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1925 TO 1929/30

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LEAGUE OF NATIONS

MEMORANDUM ON PRODUCTION AND TRADE

1925 to 1929/30

Errata

Page 17. — Paragraph 2, line 7, *for* " 48 per cent " *read* " 38 per cent ".

Page 27. — Table VIII. Foodstuffs 1930, *for* " 106 " *read* " 105 ".

Page 42. — Line 2, *for* " 6 to 17 per cent " *read* " 16 to 17 per cent ".

Page 60. — Table XIV. Footnote [1], *for* " 32.7 tons " *read* " 32,700 tons ".

Page 77. — Table XXI A. Sweden Weight 1927, *for* " 124 " *read* " 125 ".

Page 85. — Table XXVII. Germany, Linen Spinning 1930 (1929=100), *for* " 94 " *read* " 96 ".

Page 118. — Table XXXVII. United Kingdom Cereals 1927, *for* " 153[1] " *read* " 153 ".

Page 118. — Table XXXVII. United States of America, Farm Products 1930, *for* " 115 " *read* " 105 ".

Page 118. — Table XXXVII. United States of America, Non-Agricultural Commodities 1930, *for* " 105 " *read* " 115 ".

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PREFACE.

The first *Memorandum on Production and Trade* was published in October 1926 as one of the preparatory documents for the World Economic Conference. The Conference expressed a wish that the work then undertaken should be continued and three editions of the *Memorandum* have since been published. The present volume deals more especially with the period 1925-1929, but, in view of the radical change in the world economic conditions since 1929, information for 1930 has been given wherever possible.

In the present edition, 1925 has been adopted as the base year in all chapters except in that relating to relative prices, and new, and more comprehensive series of indices have been calculated.

The study of certain aspects of manufacturing industry is the outcome of a resolution adopted by the Assembly of the League of Nations in 1929, requesting the Council to "consider the possibility of arranging for the preparation of a comprehensive annual survey of economic developments in the near future and for the collection by the Economic Organisation of all the information required for this purpose ". The Council decided that, pending the preparation of a general and separate survey of economic conditions, a chapter dealing with the available information concerning the development of industrial activity should be included in the *Memorandum on Production and Trade.* Such a chapter was published for the first time in last year's volume and has now been continued and enlarged. This study, tentative and incomplete as it is, forms a useful complement to the chapter on the production of foodstuffs and raw materials and is helpful when checking the conclusions regarding the recent development of the world's industrial output, for which returns for raw products alone are not fully adequate as a basis.

As the result of a recommendation of the Economic Consultative Committee at its 1929 session that the Economic Organisation of the League " should continue and expand its studies concerning the comparative prices of agricultural and industrial products", a special enquiry into the recent relative movements of such prices has been undertaken and is at present being pursued. The first and partial results so far obtained are incorporated into the price chapter contained in this volume ; the chapter also includes certain additional materials not previously available. The year 1913, which is being taken as the base year for the special enquiry, is maintained as base period in the present study. Attention is, however, particularly directed to the relative movements of prices between the end of 1928 and the end of 1930.

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The detailed figures on which the indices for population and the production of foodstuffs and raw materials are based have been published in the *Statistical Year-Book of the League of Nations*, 1930/31 ; those relating to trade in the *Memorandum on International Trade and Balances of Payments*, 1927-1929, Volumes I and III.

A summary of the main conclusions that may be drawn from the present study will be found in the introductory chapter.

A. LOVEDAY,

Director of the Financial Section and Economic Intelligence Service.

Geneva, June 1931.

CONTENTS.

INTRODUCTORY.

The present edition of this *Memorandum* is similar in general form and composition to those published in earlier years. Certain important changes have, however, been made in the method of calculation and presentation of the statistics.

In the first place, the base year of the production and trade indices has been changed. In the three first editions of the *Memorandum*, the year 1913 or the quinquennium 1909-1913 was employed as base ; in the preceding edition, the base year was changed to 1926, though for certain chapters 1925 was adopted, while the old series were continued and given in the annexes. In the present edition, all calculations referring to the pre-war period as well as to the years 1923 and 1924 have been dropped, and the statistical series computed for the quinquennium 1925-1929 have been thoroughly revised and completed. As years pass, new statistical series become available and old series are expanded and improved. For some time now it has been necessary to choose between ignoring certain new series while adhering to the pre-war base and abandoning that base in order to take in all the data for recent years which have become available. The latter alternative has now been adopted. This procedure has further rendered it possible to employ the year 1925 as a common base for the four first chapters in this edition of the *Memorandum*.[1] The production indices for 1930 are all provisional and subject to revision when more complete data become available.

The continental grouping employed has also been somewhat modified. In previous editions, the world was divided into seven continental groups, and Europe into three sub-groups. In the present edition, the groups " Central and Eastern Europe " and " Rest of Europe " are no longer shown separately. By 1929, ten years had elapsed since the creation of the new economic units in the central and eastern parts of Europe, and production and trade have largely adapted themselves to the new conditions. Further, in view of the fact that the general economy of the Caribbean — the smallest of the groups shown in previous editions, representing in 1928 little more than 2 per cent of world production of foodstuffs and raw materials, and of world trade — largely resembles that of the northern part of South America, the whole of the American continent south of the United States has been grouped together with the West Indies as " Latin America ".

As in the previous editions, the whole of the present Union of Soviet Socialist Republics is included with Europe in all the calculations, though separate indices are still given for Europe excluding this country. The absolute figures from which the various indices have been calculated, therefore, are all somewhat too low in the case of Asia and too high in the case of " Europe ".

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[1] See *Memorandum on Production and Trade*, 1923-1928/29, page 7, for reasons that rendered 1925 unsuitable when the indices had to relate both to later years and to 1913.

In view of the changes that have been made, discrepancies inevitably exist between the new indices and those published in the previous editions of this *Memorandum*, but, in overlapping years, the movement shown by the new general indices for the world differs but little from that shown by the old world indices based on 1913.[1]

In Table I below, the most important indices relating to population, the production of raw materials and foodstuffs and the quantum of trade are set out in parallel columns. The estimates of population refer to the years 1925 and 1929 only, the other figures to the quinquennium 1925-1929. The indices for both production and trade are quantitative, changes in value having been eliminated by processes of analysis described later.

TABLE I.

GROWTH OF POPULATION, PRODUCTION AND TRADE OF THE WORLD, 1925 TO 1929.

(Base : 1925=100)

Continental groups	Population	Production of foodstuffs and raw materials (indices weighted by 1929 values)				Quantum of trade			
	1929	1926	1927	1928	1929	1926	1927	1928	1929
Europe, excluding U.S.S.R. . . .	102.9	94	106	110	119	100	113	117	122
Europe, including U.S.S.R. . . .	104.8	98	107	110	117	100	113	117	122
North America	105.7	103	101	107	105	108	110	115	119
Latin America	109.1	103	108	111	108	103	112	116	119
Africa	105.3	100	103	107	114	102	117	127	133
Asia, excluding Asiatic Russia . .	102.9	101 [1]	104 [1]	106 [1]	107 [1]	104	104	106	108
Oceania	107.8	110	106	115	108	102	108	105	107
WORLD . . .	104.1	A 101 B 100 C 103	104 102 108	108 106 112	111 105 120	103	111	115	119

A=Foodstuffs and raw materials ; B=Foodstuffs ; C=Raw materials.
[1] Excluding production of foodstuffs in China.

The evidence afforded by the table and later analysis points to the following general conclusions, certain of which will require subsequent interpretation and qualification :

(a) World population in 1929 was about 4 per cent greater than in 1925, world production of foodstuffs and raw materials was about 11 per cent greater, and world trade about 19 per cent greater.

[1] Cf. *Memorandum on Production and Trade*, 1913 and 1923-1927, Geneva, 1929.

World production and trade increased continuously throughout the quinquennium, but, according to the preliminary information available, trade and raw material production both fell off heavily in 1930 as a result of the general economic depression.

(b) World population appears to have grown between 1925 and 1929 at an average rate of about 1 per cent per annum. The rate of increase was smallest in Europe (excluding the Union of Soviet Socialist Republics) and highest in Latin America.

(c) World production of foodstuffs has increased at a considerably slower rate than that of industrial raw materials, except in 1928 when food crops were exceptionally heavy. In 1929, the production of raw materials advanced more than in any other year since the war ; but, in spite of record crops in Europe and in Africa, foodstuff production declined owing to a great contraction in the harvests in America and Oceania. In 1930, on the other hand, while world production of foodstuffs remained practically stationary, the raw material output would appear to have declined by roughly 8 per cent, and the aggregate of both foodstuffs and raw materials by about 3 per cent.[1]

(d) Such statistical information as is available suggests that manufacturing industry progressed more rapidly than the production of industrial raw materials between 1925 and 1929. The artificial silk industry, mechanical and electrical engineering and generation of electrical power all appear to have raised their output by over one-half, the rubber manufacturing industry by over 40 per cent (outside the United States by over 90 per cent), the iron and steel, shipbuilding and motor vehicle industries by about 30 per cent, the paper and printing industry by about 25 per cent and the timber industry by somewhat less, while the development of the leather, boot and shoe industry and still more that of the textile industry as a whole have been comparatively slow, not exceeding 15 and 10 per cent respectively. The economic depression in 1930 has affected all industries, although in a very varying degree. The motor industry, shipbuilding, mechanical engineering and iron and steel seem to have suffered most ; rubber goods and timber have also been seriously affected ; on the other hand, the electrical industries have been remarkably little affected.

(e) International trade was stimulated in 1927 and 1928 by considerable capital movements, largely due to the demand arising from the re-organisation of industry in Europe and industrial development in other parts of the world. In spite of a restriction in the capital supply from a number of capital-exporting countries, and a heavy fall in the general price level, there was a further increase in 1929. This continuous growth was to a large extent accounted for by manufactured articles. In 1930, the quantum of world trade fell to approximately the 1927 level, while total production of raw materials and foodstuffs appears to have been almost on the same level as in 1928.

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[1] See provisional indices of production in 1930 given in Chapter II below.

(f) In comparing the indices of the different continental groups, it should be borne in mind that very different stages of development had been achieved by 1925. European production was a little above and European trade considerably below the 1913 level, while all other continental groups had made very substantial advance.

(g) Between 1925 and 1929, Europe has made the most rapid general progress, although the increase in Africa's international trade was greater. During 1930, the contraction in the quantum of production was greater in Europe and North America than in the rest of the world — a fact which in no way implies, of course, that the incidence of the depression was greater in, for instance, Europe than elsewhere. In Europe, excluding the Union of Soviet Socialist Republics (according to the provisional indices for that year) the production of foodstuffs appears to have been reduced by 5 per cent, that of raw materials by some 12 per cent, and that of both combined by about 8 per cent. But both food crops and raw material output increased considerably in Soviet Russia and the indices for Europe including that country show a slight increase in the foodstuff production, a reduction of about 9 per cent in the raw material output, and of 4 per cent in both combined. Europe's international trade appears to have been less reduced in 1930 than that of the other parts of the world.

(h) In North America, new records in production and trade were reached in 1928, although the rate of advance since 1925 was slower than in Europe. In 1929, the quantum of total production decreased, but this decline was exclusively due to light harvests. Indeed, North American raw material output and foreign trade rose considerably in 1929, and the national indices of industrial production for Canada and the United States show considerable progress in manufacturing activity in 1929. Since the middle of the latter year, however, industrial production declined rapidly and more than in most European countries. According to the data available, the foodstuffs production of North America was further reduced in 1930 by about 2 per cent, its raw material output dropped by 12 per cent and the two combined by 7 per cent.

(i) The general development of production and trade in Latin America between 1927 and 1929 is similar to that in North America. Production reached its peak in 1928 and fell in 1929 on account of exceptionally light harvests. Trade increased throughout the period at the same average rate as that of North America.

(j) Africa made more rapid headway between 1925 and 1929 than the other continental groups except Europe.

(k) The indices for Asia point to a steady, but rather slow, increase in production and trade. The output of industrial raw materials shows, however, comparatively rapid advance.

(l) In Oceania, production rose considerably in 1928, but experienced a serious setback in the following year. The trade of this continent, which declined in 1928, increased slightly in 1929, without reaching the level of 1927.

(m) In 1930, the production of foodstuffs in Africa, Asia, Latin America and Oceania taken together appears to have somewhat recovered from the decline in 1929, and their joint output of raw materials appears to have been almost the same as in that year. The provisional joint index of production in these continental groups was thus somewhat higher in 1930. Meanwhile prices slumped.

(n) In interpreting the general conclusions set forth above, it should not be forgotten that production statistics taken alone, without reference to the movement in commodity stocks and prices, fail to reflect accurately year-to-year changes in economic conditions, particularly in periods of general depression. In recent years, the consumption of the main cereals and of many raw materials has not kept pace with their production ; stocks have therefore increased and weighed heavily on the market. The consequent slump in prices constitutes one of the chief factors of the severe depression of 1930.

(o) During the year 1930, as in all periods of economic depression, the prices of raw materials and crude products as a whole dropped more than the prices of manufactured goods. There are some reasons to believe that even in the preceding quinquennium, the discrepancy between these groups was somewhat greater than before the war ; during the current depression the margin between them widened considerably. This phenomenon was concealed to some extent, first, by the influence of producers' associations and cartels in maintaining the prices of certain classes of raw materials and semi-manufactured products and, second, by the influence of Governmental policy, in particular tariffs and milling regulations, in maintaining the domestic prices of certain classes of crude food products.

* * *

Such are the broad general results to which the analysis of available data on population, production and trade has led. They are based on statistics that are in some cases of doubtful comparability and seldom so comprehensive or so exact as to render it possible to draw conclusions of mathematical accuracy or incontrovertible finality from any single series of figures. For this reason, importance should be attached not so much to the absolute magnitude of this or that figure as to the direction towards which the whole mass of accumulated data tends to point.

I. POPULATION.

The figures relating to population, which are confined to the years 1925 and 1929 are given in this *Memorandum* only with a view to comparing the growth of population with the indices of production of foodstuffs, raw materials and international trade. It is not necessary, therefore, to consider in any great detail the demographic statistics of the world.

TABLE II.

CHANGES IN THE POPULATION OF THE WORLD IN THE PERIOD 1925 TO 1929.

Continental groups	Population (000,000's)		Percentage movement		Percentage distribution	
	1925	1929	1925	1929	1925	1929
Europe, excluding U.S.S.R. . .	362.5	373.0	100	102.9	19.0	18.9
Europe, including U.S.S.R. . .	506.1	530.5	100	104.8	26.5	26.6
North America	125.3	132.5	100	105.7	6.5	6.7
Latin America.	105.9	115.5	100	109.1	5.5	5.8
Africa	137.1	144.4	100	105.3	7.2	7.3
Asia (excluding Asiatic Russia) .	1,028.0	1,058.0	100	102.9	53.8	53.1
Oceania	9.0	9.7	100	107.8	0.5	0.5
WORLD	1,911.4	1,990.6	100	104.1	100	100
WORLD (excluding China)	1,467.4	1,546.6	100	105.4	—	—

The figures on which the calculations are based are frequently open to doubt. In many Asiatic and certain other countries, no regular census of population is taken, and even the census figures of the native population in Africa, South America, as well as other parts of the world, are often conjectural in character. Moreover, censuses are usually taken at long intervals and often at different years in the various countries, so that the majority of the figures are official or unofficial intercensal estimates. The figures relating to the end of 1929, however, are based to a large extent on the results of recent censuses and are believed to be somewhat less conjectural in character than those relating to 1925. In several countries with a large population, particularly in Asia, the population figures recorded at these censuses were considerably higher than had been officially anticipated. Part of the increase over the previous estimates for 1925 no doubt results from the fact that the recent censuses have been more complete and accurate. Certain adjustments of the 1925 figures have been made on the basis of available annual figures for natural

increase in representative areas in order thus to eliminate the apparent increase resulting from improvements in the method of census-taking. An apparent increase may also result from double counting of immigrants not excluded from the population figures of the countries whence they have emigrated. It has not proved possible to make any allowance for this factor, but its effect, if any, on the world figures is probably relatively small.

The information concerning China is particularly defective; the different estimates that have been made vary very considerably. The figures for that country adopted in the table above are based on the estimates of the Chinese Maritime Customs Service. It has been assumed that the Chinese population, which is generally believed to be stationary, did not increase between 1925 and 1929. As the figures adopted for China represent some 22 per cent of the world total, the calculations for the world as a whole, for this reason alone, are necessarily approximate.

In view of these facts, and also because China is not included in the foodstuffs production index, it is desirable to consider the world figures both with and without China. If China is excluded, the increase according to the figures shown in the table would be 5.4 per cent, and if China is included, 4.1 per cent in four years — i.e., an average annual rate of increase of about 1⅓ and 1 per cent respectively. For the reasons indicated above, however, the real growth may have been less.

The population of Europe, excluding Soviet Russia, has grown less than that of any other continental group except Asia, including China, and, as a result, its share in the world total has been somewhat reduced; but the share of Europe including Soviet Russia rose slightly owing to the rise in the population figures for that country which is estimated as high as 9 per cent between 1925 and 1929.

China weighs heavily in the Asiatic population figures; but, even if China is excluded, the rate of growth in Asia would appear to be somewhat less than the average rate for the world without that country. The population figures for Latin America and Oceania, which are most affected by immigration, show a much greater increase, while the growth in North America, in spite of a certainim migration, is but slightly higher, and that in Africa slightly lower than the average.

II. PRODUCTION.

Scope of the Production Index and Method of Compilation employed.

Very few countries publish comprehensive information concerning the output of industry, and it is impossible from the evidence available to obtain any accurate conception of the changes which have taken place in world industrial capacity or productivity. If a synoptic view is desired, it is necessary to approach the question indirectly and consider the figures of the production of crude foodstuffs and raw materials. Changes in the volume of raw materials produced, however, are not necessarily coincident with changes in the volume of industrial output. The science of industrial production is concerned largely with the discovery of means by which equal services may be rendered with a smaller consumption of crude products. In a later section (Chapter IV) the available information concerning the output and activity of some of the most important manufacturing industries is analysed.

Moreover, the statistics of the production of raw materials taken alone and without reference to variations in stocks may fail to reflect accurately changes in industrial activity over shorter periods. The supplies of vegetable raw materials in a single year will depend primarily on the atmospheric conditions and not on the immediate industrial demand. This applies particularly to the most recent years when the consumption of several foodstuffs and important raw materials failed to keep pace with production and, consequently, stocks increased and prices dropped heavily. The indices which are given below should be interpreted with these facts in mind.

In order to measure the changes in the aggregate production of the world and its main territorial divisions, it is necessary to take into account the output of a large number of different commodities. Owing to the multiplicity and variety of goods that require to be considered, the indices based on weight or volume statistics must be rendered comparable by expressing them in terms of some common denominator. It has been necessary, therefore, to calculate a quantitative index. For this purpose, the relative values of the various commodities calculated on the basis of representative price quotations in a defined period have been utilised as constant weights.

The prices employed are annual averages of actual quotations for medium qualities of the various articles in leading producing countries or free markets, and may be considered fairly representative of relative values on the world market. The index is calculated by the aggregative system. A further explanation of the procedure adopted will be found in Annex I, which should be consulted.

For the reasons set forth in the introduction new calculations have been made with 1925 as base. The statistical series have also been revised. In the case of a large number of commodities, more complete data have become available since tha

year than previously. The new indices, therefore, reflect more accurately the changes that have taken place in the different parts of the world since 1925 than the indices calculated from the old series, which were necessarily confined to those countries for which reasonably comparable information was available for both 1913 and the post-war period. The price data used as weighting coefficients have also been revised in the light of more detailed information now available. In view of these changes, it is obvious that, irrespective of differences in base years, strict comparability does not obtain between the new indices and those published in the previous issues of this *Memorandum*. For the world as a whole, however, the discrepancy between the new and the old general index is small in overlapping years ; in 1926 and 1927 it amounted to less than one per cent (1925=100).[1]

In view of the changes that have taken place in relative values in recent years, it has been considered desirable to calculate the index on the basis both of the prices ruling in 1925 and of those in 1929. These two calculations yield on the whole very similar results. It is sufficient, therefore, to consider in the following analysis only the results obtained by employing 1929 values. Discrepancies of some importance do, however, occur in certain groups of commodities composed of articles the prices of which underwent substantial changes between 1925 and 1929 and for this reason complete comparative figures are given in the annexes.

Sixty-three commodities, falling into two main divisions and thirteen groups, have been taken into consideration and sub-indices have been calculated for each division and group. The list of these commodities is given on page 16.

Owing to the absence of complete or sufficiently representative data, certain classes of products have had to be omitted, the most important being dairy produce, fruit, and timber. From the metal group, gold has been omitted as so large a part of the production is used for monetary purposes. For China, no comprehensive statistics of the production of cereals and other foodstuffs exist. Further, no adequate figures of cement production in Latin America and Africa are available ; but this omission is of very small importance.

Certain minor modifications have been made in the subdivisions adopted in the previous year. The group entitled " Colonial produce, hops, tobacco " has been split into two, tobacco being now considered separately. While tobacco is maintained under raw materials, colonial produce and hops have been included among foodstuffs. Any rough division is necessarily largely arbitrary ; thus some of the cereals, viz., barley, oats, and maize, are used mainly as fodder — i.e., as raw materials of meat, while some of the oils classed as raw materials are chiefly used for food.

The modification made in the subdivision according to continental groups has already been mentionned in the introduction.

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[1] A rough comparison with 1913 may be made by linking up the new general index in 1925 with the old index weighted by 1927 values, as published in the *Memorandum on Production and Trade,* 1913 *and* 1923-27, Geneva, 1929.

List of Commodities included in the Production Index.

Foodstuffs

Cereals :

- Wheat
- Rye
- Barley
- Oats
- Maize

Other food crops :

- Rice
- Potatoes
- Beet-sugar
- Cane-sugar

Meat :

- Beef
- Veal
- Pork
- Mutton and lamb

Colonial produce and hops :

- Coffee
- Cocoa
- Tea
- Hops

Raw Materials

Tobacco.

Vegetable oil materials :

- Cotton-seed
- Linseed
- Rape-seed
- Hemp-seed
- Sesame-seed
- Soya beans
- Ground-nuts
- Copra
- Palm and palm-kernel oil (raw)
- Olive oil (raw)

Textile materials :

- Cotton
- Flax
- Hemp
- Manila hemp
- Jute
- Wool
- Raw silk
- Artificial silk

Raw rubber.

Wood-pulp :

- Mechanical pulp
- Chemical pulp

Cement.

Fuels :

- Coal
- Lignite
- Petroleum

Metals (smelter production) :

- Pig-iron and ferro-alloys
- Steel (ingots and castings)
- Copper
- Lead
- Zinc
- Tin
- Aluminium
- Nickel
- Silver

Chemicals (fertilisers) :

- Natural phosphates
- Potash
- Sulphur
- Natural guano
- Chilian nitrate of soda
- Nitrate of lime (Norwegian and ammoniated)
- Cyanamide of calcium
- Sulphate of ammonia
- Superphosphates of lime
- Basic slag
- Sulphate of copper

Total Production.

It is convenient to show first the general index of foodstuffs and raw materials combined, based on 1925 and weighted by 1929 values, for the world as a whole and its main continental groups.

The available statistics of production in 1930 are far from complete. In particular, comprehensive information is lacking in respect of meat, tobacco, several vegetable oils and textiles, wood-pulp, cement and most chemicals. Rough provisional indices for Europe, North America and the rest of the world taken together may, however, be calculated from the figures available supplemented by estimates, based on less complete information, for the commodities mentioned above, which account for about 48 per cent of the production aggregate. These indices are given in italics in the tables below.

TABLE III.

GENERAL INDICES OF PRODUCTION, WEIGHTED BY 1929 VALUES.

(Base : 1925=100).

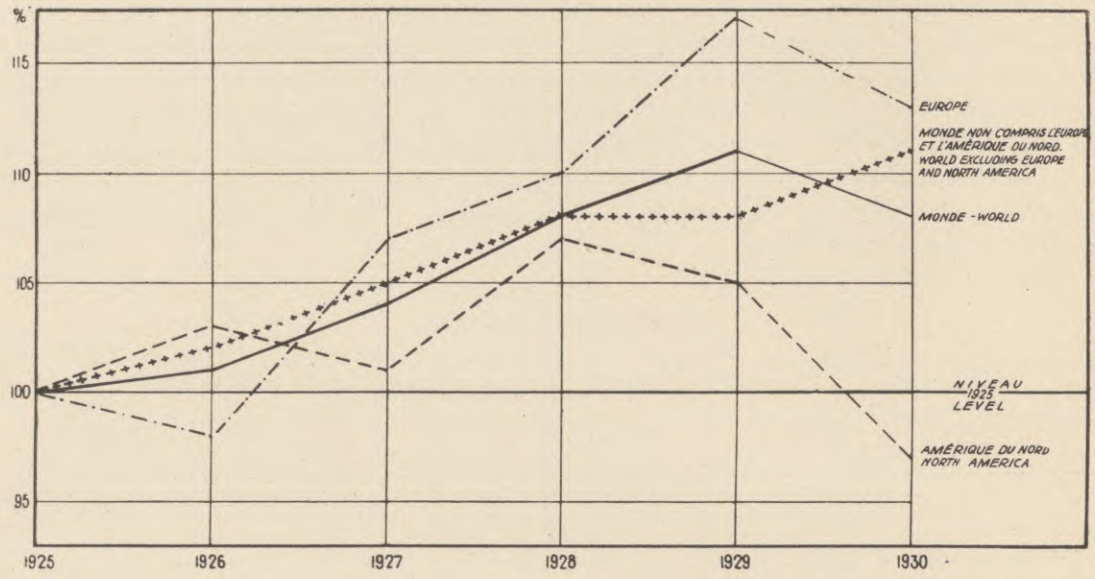
Continental groups	1925	1926	1927	1928	1929	*1930**
Europe, excluding U.S.S.R.	100	94	106	110	119	*109*
Europe, including U.S.S.R.	100	98	107	110	117	*113*
North America	100	103	101	107	105	*97*
Latin America	100	103	108	111	108	
Africa	100	100	103	107	114	*110*
Asia (excluding Asiatic Russia) [1]	100	101	104	106	107	
Oceania	100	110	106	115	108	
WORLD	100	101	104	108	111	*107*

[1] Excluding production of foodstuffs in China.
* Provisional indices.

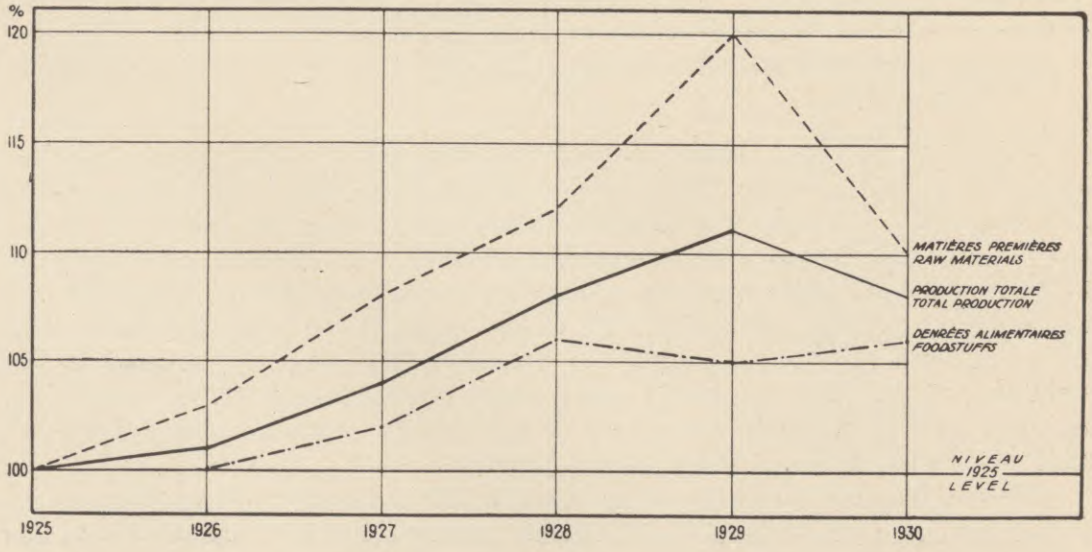
The old world index, based on 1913 and weighted by 1927 values, was well above the pre-war level by 1923, and stood at 116 in 1925. The eorresponding European index, however, was only 103 in that year, while the indices of all the other continental groups were substantially higher. A tentative calculation on the basis of the old series points to an increase in the production of foodstuffs and raw materials between 1913 and 1929 of just over 20 per cent in Europe, just under one-third in North America and something less than 30 per cent in the world as a whole. The apparently rapid progress achieved by Europe since 1925, therefore, represents partly a recovery of lost ground, while the rising figures of other continents represent more normal progress.

The considerable rise in the world index in 1927 primarily reflects the recovery in European production from the temporary set-back in 1926, due mainly to the

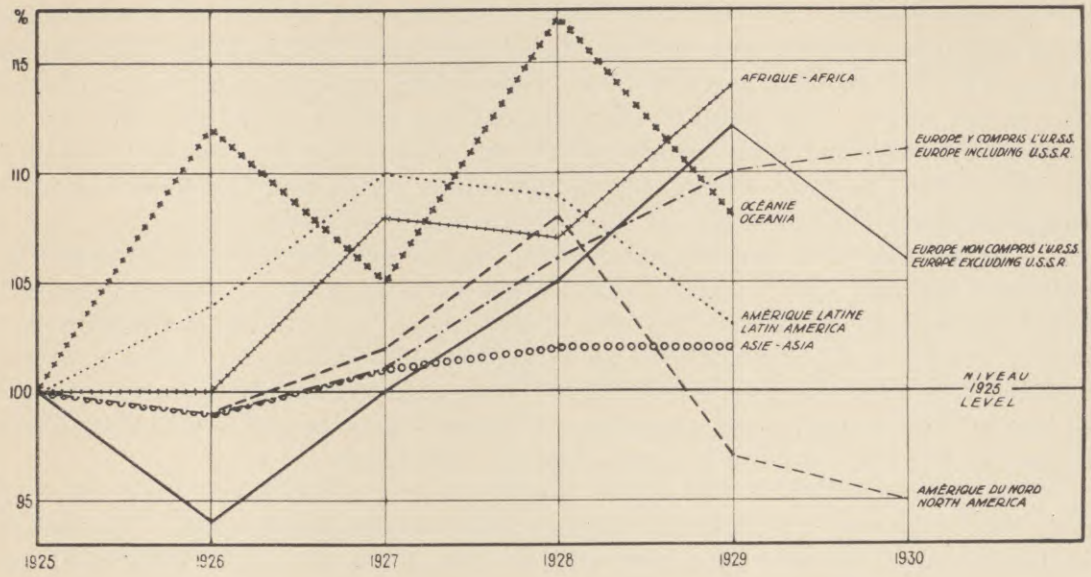
Aggregate Production of Foodstuffs and Raw Materials in Europe, North America and the World, 1925-1930.



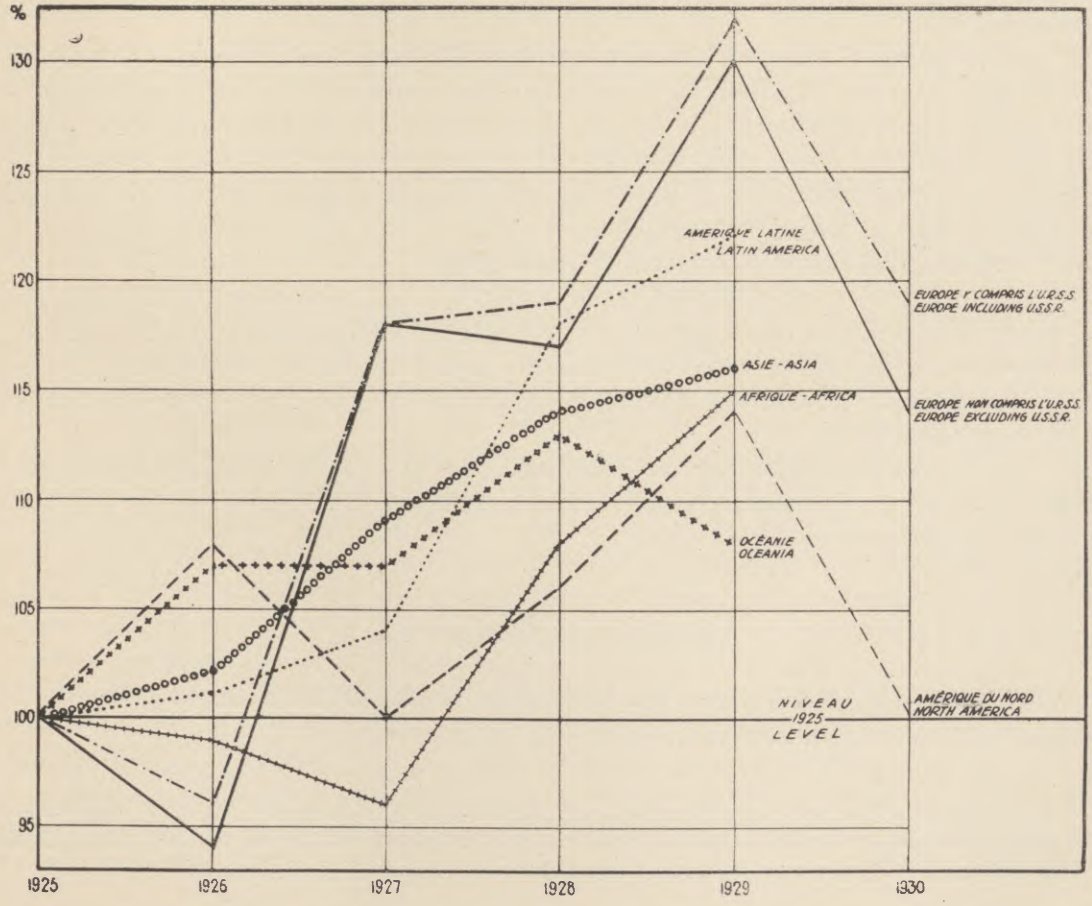
World Production of Foodstuffs and Raw Materials, 1925-1930



PRODUCTION OF FOODSTUFFS IN DIFFERENT CONTINENTAL GROUPS, 1925-1929/30



PRODUCTION OF RAW MATERIALS IN DIFFERENT CONTINENTAL GROUPS 1925-1929/30



British coal dispute. In 1928, unusually good harvests, as well as a substantial advance in the output of meat and certain raw materials, and, in 1929, a remarkable advance in the output of raw materials, were mainly responsible for the continued rise in the index. The total increase during the period 1925-1929 amounts to 11 per cent, which is equivalent to an average rise of 2.6 per cent per annum.[1] In 1930, however, there was a very rapid decline, particularly in North America and Europe excluding the Union of Soviet Socialist Republics.

