to bring national economies into conflict by creating surplus capacity. While this surplus capacity is being built up, the older industrial states are not able to adapt their own economic structure and their exports of manufactured goods to a shift in foreign demand as they can in normal times because the disturbances which have given rise to the surplus simultaneously curtail all international demand. In consequence the surplus caused by industrial expansion in certain areas proves detrimental to older industrial countries. Such disturbances cannot usually be successfully overcome by unco-ordinated national measures; both their prevention and the restoration of a functioning international economy when prevention has not succeeded clearly lie within the field of concerted international action. Such action is, in fact, required for reasons more imperative than that of avoiding unfavourable repercussions of industrialization on international trade.

CHAPTER VI

COMPARISON OF MANUFACTURING AND TRADE IN VARIOUS COUNTRIES

Introductory Remarks

The object of the following historical-statistical analysis is to draw the lessons of past experience with regard to the relationship between the movements of manufacturing and trade. It is obvious that this relationship is determined by conditions—technical, social, political, etc.—prevailing during the period studied; in fact, no historical study affords a sufficient basis for forecasting future trends. But some indications may well result from the analysis, for the period under review is of considerable length, and in the course of it the basic conditions for manufacturing and trade did not remain unchanged. In particular, conditions during the 1930's differed considerably from those prevailing before that decade.

The important question to consider is whether the apprehensions felt in certain advanced industrial countries about the development of manufacturing industry elsewhere are justified. We shall consider this problem from different angles.

First, we may compare the value of manufacturing and trade in manufactured articles per head of population in different countries. If countries, as their manufacturing industry developed, were becoming increasingly independent of foreign supply of manufactured articles, we should expect their imports of such articles per head of population to be inversely correlated with their manufacturing per head.

Secondly, we may consider, not the level of manufacturing and trade, but the changes in level over a period of time. On this point, two lines of approach are possible. We may examine how imports of manufactured goods were affected by changes in the rate of industrial growth in each country; or we may consider whether those countries in which manufacturing was growing fastest over the period under review tended to raise their imports more or less than others. Such comparisons may with advantage be carried out separately for the 1930's and for a period up to the late 1920's, in order to illustrate the effect of changes in the basic economic conditions that were brought about by the collapse of international trade around 1931.

Since exports of manufactured articles must naturally be expected to rise with the development of domestic manufacturing, we shall be concerned chiefly with the relationship between manufacturing and imports of manufactured articles. But special study of the balance of

trade in manufactured articles, as well as in primary products, is required, since the prosperity of advanced industrial countries with limited natural resources appears to depend in large measure upon these balances.

Manufacturing and Trade per Capita

Data relevant to the comparison of manufacturing and trade in manufactured articles per capita of population in various countries are presented in Table 11. The figures for manufacturing are calculated in a manner similar to those supplied in Table 3.[1] It should be observed, however, that while in that table the estimated value of the production of manufactured foodstuffs and certain crude products (not recorded as "manufactured" when entering into foreign trade) was deducted so as to permit of the calculation of the supply in the countries concerned of "finished factory products other than foodstuffs," no such deduction has been made in Table 11. Hence, the production figures there given are about a third larger than in Table 3. The figures can thus be used for studying how variations in the value of manufacturing affect trade in manufactured articles, but not, for instance, for computing the consumption of manufactured articles in the countries in question.

The countries included in the table are those for which manufacturing indices are available, with the exception of a few minor countries in the case of which the amount of manufacturing could not be calculated with sufficient accuracy.[2] In view of the fact that small countries are naturally more dependent upon foreign supplies than big, the countries have been divided into two groups according to the magnitude of their populations, the dividing line being drawn arbitrarily at 15 million inhabitants.

Comparison between the trade and production figures of this table, which is facilitated by Diagram 6, does not suggest that highly industrialized countries have become independent of imports of manufactured articles—rather, the opposite seems to be nearer the truth. With few exceptions, the countries in each group with a relatively high manufacturing production were also relatively large importers of manufactured goods. It is obvious, however, that the relationship between manufacturing and imports is not simple and uniform. The absence of a clear positive or negative correlation is due in part to differences in population and resources. The average imports per capita into coun-

[1] See page 22.

[2] The countries thus excluded were those in the case of which the "weight" employed for calculating the world manufacturing index was less than 0.3 %. (*Cf.* Annex I.)

Table 11. MANUFACTURING PRODUCTION AND TRADE IN MANUFACTURED ARTICLES PER HEAD OF POPULATION IN 1926–29

(Annual averages)

Country	Population (000,000's)	$(000,000's)			$ per head		
		Manufacturing (gross value)	Imports of manufactured articles	Exports of manufactured articles	Manufacturing (gross value)	Imports of manufactured articles	Exports of manufactured articles
Countries of more than 15 million inhabitants:							
United States	119.8	42,200	1,064	2,027	350	8.9	17
United Kingdom	48.4	9,400	1,069	2,790	190	22	58
Germany	64.3	11,500	512	2,001	180	8.0	31
France	40.5	6,600	336	1,356	160	8.3	34
Italy	40.3	3,300	259	401	80	6.4	10
Spain	23.0	1,000	235	80	40	10	3.5
Japan	62.1	2,500	241	451	40	3.9	7.3
U.S.S.R.	149.2	4,300	175	53	30	1.2	0.4
Poland	30.4	810	129	44	30	4.2	1.4
Roumania	17.1	310	151	3	20	8.8	0.2
India	339.8	1,200	684	305	4	2.0	0.9
Countries of less than 15 million inhabitants:							
Canada	9.7	2,400	627	336	250	64	35
Belgium	8.0	1,900	209	448	240	26	56
Union of South Africa	1.5(7.8)[a]	400	272		240[b]	182[b]	.
New Zealand	1.4	300[c]	166	2	220[c]	119	1.5
Australia	6.3	1,400	510	30	220	81	4.8
Switzerland	4.0	690	209	305	170	53	76
Sweden	6.1	1,000	187	178	160	31	29
Netherlands	7.7	1,200	397	254	160	52	33
Denmark	3.5	500	165	46	140	47	13
Czechoslovakia	14.5	1,600	156	395	110	11	27
Finland	3.6	410	83	22[d]	110	23	6[d]
Austria	6.7	600	164	211	90	25	31
Hungary	8.6	410	100	29	50	12	3.4

[a] White population, 1.5, total population 7.8.

[b] If only the white population is taken into account. Similar figures calculated per head of the total population are: manufacturing, 50; imports 35.

[c] Of which a considerable proportion represents industrial production of animal foodstuffs (*e.g.*, butter, cheese) for export.

[d] Uncertain figure.

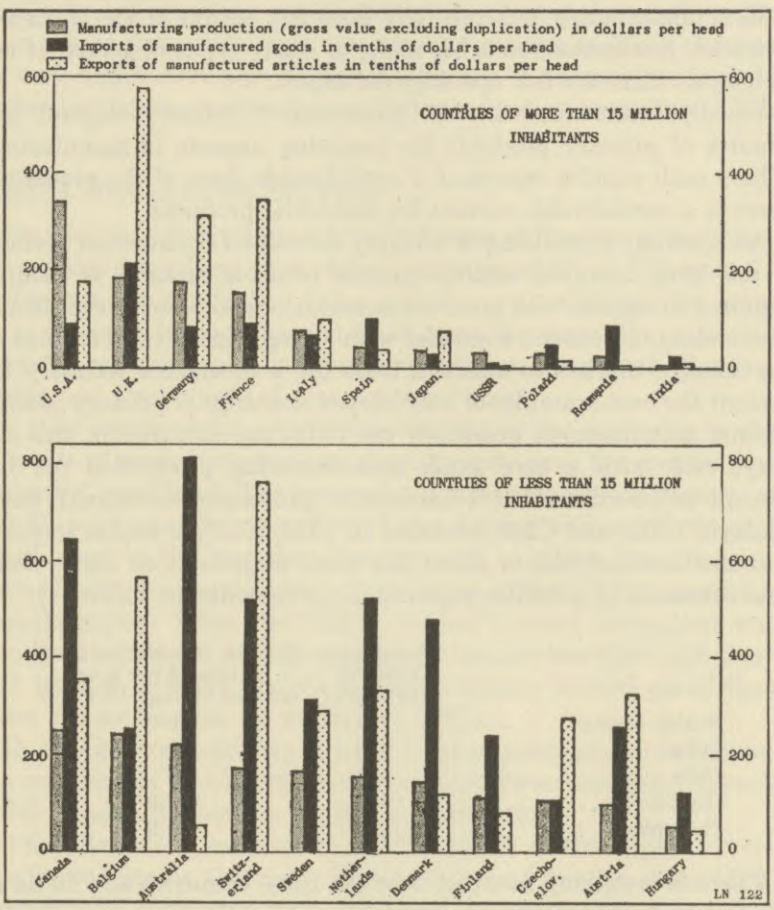
Note. The figures for manufacturing refer to the approximate gross value of the products concerned (after elimination of "double counting"). The trade figures refer to Class IV of the International (Brussels) Classification of 1913; they exclude manufactured foodstuffs and certain semi-manufactured articles included in the manufacturing production. The figures for manufacturing (unlike the similar figures for production in Table 3) include such foodstuffs and semi-manufactures.

The countries of each group are arranged in the order of the magnitude of their manufacturing production per head.

tries of less than 15 million inhabitants appears generally to be several times greater than that into more populous countries with a similar manufacturing production per capita. It is natural that within each of the two groups imports also vary with the size of the population. The fact that the United States, though it has a manufacturing pro-

Diagram 6. MANUFACTURING AND TRADE IN MANUFACTURED ARTICLES PER HEAD OF POPULATION IN 1926–29

(*Cf.* Table 11)



Note. Each unit of the scale represents $1 in the case of production and $0.1 in the case of trade, *i.e.*, trade is shown on a scale ten times bigger than production. The countries of each group are arranged in the order of the magnitude of their manufacturing production per head.

duction per head by far exceeding that of any other country shown, imported less manufactures per capita than the United Kingdom and only little more than France and Germany, must be attributed largely to the size of the home market, which affords the basis for a very diversified manufacturing production. But the size of the population affords only a rough indication of the magnitude of the domestic market. In certain countries of over 15 million inhabitants, with rela-

tively high imports of manufactured goods—for instance, Spain and Roumania—the market for manufactured goods is actually much smaller than in most of the countries of the second group (under 15 million inhabitants) and naturally does not permit of the immediate economic production, on a big scale, of many types of goods, at least as long as there are few openings for export.

Usually, countries with an undeveloped industry depend upon exports of primary products for financing imports of manufactures. Where such exports represent a considerable share of the production, there is a considerable market for industrial products.

An economy permitting of a highly developed commercial exchange of this kind, however, seldom expands over big areas; it is naturally confined to regions with good communications to ocean ports. Islands, peninsulas, and coastal countries with a large agricultural surplus and too small a market to afford a basis for a diversified industry thus present the best examples of a developed exchange of primary products against manufactured goods. Of the following countries in this category, each with a very small manufacturing production per head (except to the extent that it consisted of processing for export), British Malaya, Cuba and Chile recorded in 1926/29 a per capita import of manufactured articles of about the same magnitude as highly industrial countries of a similar population (as recorded in Table 11):

	Population 1926/29 (000,000's)	Imports of manufactured articles, $ per head (annual average 1926/29)
British Malaya	4.0	41
Cuba	3.6	31
Chile	4.1	28
Ceylon	5.4	8.9
Philippines	12.0	7.3

There is a striking contrast between these countries and India and China which export only a minor portion of their primary production. India's annual import of manufactured goods in 1926/29 was only $2 per head (*cf.* Table 11); China's $0.9.

We may summarize the result of this comparison as follows:

(i) There is no simple and direct correlation between manufacturing and imports of manufactured articles per head of population, for the degree to which a country with a developed industry depends on foreign supplies of manufactured articles tends to be smaller the larger the size of the domestic market. The correlation therefore depends upon the size of a country's population and other factors.

(ii) But among countries of similar magnitude it was found that a

high manufacturing production per capita usually accompanied a high per capita import of manufactured goods.

(iii) Countries lagging behind in industrial development appear generally to be small per capita importers of manufactured goods. Certain minor areas with good sea communications enabling them to sell a very high percentage of their production of primary products in exchange for foreign-produced manufactures form an exception to this rule.

Changes in Manufacturing and Trade

Indices for manufacturing and the quantum of imports of manufactured articles have been plotted for twelve countries in Diagram 7.[1] This diagram is not intended to be used for comparison among countries, as the scale employed is not in all cases the same. Its purpose is to show the relationship in each country between the growth of manufacturing and the imports of manufactured goods.

The chief fact brought out by this diagram is the similarity in the movements of manufacturing and these imports over the greater part of the period considered. The agreement is most complete in the case of the 20–25 years preceding the 1914/18 war. During this period not only did both tend to rise together, but the rate at which imports grew appears to have been approximately the same as that of the expansion in manufacturing. When the rather uniform upward movement was broken by the 1914/18 war, the agreement became less close; but there was at least over short periods a clear tendency toward parallelism between the movements up to the late 1920's.

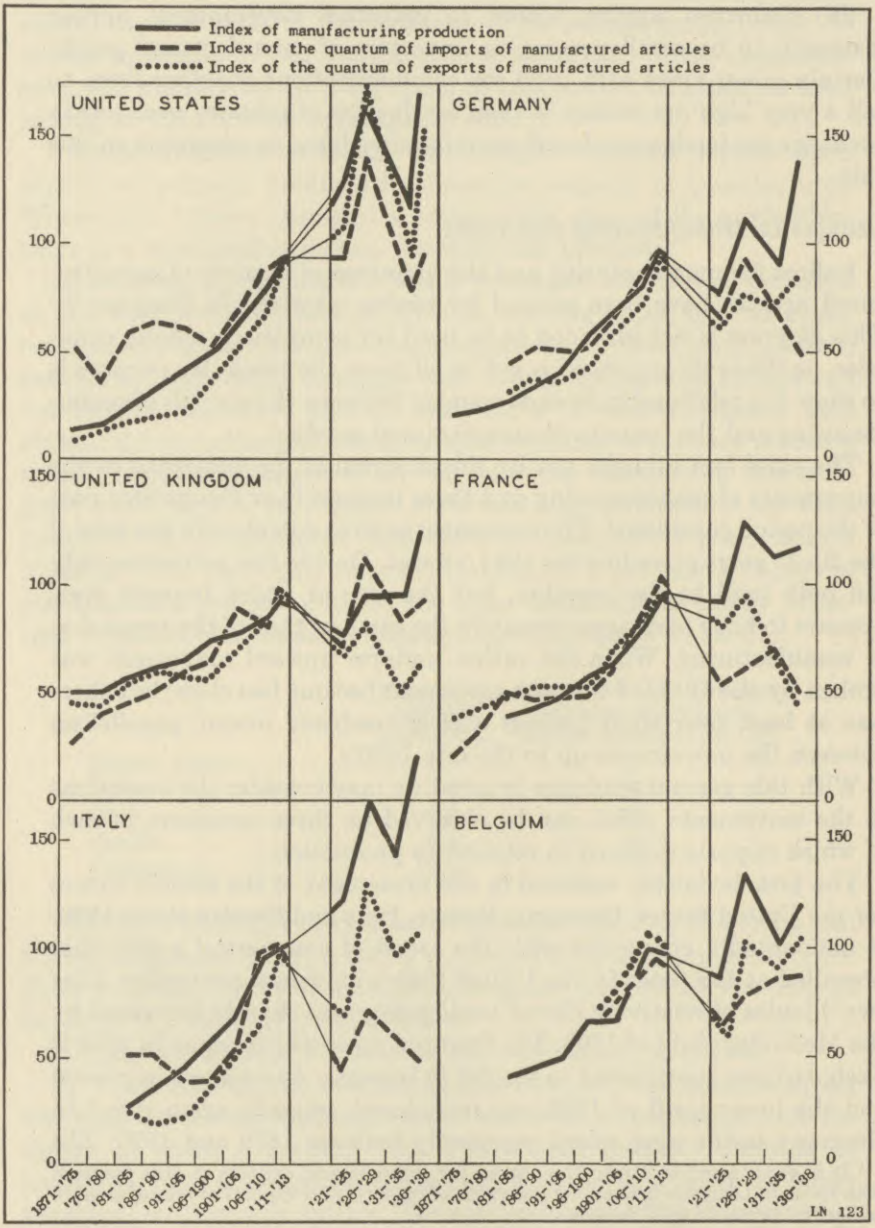
With this general tendency in mind we may consider the deviations in the movements which can be observed on three occasions, in each of which imports declined in relation to production.

The first deviation, reflected in the movement of the import curves for the United States, Germany, France, Italy and Sweden about 1890, is undoubtedly connected with the trend of commercial policy that prevailed at the time. In the United States industrial protection after two decades of relatively liberal trade policy was sharply increased by the McKinley tariff of 1890. The financial crisis which began in 1893 is likely to have contributed to the fall in imports. As business improved and the lower tariff of 1894 was introduced, imports again rose.[2] In Germany tariffs were raised repeatedly between 1879 and 1890. The

[1] It is convenient to study the curves for imports and exports in this diagram with those in Diagram 9, showing the value of imports and exports of manufactured articles in terms of gold dollars.

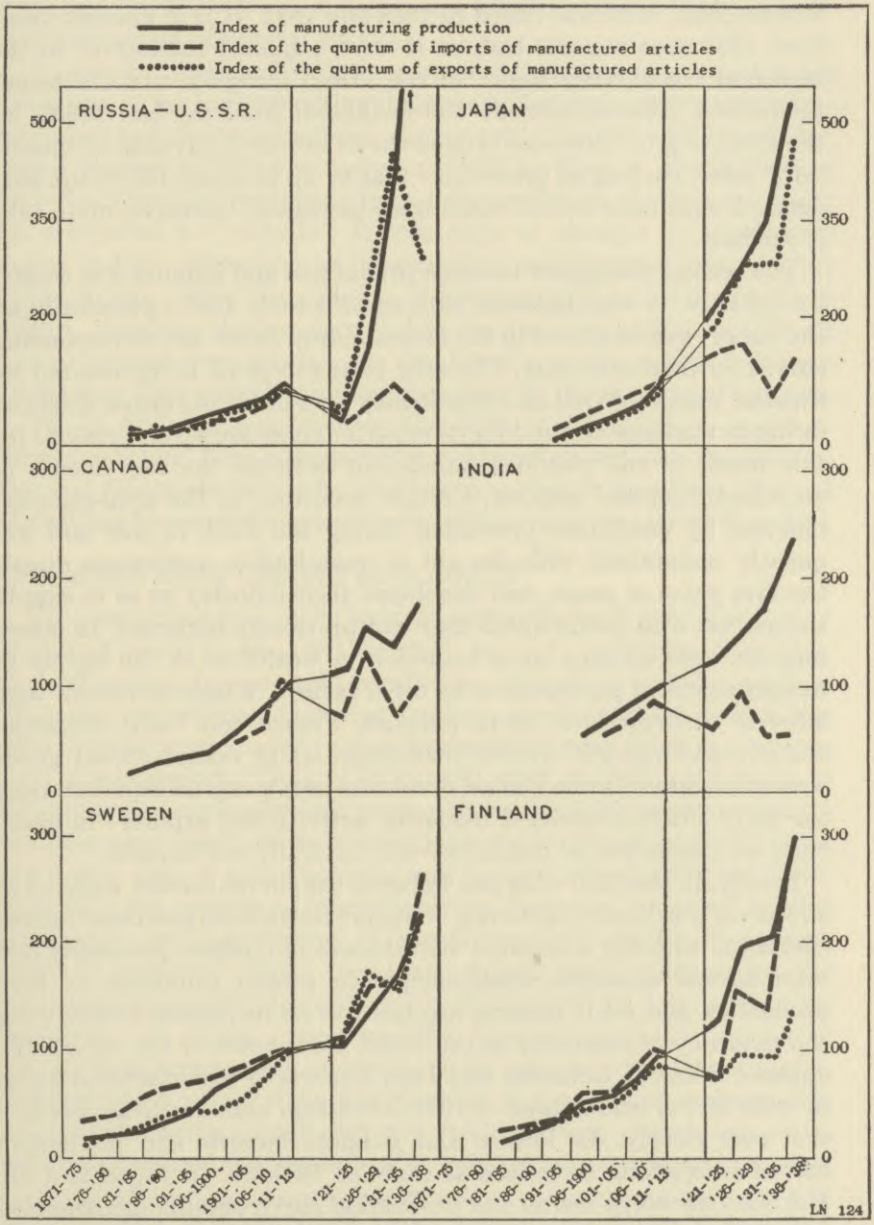
[2] The tariff was raised again in 1897, but without noticeable effect on the trend of imports. The rates of that year remained in force until 1913, with minor modifications in 1909.

Diagram 7. MOVEMENT OF INDICES OF MANUFACTURING AND ARTICLES



Note. The curves indicate the movement

THE QUANTUM OF IMPORTS AND EXPORTS OF MANUFACTURED
(1913 = 100)



of indices given in Annex Tables I and XI.

French tariff was raised in 1892. In Italy imports were affected by a tariff increase of 1887 and the trade war with France of 1882–92.[1] The Swedish tariff was raised in 1888 and 1892. It is of interest, however, that once imports had, as it were, adjusted themselves to the increased tariffs, they began to rise afresh alongside manufacturing production. The adjustment was facilitated from the late 1890's by the effect of price movements upon the *ad valorem* equivalent of specific tariff rates. As long as prices fell—that is, up to about 1895—the incidence of such rates (when unchanged) increased; thereafter up to 1913 it declined.

The second divergence between production and imports was caused by the 1914/18 war. Between 1913 and the early 1920's practically all the import curves shown in the diagram drop below the corresponding curves for manufacturing. The only clear exception is represented by Sweden, which enjoyed an exceptionally favourable payments situation owing to the large demand for its exports. There are several reasons for this break in the previous parallelism between the movements of manufacturing and imports. Certain countries, in the semi-isolation imposed by conditions prevailing during the 1914/18 war and frequently maintained with the aid of quantitative restrictions during the first years of peace, had developed their industry so as to supply themselves with goods which they had previously imported. In others imports were checked by a reduction in wealth or in the supply of foreign means of payments or by other factors. Where currencies were allowed to depreciate, as in Belgium, France and Italy, industrial activity and exports (rather than imports) of manufactured goods were stimulated. In the United States the heavy capital exports during the early 1920's stimulated industrial activity and exports—in particular to non-industrial countries—but naturally not imports.

Finally, in the 1930's the gap between the curves further widened as a result of the drastic tightening of import restrictions and other factors connected with the worldwide disturbances in business prosperity and international economic relationships. In several countries, as both production and trade became regulated to an increasing extent, even the tendency of similarity in the broad movements of the curves disappears. Thus, in Germany and Italy imports of manufactured goods in 1936/38 fell below those of 1931/35 though manufacturing production rose steeply. In France and Belgium imports and production moved in opposite directions as early as 1931/35. In Japan and the U.S.S.R. the steep rise in the production curve became disconnected

[1] The share of France in Italy's imports fell from 26 % in 1881/85 to 11 % in 1896/1900 and in Italy's exports from 43 % to 13 % over the same period.

with the fluctuating import curve. In India currency depreciation and increased tariffs afforded new protection to the industry, while imports were reduced also by the deterioration of the terms of trade and the discontinuation of capital imports.

To sum up, until the 1930's the growth of manufacturing in industrial countries, so far from rendering these countries independent of foreign-produced manufactured articles, stimulated the import of such articles, which tended to follow a course parallel to that of manufacturing activity. The chief deviations from this parallelism of movements can be attributed to "outside" factors such as changes in commercial policy and the disturbance of international relationships caused by the 1914/18 war. After the collapse of international trade in the early 1930's, however, the previous bonds between production and trade appear to have been severed in a number of countries which took steps to develop their manufacturing production at the expense of imports.

All the evidence goes to show, therefore, that imports of manufactured goods tend to be stimulated by industrial growth in normal times, but that this tendency can be, and has from time to time been, checked or nullified by restrictive commercial policies or by currency disorders.