The rate of growth in Europe including the Union of Soviet Socialist Republics between 1925 and 1929 averaged about 4 per cent per annum, while, in the rest of the world taken together, it was only 1.6 per cent. The rapid rise in the European indices in 1929 and particularly in that for Europe excluding the Union of Soviet Socialist Republics was due in part to rich food crops but mainly to a very marked advance in the output of raw materials. The heavy drop in 1930 is likewise chiefly caused by the movement in the raw material production.

The indices for North and Latin America show a development very different from that of Europe. In both, the highest point was reached in 1928. The decline in 1929 was wholly due to a reduction in crops ; the output of industrial raw materials continued to rise in that year, but contracted heavily in 1930. The net increase between 1925 and 1929 was less in North America than in any other continent.

An increase of about 14 per cent between 1925 and 1929 is recorded for Africa. It should be borne in mind, however, that the contribution of this continent to the world's total production is small. The exceptional rise in the African index in 1929 is largely due to heavy crops. The general index for Oceania, which, in 1928, was higher than that of any other continent, decreased in 1929 on account of light crops and a drop in the output of wool. Asiatic production shows a regular but comparatively slow development since 1926.

According to the provisional joint index for Latin America, Africa, Asia and Oceania shown above, their aggregate production of foodstuffs and raw materials in 1930 would appear to have been roughly equal to that in 1929 ; but the 1930 data available for these continental groups are less complete than those for Europe and North America.

Certain of the major factors responsible for the relative changes since 1925 indicated above will become clear from an examination of the indices for different groups of commodities.

Production of Foodstuffs.

The following table gives the indices for foodstuffs in a manner similar to that adopted in the preceding table.

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[1] Throughout this chapter, the rates of development are calculated direct from production aggregates and therefore do not always exactly coincide with the changes indicated by the indices and percentages shown in the tables.

TABLE IV.

FOODSTUFFS PRODUCTION INDICES, WEIGHTED BY 1929 VALUES.

(Base : 1925=100)

Continental groups	1925	1926	1927	1928	1929	*1930* *
Europe, excluding U.S.S.R.	100	94	100	105	112	*106*
Europe, including U.S.S.R.	100	99	101	106	110	*111*
North America	100	99	102	108	97	*95*
Latin America.	100	104	110	109	103	
Africa	100	100	108	107	114	*107*
Asia (excluding Asiatic Russia and China)	100	100	101	102	102	
Oceania	100	112	105	117	108	
WORLD	100	100	102	106	105	*105*

* Provisional indices.

Foodstuffs indices for which a single year is used as base are obviously open to criticism. They are mainly useful as indicating the year-to-year variations. In 1925, the harvests of cereals and other food crops exceeded the average for the quinquennium 1923-1927 by some 9 per cent in Europe, about 3 per cent in Latin America and 1 per cent in Africa and Asia, while, in North America, they fell short of that average by about 1 per cent and, in Oceania, by roughly 7 per cent. World harvests in 1925 were about 3.5 per cent greater than the average for 1923-1927. Had that average been adopted as base in the case of these products, this would not have appreciably affected the indices of the total foodstuffs production (including meat and colonial produce) for North America, Latin America, Africa and Asia. The relative level of the world index for foodstuffs production would have been roughly two points higher throughout the period considered, the level of the Oceanian index would have been very considerably lower and that of the European indices very considerably higher. Thus, the 1929 index for Europe, excluding the Union of Soviet Socialist Republics, would have risen to 119 and that for Europe, including the Union of Soviet Socialist Republics, to 117. The increase in the foodstuffs production in recent years over the average output in 1923-1927 has, therefore, been much larger in Europe than in the other continental groups. On the other hand, this average was some 3 per cent lower than that for 1909-1913 in Europe, about 17 per cent higher both in North America and in the other continental groups taken together and about 8 per cent higher in the world as a whole.

World production of foodstuffs reached its peak in 1928, declined but slightly in 1929 and appears to have risen again in 1930 to a level which, according to the preliminary data available, was less than a half per cent below that of 1928.

The foodstuffs index reflects mainly the variations in the cereal harvests and other food crops. In 1928 (1928-29 in the southern hemisphere), crops were heavy all over the world and particularly in North and Latin America and Oceania. As a

result, the carry-over of certain cereals was exceptionally large, and prices began to sag. In 1929 (1929-30), world harvests declined from the high figures of the preceding year on account of a considerable reduction in the crops of the great exporting countries in America and Oceania, while, at the same time, the requirements from overseas of the chief importing countries in Europe diminished on account of record harvests in these areas and the reappearance of Soviet Russia as an exporter. According to the preliminary information for 1930 (1930-31), the cereal harvests were again relatively heavy, exceeding those of the preceding year, in spite of a not inconsiderable reduction in Europe (apart from the Union of Soviet Socialist Republics) and North America. As a consequence, exportable stocks further increased during that year and are expected to reach unprecedented figures by the end of the commercial year 1930-31.

The production of meat reached its peak in 1928 and fell in 1929 ; a further slight reduction in meat production has been assumed in calculating the provisional foodstuffs index for 1930. The colonial produce and hops group has followed a different trend, but it weighs less in the food aggregate.

Europe (including the Union of Soviet Socialist Republics) accounts for more than 40 per cent of the world production of the foodstuffs considered. European crops, which, in 1925, were well above the pre-war average, shrank considerably in 1926, except in the Union of Soviet Socialist Republics, but rose subsequently without interruption and reached a very high level in 1929. For the first time since the war, Europe's share in world production of cereals then exceeded 50 per cent. The cereal harvests and other food crops were reduced in Europe, excluding the Union of Soviet Socialist Republics, in 1930, but this decrease was more than compensated for by an advance of about 20 per cent in Soviet Russia. The reduced requirements of the European countries further accentuated the depression in the cereal markets overseas. European meat production had, by 1925, probably recovered its 1913 level ; it increased very rapidly (by 19 per cent) up to 1928, but has since declined to some extent.

The crops reaped in North America, the second largest supplier of these foodstuffs, show a movement between 1925 and 1928 somewhat similar to that in Europe : in the latter year, they exceeded the pre-war average by more than one quarter, but shrank heavily in 1929, and further decreased in 1930. American meat production, on the other hand, remained practically stationary, at probably 26 to 27 per cent above the 1913 level, during the whole period under review.

The foodstuff index for Latin America mainly reflects the fluctuations in wheat and coffee production. The record coffee crop of 1927-28 and the abundant wheat harvest in 1928-29 account for the high indices for these years. The drop in 1929-30 is entirely due to a 53 per cent reduction in the wheat harvest in the Argentine. In 1930-31, again, the wheat harvest in Latin America improved, without, however, reaching the high figures for 1926-27 to 1928-29, while the coffee crop was the lightest since 1925-26. Africa shows, in 1929-30, a higher index for foodstuffs than any other continent, a result of record harvests of wheat and maize. The exceptional rise in the index for Oceania in 1928 and the heavy fall in 1929 are mainly due to variations

in the wheat crop and, to a less extent, in meat output. On the other hand, the index for Asia, in which rice plays a predominant rôle, has remained remarkably steady.

Production of Raw Materials.

Indices of the aggregate production of industrial raw materials are given in the following table :

TABLE V.

RAW-MATERIAL PRODUCTION INDICES, WEIGHTED BY 1929 VALUES.

(Base : 1925=100)

Continental groups	1925	1926	1927	1928	1929	*1930* *
Europe, excluding U.S.S.R.	100	94	118	117	130	*114*
Europe, including U.S.S.R.	100	96	118	119	131	*119*
North America	100	108	100	106	114	*100*
Latin America.	100	101	104	118	122	
Africa	100	99	96	108	115	*115*
Asia (excluding Asiatic Russia).	100	102	109	114	116	
Oceania	100	107	107	113	108	
WORLD	100	103	108	112	120	*110*

* Provisional indices.

The world index based on the old production series weighted by 1927 values showed an increase of 25 per cent in the output of raw materials between 1913 and 1925 as against 11 per cent in the case of foodstuffs. But the raw-material production in Europe (including the Union of Soviet Socialist Republics) was only fractionally higher than before the war, while in Oceania it was one-sixth, in North and South America about one-third, in Asia one-half, and in Africa two-thirds higher.

The above table shows that, in the quinquennium under review, the output of raw materials, in contrast to that of foodstuffs, has expanded without interruption. The growth in 1929 was greater than in any other single year since the war. The average annual increase between 1925 and 1929 was about 4.7 per cent as against 1.2 per cent in the case of foodstuffs. The aggregate production of raw materials appears to have dropped by more than 8 per cent in 1930 : but the provisional world index is higher than in 1927 and only a little lower than in 1928. A more detailed analysis of the movement in the production of the various groups of commodities included in the raw-material index will be made later.

The outstanding general feature in raw-material production up to 1929 was the tendency toward a re-establishment of the pre-war balance between Europe and the rest of the world. The recovery of Europe was temporarily checked in 1926 and again in 1928, but in 1927 and 1929 very rapid growth is recorded.

This advance was largely due to the fact that the production of heavy raw materials, such as coal, iron and steel, which had lagged much behind up to 1925-26, advanced very rapidly in subsequent years and reached record figures in 1929. According to the preliminary data available, raw-material production dropped in 1930 in Europe, excluding the Union of Soviet Socialist Republics, by not less than 12 per cent, but Soviet Russia further raised her output to the effect that in Europe, including the Union of Soviet Socialist Republics, the decrease was 9 per cent, and the quantum of production maintained the high level of 1927 and 1928.

Raw-material production in North America experienced a setback in 1927, but increased remarkably in the subsequent years. Peak figures were recorded in 1929 for iron and steel, copper and petroleum, but the production of certain other important products, such as cotton and coal, was on a lower scale than in some of the preceding years. Total production of raw materials in 1930 declined by 12 per cent, as in Europe excluding the Union of Soviet Socialist Republics, and was lower than in any year since 1925.

The index for Latin America is mainly influenced by the output of petroleum in Venezuela, Colombia and Mexico, the wool clip in Argentine and Uruguay, and by copper and nitrate production in Chile. Egyptian cotton and South-African wool have a considerable influence on the African index. Rubber, tin, steel, natural silk, jute and vegetable oil materials together with tobacco all contributed to the rise in the index for Asia up to 1928 ; but the further increase in 1929 was almost exclusively due to the record output of natural silk in Japan, and of rubber, particularly in British Malaya, while the production of the other principal Asiatic products either remained stationary or declined. Raw material output in Oceania reached its peak in 1928, but declined by nearly 5 per cent in 1929, mainly as a result of the variations in the wool clip which has a decisive weight in the index for this continent.

A preliminary index of raw-material production in 1930 has been calculated for Latin America, Africa, Asia and Oceania, taken together. It appears that the aggregate production of these continents was practically the same in 1930 as in 1929.

A comprehensive production index including raw materials of agricultural origin must necessarily be based on annual figures. Monthly production figures are only available for a few of the other raw materials and in relatively few countries ; but they show that, in certain cases, and particularly in North America, the trend of production had turned decidedly downwards in the course of 1929. The consumption of important raw materials did not, in fact, keep pace with the rapid advance in production in 1929 and declined more rapidly in 1930 as reflected by a marked increase in stocks since the middle of the former year. The increasing stocks weighed heavily on the market and precipitated the fall in prices and the gradual extension of the economic depression in 1930 to all parts of the world.

Relative Importance of the Different Continental Groups.

The extent to which the contributions of the different continental groups to the total volume of production considered have changed in relative importance in recent years is brought out in Table VI. This table gives the percentage distribution of the aggregate production of foodstuffs and raw materials and of these two groups of commodities combined in the years 1925 and 1929. Figures for each year, weighted both by 1925 and 1929 values, are given in Annex IV.

TABLE VI.

PERCENTAGE DISTRIBUTION OF AGGREGATE PRODUCTION OF FOODSTUFFS AND RAW MATERIALS, WEIGHTED BY 1929 VALUES.

(World total=100)

Continental groups	Foodstuffs		Raw materials		Total production	
	1925	1929	1925	1929	1925	1929
Europe, excluding U.S.S.R.	29.0	31.0	28.0	30.3	28.6	30.7
Europe, including U.S.S.R.	41.9	44.2	31.5	34.6	38.0	40.2
North America	25.8	23.8	40.7	38.6	31.5	29.9
Latin America.	9.6	9.5	5.2	5.3	7.9	7.7
Africa	2.7	3.0	3.1	2.9	2.9	3.0
Asia (excluding Asiatic Russia)	18.3	17.8	16.9	16.3	17.7	17.2
Oceania	1.7	1.7	2.6	2.3	2.0	2.0
WORLD . . .	100	100	100	100	100	100

Europe's share in world production of both foodstuffs and raw materials increased during the period under review, and more in the case of the latter than in that of the former.

The complement to this change in Europe's relative position is to be found in an almost equal drop in the share of North America. The share of the other continents taken together has dropped much less and this loss was indeed almost wholly confined to Asia.

Relative Importance of Foodstuffs and Raw Materials

That the production of foodstuffs should have developed less rapidly than that of raw materials is to be expected in all progressive countries after they have reached a certain standard of living.

The figures for any single year are, in the case of foodstuffs and raw materials of agricultural origin, naturally influenced by weather conditions, but the nature of this tendency can be appreciated by an inspection of Annex V, condensed in Table VII below, which shows the percentage distribution of the production aggregates between foodstuffs and raw materials in 1925 and 1929. The figures are all weighted by 1929 values, so that the changes result from alterations in quantities only. As shown in Annex V, rather different results are obtained if the production figures are weighted by 1925 values, as a result of changes in relative prices between 1925 and 1929, but the tendency is equally clear.

TABLE VII.

SHOWING THE RELATIVE IMPORTANCE OF FOODSTUFFS AND RAW MATERIALS IN AGGREGATE PRODUCTION, WEIGHTED BY 1929 VALUES.

(Total production of each continental group=100)

Continental groups	Foodstuffs		Raw materials	
	1925	1929	1925	1929
Europe, excluding U.S.S.R.	62.6	59.1	37.4	40.9
Europe, including U.S.S.R.	68.3	64.4	31.7	35.6
North America	50.7	46.5	49.3	53.5
Latin America	74.8	71.6	25.2	28.4
Africa	59.1	58.9	40.9	41.1
Asia (excluding Asiatic Russia)	63.7	60.8	36.3	39.2
Oceania	51.5	51.5	48.5	48.5
WORLD	61.9	58.6	38.1	41.4

It will be seen that foodstuffs have lost, and industrial raw materials gained, in relative importance in all continental groups except Oceania.

The percentages shown above are affected to some extent by the fact that, for metals, smelter production is taken instead of mine production. In consequence, the figures for Latin America and Africa are somewhat reduced. Moreover, it should be noted that the statistics of the foodstuff production in Asia (which omit China) and also those relating to Africa are incomplete, while the raw material output is fairly accurately recorded in all continents. Nevertheless, the table brings into light the remarkable differences which exist between the different continental groups in respect of the relative importance of foodstuffs and raw materials. The figures for North America and Europe where the bulk of the commodities produced is actually consumed within the respective continents, are of particular significance. In North America a much greater proportion of total expenditure is devoted to the production of raw materials than in Europe, even excluding the Union of

Soviet Socialist Republics. A still greater proportion than that indicated above is, in point of fact, in North America devoted to the purchase of raw materials, for the United States of America is relying more and more on outside sources of supply. Had calculations been made for Western Europe separately, a result similar to that shown above for North America would have been obtained, although the preponderance of raw materials would have been somewhat less.

Production of the Principal Commodity Groups.

In Table VIII below will be found indices for each commodity group for the years 1925 to 1929, together with provisional indices for 1930 for most of these groups.

TABLE VIII.

GROUP INDICES OF PRODUCTION IN THE WORLD AS A WHOLE, WEIGHTED BY 1929 VALUES.

(Base : 1925=100)

Groups of products	1925	1926	1927	1928	1929	*1930* *
Cereals	100	99	99	104	101	*102*
Cereals and other food crops	100	98	100	104	103	*105*
Meat	(100)	(102)	(105)	(110)	(107)	...
Colonial produce, hops	100	109	132	116	125	*107*
Tobacco	100	103	101	106	113	...
Vegetable oil materials	100	99	110	106	112	*106*
Textiles	100	104	98	106	108	*109*
Rubber	100	111	122	116	149	*140*
Wood-pulp	100	110	114	117	131	...
Cement	100	107	116	123	124	...
Fuels	100	100	110	110	119	*109*
Metals	100	103	112	120	131	*107*
Chemicals (fertilisers)	100	100	106	123	133	...
Foodstuffs	100	100	102	106	105	*106*
Raw materials	100	103	108	112	120	*110*
GENERAL INDEX	100	101	104	108	111	*107*

* Provisional indices.

The first index given above is supplementary to the second which includes, in addition to cereals, rice, potatoes and raw sugar. Individual indices for each of the commodities comprised in the above groups are given in Annex II, and separate indices for the production by continents of each group of commodities will be found in Annex III.

Cereals.

Of all the commodity groups, that of cereals is the most important, accounting in 1929 for about 25 per cent of the aggregate on which the general index is based. The production of cereals has, however, increased but little since the war and remained in the years 1925 to 1927 4 to 5 per cent above the pre-war level; but the harvest of 1928 (in the southern hemisphere, 1928-29) was exceptionally large. In 1929 (1929-30), total world production of cereals shrank considerably owing to very light crops in the great exporting countries in America and Oceania which were only partly offset by record harvests in Europe. This increase in European crops, in conjunction with the accumulation of heavy stocks elsewhere from previous seasons, depressed the market and caused a slump in cereal prices. According to the preliminary information available, the aggregate cereal harvests of 1930 (1930-31) were somewhat heavier than in the preceding year, but not as good as in 1928 (1928-29). Both in Europe, excluding the Union of Soviet Socialist Republics, and in North America, the harvests declined, but Soviet Russia reaped record crops; in the rest of the world, taken together, the harvests were considerably larger than in either 1925 or 1929. As a result, the agricultural depression was further accentuated in 1930 and the beginning of 1931.

The wheat market has been the most seriously affected. The commercial year beginning on August 1st, 1929, opened with abnormally large stocks amounting to about 122.5 million quintals. The world harvest of wheat was reduced by about 151 million quintals and was less than the average for the quinquennium 1923-1927 (1923-24 – 1927-28); almost half of this reduction was attributable to Canada and the remainder to the United States of America, Argentine and Australia. At the same time, the requirements from overseas of the chief importing countries of Europe were substantially reduced and the exporting countries were unable to market their whole supply. As a result, although the world harvest of 1929-30 was moderate, there remained, on July 31st, 1930, a carry-over of 114.3 million quintals. The consequent disturbances were particularly severe in the Argentine, Australia, Canada and the United States of America. An extremely heavy burden was imposed upon the Canadian Wheat Pool, which ultimately, however, received both official and private financial support. In the United States of America, a new organisation, the Federal Farm Board, was created in 1929 with the object of bringing about a stabilisation of prices and waging a campaign for the reduction of acreage under wheat and cotton.

The estimated world harvest in 1930 (1930-31) shows an increase of about 147 million quintals, or nearly 13 per cent over that of the preceding year; the greater part of this increase is due to record crops in Soviet Russia. The surplus of wheat that will be available for export at the end of the commercial year (July 31st, 1931) is estimated by the International Institute of Agriculture at some 130 million quintals, the highest figure ever recorded.

The harvest of oats in 1929 (1929-1930) was considerably above and that of barley very much above the average for 1923 to 1927. In 1929, Europe reaped record harvests of both cereals, but the fall in the North American oats crop in

that year more than outweighed the increase in European countries. The world harvests of rye and maize, which were light in 1928, recovered in 1929 to about the average for 1923 to 1927. The greater part of the increase in the rye harvest in that year was attributable to Soviet Russia. In 1930 (1930-31), the harvests of rye and oats were heavier than in the preceding year, but those of barley and maize decreased.

Other Food Crops.

The yields of rice, potatoes and raw sugar in 1928 (1928-29) equalled or exceeded those for any preceding year. In 1929 (1929-30), the rice and sugar crops dropped, while the yield of potatoes advanced, largely owing to a record crop in France and other European countries. The preliminary figures for 1930 (1930-31) indicate a considerable increase in the rice crop, a slight advance in the total output of raw sugar, but a small decline in the yield of potatoes.

During the years preceding the period under review, cane-sugar gained ground from beet and ultimately represented about two-thirds of the total production of raw sugar. This tendency however was reversed in the period 1925 to 1930. The fluctuations in both crops were similar : after a fall in 1926-27, both increased in the two subsequent years, and dropped in 1929-30. But the average rate of increase up to 1929 was considerably higher for beet-sugar than for cane-sugar. In 1930-31, moreover, the beet-sugar crop rose by not less than 25 per cent — this increase being chiefly attributable to Soviet Russia — while that of cane-sugar decreased by nearly 8 per cent.

The beet-sugar industry has been largely stimulated, especially in European countries, by protective duties and subsidies. On the other hand, the output of cane-sugar was checked by the restriction scheme adopted in Cuba, the largest single producer. This policy eventually failed, however, and the scheme was abandoned in 1928. Since the record sugar crop in 1928-29, the accumulated stocks in Cuba and elsewhere have grown rapidly and prices have fallen continuously though total stocks are not large as compared with world production ; but they are, in the main, concentrated in a few exporting centres. The world output of raw sugar rose from 254 million quintals in 1925-26 to 282 million in 1930-31, and total stocks from 33 to 68 million quintals between the end of 1925 and the end of 1930. In 1930 and 1931, the chief sugar exporters of Cuba, Java, and Europe agreed to form a world cartel with a view to checking production and regulating exports.

Meat.

The statistics of meat production are very defective. In preparing the present edition of the *Memorandum*, the various figures and estimates employed in calculating the index were revised and completed as far as possible. The meat index remains, however, conjectural in character and is therefore printed in parentheses.

The world production of meat appears to have increased until 1928. This increase was largely due to an advance in the production of pork, more especially

in Europe. It would seem that there has been in recent years a substantial shift in demand from cereals to meat and potatoes ; no doubt, if statistics were available, it would be found that the consumption of fruit has likewise increased rapidly.

Since 1925, meat production in North and Latin America has remained almost stationary. On the other hand, the European production of meat only reached the pre-war level in 1925, but increased by nearly one-fifth between 1925 and 1928. In 1929, a considerable drop seems to have taken place ; but the index still remained well above the average for 1925 to 1927. In Africa, Asia and Oceania meat production advanced at a moderate rate after 1925. In 1929, a slight increase in Africa was offset by a drop in Oceania.

Colonial Produce and Hops.

The production of the commodities included in this group has nearly doubled since immediately before the war. The group index reflects mainly the great variations in the coffee crops. The crop of 1927-28 was the heaviest ever harvested, exceeding that of the preceding season by one-third. The crop was considerably reduced in 1928-29, recovered again by some 10 per cent in 1929-30, but is believed to have contracted by about 20 per cent in 1930-31, and to be smaller than in any year since 1925-26. The stocks accumulated in Brazil amounted at the end of 1929 to 12 million and at the end of 1930 to 14.5 million quintals, which nearly equals the average annual production of coffee in the world prior to 1926-27. In consequence, coffee prices have shown an unprecedented fall.

The production of tea has increased regularly during the period 1925-26 to 1929-30, but the rate of growth, although high, was lower than that for coffee. The stocks held in the United Kingdom, which consumes about half the total tea crop, increased from 1,093,000 metric quintals at the end of 1928 to 1,361,000 metric quintals at the end of 1930. The tea planters in British India and Dutch East Indies were led to take measures with a view to restricting output. As a result of these measures and also of unfavourable weather conditions, the estimated tea crop of 1930-31 is lighter than in the two preceding years.

The output of cocoa, which in 1925 was more than double that of 1913, has increased less during the period under review than that of coffee and tea. The production of hops slightly exceeded the pre-war level for the first time in 1929, but dropped considerably in 1930.

Tobacco.

Too much reliance should not be placed on the statistics for tobacco as, owing to lack of actual production data for India, the Asiatic production is, in the main, estimated on the basis of figures for area under cultivation. From the figures available, it would appear that a great increase in world production occurred between 1913 and 1925. In 1925 to 1927 the output changed but little, but in the two last years under review has made further advance. This advance has been particularly marked in Latin America.

Vegetable Oil Materials.

The group index for vegetable oil materials, which rose comparatively rapidly up to 1925, has since risen less than that for any other group of raw materials.

The movement in the three last years covered is largely influenced by great variations in the output of olive oil, which was very large in 1927, but reached in 1929 the highest figure ever recorded. Indeed, the European index for vegetable oils, which is almost wholly governed by olive-oil production, advanced in that year to 173 (excluding the Union of Soviet Socialist Republics). On the other hand, the yield of linseed decreased heavily in 1928 and still more in 1929. As the Argentine produces about one-half of the world supply of linseed, and as other vegetable oils are of small importance in Latin America, the index of this continent for 1929 dropped to 75. In 1930, the olive-oil output was little more than one-third of that in the preceding year, while the linseed crop rose by more than one-fourth. The cotton-seed crop, another important oil product of temperate regions, has varied but little in the last three years.

The total tropical supplies of vegetable oils increased slightly in 1928, but contracted in 1929. This decrease is wholly due to a considerable fall in the crop of ground-nuts in India which accounts for more than one-half of the world total. The yields of all other tropical oils increased.

Textiles.

The production of textile raw materials as a whole developed less rapidly than that of any other commodity group, except food and fuels, up to 1925 and, since that year, the index has risen but little, the net advance up to 1930 being about 9 per cent. Nevertheless, the supplies of textile raw materials have, in recent years, been in excess of requirements owing to a contraction in the demand for finished textile products.

The chief textile, cotton, has continued to suffer from the competition of the finer and more expensive materials. The production of raw cotton decreased from 1925-26 to 1929-30 by 7 per cent ; the figure for the latter year, although above the average for 1921-22 to 1925-26, is the lowest recorded in the period under review. The estimated crop of 1930-31 exceeds that of the preceding year by about 7 per cent. On the other hand, the mill consumption of raw cotton increased slightly in 1929, but fell by about 12 per cent in 1930. According to the estimate of an expert body (Liverpool Cotton Association), the world stocks of raw cotton increased from 7,024 million bales at the end of 1928 to 7,234 million at the end of 1929, and reached as much as 9,396 million at the end of 1930, which corresponds to about 40 per cent of the average annual cotton-mill consumption of the world.

Increased consumption of mutton helped to augment the supplies of wool coming forward up to 1928-29, the year of record clip. During the second half of 1929, however, it became evident that the supplies could no longer be absorbed by the market, and the increase was accordingly arrested. The wool clip of 1929-30 was nearly as large as in the preceding year, but, according to preliminary information, the clip of 1930-31 is likely to show a considerable reduction.

The flax crops of the years 1926 to 1928 were much lighter than that of 1925, which was below the pre-war average; for 1929 and 1930, however, a remarkable advance is recorded, chiefly owing to very favourable crops reaped in the Union of Soviet Socialist Republics. The production of jute, which is practically confined to India, likewise increased both in 1929 and 1930.

The output of artificial silk increased, between 1925 and 1929, by as much as 132 per cent — that is, more than that of any other commodity considered — and the production of natural silk also showed a steady and considerable advance during that period. In 1930, a moderate decrease was recorded for both products.

Rubber.

The production of raw rubber increased extremely rapidly during the whole post-war period until 1927, in spite of the restriction scheme adopted in the British controlled areas in 1922. This scheme was abandoned in November 1928. The total production of 1928, however, was about 32,000 tons below that of the preceding year. In spite of this decrease, total shipments of rubber increased by some 6 to 7 per cent, owing to the stocks previously accumulated. The removal of the restriction scheme made itself felt in 1929, when both production and shipments increased more than in any single year of the period under review. The total output of rubber in 1929 exceeded that of 1925 by almost a half, and that of 1928 by nearly one-third. The bulk of the increase is attributable to British Malaya and also to a considerable extent to the Dutch East Indies. In 1930, the British and Dutch producers in the Asiatic plantation areas ceased tapping for one month. The total output of rubber decreased by about 6 per cent in that year, but rubber consumption, which had increased less than production in 1929, declined considerably. The consequent over-supply of raw rubber in recent years is reflected in a rapid increase in stocks. According to the *Wijnand & Keppler's Rubberbericht*, world stocks of raw rubber grew from 275,000 tons at the end of March 1929 to 409,300 in March 1930 and 517,900 in March 1931. The last-mentioned figure represents over 60 per cent of the world output in 1930.

Wood-pulp.

The production of wood-pulp, which, by 1925, was over 50 per cent greater than in 1913, increased by more than one-third in the subsequent four years and thus developed more rapidly than that of the other groups considered, except rubber. The growth was particularly rapid in 1929 and, since 1926, considerably greater in Europe than in North America ; consequently, Europe's share in world production has increased continuously since that year.

The tendency, to which reference has been made in preceding editions of this *Memorandum*, for chemical pulp to gain ground from mechanical has persisted in recent years. The syndicate of Norwegian, Swedish and Finnish producers of mechanical pulp took measures in 1929 to curtail production, and the principal producers of chemical (sulphite) pulp in Northern and Central Europe did likewise in 1930. Comprehensive production figures for that year are not yet available.

Cement.

As already stated, the cement index does not include Latin America or Africa and is not complete for certain other continents. It is, however, sufficiently representative to afford a fair indication of the growth of this particular industry in the regions to which it relates ; these regions undoubtedly account for the bulk of the production of the world as a whole. But the index should not be employed as a measure of building activity. Between 1925 and 1929, output increased at an average rate of a little more than 6 per cent per annum, but this rate was not maintained in 1930, according to the somewhat incomplete data available.

Fuels.

World production of fuels, which rose by 10 per cent in 1927, the year after the British coal dispute, remained unchanged in 1928, and advanced by another 8 per cent in 1929. In 1930, however, it dropped below the level of 1927-28.

The increase in the aggregate output of coal and lignite (in terms of coal) in 1929 by some 80 million tons, or about 6 per cent, was very remarkable, being greater than that recorded in the whole period 1924 to 1928. Of this increase, nearly two-thirds was accounted for by Europe, where demand was stimulated by, *inter alia*, a hard winter. In the United States of America, output was also large, though less than in either 1923 or 1926. The drop in world production in 1930 amounted to 127 million tons, or about 9 per cent. The output of the United States decreased by over 70 million tons and fell to a lower figure than for any year since 1922. The decline in output was considerable also in Germany (27 million tons), the United Kingdom (over 14 millions) and in Poland (almost 9 millions). On the other hand, output remained on the 1929 level in France and Belgium, and continued to increase in the Union of Soviet Socialist Republics.

The petroleum output of the world has for many years increased uninterruptedly and, particularly in recent years, considerably more than consumption. Between 1925 and 1929, output rose by 39 per cent — i.e., at an average rate of 8 ½ per cent per annum. The advance in 1929 alone was 12 per cent (22.5 million tons). Two-thirds of the additional supply of crude oil in that year was accounted for by the United States of America, where the stocks at the end of December reached the unprecedented figure of 95 million tons — almost two-thirds of its total production figure for the same year. The producers attempted, in the second half of 1929, to tighten up the policy of restriction, but were hampered by the continuation of unrestricted production in Venezuela and elsewhere. Venezuela, indeed, increased her output by 30 per cent in 1929. Record figures were also reached in the Union of Soviet Socialist Republics, where output rose by 17 per cent. The world petroleum output decreased in 1930 by nearly 11 million tons, or 5 per cent. This drop was chiefly due to the restriction effected in the United States of America. The output of Venezuela remained practically unchanged, but, towards the end of 1930, the oil companies in that country also agreed to cut down production. The only countries which increased output considerably were the Union of Soviet Socialist Republics and Roumania.

The group index of fuel production does not allow for such electrical power as is generated by hydro-electric plants. The rapid development that has taken place in the output of electricity is referred to in Chapter IV.

Metals.

The statistics on which the metal index is based relate to smelter production and not to the mine production. In consequence, the continental distribution in the annexes must not be interpreted as indicating the primary sources of supply. The figures for North America and Europe are higher and those for the other continents appreciably lower than they would have been had it been possible to employ data relating to the output of mines.

It will be seen that the group index for metals rose without interruption throughout the period 1925 to 1929. The advance by 10 per cent in 1929 was quite exceptional. The aggregate production in that year was nearly one-third as high as in 1925. On the other hand, the output of metals dropped in 1930 by 19 per cent—i.e., more than any other commodity group for which comprehensive data are available.

Pig-iron and raw steel account for about three-quarters of the aggregate upon which the metal index is based, and thus largely determine the movement in that index. The iron and steel industry is dealt with in Chapter IV and need not be discussed in detail here. It is sufficient to point out that the output of both iron and steel advanced very considerably in 1929, and fell heavily in 1930 — steel being more seriously affected than pig-iron.

The total production of non-ferrous metals has likewise advanced considerably in recent years and was, in 1929, the highest on record. The total increase between 1925 and 1929 was about 50 per cent for aluminium and nickel, 40 per cent for copper, 30 per cent for zinc and tin, but only 16 per cent for lead. In spite of a steady advance in consumption, there was a considerable over-supply of all these metals and large stocks were accumulated. In 1930, a heavy drop in output was registered for all the metals concerned. The production of copper declined by 357,000 tons, or 18 per cent ; that of tin by 18,000 tons, or 9 per cent ; that of lead by 133,000 tons, or 7 per cent ; and that of zinc by 88,000 tons, or 6 per cent. Consumption declined still more, however, and stocks rose very rapidly, as shown by the following end-of-year figures :

STOCKS OF CERTAIN NON-FERROUS METALS.

	1928	1929	1930
	Tons (000's)		
Copper, refined (North and Latin America)	60	81	276
Lead (United States of America)	49	56	100
Zinc (Europe and United States of America)	.	117	238
Tin (World)	23	28	42

The figures at the end of 1930 shown above for tin, copper and zinc, which practically cover total world stocks, represent roughly one-fourth, one-fifth and one-sixth respectively of the world production of these metals in that year.