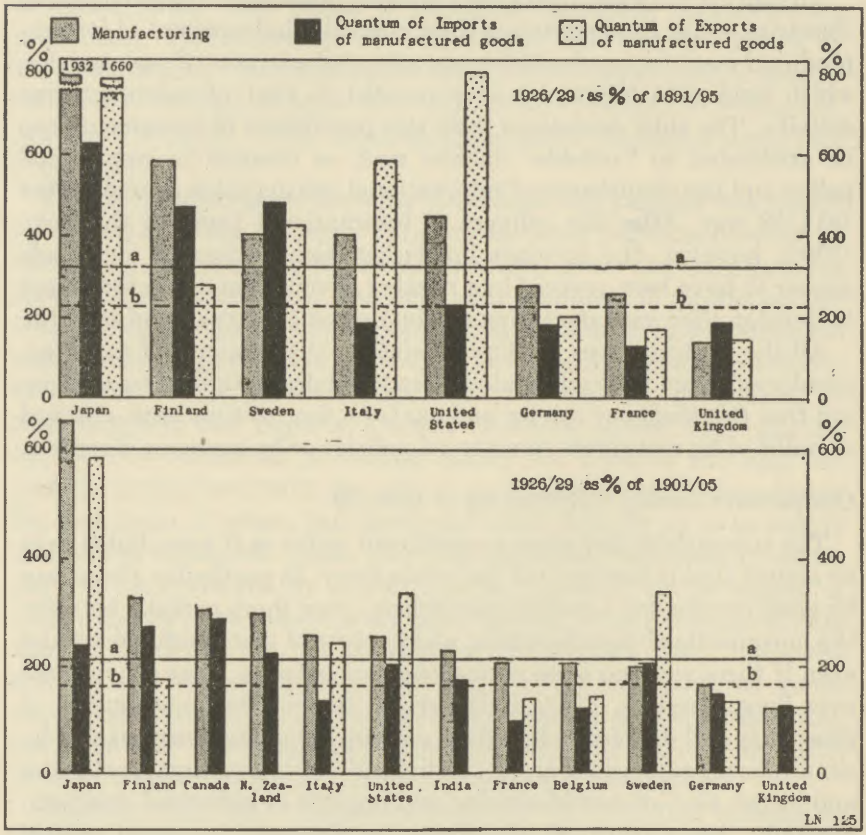
Comparision among Countries up to 1926/29

The comparison just made is significant as far as it goes; but it may be argued that it does not tell the whole story. In particular, there may be good reasons for a certain parallelism, over short periods, between the movements of manufacturing and imports of manufactured articles even if there were no close correspondence between these movements over longer periods. Thus, it is natural that cyclical movements of prosperity and depression in a given country should be accompanied by simultaneous expansions or contractions of various economic activities and hence, also, of manufacturing and imports of industrial products. Secondly, the growth of manufacturing demands increased capital investment and acquisition of machinery and similar equipment which is produced chiefly in advanced industrial countries for the international market; accordingly, if this growth in a given country fluctuates, we might expect parallel fluctuations in its import of manufactured equipment and hence in its aggregate imports of manufactured goods.[1] Only if we find that the movements of such imports and manufacturing correspond over relatively long periods can we be reasonably assured that the spread of industry to economically younger

[1] As the new equipment must be installed before the manufacturing production can be expanded, we should, in fact, expect manufacturing activity to lag slightly behind imports, though naturally a lag of this kind might not be manifest in a comparison based on the movement of five-year averages.

countries does not tend ultimately to restrict the export market of the older industrial countries.

Diagram 8. MOVEMENT OF MANUFACTURING AND TRADE IN MANUFACTURED ARTICLES



Note. The unbroken horizontal line (a) represents the movement of world manufacturing, and the broken line (b) that of the quantum of world trade in manufactured articles, over the period considered (*cf.* the last line of Table 3).
The countries are arranged in the order of the increase in their manufacturing activity during each period.

The problem is best approached by comparing the movements of manufacturing and trade in different countries. We should endeavour to find out whether, over a representative and comparatively long period, those countries in which manufacturing was growing fastest tended to increase their imports of manufactured goods more or less than others.

Naturally, we have in mind conditions under which international

trade functions in a normal manner; hence the 1930's should not be included in the period to be investigated. Further, as the number of countries for which adequate information referring to the 1870's and 1880's is limited, comparison over periods including these decades would hardly be representative. The longest period which can with advantage be considered is thus that from 1891/95 to 1926/28.

Table 12 shows the percentage movement of manufacturing and trade in manufactured articles over that period, as well as that from 1901/05 to 1926/28. Comparison is possible among eight countries over the former period, and twelve over the latter. Diagram 8 illustrates the same movements.

Table 12. MOVEMENT OF MANUFACTURING AND TRADE IN MANUFACTURED ARTICLES, UP TO 1926–29

Country	1926–29 as percentage of 1891–95			1926–29 as percentage of 1901–05		
	Manufacturing	Trade in manufactured articles (quantum)		Manufacturing	Trade in manufactured articles (quantum)	
		Imports	Exports		Imports	Exports
Japan	1,932	628	1,660	659	240	588
Finland	583	473	280	325	273	175
Canada	521	·	·	318	284	·
New Zealand	·	·	·	296	226	·
Italy	394	189	583	254	135	246
United States	436	230	803	250	202	338
India	·	·	·	213	170	·
France	260	127	177	205	98	138
Belgium	285	·	·	204	120	144
Sweden	405	480	426	192	201	337
Germany	279	185	203	163	149	133
United Kingdom and Ireland	143	195	144	120	126	122
World	326	225	230	207	165	165

Note. The countries are arranged in the order of the increase in their manufacturing activity between 1901/05 and 1926/29.

The correlation between the movements of manufacturing and imports is very pronounced in the case of the longer of the two overlapping periods, and less striking in the case of the shorter period. It will be observed that countries which increased their manufacturing more than the world average as a rule also increased their imports of manu-

factured goods more than the world average. The only exception (in the case of both the periods considered) is represented by Italy.

In several cases, however, the increase in imports of manufactured goods was far from matching that of manufacturing production. Both in Japan and in Italy—which are densely populated countries with limited domestic resources of raw materials—the development of manufacturing that took place appears to have been closely dependent on a heavy net export of manufactured articles; exports of such articles soared while imports did not keep pace with manufacturing. The failure of imports of manufactured goods to keep pace with manufacturing in the United States must be attributed in large measure to the tariff policy of that country. United States exports of manufactured articles rose more rapidly than manufacturing, owing, no doubt, to the stimulus afforded by the heavy capital exports in the 1920's. In the case of France, too, the discrepancy between manufacturing and imports is considerable. French manufacturing from 1926 to 1929 was over twice as high as 25 years earlier—an increase which corresponds closely to that in world manufacturing; but French imports of manufactured goods appear unique in not having increased in quantum over the same period. Conditions which caused the heavy capital flight from France in the middle 1920's appear chiefly responsible for the low import figure.

The differences now considered in the movements of manufacturing and trade should not obscure the general impression imparted by the diagram, which is that even over a period of considerable length up to the late 1920's countries tended to raise their imports—and, naturally, also their exports—of manufactured articles as their manufacturing grew.

Comparison among Countries after 1926/29

It was indicated above that the general agreement between the movement of manufacturing and imports of manufactured articles did not continue during the 1930's. As comparison between 1926/29 and 1936/38 is possible on a broader basis than in the case of the periods just examined, closer illustration is of interest. Available data are summarized in Table 13.

The decade was one of unprecedented discrepancies among countries with regard to the development of industry as well as trade in manufactured articles. Moreover, as the last line of the table shows, there was a large difference between the world movements of manufacturing and trade in manufactured goods over the period: the former increased by 33% and the latter fell by 12%.

Table 13. MOVEMENT OF MANUFACTURING AND THE QUANTUM OF TRADE IN MANUFACTURED ARTICLES BETWEEN 1926/29 AND 1936/38

Note. The countries have been divided into three groups according to the relationship between the movements of manufacturing and imports as shown in columns 4 and 5. *Group 1* represents countries in the case of which imports (relative to world imports) fall well below the corresponding movement of manufacturing, *i.e.* the figure in column 5 is much lower than that in column 4. The countries belonging to *Group 2* were subject to the opposite tendency, *i.e.*, the percentage in column 5 is well above that in column 4. *Group 3*, finally, represents countries in the case of which the relative movements of manufacturing and imports were similar and the percentages of columns 4 and 5 thus close to one another.

Within each group, the countries are arranged in the order of the movement of their manufacturing industry, as shown in column 1.

Country	1936/38 as percentage of 1926/29			Same figures, expressed as percentage of world movement		
	Manufacturing	Trade in manufactured articles (quantum)		Manufacturing	Trade in manufactured articles (quantum)	
		Imports	Exports		Imports	Exports
	(1)	(2)	(3)	(4)	(5)	(6)
Group 1						
U.S.S.R.	574	90	124	432	103	140
Latvia	216	103	89	162	117	99
Japan	183	85	171	138	96	193
India	157	58	77	118	65	87
Chile	154	66	[a]	116	74	[a]
Roumania	145	87	[a]	109	98	[a]
Hungary	142	59	89	107	70	214
United Kingdom	131	81	78	98	92	88
Germany	123	[b]54	[b]109	92	[b]59	[b]123
Austria	108	[b]60	[b]80	81	[b]68	[b]90
Group 2						
Union of South Africa	209	173	[c]161	157	196	[c]183
Sweden	166	165	134	125	187	152
Finland	154	175	143	116	198	162
Denmark	147	112	132	111	127	150
Greece	144	117	[a]	108	132	[a]
Norway	143	153	117	108	173	132
Estonia	132	161	71	99	182	80
Netherlands	118	99	88	89	113	100
Czechoslovakia	96	80	86	72	90	98
France	91	85	48	68	97	55
Belgium	90	111	104	68	126	117
Switzerland	[d](75)	96	98	[d](56)	109	111
Group 3						
New Zealand	140	95	108	105	108	123
Australia	129	82	68	97	93	77
Poland	124	82	131	93	93	148
Canada	111	73	93	83	83	105
Italy	110	66	83	83	75	94
United States	102	67	88	77	76	100
World	133	88	88	100	100	100

[a] The trade values are either not available or too small to be significant.
[b] 1936–37 as percentage of 1926–29.
[c] The absolute figures are so small (*cf.* Annex, Table X) that this increase is of little significance.
[d] Uncertain figure.

The general tendency of imports of manufactured goods to fall behind manufacturing must be attributed in large part to the manner in which national economic policies reacted to the ravages of the economic depression of the early 1930's. As the markets for goods produced shrank and industrial unemployment rose, the economic and social structure of many countries was serioulsy menaced and the restoration of employment and business activity became a central object of economic policy. Measures to reduce imports, generally taken suddenly about 1931 in order to relieve the foreign-payments situation when the world system of multilateral trade broke down,[1] soon became a tool for increasing domestic employment. Goods previously imported were reserved for domestic production; further, as the domestic market was thus partially insulated from foreign influences, policies of domestic expansion could be more successfully carried out.

One effect of the trade restrictions was to curtail trade in manufactured goods among industrial countries, a fact which, together with the "improvement" in the barter terms of industrial countries and the discontinuation of capital exports to other countries, explains why the quantum of trade in manufactured goods fell to so low a level.

The vulnerability of countries in their foreign transactions and the means at their disposal for promoting domestic expansion vary greatly, however; and so did, therefore, the effect of the measures taken upon manufacturing as well as upon trade. In order to facilitate study of the differences in question, the movements of manufacturing and trade are shown, in the last three columns of the table, as percentages of the corresponding world movements, and the countries are divided into three groups according to the relationship between the movements of manufacturing and imports of manufactured articles, as explained in the introductory note to the table. Briefly, Group 1 represents countries in which, *relatively to the world as a whole,* manufacturing went far ahead of imports; Group 2, countries in which imports went ahead of manufacturing; and Group 3, countries in which both movements were similar. The last-mentioned group is so small that the similarity in the relative movements of manufacturing and imports appears to be little more than a statistical accident; we are, therefore, concerned chiefly with the differences between the movements in the countries of Groups 1 and 2.

In Group 1 the U.S.S.R. occupies a special position. The Union's relative independence of the supply of foreign manufactures is an expression of a policy which reduced its exchange with the outside world to a very low level. But this policy was possible only because of the

[1] For details see *The Network of World Trade* (particularly pages 93-95).

Union's vast resources: its mineral wealth, its supply of agricultural products of different latitudes, and the magnitude of its domestic market. We also find the United Kingdom in this group—a fact which suggests that to a certain extent the industrial revival in that country was attained through the curtailment of imports of manufactured goods. The remaining countries in this group, with the possible exception of Japan, were debtor countries. The figures reflect their efforts to curtail imports and promote exports of manufactured goods so as to facilitate the financing of raw material imports or debt service payments. In both Japan and Germany, it will be observed, the percentages shown for exports are twice as high as those for imports.

Among the countries in Group 2, the Union of South Africa was able to raise its imports of manufactured articles with the aid of the increased proceeds from gold exports. Further, to this group belong several Scandinavian and Baltic countries profiting from a regional economic expansion reflected not only in their imports but also in their exports of manufactured articles. Finally, the group includes five industrial countries of central and western Europe—the Netherlands, Czechoslovakia, France, Belgium and Switzerland—the manufacturing industry of which fell much behind the average for the world. Certain of these countries—in particular France, the Netherlands, and Switzerland—had placed large sums in Germany in the form of loans or business investments; under the conditions prevailing in the 1930's the annual yields could be transferred only by imports of German goods, predominantly manufactures. The possibility of developing manufacturing at the expense of imports (without sacrificing financial interests) was thus limited. Exports of these countries were adversely affected by the import barriers introduced particularly by the larger European countries.

To sum up, we find during the 1930's an almost complete lack of agreement between the movements of manufacturing and trade (particularly imports) in manufactured goods. In several instances this deviation from the norm that characterized the preceding decades can be explained by the breakdown of the system of multilateral trade and the resulting disintegration of international economy.

An Important Qualification

While imports into countries with a developing industry normally increase in volume, they change in nature. Countries with no industry are generally poor; their manufactured imports accordingly consist of necessities, in particular textile goods of cheap and uniform qualities. When domestic manufacturing is established, it must naturally aim

primarily at producing this kind of goods for which there already exists a domestic market. It thus at first competes with the exporting industries of other countries. To a certain extent, therefore, the pattern of international industrial expansion differs from that of domestic industrial expansion, which usually aims at supplementing rather than competing with existing (national) production. The seriousness of the problem we are studying stems in part from this fact.

The demand for the articles which are produced in the first stages of industrialization is usually relatively constant and inelastic. It frequently happens, therefore, that imports of such articles tend to be reduced as domestic production grows. When imports of manufactured articles increase notwithstanding, as the previous analysis has shown, this is due to a demand for other kinds of manufactured goods. This demand is a result of the increase in wealth that follows industrialization; it is diversified, oriented towards higher qualities of goods and usually varied according to taste and fashion. The domestic industry is naturally not ready to assume production of these goods; moreover, the variety of the products and the narrow limits to the domestic turnover of each of them does not always permit of economic production in the country concerned. Another type of demand which naturally develops as industry expands and is usually met largely by imports is that for manufactured capital goods, in particular machinery. Only countries with a considerable domestic market and highly developed industry can attempt to achieve a high degree of self-sufficiency in their supply of such goods.

As wealth increases in countries with a growing industry, more and more articles are manufactured in them; but while imports of these articles may thus decline, other articles previously not in demand are imported from abroad. The composition of imports thus gradually changes; and the exporting industrial countries share in the increasing market to the extent that their industry is able to adjust itself to the continuous change in demand. How great the differences are in the extent to which countries actually have shared in that market is shown by the figures in the last column of Table 12, indicating the development of exports of manufactured goods during the 25 years up to the late 'twenties. The smallest increase over this period is recorded by the United Kingdom. Her exporting industry was long directed principally towards meeting the demand of non-industrial countries. Textile products, in particular cotton piece-goods, held a predominant position in her exports, and at the beginning of the century 40% of the persons engaged in her manufacturing industry were employed in textile factories. During and after the 1914–18 war, textile industries grew up

in the most important British export markets and, simultaneously, Japan became a major competitor in these markets. The competitive position which thus arose called for a more rapid change in the composition of British exports than could be carried out.

Industrialization and the Balance of Trade

The evidence supplied leaves an important aspect of our problem unexplored. The very fact that imports of manufactured goods increase with industrial development implies that the older industrial countries are major importers of such goods. These imports do not necessarily compete with the domestic manufacturing industry. They reflect the diversification of demand and specialization of production that accompany the increase in wealth; the exchange of manufactured goods helps to render production more efficient in all the countries conducting this trade. But it is obvious that only the *net* export of such goods can be employed for financing imports of foodstuffs and industrial raw materials. As concern about these imports is at the root of the apprehensions felt in certain industrial countries as industry develops elsewhere, it is appropriate to consider the balance of imports and exports of manufactured goods and its effect on trade in primary products.

It is natural to expect that in countries with an advancing industry but limited natural resources there should arise, sooner or later, a net export of manufactured articles and a net import of primary products; moreover, one would expect these countervailing balances to increase alongside one another. However, such a movement of balances would imply that in other countries there would be growing import balances of manufactured goods and growing export balances of primary products, and this even if the countries in question were developing their manufacturing industry.

Table 14, showing trade balance of countries for which relevant data are available over a considerable period of time, and Diagram 9, which shows imports and exports of manufactured articles by value, illustrate both these tendencies. In the table the countries have been divided into three categories according to the trend of their balances of trade in manufactured articles up to 1926/29.[1] In the United States, Japan and the principal industrial countries of Europe the balances in question tended to become more active or less passive. Russia (before the first world war), Australia, Spain and Finland, on the other hand, are examples of countries with an increasing import balance of manufactured articles; yet these countries were all expanding their manufac-

[1] The movement between 1926/29 and 1936/38 was disregarded as the fall in trade values caused an almost general decline in the balances.

Table 14. IMPORT (−) OR EXPORT (+) BALANCES

Annual averages in $(000,000's) gold at the old parity

a = primary products
b = manufactured articles

Countries		1881–85	1891–95	1901–05	1911–13	1926–29	1936–38
I. Balance of manufactured articles tending to grow more "favourable" up to 1926/29:							
United States	a	+250	+197	+414	+343	−325	−246
	b	−142	−106	+41	+196	+963	+519
Germany	a	−332	−586	−879	−1.477	−1.769	[a] −797
	b	+329	+357	+617	+1.158	+1.489	[a] +916
United Kingdom and Ireland	a	−1.262	−1.291	−1.567	−1.990	−3.592	−1.740
	b	+755	+657	+717	+1.338	+1.601	+560
France	a	−455	−393	−378	−788	−1.100	−531
	b	+220	+251	+338	+461	+1.020	+178
Italy	a	+21	−2	−46	−196	−446	−129
	b	−61	−34	−15	−39	+142	+78
Belgium	a	.	.	−179	−283	−315	−147
	b	.	.	+73	+118	+239	+112
Japan[b]	a	.	+8	−17	−36	−306	−309
	b	.	−5	−13	−5	+210	+272
Switzerland	a	.	−75	−99	−154	−201	−108
	b	.	+35	+45	+56	+96	+48
II. Balance of manufactured articles tending to grow more "unfavorable" up to 1926/29 (or up to 1911/13):							
Russia	a	+72	+120	+223	+331	[c] +113	[c] +56
	b	−46	−42	−63	−172	[c] −122	[c] −44
Australia	a	.	.	[d] +225	+254	+413	+229
	b	.	.	[d] −179	−272	−480	−188
Spain	a	.	.	+3	+9	+23	.
	b	.	.	−18	−28	−155	.
Finland[e]	a	.	−1	−1	−9	+31	+30
	b	.	−3	−6	−13	−47	−25
III. No clear trend in the balance of manufactured articles:							
Austria-Hungary	a	−27	−16	−50	−207	—	—
	b	+70	+58	+83	+55	—	—
Sweden	a	+2	+8	−11	−22	−1	+10
	b	−20	−16	−21	−7	−9	−34
Netherlands[e]	a	−100	−101	−126	−252	[f] −184	[f] −71
	b	−3	+3	−33	−9	[f] −98	[f] −48

[a] 1936–37.
[b] Excluding trade with Korea and Formosa.
[c] U.S.S.R.
[d] 1906–10.
[e] According to national classification.
[f] The figures for 1926/29 and 1936/38 are not comparable with those for earlier periods.

turing industry. The last category represents countries (Austria-Hungary, Sweden and the Netherlands) in the case of which the balance in manufactured goods did not display a clear upward or downward movement. As a general rule, it will be observed, the balances in primary products have tended to move in a direction opposite to those in manufactured articles.

With the exception of the United States, the countries of the first category are all densely populated, and their mineral and agricultural resources, though in some cases considerable, are limited in relation to their domestic demand for crude products. An increase in their export balance of manufactured goods was therefore necessary in order to pay for the growing imports of crude products that their expanding industry required. The inclusion of the United States in this category, in spite of its great mineral and agricultural wealth, is explained by a number of circumstances—in particular, the rapidity with which its population[1] and industry developed. In the 1920's the United States became a net importer of both foodstuffs and raw materials and in addition financed capital exports and outward payments on account of services with the aid of the export balance of manufactured goods.

Together, the eight countries in this category represented in the late 1920's 83% of the world's manufacturing industry. Between 1901/05 and 1926/29 their aggregate annual net export of manufactured articles increased from $1,803 million to $5,760 million. Though this balance did not represent their only source of income from abroad, there can be no doubt that their industrial development was linked up with their ability to dispose of an increased net export of manufactured articles in exchange for crude products.

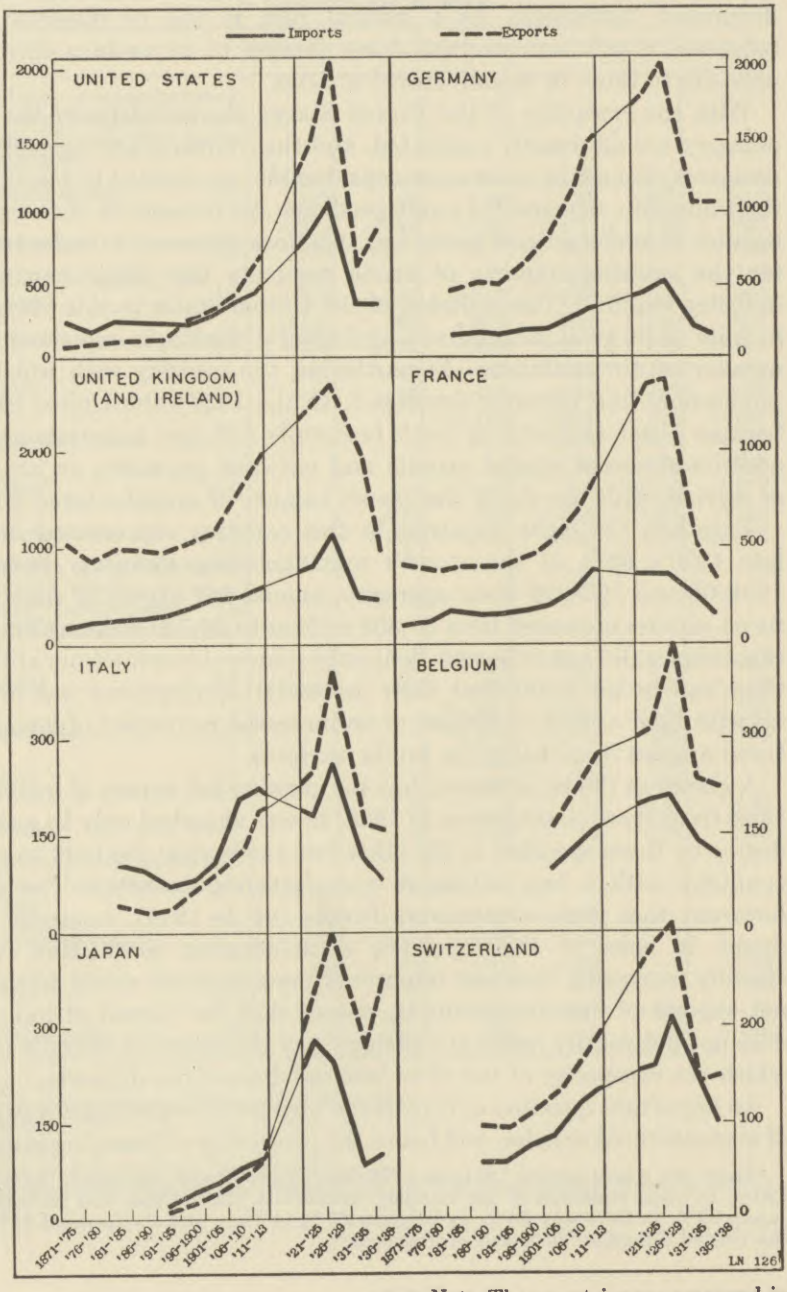
A glance at the table shows that the growing net export of manufactures from these countries up to 1926/29 was absorbed only to a slight degree by those specified in the other two categories; the bulk went to countries with a less advanced manufacturing industry. The fact, however, that such countries as Russia (up to 1914), Australia and Spain, in spite of their growing manufacturing production, were steadily increasing their net imports of manufactured goods and their net exports of primary products, proves that the spread of industry does not necessarily imply the silting up of the channels of trade upon which the prosperity of the older industrial countries depends.

An important question to consider is whether the openings for export of manufactured articles, and hence the possibility of financing imports

[1] Over the whole period 1881/85–1926/29, United States population increased 120%. In other countries of the category considered, the increase was far less—in Japan 69%, in Germany 54%, in Belgium 39%, in Italy and Switzerland 38%, in the United Kingdom 36% and in France 3%.

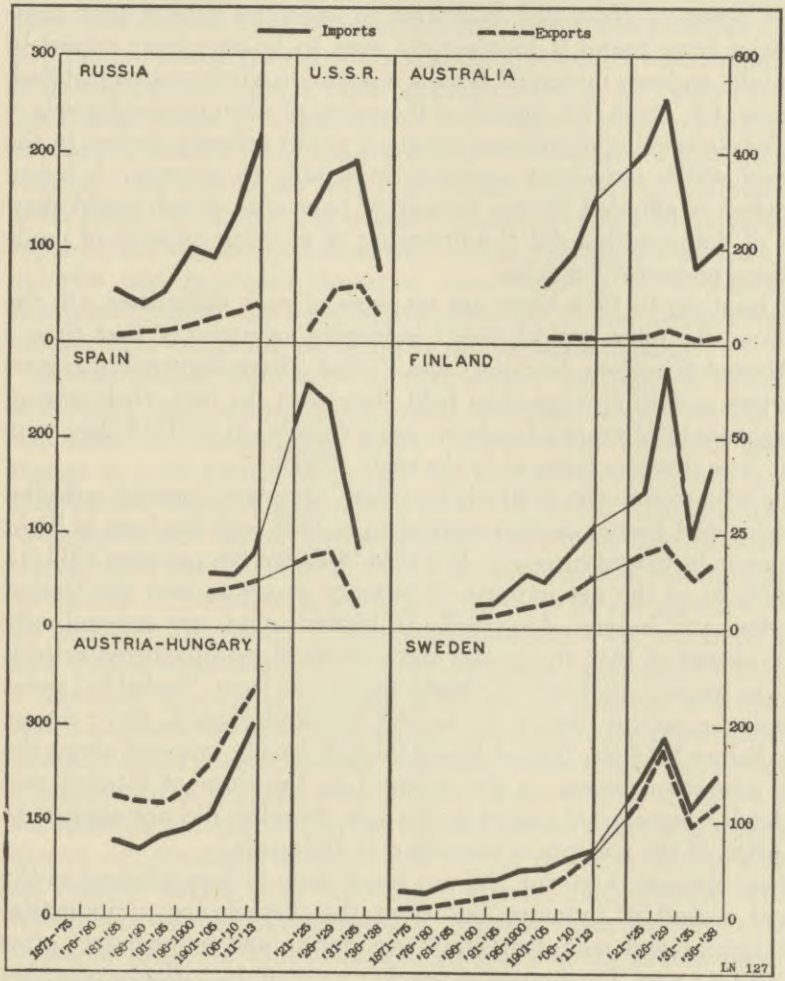
NATIONAL LIBRARY OF SCOTLAND

Diagram 9. TRADE IN MANUFAC-
Annual averages in
Based on Annex, Table IX (except



Note. The countries are arranged in

TURED ARTICLES BY VALUE
old $(000,000's) gold
in the case of Finland, imports)



the same order as in Table 14.

of crude products, have in the past actually represented a limiting factor in the economic expansion of advanced industrial countries. Superficially, it might have been thought that the tendency of the barter terms of industrial countries to improve[1] implies that these countries have found it increasingly easy to finance their import of foodstuffs and raw materials. Such a conclusion would not be justified, however, for, given the rigidity of the prices of manufactured goods, a relative cheapening of primary products might reflect a decline in the demand which industrial countries were able to exercise. A better indication is afforded by the balance of payments, which would show signs of deterioration did the financing of growing imports of crude products present difficulties.

At least up to 1914 there are no signs of such difficulties. On the contrary, the most typical "old" industrial countries of that time—the United Kingdom, Germany and France—were also typical capital exporters and thus more than held their own. In fact, their annual aggregate capital exports tended to grow rapidly: in 1911/13 they were about four times as large as in the early 1880's.

The situation in the 1920's is less clear. Germany became a capital importer, and French capital exports up to 1928 took the form of flight from an undervalued currency. As Table 14 shows, the rise from 1911/13 to 1926/29 in the net imports of primary products into the United Kingdom and Ireland, due chiefly to higher prices, was covered only to the extent of 16% by greater net exports of manufactured articles and was accordingly financed chiefly by income from "invisible" items (shipping earnings, return on capital invested abroad, etc.); hence, while before 1914 the United Kingdom had usually invested about the same amount overseas as she received in the form of interest and dividends,[2] her capital export in the late 'twenties did not amount to two-fifths of the receipts of interest and dividends.[3]

These changes, however, did not result from factors inherent in the normal spread of industry but from the disturbance of industrial relationships and monetary equilibria during and immediately after the 1914/18 war. The impact of the war on manufacturing production differed greatly from country to country: as reference to Diagram 1

[1] *Cf.* Diagram 4.

[2] According to the estimates by Hobson, the receipts of interest and dividends during the years 1906/12 amounted to £155 million annually and the net capital export (estimated indirectly from the surplus on current account) to £151 million. The latter figure appears too low, however, owing to an undervaluation of the shipping income (*cf.* Colin Clark in *Weltwirtschaftliches Archiv.* Vol. 1935, Heft 1). The correct figure appears to have been some £27 million higher.

[3] The figure for 1926/29 is only 26% but is affected by the coal dispute in 1926; that for 1927/29 is 38%.

will show, the United States, Italy, and Japan emerged in the early 'twenties with a manufacturing industry well above that in 1913; in the United Kingdom, Germany, France and Belgium, on the other hand, the upward trend was temporarily broken and a decline had set in.[1] The industrial growth of the first three countries was accompanied by exceptional changes in their balances of trade. As Table 14 shows, the United States between 1911/13 and 1926/29 became net importer of primary products and quadrupled her net exports of manufactured articles; Italy and Japan both became net exporters of manufactures, while Italian net imports of primary products more than doubled and Japanese net imports increased eight times. Increased sales from these markets and increased domestic manufacturing in non-industrial countries changed the competitive situation to the disadvantage of certain other countries, particularly the United Kingdom.

Events of the 1930's show to what extent the effect of the spread of industry upon advanced industrial countries depends on the basic conditions for international trade. Owing to the price fall and the change in price relationships, the figures of trade balances between 1926/29 and 1936/38, as shown in Table 14, do not offer a secure basis for analysis. But the payments difficulties and other disturbances that accompanied the breakdown of the international gold standard and of the system of multilateral trade are still fresh in the memory. While the pressure was chiefly on non-industrial countries, industrial countries with a weak financial position generally experienced difficulties in financing imports of primary products. In creditor countries the disturbance was felt predominantly as one of shrinking export markets; necessary imports were financed in part by a reduction of capital exports or liquidation of capital assets abroad. In the United Kingdom a deficit arose on current account as exports fell off and the income from interest and dividends declined with the fall in prices that, in its turn, had resulted largely from the reduction in the demand that countries were able to exercise in international markets. Countries with over-sea territories sought in vain to escape the effects of the general economic disintegration by developing empire trading. Germany increased her exchange of goods under barter and clearing with countries which had previously played a minor part in her trade, thus further reducing the demand she might have exercised in customary markets. At the same time, Germany's new customers were sometimes hindered in pursuing a policy of industrial expansion by the necessity of accepting

[1] The same is true of Switzerland, which country is not shown in the diagram. In France the volume of manufacturing production was higher in 1921/25 than in 1911/13, owing to the increase in territory, but industrial activity in the old territory declined.

payment in German-manufactured articles. But as a general rule, non-industrial countries, dismayed by the low prices fetched by their exports, strove to become less dependent on foreign trade, and, like many industrial countries during the years under review, developed their manufacturing at the expense of imports.

Events thus appeared to support the view that with the spread of industry the old industrial countries are bound to suffer. There can, indeed, be little doubt that when the channels of multilateral trade are blocked, advanced industrial countries are likely to lose ground in export markets outside their political or economic control, and this whether manufacturing industry is developing in these markets or not.

Our findings concerning the trade balance may be summarized as follows:

i) Advanced industrial countries with natural resources that are limited in relation to their population and industry usually depend for their continued development on an increasing export balance of manufactured articles and an increasing import balance of primary products.

ii) Such a movement of balances is not incompatible with industrial development elsewhere, for there are several examples of countries more favourably placed with regard to natural resources that have increased their import balance of manufactured articles at the same time as their manufacturing industry.

iii) Up to 1913 there was nothing to indicate that the gradual spread of industry tended to upset the balances of the older industrial countries so as to hinder their economic growth; on the contrary, there are strong indications that these countries more than held their own. In the 1920's the balances of certain of these countries deteriorated as a result, not of forces inherent in the normal spread of industry, but of disturbances in international economic relationships during the 1914/18 war.

iv) As multilateral trade became blocked in the 1930's and the forces of international economic disintegration gained the upper hand, imports of primary products into industrial countries were frequently safeguarded only with the aid of methods of commercial policy implying general economic warfare, or financed through the reduction of capital exports or liquidation of assets abroad.

Competition between Industrial Countries in Third Markets

The preceding section dealt in the main with the relationship between manufacturing and trade in countries with an established manufacturing industry. We found that up to the 1930's these countries tended to increase their imports of manufactured goods as their own

manufacturing industry developed. That the more typical agricultural and mining countries increased their imports of such goods as manufacturing expanded *elsewhere* hardly requires any proof—it follows from the importance to industrialized countries of the exchange of manufactured articles against primary products, as illustrated in Table 2, and from the fact that the typical industrial countries have as a rule tended to expand their exports of manufactured articles more rapidly than their imports.[1]

From the point of view of our enquiry it is, however, of importance to consider how the *older* industrial countries are affected in their sales to agricultural and mining countries by competition from younger industrial countries. These younger countries, we observe, must as a rule pay for their increased requirements of foreign primary products through the export of manufactured articles. At first sight, it might appear that the resulting increase in the exchange between these countries and primary producing areas would tend to affect the older industrial countries adversely; but closer analysis reveals that such a conclusion is untenable.

For historical illustration, we may refer to the development between 1875/80 and 1911/13 of the trade of the United Kingdom, the most typical "old" industrial country at that time. During that period, industry expanded rapidly in western and central Europe and in the United States; these regions accounted for five-sixths of the growth in

Table 15. UNITED KINGDOM: EXPORTS (DOMESTIC PRODUCE) 1876/80–1911/13

Shipments to	£(000,000's)			Percentage increase		
	1876/80	1891/95	1911/13	1876/80 to 1891/95	1891/95 to 1911/13	1876/80 to 1911/13
Central and western Europe	66.7	69.0	143.7	3	108	115
United States	19.8	24.9	28.9	26	16	46
I. Total above countries	86.5	93.9	172.6	9	84	100
II. All other countries (predominantly agricultural and mining)	114.9	133.1	315.7	16	137	175

Note. Trade is distributed according to the countries to which the goods were "shipped" (distribution according to countries of consignment is available only from 1904). The countries grouped under the term "Central and western Europe" are: Austria-Hungary, Belgium, Denmark, France, Germany, Italy, Netherlands, Norway, Portugal, Spain and Sweden. (Exports to Switzerland were obviously shown as shipped to other countries of the group.)

[1] *Cf.* pages 99–106 above.

the world's manufacturing industry outside the United Kingdom. Other regions, notwithstanding the industrial growth that occurred, for instance, in the British Dominions, remained predominantly agricultural and mining. Our problem is to ascertain whether British trade with these regions gained or lost as a result of industrial development elsewhere.

The value of United Kingdom exports to the two groups of countries was as shown in Table 15.

The primary producing regions (last line of the table) were, on the average, the best markets for British products; exports to them increased by 175% as against 100% for exports to countries further advanced in manufacturing. The emergence of the United States as a major buyer of primary products from about 1890 appears to have stimulated British exports to the primary producing regions in compensation for the rather unfavourable trend of exports to the United States.

The increase in United Kingdom exports to the primary producing countries considered between 1876/80 and 1911/13 was offset only to the extent of about two-thirds by larger imports from the same countries;[1] as a result, there arose a considerable export surplus to several of these countries, for instance, Australia, Brazil and India. The industrial countries other than the United Kingdom, on the other hand, as a rule developed a net import from the primary producing areas financed by a net export to the United Kingdom. The emergence of these triangular transactions played a predominant rôle in the formation and growth of the system of multilateral trade.[2]

The primary producing countries financed their expanding purchases from the United Kingdom in part by sales to younger industrial countries in which the demand for raw materials increased rapidly. But the trade movements we have examined were also greatly influenced by financial transactions. The proceeds from the growing net export from primary producing areas to industrial countries other than the United Kingdom were used chiefly to meet interest and dividend payments on European (particularly British) capital investments and, to that extent, were not available for financing imports from the United Kingdom. Hence the increase in such imports was in large part financed by capital imports from that country.[3] The United Kingdom's opportu-

[1] Owing to the absence of data for retained imports by countries of provenance, no exact figure can be calculated. General imports include re-exports, derived chiefly from agricultural regions and disposed of in continental Europe.

[2] It is assumed that the reader is acquainted with the brief analysis of this subject made in *The Network of World Trade* (particularly pages 83–85).

[3] Accordingly, interest and dividends due to the United Kingdom must be regarded as transferred through other countries in multilateral trade, while capital

nity of making economic oversea investments of this kind, however, was dependent on the development of the production and export of primary goods in the capital importing areas; and the international market for such goods could be extended only through the growth of manufacturing in countries which were net importers from the primary producing areas and net exporters to the United Kingdom (or to countries which, in their turn, were net exporters to the United Kingdom). Hence, United Kingdom exports of capital as well as of goods to primary producing regions, the roundabout transfer of capital yields from these regions, and industrial growth in the regions serving as transfer channels, were only different aspects of an evolution beneficial to all the participating countries.

While the United Kingdom profited, in particular, as an exporter to primary producing countries, she increased her imports from the countries with an expanding industry. It should not be assumed that this import involved a heavy competitive pressure on British manufacturing industries. Actually, only a minor portion of these purchases—about a fourth—consisted of manufactured articles. The great bulk consisted of raw materials, such as cotton from the United States and timber and pulp from Sweden, or foodstuffs, such as wheat from the United States and butter and bacon from Denmark. But even the manufactures imported from the countries in question consisted to a large extent of articles not competing with British manufactures.

Everything considered, there can be little doubt that at least up to 1914 the United Kingdom profited from the development of manufacturing elsewhere in its trade with primary producing areas. The conclusion is not invalidated by the fact that the younger industrial countries also increased their exports to the primary producing areas, frequently at a more rapid rate than did the United Kingdom. It is axiomatic that a country which is a pioneer in industrial and commercial development should lose in relative position as other countries follow suit, even if it gains in absolute terms.

Though industrially younger than the United Kingdom, countries such as France, Germany, Belgium and the United States had reached a high degree of industrial maturity by the end of the last century. It would carry us too far to analyze in detail how these countries were affected in their sales to primary producing regions as manu-

exports from the United Kingdom were as a rule transferred in bilateral trade with the capital importing country. It cannot be assumed that capital exports and returns on outstanding investments simply "offset" one another in international accounts without affecting trade (even when these items were of the same magnitude); for the ability of the primary producing areas to expand their exports so as to meet the demand from continental Europe and the United States was developed in large measure with the aid of British capital.

facturing developed elsewhere. Their dependence upon sales to such regions differed according to the position they held in the multilateral trading system; none of them in fact was as dependent on such sales as the United Kingdom. But as countries in earlier stages of industrial development were seldom able to develop their exports of manufactured articles to the primary producing regions in step with their demand for these regions' products, the older industrial countries with established overseas markets were frequently in a favoured position. In particular, the United States and Germany took a leading part in supplying the primary producing regions with the agricultural machinery, railway equipment and other implements which these regions needed in order to satisfy the demand for their products which was increasing with the spread of industrialization.

The tendencies we have been considering were also discernible during the 1920's. Thus, as Table 16 shows, the primary producing regions continued to be the best markets for British exports between 1911/13 and 1926/29, and there can be no doubt that the importing capacity of these regions was due chiefly to the demand for their own products arising in connection with industrial growth outside the United Kingdom.

Table 16. UNITED KINGDOM: EXPORTS (DOMESTIC PRODUCE) 1911/13–1926/29

Consignments to	£(000,000's)		Percentage increase
	1911/13	1926/29	
Central and Western Europe	143.7	165.4	15.1
United States	28.9	46.7	61.6
Canada	22.3	31.3	40.4
Japan	12.9	14.3	10.9
Russia[a]	15.1	10.8	−28.5[b]
I. Total, above countries	222.9	268.5	20.5
II. All other countries (predominantly agricultural and mining)	265.5	435.3	64.0

[a] In 1926/29 the U.S.S.R., Estonia, Latvia, Lithuania and Poland.
[b] Decrease.

Note. As in Table 15, the countries grouped under I represent those with an advanced manufacturing industry while those under II (the last line) represent predominantly agricultural and mining regions. Owing to the industrial development of Canada, Japan and Russia, it was found appropriate in Table 16 to include these countries in the former category.

The relative weakness of British exports to industrialized countries between 1911/13 and 1926/29, however, is due in part to the reduction

in the purchasing power of central and western Europe that resulted from the 1914/18 war. Even the rise in exports to the primary producing regions over the period considered (64%) was hardly greater than the increase in prices; the quantum of these exports thus remained at about its pre-war level. Total British exports declined in quantum, as did those of several other industrial countries. In certain cases, losses were suffered in competition with younger industrial countries; and during the 1930's losses of this kind appear to have become more frequent.

It is not possible in this study to deal fully with the circumstances responsible for the weakness in the British competitive position, some of them not connected with the industrialization of other countries; but certain of the factors involved come to light if this weakness is contrasted with the competitive strength of Japan, felt particularly in the market for cotton piece goods, which represented the principal article of export to a number of primary producing countries. Measured by value, Japanese exports of such goods amounted in 1913 to little more than 3% of the British; by 1925 they had reached 24%, by 1928, 31%, and by 1935, 73%; after that year the Japanese competition began to subside. British exports in 1913 had amounted to about 6.75 billion square yards;[1] after a heavy fall during the 1914/18 war, they rose to 4.64 billion in 1925. From then on, a new decline began—in 1928, 3.87 billion square yards were exported, and in 1935, 1.95 billion. Japanese exports rose between the last-mentioned two years from 1.45 to 2.71 billion square yards. Comparison between the quantities exported by the two countries is misleading, however, for the quality of British piece goods was, on the average, higher than that of Japanese; moreover, this difference in quality gradually increased as the United Kingdom lost her ability to compete in simpler qualities.[2]

The expansion of Japanese exports had gained impetus during the 1914/18 war when Japan replaced European countries, particularly the United Kingdom, as supplier of textile manufactures in Asiatic markets. With the growth of her industry, Japan became dependent on such exports. To some extent, however, Japanese competition was mitigated during the 1920's by the fact that Japan was able to finance her raw material imports largely by the proceeds from her growing sales of raw silk to the United States and by drawing upon her foreign currency holdings which had accumulated during the 1914/18 war. But when, late in the decade, the price of raw silk collapsed in the

[1] 7,075 million linear yards, converted to square yards at the rate indicating the relationship between square yards and linear yards in the 1920's.

[2] *Cf. Review of World Trade*, 1937, page 65.

United States and the Japanese currency holdings were exhausted, Japan became increasingly dependent upon the export of manufactured goods. The new Japanese competition was sharpened after the financial crisis by a reduction in the exchange value of the yen which by 1935 had reached 65%, while the depreciation of sterling remained at 40%.

As early as the late 1920's the United Kingdom was handicapped in its competition with Japan, and, indeed, with several other countries, by the fact that sterling had been stabilized at a relatively high level and by the relative decline in capital exports[1] which was due in part to the high exchange value of sterling. The effect of Japanese competition on the British export industry during the early 'thirties was enhanced by the fact that it occurred as certain importing countries—for example, India—expanded their domestic textile production at the expense of imports, while the purchasing power of others was seriously reduced.

It is by no means easy to form a general judgment of the effect of Japanese competition upon the export of older industrial countries. The chief adverse element in this competition was undoubtedly its jerkiness—a result of the disturbances in international economic relationships that had been initiated by the 1914/18 war. Normally, competitive pressure, it may be observed, fills an important economic function, promoting mutual and gradual adjustment. Sudden changes in the competitive situation, on the other hand, may upset rather than regulate production and trade, and are naturally feared by mature industrial countries. For one thing, it appears more difficult for them than for younger industrial countries to reduce their export prices when this is called for. The national price structure usually becomes more rigid as the rôle of capital in the production process is increased. The alternative of allowing the national currency to depreciate has for the older industrial countries, which are normally creditor countries, the unwelcome effect of reducing the real value of capital invested abroad in the form of loans and credits and of interest due on account of such investments.

It must be pointed out, however, that the loss to a country of competitive advantage in the sale of any particular commodity in any particular foreign market normally tends to be offset or limited by a number of factors. Even Japanese competition at its height undoubtedly had secondary effects which may have been beneficial to other industrial countries and to the United Kingdom in particular. Certain of these effects may be briefly indicated.

[1] *Cf.* page 104.

By way of example, let us consider the import of cotton piece goods into the Dominican Republic, Haiti, and Honduras. In the case of these Central American republics, there was between 1929 and 1935 a shift-over from the United States or the United Kingdom to Japan as the principal supplier of such goods, and chiefly for this reason the share of Japan in their total imports grew rapidly. The general trend of trade during the period considered, it will be remembered, was downward, and the quantity of most manufactured articles imported into the three countries considered declined; but that of cotton piece goods, stimulated by the low Japanese prices, increased, as the last line of the following table shows:

	Dominican Republic		Haiti[a]		Honduras[b]	
	1929	1935	1929	1935	1929	1935
Percentage share of Japan in total import value	0.4	11.8	0.1	17.7	0.5	10.6
Percentage share of cotton piece goods in import value	10.2	13.7	14.4	22.7	16.2	15.2
Cotton piece goods imported in tons (000's)	18.3[c]	20.0[c]	2.1	2.8	1.7	2.0

[a] Fiscal years ending September 30.
[b] Fiscal years ending July 31.
[c] Million linear metres.

Owing to the low Japanese prices, the spending of a given sum on cotton piece goods of Japanese instead of, say, British manufacture implied a greater consumption of raw cotton and thus a mitigation of the pressure on raw material prices, which was one of the chief manifestations of the economic depression of the early 'thirties. If primary producing countries thus profited from Japanese trade, they are likely to have employed a portion of the ensuing increase in their supply of foreign currency for the purchase of manufactured articles of kinds which could not be supplied by Japan.

It may be added that a reduction in the export prices of a country, besides affecting sales in competition with other exporters, may open up quite new markets for the goods in question. When, in spite of the ravages of the depression in the early 1930's, certain undeveloped countries not only maintained, but increased the quantity of the textile products they imported at the same time as they shifted over to Japan as a supplier, there is reason to assume that the low prices rendered factory-made textiles available to layers of population which had

previously not had access to them. In many countries, it may be recalled, the bulk of the population is still engaged in subsistence farming; cash incomes are extremely small, and so is, accordingly, the effective demand for manufactured goods. But the lowering of the prices of such goods facilitates the change-over to a cash economy in which an increased share of the agricultural production is sold and the proceeds employed in the purchase of industrial products. The new market for manufactured goods thus established, at first absorbing only such essential requirements as plain cotton tissues, is likely to become increasingly diversified as it expands, with beneficial effects accruing not only to the supplying country that happened to initiate this development.

Naturally, the opportunity of thus opening up new markets through a reduction in price does not always present itself. The demand for the article the price of which is reduced may be inelastic in the importing country. While the supplier which lowers its prices will gain at the expense of its competitors, the total quantity will then remain at its previous level. But this is not the end of the matter, for as the import value of the article considered declines, there is likely to be a corresponding rise in the amount available for the import of other goods. The new demand thus exercised may at least to some extent benefit those industrial countries which suffered losses in their sale of the article first considered.

One reason why, at any rate in "normal" times, one country's competitive gain is not necessarily another country's loss (if secondary effects of the competition are considered) but frequently benefits all countries involved, is that a competitive gain accruing to the most efficient producer does not only imply the substitution of one source of supply for another, but releases productive forces which may serve to expand the basis for the world's economic activity.