The production and marketing of non-ferrous metals is to a great extent under the control of large groups. The copper market was controlled by the American Copper Cartel until 1930. The Tin Producers' Association, which includes the great majority of producers in the different continents, adopted a restriction scheme for 1930. The great American and British nickel interests combined in 1929. The aluminium market is dominated by the European cartel, on the one hand, and the American-Canadian Trust, on the other. In 1929, the latter group considerably increased its output, so that the European cartel now controls less than half the world production. On the other hand, the zinc cartel, formed in 1928, made unsuccessful attempts to check the decline in prices, and was dissolved at the end of 1929, but efforts to form another cartel were made in 1930. [1]

The recent developments on the silver market are of special interest. Silver is largely obtained as a by-product at copper and lead mines, and the supply of new metal has varied but little, the net increase between 1925 and 1929 being only 4 per cent. But old silver made available through demonetisation of subsidiary coin or by reduction of their silver content has swelled the supply. On the other hand, the demand for silver for monetary purposes has declined, and the Oriental market has become saturated. In 1928, Siam adopted the gold standard; in 1929, the Indian Government effected large sales; in 1929 and 1930, the Chinese authorities practised to an increasing extent the policy of exchanging silver for more stable values, and in 1930, Indo-China adopted the gold standard and placed large quantities of silver on the market. In spite of a drop of about 7 per cent in the world output of silver in 1930, its price continued to fall, and reached in 1931 the lowest level on record.

Chemicals (Fertilisers).

The chemical industry has been among the most prosperous in recent years, and the group index shows an increase in total production of about one-third during the period 1925 to 1929. The advance realised in 1929 was, however, not as great as in the preceding year. The rate of increase has been about equal in Europe and North America, but sensibly lower in Latin America. Europe now accounts for nearly 60 per cent of the world's total production of fertilisers. Though incomplete, the available data for 1930 would appear to suggest that the production of fertilisers was not reduced in that year.

The three principal groups of fertilisers considered are phosphates, potash and nitrates. The increase has been least in the phosphates group as a whole, although, in certain countries, remarkable progress has been made in recent years.

The production of potash, the world monopoly of which is shared by Germany and France, has risen since 1925 by 23 per cent. The absolute increase in the output of both countries was about the same, but the relative increase was greater in the French (Alsatian) industry.

The nitrate industry, the most important branch of the fertiliser group, has shown the greatest advance. In 1927, the production of Chilian nitrate of soda,

[1] The cartel was reconstituted in 1931.

which was being rapidly replaced by synthetic products, was little more than one-half of the pre-war figure ; but it almost doubled in 1928, exceeding the 1913 level for the first time, and advanced further in 1929. In that year, an agreement was concluded between the Chilian nitrate industry and the largest European producers of synthetic nitrogen.

The output of sulphur has increased during the period under review by as much as 58 per cent, that of natural guano has risen by 11 per cent only. The production of copper sulphate made rapid progress until 1928, but, owing to a market contraction in Italy, dropped considerably in 1929.

III. INTERNATIONAL TRADE.[1]

The recorded aggregate import value of goods in international trade increased from $33,150 million in 1925 to $35,343 million in 1929. The corresponding export figure, which differs from the import figure partly because it excludes freight and insurance, rose from $31,434 million to $32,742 million. The percentage distribution of this trade among different continental groups and the percentage movement of the value of imports and exports of each group during the period under review are shown in Table IX. The values for each group upon which these percentages are based were reached simply by adding those of the individual countries belonging to it. The figures for each group thus represent, in addition to the trade of the group with the rest of the world, the trade between its constituent parts.

The share of Europe in world trade, after the decline during and immediately after the war, grew from 50.8 per cent in 1925 to 52.2 per cent in 1929. The share of North America in 1929 was over one-sixth and that of Asia just over one-seventh. During the five years shown these three continents accounted for over 84 per cent of world trade. The figures are to some extent affected by the exclusion of freights from the recorded imports of some countries, particularly the United States of America and Canada. If freights were included throughout, North American imports and total trade in 1929 would rise from 15.9 and 17.5 per cent to about 17.1 and 18.2 per cent of world imports and total trade, and the shares of Europe would fall by an almost corresponding amount.

Trade movements during the years under review, and particularly the irregular movements of imports and exports of the individual groups, were largely influenced by capital movements and variations in crops.

The supply of capital from a number of capital-exporting countries fell off in 1926 and 1929, when these countries employed a larger proportion of their national income for domestic consumption or investment. Their trade balance then became less active or more passive than in the years 1925, 1927 and 1928, when international capital movements were on a larger scale, while the reverse is true of certain borrowing countries. It is largely for this reason that, as is shown by the last five columns of Table IX, the value of North American imports reached a maximum in 1926 and 1929, while exports in these years fell off in value. The fluctuations in the European balance of trade during the period were largely determined by the borrowings of Germany. In spite of the fact that the British coal dispute in 1926 affected British exports more than imports, the contraction

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[1] A more detailed analysis of international trade during the years 1927-1929 is given in Volume I of *Memorandum on International Trade and Balances of Payments*, 1927-1929 (*Series of publications:* 1930. II.54/1). The three previous issues of the same *Memorandum* deal with trade in 1925-1926, 1926-1927 and 1926-1928.

Table IX.

Percentage, Distribution and Movement of World Trade, by Continental Groups.

(Basis : Recorded values ; special trade ; merchandise only.[1])

	Percentage distribution amongst Continental groups					Movement of the value of trade (percentages : 1925=100)				
	1925	1926	1927	1928	1929	1925	1926	1927	1928	1929
Imports :										
1. Europe, excluding U.S.S.R. .	54.6	52.1	54.9	54.9	54.5	100	92.5	102	105	106.5
2. Europe, including U.S.S.R. .	55.9	53.3	55.9	56.2	55.7	100	92.5	102	105	106
3. North America[2]	15.5	17.0	15.7	15.5	15.9	100	106.5	103	104.5	109
4. Latin America[3]	7.5	7.6	7.2	7.2	7.3	100	97.5	90.5	101	104.5
5. Africa	4.1	4.1	4.4	4.6	4.8	100	97	108	116	122.5
6. Asia, excluding Asiatic Russia	14.0	14.9	13.7	13.8	13.7	100	103	100	103	104.5
7. Oceania	3.0	3.1	3.1	2.7	2.6	100	99.5	103.5	95.5	95
Total (groups 2-7) . . .	100	100	100	100	100	100	97	102	104.5	106.5
Exports :										
1. Europe, excluding U.S.S.R. .	44.3	44.3	45.9	45.8	46.9	100	94.5	103.5	107	110.5
2. Europe, including U.S.S.R. .	45.3	45.5	47.2	47.0	48.3	100	95	104	107	111
3. North America[2]	19.8	20.2	19.3	19.9	19.3	100	96.5	97.5	104	101.5
4. Latin America[3]	9.2	9.2	9.5	9.7	9.3	100	95	104	108.5	105.5
5. Africa	4.3	4.2	4.5	4.7	4.7	100	94	105	114.5	113.5
6. Asia, excluding Asiatic Russia	18.1	17.7	16.4	15.7	15.4	100	92.5	90	89.5	88.5
7. Oceania	3.3	3.2	3.1	3.0	3.0	100	92	92.5	95	95.5
Total (groups 2-7)	100	100	100	100	100	100	94.5	100	103.5	104
Total of Imports and Exports :										
1. Europe, excluding U.S.S.R. .	49.6	48.4	50.6	50.4	50.8	100	93.5	103	105.5	108
2. Europe, including U.S.S.R. .	50.8	49.6	51.8	51.7	52.2	100	93.5	103	106	108.5
3. North America[2]	17.6	18.6	17.4	17.7	17.5	100	101	100	104	105
4. Latin America[3]	8.3	8.3	8.3	8.4	8.3	100	96	101.5	105	105
5. Africa	4.2	4.2	4.4	4.6	4.7	100	95.5	106.5	115	118
6. Asia, excluding Asiatic Russia	16.0	16.2	15.0	14.7	14.5	100	97.5	95.5	95.5	95.5
7. Oceania	3.1	3.1	3.1	2.9	2.8	100	96	98	95	95
Total (groups 2-7) . . .	100	100	100	100	100	100	96	101	104	105.5

[1] The figures upon which the table is based include, in the case of a few countries (among which the Union of South Africa, Australia and Mexico), bullion and specie.

[2] *i.e.*, Canada, United States of America, Newfoundland, Greenland and St. Pierre and Miquelon.

[3] *i.e.*, America other than "North America", as defined above.

in European trade in that year was greater in imports. In 1929 the growth of European exports far exceeded that of imports.

The reduction in the supply of capital from North America in 1926 and 1929 coincided with, and may indeed be partly attributed to, the small cereal crops in North America in 1925-1926 and 1929. In Europe, on the other hand, food crops were heavy in 1925 and 1928-1929, and the need for imported cereals was thus reduced.

The movement of trade, as shown in the last five columns of the above table, is the result of both price and *quantum* changes, and the figures cannot therefore be compared with the world indices of the volume of production given in the preceding section. For a number of countries, representing not far from three-quarters of world trade, compilations are made with a view to showing the variations in the *quantum* of imports and exports. On the basis of these data it is possible to calculate rough world indices of the movement of prices and volume of goods entering into international trade.

	1925	1926	1927	1928	1929
World imports :					
Prices (gold)	100	94	91	90	88
Quantum	100	103	112	116	121
Value	100	97	102	104.5	106.5
World exports :					
Prices (gold)	100	93	91	91	88
Quantum	100	102	110	114	118
Value	100	94.5	100	103.5	104
Total world trade :					
Prices (gold)	100	93.5	91	90.5	88
Quantum	100	103	111	115	120
Value	100	96	101	104	105.5

Owing to deficiencies in the material upon which the calculations are based, the increase in the *quantum* of world imports during the period works out at a slightly higher figure (21 per cent) than the increase in the *quantum* of world exports (18 per cent). The average annual growth in the volume of trade would seem to have been between 4 and 5 per cent.

The aggregate increase of some 20 per cent during the period should be compared with the growth in the production of foodstuffs and raw materials, amounting to about 11 per cent, and that in industrial production which is extremely difficult to measure for the world as a whole, but, according to the partial evidence afforded by the indices compiled in certain European countries and North America, may be estimated somewhere in the neighbourhood of 25 per cent. " Manufactured articles " alone (not including semi-manufactured goods and finished foodstuffs) represent not far from two-fifths of the goods entering into international trade, and it is natural that the increase in the total volume of such trade should have been considerably higher than the increase in the production of foodstuffs and raw materials, but lower than that of industrial goods.

The information available concerning the fluctuations in prices and the volume of trade is not sufficient for establishing indices of the kind given above for imports and exports of each continental group of countries. Such information can be given only for Europe and North America as shown below :

	Imports					Exports				
	1925	1926	1927	1928	1929	1925	1926	1927	1928	1929
Europe :										
Prices (gold)	100	92	91.5	92	90	100	95.5	93.5	93	90.5
Quantum	100	100	111	114	118	100	99.5	111	115.5	122
North America :										
Prices (gold)	100	97	91	88	85	100	93	87.5	86.5	86.5
Quantum	100	109.5	113	119	128	100	104	111	120	117

A rough idea of the changes in the *quantum* of trade of all continental groups may, however, be afforded by the following figures which are obtained by dividing the value of trade of each group by the world price indices shown above, disregarding the discrepancies in the movement of the prices at which trade was conducted in different continents. Figures for total trade only are given, as these are less affected by inaccuracies arising from variations in relative prices than are figures for imports and exports considered separately.

TABLE X.

MOVEMENT OF *Quantum* OF TRADE.

Continental groups	1925	1926	1927	1928	1929
1. Europe, excluding U.S.S.R.	100	100	113	117	122
2. Europe, including U.S.S.R.	100	100	113	117	122
3. North America	100	108	110	115	119
4. Latin America	100	103	112	116	119
5. Africa	100	102	117	127	133
6. Asia, excluding Asiatic Russia	100	104	104	106	108
7. Oceania	100	102	108	105	107
World	100	103	111	115	119

This table slightly over-estimates the growth of European trade and probably under-estimates that of other continents, as prices of goods in the former fell less than the world price index employed in the calculation. While trade prices for the world as a whole fell by about 12 per cent during the period, the fall would appear to have been about 10 per cent only for Europe and on an average some 13-15 per cent for other continents.

During the period under review North America continued rapidly to expand its foreign trade. A remarkable change took place in the nature of United States exports : between 1925 and 1929 agricultural products fell by $443 million or from 44.3 to 32.8 per cent of the export value, while non-agricultural products — mainly such articles as motor-cars, machinery, iron and steel products, chemicals and mineral oils — rose by $778 million or from 55.7 to 67.2 per cent of the export value.

In the course of the period there were, however, signs of a slackening in the rate of growth of North American trade. On the other hand, European trade made headway and regained some of the ground lost in preceding years. In view of the fact that European trade represents more than half of world trade, its rapid growth since 1926 which implies a reversal of previous tendencies, is worthy of special attention. It was far from uniform ; one of the main characteristics of trade in these years is the very slow growth in the volume of British trade. The largest increase is recorded by a number of countries in Central, Eastern and Northern Europe. Of decisive importance is the growth in German trade : the *quantum* of German exports rose between 1925 and 1929 by 45 per cent and the *quantum* of German imports by 18 per cent. The volume of Russian exports nearly doubled and that of Russian imports grew by 40 per cent. The increase in the volume of Swedish trade (imports as well as exports) was over one-third ; the volume of Danish and Norwegian exports rose by 29 and 27 per cent respectively. For a number of other countries no *quantum* figures are available, but the value of Polish exports rose by 29 per cent and that of Belgian exports by 30 per cent.

The expansion of European trade is largely due to trade between European countries. The proportion of manufactured goods in the trade of most countries has been increasing in recent years — a tendency which can be traced in the trade of countries in all continents, but which has naturally affected European trade most.

Temporary circumstances contributed to the growth in inter-European trade during the last year under review. The cold season early in the year led to a marked increase in the European coal trade, and in consequence of the important European cereal crops of 1928 and 1929 some of the industrial countries in Western and Central Europe imported more foodstuffs from Eastern Europe and less from other continents.

The rapid growth since 1925 in Latin-American trade is to be attributed partly to a succession of rich crops in the Argentine and Brazil, partly to the increased activity in mining and oil production in Peru, Chile, Venezuela and other countries. The growth in African trade largely reflects the rapid development of the French territories in North Africa.

The *quantum* of trade of Asia and Oceania has grown during the period by 7-8 per cent only, or less than half the rate of that of the world as a whole. The trade of Oceania was, indeed, lower in 1928 and 1929 than in 1927.

Trade movements during and after the war up to 1926 inclusive resulted in an increase in the share of the countries bordering the Pacific in comparison with Europe and other parts of the world. Since then, a reaction has taken place and there has been a movement towards a re-establishment of the previous balance.

* * *

Trade values for the world as a whole in 1930 were roughly 20 per cent lower than in 1929 and 6 to 17 per cent lower than in 1925. It is not yet possible to estimate closely to what extent this reduction was due to the fall in prices. But there are strong reasons to believe that the price fall, however great in primary products, was somewhat less than the relative fall in trade values and that there was thus a real contraction in the volume of world trade in 1930. Undoubtedly, however, the volume of trade during the year as a whole remained on a higher level than in 1925 and 1926, perhaps even as high as in 1927. Allowing for ordinary seasonal variations, the regression continued, however, throughout the year, and the average level for the year is of little real significance. The decline in the volume of trade is reflected in the growth of the tonnage of laid-up ships : such tonnage which during the period of growing activity in trade had fallen from 6.6 millions in the middle of 1925 to 3.2 millions on January 1st, 1930, rose to 5.4 millions in the middle and 8.3 millions at the end of the same year.[1]

In the absence of full information concerning trade movements in 1930, the monthly trade figures (largely of a provisional nature) from the beginning of 1928 up to February 1931 available for 45 countries, representing in 1929 about 88 per cent of world trade,[2] are summarised in the diagrams on page 43.

Account should be taken of the fact that in the last quarter of every year there is regular expansion of European and North American trade in agricultural products, and that the diagrams thus somewhat exaggerate the fall in trade values which set in late in 1929.

From 1929 to 1930 European trade fell in value by some 12 per cent only, or less than half as much as the trade of the other continents, taken together. Trade in industrial products, between European countries, was not materially affected. Trade between Europe and other continents, on the other hand, was affected primarily by the excessive fall in prices of raw materials and foodstuffs, which reduced the purchasing power of these continents. The value of both imports and exports of European countries in this trade shrank considerably, but the reduction in *quantum* was far less for imports than for exports.

It follows that the trade depression has been most severely felt in those European countries whose exports are to a large extent directed towards countries in other continents. British exports, of which only 35 per cent went to Europe in 1929, were 21 per cent lower in value than in that year, while German exports, of which 74 per cent went to Europe in the same year, fell by 10.5 per cent only. Other causes than those now referred to contributed, however, to the drastic fall in British exports, in particular, disturbances in certain Asiatic markets for British goods.

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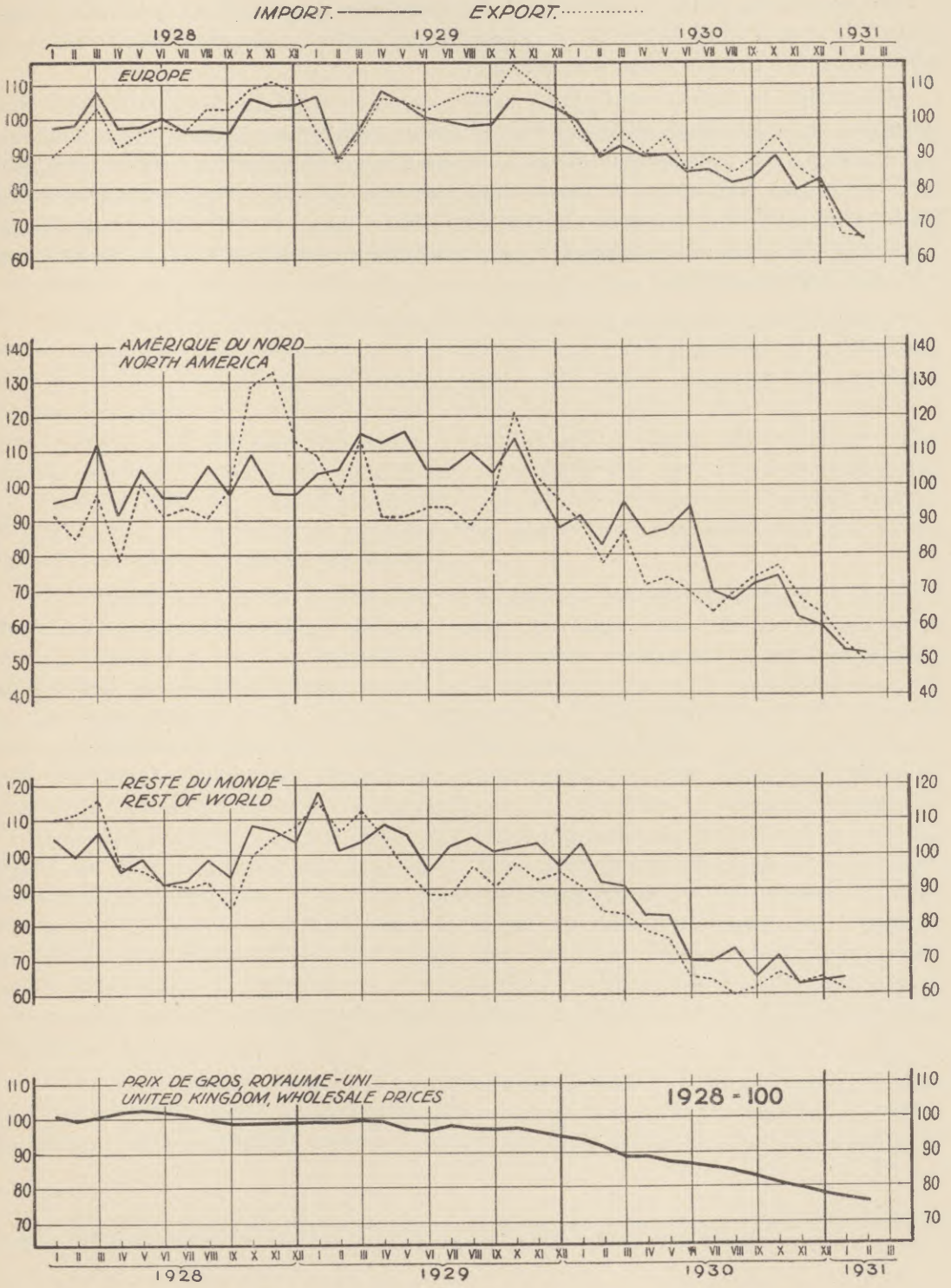
[1] According to statistics published in the *Commerce Reports*.

[2] The number of countries considered for Europe was 25, representing 99 per cent of European trade. The corresponding figures for North America are : two countries (the United States and Canada), 99 per cent ; and those for the rest of the world : 18 countries, 61 per cent. With a few exceptions of small importance, the figures upon which the diagrams are based refer to merchandise only (special trade).

Movement of Trade Values, by Months

(Monthly Average 1928=100)



North American trade (imports as well as exports) fell off in value by just over one-quarter. United States total trade, which since the British coal dispute in 1926 up to 1929 inclusive had slightly exceeded the trade of the United Kingdom, again fell appreciably below it. United States exports, however, were still more than one-third greater than the British.

Countries in other continents, which produce mainly foodstuffs and raw materials naturally had difficulty in adjusting their trade to the less favourable barter terms. Between the middle of 1929 and the end of 1930 their exports dropped in value on an average more than their imports. As new long-term borrowing during that period was seriously curtailed, the change in the trade balances of these countries was accompanied by a considerable reduction of their reserves of gold and foreign assets.

IV. INDUSTRY.

The great diversity of the products of the manufacturing industries renders a general study of industrial production difficult. Moreover, a review of the development of industrial activity cannot embrace as many countries and branches of production as do the statistics relating to the output of foodstuffs and raw materials, in view of the fact that comprehensive industrial statistics are compiled in relatively few countries and in some of these for a few industries only.

All that can be aimed at, therefore, is a rough survey of general industrial activity in a few countries and of the trend of development in a few branches of production. For the review of general industrial activity only those countries which publish composite indices of production are taken into account. The composition of these indices and the methods employed in compiling them vary widely.[1] The indices generally cover both mining and manufacturing and, in some cases, also the building industry. Most of them do not, of course, measure the real volume of production of the various countries, but serve to indicate the changes which have taken place in industrial activity.

For many industries covered by the indices periodic figures for quantity or value of output are not available. Other periodic data reflecting changes in industrial activity, such as figures for raw materials consumed, goods despatched, orders filed, degree of employment, etc., are therefore used to a considerable extent in the compilation of the indices. There is no uniformity, however, between the supplementary data thus used in the different countries. In some countries and for certain industries figures for consumption of raw materials relate to quantities actually delivered at factories or, in the case of textiles, quantities " conditioned ", while, in other cases, only import figures or estimates of the market supply of raw materials are available. The activity of factories is sometimes measured by the number of workers employed, sometimes by the number of hours worked or by figures expressing the degree of utilisation of plant, etc. Figures for orders filed relate to an early stage and those for finished goods despatched to the final stage of the process of production. Indices for a particular month or year may therefore reflect both past, present and prospective activity in varying degrees.

Thus, it is evident that a close comparison between the production indices reproduced below must not be attempted ; they should only be regarded as rough indications of the general trend of industrial activity in the various countries.

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[1] For details concerning the manner in which these indices are computed see Introduction to *Monthly Bulletin of Statistics*, 1928, No. 8 ; 1929, Nos. 3 to 6 and 9 ; 1930, No. 2 ; 1931, No. 3

General Industrial Activity.

The general impression afforded by the data relating to industrial activity confirms the results of the preceding analysis regarding raw materials. From 1925 to 1929 there was a general increase in industrial activity which was specially marked in a number of European countries and in Canada. In the earlier years under review, Europe was adversely affected by the instability of the Belgian, French and Italian currencies, the readjustments required in Germany and elsewhere as a consequence of currency reforms just accomplished, and in 1926 by the coal stoppage in Great Britain. In the following year, France and Italy were handicapped by the readjustments necessitated by the stabilisation of the franc and the lira. In 1928, conditions were relatively favourable in almost all industrial countries and continued to improve in the first half of 1929. In the second half of that year there was a reaction in certain countries which, in the course of 1930, spread to practically all countries except the Union of Soviet Socialist Republics. The extent of the slump in 1930 may be judged from Table XI below giving annual averages of the production indices for a number of countries which publish regular data of this kind.

TABLE XI.

INDICES OF INDUSTRIAL PRODUCTION.[1]

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
America								
Canada	117	125	138	154	131	112	95	85
United States	104	102	107	114	93	107	87	82
Europe :								
France	116	102	119	130	131	109	110	101
Germany	95	120	120	122	101	102	84	82
Poland	98	123	138	138	113	100	82	82
Sweden :								
Official	110	113	120	135	...	113	...	...
Svensk Finanstidning	103	108	104	127	124	123	119	98
United Kingdom :								
Board of Trade[2] . . .	—	(107)	(106)	(112)	(103)	106	98	92
London and Cambrige[3]	77	111	105	113	101	108	96	89
U.S.S.R.	139[4]	164[4]	198[4]	223[4]	—	124[5]	153[5]	123[5]

[1] The source and original base of each series are indicated in Annex VI.
[2] Board of Trade index based on 1924=100.
[3] Index of the London and Cambridge Economic Service.
[4] Old index of the Conjuncture Institute of Moscow discontinued since August 1929 ; the figure for 1929 is an average for 8 months only.
[5] New index based on value of production at 1926-27 prices as published by the State Bank of the Union of Soviet Socialist Republics.

The indices for the United States, Germany and Poland dropped by nearly 20 per cent, that for Canada by 15 per cent and those for the United Kingdom by 8 to 11 per cent in 1930 as compared with 1929. The countries which appear to have been least affected by the general economic depression are France and Sweden. France actually increased its industrial activity in 1930, and in Sweden there was a drop of only 2 per cent in the annual average. Annual averages do not, however, give an accurate impression of the course of events ; this is better illustrated by the diagrams on the following page showing on a common scale the monthly indices for the whole period under review. The fact that the averages for 1930 remained so high in the case of France and Sweden is due to the intense industrial activity of these countries in the earlier part of the year. The Swedish monthly production index has declined very considerably since April 1930 and since the middle of the year the French index has also dropped.

The Canadian index, which shows an astonishing rise between 1925 and 1929, relates mainly to mining and the simple forms and early stages of manufacture, milling, sugar manufacture, butter and cheese making, slaughter, the production of pig-iron and crude steel and of news-print paper. The development of the textile industry is indirectly measured by two series based on the imports of raw cotton and wool and that of petroleum refining by the imports of crude petroleum. The only highly finished products directly measured are motor vehicles. The average index rose by 17 per cent in 1926, by 11 and 12 per cent in 1928 and 1929 respectively. The highest monthly figure was recorded in January 1929 ; after this date, the index shows a downward trend, which was accentuated in 1930.

The United States index of production, which is compiled by the Federal Reserve Board, included mining and covers about sixty series of returns relating to 35 industries. " It includes many commodities which enter as materials into great numbers of other factory products, and thus serves as a fairly close measure of variations in manufacturing activity, especially over relatively short periods. "[1] It will be seen from the diagram that — apart from a check in 1927, due largely to the temporary closing down of one of the large motor plants — the index rose steadily, and in the latter part of the period, rapidly, up to the middle of 1929. A decline set in in 1929 and became very pronounced in November and December. There was a slight recovery in the early months of 1930, after which the figures dropped steadily throughout the year.

The French index covers mining, textiles, the heavy metal industries, various forms of engineering, including shipbuilding and the manufacture of motor vehicles, building, pulp paper manufacture and rubber. A rapid and very remarkable recovery was made from the temporary set-back in 1927 (caused by the *de facto* stabilisation of the franc). The index remained stable for three months at a maximum reached in March 1930, but has declined steadily since June.

The German index includes some thirty distinct series, of which one-half refer to basic industries — mining, heavy metals, production of cement, bricks, etc. —

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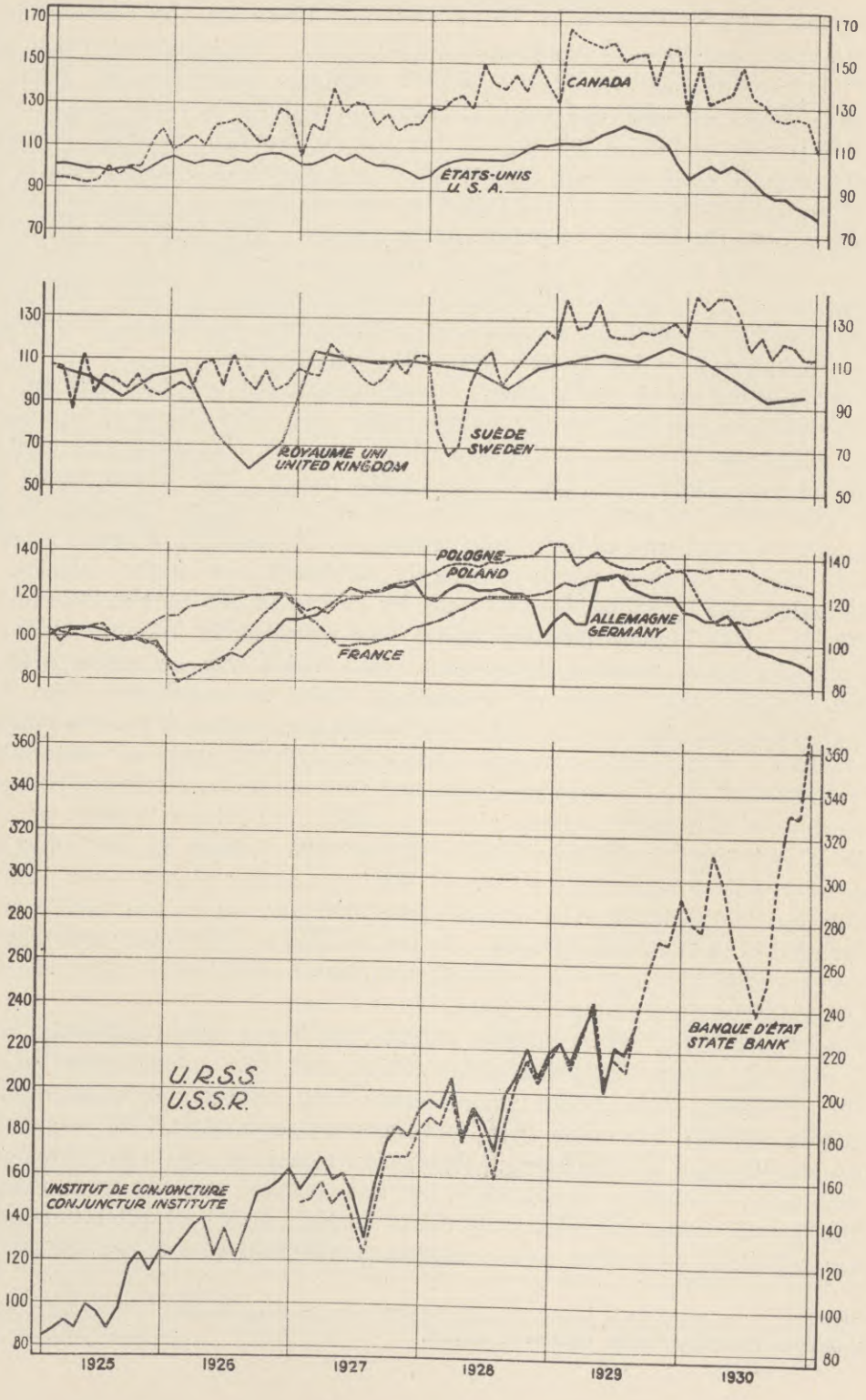
[1] *Commerce Year-Book*, 1929, Volume I, page 2.

INDICES OF INDUSTRIAL PRODUCTION IN VARIOUS COUNTRIES, 1925-1930.



and the other half to finishing industries, such as engineering, manufacture of textiles, shoes, porcelain, pianos, clocks and watches, etc. The development in Germany has been irregular and may more easily be followed from the diagram than from the table. It will be seen that there was a rapid recovery in 1926 and 1927 from the temporary depression towards the end of 1925. During the year 1928 and the first half of 1929 the position was fairly maintained without any marked increase in production. Since the middle of 1929, however, the index shows a decline which was greatly accelerated in the winter 1929-30. In the spring of 1930 there was a slight recovery, but subsequently production fell rapidly.

The Polish index likewise covers the whole range of production from mining to finished textile products, although, owing to the industrial structure of the country, the basic industries predominate. Textiles, however, constitute 20 per cent of the whole. The general movement has not been unlike that in Germany, although the degree of recovery between 1925 and 1928-29 was greater. The average decline in 1930, was roughly equivalent to that in Germany, but the monthly fluctuations were more irregular.

For the United Kingdom two indices are shown in the table. The official index (Board of Trade) embraces mining, quarrying, production of iron and steel and manufactures thereof, non-ferrous metals, engineering and shipbuilding, textiles, chemicals and allied trades, paper, building, leather, boots and shoes, food, drink and tobacco, gas and electricity. This index does not go back farther than 1927. For this reason, the index of the London and Cambridge Economic Service, which is less comprehensive but covers the years 1925 and 1926, is given in the diagram. Industrial activity in the United Kingdom was largely arrested in 1926 on account of the coal dispute, but recovered rapidly from the middle of that year up to February 1927. Subsequently, there were no marked fluctuations until the end of 1928, and in 1929 the index rose to a slightly higher level. The decline which has taken place since the early months of 1930 has been less marked than in many of the other countries covered by the table and the diagrams.

The Swedish official index *(Kommerskollegium)* is only annual. It is based exclusively on quantitative data of production and covers the total output of all extractive and manufacturing industries of the country ; but it does not include the generation of electric power and production of gas, nor does it extend beyond 1929, as complete production data for 1930 are not yet available. This index shows throughout the whole period a considerably greater increase in industrial activity than the less comprehensive monthly index of *Svensk Finanstidning* which is confined in the main to a few large export industries, and very incompletely represents the industries working primarily for the home market and particularly those producing consumers' goods. Owing to the economic structure of the country the index mainly refers to industries employing wood as raw material, iron ore mining and iron and steel works. Wood, pulp and paper account for well over half the total weighting. The drop in 1928 shown in the diagram is due to the fact that in that year, especially in the first quarter, labour disputes seriously affected the production of the industries included in the monthly index. It will be observed

from the table, however, that the more complete official index shows an increase in 1928 over 1927 of more than 6 per cent. In 1929, there was a further remarkable increase in total production of 13 per cent, but, as already mentioned, the general economic depression has affected the activity of the export industries since the second quarter of 1930.