A word of caution is required, however, when judging the indirect effect of competition among the industrial countries during the 1930's, which was by no means a "normal" period. The decade was one during which a frictionless adjustment to a new competitive situation through multilateral transactions was extremely difficult—indeed, the heavy fall in the exchange value of the yen, and hence the intensity of the Japanese competition, is due in part to this fact. It is uncertain, therefore, to what extent the older industrial countries were compensated, in the manner suggested above, for the direct loss of markets that Japanese competition involved.

In fact, not only was it more difficult during the 1930's for older industrial countries to profit in their sales to primary producing regions

from industrial expansion elsewhere, but previous gains of this kind were wiped out to a considerable extent. After the collapse of the multilateral trading system and of international lending, industrial countries generally endeavoured to pay for their imports of primary products to an increasing extent by exports of manufactured articles to the supplying areas and adapted their commercial and monetary policy to that end. The United Kingdom which, as we found above, had previously greatly expanded its sales to countries which export important primary products to all parts of the world, accordingly lost part of its old market in these countries to younger competitors, and the previous excess of exports to several such markets disappeared. While in 1928, for instance, there had been an aggregate export surplus of £78 million in British trade with Australia, Brazil, British Malaya, Ceylon, China, India (with Burma), and the Netherlands Indies, trade with the same countries ten years later resulted in an import balance of £52 million; the share of these countries in British exports fell simultaneously from 28 to 22%.

To sum up, there is nothing to indicate that older industrial countries are bound to suffer from competition with younger industrial countries in their exports to agricultural and mining regions. At least up to 1914 the United Kingdom, which has been more dependent than other industrial countries on exports to such regions, was able markedly to expand its sales to such regions as their purchasing power increased with the demand for their own products exercised by younger industrial countries. Even between then and the later 1920's such demand helped to maintain British exports to the primary producing regions at a relatively high level. Price competition from young industrial countries may involve losses in the market for particular commodities; but normally such losses tend to be offset by gains resulting from the new demand that is released, in various ways, by the competition. But these restorative forces are fully active only under conditions of sound international trade. Thus, after the collapse of the multilateral trade system in the 1930's, the United Kingdom lost to younger competitors a considerable portion of the export market in primary producing regions which it had developed during previous decades.

CHAPTER VII

SUMMARY OF FINDINGS

Relationship between Industrial Development and International Trade

The study of the effect on trade of industrial development has been pursued from two angles. The conclusions drawn from the first and more general approach (contained in Chapters I–V) are summarized below.

1. Countries which do not produce manufactured articles can usually acquire such products only by export of primary products. But a proportion of their primary production, which varies from country to country, cannot be exported—for instance, because it is required to feed the domestic population. Where exportable supplies are small, the supply of foreign manufactures is also small.

2. For these and other reasons the international division of labour and international trade, however important, are not sufficient to equalize supplies among countries. A statistical verification indicated that the annual supply in 1926/29 of imported and domestically produced "finished factory products other than foodstuffs" (a term covering the great bulk of the products of manufacturing), varied between about $250 per capita in the United States and $3 per capita in India and China.

3. Since mechanical processes greatly increase the productivity of labour, the supply of goods may be greatly increased by industrialization, which involves an all-round application of such processes and in particular the establishment of a manufacturing industry. The products of this industry are marketed chiefly in exchange for primary goods which before industrialization were not produced or which, if produced, were consumed locally by a self-sufficient peasantry. Hence, industrialization implies that primary products are produced in large measure for sale, and accordingly that there is a simultaneous development of domestic commerce and trade.

4. To the extent that domestic industrial production is thus accompanied by a corresponding increase in the total amount of manufactures that can be marketed in the country, it obviously does not encroach upon the market for imported manufactures.

5. Given the advantage accruing to the country concerned from continued sale abroad of its exportable surpluses of primary products, the domestic industry is not, under conditions of normal economic growth, likely to encroach upon the export of such products and hence upon the market for imported manufactures. Rather, a general increase

in the production of primary goods, and hence also in the ability to acquire foreign manufactures, may be expected.

An additional reason why industrial development is usually not likely to cause a reduction in the import of manufactured articles is that, particularly in densely populated countries, the industry most likely to make progress is decentralized and dependent on local markets in which, before the industry was established, the purchasing power that could be exercised for the acquisition of manufactured articles was very limited (*cf.* point 18 below).

6. While normally the import from older industrial countries is thus not likely to decline as a result of industrial growth elsewhere, these imports are likely to change in character, for the countries in which industry develops will diversify their demand for consumption goods and increase their demand for manufactured capital goods. Different supplying countries will thus be differently affected; and even those able to raise their sales may experience some difficulty in effecting the necessary adaption. Under normal conditions, however, time for adaptation is likely to be afforded, for in the majority of countries, particularly those with a dense population, there are strong forces resisting the industrial development which is accordingly, as a rule, relatively slow.

7. Certain countries in the process of industrialization that are short of foreign currency may have to divert part of their foreign purchases from manufactured articles to primary products. This, however, is likely to enable the countries exporting such materials to raise their purchases of manufactured articles so that, on balance, the older industrial nations may not be adversely affected. For similar reasons even the export of manufactured articles from recently industrialized countries will have secondary effects which partly or wholly offset the adverse influence of this competition upon the older industrial nations.

8. While import restrictions with a protective purpose tend to favour domestic industry at the expense of imports, the protective tariff of moderate height, aiming only at rendering the domestic manufacturing competitive in the home market, is likely only to have a limited and temporary restrictive effect on imports.[1]

9. Disturbances in international trade resulting from wars or major depressions may cause, and have caused, industrial development of a kind that short-circuits external trade and hence is detrimental to the interests of older industrial countries. Such development, however, is likely to require heavy sacrifice in the countries where it takes place and to prove in part uneconomical if and when normal international

[1] *Cf.* also point 22 below.

relationships are restored. Trade disturbances of the kind provoking such industrialization can be prevented or overcome, and conditions for sound economic development created only by concerted international action.

Certain of the above findings have been verified and further qualified by the historical-statistical analysis made in Chapter VI, the chief results of which are summarized below.

10. *Manufacturing and Imports of Manufactured Goods per Capita.* In order to ascertain whether countries have tended to become increasingly independent of imports of manufactured articles as their own manufacturing developed, a comparison was made between manufacturing and imports of manufactured articles per head of population in different countries during the late 1920's. It was found that, as a general rule, small countries were more dependent upon foreign supplies of such articles than big, and that, *among countries of similar size,* a high manufacturing production per capita was usually accompanied by a high per capita import of manufactured goods. Countries lagging behind in industrial development were generally small per capita importers of manufactured goods. Certain minor areas with good sea communications enabling them to sell a high percentage of their production of primary products in exchange for foreign-produced manufactures formed an exception to this rule.

11. *Changes in Manufacturing and Trade.* In addition the movement of manufacturing was compared with that of trade in manufactured articles in various countries since the early 1870's. It was found that, until the 1930's, the growth of manufacturing, far from rendering the countries concerned independent of foreign-produced manufactured articles, stimulated the importation of such articles, and that imports tended to follow a course parallel to that of manufacturing activity. The chief deviations from this parallelism can be attributed to "outside" factors such as changes in commercial policy and the disturbance of international relationships caused by the 1914–18 war. After the collapse of international trade in the early 1930's, however, the previous relationship between production and trade appears to have been severed in a number of countries which took steps to develop their manufacturing at the expense of imports.

A similar comparison brought out that, over representative periods up to the late 1920's, those countries in which manufacturing had grown fastest had, as a general rule, increased their imports of manufactured goods more than others. Exports of manufactured articles naturally also tended to increase with manufacturing production.

During the 1930's, however, there was an almost complete lack of correspondence between the movements of manufacturing and trade (particularly imports) in manufactured goods. In several instances this deviation from the norm that had characterized the preceding decades could be explained by the breakdown of the system of multilateral trade and the resulting disintegration of international economy. From this it would appear that the real danger that the older industrial countries may have to face is not the spread of industry throughout the world but the failure to restore multilateral trade, or its collapse when once restored (see also point 13 below).

12. *Manufacturing and the Balance of Trade.* The older industrial countries are major importers, as well as exporters, of manufactured goods. But as only the *net* exports of such goods can be employed for financing imports of foodstuffs and industrial raw materials, a study was made of the movement of the balances of trade in manufactured goods and primary products.

It was found that advanced industrial countries with natural resources that are limited in relation to their population and industry usually depend on increasing net exports of manufactured articles, and increasing net imports of primary products. Such a movement of balances, however, is not incompatible with industrial development elsewhere, as is shown by the fact that countries more favourably placed with regard to natural resources have increased their import balance of manufactured articles at the same time as their manufacturing industry. Up to 1913 there was nothing to indicate that the gradual spread of industry tended to upset the balances of the older industrial countries so as to hinder their economic growth; on the contrary, these countries more than held their own. In the 1920's the balances of these countries deteriorated as a result of disturbances in international economic relationships during the 1914–18 war. As multilateral trade became blocked in the 1930's and the forces of international economic disintegration gained the upper hand, imports of primary products into industrial countries were frequently safeguarded only with the aid of methods of commercial policy implying general economic warfare, or financed through the reduction of capital exports or liquidation of assets abroad.

13. *Competition Between Industrial Countries in Third Markets.* To complete the analysis of evidence a study was made of the competition between older and younger industrial countries in their exports to primary-producing countries. The evidence did not suggest that the older industrial countries lose from such competition. On the contrary, the United Kingdom, which has been more dependent than other

industrial countries on exports to primary producing regions, was clearly able to expand its sales to such regions up to 1911/13, as their purchasing power increased owing to the increasing demand for their own products exercised by younger industrial countries. Even between 1911/13 and the late 1920's, such demand helped to maintain British exports to the primary producing regions at a relatively high level. Price competition from younger industrial countries may involve losses in the market for particular commodities; but normally such losses tend to be offset by gains resulting from the new demand that is released, in various ways, by the competition. But these restorative forces are fully active only under conditions of sound international trade. Thus, after the collapse of the mutilateral trading system in the 1930's, the United Kingdom lost to younger competitors a considerable portion of the export market in primary producing regions which it had developed during the previous decades.

Conditions for Industrial Development

The analysis in Chapter V gives certain indications concerning the nature of the problems faced by countries wishing to develop their manufacturing industry. Though the study of these problems was only incidental to the main purpose of the enquiry, and was made in order to provide a wider basis for judging the effect of industrialization on trade, certain of its chief results are important enough to be recapitulated here.

14. When considering the conditions under which a domestic manufacturing industry may develop, distinction had to be made between nonindustrial countries in which the population is relatively sparse in relation to available natural resources, and those in which it is relatively dense.

15. In the sparsely populated countries the economy is frequently commercialized to a considerable extent even before industrialization, for exportable surpluses of primary products are likely to be relatively great and hence also the import of manufactured articles. The early growth of foreign trade in these countries and the resulting development of their internal transportation, of domestic savings and of the inflow of foreign capital are likely to facilitate their industrialization.

16. The densely populated countries, which occupy about three-fourths of their population in agriculture, are usually handicapped by poverty, low productivity of labour and an old-fashioned and inert social organization. Their commerce is underdeveloped, their domestic transport facilities inadequate, and they are short of savings. Their

industrialization would require, among other things, a radical change in social values and administration, reorganization and rationalization of agriculture. Agricultural production might then be raised at the same time as the use of labour in agriculture is reduced, and a large proportion of the population now engaged in agriculture could thus be made available for industry and commerce.

17. Industrial development in countries with a relatively small population—whether this population is abundant or sparse in relation to local natural resources—presents a special difficulty on account of the fact that the domestic market in these countries is not large enough to absorb the production on an industrial scale of many manufactured articles.

18. Particularly during its early stages, industrial development in densely populated countries may be facilitated if the industry established is decentralized and the scale of production relatively small. When the expanding industry is decentralized, less social reorganization is required, unnecessary urbanization is avoided, the utilization of the large resources of labour is facilitated and the need for investment in industry as well as in public utilities reduced.

19. In densely populated countries a successful programme of industrialization might have to be combined with measures intended to check excessive population growth.

20. In these countries, it is imperative that the existing natural resources should be exhausted as little as possible before progressive industrialization is undertaken. In certain of them the stage may be passed where such industrialization is likely to occur spontaneously; it will then have to be carefully planned and pursued with the aid of government intervention and support.

21. The influx of foreign capital is of great importance for the development of external trade and of public utilities which are prerequisites for industrialization. But experience shows that only limited amounts of such capital are likely to be available for building up a manufacturing industry. Hence, domestic savings must usually supply the bulk of the industrial capital. The possibility of raising such capital, even in countries where there is hardly any margin for the compression of consumption, is greater than it may appear at first sight.

22. Tariff protection cannot nowadays be relied upon as the only or chief means to bring about industrialization. A successful industrialization scheme must usually include a broad programme of social rejuvenation, of hygienic improvement, of general and technical education, of agricultural reform and of investment in transportation, power generation and other utilities.

ANNEX

A. INDICES OF MANUFACTURING, 1870–1938

Nature of the Indices

Whenever possible, the indices in the following tables I–VI refer to manufacturing only; they thus do not include mining, building and the generation of gas and electricity. In the majority of countries, total industrial production, which includes these activities, does not follow a course very different from that of manufacturing. When indices of manufacturing were not available, therefore, indices of industrial production were used; the countries and periods involved are indicated in foot-notes.

The tables cover the period 1871–1938, except for the war years 1914–1919. Tables III–VI give annual figures, Tables I and II averages for the periods considered in the principal text tables. The majority of these periods are quinquennia (1871–75, 1876–80, etc.); but there are two three-year periods (1911–13 and 1936–38), and the period 1926–29 is shown rather than 1926–30 in order to prevent the figures being unduly affected by the switch-over from the boom of the late 1920's to the great business depression. The transition from boom to depression, it will be remembered, did not take place simultaneously in all countries.

The national indices have in the main been derived from existing computations. In a few cases, however, the existing series have been supplemented by intra- or extra-polations, or by more independent calculations covering longer periods (*cf.* the notes after the tables). In the case of Australia indices were calculated entirely by this Department from national statistics.

In a few cases production indices were available only for every fifth or tenth year (1875, 1880, etc.) of the first decades covered by the tables and there were no satisfactory data from which indices for the intervening years could be interpolated. Five-year averages were nevertheless calculated on the assumption that the growth of production followed a "straight line." These averages are entered in brackets in Table I. Similarly, annual intrapolations made with the aid of data concerning coal consumption, extrapolations and a few other indices of doubtful accuracy have been entered in brackets in the respective tables.

The methods applied in calculating the national indices vary, and even indices computed in the same manner are by no means equally representative. Moreover, the indices shown for each country are seldom covered by a single series; usually two or more overlapping series have had to be combined. For these reasons, it cannot be pretended that the indices present a high degree of accuracy or comparability. The comparison made between the indices for different countries and periods in the relevant part of the preceding enquiry was nevertheless thought justified, since the conclusions were based on the behaviour of the indices in a relatively large number of cases and since there was no reason why errors in the figures would involve any bias.

The National Indices

Base periods

The original national indices are calculated with different base years or base periods and are theoretically not always convertible. Errors involved in conversion, however, are not likely to be considerable. In Tables V and VI the indices are shown after conversion to 1925–29 (annual average) = 100, the reason being that this basis was employed for the corresponding indices given in the last few issues of *World Production and Prices*. In Tables I–IV the indices have been converted to a 1913 basis. No earlier base year could be chosen since the indices for several countries only begin with 1913.

Methods of computation

1. The most usual national indices of the volume of manufacturing (or industrial production) represent the weighted arithmetical average of indices of the quantity of goods produced in important branches of production. The weighting is made according to the relative importance of these branches in the base year, measured, for instance, by the value of the production or the number of workers employed. Where not otherwise indicated in the notes after the tables describing the indices, it may as a rule be assumed that this method was used.[1]

It will be observed that indices computed according to this method in some cases understate the factual rise in production. When national indices once published have been revised, the upward movement has usually been accentuated, since the revisions have involved the inclusion in the calculation of branches of manufacturing which have become relatively important through a rate of expansion above the average. Such revisions have become important particularly in countries with a highly developed and diversified manufacturing production, and during periods of rapid change in the composition of production, such as occurred during the 1930's. A recent revision of the index for the United States is a case in point.[2] There has been a tendency to render the computation of the indices more elaborate by increasing the number of commodities considered; but as simultaneously production appears to have become more diversified and variable, recent indices do not necessarily reflect the volume of production with greater accuracy than those for earlier periods.

2. Where annual industrial statistics record the quantity and the value of the various manufactured articles produced, an index of the volume of manufacturing may be calculated as the relationship between the values, calculated according to the "prices" (unit values) prevailing in a given year, of production in the base year and the year under examination. If the prices of the first year considered are used, the form-

[1] In the case of certain of the indices, however, the method employed is not known. In particular, this is true of the majority of the computations by Wagenführ (*cf.* page 126).

[2] According to the manufacturing index for the United States used in *World Production and Prices, 1937/38*, production in 1936–38 was 17.7 % lower than in 1926–29; but according to the revised index published in 1941 and used in the present study, it was 3.8 % *higher*.

ula for such an index is $\frac{\Sigma p_1 q_n}{\Sigma p_1 q_1}$. The index is naturally affected by changes in the average quality of the articles included in each recorded item. The tables include indices calculated according to this method for the following countries and periods: Finland, 1913–1926; Hungary, 1921–1925; Sweden, 1913–1938; and U.S.S.R., 1913–1938.

3. A more summary index may be calculated by correcting an index of actual total production values, as recorded in industrial statistics, for price changes since the base year by application of an appropriate price index. Certain production indices of this kind employed in the tables were derived from national sources (Union of South Africa, 1920–1938); others were computed in this Department in the absence of other indices (Australia, 1908–1938; Canada, various years up to 1923; Finland, 1885–1913; New Zealand, various years up to 1928; Sweden 1870–1913).[1] It may be argued that indices of the kind now considered should be calculated from net values ("values added by manufacture") rather than gross values of production, and that the price index to be applied should refer to manufacturing costs (wages, power, interest rates, etc.) rather than commodities. As composite price indices of this kind are not available, however, the computations have to be based on indices of gross values and commodity prices. Unfortunately, the only price indices usually available refer to wholesale prices. Such indices are determined chiefly by the prices of raw materials and to that extent fail to reflect the usually more slow-moving manufacturing costs entering into the price of processed articles. Indices of the prices of manufactured articles could be used only in the case of Canada for 1913–1923 and New Zealand for 1920–1928. In the case of Australia use was made of an average of an index of wholesale prices and of an index of wage rates, as this average was thought to reflect the prices of manufactured goods more correctly than an index of wholesale prices alone.

Changes in territory

The indices presented in this volume do not rise or decline as a result of an increase or decrease in the territory of the countries to which they refer. The principle applied in cases of such territorial changes was to calculate a separate index for each of the two periods involved; these indices were then linked to one another at the time of the territorial change. The choice of this method was connected with the manner in which the world index was weighted (see page 129).

"Linking" of indices

The linking of different overlapping indices for a country in order to obtain one seemingly unbroken series was made according to the following principles:

(i) Preference was usually given to series covering the most recent period. For example, if two indices were used, one covering the years

[1] In addition, a number of the indices quoted from Wagenführ (*cf.* p. 126) were calculated by him in a similar manner.

1920–1935 and the other 1928–1938, they were linked in 1928, not in 1935.

(ii) Preference was usually given to official compilations.

(iii) For simplicity and clarity, "linking" was always made in one year, though in certain cases it might have been argued that a gradual adjustment of the indices to each other over the whole overlapping period (in the example in (i) above, 1928–1935) might have been preferable.

Similar principles were used in linking the series of production values, price indices, etc., employed in the computation of indices of the volume of manufacturing.

General sources

The notes after the tables indicate the principal sources from which national indices have been derived. Mention may be made here, however, of certain sources of a general character, covering several countries.

1. *Statistical Year-Book* and *Monthly Bulletin of Statistics* issued by the League of Nations, reproduce indices of industrial production for a number of countries since the middle 1920's and give various details concerning their computation.

2. *World Production and Prices*, issued annually by the League of Nations (last issue, 1938/39). Beginning with 1935/36, this publication gives an index of the world's manufacturing production covering the years 1925–1938. The world index contained in the present study for the same years is computed on the same general principles as that in *World Production and Prices*, though its movement differs from that given there because:

(i) use has been made of revised series for several countries, affecting particularly the 1930's;
(ii) indices have been added for Australia, India, Latvia, Switzerland and the Union of South Africa not considered in *World Production and Prices;*
(iii) the weights attributed to the indices for certain countries have been slightly changed (*cf.* page 128).

3. An article by Jean Dessirier, *Indices comparés de la production industrielle et de la production agricole en divers pays de 1870 à 1928*, published in the *Bulletin* of the Statistique générale de la France for October–December 1928, contains indices of industrial production for 1870, 1880, 1890 and annually from 1898 for a few countries. In the present study, use has been made of certain of these indices for Belgium, France and Italy.

4. Rolf Wagenführ, *Die Industriewirtschaft* (*Vierteljahrshefte zur Konjunkturforschung*, Sonderheft 31, Berlin 1933), contains indices of industrial production for individual countries and the world as a whole for the years 1860, 1870, 1880, 1890, 1900–1913 and 1919–1931, and a narrower range of indices of manufacturing production.[1] The move-

[1] A similar index, computed monthly and annually for 23 countries and for the

ment of the world's industrial production, as recorded in this study, is in the main confirmed by the present enquiry. The indices given for a few individual countries, however, have not proved reliable. Use was made in the present enquiry of several indices given by Wagenführ, particularly in order to extend the indices for certain minor countries backwards from the 1920's to 1913—a period for which official indices are frequently missing.

The World Index

Scope of the index

The world index may be regarded as a weighted arithmetical average of the national indices. In one respect the method differs, however, from that usually employed in similar computations. It will be noted that national indices are available for only 29 countries, and further, that the indices for over half the number of these countries do not cover the first few decades of the period under consideration.[1] It was not found possible, however, to assume that manufacturing in the countries for which indices were missing followed the same general course as in the countries for which indices were available—in fact, there were indications that production rose, on the average, at a somewhat more rapid pace in the former than in the latter. In order that the world index should be fully representative, it was found necessary to estimate the general movement of manufacturing production both in the countries for which no indices were available and, in other countries, over periods not covered by the indices. While the information thus secured was not considered exact enough to warrant its inclusion in index form for the countries concerned, its utilization is thought to have rendered the world index more accurate than if it had been calculated from the indices shown alone.

Method of weighting

The world index was calculated on a 1925–29 basis; the figures with 1913 as basis (in Tables I–III) were converted from 1925–29. The weights attributed to each country are necessarily rough. In the main the weights employed in *World Production and Prices* were used.[2] The following details from the description of the method of computation may be quoted:

"The weights . . . are based on a detailed comparative study of industrial censuses, where available, or other relevant information relating to the period 1925–29. The criterion employed has been the net value of industrial production (value added in the process of manufacture). . . The net value of production is officially recorded for certain of the countries considered. For the others it had to be estimated indirectly on the basis of detailed comparisons between their statistics for quantity of output and number of workers in their different industries and those of reasonably comparable countries . . . The results of these comparisons between

---

world, covering the period 1928–1938, was published regularly in the statistical tables of the *Vierteljahrshefte zur Konjunkturforschung* (Teil B).

[1] Nevertheless, the indices available refer to the most important industrial countries and thus cover a high percentage of the world's industry (in the inter-war period 97 %).

[2] *Cf.* vol. 1935/36, pages 21–22.

pairs of countries were further adjusted by means of various cross-comparisons. . . . "

One reason for the adjustments made with the aid of such comparisons was that the recorded production values do not always correctly reflect the relative importance of the countries concerned in the world's manufacturing industry. In particular this is true of countries in which prices are raised by means of high protective tariffs.

SCHEDULE OF WEIGHTS USED FOR INDEX OF MANUFACTURING

(Averages for 1925–1929)

	This enquiry	*World Production and Prices*
United States	42.5	45.0
Germany (incl. Saar)[a]	11.5	12.0
United Kingdom	9.5	10.0
France[a]	6.6	8.0
U.S.S.R.[a]	4.0	5.0
Italy	3.3	3.4
Japan	2.5	2.6
Canada	2.4	2.5
Belgium	1.9	2.0
Czechoslovakia	1.6	1.7
Australia	1.4	[c]
India	1.2	[c]
Netherlands	1.2	1.3
Sweden	1.0	1.1
Spain	1.0	1.1
Poland	0.8	0.8
Switzerland	0.7	[c]
Austria	0.6	0.7
Denmark	0.5	0.6
Finland	0.4	0.4
Hungary	0.4	0.4
Union of South Africa	0.4	[c]
New Zealand	0.3	0.3
Roumania	0.3	0.3
Norway	0.3	0.3
Chile	0.2	0.2
Greece	0.2	0.2
Latvia	0.1	[c]
Estonia	0.1	0.1
All other countries	3.1[b]	[c]
Total	100	100

[a] Approximate weights for the 1913 territories of these countries were: Germany, 12.7; France, 6.0; Russia, 4.9.

[b] Of which the Argentine, 0.6; Mexico, 0.25; Yugoslavia, 0.25; Brazil, 0.2; China, 0.3; all others 1.5.

[c] Not included.

In the present volume, the weights attributed to three countries in *World Production and Prices* were revised on the basis of more recent information: those for France and the U.S.S.R. were reduced, and that for Germany slightly increased. Further, weights were estimated not only for Australia, India, Switzerland and the Union of South Africa—countries not included in the world index given in *World Production and Prices*—but also for countries concerning which no

indices proper are available. Owing to the inclusion of these countries, the percentage weights attributed to the countries considered in *World Production and Prices* underwent a reduction of about 6.4%. The table on page 128 shows how the final schedule of weights compares with that in the publication just mentioned.

It should be observed, however, that these weights were in principle applied only over periods when the national territories of the countries concerned were the same as in 1925–29. While, as mentioned above, the national indices are constructed so as not to be affected by changes in territory,[1] logic demands that *the weights attributed to* any country be modified when that country undergoes territorial change, so as to represent the scope of manufacturing in the territory in question during the base period. Actually, the only modification in weights made on this account were those resulting from the change between 1913 and 1920 in the territory of Germany, France and Russia (*cf.* footnote *a* to the schedule); other changes (such as the exclusion of Ireland from the territory of the United Kingdom in 1923) were disregarded as being of no consequence for the movement of the world index.

[1] *Cf.* page 125.

TABLE I. INDICES OF MANUFACTURING ACTIVITY

Base: 1913 = 100

Period	World	United States	Germany	United Kingdom	France[a]	Russia U.S.S.R.[b]	Italy[a]
1871–75	22.4	14.8	20.5	49.0	.	.	.
1876–80	24.5	17.1	22.0	50.0	.	.	.
1881–85	30.4	24.3	26.8	57.3	41.3	(18.8)	26.8
1886–90	36.8	32.0	33.5	61.3	44.0	23.8	36.5
1891–95	42.6	37.5	40.2	64.6	50.3	33.0	43.2
1896–1900	53.6	45.1	56.4	74.3	59.8	49.0	55.2
1901–05	67.0	65.5	68.8	77.3	63.8	61.4	67.0
1906–10	79.9	78.7	80.8	83.1	80.4	72.3	93.4
1911–13	94.3	91.6	97.4	93.1	96.8	94.1	99.7
1920	93.2	122.2	59.0	92.6	70.4	12.8	95.2
1921–25	103.2	129.3	77.7	76.4	95.3	41.1	124.7
1926–29	138.9	163.6	112.2	92.6	130.6	134.9	170.1
1930	136.9	148.0	101.6	91.3	139.9	235.5	164.0
1931–35	128.2	117.8	90.6	92.3	113.7	393.2	139.7
1936–38	185.0	166.6	138.3	121.5	118.2	774.3	186.3

Period	Canada	Belgium[a]	Japan	India	Sweden	Finland	New Zealand	Other countries
1871–75	.	.	.	.	11.1	.	.	.
1876–80	.	.	.	.	13.4	.	.	.
1881–85	(16.9)	37.3	.	.	17.6	(15)	.	.
1886–90	(22.7)	42.4	.	.	22.6	24.9	.	.
1891–95	(28.3)	45.9	(15)	.	33.2	32.2	.	.
1896–1900	(33.7)	57.8	(28)	53.5	57.8	51.0	.	.
1901–05	46.3	63.9	(44)	68.9	70.0	57.8	(52.2)	.
1906–10	70.1	78.3	64.4	85.0	84.0	73.4	(74.6)	.
1911–13	92.7	98.2	93.1	97.1	94.6	92.8	(91.6)	.
1920	99.1	67.3	176.0	118.4	97.2	87.4	125.0	84.5
1921–25	103.9	86.6	203.3	122.1	96.3	117.8	130.0	101.1
1926–29	147.4	130.6	289.8	146.6	134.3	187.8	154.7	132.8
1930	147.5	120.0	294.8	144.7	154.1	179.5	127.3	136.2
1931–35	122.8	101.0	365.8	174.8	161.0	196.4	148.2	126.9
1936–38	163.6	117.3	528.9	230.4	223.0	289.4	216.0	162.9

[a] Mining is included in the indices for France up to 1898, for Belgium up to 1902 and for Italy up to 1913.

[b] From 1920, U.S.S.R.

Note. The countries are arranged in the order of the relative magnitude of their manufacturing industry in 1913. (This applies also to Table II.) Where total manufacturing production of the countries concerned was affected by a change in territory, the original indices for the periods in question were "linked" to one another.

Table II. INDICES OF MANUFACTURING ACTIVITY

Base: 1913 = 100

Period	Poland	Czecho-slovakia	Australia	Spain[a]	Nether-lands[a]	Switzer-land[ab]	Austria[a]	Hungary
1920	35.1	69.8	100.5	94.0	.	(94.5)	48.0	.
1921–25	62.4	110.8	125.9	104.5	122.4	(84.8)	79.6	68.8
1926–29	76.8	155.5	146.0	126.2	167.3	(105.1)	108.8	101.0
1930	75.8	155.5	129.1	131.5	188.8	(107.7)	100.0	108.1
1931–35	63.8	116.2	142.9	117.0	167.9	(77.1)	80.8	105.7
1936–38	95.4	149.5	188.2	.	196.8	(79.2)	177.7	143.3

Period	Den-mark	Rou-mania	Norway	Chile	Latvia[ac]	Estonia[g]	Union of South Africa[d]	Greece[b]
1920	127.8	.	101.9	.	.	47.8	312.1	.
1921–25	121.4	75.0	97.2	[e]79.5	[e]33.5	75.5	342.9	292.8
1926–29	135.3	122.8	115.1	127.7	67.2	103.0	477.0	345.6
1930	160.6	132.5	132.3	156.7	99.1	105.3	.	363.2
1931–35	160.0	144.3	123.2	147.7	100.3	95.1	[f]662.9	398.3
1936–38	199.1	178.6	164.7	196.5	145.0	136.0	998.8	497.1

[a] Mining is included in the indices for the following countries and periods: Netherlands, 1913–1921; Spain, 1928–1938; Latvia, 1910, 1922–1928; Switzerland, 1913–1928; Austria, 1913–1928.

[b] Uncertain figures.

[c] Base: 1910 = 100.

[d] Base: 1911 = 100.

[e] 1922–25.

[f] 1932–1935.

[g] Base: 1925–29 = 100.

Note. The figures refer to those countries included in the last column of the preceding table for which annual indices are available. See also Note to Table I.

Table III. ANNUAL INDICES OF MANUFACTURING PRODUCTION

Base: 1913 = 100

Year	World	United States	Germany	United Kingdom	France[a]	Russia U.S.S.R.[b]	Italy[a]	Japan
1870	19.5	12.7	16.3	44.0	31.7	(13)	17.0	·
1871	21.1	13.3	19.8	46.7	·	·	·	·
1872	23.3	15.8	21.7	48.0	·	·	·	·
1873	23.1	15.4	21.0	49.7	·	·	·	·
1874	23.1	14.9	19.8	51.2	·	·	·	·
1875	22.5	14.4	20.0	49.6	·	·	·	·
1876	23.3	14.4	21.7	50.1	·	·	·	·
1877	23.8	15.3	20.1	51.6	·	·	·	·
1878	24.4	16.3	22.6	48.4	·	·	·	·
1879	24.8	18.3	23.7	45.6	·	·	·	·
1880	26.9	21.4	21.8	54.3	38.6	(17)	23.0	·
1881	28.4	23.5	23.9	54.2	(39.4)	·	(23.9)	·
1882	30.4	24.9	25.3	58.7	(41.6)	·	(24.6)	·
1883	31.5	25.5	27.3	59.9	(43.5)	·	(26.0)	·
1884	30.6	24.0	28.4	57.9	(41.5)	·	(28.1)	·
1885	30.3	23.8	29.2	55.8	(40.3)	20.5	(31.2)	·
1886	32.1	28.9	29.6	54.5	(39.7)	20.7	(29.9)	·
1887	34.5	30.5	32.0	57.5	(41.9)	24.4	(36.2)	·
1888	36.1	31.0	33.0	62.2	(43.9)	22.0	(38.2)	·
1889	39.2	33.3	35.7	66.7	(45.0)	26.0	(38.2)	·
1890	41.1	36.1	37.3	65.8	49.3	26.1	40.0	·
1891	41.7	37.0	38.2	65.9	(49.3)	28.1	(37.8)	·
1892	42.2	40.0	36.8	62.6	(49.2)	29.7	(39.4)	·
1893	40.9	35.2	39.3	62.1	(49.2)	34.3	(38.9)	·
1894	42.2	34.2	42.0	64.8	(51.4)	35.0	(51.2)	·
1895	46.4	40.9	44.9	67.4	(52.3)	37.8	(48.6)	·
1896	47.4	37.3	50.3	71.4	(54.4)	40.9	(48.0)	·
1897	49.8	40.4	53.1	71.4	(56.8)	43.9	(50.8)	·
1898	54.3	45.9	57.7	74.7	59.0	48.4	(55.0)	·
1899	58.3	50.5	60.1	77.4	64.6	53.7	(66.0)	·
1900	58.7	51.5	60.9	76.7	64.3	58.3	56.0	·

For footnotes, see page 135.
Figures for 1901–1938, see pages 134–135.

Note. The countries are arranged in the order of the relative magnitude of their manufacturing industry in 1925–29. Where total manufacturing production of the countries concerned was affected by a change in territory, the original indices for the periods in question were "linked" to one another.

Table III. ANNUAL INDICES OF MANUFACTURING PRODUCTION

(*Continued*)

Base: 1913 = 100

Year	Canada	Belgium[a]	Australia	India	Sweden	Finland	Norway[a]	New Zealand
1870	9.1	27.4	·	·	8.1	·	·	·
1871	·	·	·	·	9.0	·	·	·
1872	·	·	·	·	9.7	·	·	·
1873	·	·	·	·	10.5	·	·	·
1874	·	·	·	·	12.8	·	·	·
1875	·	·	·	·	13.8	·	·	·
1876	·	·	·	·	14.1	·	·	·
1877	·	·	·	·	13.8	·	·	·
1878	·	·	·	·	13.2	·	·	·
1879	·	·	·	·	12.5	·	·	·
1880	13.9	34.2	·	·	13.4	·	·	·
1881	·	(35.0)	·	·	15.2	·	·	·
1882	·	(37.4)	·	·	17.0	·	·	·
1883	·	(38.1)	·	·	17.9	·	·	·
1884	·	(38.6)	·	·	18.7	·	·	·
1885	·	(37.2)	·	·	19.5	21.6	·	·
1886	·	(37.8)	·	·	20.2	21.0	·	·
1887	·	(40.4)	·	·	21.3	23.0	·	·
1888	·	(43.1)	·	·	21.0	22.3	·	·
1889	·	(46.0)	·	·	24.1	28.8	·	·
1890	25.6	44.6	·	·	26.3	29.4	·	·
1891	·	(43.2)	·	·	27.0	31.2	·	·
1892	·	(44.1)	·	·	29.5	31.0	·	·
1893	·	(44.9)	·	·	32.2	28.2	·	·
1894	·	(48.2)	·	·	36.6	32.4	·	·
1895	·	(49.1)	·	·	40.8	38.0	·	·
1896	·	(57.2)	·	47.6	50.2	44.0	·	·
1897	·	(58.3)	·	51.5	55.4	49.1	·	·
1898	·	59.3	·	53.4	60.0	51.4	·	·
1899	·	57.1	·	55.3	60.1	54.1	·	·
1900	36.3	57.1	·	59.5	63.5	56.1	·	38.7

For footnotes, see page 135.
Figures for 1901–1938, see pages 134–135.

Table III. ANNUAL INDICES OF MANUFACTURING PRODUCTION
(*Continued*)
Base: 1913 = 100

Year	World	United States	Germany	United Kingdom	France[a]	Russia U.S.S.R.[b]	Italy[a]	Japan
1901	60.8	58.1	61.7	75.7	58.5	58.5	62.0	·
1902	65.6	65.2	66.0	76.6	62.5	59.8	66.0	·
1903	67.1	66.7	67.7	76.4	63.1	62.5	65.0	·
1904	67.4	62.6	72.9	75.7	67.0	65.0	69.0	·
1905	74.2	74.8	75.5	81.9	67.9	61.4	73.0	61.0
1906	77.7	80.3	79.9	84.4	73.1	66.2	84.0	56.2
1907	80.1	81.4	79.5	85.1	78.4	69.2	93.0	65.8
1908	73.5	67.2	76.6	79.7	77.6	70.6	94.0	61.8
1909	80.6	79.8	80.9	81.2	83.4	72.1	97.0	64.2
1910	86.3	84.8	86.9	85.0	89.6	83.2	99.0	73.8
1911	87.8	81.4	94.5	88.2	91.4	89.3	96.0	84.8
1912	95.3	93.4	97.7	91.0	99.0	92.9	103.0	94.6
1913	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1920	93.2	122.2	59.0	92.6	70.4	12.8	95.2	176.0
1921	81.1	98.0	74.7	55.1	61.4	23.3	98.4	167.1
1922	99.5	125.8	81.8	73.5	87.8	28.9	108.1	197.9
1923	104.5	141.4	55.4	79.1	95.2	35.4	119.3	206.4
1924	111.0	133.2	81.8	87.8	117.9	47.5	140.7	223.3
1925	120.7	148.0	94.9	86.3	114.3	70.2	156.8	221.8
1926	126.5	156.1	90.9	78.8	129.8	100.3	162.8	264.9
1927	134.5	154.5	122.1	96.0	115.6	114.5	161.2	270.0
1928	141.8	162.8	118.3	95.1	134.4	143.5	175.2	300.2
1929	153.3	180.8	117.3	100.3	142.7	181.4	181.0	324.0
1930	137.5	148.0	101.6	91.3	139.9	235.5	164.0	294.9
1931	122.5	121.6	85.1	82.4	122.6	293.9	145.1	288.1
1932	108.4	93.7	70.2	82.5	105.4	336.1	123.3	309.1
1933	121.7	111.8	79.4	88.3	119.8	363.2	133.2	360.7
1934	136.4	121.6	101.8	100.2	111.4	437.0	134.7	413.5
1935	154.5	140.3	116.7	107.9	109.1	535.7	162.2	457.8
1936	178.1	171.0	127.5	119.1	116.3	693.3	169.2	483.9
1937	195.8	185.8	138.1	127.8	123.8	772.2	194.5	551.0
1938	182.7	143.0	149.3	117.6	114.6	857.3	195.2	552.0

For footnotes, see page 135.

Table III. ANNUAL INDICES OF MANUFACTURING PRODUCTION

(*Continued*)

Base: 1913 = 100

Year	Canada	Belgium[a]	Australia	India	Sweden	Finland	Norway[a]	New Zealand
1901	(40.7)	50.2	·	63.1	64.2	51.2	·	·
1902	(42.9)	63.9	·	65.0	66.7	52.1	·	·
1903	(44.8)	67.1	·	68.0	70.7	60.9	·	·
1904	(51.2)	68.2	·	70.9	73.9	61.8	·	·
1905	52.0	70.3	·	77.7	74.8	63.2	·	65.6
1906	(56.2)	75.2	·	78.6	81.0	65.3	·	·
1907	(71.0)	76.8	·	82.5	83.6	65.4	·	·
1908	(72.7)	72.6	66.1	82.5	84.6	71.0	·	·
1909	(70.5)	80.8	74.0	92.2	80.5	77.1	65.9	·
1910	80.0	85.9	82.6	89.3	90.4	88.1	75.5	83.1
1911	(87.3)	92.6	89.0	90.3	90.5	87.1	78.6	·
1912	(90.8)	101.9	89.6	101.0	93.3	91.3	92.5	·
1913	100.0	100.0	100.0	100.0	100.0	100.0	100.0	(100.0)
1920	99.1	67.3	100.5	118.4	97.2	87.4	101.9	125.0
1921	89.4	55.8	115.5	112.6	74.7	88.5	71.8	112.2
1922	99.0	80.6	121.7	116.5	87.2	104.5	90.0	140.4
1923	108.3	92.1	120.2	116.5	96.8	119.7	99.8	130.1
1924	106.4	104.4	131.1	133.0	109.9	123.6	107.2	131.4
1925	116.5	100.0	141.2	132.0	112.7	152.5	117.0	135.9
1926	132.2	117.4	144.3	144.7	123.5	164.7	104.2	145.0
1927	141.0	127.7	146.8	151.5	126.8	186.1	106.5	155.3
1928	153.5	137.4	149.3	133.0	136.0	202.6	118.2	154.6
1929	162.7	139.9	143.4	157.3	150.8	197.6	131.2	163.7
1930	147.5	120.0	129.1	144.7	154.1	179.5	132.3	127.3
1931	128.2	108.2	120.2	155.3	148.3	158.1	102.1	147.8
1932	108.5	94.2	128.5	155.3	140.5	164.7	121.5	129.6
1933	108.6	95.4	141.7	167.7	146.7	189.4	123.6	134.1
1934	127.7	95.6	154.7	190.2	175.7	228.8	127.9	156.9
1935	141.0	111.8	169.2	205.4	193.6	241.1	141.0	172.8
1936	154.2	116.8	182.0	216.6	208.1	268.1	154.9	204.6
1937	174.8	133.1	188.9	234.9	228.8	300.1	169.9	216.0
1938	161.8	102.1	193.3	239.7	232.2	300.1	169.2	227.4

[a] Mining is included in the indices for the following countries and periods: France, 1870–1898; Italy, 1870–1913; Belgium, 1870–1902; Norway, 1909–1938.
[b] From 1920, U.S.S.R.

Table IV. ANNUAL INDICES OF MANUFACTURING PRODUCTION

Base: 1913 = 100

Year	Czecho-slovakia	Nether-lands[a]	Spain[a]	Poland	Switzer-land[ab]	Austria[a]	Denmark
1913	100.	100.	100.	100.	100.	100.	100.
1920	69.8	·	94.0	35.1	(94.5)	48.0	127.8
1921	100.0	109.9	96.4	46.8	(71.4)	64.0	106.9
1922	91.8	115.2	96.4	73.9	(76.9)	76.0	112.6
1923	96.7	117.4	107.1	71.2	(86.7)	81.0	125.1
1924	129.0	127.5	106.0	56.8	(93.3)	82.0	136.2
1925	136.4	141.8	116.7	63.1	(95.5)	95.0	126.4
1926	130.4	147.4	121.4	58.9	(90.0)	95.0	126.4
1927	153.8	159.9	131.0	76.1	(103.2)	106.0	127.9
1928	166.0	174.5	119.0	86.1	(109.8)	116.0	138.3
1929	171.8	187.3	133.3	85.9	(117.5)	118.0	148.7
1930	155.5	188.8	131.5	75.8	(107.7)	100.0	160.6
1931	138.5	174.2	124.4	64.4	(89.0)	82.0	148.7
1932	107.6	156.6	118.0	52.7	(76.1)	72.0	135.2
1933	101.4	164.8	112.6	59.4	(73.2)	74.0	156.1
1934	113.4	171.9	114.2	68.2	(75.0)	82.0	174.0
1935	120.1	172.1	116.0	74.2	(72.3)	94.0	185.8
1936	138.3	182.4	58.0	83.3	(72.7)	101.0	193.3
1937	164.8	203.9	58.0	97.6	(82.4)	125.0	202.1
1938	145.5	204.1	58.0	105.2	(82.4)	127.0	202.1

For footnotes, see Table II.

Note. The figures refer to those countries included in the last column of Table I for which annual indices are available (with the exception of Estonia, shown in Table VI). See also Note to Table III.

Table IV. ANNUAL INDICES OF MANUFACTURING PRODUCTION

(*Continued*)

Base: 1913 = 100

Year	Hungary	Union of South Africa	Roumania	Chile	Greece[b]	Latvia[a]
1913	100.	[d]100.	100.	100.	100.	[c]100.
1920	·	312.1	·	·	·	·
1921	64.0	306.4	47.2	·	260.7	·
1922	80.0	310.7	73.2	72.7	296.4	20.0
1923	56.6	335.0	73.2	77.9	275.0	33.3
1924	66.6	358.6	89.0	77.9	300.0	38.5
1925	76.7	403.6	92.2	89.6	322.1	42.2
1926	83.4	419.3	103.7	111.0	312.2	48.9
1927	98.7	460.7	118.8	115.8	348.4	54.8
1928	108.0	495.7	131.8	127.7	362.2	74.0
1929	113.9	532.1	136.9	156.3	359.6	91.0
1930	108.1	·	132.5	156.7	363.2	99.1
1931	98.6	·	140.6	116.3	370.9	81.2
1932	91.3	497.1	111.9	132.9	342.2	75.0
1933	101.1	614.3	136.2	146.2	377.4	101.8
1934	114.4	714.3	167.8	159.4	423.7	118.7
1935	123.1	825.7	165.2	183.6	477.3	125.0
1936	136.6	945.0	175.0	188.6	461.4	130.3
1937	150.0	984.3	182.9	196.6	492.9	146.6
1938	143.3	1067.1	177.9	204.2	537.1	158.0

For footnotes, see Table II.

Table V. ANNUAL INDICES OF MANUFACTURING PRODUCTION

Base: 1925–1929 = 100

Year	World	United States	Germany	United Kingdom	France[a]	Russia U.S.S.R.[b]	Italy[a]	Japan
1870	14.4	7.9	15.0	48.2	24.9	10.7	10.2	·
1871	15.6	8.3	18.2	51.2	·	·	·	·
1872	17.2	9.9	20.0	52.6	·	·	·	·
1873	17.1	9.6	19.3	54.4	·	·	·	·
1874	17.1	9.3	18.2	56.1	·	·	·	·
1875	16.6	9.0	18.4	54.3	·	·	·	·
1876	17.2	9.0	20.0	54.9	·	·	·	·
1877	17.6	9.5	18.5	56.5	·	·	·	·
1878	18.0	10.2	20.8	53.0	·	·	·	·
1879	18.3	11.4	21.8	49.9	·	·	·	·
1880	19.9	13.3	20.1	59.5	30.3	13.9	13.7	·
1881	21.0	14.7	22.0	59.4	(30.9)	·	(14.3)	·
1882	22.5	15.5	23.3	64.3	(32.7)	·	(14.7)	·
1883	23.3	15.9	25.1	65.6	(34.1)	·	(15.5)	·
1884	22.6	15.0	26.1	63.4	(32.6)	·	(16.8)	·
1885	22.4	14.8	26.9	61.1	(31.6)	16.8	(18.6)	·
1886	23.7	18.0	27.2	59.7	(31.2)	17.0	(17.9)	·
1887	25.5	19.0	29.4	63.0	(32.9)	20.0	(21.6)	·
1888	26.7	19.3	30.4	68.1	(34.5)	18.0	(22.8)	·
1889	29.0	20.8	32.8	73.1	(35.3)	21.3	(22.8)	·
1890	30.4	22.5	34.3	72.1	38.7	21.4	23.9	·
1891	30.8	23.1	35.1	72.2	(38.7)	23.0	(22.6)	·
1892	31.2	24.9	33.9	68.6	(38.6)	24.3	(23.5)	·
1893	30.2	21.9	36.2	68.0	(38.6)	28.1	(23.2)	·
1894	31.2	21.3	38.6	71.0	(40.3)	28.7	(30.6)	·
1895	34.3	25.5	41.3	73.8	(41.1)	31.0	(29.0)	·
1896	35.0	23.3	46.3	78.2	(42.7)	33.5	(28.7)	·
1897	36.8	25.2	48.9	78.2	(44.6)	36.0	(30.3)	·
1898	40.1	28.6	53.1	81.8	46.3	39.7	32.9	·
1899	43.1	31.5	55.3	84.8	50.7	44.0	39.4	·
1900	43.4	32.1	56.0	84.0	50.5	47.8	33.5	·

For footnotes, see Table III.
Cf. Note to Table III.