The production index published by the Moscow Economic Research Institute up to August 1929 covers mining and manufacturing industries in the proportion of 27 to 73. Heavy industries and textiles predominated in the latter group, which also included leather, paper and tobacco. For recent years, a new index has been calculated on the basis of the returns of the total value of industrial production at 1926-27 prices published by the State Bank of the Union of Soviet Socialist Republics. The two indices show almost identical fluctuations in the years for which they overlap. Since the end of 1927 the figures point to a remarkable increase in activity reflecting the effort towards industrialisation that has been made in this country under the so-called five-year plan.

The indices for the Union of Soviet Socialist Republics shown below in some of the sections relating to particular industries are based on the production statistics, expressed in terms of 1926-27 values, published by the Supreme Economic Council.

Review of Important Industries.

The recent development of the more important industries for which periodic data are available in various countries and which, as a rule, are covered by the general production indices, is analysed in greater detail in individual sections below. The industries which have expanded relatively most in the quinquennium 1925-1929 are on the whole the new industries, such as the artificial silk industry, electrical engineering and generation of electrical power and the rubber-manufacturing industry. But in mechanical engineering industry a very remarkable increase in activity has also been recorded, on the whole even greater perhaps than that in electrical engineering. The relative growth in the output of motor vehicles exceeded but little that in shipping tonnage launched and was even somewhat less than the rise in steel output, which was due, of course, to the great expansion in mechanical and electrical engineering mentioned above. The development of the leather, boot and shoe industry and still more that of the textile industry, apart from artificial silk, natural silk and jute, appears on the whole to have been comparatively slow in the period considered, even though it has been more rapid than the simultaneous increase in world population. Linen and hemp have not been able to maintain the 1925 level and the cotton spinning and weaving and the wool weaving industries in the North America and Europe have conspicuously failed to keep pace with the general economic development since 1925. But the knitting and hosiery industries for the products of which demand has increased as a result of post-war changes in fashion, seem to have expanded

considerably in the same period. Finally, the advance in the paper and printing industry appears on the whole to have kept pace with the general rate of economic development, while the output of the European timber industry increased somewhat less and that of the North American saw mills definitely declined.

The economic depression in 1930 affected the activity of the main industries in a very varying degree. Those which have been hardest hit are the motor vehicle industry, shipbuilding (according to tonnage under construction), mechanical engineering and the iron and steel industry. Rubber goods and timber have also suffered considerably from the crisis. In the textile group, the woollen industry would appear to have suffered more than the natural silk and the cotton industries in the world as a whole, while in the case of artificial silk output decreased comparatively little and exports not at all. The leather and boot and shoe industries were on an average less affected than the main textiles, and the decline in the paper and printing industry was comparatively small. Electrical engineering to judge from aggregate exports of electrical goods from the chief producing countries hardly suffered, and the generation of electrical energy has been only slightly influenced by the depression. It should be mentioned, however, that the generation of current consumed in industry is to a great extent ignored in official statistics.

This rapid review of the relative development of the main industries in the world as a whole necessarily fails to take into account the different conditions in individual countries or groups of countries. Some light is thrown on this aspect of the question by the national indices and other significant data analysed below.

Iron and Steel Industry.

As was shown in the study of raw materials the world production of pig-iron and steel, which had increased continuously during the period 1925-1929, dropped very considerably in 1930. Figures for the principal producing countries are given in Table XII.

World output increased steadily up to 1929 inclusive in spite of the disturbances which occurred in one or another of the great centres of production in most of the years under review. The most important of these disturbances were the British coal stoppage in 1926, the effects of which extended to the iron and steel industry ; the temporary closing down of one of the most important motor-car plants in America in 1927 ; and the industrial dispute in the Ruhr works in 1928. In 1930, the world production of pig-iron dropped by over 18 per cent and that of steel ingots and castings by almost 22 per cent as compared with the record figures of 1929. Physical output was thus reduced almost to the 1926 level. In fact, as shown by the detailed figures given above, production in 1930 declined everywhere except in the Union of Soviet Socialist Republics and Japan. The latter country was able to maintain its steel production near the high level of 1929, and its production of pig-iron increased somewhat during the year.

Among the leading producers the decline was most marked in Germany, the United States of America and the United Kingdom, while it was comparatively

Table XIIA.

Pig-Iron and Ferro-Alloys.

Countries	Output in metric tons (000's)						Output as percentage of preceding years			Output as percentage of of world total		
							1925=100		1929=100			
	1925	1926	1927	1928	1929	1930	1929	1930	1930	1925	1929	1930
North America	37,863	40,797	37,895	39,836	44,486	33,089	117.5	87.4	74.4	49.3	45.2	41.3
Canada	606	827	778	1,100	1,188	827	196.0	136.5	69.6	0.8	1.2	1.0
U.S.A.	37,257	39,970	37,117	38,736	43,298	32,262	116.2	86.6	74.5	48.5	44.0	40.3
Asia	1,995	2,221	2,653	2,833	3,136	3,200	157.2	160.4	102.0	2.6	3.2	4.0
Japan	933	1,135	1,285	1,540	1,562	1,667	167.4	178.7	106.7	1.2	1.6	2.1
Rest of Asia	1,062	1,086	1,368	1,293	1,574	1,533	148.2	144.4	97.4	1.4	1.6	1.9
Europe	36,362	35,181	45,580	45,385	50,270	43,450	138.2	119.5	86.4	47.4	51.1	54.2
European Steel Entente	—	—	30,596	30,348	32,900	27,581	—	—	83.8	—	33.5	34.4
Belgium	2,543	3,368	3,709	3,857	4,041	3,394	158.9	133.5	84.0	3.3	4.1	4.2
France	8,505	4,430	9,295	9,981	10,447	10,106	122.8	118.8	96.7	11.1	10.6	12.6
Germany	10,089	9,636	13,089	11,804	13,401	9,695	132.8	96.1	72.3	13.1	13.6	12.1
Luxemburg	2,363	2,559	2,732	2.770	2,906	2,474	123.0	104.7	85.1	3.1	3.0	3.1
Saar Basin	1,453	1,635	1,771	1,936	2,105	1,912	144.9	131.6	90.8	1.9	2.2	2.4
Czechoslovakia	1,166	1,088	1,260	1,569	1,645	1,435	141.1	123.1	87.2	1.5	1.7	1.8
Italy	536	559	529	554	727	578	135.6	107.8	79.5	0.7	0.7	0.7
Poland	315	327	618	684	706	478	224.1	151.7	67.7	0.4	0.7	0.6
United Kingdom	6,362	2,498	7,410	6,716	7,711	6,296	121.2	99.0	81.6	8.3	7.8	7.9
U.S.S.R.	1,289	2,206	2,966	3,282	4,018	4,982	311.7	386.5	124.0	1.7	4.1	6.2
Rest of Europe	1,741	1,875	2,201	2,232	2,563	2,100	147.2	120.6	81.9	2.3	2.6	2.6
Rest of the World	514	541	617	502	444	361	86.9	70.6	81.3	0.7	0.5	0.5
World	76,731	78,740	86,745	88,556	98,336	80,100	128.2	104.4	81.5	100.0	100.0	100.0

Table XIIB.

Steel (Ingots and Castings).

Countries	Output in metric tons (000's)						Output as percentage of preceding years			Output as percentage of of world total		
							1925=100		1929=100	1925	1929	1930
	1925	1926	1927	1928	1929	1930	1929	1930	1930			
North America	46,887	49,858	46,578	53,626	58,739	42,381	125.3	90.4	72.2	51.8	48.7	44.8
Canada	765	789	922	1,255	1,400	1,028	183.0	134.4	73.4	0.8	1.2	1.1
U.S.A.	46,122	49,069	45,656	52,371	57,339	41,353	124.3	89.7	72.1	51.0	47.5	43.7
Asia	1,842	2,128	2,341	2,401	2,958	2,820	160.6	153.1	95.3	2.0	2.5	3.0
Japan	1,336	1,548	1,728	1,955	2,343	2,287	175.4	171.7	97.6	1.5	2.0	2.4
Rest of Asia	506	580	613	446	615	533	121.5	105.3	86.7	0.5	0.5	0.6
Europe	41,238	40,813	52,445	53,331	58,270	48,950	141.3	118.7	84.0	45.6	48.3	51.7
European Steel Entente	—	—	32,586	32,415	34,967	28,549	—	—	81.6	—	29.0	30.2
Belgium	2,549	3,339	3,680	3,905	4,110	3,390	161.2	130.0	82.5	2.8	3.4	3.6
France	7,464	8,617	8,375	9,500	9,699	9,412	129.9	126.1	97.0	8.3	8.1	9.9
Germany	12,119	12,264	16,167	14,369	16,246	11,539	134.1	95.2	71.0	13.4	13.5	12.2
Luxemburg	2,086	2,244	2,471	2,567	2,702	2,270	129.5	108.8	84.0	2.3	2.2	2.4
Saar Basin	1,575	1,737	1,893	2,074	2,210	1,938	140.3	123.0	87.7	1.7	1.8	2.1
Czechoslovakia	1,476	1,344	1,692	1,973	2,193	1,835	148.6	124.3	83.7	1.6	1.8	1.9
Italy	1,786	1,780	1,596	1,960	2,143	1,774	120.0	99.3	82.8	2.0	1.8	1.9
Poland	782	788	1,244	1,438	1,377	1,238	176.1	158.3	89.9	0.9	1.1	1.3
United Kingdom	7,504	3,654	9,243	8,656	9,791	7,416	130.5	98.8	75.7	8.3	8.1	7.8
U.S.S.R.	1,868	2,900	3,636	4,104	4,723	5,552	252.8	297.2	117.6	2.1	3.9	5.9
Rest of Europe	2,029	2,146	2,448	2,785	3,076	2,586	151.6	127.5	84.1	2.2	2.6	2.7
Rest of the World	517	497	554	589	542	455	104.8	88.0	83.9	0.6	0.5	0.5
World	90,484	93,296	101,918	109,947	120,509	94,600	133.2	104.5	78.5	100.0	100.0	100.0

small in France. These four countries together accounted for more than three-quarters of the total world production of iron and steel in 1929. In 1930, their share dropped some 3 per cent. The course of the recent depression in these countries is illustrated by the following figures, which show the percentage which production in each quarter of 1930 constituted of production in the corresponding quarter of 1929 :

	Jan.-March	April-June	July-Sept.	Oct.-Dec.	12 months
Pig-iron, etc. :					
United States of America	86	83	67	59	75
France	101	99	96	92	97
Germany	98	74	62	58	72
United Kingdom	115	93	66	59	82
Total	93	85	70	64	78
Steel Ingots and Castings :					
United States of America	88	77	62	64	72
France	102	99	97	92	97
Germany	90	69	64	61	71
United Kingdom	99	80	69	54	76
Total	91	78	67	66	75

The United States of America still holds the position of leading iron and steel producer, but its share in the world total dropped from 51 per cent in 1925 to 44 per cent in 1930, while the share of Europe rose from about 46 per cent to roughly 52 per cent and that of Asia from 2 per cent to almost 3 per cent in the same period.

In Europe the iron and steel production of the countries outside the western group of the " European Steel Entente "[1] and the United Kingdom increased more in the period 1927-1929 and their production of pig-iron dropped less in 1930 than the output of that group. The steel production of these countries (which include the Union of Soviet Socialist Republics) decreased only slightly in 1930 as will be seen from the following statement showing percentage changes :

	Output as percentage of total Europe	Output in : 1929 as percentage of	Output in : 1930 as percentage of	Output as percentage of total Europe	
	1927	1927	1929	1929	1930
Pig-iron, etc. :					
Western group of Steel Entente	67.1	108	84	65.5	63.5
United Kingdom	16.3	104	82	15.3	14.5
Other Europe.	16.6	128	99	19.2	22.0
Total Europe . . .	100.0	110	86	100.0	100.0

[1] The eastern group, comprising several minor producers, is more loosely connected with the Entente.

	Output as percentage of total Europe	Output in: 1929 as percentage of	1930 as percentage of	Output as percentage of total Europe	
	1927	1927	1929	1929	1930
Steel Ingots and Castings :					
Western group of Steel Entente	62.1	107	82	60.0	58.3
United Kingdom	17.6	106	76	16.8	15.2
Other Europe	20.3	127	96	23.2	26.5
Total Europe . . .	100.0	111	84	100.0	100.0

As a result of the more rapid development of the iron and steel industry in the countries east of Germany and particularly in the Union of Soviet Socialist Republics, the share of the western group of the " European Steel Entente " in total European output was substantially reduced between 1927 and 1930. In 1930, France became the largest producer of pig-iron in Europe, while Germany maintained the leading position among European steel producers.

The effects of the general depression on the foreign trade in iron and steel is illustrated by the following statement showing total exports in 1929 and 1930 of raw and semi-manufactured iron and steel (including all products of iron and steel plants proper) from the four most important producing countries. Figures showing the relative changes in their production of raw steel and pig-iron are added for comparison.

Countries	Export of Iron and Steel			Production of	
	Metric tons (000's)		1930 as percentage of 1929	Raw steel 1930 as percentage of 1929	Pig-iron 1930 as percentage of 1929
	1929	1930			
United States of America	3,087	1,929	62	72	75
France	4,121	4,013	97	97	97
Germany	5,813	4,794	82	71	72
United Kingdom.	4,450	3,209	72	76	82
Total	17,471	13,945	80	75	78

The prices of iron and steel, which advanced in 1928 and 1929, dropped universally in 1930, as is demonstrated by the following rough indices of the annual averages of some representative quotations.

Countries	1925=100					1929=100
	1926	1927	1928	1929	1930	1930
Germany (*Stabeisen*, Oberhausen) . . .	101	101	105	107	105	98
Belgium (Bars, free station)	90	87	103	106	90	85
France (*Aciers marchands*, Eastern works)	99	88	100	109	93	86
Great Britain (Middlesbrough rounds and squares 3/8 in. to 3 in., free destination)	93	93	88	90	89	99
Board of Trade index numbers, group IV, iron and steel	98	95	89	90	89	99
United States (Pittsburgh, steel bars, *ex* works)	99	91	93	95	86	89

The quotations on which these indices are based are, of course, not strictly comparable and for this reason the absolute figures have not been given. These latter show clearly, however, that there was a tendency in the period 1925-1929 for prices in different countries to draw closer together ; but the price movement in 1930 has resulted in a new dispersion.

Mechanical Engineering.

Owing to the diversity of the products of the mechanical engineering industry, no uniform and comparable measure of the quantities of production is possible. The variation in the activity of this industry in certain countries may, however, be roughly gauged from the data relating to it which enter into the general production indices or else are specially compiled in these countries. The partial indices based on these data, excluding those relating to shipbuilding and motor vehicles,[1] where shown separately, are reproduced in Table XIII. The indices vary in scope and method of compilation and are therefore not closely comparable from one country to another.

Two indices are given for the United States of America ; they show the fluctuations in the demand for machine tools and for foundry equipment respectively. The demand for these products is regarded as " a significant indicator of the prospective activity anticipated by the machinery-manufacturing industry " as these products are chiefly used in that industry.[2] The demand for machine tools shows wider fluctuations than that for foundry equipment. Both indices probably overstate the extent of the variations in the actual output of the engineering industry.

The French index is computed on the basis of indirect calculations of the consumption of those iron and steel products which are used as raw material in the engineering industry including shipbuilding and motor vehicle manufacture.

[1] The activity in these branches is revised in separate sections below.
[2] *Commerce Year-Book*, 1929, Volume 1, page 429.

Table XIII.

Indices of Production in the Mechanical Engineering Industry.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
United States of America. [1]								
Demand for machine tools	108	92	158	187	85	119	54	46
Demand for foundry equipment	106	93	130	148	79	114	61	53
France [2]	115	99	120	137	137	114	114	100
Germany [3]	85	112	122	122	101	100	83	83
Netherlands. [4]								
Value of products	109	119	144	167	...	116	...	...
Workers employed	99	105	124	142	...	115	...	...
Poland [5]	92	119	146	147	111	101	76	76
Sweden [6]	119	124	151	166	...	110	...	...
United Kingdom.								
Board of Trade Index	...	...	...	...	...	107	104	97
London and Cambridge Economic Service	86	124	127	136	126	108	100	94
U.S.S.R. [7]	...	...	...	...	...	141	221	157

[1] Indices published by the United States Department of Commerce.
[2] Production index of the *Statistique générale de la France.*
[3] Monthly index of the *Institut für Konjunkturforschung.*
[4] Indices based on figures published in the *Maandschrift van het Centraal Bureau voor de Statistiek,* January 31st, 1931.
[5] Production index of the Economic Research Institute.
[6] Official production index published in *Kommersiella Meddelanden,* 1931. No. 1, page 5.
[7] Production values of engineering and metal working (1926/27 prices) published in *Sowjetwirtschaft und Aussenhandel* No. 10, 1931.

The German index is based on data for despatches of machines. It is closely confirmed for 1929 and 1930 by data showing changes in the degree of utilisation of workers in the engineering industry. The data showing the value of orders filed, as might be expected, indicate a greater decline in 1930 than those relating to despatches (29 per cent and 17 per cent respectively as compared with 1929).

The two indices for value of production and number of workers employed in the Dutch engineering industry show very similar variations since 1927 ; the level of the former is, however, higher throughout.

The Polish index shows changes in the number of hours worked.

The Swedish index includes shipbuilding and manufacture of vehicles and instruments in addition to engineering proper. It shows changes in total output of these industries calculated at 1913 prices.

The indices of the British Board of Trade and of the London and Cambridge Economic Service cover both engineering proper and shipbuilding, but the data selected as representative of the machinery industry are not the same in both indices ; these, therefore, show a different movement in the years covered by both.

The index shown for the Union of Soviet Socialist Republics is based on production values at 1926-27 prices.

The above indices all indicate a very considerable increase in the activity of the engineering industry in the period 1925-1929. The increase was particularly marked in the United States of America, the Netherlands, Sweden and the Union of Soviet Socialist Republics. For the last country data comparable from year to year are only available since 1928. In view of the fact that the Swedish shipyards doubled their output and that of the British shipyards increased by 40 per cent in the period 1925-1929, the development of the engineering industry proper in these countries must have been less than the more comprehensive indices in the table would suggest. This may also be true of the Netherlands, in which the tonnage launched increased by 137 per cent in the same period.

Data for 1930 are not available for the Netherlands and Sweden. The recent economic depression appears to have affected the activity of the engineering industry more severely in the United States of America than in any other of the countries included in the table. It appears, indeed, to have declined in the United States to roughly half the 1929 level. The drop shown by the indices for the United Kingdom, Germany and Poland, though considerable, was much less serious. The tonnage launched by British shipyards in 1930 was only 3 per cent lower than in 1929 : the activity of other branches of engineering included in the second British index must therefore have dropped somewhat more than the table suggests.

The French engineering industry seems in 1930 to have maintained the high level of activity of the preceding year. In fact, the index rose slightly until the middle of the year and then dropped, slowly at first, but more rapidly towards the end of the year. In sharp contrast to the movement in the other countries for which 1930 figures are available, the Russian engineering index showed a very remarkable increase.

Shipbuilding.

In contrast to the general tendency in other industries, shipbuilding in the world as a whole increased in 1930. The total tonnage launched rose from 2,793,200 tons (including the Union of Soviet Socialist Republics) to 2,889,500 tons (excluding the Union of Soviet Socialist Republics) or by over 3 per cent. Figures for the output of Russian shipyards in 1930 are not available ; but judging from the movement in the quarterly figures for tonnage under construction it may have reached about 50,000 tons. If this figure be included the world output of shipping tonnage would have risen by 5 per cent in 1930 and was greater than in any year since 1921. Indeed, there has been a steady progress year by year except in 1926, when a number of the British yards were temporarily closed down. Thus, as

illustrated in detail by Table XIV below, the shipbuilding industry has been gradually recovering from the depression from which it suffered after the largely artificial boom of 1920 and 1921.

This, of course, does not mean that shipbuilding has escaped the effects of the depression. The figures for tonnage launched in 1930 relate largely to orders given in the preceding year. Only annual world figures are compiled for tonnage launched, but Lloyd's Register Shipbuilding Returns give quarterly figures for tonnage under construction which clearly indicate the decline in the activity of the world's shipbuilding industry since the first quarter of 1930 as shown below :

End of :		Tonnage under construction	Figure for end of March, 1930=100
March	1929	2,721,000	86.6
June	»	2,713,000	86.3
September	»	2,705,000	86.0
December	»	2,990,000	95.1
March	1930	3,143,000	100.0
June	»	2,901,000	92.3
September	»	2,569,000	81.8
December	»	2,326,000	74.0
March	1931	2,000,000	63.6

The Union of Soviet Socialist Republics, for which no figures since June 1930 are available, is excluded above ; but as the Russian figures are comparatively low — they rose from 116,000 to 156,000 between the end of March 1929 and the end of June 1930 — this omission is of no appreciable consequence. By the end of the second quarter of 1930, the figure for tonnage under construction still exceeded the average for 1929 ; but by the end of the year it had dropped to three-fourths of the March figure. The decline continued at the same rapid rate in the beginning of 1931 as is indicated by the figure for the end of March of this year, which, indeed, is lower than at any previous date since 1926.

The tonnage launched in the United States more than doubled in 1930, and the coastal tonnage under construction in that country at the end of 1930 and even at the end of March 1931 was greater than at any previous date since 1921. Similarly, several minor European shipbuilding countries — Denmark, Sweden, France and Italy — increased their output by almost one-quarter in 1930, and the tonnage under construction in their shipyards at the end of March 1931 was greater than the average for 1930. But the four largest shipbuilding countries in 1929 — *i.e.*, the United Kingdom, Germany, the Netherlands and Japan — all show a decline in shipbuilding activity in 1930. The tonnage launched decreased most in the Netherlands and Japan, and tonnage under construction in the United Kingdom dropped from 1,615,000 (51 per cent of the world total) at the end of March 1930 to 694,000 (35 per cent of the world total) at the end of March 1931 — *i.e.*, by 921,000 tons or 57 per cent. In Japan, indeed, an even greater

TABLE XIV.

SHIPBUILDING.

(All vessels, including sailing vessels.)

Countries	Gross tonnage launched (000's omitted)						Tonnage launched as percentage of preceding years			Tonnage launched as percentage of world total		
							1925=100		1929=100			
	1925	1926	1927	1928	1929	1930	1929	1930	1930	1925	1929	1930
North America :												
United States (Coast) [1]	78.8	115.2	124.3	86.1	100.6	214.0	128	272	213	3.6	3.6	7.4
Asia :												
Japan	55.8	52.4	42.4	103.7	164.5	151.3	295	271	92	2.5	5.9	5.2
Europe :												
Denmark	73.3	72.1	72.0	138.7	111.5	137.2	152	187	123	3.3	4.0	4.8
France	75.6	121.3	44.3	81.4	81.6	100.9	108	133	124	3.5	2.9	3.5
Germany	406.4	180.5	289.6	376.4	249.1	245.6	61	60	99	18.5	8.9	8.5
Italy	142.0	220.0	101.1	58.6	71.5	87.7	50	62	123	6.5	2.6	3.0
Netherlands	78.8	93.7	119.8	166.8	186.5	153.1	237	194	82	3.6	6.7	5.3
Sweden	53.8	53.5	67.4	106.9	107.2	131.8	199	245	123	2.5	3.8	4.6
United Kingdom	1,084.6	639.6	1,225.9	1,445.9	1,522.6	1,478.6	140	136	97	49.4	54.5	51.2
Other countries	144.3	126.7	198.9	134.7	198.1	189.3 [2]	137	131	96	6.6	7.1	6.5
WORLD	2,193.4	1,675.0	2,285.7	2,699.2	2,793.2	2,889.5 [2]	127	132	103	100.0	100.0	100.0

[1] Excluding Great Lakes (tonnage launched in 1930, 32.7 tons).
[2] Excluding the Union of Soviet Socialist Republics, for which complete returns are not available.

relative drop was recorded — 69 per cent between the end of December 1929 and March 1931 ; but, as the Japanese figures represented only some 6 per cent of the world total in 1929, this reduction is not so significant. Tonnage under construction in Germany decreased in the same fifteen-month period by 46 per cent, and in the Netherlands by 48 per cent.

The share of the three leading European shipbuilding countries in the world total of tonnage launched (excluding the Union of Soviet Socialist Republics) dropped from 71 per cent in 1929 to 65 per cent in 1930; while their share in tonnage under construction fell from 70 per cent at the end of December 1929 to 48 per cent at the end of March 1931.

The shipbuilding industry has developed most rapidly in recent years in Sweden and Denmark, which are both producing to-day more sea-going tonnage than France. In Japan, the United States, the Netherlands and the United Kingdom there has been a marked recovery since 1925. In Germany and Italy, on the other hand, tonnage launched in 1930 was less than in 1925.

In the world as a whole, figures for tonnage launched have not regained the level of 1920 and 1921. This is partly due to the fact that the abnormal output of these years could not be fully utilised for a long time. Even in the years 1925 to 1927 the bulk of tonnage launched was built for the purpose of replacing old vessels rather than of meeting a demand for additional tonnage, as shown by the following percentages relating to world totals.

Proportion of total tonnage launched required for replacing old vessels was :

	Per cent		Per cent
1925	72	1928	34
1926	92	1929	60
1927	82	1930	47

Motor Vehicles.

Statistics of the manufacture or sale of motor vehicles are available only for the principal producing countries, but it is believed that these account for about 99 per cent of the world output. The statistics, as a rule, show only the total number of vehicles of various kinds produced or sold and do not include motor cycles. All types of vehicle are thus arbitrarily treated as equal ; the totals so obtained are of course not the totals of like units. Nevertheless, the changes in the number of vehicles produced as shown in Table XV afford a rough idea of the development of the automobile industry in the various countries.

The figures for North America are more accurate than those shown for European countries which in several cases, particularly in 1930, are estimates. The table indicates that the European industry developed more rapidly in the years 1925-1929 and suffered less from the depression in 1930 than that of North America, which, however, in that year still accounted for about five-sixths of the total number of motor vehicles produced.

Table XV.

Production of Motor Vehicles excluding Motor Cycles in Principal Countries.

Countries	Number of vehicles produced (000's)						1925=100					1930 as percentage of 1929	Percentage distribution			
	1925	1926	1927	1928	1929	1930	1926	1927	1928	1929	1930		1925	1927	1929	1930
Canada	162	205	179	242	263	154	127	111	150	163	96	59	3.3	4.3	4.1	3.7
United States of America	4,266	4,301	3,401	4,359	5,358	3,356	101	80	102	126	79	63	86.7	81.1	84.2	80.2
Total I*	4,428	4,506	3,580	4,601	5,621	3,510	102	81	104	127	79	62	90.0	85.4	88.3	83.9
Austria	5	5	9	12	9											
Belgium	6	6	7	8	7	25 [1]	113	163	206	194	156	81	0.3	0.6	0.5	0.6
Czechoslovakia	5	7	10	13	15											
France	177	193	191	223	250	240 [2]	109	108	126	141	136	96	3.6	4.5	3.9	5.7
Germany	70	51	125	149	135	93 [2]	73	179	213	193	133	69	1.4	3.0	2.1	2.2
Italy	64	63	59	74	91	79 [2]	98	92	116	142	123	87	1.3	1.4	1.4	1.9
United Kingdom	167	198	212	212	239	237 [2]	119	127	127	143	142	99	3.4	5.1	3.8	5.7
Total II	494	523	613	691	746	674 [2]	106	124	140	151	136	90	10.0	14.6	11.7	16.1
Grand Total	4,922	5,029	4,193	5,292	6,367	4,184 [2]	102	85	108	129	85	66	100.0	100.0	100.0	100.0

[1] Rough estimate.

[2] Provisional figure.

France is the leading motor-car producer in Europe, closely followed by the United Kingdom, but the German motor-car industry showed the most rapid development in the quinquennium 1925-1929. It will be observed that none of the European producers turned out as many motor vehicles in 1928 and 1929 as Canada, but the Canadian output fell the most in 1930. Among European producers, Germany suffered most from the depression in that year, and France and the United Kingdom comparatively little. The production of the world as a whole fell by one-third from the 1929 figure.

Motor-cars belong to the groups of commodities the demand for which might *a priori* be expected to be most radically cut in times of general economic depression. The decline in the activity of the motor vehicle industry in the course of 1930 was indeed considerably greater than the above comparison of annual figures would suggest. This is shown in the following statement comparing the output in each quarter with the average for all quarters of 1930 in those countries for which quarterly production figures or indices are available.

	First quarter	Second quarter	Third quarter	Fourth quarter	Fourth quarter as percentage of second quarter
	As percentage of average of all quarters				
United States of America	119	143	85	53	37
Canada	121	166	73	40	24
France	104	105	98	93	88
Germany	115	153	79	52	34

In all the above countries there was a recovery in the second quarter and a subsequent rapid decline which reduced the output in the last quarter of the year by three-fourths of that of the second quarter in Canada, almost two-thirds in Germany and the United States and one-sixth in France. As these figures in the first instance reflect changes in the demand, they may be regarded as rough indicators of the relative seriousness of the general depression in the above countries. Corresponding figures are not available for other countries.

It may be mentioned that the Union of Soviet Socialist Republics, which is not included in the table, is stated to have produced 14,900 motor-cars and 11,000 tractors or, in all, 25,900 motor vehicles in the economic year 1929-30 as compared with 4,150 in 1928-29 and 1,900 in 1927-28 ; these figures indicate a very remarkable progress. Similarly, in Sweden, according to the official production statistics, the gross value of the output of the automobile industry, including the value of cars made from finished parts, increased tenfold between 1925 and 1929.

It is of interest to compare the figures for production given above with the figures for exports given in Table XVI below. For all countries included in this table both the number and the value of the motor vehicles exported are shown. In addition, figures for exports of parts and engines are given for the United States of America.

Table XVI.

Exports of Motor Vehicles (excluding Motor Cycles).

Countries	1925	1926	1927	1928	1929	1930[1]	1929 as percentage of 1925	1930 as percentage of 1929
	Number (000's)							
Canada	74.1	74.3	57.4	79.4	101.7	44.5	137	44
United States of America (cars)	303.0	305.0	385.0	507.0	536.0	255.0	177	48
Total (1)	377.1	379.3	442.4	586.4	637.7	299.5	169	47
France	63.8	59.8	52.1	46.0	49.2[1]	14.1	77	29
Germany	2.6	2.2	4.1	8.0	8.2	6.2	315	76
Italy	29.1	34.2	33.3	28.3	23.7[1]	20.7	81.	87
United Kingdom	29.0	32.5	35.6	32.5	42.0	29.8	145	71
Total (2)	124.5	128.7	125.1	114.8	123.1	70.8	99	58
Total (1+2)[2]	501.6	508.0	567.5	701.2	760.8[1]	370.3	152	49
	Value in $ (000,000's)							
Canada	33.1	32.8	28.5	33.9	44.6	18.8	135	42
United States of America (cars)	222.6	223.6	278.1	354.9	345.7	172.9	155	50
Total (1)	255.7	256.4	306.6	388.8	390.3	191.7	153	49
United States of America (parts and engines)	*101.0*	*103.3*	*117.2*	*152.4*	*200.8*	*111.5*	199	56
France	110.9	77.5	68.0	60.4	61.3[1]	18.6	55	30
Germany	5.6	4.6	6.4	11.3	13.3	9.2	238	69
Italy	26.6	27.6	31.2	21.5	18.6[1]	15.2	70	82
United Kingdom	35.8	34.8	41.0	34.5	40.9	32.2	114	79
Total (2)	178.9	144.5	146.6	127.7	134.1	75.2	75	56
Grand Total (1+2) [2]	434.6	400.9	453.2	516.5	524.4[1]	266.9	121	51
Grand Total (1+2) [3]	*535.6*	*504.2*	*570.4*	*668.9*	*725.2*	*378.4*	135	52

[1] Provisional figures.
[2] Excluding parts and engines exported from the United States.
[3] Including parts and engines from the United States.

In 1929, Canada exported 39 per cent of the number of motor vehicles which it produced, Italy 26 per cent (in 1926, 54 per cent), France 20 per cent (in 1925, 36 per cent), the United Kingdom 18 per cent, the United States 10 per cent and Germany 6 per cent. The ratio of exports to production of North America as a whole rose from 9 to 11 per cent between 1925 and 1929 and dropped again to 8 per cent in 1930. For France, Germany, Italy and the United Kingdom together the ratio dropped from 26 to 17 per cent between 1925 and 1929 in spite of the remarkable increase in their output. Thus the absorption by their domestic markets

increased more than in proportion to output while their exports were affected by American competition in foreign markets. In 1930, there was a further drop to 11 per cent in the above ratio, owing mainly to the widespread economic depression, which caused a great curtailment in the demand for motor-cars on these markets.

The total value of the motor-cars exported from North America increased less in the quinquennium 1925-1929 than the number of units. Thus there was a reduction in price per unit. With reference to the four European countries, the aggregate value of the motor-cars exported dropped in the same period to 75 per cent of the 1925 figure, although the number of units exported was practically equal in 1929 and 1925. This points to a drop of roughly one-fourth in the average price of the cars exported, assuming that the composition of the export quantities was approximately the same in the two years.

Owing to the remarkable increase in the export of parts from the United States (chiefly to foreign branch factories of American motor-car companies) the total value of the North American exports, including such parts and separate engines, rose in this period by 66 per cent or almost in the same proportion as the number of complete cars. The share of North America in aggregate world exports of motor vehicles amounted to 84 per cent in 1929 and 81 per cent in 1930, measured by the number of units, and to 74 and 72 per cent respectively, measured by value. If the value of American exports of parts be included (such exports are of less importance in the case of European producers), its share amounted to about 80 per cent in both years.

Aggregate exports of all the countries included in the table dropped in 1930 by about one-half according to both the number of units and total value, as compared with 1929. As mentioned above, total output was reduced by one-third. The effects of the general depression were thus felt more seriously on the export markets than on the home markets. French exports declined most (by 70-71 per cent), but the drop in Canadian exports (56-58 per cent) was also greater than the average. The exports of the United States declined in almost exactly the same proportion as the average, while the German, British and especially the Italian motor-car industries suffered a much smaller reduction in the foreign demand for their products.

Electrical Industry.

Annual production figures or other data measuring changes in the annual volume of output of the electrical industry are available only for a few of the more important producing countries. The United States Department of Commerce compiles an index of the value of orders for electrical goods filed with certain companies which account for about 60 per cent of the total output of the electrical industry of the United States. The movement in this index since 1925 is shown below (1925=100) :

1926	1927	1928	1929	1930
108	102	113	141	115

In 1930, the index dropped by 19 per cent as compared with 1929; the orders decreased rapidly towards the end of the year.

The British Electrical and Allied Manufacturers' Association compiles an index of activity of the electric engineering industry with 1924 as base year which is published in the *Board of Trade Journal*. Figures for 1925 and 1926 are not available, but the movement since 1927 is shown below (averages of quarterly figures, 1924=100):

1927	1928	1929	1930
120	90	107	108

The movement during the course of the year 1930 is illustrated by the following quarterly figures:

Oct.-Dec. 1929	Jan.-March 1930	April-June 1930	July-Sept. 1930	Oct.-Dec. 1930
111	116	109	109	98

As a result of the depression the index in the last quarter of 1930 was 12 per cent lower than in the first quarter 1930 and 8 per cent lower than the average for 1929.

In Germany, which is the largest producer of electrical goods in Europe, no production data or indices are published.

The *Maandschrift van het Centraal Bureau voor de Statistiek* in the Netherlands publishes data regarding the gross value of the production of, and the number of workers employed in, the Dutch electrical industry, which indicate a remarkable development up to 1929 as shown below by the annual indices for the electrical industry (1925=100):

	1926	1927	1928	1929
Value of products	100	134	139	197
Workers employed	105	115	135	154

The official annual report on industry in Sweden contains complete data of the value of total production of electrical goods in that country. The following index, unadjusted for price changes, has been calculated on the basis of these data (1925=100):

1926	1927	1928	1929
122	134	157	158

In view of the continuous drop in the price of the goods produced since 1925, the physical output has been greater than the above index would suggest. The official price index for finished goods dropped by 15 per cent between 1925 and 1929. If the above production index be corrected accordingly, it would show an increase of 82 per cent during this period.

Figures for 1930 are not available in the case of the Netherlands and Sweden.

The value of the output of the electrical industry in the Union of Soviet Socialist Republics increased by 42 per cent in the year 1929 and by 159 per cent in 1930 as compared with 1928.

The following table shows the value of the exports of electrical goods for a number of important producing countries.

TABLE XVII.

EXPORTS OF ELECTRICAL GOODS.

	$ (000,000's)				1929	1930	1930 as percentage of 1929
	1925	1928	1929	1930 [1]	as percentage of 1925		
America :							
United States	84	89	121	119	144	142	98
Europe :							
France	19	16	13 [1]	15	68	78	115
Germany	84	126	149	150	177	179	101
Netherlands	13	15	39	32	300	247	82
Sweden	10	27	23	24	230	240	104
Switzerland	10	14	14	14	140	140	100
United Kingdom	85	90	96	90	113	106	93
Total	305	377	455 [1]	444	149	146	98

[1] Provisional figures.

The definition of the term " Electrical Industry " is not uniform in all countries, and the classification of electrical goods in the trade returns varies. But as far as possible the above statistics have been compiled on a uniform basis, and embrace electrical machinery (motors, dynamos, transformers, etc.), bulbs, electrical installation materials, boiling apparatus, telephones, radio receivers, electrometers, cables, etc. The indications they furnish of the changes in the activity in, and the relative importance of, the total electrical industry are of course not comparable as between the various countries, as exports constitute a different and varying proportion of the value of national output. The value of the exports of the United States, Germany and the United Kingdom was practically equal in 1925, but exports represented only 5 per cent of the value of the output in the United States, 17 per cent in Germany and 25 per cent in the United Kingdom. In France the corresponding ratio was 19 per cent and in Sweden 42 per cent (in 1929, 63 per cent).

In more recent years Germany has been by far the greatest exporter of electrical goods, followed at a considerable distance by the United States ; both these countries, and particularly Germany, have very much expanded their exports since 1929 while those of the United Kingdom have increased comparatively little. The most rapid expansion, however, has taken place in the Netherlands and Sweden,

whose economic development in post-war years, as their various production indices show, has been very remarkable.

The drop in French exports since 1925 has no doubt been accompanied by a substantial growth in domestic consumption. All other countries show larger exports in 1930 than in 1925. The drop in aggregate export values in 1930 as compared with 1929 is remarkably small and, in view of the fall in prices, it would appear that the aggregate quantities exported were actually greater than in previous years. This points to the conclusion that in 1930 the electrical industry of the world as a whole was relatively little affected by the general economic depression.

Electrical Energy.

The statistics relating to generation of electrical current are not very complete. In many countries none are published and, even where figures are available, they often do not include part or the whole of the power privately generated (mainly that produced by industrial undertakings for their own consumption). British figures account for something less than 95 per cent of the total national output, the Canadian, Dutch, French, Italian and Swiss figures for about 90 per cent, the United States figures for about 80 per cent, the Polish for 75 per cent, and those for the Argentine for only 50 per cent.

Owing to the inadequacy of the data available, it is difficult to estimate the total output of electricity in the world. According to one authority[1], this total would appear to have been as follows :

1925 . .	186,595 million kw. h.	1927 . .	233,407 million kw. h.
1926 . .	204,836 „ „	1928 . .	255,622 „ „

The increase in 1929 in countries for which figures are available was somewhat more than 11 per cent. On this basis the world output of electricity in that year may be put at roughly 285,000 million kw. h. The growth in the world production of electric current between 1925 and 1929 may be safely estimated at not less than 50 per cent.

The generation of electricity has been developed to a greater extent in North America than in other continents. The joint total output of the United States and Canada is certainly almost half of the world total, and the United States alone probably accounts for over 40 per cent. The aggregate generation of the European countries appears to constitute something more than 40 per cent of world total. In Europe, Germany is the largest producer, being followed in order of importance by the United Kingdom, France, Italy and Norway. The output of Japan is not far short of that of France.

The output of electricity per head of population is greatest in Norway and greater in Canada and Switzerland than in the United States, where it exceeds that of all remaining countries, both in Europe and elsewhere.

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[1] Institut für Konjunkturforschung, *Vierteljahrshefte zur Konjunkturforschung*, Sonderheft 19 (Berlin, 1930).

Table XVIII gives an indication of the relative rates of progress in electrification in the principal countries during the years 1925-1930.

Table XVIII.

Production of Electrical Energy in Various Countries.

Countries	Production of electricity in millions of k.w.h. [1]			Production as percentage of that in 1925					Production as percentage of that in 1929
	1925	1929	*1930	1926	1927	1928	1929	1930	1930
North America :									
Canada	10,110	*17,633	17,828	120	144	162	174	176	101
United States	65,870	97,352	95,638	112	122	133	148	145	98
Asia :									
Japan	8,172	12,036 [2]	...	114	129	147	...	...	...
Europe :									
Austria	2,320	*2,500	2,500	105	108	108	108	108	100
Belgium	2,274	4,270	...	.	143	164	188	...	...
Czechoslovakia	1,955	2,749 [2]	...	107	122	141	...	...	...
Finland	541	995	...	113	127	140	184	...	...
France	10,222	14,327	...	110	111	127	140	...	...
Germany	20,328	30,661	29,450	104	124	137	151	145	96
Italy	6,545	9,794	10,025 [3]	117	124	137	150	153	102
Netherlands	1,004	1,606	1,818	106	123	139	160	181	113
Norway	7,820	9,490 [2]	...	108	111	121	...	...	...
Poland	1,297	2,355	...	111	134	148	182	...	...
Sweden	3,673	4,967	...	109	120	120	135	...	...
Switzerland	3,665	5,300	...	114	120	141	145	...	...
United Kingdom	11,278	*17,392	18,340	101	119	129	154	163	105
U.S.S.R. [4]	2,274	6,465	8,700	155	179	228	284	383	135
Oceania :									
Australia	1,537	2,286	...	113	129	143	149	...	...
New Zealand	477	*1,200	...	133	166	197	252	...	...

[1] More complete statistics, with notes concerning their scope, are given in the *Statistical Year-Book of th e League of Nations*, 1930-31, Table 60 (Geneva, 1931).

[2] Production in 1928 : figures for 1929 not yet available.

[3] Italy : revised figure for 1930.

[4] U.S.S.R. : economic year ending 30. IX.

* Estimate or provisional figure.

Between 1925 and 1929, North American output increased by 51 per cent and that of Europe excluding the Union of Soviet Socialist Republics by 48 per cent. The rate of increase was more rapid in Soviet Russia than in any other country.

Very few figures are available for 1930. Those given appear to indicate a slackening of the rate of development in Europe and a small drop in North America. But in view of the fact that a large proportion of the industrial consumption of

current — *e.g.*, that generated by the industries themselves, is not included in the official statistics, the figures probably understate the actual effects of the industrial depression on the production of electricity.

The proportion of current generated in thermo-electric and hydro-electric stations varies widely from country to country. Information available for the principal countries shows that the greater part of the world's supply of electricity is produced by fuels, although water power is being more and more used and accounts for the rapid increase in the generation of electricity in countries where fuel resources are small or non-existent.

The percentage of total power generated by fuels and water power has varied but little between 1925 and 1929. In the latter year, the percentage generated by fuels was 99 per cent in the United Kingdom, 88 per cent in Germany, 64 per cent in the United States, and 57 per cent in France. On the other hand, practically only water power is used in Norway, Sweden, Switzerland and Canada, while the proportion generated in hydro-electric stations was 96 per cent in Italy [1].

Textiles.

The indices of world production of the more important textile raw materials given in Chapter II and Annex II of the present *Memorandum* show in broad outline the development of the different branches of the textile industry in the quinquennium 1925-1929. Comprehensive figures for 1930 are only available for a few of these materials and do not afford a sufficiently broad basis for an estimate of the movement in textile production as a whole ; they indicate a slight decline in the production of cotton, natural silk and artificial silk and an increase of about 8 per cent in that of jute.

Only a few countries compile more or less comprehensive indices showing the variations in the activity of the textile industry as a whole. Those available are reproduced herewith (Table XIX).

The composition of the indices given in the table varies considerably. That for France refers to the cotton, wool and silk industries and is based on average output of cotton per spindle and per loom, spinning and weaving being combined in the proportion of 7 : 12, wool conditioned at two manufacturing centres and silk conditioned at Lyons. The German, British, Dutch, Polish and Swedish indices are much wider in scope. The German index refers to nearly all branches of textile industry — namely, the artificial silk industry, silk weaving, wool combing, weaving and worsted, cotton spinning and weaving, linen weaving, hemp spinning and jute spinning. The Dutch indices relate to the whole cotton and woollen manufacturing industry and include in addition, the more important hosiery

[1] For detailed statistics, cf. the *Statistical Year-Book* of the League of Nations, 1930-31, Table 60.

factories in the Netherlands. The Polish index covers cotton spinning, weaving, bleaching, dyeing and printing, the woollen and worsted industry, jute, silk and artificial silk. The Swedish index includes the total production of all branches of the textile industry of the country and, in addition, rope making (ready-made clothing, which is included in the official index, has been excluded above). That for the United Kingdom covers cotton spinning, weaving, bleaching, dyeing and printing, the woollen and worsted industry, jute, hemp and linen, hosiery, lace, silk and artificial silk. The United States index includes the production of cotton, woollen and worsted goods and silk manufactures, and is based on the mill consumption of raw material and on spindle and loom activity for wool and silk.

Table XIX.

Indices of Activity in the Textile Industry.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
America :								
United States [1]	100	109	103	111	88	107	85	79
Europe :								
France [2]	111	106	116	108	100	93	86	92
Germany [3]	90	124	111	104	102	94	92	98
Netherlands : [4]								
Value of products	86	94	102	102	...	100	...	...
Workers employed	105	112	116	117	...	102	...	...
Poland [5]	96	142	147	131	102	89	69	78
Sweden [6]	114	121	126	125	...	99	...	...
United Kingdom [7]	93	102	96	100	85	103	88	85

[1] Production index of the Federal Reserve Board.
[2] Production index of the *Statistique générale de la France.*
[3] Annual production index of the *Institut für Konjunkturforschung.*
[4] Based on returns published by the *Centraal Bureau voor de Statistiek* (*Maandschrift*, January 31st, 1931).
[5] Production index of the Economic Research Institute.
[6] Official production index of the *Kommerskollegium*, excluding ready-made clothing.
[7] Annual production index of the London and Cambridge Economic Service.

The table shows that, except in Sweden and Poland, the development of the textile industry has been relatively slow in the five-year period 1925-1929 and that there was a marked decline in 1929 in the activity of the French, German and Polish textile industries.

The Swedish index was practically the same in 1929 as in 1928. This is true also of the Dutch indices the first of which relates to the value of production and thus is influenced by the drop in cotton and wool prices and therefore shows a decline in the early years of the period, although the quantity of the output may in fact have risen. It will be observed that the index of workers employed points to a continuous expansion of the Dutch textile industry. The value of the

production of the hosiery branch increased without interruption and was in 1929 38 per cent greater (the number of workers employed in the reporting factories was 40 per cent greater) than in 1925. The Swedish hosiery industry expanded still more, the quantity of its production being 55 per cent larger in 1929 than in 1925. Separate indices for this branch of the textile industry, which has largely profited (partly at the cost of the others) from the changes in fashion in post-war years, are unfortunately not available for the other countries.

The activity of the German industry was greatest in 1927 and the British index was also higher in that year than in 1929. In the United States the textile index has fluctuated in close harmony with the variations in general business activity. It declined suddenly towards the end of 1929 and dropped further in 1930. The average for that year lies more than 20 per cent below that for 1929. The Polish index for 1930 shows a drop of roughly the same proportion, while the decline by 8 per cent in the French index points to a less serious general depression in that country. The index of the London and Cambridge Economic Service for the United Kingdom shows a general decline of 15 per cent in 1930. According to the indices for individual industries the activity of the British cotton industry declined by 28 per cent, that of the artificial silk industry by 14 per cent, that of the natural silk industry by 12 per cent ; the activity in the woollen industry, however, increased by 4 per cent. In Germany, the index of the textile industry shows a decrease of only 2 per cent in 1930. This is explained by the fact that in 1929 the activity of this branch of industry was already much less than in the two preceding years.

In studying the table it is necessary to bear in mind, first, that certain important textile countries, such, for instance, as Czechoslovakia, Italy and Switzerland, are omitted and, secondly, that these indices are computed with fixed weights and do not therefore take into account the very substantial changes in the relative prices of the products of the various branches of the textile industry which have taken place in the last few years. They refer to quantities and not to values (except one of the Dutch indices) and accordingly indicate changes in the volume of production but not in the profits earned.

The recent development of the more important branches of the textile industry are analysed in greater detail in separate sections below.

Cotton.

In Table XX (pages 74 and 75) is given the consumption of raw cotton in all countries from which information is obtained by the Federation of Master Cotton Spinners' Associations. The original statistics are expressed in numbers of bales the average weight of which, however, differs widely for the different kinds of cotton. They have therefore been converted into metric tons according to the average rates used by the Cotton Trade Statistical Bureau at Manchester. It should be observed that the scope of the statistics is not quite worldwide and that the continental

totals cover those countries for which information is available and not necessarily to the whole area of the continents concerned.

The economic years run from August 1st to July 31st. The figures for total production and total consumption in the period under review are the following :

Metric tons (000's)

	1924	1925	1926	1927	1928	1929	1930
	1924–25	1925–26	1926–27	1927–28	1928–29	1929–30	1930–31
Cotton production . .	5,350	6,050	6,150	5,190	5,690	5,640	5,600
Cotton Mill Consumption	5,066	5,352	5,716	5,594	5,646	5,434	—

After allowance has been made for such discrepancies as may arise from overlapping dates and from slight differences in the rates used for converting the bales into metric tons[1], the agreement is fairly close in general between the two series of figures. The raw cotton crops are, of course, subject to considerable year-to-year fluctuations, but have tended to fall since 1926. The cotton mill consumption was also largest in the economic year 1926-27 and remained at a slightly lower level in the two consecutive economic years, during which part of the surplus crops of the preceding years was consumed ; but the year 1929-30 shows a decided decline as a result of the general economic depression. The available figures for the half-year August 1930 - January 1931 reflect the depression much more markedly than the figures given in the table above. Compared with the corresponding period of the previous year, the drop in mill consumption amounted to 17 per cent. The decline has been most marked in the case of American cotton, the consumption of which dropped by 14 per cent in the year 1929-30 and by 24 per cent in the second half of 1930 compared with that of 1929. The consumption of Egyptian cotton dropped by only 5 per cent in the year 1929-30, and that of East Indian and sundry cotton rose by 17 and 11 per cent respectively. But these were also seriously affected in the second half of 1930, when the consumption of East Indian cotton hardly rose at all and that of Egyptian and sundry cotton declined by 22 and 6 per cent respectively. During the whole period under review, American cotton lost ground to the miscellaneous crops and, in the last year and a-half, to East Indian cotton, especially on the European market.

The share of Europe in total cotton consumption remained almost stationary at about 43 per cent throughout the whole period, while that of North America dropped from 28 per cent in the beginning of the period to 24 per cent in the latter half-year of 1930 and that of Asia rose from 25 to about 30 per cent between the same dates, largely as a result of the rapid development of the cotton industry in China and Japan. The consumption of India, which had declined considerably in 1927-28 and 1928-29, recovered in 1929-30 and continued to rise in the second half of 1930. The consumption of China also rose in the latter half of last year,

[1] These differences may be accounted for by the fact that the bales, when reaching the factories, are, as a rule, somewhat lighter than at the original places of production.

Table XX.

Cotton Mill Consumption from 1924-25 to 1929-30.
Metric tons (000's).[1]

Countries	American Cotton						East Indian Cotton						Egyptian Cotton					
	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30
North America	1,375	1,446	1,605	1,526	1,589	1,361	6	5	5	5	6	11	44	49	58	50	57	51
Canada	36	47	44	44	49	43	0.2	—	—	—	—	—	—	2	3	1	3	4
United States	1,339	1,399	1,561	1,482	1,540	1,318	5.8	5	5	5	6	11	44	47	55	49	54	47
Caribbean and S. America	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—	—
Brazil	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mexico	—	1	—	—	—	—	—	—	—	—	—	—	1	—	—	1	—	—
Asia	175	229	398	343	325	324	756	776	763	615	683	799	16	15	18	15	15	20
China	16	27	62	67	63	66	62	89	83	56	72	84	—	1	1	1	—	1
India	3	2	79	31	12	10	426	366	397	334	341	407	3	2	1	1	1	5
Japan	156	200	257	245	250	248	268	321	283	225	270	308	13	12	16	13	14	14
Europe[2]																		
Including U.S.S.R.	1,441	1,426	1,559	1,609	1,476	1,245	234	223	170	197	241	282	269	250	261	259	264	247
Excluding U.S.S.R.	1,371	1,364	1,471	1,497	1,388	1,181	234	223	170	197	241	261	255	234	240	235	244	229
Belgium	34	40	47	49	50	41	26	28	23	27	32	33	1	1	1	1	2	2
Czechoslovakia	78	80	93	98	86	73	21	18	12	14	16	20	7	7	8	10	8	6
France	183	189	187	188	187	165	29	30	29	33	39	41	37	37	34	33	37	41
Germany	208	200	275	289	232	209	39	37	31	38	46	49	20	15	23	22	24	27
Italy	145	161	154	160	169	151	52	46	33	32	41	47	19	17	17	17	18	18
Netherlands	24	27	30	33	34	34	5	5	5	6	7	8	—	—	—	—	—	—
Poland	37	36	61	72	48	42	5	4	6	4	4	4	2	2	4	3	5	3
United Kingdom	532	475	471	442	433	334	33	30	15	22	33	34	149	135	127	123	126	104
U.S.S.R.	70	62	88	112	88	64	—	—	—	—	—	21	14	16	21	24	20	18
Various Countries n.e.i.	15	11	17	16	29	24	6	7	5	4	9	12	4	4	5	4	5	5
Total	3,006	3,113	3,579	3,494	3,419	2,954	1,002	1,011	943	821	939	1,104	334	318	342	329	341	323
Total as percentage of 1924-25	100	104	119	116	114	98	100	101	94	82	94	110	100	95	102	99	102	97

Source : *International Cotton Bulletin.*

[1] Bales have been converted to metric tons according to the following rates :

American cotton . . . . . 1 bale = 500 lb. = 226.7962 kg.
EastIndian cotton . . . . . 1 bale = 400 lb. = 181.4370 kg.
Egyptian cotton. . . . . 1 bale = 760 lb. = 344.7203 kg.
Sundries . . . . . 1 bale = 450 lb. = 204.1166 kg.

[2] The totals for Europe include also the following countries : Austria, Denmark, Finland, Norway, Portugal, Spain, Sweden, Switzerland. These countries are not included in the group : *Various countries.* n.e.i.

TABLE XX *(continued)*.

COTTON MILL CONSUMPTION FROM 1924-1925 TO 1929-1930.

Metric tons (000's).

Countries	Sundries						Total						1924-25=100		1928-29=100	Consumption as percentage of world total		
	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1928-29	1929-30	1929-30	1924-25	1928-29	1929-30
North America	14	12	13	13	11	10	1,439	1,512	1,681	1,594	1,663	1,433	116	100	86	28	30	26.5
Canada	—	—	—	—	—	—	36	49	47	45	52	47	144	130	90	1	1	1
United States	14	12	13	13	11	10	1,403	1,463	1,634	1,549	1,611	1,386	115	99	86	27	29	25.5
Caribbean and S. America	148	204	128	151	130	128	149	205	128	152	130	128	87	86	98	3	2	2.5
Brazil	109	160	91	113	96	84	109	160	91	113	96	84	88	77	88	2	1.5	1.5
Mexico	39	44	37	38	34	44	40	45	37	39	34	44	86	111	129	1	0.5	1
Asia	311	267	278	336	302	373	1,258	1,287	1,457	1,309	1,325	1,516	105	121	114	25	24	28
China	245	234	242	288	261	314	323	351	388	412	396	465	123	144	117	6	7	9
India	14	7	12	11	13	25	446	377	489	377	367	447	82	100	122	9	7	8
Japan	52	26	24	37	28	34	489	559	580	520	562	604	115	124	107	10	10	11
Europe																		
Including U.S.S.R.	239	406	407	415	467	519	2,183	2,305	2,397	2,480	2,448	2,293	112	105	94	43	43	42
Excluding U.S.S.R.	89	114	144	150	119	180	1,949	1,935	2,025	2,079	1,992	1,851	102	95	93	38	35	34
Belgium	2	3	5	12	11	19	63	72	76	89	95	95	151	151	100	1	2	2
Czechoslovakia	1	1	1	1	1	3	107	106	114	123	111	102	104	95	92	2	2	2
France	10	15	20	16	16	21	259	271	270	270	279	268	108	103	96	5	5	5
Germany	5	3	5	7	7	10	272	255	334	356	309	295	114	108	95	5	5	5
Italy	4	4	4	4	4	5	220	228	208	213	232	221	105	100	95	4	4	4
Netherlands	1	1	1	1	1	2	30	33	36	40	42	44	141	149	106	0.5	1	1
Poland	2	1	1	2	1	2	46	43	72	81	58	51	126	111	88	1	1	1
United Kingdom	77	76	98	97	70	102	791	716	711	684	662	574	84	73	87	16	12	11
U.S.S.R.	150	292	263	265	348	339	234	370	372	401	456	442	195	189	97	5	8	8
Various countries n.e.i.	12	21	26	35	37	23	37	43	53	59	80	64	216	173	80	1	1	1
Total	724	910	852	950	947	1,053	5,066	5,352	5,716	5,594	5,646	5,434	111	107	96	100	100	100
Total as percentage of 1924-25	100	126	118	131	131	146	100	106	113	110	111	107						

Source : *International Cotton Bulletin.*

[1] Bales have been converted to metric tons according to the following rates :

American cotton	1 bale	= 500 lb.	= 226.7962 kg.
East Indian cotton	1 bale	= 400 lb.	= 181.4370 kg.
Egyptian cotton	1 bale	= 760 lb.	= 344.7203 kg.
Sundries	1 bale	= 450 lb.	= 204.1166 kg.

[2] The totals for Europe include also the following countries : Austria, Denmark, Finland, Norway, Portugal, Spain, Sweden, Switzerland. These countries are not included in the group : *Various countries*, n.e.i.

but that of Japan dropped by 20 per cent compared with the corresponding period in 1929.

The consumption of the United States expanded relatively little up to 1928-29 and dropped by 14 per cent in the following year. In the second half of 1930 it was 26 per cent below the figures for the corresponding period in 1929. The far less important Canadian cotton industry expanded rapidly up to 1928-29 and appears to have suffered less than that of the United States from the recent depression, except in the second half-year of 1929 ; since then its consumption has declined only slightly.

The development in European countries during the period under review has been far from uniform. A steady and rapid advance up to 1928-29 will be observed in the case of Belgium, the Netherlands and the Union of Soviet Socialist Republics. The Polish cotton industry also expanded considerably and the German industry more than those of France, Italy and Czechoslovakia, while there was a steady decline in British cotton mill consumption throughout the period. In 1929-30 the Dutch cotton industry continued to expand, and the consumption of the Belgian industry was maintained at the level of the preceding year, while consumption declined in the Union of Soviet Socialist Republics, though slightly, and in all other European countries shown. The contraction was most marked in the already depressed cotton industry of the United Kingdom and in that of Poland.

The various European countries have been affected in very different degrees by the general depression. This is clearly seen from the following figures showing the percentage drop (—) or increase (+) in the cotton mill consumption in the half-year ending January 31st, 1931, compared with the corresponding period in 1929-30 :

	Percentage		Percentage
United Kingdom	— 32	Czechoslovakia	— 11
Italy	— 27	Netherlands	— 3
Belgium	— 21	France	— 1
Germany	— 18	Poland	+ 2
U.S.S.R.	— 14		

The United Kingdom stands out again as the country which has been most severely hit ; but the Italian, Belgian and Germany industries, which had been much less affected in the first half of the year, were also seriously depressed in the second. The Dutch and French industries were remarkably little affected and Polish cotton mill consumption even recovered from the drop in the first half of the year. The 14 per cent decline in the Union of Soviet Socialist Republics attracts special interest in view of the fact that cotton spinning and weaving would appear to be the only important branch of industry in that country which failed to increase its output in 1930.

The following table gives indices of the activity in cotton spinning and weaving in the limited number of countries for which production figures or other significative data, apart from mill consumption figures, are available. It confirms on the whole

the conclusions drawn from the preceding table, due regard being paid to the fact that the twelve-month periods to which the figures relate are not identical in the two cases. Separate indices relating both to the weight and the value of the output of the Swedish cotton industry are given. The quantity indices point to a more rapid development up to 1928 in the industry of that country than in that of any of the other countries shown, except the Union of Soviet Socialist Republics and Belgium. As a result of the drop in prices, the value indices are of course very considerably lower than the quantity indices ; that relating to yarns even remained slightly below the level of 1925 in all subsequent years, except 1928. The Dutch value index, which does not distinguish between yarns and tissues, shows the effects of the decline in prices to be still more striking.

Table XXI A.

Activity in the Cotton-spinning Industry.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
America :								
Canada [1]	113	114	113	114	85	101	76	75
United States [2]	105	117	103	111	84	107	81	76
Asia :								
China [3]	106	99	128	...	...	...	...	...
India [3 4]	118	118	94	121	...	129	...	118 [5]
Japan [3]	107	104	100	114	103	114	103	90
Europe :								
Belgium [3]	116	128	136	...	...	...	...	...
France [3]	102	101	107	105	97	98	91	93
Germany [6]	85	116	105	95	94	90	90	100
Italy [3]	100	87	97	...	...	...	...	...
Sweden (yarn produced) : [7]								
Weight	118	124	132	124	...	94	...	...
Value	97	99	110	98	...	89	...	...
United Kingdom [8]	84	93	85	84	61	98	72	78
U.S.S.R. [3 9]	128	160	167	184	178	110	107	97

[1] Production index of the *Monthly Bulletin of Business Statistics*, based on raw cotton imports.
[2] Production index of the Federal Reserve Board based on cotton consumption.
[3] Actual quantities of yarn produced.
[4] Twelve months (April 1st–March 31st) ; base year : April 1925–March 1926.
[5] Provisional figures, based on returns for April–August only.
[6] Production index of the *Institut für Konjunkturforschung*, relating to output of yarn.
[7] Annual Report on Industry, *Kommerskollegium*.
[8] Production index of the London and Cambridge Economic Service, relating to output of yarn.
[9] Economic years ending September 30th.

TABLE XXI B.

ACTIVITY IN THE COTTON WEAVING INDUSTRY.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
America :								
United States [1]	.	116	.	...	.	...	.	.
Asia :								
India [1 2]	116	122	96	121	...	126	...	118 [3]
Japan [1]	109	110	118	131	118	111	100	90
Europe :								
France [1]	104	104	106	108	109	102	103	101
Germany [4]	78	117	110	94	94	86	85	99
Italy [1]	115	100	108	...	...	...	...	...
Netherlands : [5]								
Workers employed	105	111	114	115	...	101	...	...
Value of production	82	88	96	96	...	100	...	...
Sweden (tissues produced) : [6]								
Weight	120	127	129	129	...	100	...	...
Value	110	108	110	111	...	101	...	...
U.S.S.R. [1 7]	136	152	165	180	176	109	106	98

[1] Actual quantities of tissues produced.
[2] Twelve months (April 1st–March 31st) ; base year : April 1925–March 1926.
[3] Provisional figure, based on returns for April–August only.
[4] Production index of the *Institut für Konjunkturforschung.*
[5] Spinning and weaving, *Maandschrift van het Centraal Bureau voor de Statistiek,* January 31st, 1931.
[6] Annaul Report on Industry, *Kommerskollegium.*
[7] Economic years ending September 30th.

Large as is the trade in cotton goods, most production is nevertheless for domestic purposes. According to an unofficial estimate by one expert body [1] less than 10 per cent of the cotton yarn and less than 20 per cent of the cotton tissues produced enters to-day into international trade. Exports are, however, vital to certain national industries. The total exports of yarn have declined substantially in recent years, and the value of the exports of piece-goods have fallen steadily throughout the whole period under review, partly as a result of the decline in prices and partly owing to a quantitative reduction in British exports, which constitute a very large proportion of the world total. Certain features of the trade in cotton goods have been discussed in a companion volume [2] and need not be further referred to here.

Wool.

The statistics of raw wool production should not be accepted as more than expert estimates. They probably give a fairly accurate indication of the general

[1] The Manchester Cotton Trade Statistical Bureau.
[2] League of Nations *Memorandum on International Trade and Balances of Payments,* 1927-1929, Volume I.

trend of development. It was not until about 1925 that the post-war production and consumption of wool reached the pre-war level. Between that year and 1928, production rose by about 12 per cent and remained stationary in 1929.

The available production indices for the woollen industry are given in the following table. These indices of the different countries are based on very different data — in some cases on raw wool consumption, in others on quantity of wool conditioned, actual output by weight or square measure or value, number of workers employed, etc. — and some only cover part of the industry. The indices therefore are not directly comparable with one another ; they only serve to indicate the general trend.

Table XXII.

Activity in the Wool Industry.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
America :								
United States [1]	97	104	102	111	78	108	77	71
Europe :								
Belgium [2]	111	152	153	147	...	97	...	...
France [3]	107	101	110	104	98	94	89	94
Germany : [4]								
Wool-combing	105	150	142	137	...	97	...	...
Worsted-spinning	95	115	114	111	120	97	105	108
Wool-weaving	124	153	123	118	115	96	94	98
Netherlands : [5]								
Value of products	99	116	125	124	...	99	...	...
Workers employed	102	109	113	115	...	102	...	...
Sweden :								
Weight of yarns and tissues produced [6]	102	101	108	108	...	100	...	...
United Kingdom [7]	111	112	107	117	122	110	114	104
U.S.S.R. [8]	...	...	...	...	...	117	123	105

[1] Production index of the Federal Reserve Board, based on raw wool consumption.
[2] Production index based on wool conditioned at Verviers and Dison.
[3] Production index of the *Statistique générale de la France* based on wool conditioned at Roubaix-Tourcoing and Mazamet.
[4] Annual Production index of the *Institut für Konjunkturforschung.*
[5] Based on returns published by the *Centraal Bureau voor de Statistiek* (*Maansdchrift*, January 31st, 1931).
[6] Annual Report on Industry, *Kommerskollegium.* The index for the value of these products (1925=100) was :

1926	1927	1928	1929
97	96	103	101

[7] Annual production index of the London and Cambridge Economic Service, based on raw wool consumption.
[8] Actual production of woollen fabrics (quantities).

In the quinquennium 1925-1929, the woollen industry seems on the whole to have expanded in Belgium, Germany and the Netherlands more than the average increase suggested by the index for world production of raw wool. Production in the United Kingdom appears to have grown almost in proportion to that average increase, while the indices for the United States, Sweden and France have risen less. The indices of those countries in which the expansion has been greatest and, in addition, that of France, dropped somewhat in 1929. The indices of the United States, the United Kingdom and the Union of Soviet Socialist Republics, on the other hand, rose in 1929 ; the rapid development in the latter country, however, slackened in 1930. Annual indices for 1930 are available for the United States, France, the United Kingdom and Germany in addition to the Union of Soviet Socialist Republics. As a result of the general economic depression, the activity of the industry has apparently been very considerably reduced in the United States and to a much less extent in France. In France, indeed, the depression was felt by the woollen industry only in the second half of the year, when the index declined by 9 per cent. In Germany, activity seems to have been on an average even somewhat greater than in 1929. The woollen textile index of the London and Cambridge Economic Service, which is based on wool consumption also shows a small increase.

The total value of woollen tissues exported annually by the six European countries covered by Table XXIII below changed comparatively little in the period 1925-1929. That of the woollen and worsted yarns exported was 25 per cent greater in 1928 and only slightly higher in 1929 than in 1925. But the price for raw wool dropped in the same period by about 35 per cent.[1] In 1930 the aggregate value of woollen fabrics exported was reduced by about one-quarter compared with 1929; but in view of the continued drop in wool prices, which fell in the course of the year 35 per cent from the average of 1929 — a drop which involved a considerable decline also in the prices of woollen fabrics — the reduction in quantity was certainly nothing like as great as that in value.