Table V. ANNUAL INDICES OF MANUFACTURING PRODUCTION

(*Continued*)

Base: 1925–1929 = 100

Year	Canada	Belgium[a]	Australia	India	Sweden	Finland	Norway[a]	New Zealand
1870	6.4	22.0	·	·	6.2	·	·	·
1871	·	·	·	·	6.9	·	·	·
1872	·	·	·	·	7.5	·	·	·
1873	·	·	·	·	8.1	·	·	·
1874	·	·	·	·	9.8	·	·	·
1875	·	·	·	·	10.6	·	·	·
1876	·	·	·	·	10.8	·	·	·
1877	·	·	·	·	10.6	·	·	·
1878	·	·	·	·	10.2	·	·	·
1879	·	·	·	·	9.6	·	·	·
1880	9.8	27.5	·	·	10.3	·	·	·
1881	·	(28.1)	·	·	11.7	·	·	·
1882	·	(30.0)	·	·	13.1	·	·	·
1883	·	(30.6)	·	·	13.8	·	·	·
1884	·	(31.0)	·	·	14.4	·	·	·
1885	·	(29.9)	·	·	15.0	12.0	·	·
1886	·	(30.4)	·	·	15.5	11.6	·	·
1887	·	(32.4)	·	·	16.4	12.7	·	·
1888	·	(34.6)	·	·	16.2	12.3	·	·
1889	·	(36.9)	·	·	18.5	15.9	·	·
1890	18.1	35.8	·	·	20.2	16.3	·	·
1891	·	(34.7)	·	·	20.8	17.3	·	·
1892	·	(35.4)	·	·	22.7	17.2	·	·
1893	·	(36.1)	·	·	24.8	15.6	·	·
1894	·	(38.7)	·	·	28.2	17.9	·	·
1895	·	(39.4)	·	·	31.4	21.0	·	·
1896	·	(45.9)	·	33.1	38.6	24.3	·	·
1897	·	(46.8)	·	35.8	42.6	27.2	·	·
1898	·	47.6	·	37.2	46.2	28.4	·	·
1899	·	45.9	·	38.5	46.2	29.9	·	·
1900	25.7	45.9	·	41.4	48.8	31.0	·	25.6

For footnotes, see Table III.

Table V. ANNUAL INDICES OF MANUFACTURING PRODUCTION

(*Continued*)

Base: 1925–1929 = 100

Year	World	United States	Germany	United Kingdom	France[a]	Russia U.S.S.R.[b]	Italy[a]	Japan
1901	44.9	36.2	56.8	82.9	45.9	48.0	37.0	·
1902	48.5	40.6	60.7	83.9	49.1	49.0	39.4	·
1903	49.6	41.6	62.3	83.7	49.5	51.2	38.8	·
1904	49.8	39.0	67.1	82.9	52.6	53.3	41.2	·
1905	54.8	46.6	69.5	89.7	53.3	50.3	43.6	22.1
1906	57.4	50.1	73.5	92.4	57.4	54.3	50.2	20.3
1907	59.2	50.7	73.1	93.2	61.5	56.7	55.6	23.8
1908	54.3	41.9	70.5	87.3	60.9	57.9	56.2	22.4
1909	59.6	49.8	74.4	88.9	65.5	59.1	57.9	23.2
1910	63.8	52.9	79.9	93.1	70.3	68.2	59.1	26.7
1911	64.9	50.7	86.9	96.6	71.7	73.2	57.3	30.7
1912	70.4	58.2	89.9	99.7	77.7	76.1	61.5	34.3
1913	73.9	62.3	92.0	109.5	78.5	82.0	59.7	36.2
1920	68.9	76.2	54.3	101.4	55.3	10.5	56.9	63.7
1921	59.9	61.1	68.7	60.4	48.2	19.1	58.8	60.5
1922	73.5	78.4	75.3	80.5	68.9	23.7	64.6	71.7
1923	77.2	88.2	51.0	86.6	74.7	29.0	71.3	74.7
1924	82.0	83.0	75.3	96.2	92.5	38.9	84.1	80.8
1925	89.2	92.3	87.3	94.5	89.7	57.5	93.7	80.3
1926	93.5	97.3	83.6	86.3	101.9	82.2	97.3	95.9
1927	99.4	96.3	112.3	105.1	90.7	93.9	96.3	97.8
1928	104.8	101.5	108.8	104.2	105.5	117.6	104.7	108.7
1929	113.3	112.7	107.9	109.9	112.0	148.7	108.1	117.3
1930	101.6	92.3	93.5	100.0	109.8	193.0	98.0	106.7
1931	90.5	75.8	78.3	90.3	96.2	240.9	86.7	104.3
1932	80.1	58.4	64.6	90.4	82.7	275.5	73.7	111.9
1933	89.9	69.7	73.0	96.7	94.0	297.7	79.6	130.6
1934	100.8	75.8	93.7	109.7	87.4	358.2	80.5	149.7
1935	114.2	87.5	107.4	118.2	85.6	439.1	96.9	165.7
1936	131.6	106.6	117.3	130.4	91.3	568.3	101.1	175.2
1937	144.7	115.8	127.0	140.0	97.2	633.0	116.2	199.5
1938	135.0	89.2	137.4	128.8	90.0	702.7	116.6	199.9

For footnotes, see Table III.

Table V. ANNUAL INDICES OF MANUFACTURING PRODUCTION

(*Continued*)

Base: 1925–1929 = 100

Year	Canada	Belgium[a]	Australia	India	Sweden	Finland	Norway[a]	New Zealand
1901	(28.8)	40.3	·	43.9	49.4	28.3	·	·
1902	(30.4)	51.3	·	45.2	51.3	28.8	·	·
1903	(31.7)	53.9	·	47.3	54.4	33.7	·	·
1904	(36.3)	54.8	·	49.3	56.8	34.2	·	·
1905	36.8	56.5	·	54.1	57.5	35.0	·	43.5
1906	(39.8)	60.4	·	54.7	62.3	36.1	·	·
1907	(50.3)	61.7	·	57.4	64.3	36.2	·	·
1908	(51.5)	58.3	45.6	57.4	65.1	39.3	·	·
1909	(50.0)	64.9	51.0	64.2	61.9	42.7	57.1	·
1910	56.7	69.0	57.0	62.1	69.5	48.8	65.4	55.1
1911	(61.8)	74.4	61.4	62.8	69.6	48.2	68.1	·
1912	(64.3)	81.8	61.8	70.3	71.8	50.5	80.2	·
1913	70.8	80.3	69.0	69.6	76.9	55.3	86.7	(66.3)
1920	70.2	54.1	69.3	82.4	74.8	48.4	88.3	82.8
1921	63.3	44.8	79.7	78.4	57.5	49.0	62.2	74.4
1922	70.1	64.7	83.9	81.1	67.1	57.8	78.0	93.0
1923	76.7	74.0	82.9	81.1	74.5	66.2	86.5	86.2
1924	75.4	83.9	90.4	92.6	84.5	68.4	92.9	87.1
1925	82.5	80.3	97.4	91.9	86.7	84.4	101.4	90.1
1926	93.6	94.3	99.5	100.7	95.0	91.1	90.3	96.1
1927	99.9	102.6	101.2	105.4	97.5	103.0	92.3	102.9
1928	108.7	110.4	103.0	92.6	104.6	112.1	102.4	102.5
1929	115.2	112.4	98.9	109.5	116.0	109.4	113.7	108.5
1930	104.5	96.4	89.0	100.7	118.5	99.3	114.6	84.4
1931	90.8	86.9	82.9	108.1	114.1	87.5	88.5	97.9
1932	76.8	75.7	88.6	108.1	108.1	91.1	105.3	85.9
1933	76.9	76.6	97.7	116.7	112.8	104.8	107.1	88.9
1934	90.4	76.8	106.7	132.4	135.2	126.6	110.8	104.0
1935	99.9	89.8	116.7	143.0	148.9	133.4	122.2	114.5
1936	109.2	93.8	125.5	150.7	160.1	148.4	134.2	135.6
1937	123.8	106.9	130.3	163.5	176.0	166.1	147.2	143.1
1938	114.6	82.0	133.3	166.8	178.6	166.1	146.6	150.7

For footnotes, see Table III.

Table VI. ANNUAL INDICES OF MANUFACTURING PRODUCTION

Base: 1925–1929 = 100

Year	Czecho-slovakia	Nether-lands[a]	Spain[a]	Poland	Switzer-land[ab]	Austria[a]	Denmark
1913	65.9	61.7	80.5	135.1	(96.9)	94.3	74.9
1920	46.0	·	75.6	47.4	(91.6)	45.3	95.7
1921	65.9	67.8	77.6	63.2	(69.2)	60.4	80.1
1922	60.5	71.0	77.6	99.9	(74.5)	71.7	84.3
1923	63.7	72.4	86.2	96.2	(84.0)	76.4	93.7
1924	85.0	78.6	85.3	76.8	(90.4)	77.4	102.0
1925	89.9	87.4	93.9	85.3	(92.5)	89.6	94.7
1926	86.0	90.9	97.7	79.6	(87.2)	89.6	94.7
1927	101.4	98.6	105.4	102.8	(100.0)	100.0	95.8
1928	109.4	107.6	95.7	116.4	(106.4)	109.4	103.6
1929	113.2	115.5	107.2	116.1	(113.9)	111.3	111.4
1930	102.5	116.4	105.8	102.4	(104.4)	94.3	120.3
1931	91.3	107.4	100.1	87.0	(86.2)	77.4	111.4
1932	70.9	96.5	94.9	71.2	(73.7)	67.9	101.3
1933	66.8	101.6	90.6	80.3	(70.9)	69.8	116.9
1934	74.8	106.0	91.9	92.2	(72.7)	77.4	130.3
1935	79.2	106.1	93.3	100.3	(70.1)	88.7	139.2
1936	91.2	112.5	·	112.6	(70.4)	95.3	144.8
1937	108.6	125.7	·	131.9	(79.8)	117.9	151.4
1938	95.9	125.8	·	142.2	(79.8)	119.8	151.4

For footnotes, see Table II.
Cf. Note to Table IV.

Table VI. ANNUAL INDICES OF MANUFACTURING PRODUCTION

(*Continued*)

Base: 1925–1929 = 100

Year	Hungary	Union of South Africa	Roumania	Chile	Greece	Latvia[a]	Estonia
1913	104.1	21.6	85.7	83.3	[b](29.2)	160.8	.
1920	·	67.5	·	·	·	·	47.8
1921	66.6	66.3	40.4	·	76.0	·	57.6
1922	83.2	67.2	62.7	60.5	86.4	32.2	68.5
1923	58.9	72.5	62.7	64.9	80.2	53.5	82.7
1924	69.3	77.6	76.3	64.9	87.5	61.9	80.5
1925	79.8	87.3	79.0	74.6	96.9	67.8	88.1
1926	86.8	90.7	88.9	92.4	91.0	78.6	98.0
1927	102.7	99.7	101.8	96.4	101.6	88.1	99.0
1928	112.4	107.2	112.9	106.3	105.6	119.0	108.0
1929	118.5	115.1	117.3	130.1	104.9	146.3	106.9
1930	112.5	·	113.5	130.5	105.9	159.3	105.3
1931	102.6	·	120.5	96.8	108.2	130.5	96.2
1932	95.0	107.5	95.9	110.7	99.8	120.6	81.4
1933	105.2	132.9	116.7	121.7	110.1	163.7	85.2
1934	119.0	154.5	143.8	132.7	123.6	190.8	100.9
1935	128.1	178.6	141.6	152.9	139.2	201.0	111.7
1936	142.1	204.4	150.0	157.0	134.6	209.5	124.0
1937	156.1	212.9	156.7	163.7	143.7	235.7	140.6
1938	149.1	230.8	152.4	170.0	156.6	254.0	143.5

For footnotes, see Table II.—The figure entered against 1913 for the Union of South Africa refers to 1911 and that for Latvia to 1910.

Notes Concerning the Computation of the National Indices

Australia

1908–1938. The volume of manufacturing production was estimated by applying an index of prices to an index of the gross value of production in the manufacturing industry.

As after 1918 the production values are recorded by fiscal years beginning July 1st, figures for calendar years were estimated on the assumption that production was divided equally between the first and the second half of each fiscal year.

The price index employed was calculated as the unweighted arithmetic average between the official Melbourne wholesale price index (which refers chiefly to "basic materials") and the official index of nominal wage rates for adult males (weighted average rate for Australia). This index refers to weekly wage rates. No attempt was made to adjust it for the reduction in the number of working hours per week which over the period 1914–1938 amounted to 8–9%, as prices of manufactures were undoubtedly affected to some extent by the increase in the productivity of industrial labour. This combined index, it was believed, would reflect with reasonable accuracy the effect on the prices of manufactured articles of fluctuations in the prices of raw materials and in manufacturing costs. Over the whole period the index of wholesale prices rose by 49.1% and that of wage rates by 99.9%.

All the series used were derived from the *Official Year Book of the Commonwealth of Australia.*

Austria

1913–1923. Index of total industrial production according to Wagenführ.[1] Similar figures for the manufacturing production, showing approximately the same movement, were not used, as the series indicated below refer to total industry. Wagenführ also gives indices for the years 1924–1931, but they do not agree well with those of the Austrian Business Cycle Institute (Oesterreichisches Institut für Konjunkturforschung).

1923–1925. Index of total industrial production computed by the Austrian Business Cycle Institute and published in its *Monatsberichte.*

1925–1938. Revised index of total industrial production computed by the same institute (from 1939 called Wiener Institut für Wirtschafts und Konjunktur Forschung). The figure for 1938 was estimated on the basis of monthly indices of the same series available up to September inclusive of that year, on the assumption that production during the last quarter of the year was equal to that during the third quarter.

Belgium

1870–1902. An index of the volume of total industrial production computed by Jean Dessirier[1] refers to the years 1870, 1880, 1890 and 1898–1913. Indices for the years 1881–1889 and 1891–1897 were inter-

[1] *Cf.* page 126.

polated chiefly on the basis of figures for the Belgian consumption of pig-iron. For the years beginning with 1901, a more representative index, prepared by Francois Cracco (see below), is available. It was found more appropriate, however, to link the two indices in 1902 rather than in 1901, a year in which the production of certain articles was unusually low.

1902–1920. An index of the manufacturing production was derived from the index of total industrial production by Francois Cracco[1] (*Un indice de la production industrielle en Belgique*, in *Bulletin de l'Institut des sciences economiques*, Louvain, August 1931 and later issues), after elimination of the series for mining and production in quarries. This index is weighted according to the relative importance of the products considered in the period 1907–1913.

1920–1938. The procedure was similar to that employed for 1902–1920, though use was made of a modified index by Cracco, weighted according to the relative importance of the various products in 1923–1925.

Canada

1870, 1880, 1890, 1900, 1905, 1910 and *1920–1923.* For these years gross values of the manufacturing production are recorded by industrial statistics. Those for the years 1870, 1880 and 1920–1923 refer to all establishments regardless of the number of employees, and those for 1900, 1905 and 1910 only to establishments with at least five employees, while for 1890 figures of both the series are available. After correction for these changes in coverage, an index of the gross value of production in establishments with at least five employees was calculated; finally, by application of a price index, an index of the volume of production was computed. The price index employed for the period 1870–1913 refers to wholesale prices; for later years, an index of prices of manufactured articles could be used. Source: *The Canada Year-Book.*

The averages for five-year periods from 1881 to 1900 entered in brackets in Table I were interpolated from the above indices on the assumption that the growth of production followed a "straight line."

1900–1913 (except 1905 and 1910). Figures for 1901–1904 and 1905–1909 were interpolated with the aid of data concerning the Canadian consumption of coal. The index for 1913 was assumed to bear the same relation to that for 1910 as estimated by Wagenführ.[2] (His indices refer to total industry, but a special calculation showed that exclusion of mining would not have affected the index for 1913.) Finally, indices for 1911 and 1912 were interpolated from information concerning the consumpton of coal.

1923–1938. Annual index of the volume of manufacturing production computed by the Dominion Bureau of Statistics.

Chile

1913–1927. Index of manufacturing production according to Wagenführ.[2]

[1] Actually Cracco gives two non-identical indices, one annual and one monthly. The annual index was used for the present study.

[2] *Cf.* page 126.

1927–1938. Index of manufacturing production computed by the Direccion General de Estadistica. Source: *Estadistica Chilena.*

Czechoslovakia

1913–1921. Index of manufacturing production according to Wagenführ.[1]

1921–1938. Index of industrial production calculated by Obzor Národohospodárský, after elimination of mining and electrical power production (*cf. Annuaire Statistique de la Republique Tchechoslovaque, 1935*, and later volumes). The index for 1938 had to be estimated (the relationship between the indices for the whole years 1937 and 1938 was assumed to be the same as that between the indices for the first seven months of the same years).

Denmark

1913–1927. Index of industrial production according to Wagenführ.[1]

1927–1938. The index of industrial production calculated by the Statistiske Department was linked to that mentioned above. (Source: *Statistiske Efterretninger.*

Estonia

1920–1927. Index of manufacturing production according to Wagenführ.[1]

1927–1938. An index of manufacturing production was derived by eliminating mining, quarrying and electrical power production from the index of total industrial production calculated by the Estonian Konjunktuurinstituut.

Finland

1885–1913. The movement of the manufacturing production was estimated by dividing an index of the gross value of the industrial production (in practice coming very close to that of manufacturing) by an index of wholesale prices. As no Finnish price index was available for the period up to 1912, it proved necessary to have recourse to price series of neighbouring countries: for 1885–1890 the official Swedish wholesale price index, and for 1890–1912 an index of Russian wholesale prices (*cf. Bulletin 284* of the United States Bureau of Labor Statistics). It was assumed that there was no change in prices between 1912 and 1913.

1913–1926. Gross values of manufacturing production at 1913 prices as published by the Föreningsbanken (Helsingfors) in *Unitas.*

1926–1933. Index of the volume of industrial production, as calculated by the Föreningsbanken (*Unitas*).

1933–1938. Revised index of the same bank, first published in May 1939.

France

1870–1898. For the years 1870, 1880 and 1898 Dessirier's index of total industrial production was used.[1] Annual estimates for the intervening years were interpolated with the aid of data concerning French coal consumption.

[1] *Cf.* page 126.

1898–1913. Index of the industrial production, computed for this period by the Statistique Générale de la France, after elimination of mining and building.

1913–1928. Similar index of industrial production (though with a modified scale of weights) computed by the Statistique Générale, after elimination of mining and building. In this index, it is stated, "account was taken for each industry of the contribution by Alsace and Lorraine in 1913."

1928–1938. For the period beginning with 1928 an annual,[1] more comprehensive index of the industrial production, computed by the Statistique Générale de la France is available. An index of the manufacturing production was derived from this index by eliminating mining, building and electric power generation (source: *Bulletin de la Statistique Générale,* April–June 1939, page 520).

Germany

1870–1913. An index of the manufacturing production was calculated from that of total industrial production as computed by Wagenführ[2] by elimination of mining and building.

1913–1925. Wagenführ's index of manufacturing production, adjusted as follows:

(a) An upward revision of 10% of the post-war indices had to be made, as Wagenführ allowed his index to reflect the decline in production on account of the loss of territory.[3]

(b) Building (included by Wagenführ in manufacturing) had to be eliminated. This involved a certain amount of estimation, since no separate index of building was available for the years 1920–1923.

1925–1938. Index of industrial production (averages of quarterly figures, adjusted for seasonal variations) computed by the German Institut für Konjunkturforschung in its *Vierteljahrshefte,* after elimination of mining, building and electricity generation.

Greece

1913–1925. Index of manufacturing production computed by Wagenführ.[2] His estimate for the period for 1913–1921 is admittedly a rough approximation, based on a study of George Ducas published in the *Weltwirtschaftliches Archiv* for 1927.

1925–1938. An index of manufacturing production was derived from the index of industrial production, calculated by the Conseil Supérieur Economique, by eliminating building and electric power production.

Hungary

1913. The relationship between manufacturing production in 1913 and 1922 (as of the following index) was assumed to be that calculated by Wagenführ.[2]

[1] The annual figures for the two previous periods represent annual averages of monthly indices.

[2] *Cf.* page 126.

[3] *Cf.* page 129. In calculating the world index, changes in territory have been accounted for by modification of the weights attributed to the countries concerned.

1921–1925. Index of the value of manufacturing production at stable prices (pengoes of a purchasing power prior to World War I), published in graphic form in the *Revue Hongrois de Statistique* for April 1938. The series includes electric power generation and production in other public utilities.

1925–1938. New index for manufacturing production computed by the *Ungarisches Institut fur Wirtschaftsforschung*, published in 1939 (*Bericht über die Ungarische Wirtschaftslage in den Monaten October 1938–January 1939*). Judging from the description of the index, public utilities are partly included.

India

1896–1932. Index of the manufacturing production computed by Sir David B. Meek (*Some Measures of Economic Activity in India*, published in the *Journal of the Royal Statistical Society*, London, for 1937). The index, which refers to fiscal years beginning April 1st, covers large-scale production in the following industries: (1) cotton manufacturing; (2) jute manufacturing; (3) wool manufacturing; (4) paper products; (5) breweries; and (6) iron and steel production.

1932–1938. Weighted arithmetic average of six indices representing cotton consumption and the production of jute manufactures, steel ingots, pig iron, cement and paper. (No index number of the production of cement in 1938 was available.) The indices refer to fiscal years beginning April 1st. Source: *Capital* (Calcutta) for March 17, 1938, and later dates.

Italy

1870–1913. Dessirier's index[1] of total industrial production was used for the years 1870, 1880, 1890 and 1898–1913. Indices for 1881–1889 and 1891–1897 were interpolated on the basis of data concerning Italian coal consumption.

1913–1922. Index of manufacturing production according to Wagenführ.[1]

1922–1928. The annual index of total industrial production, as calculated by the Istituto Centrale di Statistica (source: *Compendio Statistico Italiano*), was used after elimination of mining, building and gas and electricity production. For this elimination, it proved necessary to apply the weights attributed to the respective industries by the Ministerio delle Corporazioni in its index of industrial production, as information concerning the weights used by the Istituto Centrale di Statistica was not available.

1928–1938. For this period a more comprehensive index of industrial production, based on monthly figures and computed by the Ministerio delle Corporazioni was available (source: *Annuario Statistico Italiano*). An index of manufacturing production was computed as the weighted arithmetic average of certain series in this index, namely, those representing textile, metallurgical, mechanical and paper production, and from 1935 on, also chemical production.

[1] *Cf.* page 126.

Japan

1891–1905. No index of the manufacturing production was available for this period. As it proved desirable to give some indication of the movement of production back to 1891, however, a series based on data for Japan's consumption of coal was calculated for five-year periods and entered in brackets in Table I.

1905–1930. Index of manufacturing production, computed by the Nagoya Higher Commercial School (source: *Liberty of Trading Bulletin*, No. 4, Tokyo).

Among other indices available but not used for this enquiry may be mentioned the Mitsubishi index of industrial production from 1925 (*cf.* the *Monthly Circular* of the Mitsubishi Economic Research Bureau for February 1929) and similar indices for 1919–1933 published in the *Oriental Economist* (September 1934). These series do not differ greatly from that used here.

1930–1938. The official index of manufacturing production calculated by the Ministry of Commerce and Industry was used, after elimination of electric power generation.

Latvia

1910 and 1922–1929. Index of industrial production according to Wagenführ.[1]

1929–1938. Index of industrial production, calculated by the Bureau de Statistique de l'Etat Letton (*cf.* its *Bulletin* No. 12, 1937). This index does not seem to include mining, building, and generation of gas and electricity; it appears, therefore, to represent manufacturing production only.

Netherlands

1913–1921. Index of total industrial production according to Wagenführ.[1]

1921–1938. Index of manufacturing production calculated by the Centraal Bureau voor de Statistiek (published in *De Nederlandsche Konjunktuur*, Volume II, February 1939, pages 45–51).

New Zealand

1900, 1905, 1910, 1913, 1920–1928. An index of the volume of manufacturing for these years was computed by applying a price index to an index of the gross value of manufacturing production in the economic years beginning in the course of the first half of the calendar years in question (the exact dates appear to vary among the enterprises concerned). The figure for 1913 had to be estimated in this Department, since industrial returns for that year are not available. The price index applied up to 1910 was the official wholesale price index; for later years use could be made of an official index of prices of manufactured articles.[2]

[1] *Cf.* page 126.

[2] The Census and Statistics Office of New Zealand has used this index when computing the volume of manufacturing (*cf. New Zealand Official Year-Book 1933*, page 392). However, the Office applies the index to an index of "values added in

The averages for 1901–1905, 1906–1910, and 1911–1913, entered in brackets in Table I, were interpolated on the assumption that the growth of production between the years dealt with above followed a "straight line."

1928–1938. Index of the volume of manufacturing production computed by the New Zealand Census and Statistics Office. The following statement with reference to the method of computation is quoted from the *New Zealand Year Book* for 1942: "For factory industries quantity figures as of products—or of materials used—have been utilized where available, and in the case of other factory industries, a figure closely indicative of volume movements has been arrived at by applying to the cost of materials used an index of wholesale prices of the principal materials used in the industry."

Norway

1909–1913 and 1920–1938. The annual index of industrial production calculated by the Statistiske Centralbyrå was used. The Centralbyrå points out that for the years before 1927 (other than 1909 and 1916) quantitative production returns are available only for few industries. Indices of the production in other industries before 1927 were calculated chiefly on the basis of figures concerning the physical volume of production in 1909 and 1916 and on annual figures on the number of hours worked, corrected for the increase in productivity. The general index represents the weighted geometric average of the component series. Mining and quarrying production could not be excluded from the index, but gas production was deducted. Source: *Statistiske Meddelelser*, 1931, Nos. 9 and 10, and *Statistisk Årbok*, 1936 and 1940.

Poland

1913–1925. Index of manufacturing production according to Wagenführ.[1]

1925–1928. An index of total industrial production, computed by the Institut de recherches sur le mouvement des affaires et des prix (Warsaw) was modified by the elimination of mining and building. Source: *Annuaire Statistique de la République Polonaise.*

1928–1938. Revised index first published in 1938 by the above-mentioned Institute. Mining and electricity generation were eliminated. Source: *Konjunktura Gospodarcza*, Rok XI, No. 2, 1938.

Roumania

1913–1924. Index of manufacturing production according to Wagenführ.[1]

1924–1938. An index of manufacturing production has been computed by the Institutul Românesc de Conjuncturâ. The index was

---

factory production." In the present volume it is applied to an index of gross values, in accordance with the practice followed in the case of other countries, since the price movement must have been influenced by changes in the prices of raw materials as well as in manufacturing costs.

[1] *Cf.* page 126.

modified by taking into account also tobacco manufacturing, for which a separate index computed by the same Institute is available. Source: *Conjunctură Economiei Românesti.*

Russia: see *Union of Soviet Socialist Republics*

Spain

1913–1928. Index of manufacturing production according to Wagenführ.[1]

1928–1935. Index of industrial production, computed by the Banco de España. This series includes mining and the production of electrical power.

Sweden

1870–1913. An index of the manufacturing production was calculated by applying the official index of Swedish wholesale prices to an index of the recorded official gross values of manufacturing production, adjusted on account of the fact that industrial statistics were rendered more complete in 1892 and 1896.[2] Source: *Statistisk Årsbok för Sverige.*

1913–1929. The movement of the volume of Sweden's industrial production since 1913 has been calculated by the Swedish Kommerskollegium (Board of Trade). The calculation for this period is based on figures showing gross values of production in terms of 1913 prices. The index, as published, was modified so as to represent manufacturing production alone. Sources: *Statistisk Årsbok* and *Kommersiella Meddelanden.*

1929–1938. Similar procedure, utilizing a new series of the Kommerskollegium, based on gross values at 1935 prices. Source: *Kommersiella Meddelanden.*

Switzerland

No official estimate of the movement of Switzerland's manufacturing production is available. It was thought important, however, to give at least a rough idea of this movement between 1913–1938. But as the indices given are open to doubt, they have been entered in brackets in the tables.

1913–1931. Index of manufacturing production as computed by Wagenführ.[1]

1931–1938. A rough index of the volume of production was computed by applying an assumed ratio of increase in productivity (similar to that found for certain neighboring countries) to an index of man-hours worked. The last-mentioned index was computed by multiplying an index of the number of workers employed by an index of the average number of hours per worker (*cf. Year Book of Labour Statistics*, 1942, pages 50 and 73). Figures for the average number of hours per worker

[1] *Cf.* page 126.

[2] The corresponding indices computed by Wagenführ differ from those here given in that the gross values were not adjusted on account of these changes in industrial statistics.

were not available, however, over the whole period; hence it was necessary to have recourse to estimates for certain years.

Union of South Africa.

1911–1920. Figures for the gross value of industrial production are available for the calendar year 1911 and for fiscal years beginning in the course of the first half of each calendar year from 1915 onwards. The relationship between the volume of manufacturing production in 1911 and the fiscal year 1920–1921 was calculated by applying wholesale price indices for these years to the respective gross values of manufacturing.

1920–1938. Use was made of an official index of the volume of manufacturing production, computed by application of an index of the prices of manufactured articles to an index of the gross value of manufacturing (*Official Year Book of the Union of South Africa 1938*, page 910). The index includes repair work and municipal and government generation of electric energy. It refers to fiscal years beginning in the first half of the calendar years indicated.

Union of Soviet Socialist Republics—Russia

1870, 1880, Index of Russia's industrial production according to Wagenführ.[1]

1881–1885. The average for this period entered in brackets in Table I is interpolated on the assumption that the growth of production between 1880 and 1885 followed a "straight line."

1885–1913. Index of manufacturing production, calculated by the Moscow Conjuncture Institute. (*Economic Bulletin*, 1926, No. 2).

1913–1925. Index calculated from values of gross production in manufacturing industries in roubles at stable (pre-war) prices, as published in *The Five-Year Plan of the Soviet Union*, by Grigorii T. Grinko (New York, 1930). It was assumed that the index for 1913 refers to the territory of the U.S.S.R. Correction had to be made on account of the fact that, beginning with 1921, the reported gross values of production refer to fiscal years ending September 1930. The monthly indices of manufacturing production, prepared by the Moscow Conjuncture Institute, were used for this correction. The indices of that Institute appear to be less comprehensive than the index based on the above-mentioned production values, but suitable for the purpose of this adjustment.

1925–1936. Index calculated from values of gross production in large-scale industry in roubles at 1926–27 prices, according to figures published by the Central Board of National Economic Accounting of the Gosplan in *U.S.S.R. in Figures*, *Socialistitcheskoie Stroïtelstva U.R.S.S.*, *Plan*, and *Planovoïe Khoziaïstuo*. The figures differ from those published in certain other official documents. Mining and electric power generation were eliminated from this series in order to confine the index to manufacturing production.

1936–1938. The volume of manufacturing production was assumed to move parallel with that of total industrial production, as recorded in the *Statistical Year-Book of the League of Nations, 1940/41.*

[1] *Cf.* page 126.

United Kingdom

1870–1924. A study by Walter Hoffman[1] contains indices of the volume of production in various industries and in total industry as well as total industry less building. The last-mentioned index was modified so as to represent manufacturing alone (by eliminating mining and the generation of electric power).

1924, 1927–1934. Mining and the generation of electric power and gas were eliminated from the aggregate (quarterly) index of industrial production computed by the Board of Trade (see *Board of Trade Journal*, July 26th, 1928, and later issues).

1925–1926. Indices for these two years, not covered by the preceding series, were interpolated with the aid of the indices by Hoffman (see 1870–1924 above).

1934–1938. New index of manufacturing production, computed by the Board of Trade, modified by exclusion of the generation of gas and electric power.

United States

1870–1899. The index used for these years was computed by Professor Edwin Frichey of Harvard University. A full description will be presented in Professor Frichey's forthcoming monograph dealing with production in the United States over the period 1860–1914. (An earlier version of the index is shown in graphic form in Professor Frichey's book *Economic Fluctuations in the United States.*)

Among earlier computations (not used in the present enquiry) may be mentioned that by Warren M. Persons and Edmund E. Day for the period 1863–1930 (Warren M. Persons, *Forecasting Business Cycles*, New York, 1931), and that by Walter W. Stewart for 1890–1919 (*An Index Number of Production* in the *American Economic Review*, March 1921).

1899–1923. Index of manufacturing production by Solomon Fabricant (*The Output of Manufacturing Industries, 1899–1937*, New York, National Bureau of Economic Research, Inc., 1940). It will be observed that the index was linked to that for the previous period in a year of industrial census (1899). While in the overlapping period (1899–1914) the two indices agree closely in such years, they differ in the intervening years.

For the period 1920–1923 an index of manufacturing production by the Federal Reserve Board is available (*cf. Federal Reserve Bulletin* for September 1941). This index has not been revised and was not used.

1923–1938. A new index of manufacturing production computed by the Federal Reserve Board (*Federal Reserve Bulletin* for September 1941 and later issues) was used for this period. It moves in close agreement with that computed by Fabricant (see above) which is available for the whole period 1899–1937.

[1] *Wachstum und Wachstumsformen der englischen Industriewirtschaft von 1700 bis zur Gegenwart* (Probleme der Weltwirtschaft, Schriften des Instituts für Weltwirtschaft, Bd. 63).

B. STATISTICS OF INTERNATIONAL TRADE, 1871–1938

World trade in manufactured articles and primary products

In order to study trade movements over the period considered a number of computations had to be made that need only be briefly described.

Figures for the value of world trade in merchandise back to 1876 were first ascertained. Those for the earlier years in the series had partly to be estimated.[1] A special computation was then made of the trade in manufactured articles according to group IV of the International (Brussels) Classification of 1913.[2] How this computation was made will be explained later; here it may be sufficient to point out that the figures up to 1913 inclusive have to be regarded as estimates based on statistics which become less complete the farther back in time one goes. Finally, figures for "primary products" (under which term we group all goods belonging to classes I–III of the Brussels Classification) were calculated by deduction. The figures are shown in the left-hand columns of Tables VII and VIII.

These trade values, expressed in U.S. gold dollars at the "old" parity (one dollar equalling 1.50463 grammes of fine gold), are influenced by price movements and hence do not lend themselves to comparison with indices of manufacturing activity. Accordingly, values at 1913 prices were calculated with the aid of price indices for the two groups of commodities. Up to 1929 inclusive British price indices were utilised after adjustment on account of the depression of sterling in 1921–25—in the case of manufactured articles the combined import and export price index for such articles calculated in a recent study of British Trade,[3] and in the case of primary products the Sauerbeck wholesale price index.[4] But as in the 1930's the British indices became less representative of the average price movements in the world market—a result of the depreciation of sterling and the

[1] The figures for 1913 and 1924–1938 differ slightly from those in the League of Nations *Review of World Trade* (*e.g.*, vol. 1938, Annex I) in that they are more comprehensive and exclude trade in bullion and specie which in the *Review* are included in the trade of certain countries which are producers of precious metals.

[2] That classification comprises five groups:

I. Live animals
II. Articles of food and drink
III. Materials, raw or partly manufactured
IV. Manufactured articles
V. Gold and silver.

Group V is entirely excluded from the trade figures in this study which refer to merchandise only.

[3] Werner Schlote, *Entwicklung und Strukturwandlungen des englischen Aussenhandels von 1700 bis zur Gegenwart.* (Probleme der Weltwirtschaft, No. 62; Jena, Gustav Fischer, 1938).

[4] That this index is representative of primary products is shown by the fact that, during the period considered, it comes very close to an average of the import and export price indices for "Foodstuffs and live animals" and "Raw materials and semi-manufactures" in British trade, as calculated by Schlote in the study just referred to.

change in the commercial policy of the United Kingdom—the above indices were linked from 1929 to indices given in *Review of World Trade 1938* (page 61) for manufactured articles and primary products entering into world trade.

The "values at 1913 prices," and indices of the movement of actual values, quantum and price are shown in the middle and right-hand columns of Tables VII and VIII.

Trade in manufactured articles by countries

Figures were first ascertained concerning the value of trade in "manufactured articles" (or similar groups), as recorded by principal trading countries according to their various *national* classifications.[1] While these figures (not reproduced here) may reflect correctly the movement of trade in each country, they cannot be used to gauge the relative importance of different countries as importers and exporters of manufactured goods. For this purpose comparable groups of "manufactured articles" must be employed for each country.

Figures of this kind (Group IV of the International "Brussels" Classification of 1913)[2] are available for the chief trading countries over a limited number of years, usually the late 1920's and the 1930's up to 1936 or 1937. Comparison shows that over this short period the figures for each country's trade in manufactured articles according to that classification usually moved parallel with (though frequently well above or below) that according to the corresponding group in the national classification. On the somewhat doubtful assumption that the relationship was relatively stable during years for which only the "national" figures are on record,[3] approximate figures for the Brussels Classification Group have been estimated for the whole period covered by each national classification. The results thus computed are shown in Table IX, the figures in which may be compared with each other both vertically and horizontally.[4]

The figures in question and similar data collected for the inter-war period with regard to countries not included in Table IX form the basis for the estimate of world trade in manufactured articles given in Table VII.

In order to eliminate the effect of price movements, each of the series shown in Table IX were divided by the price index for manufactured articles given in Table VII. The resulting "values at 1913 prices" are shown in Table X, and, in the form of indices, in Table XI.

[1] In fact the series could not always be derived from national trade returns for all the years shown. Data for individual years at the end or the beginning of the series had, in some cases to be estimated on the basis of partial information, while in other cases minor adjustments of published figures had to be made in order to link two overlapping series of similar scope.

[2] Figures according to the new international classification elaborated by the League of Nations Committee of Statistical Experts and more suitable for international comparison was not available for a sufficient number of countries and years to be used, except as a help in estimating certain countries' trade during 1937 and 1938 according to the Brussels classification.

[3] Usually it was assumed that the trade values according to the two series up to 1913 inclusive bore the same relationship as in 1926–29.

[4] Except in the case of Austria-Hungary, the Netherlands up to 1913, and Finland (exports); *cf.* note [d] to the table.

In reality the prices of manufactured articles imported or exported by different countries do not, of course, follow the same course; it can be shown, for instance, that a relative expansion of a country's export of manufactured articles is usually accompanied by a relative decline in its export prices.[1] National import and export price indices for manufactured articles, however, are only available for a few countries and do not cover the whole period under review. Moreover, in the present study we are less concerned with changes in the quantum of trade proper than with the variations in the inflow or outlay of foreign currency that such changes reflect. The use of a common price index for different countries (and for imports and exports) is thus justified and may even be advantageous, since the various "values at 1913 prices" for each period then maintain the same mutual relationship as the actual values.

Table XII gives figures for the trade in manufactured articles from 1926 for a number of countries not considered in the preceding tables. The figures were collected in order to permit of comparison with the manufacturing indices available for these countries over the same period.

Trade in primary products by countries

Deduction of trade values for manufactured articles from those for total merchandise trade gives the trade in "primary products." Table XIII summarizes data computed in this manner for the countries considered in Table VII.[2]

Owing to differences in the price movement for various primary products it has not been thought advisable to calculate figures concerning the quantum movement by application of a common price index.

[1] *Cf. Review of World Trade*, 1938, pages 43–45.

[2] Figures for the Union of South Africa are not shown in Table XIII. Similarly, no figures relating to 1921-25 are shown.

Table VII. WORLD TRADE IN MANUFACTURED ARTICLES

Annual averages

Period	Actual values in $(000,000's) at the old parity			Value in $(000,000's) at 1913 prices Total	Indices (1913 = 100) of:		
	Imports	Exports	Total		value (in gold)	quantum	price (in gold)
1876–80	2,480	2,290	4,770	4,877	31.4	32.1	97.8
1881–85	2,810	2,600	5,410	6,065	35.7	40.0	89.2
1886–90	2,900	2,700	5,600	6,846	36.9	45.1	81.8
1891–95	2,890	2,720	5,610	6,960	37.0	45.9	80.6
1896–1900	3,370	3,230	6,600	7,285	43.5	48.0	90.6
1901–05	4,160	3,990	8,150	9,588	53.7	63.2	85.0
1906–10	5,620	5,400	11,020	11,824	72.6	77.9	93.2
1911–13	7,250	6,920	14,170	14,504	93.4	95.6	97.7
1913	7,720	7,450	15,170	15,170	100.0	100.0	100.0
1921–25	10,880	10,410	21,290	11,621	140.3	76.6	183.2
1926–29	12,920	12,400	25,320	15,825	166.9	104.3	160.0
1930	11,310	10,770	22,080	15,123	145.6	99.7	146.0
1931–35	5,380	5,130	10,510	11,449	69.3	75.5	91.8
1936–38	5,500	5,290	10,790	13,977	71.1	92.1	77.2

Note. The figures refer to group IV of the International (1913) Classification.

Table VIII. WORLD TRADE IN PRIMARY PRODUCTS

Annual averages

Period	Actual values in $(000,000's) at the old parity			Values in $(000,000's) at 1913 prices Total	Indices (1913 = 100) of:		
	Imports	Exports	Total		value (in gold)	quantum	price (in gold)
1876–80	4,580	3,720	8,300	7,905	32.8	31.2	105
1881–85	4,890	4,160	9,050	9,628	35.7	38.0	94
1886–90	4,990	4,260	9,250	11,280	36.5	44.5	82
1891–95	5,500	4,650	10,150	13,013	40.1	51.4	78
1896–1900	6,440	5,460	11,900	15,256	47.0	60.2	78
1901–05	7,780	6,920	14,700	17,927	58.0	70.8	82
1906–10	10,030	8,920	18,950	21,056	74.8	83.1	90
1911–13	12,670	11,400	24,070	24,561	95.0	97.0	98
1913	13,330	12,000	25,330	25,330	100.0	100.0	100
1921–25	16,900	15,250	32,150	21,723	126.9	85.8	148
1926–29	21,310	19,210	40,520	28,535	160.0	112.7	142
1930	17,770	16,230	34,000	30,357	134.2	119.8	112
1931–35	8,910	7,930	16,840	27,161	66.5	107.2	62
1936–38	9,070	8,060	17,130	29,534	67.6	116.6	58

Note. The figures refer to groups I–III of the International (1913) Classification.

Table IX. TRADE IN MANUFACTURED ARTICLES ACCORDING TO THE INTERNATIONAL (1913) CLASSIFICATION

Annual averages in $(000,000's) at the old parity. Special trade

Period	United States[a]	Germany	United Kingdom & Ireland[b]	France	Russia U.S.S.R.[c]	Austria-Hungary[d]	Italy	Canada[e]	Belgium[f]
Imports									
1871–75	244	·	184	84	·	·	·	·	·
1876–80	169	·	225	111	·	·	·	·	·
1881–85	250	135	238	158	53	114	104	·	·
1886–90	245	143	246	134	37	102	95	·	·
1891–95	233	139	280	134	52	121	69	·	·
1896–1900	226	166	350	152	94	136	77	·	·
1901–05	279	183	455	182	87	155	102	117	93
1906–10	388	267	455	263	136	230	203	168	126
1911–13	439	320	564	356	211	295	223	303	155
1913	475	338	603	344	232	294	226	309	169
1921–25	821	418	790	342	132	·	182	394	200
1926–29	1,064	512	1,082	336	175	·	259	627	209
1930	773	428	1,045	492	346	·	255	550	260
1931–35	342	188	458	225	187	·	116	195	132
1936–38	343	[k]132	426	138	76	·	83	222	112
Exports									
1871–75	70	·	1,039	392	·	·	·	·	·
1876–80	92	·	864	370	·	·	·	·	·
1881–85	108	464	993	378	7	184	43	·	·
1886–90	111	509	996	385	10	179	30	·	·
1891–95	127	496	937	385	10	179	35	·	·
1896–1900	225	627	1,018	433	15	198	63	·	·
1901–05	320	800	1,172	520	23	238	87	·	166
1906–10	441	1,110	1,554	676	30	303	120	·	221
1911–13	635	1,478	1,902	817	39	350	184	·	273
1913	721	1,615	2,029	875	44	370	194	·	280
1921–25	1,436	1,810	2,482	1,336	12	·	248	263	306
1926–29	2,027	2,001	2,683	1,356	53	·	401	336	448
1930	1,686	2,153	2,021	1,117	81	·	327	258	445
1931–35	629	1,064	946	527	58	·	174	125	234
1936–38	862	[k]1,048	986	316	32	·	161	150	224

For footnotes, see page 164.

Note. The countries are arranged in the order of the relative magnitude of their manufacturing industry in 1913. Horizontal lines in the columns (*e.g.*, in that for Germany between 1913 and 1921–1925) indicate that the figures are affected by a change in territory.

Table IX. TRADE IN MANUFACTURED ARTICLES ACCORDING TO THE INTERNATIONAL (1913) CLASSIFICATION (*Continued*)

Annual averages in $(000,000's) at the old parity. Special trade

Period	Australia[g]	Japan[h]	Spain	Sweden	Netherlands[di]	India & Burma[j]	Switzerland	Finland[d]	New Zealand	Union of South Africa
Imports										
1871–75	·	·	·	25	·	·	·	·	·	·
1876–80	·	·	·	23	·	·	·	·	·	·
1881–85	·	·	·	32	·	·	·	·	·	·
1886–90	·	·	·	36	(108)	·	58	7	·	·
1891–95	·	19	·	37	(122)	·	57	9	·	·
1896–1900	·	44	·	47	(160)	·	73	17	·	·
1901–05	127	54	57	49	(213)	240	82	16	39	84
1906–10	187	76	57	61	(291)	327	114	26	49	97
1911–13	282	93	77	69	(350)	430	132	32	62	131
1913	313	97	93	76	(382)	502	134	33	68	133
1921–25	404	276	255	146	315	565	154	44	145	202
1926–29	510	241	235	187	397	684	209	83	166	272
1930	439	178	233	221	424	483	219	61	146	230
1931–35	148	82	84	111	236	240	145	42	52	155
1936–38	202	99	·	149	190	213	97	70	76	227
Exports										
1871–75	·	·	·	5	·	·	·	·	·	·
1876–80	·	·	·	7	·	·	·	·	·	·
1881–85	·	·	·	12	·	·	·	·	·	·
1886–90	·	·	·	17	(130)	·	94	3	·	·
1891–95	·	14	·	21	(125)	·	92	4	·	·
1896–1900	·	23	·	21	(132)	·	107	6	·	·
1901–05	·	41	39	28	(180)	·	127	7	·	·
1906–10	8	62	45	44	(235)	·	157	10	·	·
1911–13	10	88	49	62	(341)	·	188	13	·	·
1913	11	102	48	68	(382)	·	192	15	·	·
1921–25	15	357	76	126	177	231	278	20	3	4
1926–29	30	451	80	178	254	305	305	22	2	10
1930	17	380	102	188	248	218	271	21	3	16
1931–35	10	266	23	95	114	99	140	13	2	8
1936–38	14	371	·	115	109	114	145	17	1	8

For footnotes, see page 164.

Table X. TRADE IN MANUFACTURED ARTICLES ACCORDING TO THE INTERNATIONAL (1913) CLASSIFICATION, AT 1913 PRICES

Annual averages in $(000,000's)

Period	United States[a]	Germany	United Kingdom & Ireland[b]	France	Russia U.S.S.R.[c]	Austria-Hungary[d]	Italy	Canada[e]	Belgium
Imports									
1871–75	213	·	161	73	·	·	·	·	·
1876–80	173	·	230	113	·	·	·	·	·
1881–85	281	152	267	178	59	128	117	·	·
1886–90	300	175	301	164	45	125	116	·	·
1891–95	290	173	347	166	65	150	86	·	·
1896–1900	250	183	386	168	104	150	85	·	·
1901–05	328	215	535	214	102	182	120	138	109
1906–10	416	286	488	282	146	247	218	180	135
1911–13	450	328	578	365	216	302	228	310	159
1913	475	338	603	344	232	294	226	309	169
1921–25	448	228	431	187	72	·	99	215	109
1926–29	665	320	676	210	109	·	162	391	131
1930	530	293	716	337	237	·	175	377	178
1931–35	372	205	499	245	180	·	126	212	144
1936–38	444	[k]168	552	179	98	·	107	287	145
Exports									
1871–75	61	·	908	343	·	·	·	·	·
1876–80	94	·	883	378	·	·	·	·	·
1881–85	121	521	1,113	425	8	207	48	·	·
1886–90	136	621	1,217	471	12	219	37	·	·
1891–95	158	616	1,163	478	12	222	43	·	·
1896–1900	248	692	1,124	478	17	219	70	·	·
1901–05	376	941	1,378	612	27	280	102	·	195
1906–10	473	1,191	1,667	725	32	325	129	·	237
1911–13	650	1,513	1,948	837	40	358	188	·	280
1913	721	1,615	2,029	875	44	370	194	·	280
1921–25	784	988	1,387	729	7	·	135	144	167
1926–29	1,267	1,251	1,677	848	33	·	251	210	280
1930	1,115	1,475	1,384	765	55	·	224	177	305
1931–35	685	1,159	1,030	574	63	·	189	136	255
1936–38	1,116	[k]1,357	1,277	409	41	·	208	195	290

For footnotes, see page 164.
Cf. Note to Table IX.