German woollen exports expanded more than those of any other country up to 1927-28 and remained high in 1929 in spite of the general slackening in productive activity. It is true indeed that exports of yarns from Italy have increased relatively more, but these exports, are only a fraction of those of Germany. Moreover the value of Italy's exports of tissues in 1929 was lower, compared with 1925, than that of any of the other countries shown above. In all these countries, except Czechoslovakia, the value of exports both of tissues and yarns in 1929 was below the 1925 level. The aggregate exports of the United Kingdom and France were more affected in 1930 than those of Germany.

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[1] Average Australian export price of greasy wool, in terms of dollars.

Table XXIII.

Exports of Woollen Fabrics.

Countries	Value in $ (000's omitted)				1925=100			1929=100
	1925	1928	1929	1930*	1928	1929	1930	1930
	Woollen tissues							
Belgium	6,046	6,721	5,954	4,962	111	98	82	83
Czechoslovakia	32,308	36,267	35,046	28,114	112	108	87	80
France	68,920	69,900	64,800	50,300	101	94	73	78
Germany	50,673	66,549	66,307	54,793	131	131	108	83
Italy	18,237	12,905	14,000	13,046	71	77	72	93
United Kingdom	176,680	170,946	158,920	113,889	97	90	64	72
Total	352,864	355,238	345,027	265,104	101	98	75	77
	Woollen and worsted yarns							
Belgium	18,887	19,916	15,705	12,314	105	83	65	78
Czechoslovakia	13,762	17,300	15,942	12,856	126	116	93	81
France	34,698	34,500	30,500	25,300	99	88	73	83
Germany	21,991	29,063	28,975	21,707	132	132	99	75
Italy	2,026	5,644	5,000	3,012	279	247	149	60
United Kingdom	57,194	57,834	53,582	36,038	101	94	63	67
Total	148,558	185,792	149,704	111,227	125	101	75	74

* Provisional figures.

Silk.

The recorded production of raw silk increased between 1925 and 1929 from about 48,000 to about 61,000 metric tons, or by 27 per cent, mainly on account of an expansion by over 40 per cent in the output of Japan, the producer next in importance to China, for which, however, production figures are not available. Chinese exports, which amount to between one-third and one-fourth of the total output of Japan, only rose by 13 per cent, and the output of Italy, the main European producers, by 10 per cent. The aggregate output of the other European producers remained practically stationary. In 1930 there was a drop of 1½ per cent in the figures for Japan and it is possible that world supply fell slightly.

The most important silk industries are those of the United States of America, Japan, France, Italy, Germany, Switzerland and the United Kingdom. Table XXIV gives such indices of activity in the silk industry as are available.

Table XXIV.

Indices of Activity in the Silk Industry.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
America :								
United States [1]	100	110	114	124	115	109	101	93
Asia :								
Japan [2]	108	117	119	116	107	98	90	92
Europe :								
France [3]	105	87	110	91	74	83	67	81
Germany [4]	101	134	120	128	119	107	100	93
Italy [5]	86	98	109	108	...	99	...	...
United Kingdom [6]	106	98	112	127	112	113	99	88
U.S.S.R. [7]	...	...	...	...	...	130	169	130

[1] Silk deliveries to mills.
[2] Production of silk tissues.
[3] Production index of the *Statistique générale de la France* based on silk conditioned at Lyons.
[4] Annual production index of the *Institut für Konjunkturforschung* (silk weaving).
[5] Actual quantities of silk yarn produced.
[6] Annual production index of the London and Cambridge Economic Service, based on production of silk thrown and spun.
[7] Economic years beginning October 1st. Index based on values at 1926-27 prices.

Considerable year-to-year fluctuations are noticeable. In 1929 there was a remarkable increase in the activity of the silk industries of the United States of America, the United Kingdom and Germany. The production of silk yarn in Italy and of tissues in Japan was slightly lower than in 1928, while the French index dropped by 17 per cent as compared with that year. The available figures for 1930 point to a further sharp decline in the activity of the French industry ; the contraction in the German, British, American and Japanese silk industries appears to have been less serious. The index of the Union of Soviet Socialist Republics for production of silk goods rose by as much as 30 per cent in 1930.

Artificial Silk.

As shown in Table XXVI below the aggregate output of artificial silk increased without interruption between 1925 and 1929, and more than doubled in the period, but in 1930 there was a small decline.

Table XXV.

Production of Artificial Silk.

Countries	Production in metric tons (000's)			Production as percentage of that in 1925					1930 as percentage of 1929	Production as percentage of world total		
	1925	1929	1930[1]	1926	1927	1928	1929	1930		1925	1929	1930
America:	24.1	57.3	56.3	124	147	191	237	233	98	27.8	28.5	28.7
United States	23.5	55.4	53.8	123	146	189	235	229	97	27.1	27.6	27.4
Asia:												
Japan	1.3	14.0	15.8	196	286	428	1100	1243	113	1.5	7.0	8.1
Europe:	61.2	129.5	123.9	114	156	188	212	203	96	70.7	64.5	63.2
Belgium	5.0	7.3	5.4	120	150	136	146	108	74	5.8	3.6	2.8
France	6.5	16.8	18.1	122	147	210	258	279	108	7.5	8.4	9.2
Germany	11.8	25.0	27.0	115	154	202	212	229	108	13.6	12.5	13.8
Italy	13.9	32.3	30.1	120	176	188	234	218	93	16.1	16.1	15.4
Netherlands	4.0	9.1	8.2	153	187	204	227	204	90	4.6	4.5	4.2
Switzerland	2.8	5.6	4.8	130	168	194	199	173	87	3.2	2.8	2.4
United Kingdom	13.5	25.8	22.2	86	130	175	191	165	86	15.6	12.8	11.3
Other Countries	3.7	7.6	8.1	117	162	202	208	216	104	4.3	3.8	4.1
World	86.6	200.8	196.0	118	155	192	232	226	98	100.0	100.0	100.0

[1] Provisional figures.

The industry was concentrated in a few European countries before the war, but, in recent years, it has been rapidly developed in other countries. In 1913, the United Kingdom, Germany, France and Belgium were probably responsible for about 80 per cent of the world output. Their share was only 42 per cent in 1925 and not more than 37 per cent in 1929-30. Italy had by 1925 risen to the leading position among European producers and has since more than doubled its output. The rate of increase, however, has been greatest in Japan, although its output is still below that of the European countries mentioned, except Belgium. The total share of Europe in the world output dropped from 71 to 63 per cent between 1925 and 1930, and that of North America rose from 28 to 29 per cent.

In 1930, production dropped everywhere except in Japan and France; the reduction was largest both absolutely and relatively in the United Kingdom. The trade in artificial silk has kept pace with production and, up to 1928, indeed increased somewhat more rapidly, as shown in Table XXVI.

In 1930, the decline in output was not fully reflected in the export quantities, which were indeed slightly higher than in 1929. But although the weight of exports in 1928 was double that of 1925, the decline in prices has been so great that the values were only up by 35 per cent and actually dropped by 6 per cent in the two subsequent years in spite of a further increase of 15 per cent in the total weight.

Table XXVI.

Exports of Artificial Silk.

Countries	Quantities in quintals (000's)						1929 as percentage of 1925	1930 as percentage of 1929
	1925	1926	1927	1928	1929	1930[1]		
Belgium	33.2	32.2	37.2	39.8	31.9	30.3	96	95
France	6.4	10.9	48.4	51.2	65.2	79.4	1,019	122
Germany	38.0	36.6	44.1	62.8	89.9	69.6	237	77
Italy	72.6	97.9	147.6	150.0	175.9	186.7	242	106
Netherlands	30.4	55.4	72.0	77.8	88.5	92.2	291	104
Switzerland	18.7	29.5	33.3	37.6	39.3	43.2	210	110
United Kingdom	32.7	26.5	37.9	43.3	37.0	29.2	116	79
Total	232.0	289.0	420.5	462.5	527.7	530.6	228	101
Total value (million dollars)	63.3	61.2	78.5	85.4	81.4	80.6	129	99
Average price in dollars per quintal	272.8	211.7	186.7	184.6	154.3	151.9	57	98
Indices of Exports: Quantities	100	125	181	199	228	229	—	—
Indices of Exports: Values	100	97	124	135	129	127	—	—
Indices of Exports: Prices	100	78	68	68	57	56	—	—

Source: National foreign trade returns.

[1] Preliminary figures.

By 1930 indeed the average export price was little more than half that of 1925. The quantitative indices, therefore, must not be taken as indicating the financial prosperity of the industry. The above table is of particular interest as showing the enormous changes that have taken place in the relative importance in international trade of the various competing countries. In the period 1925-1929 the exports of France increased over tenfold, those of the Netherlands almost trebled, and those of Italy, Germany and Switzerland more than doubled. On the other hand, the exports of the United Kingdom and Belgium expanded relatively little compared with those of the other countries up to 1928 inclusive and showed a definite contraction in 1929 and 1930. In 1930, the German exports also declined very substantially, while those of Italy, the Netherlands, Switzerland and, above all, those of France continued to rise.

Italy is by far the largest exporter ; the Netherlands come next on the list, but their exports are not even half those of Italy. German exports, which in 1929 slightly exceeded those of the Netherlands, were outstripped in 1930 also by those of France.

Linen, Hemp, Jute and Sundry Textile Industries.

The indices available for textile industries not dealt with above are given in the following table :

TABLE XXVII.

ACTIVITY IN THE LINEN, HEMP AND JUTE INDUSTRIES, ETC.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
United States of America : [1]								
Jute	107	143	140	136	...	98	...	...
Linen	130	86	105	108	...	102	...	...
Hemp	72	53	53	44	...	83	...	...
Manila	111	82	76	115	...	153	...	...
Sisal and henequen	87	87	99	99	...	100	...	...
Kapok	83	96	77	74	...	96	...	...
Total	97	99	102	110	...	108	...	...
Germany :								
Linen-spinning [3]	66	104	64	56	54	89	85	94
Linen-weaving [3]	66	112	73	69	57	95	78	82
Hemp-spinning [2]	95	136	124	123	99	99	80	81
Jute-spinning [3]	78	100	110	101	66	92	60	65
Sweden [4]								
Production of :								
Linen and hemp yarn and tissues — quantity	99	104	108	97	...	89	...	...
Linen and hemp yarn and tissues — value	88	93	94	88	...	93	...	...
Jute yarn and tissues — quantity	94	101	108	116	...	107	...	...
Jute yarn and tissues — value	92	89	94	99	...	106	...	...
United Kingdom : [5]								
Jute, hemp and linen industries	75	125	104	110	80	106	77	73
U.S.S.R. : [6]								
Linen fabrics	...	...	...	...	...	120	124	104

[1] Consumption of raw materials based on imports.
[2] Monthly production index for the *Institut für Konjunkturforschung.*
[3] Annual production index of the *Institut für Konjunkturforschung.*
[4] Annual Report on Industry. *Kommerskollegium.*
[5] Annual Index of the London and Cambridge Economic Service, based on consumption of raw materials.
[6] Actual production in quantities.

The various branches of the textile industry in the United States of America for which indices are given above are chiefly dependent upon foreign supply for their raw material. The figures for the imports of the main raw materials are therefore taken as indicative of the activity of the industries concerned. For a similar reason, the British textile index is likewise based mainly on raw material imports. The German indices are based on various other data indicative of the activity in the linen, hemp and jute industries, while the Swedish and Russian indices have been calculated from actual production figures.

In the United States of America the jute industry shows a very rapid development up to 1927 and a slight decrease in activity in subsequent years ; in the linen and manila hemp industries, a moderate expansion since 1927 is recorded. The ordinary hemp industry and industries using sisal, henequen and kapok as raw materials appear to have remained less active throughout the period 1926-1929 than in 1925.

In Germany the linen industry has been seriously depressed since 1927, and the jute spinning index dropped 40 per cent between 1928 and 1930 ; activity in the hemp spinning industry, on the other hand, although less than in 1927, was considerably greater than in 1925 until 1930. The British jute, hemp and linen industries had by 1929 only partly recovered from the setback of the previous year. In Sweden, the linen and hemp spinning and weaving industries made comparatively little advance up to 1928 and the production dropped in 1929 below the 1925 level. In 1930, however, activity declined considerably. The weight of jute yarn and tissues produced in that country increased between 1927 and 1929 ; but, in consequence of the decrease in price, the value of the output remained below the 1925 level throughout the whole period. In contrast to the development in most other industries in the Union of Soviet Socialist Republics for which indices are available, the Russian output of linen fabrics rose by 20 per cent between 1928 and 1929 ; in the following year, however, production increased only by 4 per cent.

Rubber Industry.

The available figures for the consumption of crude rubber indicate roughly the importance of the various national rubber industries. The kind of rubber fabrics produced, however, vary from country to country, and the large tyre and tube industries naturally consume more crude rubber than the industries manufacturing higher-priced articles. In 1929, the quantity of crude rubber used in the United States of America for making tyres and tubes amounted to about 84 per cent of the total rubber consumption in that country, while the value of tyres and tyre sundries is estimated at not more than two-thirds of that of all rubber produets.

The development of the rubber industry has of course been chiefly dependent upon the growth of the automobile industry. The United States of America, however, which in 1930 accounted for 80 per cent (in 1929, 84 per cent) of the motor vehicles produced in the world, was in the same year responsible for less than 57 per cent (in 1929, 59 per cent) of total raw rubber consumption, as shown in Table XXVIII.

The world consumption of crude rubber remained almost stationary in the period 1925 to 1927, increased very greatly in 1928 and 1929 and dropped substantially in 1930. Consumption in the United States of America rose much less rapidly up to 1929 and fell considerably more in 1930 than in the rest of the world. Only in the United Kingdom did the consumption of rubber expand in 1930.

Table XXVIII.

Consumption of Crude Rubber.

Countries	Metric tons (000's)			1925=100					1929=100	Percentage of world total		
	1925	1929	1930	1926	1927	1928	1929	1930	1930	1925	1929	1930
United States of America	388	470	378	94	96	114	121	97	80	69.3	58.8	56.7
Canada	20	37	28	100	135	155	185	140	76	3.6	4.6	4.2
Japan	13	34	27	146	162	192	262	208	79	2.3	4.2	4.1
France	40	61	55	98	98	105	152	138	90	7.1	7.8	8.3
Germany	35	50	44	66	111	109	143	126	88	6.2	6.2	6.6
United Kingdom	30	71	74	137	150	163	237	245	104	5.4	8.8	10.7
Other countries	34	77	61	115	126	165	226	179	79	6.1	9.6	9.2
World	560	800	667	98	104	122	143	119	83	100	100	100
World excluding United States of America	172	330	289	106	124	140	192	168	88	30.7	41.2	43.3

Source: *The Statist*, February 7th, 1931 (No. 2763).

The conclusions which may be drawn from the above table are generally confirmed by the available indices of the activity of the rubber-manufacturing industry in certain countries shown in Table XXIX.

Table XXIX.

Activity in the Rubber Industry.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
United States of America [1]	100	104	124	116	86	94	69	74
France [2]	119	109	117	172	179	147	153	104
Germany [3]	54	105	100	114	103	115	103	90
Netherlands: [4]								
Value of production	92	88	90	97	...	108	...	...
Workers employed	94	101	110	114	...	104	...	...
Sweden: [5]								
Quantity	94	108	130	140	...	107	...	...
Value	94	94	116	132	...	113	...	...
United Kingdom [6]	97	135	133	209	214	157	160	102

[1] Production index of the Federal Reserve Board (rubber tyres and tubes).
[2] Index of production of the *Statistique générale de la France.*
[5] Annual index of the *Institut für Konjunkturforschung.*
[4] *Maandschrift van het Centraal Bureau voor de Statistiek*, January 1931.
[3] Official production index of the *Kommerskollegium;* all rubber goods.
[6] Annual production index of the London and Cambridge Economic Service, based on indiarubber trade.

It will be noted that, except in the case of France, the expansion up to 1929 shown by these indices is somewhat smaller than that indicated in the preceding table. The index for the United States of America, which is based on the members of tyres and tubes produced, even dropped in 1929, while crude rubber consumption increased, the average size of tyre being larger than previously. The quantity of rubber fabrics produced in Sweden (mainly galoshes) was 40 per cent and the value 32 per cent greater in 1929 than in 1925. The expansion was considerably less rapid in the same period in the United States of America, Germany and the Netherlands. The value index of the Netherlands indeed remained below the 1925 level throughout the period. The manufacture of rubber tyres and tubes in the United States of America naturally contracted in 1930 as a result of the decline in the activity of the motor-vehicle industry. In Germany, the setback was much less pronounced, and the French rubber industry was even more active than in 1929, this is true also of the British rubber industry.

Leather and Boot and Shoe Industries.

The available indices showing changes in the activity of the leather and boot and shoe industries in various countries are given in Table XXX. The indices vary widely in character.

TABLE XXX.

ACTIVITY IN THE LEATHER AND BOOT AND SHOE INDUSTRIES.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
United States of America : [1]								
Leather and products	102	107	107	109	98	102	91	90
Boots and shoes	101	106	107	112	94	105	88	84
France [2]	123	99	125	114	106	92	85	92
Germany : [3]								
Leather production	88	116	100	93	81	93	81	88
Leather manufactures	82	116	96	85	74	89	77	86
Boots and shoes	...	...	...	...	...	104	101	97
Netherlands : [4]								
Leather industry — Value of products	...	...	...	...	...	87	...	...
Leather industry — Workers employed	...	...	...	...	...	99	...	...
Boots and Shoes — Value of products	111	117	135	133	...	99	...	...
Boots and Shoes — Workers employed	107	111	119	118	...	99	...	...

[1] Production index of the Federal Reserve Board.
[2] Production index of the *Statistique générale de la France.*
[3] Production index of the *Institut für Konjunkturforschung.*
[4] Based on the number of workers employed published in the *Maandschrift van het Centraal Bureau voor de Statistiek.*

TABLE XXX *(continued)*.

ACTIVITY IN THE LEATHER AND BOOT AND SHOE INDUSTRIES.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
Poland [1]	...	...	...	...	...	88	83	94
Sweden [2]	100	107	103	95	...	92	...	...
Leather	104	113	108	99	...	92	...	...
Boots and shoes	97	102	100	93	...	93	...	...
United Kingdom:								
London and Cambridge Economic Service (leather)	95	104	116	92	103	79	89	112
Board of Trade (leather, boots, shoes)	...	...	...	...	...	97	99	102
U.S.S.R.: [3]								
Large hides	...	...	...	...	...	139	145	104
Small hides	...	...	...	...	...	125	155	124
Boots and shoes	...	...	...	...	...	169	270	161

[1] Production index of the *Institut polonais de recherches sur le mouvement des affaires.*
[2] Official production index of the *Kommerskollegium* (quantities produced).
[3] Economic years beginning October 1st. Index based on quantities produced.

The development of the leather and boot and shoe industries in the period 1925-1929 was comparatively slow everywhere except in the Netherlands and France. On the whole 1928 was the year of greatest activity, except in Germany and Sweden, where leather production and manufacture have been declining since 1927, in the United States of America, whose leather industry expanded in 1929, and in the Union of Soviet Socialist Republics. The available figures for 1930 show a decline everywhere, except in the last mentioned country and in the United Kingdom, whose industry would seem to have somewhat recovered from the very marked retrogression in the preceeding year.

Table XXXI shows the value of exports of leather, boots and shoes from the chief exporting countries in 1929 and 1930. It is based on figures published by the German *Institut für Konjunkturforschung* and is believed to cover some 75-80 per cent of the world trade in these commodities.

The aggregate export value both of leather and of boots and shoes dropped in 1930 by roughly one-sixth ; but the relative decline varies from country to country. It was more than one-fourth in the United Kingdom (aggregate exports), a little less in Czechoslovakia (boots and shoes only), about one-fifth in the United States and only one-twelfth in France and Germany (aggregate exports). From Germany, indeed, the exports of boots and shoes increased, but these are small compared with the leather exports. From the indices shown, it would also appear that the boot and shoe industry resisted to the depression in 1930 better than the other branches of the German leather industry.

TABLE XXXI.

EXPORTS OF LEATHER AND OF BOOTS AND SHOES.

	$ (000,000's)		
	1929	1930	1930 as percentage of 1929
		Leather	
Germany	64.4	56.5	88
U.S.A.	43.0	35.9	84
France	33.5	31.6	94
United Kingdom . .	30.1	19.5	65
Total	171.0	143.5	84
		Boots and shoes	
Czechoslovakia . . .	26.8	20.4	76
United Kingdom . .	23.3	19.7	85
U.S.A.	11.0	7.9	72
Germany	7.2	9.2	128
France	5.6	4.5	80
Total	73.9	61.7	83

Timber Industry.

Available data concerning the activity in the timber industry relate chiefly to saw mills and in particular to those treating soft wood. Table XXXII covers most of the important soft wood producing countries, except Germany and France, which, however, are largely dependent upon imports of sawn wood and whose saw mills are as a rule small and of purely local importance. In the case of Canada, Austria, Czechoslovakia, Finland, Norway and Yugoslavia indices based on export figures are given, as comprehensive production data are either lacking or only available for a few of the years under review. The saw mills of these countries work mainly or largely for export, and the movement in the quantities of sawn and planed wood exported by them is believed to reflect the changes in the activity of their timber industry. The index for the United States relates to production of " lumber and allied products ", and that for Poland to the total number of hours worked in the timber industry. Two indices are shown for Sweden ; the official annual index covers total production of sawn and planed wood and, in addition, the output of joinery, while the index of the *Svensk Finanstidning* is based on returns from a more restricted number of monthly reporting saw mills. The index for the Union of Soviet Socialist Republics is also a quantitative production index.

Table XXXII.

Indices of Activity in the Wood Industry.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
Canada [1] (a)	99	94	80	81	70	102	89	87
Canada [1] (b)	99	96	84	90	...	107	...	...
United States [2]	96	90	90	86	...	96	...	...
Austria [3]	91	111	138	116	92	84	67	79
Czechoslovakia [3]	79	150	100	67	62	68	62	91
Finland [4]	108	123	109	114	84	104	76	74
Norway [5]	98	75	84	92	81	109	97	89
Poland [6]	92	108	115	111	93	97	81	84
Sweden [7] :								
Official Index	107	115	123	125	...	102	...	...
Svensk Finanstidning	92	98	101	104	109	103	108	105
Yugoslavia [3]	103	109	140	133	110	95	79	83
U.S.S.R. [8]	...	...	...	...	...	123	240	196

[1] Indices of exports of (*a*) boards and planks ; (*b*) all species of lumber and sawn wood.
[2] Production index of the Federal Reserve Board, production of sawn lumber and allied products.
[3] Index of exports of building wood, sawn.
[4] Index of exports of sawn wood.
[5] Index of exports of sawn and planed wood.
[6] Production index of the Economic Research Institute, Warsaw.
[7] The official production index of the *Kommerskollegium* (annual) covers the total production of sawn and planed wood and joinery goods ; the index of the *Svensk Finanstidning* (monthly) is less comprehensive.
[8] Economic years ending September 30th ; the index is based on value of products at 1926-27 prices.

The exports of boards and planks from Canada and the production of sawn lumber and allied products in the United States have declined steadily since 1925, while the output and exports of the European countries as a whole increased very substantially up to 1928-29.

The decline in the Canadian exports, which, as shown by the indices, was especially marked in the case of boards and plants, may be due in part to an increase in the domestic consumption for building purposes. But available figures for the volume of all timber cut also show a decline between 1925 and 1927 (the highest figure was actually reached in 1924). This decline was notifiable in practically all important forest products except pulp wood, the consumption of which increased by 14 per cent in the same period. The decline in the production of sawn wood may thus be due in part to a change in the utilisation of the annual cut. The fall in the output of the United States up to 1929 may be a reflection of an increasing scarcity of available supplies resulting from a continued excess of annual cut over annual regrowth in the more easily accessible forests.

The development of the timber industry in European countries during the period under review has not been uniform. Finnish exports rose very rapidly up to 1927 and have since declined. Those of Yugoslavia and Austria rose even more up

to 1928 and declined less in 1929 and 1930, while those of Norway and Czechoslovakia (except in 1927) have remained below the 1925 level througout the period. Production figures for Norway are available for 1927-29 and show a recovery between these two years in exact proportion to the recovery in exports. In the Polish wood industry 1928 was the year of greatest activity. The total production of the Swedish wood industry (official index) shows a steady and considerable increase up to 1929, and, according to the less comprehensive private index, the volume of output continued to rise in 1930. Sweden and the Union of Soviet Socialist Republics are indeed the only countries which increased their output of saw mill products in that year, while the indices for all the other countries reflect a serious depression. Since the middle of 1930, however, the monthly index of the *Svensk Finanstidning* has also declined. The output of the Swedish wood industry in the first quarter of 1931 appears to have been some 14 per cent below the average for 1930 and 24 per cent below that of the corresponding quarter in that year.

The output of the Union of Soviet Socialist Republics timber industry during the first three years of the five-year plan has enormously increased ; the increased competition of this country on the timber export markets would appear, at least partly, to explain the decline since 1927 and 1928 in the activity of the industries of most other European wood exporting countries.

Paper and Printing.

According to the raw material index given in an earlier chapter, world production of wood pulp increased by 30 per cent in the period 1925-1929. Available data[1] point to an increase of about one quarter in the production of paper and paper-boards in the same period. The difference in the rates of increase suggests that there has been a less rapid development, or possibly even a decline, in the manufacture of paper from other raw materials than wood pulp. In North America, which accounted in 1929 for some 51 per cent of the total recorded production of paper and about 64 per cent of that of paper-boards, the output of paper rose somewhat more rapidly than in Europe where the corresponding increase was 25 per cent. On the other hand, production of paper-boards increased in Europe by 37 per cent, but in the United States only 24 per cent. In 1929, Europe's share in the world total amounted to about 46 per cent for paper and 33 per cent for paper-board. The largest individual producers are, in the order of importance, the United States of America, Canada, Germany and the United Kingdom.

The indices of activity in the paper industry given in Table XXXIII chiefly relate to actual quantities of paper (mainly newsprint) and paper-boards produced. Data on the manufacture of specially prepared paper, paper bags, boxes, and other paper products are less readily available and are usually not included in the indices. Those showing the activity of the printing industry generally relate to the consumption of printing paper.

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[1] Detailed figures for some 25 countries are given in Table 53 of the *Statistical Year-Book of the League* of Nations, Geneva, 1931.

Table XXXIII.

Activity in the Paper and Printing Industry.

Countries	1925=100					1928=100		1929=100
	1926	1927	1928	1929	1930	1929	1930	1930
America :								
Canada [1]	124	136	157	180	165	114	105	92
United States of America	108	107	111	118	107	106	96	90
Paper and paper-board	107	104	109	115	103	106	95	90
Printing	113	116	120	128	119	107	99	93
Asia :								
Japan (paper)	112	123	140	152	147	109	105	96
Europe :								
Austria [2]	104	111	119	118	119	99	94	95
Belgium [2]	106	111	123	128	...	104	...	...
Finland [2]	99	105	114	120	...	105	...	...
France [3]	108	100	105	128	157	122	149	123
Germany [4]	97	117	122	124	118	102	97	95
Paper	97	119	125	126	118	101	95	93
Paper-board	89	117	119	117	111	98	93	95
Printing	97	114	123	117	115	95	94	99
Italy [2]	85	75	81	86	...	106	...	...
Norway [2]	90	110	112	121	...	108	...	...
Netherlands (paper): [5]								
Workers employed	105	109	119	126	...	106	..	...
Value of production	108	110	119	127	...	107	...	...
Poland [6]	...	...	...	...	...	100	97	97
Sweden								
Official Production Index	109	113	114	131	...	115	...	...
Paper and boards	109	112	109	129	...	118	...	...
Manufactures of paper and boards	113	122	131	144	...	110	...	...
Printing	108	115	121	131	...	109	...	...
Svensk Finanstidning (paper)	109	113	109	131	119	120	109	90
United Kingdom [7]	107	119	107	135	124	126	116	92
U.S.S.R. [2] [8]	124	131	141	139	211	99	150	152

[1] Newsprint production.
[2] Actual production of paper and paper-board.
[3] Production Index of the *Statistique générale de la France.*
[4] Annual production index of the *Institut für Konjunkturforschung,* including wood pulp.
[5] Based on figures published by the *Centraal Bureau voor de Statistiek.*
[6] Production index of the Economic Research Institute.
[7] Production Index of the London and Cambridge Economic Service covering paper, printing and allied trades.
[8] Economic years ending September 30th.

The expansion of the paper industry has been more rapid in Canada than in any other country. The Canadian index, which, however, relates to newsprint production only, was as much as 80 per cent higher in 1929 than in 1925. In Japan, the Union of Soviet Socialist Republics, the United Kingdom and Sweden, the industry also developed rapidly up to 1929. In Sweden, the expansion in manufactures of paper and paper-boards was very pronounced. The Swedish

printing index is also high. In 1929, it is higher than those of the United States and Germany, the only other countries for which separate indices for this special branch are available. All other countries, except Italy, likewise show a considerable rise in their paper or combined paper and printing indices up to 1929, though the advance was less marked than in the countries mentioned.

The effects of the economic depression in 1930 on the activity of the paper and printing industries appear on the whole to have been less serious than in the case of most of the other industries dealt with in this chapter. Both the Union of Soviet Socialist Republics and France increased their paper production very considerably in 1930. In the United States and Sweden, a drop of 10 per cent is recorded and in the United Kingdom a drop of 8 per cent; but in all other countries for which 1930 figures are available the reduction appears to have been slight.

V. THE RELATIVE MOVEMENTS IN THE PRICES OF RAW PRODUCTS AND MANUFACTURED ARTICLES.

In previous issues of this *Memorandum*, a tentative approach has been made to the problem of the relationship of prices of raw products and manufactured articles. On the ratio of the prices of these two groups of commodities, the productive activity and the foreign trade of different classes of producers and different countries are largely dependent ; the problem is therefore one of great significance. The practical importance of the problem has, indeed, been greatly increased during the past two years on account of the unequal incidence of falling prices on the two groups of commodities. In the present chapter, the analysis of certain of the somewhat inadequate published data is continued and extended in some directions. In addition, the partial and preliminary results of a special enquiry being undertaken by the League of Nations Secretariat, with the co-operation of certain national statistical offices, into relative price movements in certain years since 1913 are set out and analysed.

Comparison with pre-war years is difficult on account of the inadequacy of data concerning the prices of manufactured products. This lack of information is due to obvious reasons : methods of production have undergone important modifications ; demand has changed ; and the products of industry, even when bearing the same name as in 1913, are often no longer the same. It is partly in consequence of this difficulty that the amount of carefully sifted data is so small. Three main sources of evidence — none of which is in itself wholly satisfactory, or by itself adequate — have been employed. These are : (1) group indices of wholesale prices divided according to stage of manufacture, (2) price quotations in certain markets for raw materials and for the articles manufactured therefrom, and (3) wholesale and retail price indices.

* * *

During a period of economic depression, the prices of raw materials drop more and more rapidly than the prices of manufactured products. The main reasons for this are obvious. The output of finished products can be more readily controlled than can the supply of raw materials, more especially of those of agricultural origin. Further, merchants and manufacturers normally carry considerable reserve stocks of raw materials ; at the beginning of a period of depression these stocks tend to reduce the demand for raw materials and thus help in forcing down their prices. In addition, a substantial period of time normally elapses between the purchase of raw materials and the sale of the finished product — accordingly, a fall in the price of the raw materials is likely to be reflected in a

fall in the price of the finished product only after an interval about equal to the length of the productive process. Finally, in so far as prices follow costs during a period of economic depression, the prices of manufactured products tend to fall relatively little because manufacturing industry contains a high proportion of fixed and inelastic costs such as capital charges, wages, taxes, etc., which do not fluctuate as much or as rapidly as the prices of raw materials ; if, therefore, raw materials account for — for instance — one third of total costs of manufacturing industry and all other costs remain constant, then a 30 per cent fall in raw material prices could ultimately cause only a 10 per cent fall in the price of the final product.

The discrepancy between the fall in prices of raw materials and manufactured products has frequently been observed in periods of economic depression. Unfortunately, the direct statistical evidence bearing on this point is limited, but such evidence as exists is very striking. In the following statement, the margin between the official price indices of raw materials and manufactured goods in Sweden, Canada and the United States of America is shown for the years 1920 to 1925. In each case, the raw materials index is taken as equal to 100 and the percentage difference between it and the index for finished products is calculated. Figures preceded by a plus sign indicate that the price index of finished goods stood higher than that for goods in earlier stages of manufacture, and vice versa.

Raw Materials = 100.

	Sweden (1913 = 100)	Canada (1913 = 100)	U.S.A. (1923 = 100)
1920	— 1	— 1	+ 6
1921	+ 27	+ 7	+ 22
1922	+ 33	+ 4	+ 7
1923	+ 22	+ 11	+ 7
1924	+ 17	+ 5	+ 6
1925	+ 8	+ 1	+ 6

In these three countries, raw materials fell much more in price than manufactured goods in the depression of 1920 to 1921 ; finished products stood considerably higher than raw materials in the latter year. As economic conditions gradually improved, raw materials rose much more rapidly in price than finished goods and the margin between the groups narrowed perceptibly.

The evidence afforded by the indices of goods in different stages of manufacture must not be regarded as conclusive nor must these indices be regarded as an exact quantitative measure of the relative prices of manufactured products and raw materials considered as a whole.

As a result of technical progress and alterations in taste, industrial products undergo frequent changes ; certain manufactured articles are in everyday popular use now that were scarcely obtainable or were unobtainable before the war, and marked changes have taken place in the relative importance of the consumption

of goods which were in use in 1913. The growth of the motor-car and electrical and aluminium industries, for instance, has been such that a price index of manufactured goods based on 1913 weights implies a hypothesis which is not in conformity with facts.

Unfortunately, very few countries publish indices of wholesale prices in a form which allows a clear distinction to be made between goods in various stages of manufacture. Even when such a distinction is made, the partial indices of goods in the different stages of production are not made up of identical commodities. A comparison between their absolute heights is therefor of only limited value.

In Table XXXIV, indices for seven countries are given ; the figures show prices for the month of December in the years 1927, 1928, 1929 and 1930. In view of the special interest attached to recent price movements, the percentage changes in the various indices between the end of 1928 and the end of 1930 are also shown. Two systems of classification or a combination of these two are adopted. According to one system, the commodities included in the national wholesale price index are divided into raw materials, semi-finished and finished goods ; according to the other they are divided into consumers' and producers' goods. Consumers' goods may, in most cases, be taken as roughly equivalent to finished products, including foodstuffs, while producers' goods are closer to semi-manufactured products, although they include industrial machinery and tools.

Even at the end of 1928, the indices for finished products or consumers' goods stood substantially higher in most countries than those for materials in earlier stages of manufacture. The only apparent exceptions to this general rule are Canada and the United States of America, the indices of which are examined in greater detail below. It must, however, again be emphasised that a comparison between the absolute heights of group indices based on the year 1913 is of limited significance in a period of falling prices. The year 1913 was preceded by a period in which the general level of prices was gradually moving upward and a convincing comparison with this year can be made only when similar conditions again prevail.

The movement of the various indices since December 1928, however, affords clear evidence that the character of the relative movements in the prices of raw materials and finished goods during the present depression is essentially the same as that already noted in the depression of 1920-21. Between the end of 1928 and the end of 1930, the fall in the general level of wholesale prices, as shown in the above table, ranged from 13 per cent in Norway to 26 per cent in Italy. In all countries except Norway and Sweden, raw materials fell more in price than goods in later stages of manufacture ; the difference is greatest in the case of Canada, where raw and partly manufactured goods fell by 28 per cent, whilst fully and chiefly manufactured goods fell by only 13 per cent.

The price movements in Norway and Sweden during the two years ending December 1930 are different from those which took place in other countries and contrary to those generally observed in a period of rapidly falling prices : in Norway, the index for raw materials (which, in fact, includes a high proportion of semi-manufactured goods), and, in Sweden, the indices for both raw materials and

TABLE XXXIV.

COMPARATIVE PRICES: DECEMBER 1927 TO 1930.

1913=100.

Country	Date	Raw materials	Semi-finished products	Finished products	Producers' goods	Consumers' goods	General index
Canada	Dec. 1927	158	148		145	155	152
	Dec. 1928	147	145		139	153	148
	Dec. 1929	155	144		142	154	150
	Dec. 1930	106	126		106	134	122
	Dec. 1930 as percentage of Dec. 1928	*72*	*87*		*76*	*88*	*83*
Denmark	Dec. 1927	133				174	154
	Dec. 1928	131				172	151
	Dec. 1929	127				167	146
	Dec. 1930	102				142	120
	Dec. 1930 as percentage of Dec. 1928	*78*				*83*	*78*
Germany	Dec. 1927	134[1]		155	134	172[1]	140
	Dec. 1928	134[1]		160	138	176[1]	140
	Dec. 1929	129[1]		156	140	169[1]	134
	Dec. 1930	110[1]		143	135	149[1]	118
	Dec. 1930 as percentage of Dec. 1928	*82*		*90*	*98*	*85*	*84*
Italy[2] (Milan)	Dec. 1928[3]	490	457	527			497
	Dec. 1929	438	441	475			459
	Dec. 1930	336	371	415			369
	Dec. 1930 as percentage of Dec. 1928	*69*	*81*	*79*			*74*
Norway	Dec. 1927	158				174	166
	Dec. 1928	152				162	157
	Dec. 1929	147				157	152
	Dec. 1930	137				136	136
	Dec. 1930 as percentage of Dec. 1928	*90*				*84*	*87*
Sweden	Dec. 1927	142	150	149	137	156	148
	Dec. 1928	141	145	148	137	153	145
	Dec. 1929	130	138	135	130	138	134
	Dec. 1930	114	122	116	115	119	117
	Dec. 1930 as percentage of Dec. 1928	*81*	*84*	*78*	*84*	*78*	*81*
U. S. A.[4]	Dec. 1927	101	82	96			96
	Dec. 1928	99	82	97			96
	Dec. 1929	97	80	94			94
	Dec. 1930	75	63	83			78
	Dec. 1930 as percentage of Dec. 1928	*76*	*77*	*86*			*81*

[1] Excluding foodstuffs.
[2] Excluding foodstuffs of domestic origin.
[3] Indices for December 1927 are not available.
[4] Base 1923, converted from 1926.

semi-manufactured products fell less than those for finished articles. This is largely explained by the composition of the indices and, in particular, by the great importance of iron ore, timber, brick and cement in the raw materials and semi-manufactured goods groups. Many Swedish exporters of iron ore have contracts at fixed prices with foreign (including Norwegian) customers for a period of two years or more ; the price of this commodity remained steady until the last months of 1930, when it fell but slightly. The prices of such regional commodities as timber, bricks and cement which are also in large measure subject to monopolistic control in both countries dropped little, if at all, in the period considered. Another contributing factor in the case of Sweden is the maintenance of the price of domestic cereals during the second half of 1930 through legislation requiring millers to mix a fixed proportion of native grains with foreign grains. Between June and December 1930 cereals rose slightly in price in Sweden, while world market prices fell by 30 to 35 per cent.

The two series for Canada are of particular interest. Until the end of 1929, the price index for raw materials and partly manufactured goods in general stood relatively higher than that for fully and chiefly manufactured goods. During the price recession of 1930, raw materials fell considerably more in price than goods in later stages of production and at the end of that year the Canadian group indices stood in the same relative position as those of most other countries. The first group of indices shown for Canada in the above table has the disadvantage of not showing either raw materials or semi-manufactured goods alone : special indices of five groups of commodities in their raw and manufactured state have, however, been compiled and are given below for the month of December in the years 1927-1930 :

1913=100

Date	Articles of									
	Field origin		Animal origin		Marine origin		Forest origin		Mineral origin	
	Raw and partly manuf.	Fully and chiefly manuf.	Raw and partly manuf.	Fully and chiefly manuf.	Raw and partly manuf.	Fully and chiefly manuf.	Raw and partly manuf.	Fully and chiefly manuf.	Raw and partly manuf.	Fully and chiefly manuf.
December 1927	163	161	161	142	119	163	145	184	146	131
December 1928	138	151	160	146	144	173	150	178	144	130
December 1929	154	155	164	142	127	179	148	162	145	130
December 1930	76	124	128	124	107	146	126	159	128	124
Dec. 1930 as percentage of Dec. 1928	*55*	*82*	*80*	*85*	*74*	*85*	*84*	*89*	*89*	*95*

It will be observed that, even at the end of 1928, the indices for manufactured goods of field, marine and forest origin stood relatively higher than those for the raw materials constituting these groups. This does not appear to be true of the

animal and mineral groups. The composition of the two divisions — raw materials and semi-manufactured products — into which the group indices are separated is not, however, identical ; the indices do not therefore indicate exactly the difference in average prices for similar commodities according to their stage of manufacture. A table included in previous issues of this *Memorandum*,[1] setting out the prices of certain individual commodities classified according to their stage of manufacture, showed results for the years 1927 and 1928 in direct contradiction with those for the animal and mineral groups contained in the above table.

The movement of the various group indices since the end of 1928 is of the same character as that already observed in other countries. In all cases, raw materials or raw materials which have undergone some slight processing fell considerably more in price than fully and chiefly manufactured goods of similar origin ; the margin is greatest in the case of articles of field origin.

The fact that the general index for raw materials of mineral origin did not drop by more than 11 per cent, in spite of price declines exceeding 40 per cent in the case of silver and 30 per cent in the case of copper, is to be ascribed to the relatively steady prices of non-metallic minerals and chemicals, which fell by less than 5 per cent ; in particular, coal and bricks fell very slightly and several commodities, such as coke, cement, building-stone and salt actually rose in price.

The partial indices of the second series (those relating to producers' and consumers' goods) shown for Canada in the above table, cover groups which are more clearly divided according to stages in manufacture.

1913=100.

Date	Producers' goods		Consumers' goods	
	Manufacturers' materials	Producers' equipment (tools, heat and power, equipment, etc.)	Foods, beverages and tobacco	Other (clothing, household goods, etc.)
December 1927	141	180	162	150
December 1928	133	171	158	149
December 1929	137	175	167	145
December 1930	94	166	131	136
Dec. 1930 as percentage of Dec. 1928	*70*	*97*	*83*	*91*

" Manufacturers' materials ", which include such commodities as raw textiles, rubber, live-stock, copper, etc., may be taken as roughly equivalent to industrial raw materials and " producers' equipment " and " consumers' goods other than foodstuffs " as roughly equivalent to finished goods. In each year considered, the price relationship shown in these series was the same as that seen in the indices

[1] See *Memorandum on Production and Trade* 1923 to 1928/29, Table XXIX.

for most other countries — namely, raw materials stood relatively lower in price than manufactured goods. The movement since the end of 1928 is also similar to that generally observed: whilst the group taken to represent industrial raw materials fell by 30 per cent, consumers' goods other than foodstuffs dropped by less than 10 per cent and producers' equipment by about 3 per cent.

The figures given in Table XXXIV above for the United States of America are not directly comparable with other countries, as they are based on the year 1923. They may be supplemented by the revised index of the Department of Labour, which shows:

1913=100.

	Dec. 1927	Dec. 1928	Dec. 1929	Dec. 1930	*Dec. 1930 as percentage of Dec. 1928*
1. Farm products	146	145	143	105	*72*
2. Foodstuffs	157	153	154	127	*83*
3. Hides and leather products	172	170	158	134	*79*
4. Textile products	170	168	158	126	*74*
5. Fuel and lighting	135	136	133	115	*85*
6. Metals and metal products	108	113	112	99	*88*
7. Building materials	160	171	170	149	*87*
8. Chemicals and drugs	121	120	117	106	*88*
9. House-furnishing goods	175	171	173	162	*95*
10. Miscellaneous	96	86	86	75	*87*

The sixth group includes motor-cars, agricultural implements, etc., in addition to crude metal products; the tenth, pulp and paper, rubber, automobile tyres, etc. If attention be first directed to the first three columns in the above table, it will be seen that until the end of 1929, the low indices for these groups stood in striking contrast at once to those for agricultural products and for such standard pre-war products as those represented in the textile group. The current price recession has been most severe, however, for articles included in the last-mentioned groups. The index for farm products is composed entirely of goods which have undergone no process of manufacture; the decline in this group, though large (28 per cent), may be contrasted with the 45 per cent fall in the price of raw farm products of field origin already observed in Canada. The difference is not entirely explained by the inclusion of live-stock in the American index; in the period under review, Canadian grains fell in price by more than one-half, while American grains lost only about one-third of their value. The margin is largely to be attributed to the Federal Farm Board maintaining the domestic price of American cereals above the world level.[1]

Turning again to Table XXXIV above, it will be observed that the German indices for producers' and consumers' goods do not show a movement during the present price decline such as might be expected if the former were composed largely of raw

[1] This policy was discontinued on July 1st, 1931.

materials and the latter of finished products : between the end of 1928 and the end of 1930, producers' goods (which rose slightly in 1929) fell by only 2 per cent, while consumers' goods dropped by 15 per cent. Both these indices, however, in fact represent finished products ; the raw materials for the two groups have been subject to quite different price movements since the beginning of 1928, as will be seen in the following statement : [1]

1913=100.

Date	Producers' goods		Consumers' goods	
	Raw materials	Finished products	Raw materials	Finished products
January 1928	140	134	163	173
December 1928	138	138	156	176
December 1929	137	140	132	169
December 1930	128	135	96	149
Dec. 1930 as percentage of Dec. 1928	*93*	*98*	*62*	*85*

The raw materials for producers' goods fell by only 7 per cent in the years 1929 and 1930, while the raw materials for consumers' goods dropped by 38 per cent during the same period. The former group is composed almost entirely of iron products and other commodities whose prices are subject to the control of cartels, trusts, etc., while the latter is heavily weighted with textiles, wood and leather, whose prices are " uncontrolled " — *i.e.*, determined by market conditions. The success of the producers' associations in maintaining steady prices during the past few years is even more strikingly illustrated in the following table, which sets out separately the price changes of those industrial raw materials and semi-manufactured goods which are controlled by cartels, and those which are not so controlled :

1926=100.

Date	Industrial raw materials and semi-manufactured goods.	
	(1) Cartellised	(2) Non-cartellised
January 1928	100	110
December 1928	104	103
December 1929	105	92
July 1930	103	79
January 1931	95	—
July 1930 as percentage of Dec. 1928	*99*	*77*
January 1931 as percentage of Dec. 1928	*91*	—

[1] The raw material indices and those for cartellised and non-cartellised products which follow are published by the Institut für Konjunkturforschung, Berlin.

Cartellised products did not rise in price along with non-cartellised products during the upward movement of 1927 ; at the beginning of 1928, the latter stood considerably higher in price than the former. During the course of the year, the non-cartellised group fell by 6-7 per cent, whilst the cartellised group rose by 4 per cent : the price relationship between the two groups at the end of 1928 was about the same as that prevailing in the base year 1926. In 1929, non-cartellised goods fell another 10 per cent in price and cartellised products rose very slightly. They began to drop slowly in the first months of 1930 ; in July of that year they stood a little lower in price than at the end of 1928. The " free " prices continued to fall rapidly and in July 1930 stood 23 per cent below their December 1928 level. In the second half of 1930, cartellised products fell more rapidly, chiefly owing to reductions in the price of coal and iron goods ; at the beginning of 1931 their prices in general were 9 per cent lower than at the end of 1928. Unfortunately, the index for the second group is not available for January 1931.

In studying the index for cartellised products, it is necessary to bear in mind that for almost all commodities the prices taken are list prices ; the index therefore fails to take into account price reductions granted through cash discounts, rebates from list prices, etc.

Additional light will be thrown on the relative movements of prices in recent years by an examination of special price indices, showing various groups of goods in different stages of manufacture, which have been prepared for the League of Nations by certain national statistical offices. [1]

Germany.

In the following statement are set out the German indices for raw materials and semi-manufactured goods of (1) mineral and (2) vegetable and animal origin.

1913=100.

Year	Articles of mineral origin			Articles of vegetable and animal origin		
	(1) Raw materials	(2) Semi-manufactured goods	(3) (2) as percentage of (1)	(4) Industrial raw materials	(5) Semi-manufactured goods	(6) (5) as percentage of (4)
Average 1924	128	135	105	154	163	106
Average 1925	119	138	116	153	162	106
Average 1926	116	134	116	119	137	115
Average 1927	115	136	118	133	146	110
Average 1928	116	138	119	139	151	109
Average 1929	122	142	116	123	138	112
Average 1930	114	140	123	95	122	130
Jan. 1931	105	130	124	74	103	139
Jan. 1931 as percentage of 1928	*91*	*94*		*53*	*81*	

[1] The Secretariat is indebted to the German Statistisches Reichsamt, the British Board of Trade and the Statistique générale de la France for the preparation of these indices. They will subsequently be treated by the League of Nations in greater detail, along with those compiled by Italy and certain other countries.

The groups for raw materials and semi-manufactured goods are not absolutely identical in composition for either of the two main divisions of articles shown above ; the indices must, accordingly, not be taken to represent the price movements of identical goods in different stages of manufacture. The most important items are, however, common to both groups and the indices may therefore be regarded as fairly representative.

In each of the years considered, the indices for semi-manufactured goods of mineral origin stood higher than those for raw materials of similar origin. During the period of deflation, raw materials fell considerably in price, while semi-manufactured goods were fairly steady ; it will be seen from column (3) that the margin between the two groups widened from 5 per cent in 1924 to 16 per cent in 1925 and 1926. This margin tended to increase somewhat in subsequent years, but fell slightly in 1929 as a result of a greater rise in the price of raw materials, in particular coal and copper, than in that of semi-manufactured goods. During the present depression, the prices of the two groups of commodities have followed the normal course : raw materials have fallen more than semi-manufactured goods and the margin between the groups has widened considerably.

Both groups of mineral products were subject to much smaller fluctuations in price throughout the whole period considered than were articles of animal and vegetable origin and their fall in price during the current depression has been considerably less than the fall in the latter group. One reason for this has already been indicated : it is particularly among articles of mineral origin (*e.g.*, pig-iron, rolling-mill products, cement, etc.) that cartels have been most successful in maintaining prices.

The series for industrial materials of animal and vegetable origin (chiefly textiles, hides, etc.) also indicate that, in each year considered, semi-manufactured goods stood higher in price than raw materials ; it will be observed from column (6) that, with falling prices in 1926, the margin between the two indices increased while the opposite was true when prices rose in 1927 and 1928. Both groups have fallen rapidly since 1929, semi-manufactured goods considerably less than raw materials. In January 1931, the latter stood 47 per cent and the former 19 per cent below the 1928 average. The discrepancy between the two indices widened greatly ; as may be seen in column (6), it was almost 40 per cent in January 1931.

It should be pointed out that the price development in raw materials of vegetable and animal origin for foodstuffs has been of quite a different order from that in industrial raw materials of similar origin. Price indices for the former group since 1924 are shown below :

1913 = 100.

1924	118	1928	129
1925	132	1929	130
1926	129	1930	114
1927	133	Jan. 1931	108
Jan. 1931 as percentage of 1928			*85*

If these indices are compared with those shown in column (4) of the earlier table, it will be observed that, while industrial raw materials fell by over 10 per cent in 1929, foodstuffs were steady in price, and that the entire price-fall since 1928 was only 15 per cent for the latter, as compared with 47 per cent for the former. In part, this discrepancy may be explained by the very large drop (about 50 per cent) in cotton prices ; this material weighs very heavily in the industrial raw materials index. Wheat, which weighs somewhat less heavily in the foodstuffs index, fell about as much in price on world markets in this period as cotton, but as a result of governmental action in raising Customs duties on wheat, and milling regulations requiring the admixture of a certain proportion of domestic wheat with foreign wheat, the domestic price of this commodity diverged widely from its world price. Between 1929 and January 1931, the price of wheat, which dropped by over 50 per cent in Canada and proportionately in the other chief producing countries rose by almost 15 per cent in Germany.

Some further measure of the effectiveness of cartel (and, to some extent, governmental) attempts to control price movements may be obtained through a consideration of the following official indices, which divide the goods entering the index for industrial raw materials and semi-manufactured goods into two groups, according to whether their prices are mainly determined within or outside the country.

1913=100.

Date	Price indices of industrial raw materials and semi-manufactured goods	
	Mainly determined within Germany	Mainly determined on international markets
January 1928	132	138
December 1928	135	132
December 1929	136	117
December 1930	124	86
December 1930 as percentage of Dec. 1928	*92*	*65*

It should be borne in mind in studying the above statement that quite different goods enter the two groups ; no conclusion can therefore be drawn from these indices with regard to the general level of domestic and international prices. The index for international goods is largely composed of cotton, rubber, non-ferrous metals and other raw materials whose prices have fallen most during the depression. Most of the commodities in the domestic group are cartellised products — *e.g.*, coal and pig-iron, rolling-mill products, artificial fertilisers, etc. The prices of

these products, as pointed out above, have been relatively well maintained during the depression, and the 8 per cent drop in the prices of domestic raw materials, etc., between the end of 1928 and the end of 1930 may be compared with the 9 per cent fall in the price of cartellised products shown above.

France.

Group price indices similar to those furnished by the *Statistisches Reichsamt* for Germany have been made available by the *Statistique générale de la France* for the years 1928-1930 :

1913=100.

Year	Articles of mineral origin			Articles of vegetable and animal origin for industrial use			Articles of vegetable and animal origin for foodstuffs		
	(1) Raw materials	(2) Semi-manufactured products	(3) (2) as percent. of (1)	(4) Raw materials	(5) Semi-manufactured products	(6) (5) as percent. of (4)	(7) Crude foodstuffs	(8) Finished foodstuffs	(9) (8) as percent. of (7)
1928 . .	540	505	94	777	822	106	583	603	103
1929 . .	609	542	89	692	739	107	558	536	98
1930 . .	572	544	95	545	602	110	478	515	108
Dec. 1930	541	470	87	504	542	108	590	579	97
Dec. 1930 as percent. of 1928	*100*	*93*		*65*	*66*		*101*	*96*	

The indices for raw materials and semi-manufactured goods in the mineral group are not comparable, and the fact that they show a relationship different from that observed in most other countries is therefore of little significance. Coal accounts for more than half of the weighting of the former index ; the weight of iron ore in the same index is about 10 per cent and that of semi-finished products of iron in the second index almost 75 per cent. The indices for these iron products, in particular merchant bars and sheets, stood relatively very low in each year included in the table and they dropped most during the depression.

The groups for articles of animal and vegetable origin for industrial use (columns (4) and (5) above) contain articles which are more closely comparable; the relationship observed in these groups is much the same as that witnessed elsewhere. It will be noticed, however, that semi-manufactured products fell more than raw materials in the course of 1930 : the margin between the groups was narrower at the end than in the early months of the year.

In 1929 and the early part of 1930, declines were registered in both indices for articles of vegetable and animal origin for foodstuffs (columns (7) and (8)). In 1929, the fall in the price of crude foodstuffs (about 4 per cent) appears to have been much less serious than the drop in finished foodstuffs (about 11 per cent); this may largely be explained by a 25 per cent fall in the price of wine, which accounts for about one quarter of the finished foodstuffs group and for which no corresponding raw material is included in column (7). In the latter part of 1930, the prices of raw materials for foodstuffs rose very rapidly and, at the end of the year, they surpassed the 1928 level; finished foodstuffs also rose, though somewhat less rapidly. The recent price movements of raw materials of animal and vegetable origin for foodstuffs may be contrasted with those of articles of similar origin for industrial use. On world markets, the fall in the price of cereals, the chief component of the first group, between 1928 and the end of 1930 was as great as that in textiles, the most important element in the second. The explanation of the contrast is in part the same as that already suggested above for a similar movement in Germany: the Government has succeeded through increased tariffs and regulations requiring the milling of a fixed proportion of native wheat, in maintaining the domestic price for wheat and other crude food products above the world level.

The following official indices, which show separately the imported and domestic commodities entering the general wholesale price index of France, give some indication of the way in which the prices of national goods were maintained in 1930 in the face of the sharp drop on world markets.

July 1914 = 100.

Month	Imported articles	Domestic products
January, 1930	602	635
December, 1930	377	565
December as percentage of January .	*63*	*89*

Here, as in the case of the similar table given above, for Germany, it must be remembered that the two columns are not comparable; imported articles consist chiefly of the great staple raw materials whose prices always fall most in a period of economic depression, while domestic products include a certain number of semi-manufactured articles whose prices always fall less and later. The discrepancy in the movement of the indices is, however, striking: between January and December 1930, international goods fell in price by 37 per cent while national products fell about 11 per cent.

United Kingdom.

A number of price indices relating to various groups of crude and manufactured foodstuffs has been made available by the British Board of Trade in connection with the enquiry into relative price levels mentioned above. Some of these indices for the years 1924 to 1930 are reproduced on the following page.

1913=100.

Year	(1) Raw materials for foodstuffs	(2) Finished foodstuffs	(3) Column (2) as percentage of column (1)	(4) Crude foodstuffs consumed in that state	(5) Raw materials of animal origin for foodstuffs
1924	150	171	114	176	171
1925	162	169	105	168	170
1926	157	162	103	159	162
1927	149	154	103	152	150
1928	139	146	105	152	152
1929	140	143	102	151	158
1930	108	120	111	143	151
Dec. 1930	89	99	111	143	149
Dec. 1930 as percentage of 1928 . . .	*64*	*68*		*94*	*98*

Columns (1) and (2) in the above statement are not fully comparable : in particular, the second group includes bacon and sugar, for which no corresponding raw products are included in the first group. The most important items are, however, common to both groups. It will be observed that the margin between the price indices of crude and finished foodstuffs was greatest in 1924 ; when raw material prices rose in the following year it narrowed markedly and remained relatively slight until the present depression. In 1930, raw materials fell more in price than finished foodstuffs and the margin between the two groups widened considerably.

Column (1) consists almost entirely of articles of vegetable origin.[1] The differences between the movement of this index in recent years and that for raw materials of animal origin for foodstuffs are particularly striking.

* * *

The general conclusions to be drawn from this study of the composite indices of goods in different stages of manufacture are clear : even at the end of 1927 and 1928, before the beginning of the present depression, manufactured goods as a whole appear to have stood relatively higher in price in comparison with 1913 than raw materials in many parts of the world ; during the depression, raw materials, as is always the case, have fallen much more in price than manufactured products, with the result that the margin which already existed between the two groups has been considerably widened. These conclusions are strongly confirmed by the price indices of certain raw materials and articles manufactured therefrom (Table XXXV) quoted in three national markets. The indices are based on actual quotations for medium or representative qualities.

[1] Fresh meat, fish, eggs, etc., are classified as crude foodstuffs (column (4)) and are not included under either raw materials for foodstuffs or finished foodstuffs. The differences observed in the movements of the crude foodstuffs index and that for raw materials of animal origin (column (5)) are due to the fact that the former includes potatoes, coffee and tea in addition to the commodities included in the latter.

Table XXXV.

Relative Changes in the Prices of Individual Commodities or Groups of Commodities according to Stage of Manufacture.

1913=100.

A. *UNITED STATES OF AMERICA.*

Commodities	(1) Price indices				(2) *December 1930 as percentage of December 1928*	(3) Processed goods expressed as percentage of corresponding raw material			
	Dec. 1927	Dec. 1928	Dec. 1929	Dec. 1930		Dec. 1927	Dec. 1928	Dec. 1929	Dec. 1930
Oats	147	129	125	90	*70*	100	100	100	100
Oatmeal	150	123	124	95	*77*	102	95	99	105
Rye	171	166	162	77	*46*	100	100	100	100
Rye flour	182	208	199	108	*52*	107	125	123	141
Wheat	155	130	142	81	*62*	100	100	100	100
Wheat flour	171	143	155	105	*73*	110	110	109	129
Wheat bread	197	200	200	200	*100*	127	154	141	246
Cattle	182	167	143	124	*75*	100	100	100	100
Beef, fresh	172	189	185	151	*80*	94	114	130	121
Hogs	100	104	112	96	*93*	100	100	100	100
Pork, fresh	127	128	143	127	*99*	127	123	128	131
Hams	129	147	129	128	*87*	129	142	115	133
Cotton	152	155	136	77	*49*	100	100	100	100
Cotton yarn	155	150	147	116	*77*	102	97	108	151
Cotton thread	186	186	186	178	*96*	122	120	137	231
Cotton hosiery	199	199	199	191	*96*	131	128	146	248
Cotton underwear	187	175	175	161	*92*	123	113	129	209
Wool	171	166	122	105	*63*	100	100	100	100
Wool yarn	180	203	180	151	*75*	105	122	148	144
Wool flannel	228	218	221	176	*81*	133	131	181	168
Wool underwear	281	280	280	240	*86*	164	169	230	229
Silk, raw	123	123	116	66	*54*	100	100	100	100
Silk yarn	133	133	129	99	*74*	108	108	111	150
Silk hosiery	126	124	113	85	*69*	102	101	97	129
Calf skins	133	133	92	76	*58*	100	100	100	100
Calf leather	198	185	240	222	*120*	149	139	261	292
Calf shoes	209	217	217	217	*100*	157	163	236	286
Goat skins	106	107	108	105	*98*	100	100	100	100
Kid gloves	167	167	167	167	*100*	158	156	155	159
Kid shoes	218	218	218	209	*96*	206	204	202	199
Milk	151	146	160	148	*101*	100	100	100	100
Butter	161	161	126	98	*61*	107	110	79	66
Cheese	188	167	150	118	*70*	125	115	94	80
Petroleum, erude	113	152	122	75	*50*	100	100	100	100
Kerosene	159	176	182	108	*61*	141	116	149	144

TABLE XXXV *(contd.)*.

A. *UNITED STATES OF AMERICA (contd.)*.

Commodities	(1) Price indices				(2) *December 1930 as percentage of December 1928*	(3) Processed goods expressed as percentage of corresponding raw material			
	Dec. 1927	Dec. 1928	Dec. 1929	Dec. 1930		Dec. 1927	Dec. 1928	Dec. 1929	Dec. 1930
Iron ore	114	114	121	121	*106*	100	100	100	100
Pig iron	113	117	121	112	*96*	99	103	100	93
Bar iron	167	167	167	167	*100*	146	146	138	138
Iron pails	136	143	144	117	*82*	119	125	119	97
Steel billets	128	128	134	119	*93*	112	112	111	98
Steel plates	122	128	128	108	*84*	107	112	106	89
Stoves	153	146	147	138	*94*	134	128	121	114
Copper	88	100	113	66	*66*	100	100	100	100
Copper wire	95	107	119	71	*66*	108	107	105	108
Copper sheet	101	113	126	95	*83*	115	113	112	144
Lead	148	148	142	116	*78*	100	100	100	100
Lead pipe	154	154	149	130	*84*	104	104	105	112
Zinc slab	104	115	103	76	*66*	100	100	100	100
Zinc sheet	125	121	131	118	*98*	120	105	127	155
Wood pulp, chemical	113	112	117	111	*99*	100	100	100	100
Newsprint	157	157	157	157	*100*	139	140	134	141
Boards	185	156	149	107	*69*	164	139	127	96
Glass, window	116	154	154	154	*100*	100	100	100	100
Glass, plate	121	121	121	115	*95*	104	79	79	75
Glass tumblers	150	150	150	125	*83*	129	97	97	81

B. *GERMANY*

Commodities	(1) Price indices				(2) December 1930 as percentage of December 1928	(3) Processed goods expressed as percentage of correspionding raw material			
	Dec. 1927	Dec. 1928	Dec. 1929	Dec. 1930		Dec. 1927	Dec. 1928	Dec. 1929	Dec. 1930
Rye	149	128	108	98	*77*	100	100	100	100
Rye flour	156	130	122	115	*88*	105	102	113	117
Wheat	123	108	126	122	*120*	100	100	100	100
Wheat flour	121	102	119	130	*120*	98	94	94	94
Cattle	119	113	113	110	*97*	100	100	100	100
Beef	115	110	119	116	*105*	97	97	105	105

TABLE XXXV *(contd.)*.

B. *GERMANY (contd.)*.

Commodities	(1) Price indices				(2) *December 1930 as percentage of December 1928*	(3) Processed goods expressed as percentage of corresponding raw material			
	Dec. 1927	Dec. 1928	Dec. 1929	Dec. 1930		Dec. 1927	Dec. 1928	Dec. 1929	Dec. 1930
Pigs	100	129	138	102	*79*	100	100	100	100
Pork	110	139	145	114	*82*	110	108	105	112
Milk	131	131	117	115	*88*	100	100	100	100
Butter	152	172	144	117	*68*	116	131	123	102
Cheese	166	137	136	114	*83*	127	105	116	99
Coal	121	137	137	125	*91*	100	100	100	100
Briquettes	151	151	151	137	*91*	125	110	110	110
Iron ore	115[1]	113	114[2]	111[2]	*98*	100	100	100	100
Pig iron	105	110	114	111	*101*	91	97	100	100
Bar iron	124	130	130	126	*97*	108	115	114	114
Hardware[3]	130	134	132	127	*95*	113	119	116	114
Machine[4]	138	142	146	143	*101*	120	126	128	129
Copper	92	104	116	72	*69*	100	100	100	100
Copper sheets	106	119	131	83	*70*	115	114	113	115
Zinc	115	116	89	59	*51*	100	100	100	100
Zinc sheets	122	123	101	76	*62*	106	106	113	129
Aluminium	124	112	112	100	*89*	100	100	100	100
Aluminium sheets	123	116	118	109	*94*	99	104	105	109
Wool, raw	204	181	138	98	*54*	100	100	100	100
Cheviot	164	153	117	81	*53*	80	85	85	83
Flax	211	220	149	79	*36*	100	100	100	100
Linen yarn	194	176	166	127	*72*	92	80	111	161
Hemp	152	152	135	89	*59*	100	100	100	100
Hemp yarn	164	151	143	122	*81*	108	99	106	137
Jute	111	114	98	56	*49*	100	100	100	100
Jute yarn	123	127	119	80	*63*	111	111	121	143
Jute tissues	120	118	104	75	*64*	108	104	106	134
Jute sacks	124	122	108	82	*67*	112	107	110	146
Hides	145	125	82	72	*58*	100	100	100	100
Calf skins	141	126	94	78	*62*	97	101	115	108
Calf leather	179	165	135	122	*74*	123	132	165	169
Sole leather	145	138	115	108	*78*	100	110	140	150
Shoes[4]	151	152	137	128	*84*	104	122	167	178
Timber	160	154	152	124	*81*	100	100	100	100
Newsprint	148	148	148	143	*97*	93	96	97	115
Furniture	158	165	152	140	*85*	99	107	100	113
Cotton	154	154	136	80	*52*	100	100	100	100
Cotton yarn	167	162	151	99	*61*	108	105	111	124
Cotton cloth	181	165	161	112	*68*	118	107	118	140

[1] Average May-October.
[2] Average for year.
[3] *Kleineisenwaren.*
[4] Composite index.

C. *SWEDEN.*

Commodities	(1) Price indices				(2) *December 1930 as percentage of December 1928*	(3) Processed goods expressed as percentage of corresponding raw material			
	Dec. 1927	Dec. 1928	Dec. 1929	Dec. 1930		Dec. 1927	Dec. 1928	Dec. 1929	Dec. 1930
Cereals	149	134	113	117	*87*	100	100	100	100
Flour, meal and bread	163	147	143	132	*90*	109	110	127	113
Cattle	107	120	129	98	*82*	100	100	100	100
Meat	122	138	142	114	*83*	114	115	110	116
Iron ore	110	113	115	107	*95*	100	100	100	100
Pig iron	114	119	126	116	*97*	104	105	110	108
Iron and steel products	120	117	118	111	*95*	109	104	103	104
Tallow	115	136	117	85	*63*	100	100	100	100
Candles and soap	147	144	147	128	*89*	128	106	126	151
Raw textiles	134	141	128	81	*57*	100	100	100	100
Yarns	162	161	151	124	*77*	121	114	118	153
Tissues	187	188	163	131	*70*	140	133	127	162
Hides and skins	130	115	88	67	*58*	100	100	100	100
Leather	138	135	115	101	*75*	106	117	131	151
Shoes	158	162	151	137	*85*	122	141	172	204
Pulp	121	132	142	116	*88*	100	100	100	100
Tar paper	160	160	160	160	*100*	132	121	113	138
Paper	171	175	173	158	*90*	141	133	122	136

In cases where raw material prices fell in 1928, the prices of manufactured products fell less, if at all, thus widening the margin which already existed in most cases. Conversely, where raw material prices rose — as in the case of wheat and copper in the United States of America, pigs and jute in Germany, and tallow and textiles in Sweden — the prices of the more finished articles rose less, thus decreasing the margin. The same movement took place in 1929 ; in this year, price declines were more frequent. In 1930, practically all raw materials fell sharply in price, while manufactured products dropped substantially less ; accordingly, the margin between the groups, as shown in column (3) was, for most products, greatly increased by the end of that year. Column (2) shows the percentage decline in price between the end of 1928 and the end of 1930 of the various products included in the table. It will be noted that, in general, the higher a commodity stands in stage of manufacture, the less has it fallen in

price. In the few cases where raw material prices rose between the end of 1928 and the end of 1930 — *e.g.*, milk and iron-ore[1] in the United States of America — manufactured goods were stable in price or fell, so that in these cases the margin according to stage of manufacture was lessened or reversed. The special cases of German and Swedish wheat had already been referred to above.