Table X. TRADE IN MANUFACTURED ARTICLES ACCORDING TO THE INTERNATIONAL (1913) CLASSIFICATION, **AT 1913 PRICES** (*Continued*)

Annual averages in $(000,000's)

Period	Australia[g]	Japan[h]	Spain	Sweden	Netherlands[di]	India & Burma[j]	Switzerland	Finland[d]	New Zealand	Union of South Africa
Imports										
1871–75	.	.	.	22	.	.	.	.	.	.
1876–80	.	.	.	24	.	.	.	.	.	.
1881–85	.	.	.	36	.	.	.	.		.
1886–90	.	.	.	44	(132)	.	71	8	.	.
1891–95	.	24	.	46	(151)	.	71	11	.	.
1896–1900	.	49	.	52	(177)	.	81	19	.	.
1901–05	149	63	67	58	(250)	282	96	19	46	99
1906–10	200	82	61	65	(312)	351	122	28	53	104
1911–13	289	95	79	71	(358)	440	135	33	63	134
1913	313	97	93	76	(382)	502	134	33	68	133
1921–25	220	146	139	80	172	308	84	24	79	110
1926–29	319	151	147	117	248	478	131	52	104	170
1930	301	122	160	151	290	330	150	42	100	158
1931–35	161	89	91	121	257	261	158	46	56	169
1936–38	262	128	.	193	246	276	126	91	99	294
Exports										
1871–75	.	.	.	4	.	.	.	.	.	.
1876–80	.	.	.	7	.	.	.	.	.	.
1881–85	.	.	.	13	.	.	.	.	.	.
1886–90	.	.	.	21	(159)	.	115	4	.	.
1891–95	.	17	.	26	(155)	.	114	5	.	.
1896–1900	.	25	.	23	(146)	.	118	7	.	.
1901–05	.	48	46	33	(212)	.	149	8	.	.
1906–10	9	67	48	47	(252)	.	168	11	.	.
1911–13	10	90	50	63	(349)	.	193	13	.	.
1913	11	102	48	68	(382)	.	192	15	.	.
1921–25	8	195	41	69	97	126	152	11	1.6	2.2
1926–29	19	282	50	111	159	191	191	14	1.2	6.2
1930	12	260	70	129	170	149	186	14	2.1	11
1931–35	11	290	25	103	124	108	152	14	2.2	8.7
1936–38	13	481	.	149	141	147	188	20	1.3	10

For footnotes, see page 164.

Table XI. QUANTUM INDICES OF TRADE IN MANUFACTURED ARTICLES (1913 = 100)

Period	United States	Germany	United Kingdom & Ireland	France	Russia U.S.S.R.	Austria-Hungary	Italy	Canada	Belgium
Imports									
1871–75	51.4	·	26.7	21.2	·	·	·	·	·
1876–80	36.4	·	38.1	32.8	·	·	·	·	·
1881–85	59.2	45.0	44.3	51.7	25.4	43.5	51.8	·	·
1886–90	63.2	51.8	49.9	47.7	19.4	42.5	51.3	·	·
1891–95	61.1	51.2	57.5	48.3	28.0	51.0	38.1	·	·
1896–1900	52.6	54.1	64.0	48.8	44.8	51.0	37.6	·	·
1901–05	69.1	63.6	88.7	62.2	44.0	61.9	53.1	44.7	64.5
1906–10	87.6	84.6	80.9	82.0	62.9	84.0	96.5	58.2	79.9
1911–13	94.7	97.0	95.9	106.1	93.1	102.7	100.9	100.6	94.1
1921–25	94.3	67.5	71.5	54.4	39.3	·	43.8	69.7	64.5
1926–29	140.0	94.7	112.1	61.1	59.6	·	71.7	126.6	77.5
1930	111.6	86.7	118.7	98.0	129.5	·	77.4	122.0	105.3
1931–35	78.3	60.7	82.8	71.2	98.4	·	55.8	68.7	85.2
1936–38	93.5	49.7	91.5	52.0	53.6	·	47.3	93.3	85.8
Exports									
1871–75	8.5	·	44.8	39.2	·	·	·	·	·
1876–80	13.0	·	43.5	43.2	·	·	·	·	·
1881–85	16.8	32.3	54.9	48.6	18.2	55.9	24.7	·	·
1886–90	18.9	38.5	60.0	53.8	27.3	59.2	19.1	·	·
1891–95	21.9	38.1	57.3	54.6	27.3	60.0	22.2	·	·
1896–1900	34.4	42.8	55.4	54.6	38.6	59.2	36.1	·	·
1901–05	52.1	58.3	67.9	69.9	61.4	75.7	52.6	·	69.6
1906–10	65.6	73.7	82.2	82.9	72.7	87.8	66.5	·	84.6
1911–13	90.2	93.7	96.0	95.7	90.9	96.8	96.9	·	100.0
1921–25	108.7	61.2	68.4	83.3	50.0	·	69.6	·	59.6
1926–29	175.7	77.5	82.7	96.9	235.7	·	129.4	·	100.0
1930	160.2	91.3	68.2	87.4	393.0	·	115.5	·	108.9
1931–35	95.0	71.8	50.8	65.6	450.0	·	97.4	·	91.1
1936–38	154.8	84.0	62.9	46.7	292.9	·	107.2	·	103.6

Note. The indices are based on the values at 1913 prices shown in Table X. *Cf.* Note to Table IX.

Table XI. QUANTUM INDICES OF TRADE IN MANUFACTURED ARTICLES (1913 = 100) (*Continued*)

Period	Australia	Japan	Spain	Sweden	Netherlands	India & Burma	Switzerland	Finland	New Zealand	Union of South Africa
Imports										
1871–75	·	·	·	28.9	·	·	·	·	·	·
1876–80	·	·	·	31.6	·	·	·	·	·	·
1881–85	·	·	·	47.4	31.4	·	46.3	·	·	·
1886–90	·	·	·	57.9	34.6	·	53.0	24.2	·	·
1891–95	·	24.8	·	60.5	39.5	·	53.0	33.3	·	·
1896–1900	·	50.7	·	68.4	46.3	·	60.4	57.6	·	·
1901–05	47.3	65.0	72.0	76.3	65.4	56.1	71.6	57.6	67.7	74.7
1906–10	63.9	84.7	65.6	85.5	81.7	69.9	91.0	84.8	78.0	78.3
1911–13	92.2	98.0	84.9	93.4	93.7	87.7	100.7	100.0	92.7	100.8
1921–25	70.2	150.7	149.5	105.3	45.0	61.3	62.7	72.7	116.2	83.0
1926–29	102.0	155.6	158.1	153.9	64.9	95.3	97.8	157.6	153.0	128.0
1930	96.0	126.0	172.0	198.7	75.9	65.8	111.9	127.3	147.0	118.8
1931–35	52.7	83.6	97.8	159.2	67.3	52.0	117.9	139.4	82.3	127.2
1936–38	83.6	132.0	·	253.9	64.4	55.0	94.0	275.8	146.0	221.0
Exports										
1871–75	·	·	·	5.9	·	·	·	·	·	·
1876–80	·	·	·	10.3	·	·	·	·	·	·
1881–85	·	·	·	19.1	30.6	·	53.6	·	·	·
1886–90	·	·	·	30.9	41.6	·	59.9	26.7	·	·
1891–95	·	16.7	·	38.2	40.6	·	59.4	33.3	·	·
1896–1900	·	24.5	·	33.8	38.2	·	61.5	46.7	·	·
1901–05	·	47.1	95.8	48.5	55.5	·	77.6	53.3	·	·
1906–10	81.8	65.7	100.0	69.1	66.0	·	87.5	73.3	·	·
1911–13	90.9	88.2	104.2	92.6	91.4	·	100.5	86.7	·	·
1921–25	74.5	191.2	85.4	101.5	25.4	·	79.2	73.3	·	·
1926–29	172.7	276.5	104.2	163.2	41.6	·	99.5	93.3	·	·
1930	109.0	254.9	145.8	189.7	44.5	·	96.9	93.3	·	·
1931–35	100.0	284.3	52.1	151.5	32.5	·	79.2	93.3	·	·
1936–38	118.2	471.6	·	219.1	36.9	·	97.9	133.3	·	·

Footnotes to Tables IX, X and XIII.

[a] United States: 1871–1913, fiscal years ending June 30; 1871–1932, general trade (differing little from special trade).

[b] United Kingdom and Ireland: The trade of Ireland is recorded separately as from April 1st, 1923. For the sake of comparability, however, the figures in the table refer, over the whole period, to the combined territory of the United Kingdom and Ireland (thus excluding trade between these two areas). The figures for the United Kingdom alone (excluding Ireland) from 1926 were:

	Imports				Exports			
	1926–29	1930	1931–35	1936–38	1926–29	1930	1931–35	1936–38
Trade in manufactured articles:								
Brussels classification, actual values (Table IX)	1,069	1,030	448	416	2,790	2,121	1,005	1,048
Brussels classification, values at 1913 prices (Table X)	668	706	488	539	1,744	1,453	1,094	1,357
Trade in primary products:								
Brussels classification, actual values (Table XIII)	4,281	3,628	1,935	2,109	635	656	333	344

The export figures up to 1898 inclusive do not include ships and boats (actual values, 1899, 45; 1900, 42; 1901–05 average, 28).

[c] Russia, 1881–1913; U.S.S.R., 1921–1938. Figures for 1913 referring to the territory of the U.S.S.R. are: manufactured articles; imports, 183; exports, 14. primary products (Table X), imports, 335; exports, 657.

[d] Austria-Hungary, Netherlands 1886–1913 and exports of Finland: Figures according to national classification.

[e] Canada: fiscal years beginning April 1.

[f] Belgium: from 1922 Belgium-Luxemburg.

[g] Australia: 1921–1938, fiscal years ending June 30.

[h] Japan: excluding trade with Korea and Formosa.

[i] Netherlands: the figures from 1921 are not comparable with those for earlier years.

[j] India and Burma: Burma was separated from India on April 1st, 1937. For the sake of comparability, the figures refer to the combined territory of these two countries (and hence exclude trade between them) over the whole period.

[k] Germany (1936–38): average for 1936–37.

Table XII. TRADE IN MANUFACTURED ARTICLES ACCORDING TO THE INTERNATIONAL (1913) CLASSIFICATION

Annual averages

Period	Poland	Czecho-slovakia	Austria	Hun-gary	Den-mark	Rou-mania	Nor-way	Chile	Latvia	Estonia	Greece
Actual values in $(000.000's) at the old parity											
I. Imports											
1926–29	129	156	164	100	165	151	126	114	26	13	55
1930	116	153	153	69	198	113	164	128	30	13	58
1931–35	44	68	61	28	93	61	72	27	11	6	27
1936–38	51	60	[a] 47	29	88	63	96	36	13	10	31
II. Exports											
1926–29	44	395	211	29	46	·	45	·	12	10	2
1930	59	382	190	36	51	·	41	4	15	9	2
1931–35	30	165	81	21	20	2	20	2	6	3	1
1936–38	28	164	[a] 81	27	29	2	25	1	5	3	3
Values at 1913 prices, in $(000,000's)											
I. Imports											
1926–29	81	98	102	63	103	94	79	71	16	8	34
1930	79	105	105	47	136	77	112	88	21	9	40
1931–35	48	74	66	31	101	66	78	29	12	7	29
1936–38	66	78	[a] 61	38	114	82	124	47	17	13	40
II. Exports											
1926–29	28	247	132	18	29	·	28	·	8	6	1
1930	40	262	130	25	35	·	28	3	10	6	1
1931–35	33	180	88	23	22	2	22	2	7	3	1
1936–38	36	212	[a] 105	35	38	3	32	1	6	4	4

[a] 1936–37.

Cf. Note to Table IX.

Table XIII. TRADE IN PRIMARY PRODUCTS (GROUPS I–III OF THE INTERNATIONAL (1913) CLASSIFICATION)

Annual averages in $(000,000's) at the old parity

Period	United States[a]	Germany	United Kingdom & Ireland[b]	France	Russia U.S.S.R.[c]	Austria-Hungary[d]	Italy	Canada[e]	Belgium[f]
Imports									
1871–75	334	·	1,286	607	·	·	·	·	·
1876–80	324	·	1,362	725	·	·	·	·	·
1881–85	417	622	1,400	735	202	137	151	·	·
1886–90	472	708	1,347	688	165	128	176	·	·
1891–95	552	844	1,459	659	176	149	156	·	·
1896–1900	516	1,066	1,661	683	215	183	195	·	·
1901–05	693	1,279	1,840	708	238	228	254	·	416
1906–10	957	1,738	1,271	941	331	291	368	192	571
1911–13	1,226	2,163	2,467	1,248	423	393	473	282	728
1913	1,338	2,231	2,605	1,295	473	402	484	327	733
1926–29	3,213	2,563	4,176	1,765	250	·	789	536	651
1930	2,288	2,048	3,511	1,566	199	·	658	357	601
1931–35	1,027	962	1,923	909	84	·	322	172	322
1936–38	1,111	[k]1,020	2,092	759	79	·	262	197	365
Exports									
1871–75	416	·	126	309	·	·	·	·	·
1876–80	572	·	117	288	·	·	·	·	·
1881–85	667	290	138	280	274	110	172	·	·
1886–90	615	261	154	285	314	116	156	·	·
1891–95	749	258	168	266	296	133	154	·	·
1896–1900	911	334	212	298	340	147	175	·	·
1901–05	1,107	400	273	330	461	178	208	·	237
1906–10	1,310	501	381	409	589	177	251	·	327
1911–13	1,569	686	477	460	754	186	277	·	445
1913	1,708	794	527	464	736	196	295	·	428
1926–29	2,888	794	584	665	363	·	343	904	336
1930	2,095	714	612	562	452	·	311	542	280
1931–35	934	258	315	273	216	·	169	361	198
1936–38	865	[k]223	352	228	135	·	133	452	218

For footnotes, see page 164.
Cf. Note to Table IX.

Table XIII. TRADE IN PRIMARY PRODUCTS (GROUPS I–III OF THE INTERNATIONAL (1913) CLASSIFICATION) (*Continued*)

Annual averages in $(000,000's) at the old parity

Period	Australia[g]	Japan[h]	Spain	Sweden	Netherlands[di]	India & Burma[j]	Switzerland	Finland[d]	New Zealand
Imports									
1871–75	·	·	·	39	·	·	·	·	·
1876–80	·	·	·	47	·	·	·	·	·
1881–85	·	·	·	52	·	·	·	·	·
1886–90	·	·	·	54	(379)	·	102	·	·
1891–95	·	26	·	57	(436)	·	109	18	·
1896–1900	·	70	·	74	(565)	·	128	27	·
1901–05	57	109	124	94	(714)	·	144	32	·
1906–10	42	134	132	112	(870)	88	186	44	28
1911–13	66	211	140	140	(1,110)	113	225	59	37
1913	58	260	161	153	(1,204)	118	228	63	37
1926–29	207	807	270	253	650	212	283	88	58
1930	167	586	239	225	548	195	269	71	58
1931–35	57	360	98	125	277	96	161	23	28
1936–38	69	422	50	143	259	87	118	32	44
Exports									
1871–75	·	·	·	50	·	·	·	·	·
1876–80	·	·	·	50	·	·	·	·	·
1881–85	·	·	·	54	·	·	·	·	·
1886–90	·	·	·	57	(291)	·	36	·	·
1891–95	·	34	·	65	(335)	·	34	19	·
1896–1900	·	60	·	76	(484)	·	38	28	·
1901–05	·	92	127	83	(588)	·	45	34	·
1906–10	267	131	133	95	(691)	·	58	42	·
1911–13	320	175	149	118	(858)	·	71	56	·
1913	343	208	158	153	(859)	·	76	64	·
1926–29	620	501	293	252	511	873	82	133	238
1930	431	346	342	228	443	693	66	115	202
1931–35	276	161	115	112	229	291	24	70	112
1936–38	298	113	70	153	221	306	10	90	137

For footnotes, see page 164.

RECENT PUBLICATIONS OF THE ECONOMIC, FINANCIAL AND TRANSIT DEPARTMENT OF THE LEAGUE OF NATIONS

TRADE AND COMMERCIAL POLICY

THE NETWORK OF WORLD TRADE (Second Impression)
(Ser. L.o.N.P. 1942.II.A.3.) 172 pages.... cloth bound 12/6 $2.75
paper bound 10/– $2.00

EUROPE'S TRADE (Second Impression)
(Ser. L.o.N.P. 1941.II.A.1.) 116 pages..... cloth bound 7/6 $2.00
paper bound 5/– $1.25

COMMERCIAL POLICY IN THE INTERWAR PERIOD: INTERNATIONAL PROPOSALS AND NATIONAL POLICIES (Third Impression)
(Ser. L.o.N.P. 1942.II.A.6.) 164 pages.... paper bound 7/6 $1.75

COMMERCIAL POLICY IN THE POST-WAR WORLD
(Ser. L.o.N.P. 1945.II.A.7) 124 pages..... paper bound 5/– $1.25

QUANTITATIVE TRADE CONTROLS: THEIR CAUSES AND NATURE. By Prof. G. Haberler and W. M. Hill
(Ser. L.o.N.P. 1943.II.A.5.) 45 pages..... paper bound 2/6 $0.50

TRADE RELATIONS BETWEEN FREE-MARKET AND CONTROLLED ECONOMIES. By Prof. J. Viner (Second Impression)
(Ser. L.o.N.P. 1943.II.A.4.) 92 pages..... paper bound 4/6 $1.00

DEMOGRAPHIC QUESTIONS

THE FUTURE POPULATION OF EUROPE AND THE SOVIET UNION: Population Projections, 1940–70. By Dr. Frank W. Notestein and others of the Office of Population Research, Princeton University
(Ser. L.o.N.P. 1944.II.A.2.) 315 pages.... cloth bound 15/– $3.50
paper bound 12/6 $2.75

In the Press:

THE POPULATION OF THE SOVIET UNION. By Dr. Frank Lorimer, Office of Population Research, Princeton University
(Ser. L.o.N.P. 1945.II.A.11) about 230 pages.....
cloth bound 12/6 $3.00
paper bound 10/– $2.50

EUROPE'S POPULATION IN THE INTERWAR PERIOD. By Dr. Dudley Kirk, Office of Population Research, Princeton University

RECONSTRUCTION AND RELIEF

THE TRANSITION FROM WAR TO PEACE ECONOMY. Report of the Delegation on Economic Depressions, Part I (Third Impression)
(Ser. L.o.N.P. 1943.II.A.3.) 118 pages.....cloth bound 6/– $1.50
paper bound 4/6 $1.00

ECONOMIC STABILITY IN THE POST-WAR WORLD. Report of the Delegation on Economic Depressions, Part II (Third Impression)
(Ser. L.o.N.P. 1945.II.A.2.) 319 pages....cloth bound 12/6 $3.00
paper bound 10/– $2.50

RELIEF DELIVERIES AND RELIEF LOANS, 1919–1923 (Second Impression)
(Ser. L.o.N.P. 1943.II.A.1.) 62 pages.....paper bound 3/6 $1.00

EUROPE'S OVERSEAS NEEDS, 1919–1920, AND HOW THEY WERE MET
(Ser. L.o.N.P. 1943.II.A.6.) 52 pages.....paper bound 2/6 $0.50

AGRICULTURAL PRODUCTION IN CONTINENTAL EUROPE DURING THE 1914–18 WAR AND THE RECONSTRUCTION PERIOD
(Ser. L.o.N.P. 1943.II.A.7.) 122 pages....cloth bound 10/– $2.25
paper bound 7/6 $1.75

INTERNATIONAL CURRENCY EXPERIENCE
(Ser. L.o.N.P. 1944.II.A.4.) 249 pages....cloth bound 15/– $3.25
paper bound 12/6 $2.75

URBAN AND RURAL HOUSING (Third Impression)
(Ser. L.o.N.P. 1939.II.A.2.) xxxvi + 159 pages.....
paper bound 3/6 $0.80

CURRENT EVENTS, STATISTICS, etc.

WORLD ECONOMIC SURVEY, 1942/44 (Thirteenth Year)
(Ser. L.o.N.P. 1945.II.A.4.) 299 pages....cloth bound 12/6 $3.00
paper bound 10/– $2.50

FOOD RATIONING AND SUPPLY, 1943/44
(Ser. L.o.N.P. 1944.II.A.3.) 101 pages....paper bound 4/6 $1.00

MONEY AND BANKING, 1942/44
(Ser. L.o.N.P. 1945.II.A.1.) 221 pages....cloth bound 15/– $3.50
paper bound 12/6 $2.50

STATISTICAL YEAR-BOOK OF THE LEAGUE OF NATIONS, Seventeenth Year, 1942/44.
(Ser. L.o.N.P. 1945.II.A.5.) 315 pages....cloth bound 12/6 $3.50
paper bound 10/– $2.50

MONTHLY BULLETIN OF STATISTICS.....
Annual subscription (12 numbers) £1.0.0. $5.00
single number 1/9 $0.45

CATALOGUE OF SELECTED PUBLICATIONS ON ECONOMIC AND FINANCIAL SUBJECTS

A guide to League of Nations Documents of Value in Connection with the Formulation of Postwar Economic Policies.

69 pages.....Sent free on application to the Authorized Agents
(see list overleaf)

AUTHORIZED AGENTS FOR THE PUBLICATIONS OF THE LEAGUE OF NATIONS

SOUTH AFRICA (Union of)—Maskew Miller, Ltd., 29, Adderley Street, Cape Town.

ARGENTINE—Librería "El Ateneo," M. Pedro Garcia, 340–344, Florida, Buenos Aires.

AUSTRALIA (Commonwealth of)—H. A. Goddard Pty., Ltd., 255a, George Street, Sydney.

BOLIVIA—Arnó Hermanos, Calle Illimani, Nos. 10–20, La Paz.

BRAZIL—F. Briguiet & Cia., Rua do Ouvidor 109, Rio de Janeiro.

CANADA—United Nations Society in Canada, 124, Wellington Street Ottawa.

CHILE—Librería y Editorial Nascimento, Ahumada 125, Casilla 2298, Santiago.

COLOMBIA—Librería Voluntad S.A., Calle Real, Nos. 297–301, Bogotá.

CUBA—La Casa Belga, René de Smedt, O'Reilly, 455, Havana.

ECUADOR—Victor Janer, Guayaquil.

EGYPT—G. M.'s Book Shop, 116, Mohamed Bey Farid Street, Cairo.

GREAT BRITAIN, NORTHERN IRELAND AND THE CROWN COLONIES—George Allen & Unwin, Ltd., 40, Museum Street, London, W.C.1.

GUATEMALA—Goubaud & Cia., Ltda., Sucesor, Guatemala.

HAITI—Librairie-Papeterie, Mme. D. Viard, Port-au-Prince.

ICELAND—Peter Halldorsson, Reykjavik.

INDIA—The Book Company, Ltd., College Square, 4/4 A, Calcutta.

Indian Branch Office of the Secretariat of the League of Nations, 8 Curzon Road, New Delhi

IRELAND—Eason & Son, Ltd., 40–41, Lower O'Connell Street, Dublin.

MEXICO—Central de Publicaciones S.A., Edificio "La Nacional," Av. Juarez 4, Mexico, D.F.

PALESTINE—Leo Blumstein, Book and Art Shop, 35 Allenby Road, Tel-Aviv.

The Palestine Educational Co., Messrs. B. Y. & W. A. Said, Jaffa Road 98 & 100, P.O.B. 84, Jerusalem.

PANAMA—Isidro A. Beluche, Apartado 755, Avenida Norte No. 49, Panama.

PARAGUAY—Librería Internacional, Santiago Puigbonet, Casilla de Correo 581, Asunción.

PORTUGAL—J. Rogrigues & Cia., Rua Aurea, 186–188, Lisbonne.

SWEDEN—Aktiebolaget C. E. Fritzes Klg. Hofbokhandel, Fredsgatan, 2, Stockholm.

SWITZERLAND—Librairie Payot & Cie., Genève, Lausanne, Vevey, Montreux, Neuchatel, Berne, Bâle, Hans Raunhardt, Buchhandlung, Kirchgasse 17, Zurich 1.

TURKEY—Librairie Hachette, succursale de Turquie, 469 av. de l'Indépendance, Boîte postale, 2219, Istamboul.

UNITED STATES OF AMERICA—Columbia University Press, International Documents Service, 2960 Broadway, New York 27, N.Y.

URUGUAY—"Casa A. Barreiro y Ramos" S.A., 25 de Mayo, Esq. J. C. Gomez, Montevideo.

VENEZUELA—Librería Alejandro d'Empaire, Sociedad a Traposos, 11, Apartado Postal 274, Caracas.

For other Countries, apply:

PUBLICATIONS DEPARTMENT OF THE LEAGUE OF NATIONS

GENEVA (SWITZERLAND)