* * *

Further light may be thrown upon the problem under investigation by comparison of retail and wholesale price indices ; the former normally relate to finished products and the latter to crude foodstuffs, raw materials and semi-manufactured goods. Such comparison, however, must be made with care. In the first place, the objects for which the two sets of indices are compiled are different. Official cost-of-living indices are taken as representative of retail prices ; these indices generally include rent and only such goods as are likely to be consumed by a typical working-class family. Comparison is made, therefore, between a selection of raw materials, foodstuffs, etc., which is intended to be characteristic of the general economy of the country and a special group of immediately consumable commodities (or services) of major concern to one section of the population. The absolute height of the retail indices would probably be decreased if they included all classes of manufactured goods, for it is in the industries catering to secondary needs rather than in those supplying the prime necessities of life that the greatest technical progress has been made in recent years and it would appear likely that, until the current depression, it was the products of these industries that had fallen most in price. On the other hand, however, the level of the cost of living indices is lowered in most countries by the inclusion of rent and by the fact that the base period for most of the indices is July 1914, when retail prices were generally higher than in 1913.

Even allowing for a considerable margin of error, the fact of a discrepancy between the wholesale and retail price indices for most of the countries included in Table XXXVI remains ; the differences in their movements during the depression are particularly striking :

It will be observed that even at the end of 1927 and 1928 retail prices in most countries stood at a substantially higher level than wholesale prices. During 1929, wholesale prices fell appreciably in nineteen of the twenty-one countries shown above ; retail prices remained practically steady in six of these countries, and in six they rose. In those countries where retail prices also fell they did so at a much slower rate than wholesale prices. This difference in the movement of the two indices became, of course, even more marked during the great price recession of 1930. Between the end of 1928 and the end of 1930, the general level of wholesale prices fell by 15 to 25 per cent in fourteen of the countries included

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[1] It should be observed that iron-ore prices were the same in 1930 as in 1929 and milk, having risen in 1929, dropped back in 1930 to a point slightly higher than the 1928 level.

Table XXXVI

Wholesale and Retail Prices, December 1927-1930.

Pre-war Base. [1]

Country	Date	Wholesale	Retail	Country	Date	Wholesale	Retail
South Africa	Dec. 1927	123	132	Egypt	Dec. 1927	114	147
	Dec. 1928	120	131		Dec. 1928	126	150
	Dec. 1929	113 [2]	129		Dec. 1929	110	139
	Dec. 1930	100 [2]	126		Dec. 1930	102	128
	Dec. 1930 as percentage of Dec. 1928	*83*	*96*		*Dec. 1930 as percentage of Dec. 1928*	*81*	*85*
Australia	Dec. 1927	170	147	Estonia	Dec. 1927	118	105
	Dec. 1928	162	146		Dec. 1928	118	113
	Dec. 1929	162	149		Dec. 1929	112	109
	Dec. 1930	129	140 [3]		Dec. 1930	96	99
	Dec. 1930 as percentage of Dec. 1928	*80*	*96*		*Dec. 1930 as percentage of Dec. 1928*	*81*	*88*
Austria	Dec. 1927	127	107	Germany	Dec. 1927	140	151
	Dec. 1928	127	109		Dec. 1928	140	153
	Dec. 1929	123	113		Dec. 1929	134	153
	Dec. 1930	107	108		Dec. 1930	118	142
	Dec. 1930 as percentage of Dec. 1928	*84*	*99*		*Dec. 1930 as percentage of Dec. 1928*	*84*	*93*
Canada	Dec. 1927	152	150	Hungary	Dec. 1927	135	113
	Dec. 1928	148	151		Dec. 1928	135	118
	Dec. 1929	150	154		Dec. 1929	107	113
	Dec. 1930	122	146		Dec. 1930	90	100
	Dec. 1930 as percentage of Dec. 1928	*82*	*97*		*Dec. 1930 as percentage of Dec. 1928*	*67*	*85*
Czechoslovakia	Dec. 1927	143	109	British India	Dec. 1927	167	170
	Dec. 1928	139	108		Dec. 1928	163	167
	Dec. 1929	126	108		Dec. 1929	151	169
	Dec. 1930	110	103		Dec. 1930	114	137
	Dec. 1930 as percentage of Dec. 1928	*79*	*95*		*Dec. 1930 as percentage of Dec. 1928*	*70*	*82*
Denmark	Dec. 1927	154	176	Italy (Milan)	Dec. 1927	483	531
	Dec. 1928	151	173		Dec. 1928	497	538
	Dec. 1929	146	172 [2]		Dec. 1929	459	549
	Dec. 1930	120	162 [2]		Dec. 1930	369	508
	Dec. 1930 as percentage of Dec. 1928	*79*	*94*		*Dec. 1930 as percentage of Dec. 1928*	*74*	*94*

[1] The base period for the wholesale indices is 1913, with the following exceptions: Switzerland (1914), Austria (January to June 1914), Czechoslovakia (July 1914), and Poland (January 1914). The retail indices for the following countries are based on July 1914: Austria, Czechoslovakia, Denmark, British India, Latvia, New Zealand, Norway, Sweden, United Kingdom and the United States of America. Those for South Africa, Bulgaria and France are based on 1914; those for Canada, Estonia and Hungary on 1913; those for Finland and Italy on January to June 1914; that for Poland on January 1914; that for Switzerland on June 1914; that for the Netherlands on 1911 to 1913; that for Australia on November 1914; that for Egypt on January 1913 to July 1914; and that for Germany on October 1913, January, April, July 1914.

[2] October.

[3] September.

TABLE XXXVI *(contd.)*.

WHOLESALE AND RETAIL PRICES, DECEMBER 1927-1930.

Pre-war Base.

Country	Date	Wholesale	Retail	Country	Date	Wholesale	Retail
LATVIA	Dec. 1928	125	115	SWEDEN	Dec. 1927	148	171
	Dec. 1929	112	109		Dec. 1928	145	170
	Dec. 1930	85	98		Dec. 1929	134	167
	Dec. 1930 as percentage of Dec. 1928	*68*	*85*		Dec. 1930	117	163[2]
					Dec. 1390 as percentage of Dec. 1928	*81*	*96*
NETHERLANDS	Dec. 1927	151	170				
	Dec. 1928	148	168	SWITZERLAND	Dec. 1927	146	162
	Dec. 1929	135	167		Dec. 1928	144	162
	Dec. 1930	107	157		Dec. 1929	139	162
	Dec. 1930 as percentage of Dec. 1928	*72*	*93*		Dec. 1930	117	156
					Dec. 1930 as percentage of Dec. 1928	*81*	*96*
NEW ZEALAND	Dec. 1927	148	161	UNITED KINGDOM			
	Dec. 1928	149	162		Dec. 1927	140	168
	Dec. 1929	146	161[1]		Dec. 1928	138	167
	Dec. 1930	141	155[1]		Dec. 1929	133	166
	Dec. 1930 as percentage of Dec. 1928	*95*	*96*		Dec. 1930	109	153
					Dec. 1930 as percentage of Dec. 1928	*79*	*92*
NORWAY	Dec. 1927	166	195				
	Dec. 1928	157	183	U.S.A.	Dec. 1927	139	164
	Dec. 1929	152	179		Dec. 1928	139	162
	Dec. 1930	136	172		Dec. 1929	135	162
	Dec. 1930 as percentage of Dec. 1928	*87*	*94*		Dec. 1930	112	148
					Dec. 1930 as percentage of Dec. 1928	*81*	*91*
POLAND	Dec. 1927	120	121				
	Dec. 1928	118	125				
	Dec. 1929	109	126				
	Dec. 1930	91	118				
	Dec. 1930 as percentage of Dec. 1928	*77*	*94*				

[1] November. [2] October.

in the above table and by 25 to 35 per cent in another five countries. During the same period, retail prices fell by less than 10 per cent in sixteen countries and by more than that in only five. In all cases, retail price indices stood substantially higher at the end of 1930 than wholesale indices.

* * *

In previous editions of this *Memorandum*, a comparison was made between the import and export price indices of certain countries whose imports or exports consist mainly of raw materials or manufactured goods. This comparison suggested that, in the period 1925 to 1928, the barter terms of trade were in general favourable, in

comparison with 1913, to the countries importing raw products and exporting manufactured goods and thus supported the conclusion to which the other lines of enquiry appeared to point.

* * *

Up to this point, raw materials and foodstuffs have been in general treated as a single group of commodities and contrasted with finished articles; attention has only incidentally been directed to differences in the price movements of various groups of raw materials. It is therefore necessary to pursue the analysis a little further and to compare the prices of agricultural products with those of other raw materials and semi-manufactured goods. Unfortunately, the goods entering into the existing national indices are grouped in such diverse manners that it is often difficult to employ them for this purpose. In Table XXXVII, certain group indices which, though far from ideal, afford some evidence of value are tabulated. The groups are never identical in composition and the figures for one country should not be directly compared with those for another.

An examination of the above table will show that at the end of 1927 and 1928 the prices of foodstuffs in general ruled higher than the prices of mineral or metallurgical products. In 1929, vegetable foodstuffs and textiles dropped rather sharply in most countries, whilst animal foodstuffs, minerals, metals and most other products fell considerably less and in some cases rose slightly. The great price liquidation of 1930 affected all commodities, though with unequal intensity. Column (2) of the above table shows that between the end of 1928 and the end of 1930, vegetable foodstuffs fell by 25 to 35 per cent in most countries; in the United Kingdom, cereal prices fell by 38 per cent. Reference has already been made to the measures taken in France, Germany and elsewhere to maintain cereal prices in this period.

Animal foodstuffs fell much less in price than cereals. For this group, the greatest fall appears to have taken place in Italy and Denmark (18 per cent in both countries). In most other countries, the price fall for this group of products ranged from 5 to 15 per cent. It is interesting to observe in this connection that fodder prices have fallen very heavily.

The " industrial materials " groups in most cases include both raw materials and semi-manufactured products ; this method of grouping naturally understates the fall in the price of raw materials. In spite of this faet, however, the price of textiles fell by 40 to 50 per cent in the great majority of countries whose indices are shown above.

It is obviously difficult to estimate the real fall in the price of minerals and metallurgical products because, as has been emphasised above, it in this group of commodities that cartels, producers' associations, etc., have been most successful in restricting output and maintaining prices. When most other groups fell in price in 1929, these articles continued to rise in many countries, and though they tended to fall in 1930, they did so much less rapidly than other articles. In general the decline since the end of 1928 appears to have been less than 15 per cent and

TABLE XXXVII

PRICES INDICES OF AGRICULTURAL AND OTHER PRODUCTS.

(Base 1913, unless otherwise indicated).

Country	Group index	(1) Price indices, December				(2) *December 1930 as percentage of December 1928*	Compiler
		1927	1928	1929	1930		
AUSTRALIA . .	Cereals and vegetables	171	156	163	106	*68*	Commonwealth Bureau of Statistics. (Converted from 1911 base).
	Meat	166	145	175	125	*86*	
	Dairy produce	165	170	169	127	*75*	
	Metals and coal . . .	185	181	183	175	*97*	
	Chemicals	191	195	197	207	*106*	
AUSTRIA . .	Foodstuffs	118	118	112	95	*81*	Federal Statistical Office (Base, January to June 1914).
	Industrial raw materials and semi-manufactured products .	149	146	144	132	*90*	
BELGIUM . .	Foodstuffs	903	854	703	543	*64*	Ministère de l'Industrie, du Travail et de la Prévoyance Sociale. (Base: April 1914)
	Fuels	802	848	1,029	870	*103*	
	Metallurgical products	762	825	771	627	*76*	
	Textiles	1,140	1,092	825	558	*51*	
CZECHO-SLOVAKIA	Vegetable foodstuffs .	147	129	103	86	*67*	State Statistical Office. (Base: July 1914).
	Animal foodstuffs . .	131	133	128	118	*89*	
	Industrial raw materials	151	150	141	121	*81*	
	Minerals	153	151	147	121	*80*	
	Textiles	160	153	130	91	*59*	
DENMARK . .	Vegetable foodstuffs .	136	121	111	97	*80*	Central Statistical Department.
	Animal foodstuffs . .	141	154	155	126	*82*	
	Industrial raw materials and semi-manufactured products .	120	121	130	111	*92*	
	Metallurgical products	184	186	186	173	*93*	
	Textiles	223	222	210	180	*81*	
	Fodder	156	156	132	95	*61*	
FINLAND [1]. .	Cereals	1,158	1,121	998	770	*69*	Central Customs Administration.
	Animal products . . .	897	898	920	879	*98*	
	Minerals	873	785	834	786	*100*	
	Metals	985	955	957	918	*96*	
	Chemicals	590	594	565	611	*103*	
FRANCE . .	Vegetable foodstuffs .	541	577	456	526	*91*	Statistique générale de la France.
	Animal foodstuffs . .	591	627	695	645	*103*	
	Industrial raw materials and semi-manufactured products .	682	698	640	516	*74*	
	Minerals and metals .	496	537	569	477	*89*	
	Textiles	841	822	684	479	*58*	
	Chemicals	578	588	603	529	*90*	
GERMANY . .	Agricultural products .	135	134	126	110	*82*	Central Statistical Office.
	Vegetable foodstuffs	144	126	120	111	*88*	
	Cattle	105	118	126	104	*88*	
	Fodder	141	137	105	91	*66*	
	Industrial raw materials and semi-manufactured goods . .	134	134	129	110	*82*	
	Iron and steel . . .	125	128	130	123	*96*	
	Non-ferrous metals.	107	110	112	77	*70*	
	Textiles	159	154	128	85	*55*	
	Chemicals	124	127	127	122	*96*	

[1] 1927 indices are annual averages; all other years, October.

TABLE XXXVII *(contd.)*.

PRICE INDICES OF AGRICULTURAL AND OTHER PRODUCTS

(Base 1913, unless otherwise indicated).

Country	Group index	(1) Price indices, December				(2) *December 1930 as percentage of December 1928*	Compiler
		1927	1928	1929	1930		
ITALY	Vegetable foodstuffs	549	574	474	356	*62*	Provincial Economic Council, Milan.
	Animal foodstuffs	494	543	528	445	*82*	
	Industrial raw materials and semi-manufactured products	465	472	444	360	*76*	
	Textiles	432	450	383	253	*56*	
	Minerals and metals	434	439	441	375	*85*	
	Chemicals	445	450	434	374	*83*	
NETHERLANDS	Food	159	155	149	111	*72*	Central Statistical Office.
	Total	151	148	142	107	*72*	
NORWAY	Vegetable foodstuffs	179	156	149	113	*72*	Central Statistical Office.
	Animal foodstuffs	157	152	151	147	*97*	
	Textiles	200	185	182	154	*83*	
	Iron and metals	145	141	138	120	*85*	
	Fodder and fertilisers	147	139	128	100	*72*	
POLAND	Agricultural products	124	120	102	80	*67*	Central Statistical Office (Base : January 1914).
	Industrial raw materials and semi-manufactured products [1]	118	119	114	100	*84*	
SPAIN	Vegetable foodstuffs	161	177	165	167 [2]	*94* [2]	Ministry of Labour.
	Animal foodstuffs	213	210	208	202	*96*	
	Industrial raw materials	158	164	164	167	*102*	
	Fuels	158	151	155	155	*103*	
	Textiles and leather	146	150	138	129	*86*	
	Metals	149	155	163	179	*115*	
	Chemicals, etc.	135	141	160	163	*116*	
SWITZERLAND	Vegetable foodstuffs	155	146	132	93	*64*	Federal Labour Office. (Base : July 1914).
	Animal foodstuffs	152	151	153	144	*95*	
	Industrial raw materials and semi-manufactured products	141	139	132	106	*76*	
	Metals	115	120	122	92	*77*	
	Textiles, leather, rubber	149	141	121	85	*60*	
	Fodder and fertilisers	132	136	122	90	*66*	
UNITED KINGDOM	Cereals	153 [1]	149	132	92	*62*	Board of Trade.
	Meat and fish	138	141	158	134	*95*	
	Other than foodstuffs	136	134	128	105	*78*	
	Iron and steel	120	112	115	109	*97*	
	Cotton	155	164	144	101	*55*	
	Minerals	118	118	116	98	*83*	*Economist.*
	Textiles	161	160	130	81	*51*	
UNITED STATES OF AMERICA	Farm products	146	145	143	115	*72*	Bureau of Labor Statistics.
	Non-agricultural commodities	137	137	134	105	*84*	

[1] Including a few manufactured products.
[2] 1930 indices are for September.

for several countries it was less than 5 per cent ; it was greatest in Belgium (24 per cent). It is of particular interest to notice the difference in the movements of iron and steel products on the one hand and non-ferrous metals on the other in Germany. In this country, iron and steel products, which are subject to close control, fell in price by some 5 per cent, whilst non-ferrous metals, whose prices have been determined by world market conditions[1] since the breakdown of the copper producers' association in March 1930, fell by 30 per cent. It must be borne in mind, however, that the iron and steel index contains a larger proportion of semi- and wholly manufactured goods, such as rolling-mill products, etc., than the index for non-ferrous metals.

[1] The only important exception is aluminium, the prices of which are still influenced by the producers' association of that industry.

ANNEXES

Annex I.

Method of Calculation of the Composite Production Index.

The index is composed of 63 articles which are given in Annex II. For the purposes of the calculation of the index, a " weight " has been attributed to each commodity equivalent to its relative importance as measured by its aggregate value at selected " world " prices. The prices selected are intended to be representative in the sense that they refer to representative qualities and that their ratios are fairly typical of relative values on the world market. They are annual averages of actual quotations for medium qualities of the various articles in leading producing countries. They are not averages of prices of different qualities or of prices in different countries. They have all been converted into terms of dollars according to the annual average rates of exchange.

The indices are thus compiled by the aggregate method, the mathematical formula of which is :

$$I = \frac{q_1' p' + q_1'' p'' + q_1''' p''' + \ldots\ldots\ldots\ldots\ldots + q_{1n} p_n}{q_0' p' + q_0'' p'' + q_0''' p''' + \ldots\ldots\ldots\ldots\ldots + q_{0n} p_n} = \frac{\Sigma(q_1 p)}{\Sigma(q_0 p)}$$

The quantity of each commodity produced each year (q', q'', q''', etc.) is multiplied by the price of that commodity (p', p'', p''', etc.) and the resulting totals for all commodities are summed up. The absolute figures thus obtained for each year are then converted into percentages of the absolute figure for the basic year. As the prices are constant, variations in the index represent changes in the quantities produced and not in the values.

In view of the changes that have taken place in relative values, two different calculations have been made, employing the prices for 1925 and 1929 respectively.

Two tables showing the aggregates from which the general index has been calculated are given below.

Production Aggregates in Terms of Dollars (000,000's omitted)

Groups of Commodities	*(a)* Aggregates according to 1925 Prices					*(b)* Aggregates according to 1929 Prices				
	1925	1926	1927	1928	1929	1925	1926	1927	1928	1929
Cereals and other food crops	25,924.8	25,616.0	26,018.3	27,171.7	26,560.9	22,532.6	22,188.7	22,564.4	23,492.6	23,163.4
Meat	10,304.2	10,505.3	10,855.2	11,313.4	11,095.5	10,163.7	10,354.2	10,687.1	11,130.7	10,914.1
Colonial produce, etc.	997.7	1,096.0	1,334.3	1,159.3	1,260.7	796.9	872.3	1,054.1	922.7	997.7
Tobacco	634.5	653.4	640.7	672.5	721.2	916.7	944.1	925.6	971.7	1,042.0
Vegetable-oil materials	1,943.1	1,930.3	2,160.8	2,080.4	2,203.4	1,745.4	1,730.0	1,917.9	1,847.4	1,948.8
Textiles	6,749.1	7,068.9	6,699.3	7,257.1	7,438.2	4,964.4	5,176.3	4,852.5	5,257.0	5,369.3
Rubber	779.2	868.7	947.7	905.6	1,160.9	247.9	276.4	301.5	288.1	369.4
Wood-pulp	559.0	614.8	635.2	654.6	729.7	500.0	549.9	568.6	585.7	653.4
Cement	582.7	623.2	677.8	715.5	724.8	515.5	551.3	599.6	633.0	641.2
Fuels	6,593.3	6,619.9	7,297.5	7,276.4	7,849.6	5,271.2	5,289.3	5,817.9	5,798.2	6,246.8
Metals (smelter production)	6,112.1	6,322.0	6,859.3	7,295.3	7,997.9	5,837.3	6,037.5	6,548.6	6,986.6	7,672.4
Chemicals (fertilisers)	670.9	663.2	702.7	831.1	907.0	651.6	649.6	688.9	799.7	868.0
Total	61,850.6	62,581.7	64,828.9	67,332.9	68,649.8	54,143.2	54,619.6	56,526.7	58,713.4	59,886.5

Territorial Divisions	*(a)* Aggregates according to 1925 Prices					*(b)* Aggregates according to 1929 Prices				
	1925	1926	1927	1928	1929	1925	1926	1927	1928	1929
Europe, excluding U.S.S.R.	16,828.6	15,965.2	17,983.2	18,599.1	20,131.4	15,481.8	14,602.7	16,448.1	16,979.4	18,400.7
Europe, including U.S.S.R.	22,491.4	22,055.4	23,964.0	24,696.6	26,299.1	20,563.2	20,173.3	21,925.8	22,566.7	24,070.9
North America	18,980.1	19,712.8	19,354.4	20,447.2	20,063.5	17,035.3	17,593.2	17,227.3	18,230.0	17,919.9
Latin America	5,262.9	5,414.4	5,678.6	5,872.1	5,648.4	4,298.3	4,438.5	4,651.1	4,786.0	4,641.1
Africa	1,821.2	1,812.7	1,866.8	1,947.6	2,073.7	1,551.9	1,548.4	1,596.5	1,663.3	1,769.6
Asia	11,809.4	11,949.6	12,378.6	12,645.0	12,941.3	9,597.2	9,661.5	9,960.9	10,205.0	10,297.1
Oceania	1,485.6	1,636.8	1,586.5	1,724.4	1,623.8	1,097.3	1,204.7	1,165.1	1,262.4	1,187.9
World	61,850.6	62,581.7	64,828.9	67,332.9	68,649.8	54,143.2	54,619.6	56,526.7	58,713.4	59,886.5

Annex II.

Indices of World Production of Foodstuffs and Raw Materials.

Production in 1925=100.

Groups of Products and Articles	1926	1927	1928	1929	1930 *
Cereals and other food crops [1]					
Wheat	104	106	114	101	114
Rye	93	98	91	95	99
Barley	97	98	113	120	118
Oats	102	97	111	107	108
Maize	96	94	92	95	83
Rice	100	100	103	102	108
Potatoes	92	105	108	118	116
Sugar — Beet sugar	92	107	112	109	136
Sugar — Cane sugar	96	99	108	106	98
Meat					
Beef	102	101	101	101	...
Veal	101	101	103	104	...
Pork, bacon, etc.	101	110	119	112	...
Mutton	106	110	113	115	...
Colonial produce, etc.					
Coffee	115	153	120	132	104
Cocoa	96	99	103	107	109
Tea	106	109	114	119	113
Hops	100	111	110	140	103
Tobacco	103	101	106	113	...
Vegetable-oil materials					
Cotton-seed	100	86	94	93	94
Linseed	97	100	93	77	97
Rape-seed	77	82	73	76	90
Hemp-seed	97	104	103	104	...
Sesamum	105	127	122	126	...
Soya beans	120	136	140	158	...
Copra	111	107	130	134	...
Palm oil and palm-kernel oil (raw)	96	99	101	106	...
Olive oil (raw)	87	161	99	185	70
Ground-nuts	103	120	130	115	...
Textiles					
Cotton	102	86	94	93	100
Flax	89	80	89	98	103
Hemp	92	94	94	90	...
Manila hemp	101	96	99	118	...
Jute	136	114	111	116	126
Wool	107	108	113	112	...
Raw silk	106	113	121	127	122
Artificial silk	118	155	192	232	226

* Partly based on estimates.

[1] Excluding China.

Annex II *(concluded).*

Indices of World Production of Foodstuffs and Raw Materials.

Production in 1925=100.

Groups of Products and Articles	1926	1927	1928	1929	1930 *
Raw Rubber	111	122	116	149	140
Wood-pulp					
Mechanical pulp	110	110	116	127	...
Chemical pulp	110	115	118	132	...
Cement [1]	107	116	123	124	...
Fuels					
Coal	100	108	105	111	101
Lignite	100	108	117	124	105
Petroleum	103	118	124	139	132
Metals (smelter production)					
Pig-iron	103	113	116	128	104
Steel	103	113	122	133	104
Copper	105	109	124	140	115
Lead	106	113	113	116	107
Zinc	108	115	124	129	121
Tin	101	109	122	130	118
Aluminium	110	116	125	151	...
Nickel	91	93	133	150	141
Silver	103	104	102	104	97
Chemicals (fertilisers)					
Natural phosphates	110	116	115	125	...
Potash	87	102	114	123	...
Sulphur	128	143	136	158	...
Natural guano	70	82	96	111	...
Nitrate of soda	81	67	129	133	109
Nitrate of lime	123	155	187	228	...
Superphosphates of lime	103	101	109	116	...
Basic slag	106	123	126	135	...
Cyanamide of calcium	119	126	141	149	...
Sulphate of ammonia	101	117	126	145	...
Sulphate of copper	112	123	142	111	...

* Partly based on estimates.

[1] Excluding Latin America and Africa for which no adequate figures are available.

Annex III.

Indices of Production of Foodstuffs and Raw Materials

Production in

Groups of Products	Years	Europe				North America		Latin America	
		Excluding U.S.S.R.		Including U.S.S.R.					
		(*a*)	(*b*)	(*a*)	(*b*)	(*a*)	(*b*)	(*a*)	(*b*)
Cereals	1926	92	93	99	99	98	97	104	103
	1927	91	91	95	95	104	103	112	109
	1928	97	97	98	98	112	110	121	118
	1929	108	109	105	106	94	93	92	92
Cereals and other food crops	1926	91	91	98	97	99	98	101	102
	1927	93	94	97	97	105	103	104	105
	1928	99	99	100	100	113	111	114	115
	1929	110	111	107	109	95	94	96	96
Meat	1926	105	102	103	103	101	101	103	103
	1927	114	110	111	111	100	100	101	101
	1928	123	119	119	119	103	102	101	101
	1929	119	116	114	114	102	101	102	102
Colonial produce and hops	1926	96	95	96	95	110	111	115	114
	1927	111	111	111	111	109	109	153	152
	1928	109	108	109	108	115	116	118	117
	1929	148	148	148	148	119	118	131	130
Tobacco	1926	99	99	101	101	94	94	99	99
	1927	97	97	94	94	89	89	124	124
	1928	90	90	84	84	101	101	129	129
	1929	118	118	96	96	111	111	152	152
Vegetable-oil materials	1926	87	87	89	89	105	106	107	107
	1927	157	156	140	137	90	89	110	110
	1928	95	95	99	99	92	91	105	105
	1929	174	173	158	155	91	91	75	75
Textiles	1926	103	103	101	100	112	112	103	103
	1927	115	112	109	107	87	85	98	98
	1928	124	121	118	115	98	96	106	106
	1929	133	130	124	121	102	100	107	107
Rubber	1926	—	—	—	—	—	—	94	94
	1927	—	—	—	—	—	—	109	109
	1928	—	—	—	—	—	—	81	81
	1929	—	—	—	—	—	—	75	75

Annex III.

WEIGHTED BY : *(a)* 1925 VALUES ; *(b)* 1929 VALUES.

1925=100.

Africa		Asia		Oceania		World		Groups of Products
(a)	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*	
99	100	100	100	138	136	100	99	Cereals.
105	106	102	102	108	108	100	99	
109	110	89	89	138	137	104	104	
121	122	98	98	112	112	101	101	
97	98	99	99	121	125	99	98	Cereals and other food crops.
108	109	100	100	108	108	100	100	
107	107	102	101	127	129	105	104	
116	116	102	101	112	112	102	103	
104	104	100	100	105	104	102	102	Meat.
106	106	103	103	105	103	105	105	
106	106	105	105	110	108	110	110	
108	108	105	105	108	106	108	107	
102	101	105	105	108	112	110	109	Colonial produce and hops.
104	102	112	112	142	153	134	132	
110	109	115	115	131	129	116	116	
119	118	118	119	135	135	126	125	
109	109	112	112	60	60	103	103	Tobacco.
126	126	108	108	110	110	101	101	
104	104	118	118	100	100	106	106	
91	91	118	118	100	100	113	113	
97	97	100	99	107	107	99	99	Vegetable-oil materials.
93	93	112	111	109	109	111	110	
105	105	117	115	128	128	107	106	
114	114	111	109	125	125	113	112	
99	98	100	99	110	110	105	104	Textiles.
92	91	105	105	107	107	99	98	
106	106	109	108	116	116	108	106	
112	111	110	108	111	111	110	108	
133	133	112	112	—	—	111	111	Rubber.
133	133	122	122	—	—	122	122	
100	100	118	118	—	—	116	116	
100	100	154	154	—	—	149	149	

Annex III *(concluded).*

Indices of Production of Foodstuffs and Raw Materials

Production in

Groups of Products	Years	Europe				North America		Latin America	
		Excluding U.S.S.R.		Including U.S.S.R.					
		(*a*)	(*b*)	(*a*)	(*b*)	(*a*)	(*b*)	(*a*)	(*b*)
Wood-pulp	1926	107	107	108	108	112	111	100	100
	1927	116	117	118	118	108	108	116	118
	1928	119	119	121	121	112	112	116	118
	1929	136	137	139	139	121	120	128	129
Cement	1926	108	108	110	110	102	102	.	.
	1927	121	121	124	124	108	108	.	.
	1928	132	132	136	136	110	110	.	.
	1929	136	136	141	141	108	108	.	.
Fuels	1926	85	85	88	88	109	109	99	99
	1927	110	110	114	114	109	109	105	105
	1928	109	109	114	113	107	106	127	127
	1929	118	118	123	123	115	115	145	145
Metals	1926	97	97	99	99	106	106	110	110
	1927	122	122	125	126	101	101	120	121
	1928	123	123	127	128	112	112	131	135
	1929	134	134	140	140	123	123	141	147
Chemicals (fertilisers)	1926	101	101	102	101	110	111	79	79
	1927	114	113	115	113	111	112	65	65
	1928	122	120	123	121	126	125	124	123
	1929	137	133	137	134	136	135	127	127
General Index	1926	95	94	98	98	104	103	103	103
	1927	107	106	107	107	102	101	108	108
	1928	111	110	110	110	108	107	112	111
	1929	120	119	117	117	106	105	107	108
Foodstuffs	1926	95	94	99	99	99	99	103	104
	1927	100	100	101	101	103	102	110	110
	1928	106	105	105	106	109	108	110	109
	1929	113	112	109	110	97	97	103	103
Raw materials	1926	94	94	96	96	108	108	101	101
	1927	118	118	118	118	101	100	103	104
	1928	117	117	119	119	106	106	116	118
	1929	130	130	132	131	114	114	119	122

Annex III *(concluded).*

WEIGHTED BY : *(a)* 1925 VALUES ; *(b)* 1929 VALUES.

1925=100.

Africa		Asia		Oceania		World		Groups of Products
(a)	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*	
—	—	121	121	—	—	110	110	Wood-pulp.
—	—	131	132	—	—	114	114	
—	—	137	138	—	—	117	117	
—	—	152	153	—	—	131	131	
.	.	122	122	107	107	107	107	Cement.
.	.	132	132	119	119	116	116	
.	.	132	132	138	138	123	123	
.	.	143	143	133	133	124	124	
107	107	102	102	99	99	100	100	Fuels.
105	105	111	111	102	102	111	110	
109	109	112	112	91	91	110	110	
112	112	113	112	82	82	119	119	
95	93	105	105	101	100	103	103	Metals.
107	105	114	115	110	110	112	112	
134	132	125	125	106	106	119	120	
156	155	137	137	105	104	131	131	
106	108	114	113	98	98	99	100	Chemicals (fertilisers).
129	131	124	125	106	108	105	106	
120	120	147	145	116	119	124	123	
131	132	149	146	125	125	135	133	
100	100	101	101	110	110	101	101	*General Index.*
103	103	105	104	107	106	105	104	
107	107	107	106	116	115	109	108	
114	114	110	107	109	108	111	111	
100	100	100	100	113	112	100	100	Foodstuffs.
107	108	101	101	106	105	103	102	
107	107	103	102	118	117	106	106	
114	114	103	102	110	108	105	105	
99	99	103	102	108	107	103	103	Raw materials.
96	96	111	109	107	107	108	108	
107	108	114	114	114	113	112	112	
114	115	120	116	109	108	121	120	

Annex IV.

Percentage Distribution of Aggregate Production of Foodstuffs

(a) 1925 Values ;

World Totals = 100.

Groups of Products	Years	Europe				North America		Latin America	
		Excluding U.S.S.R.		Including U.S.S.R.					
		(a)	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*
Cereals	1925	31.1	31.1	49.1	49.2	34.5	35.1	6.4	6.3
	1926	28.7	29.0	48.8	49.3	34.0	34.3	6.7	6.6
	1927	28.3	28.5	46.5	47.1	36.0	36.2	7.1	6.9
	1928	29.0	29.2	45.9	46.4	37.0	37.3	7.4	7.2
	1929	33.4	33.6	51.3	51.9	32.3	32.5	5.9	5.8
Cereals and other food crops	1925	27.0	28.9	40.9	43.4	23.9	24.4	7.5	6.0
	1926	24.8	26.5	40.3	42.9	23.9	24.2	7.6	6.2
	1927	25.2	27.1	39.3	42.1	25.0	25.2	7.7	6.3
	1928	25.5	27.3	38.8	41.5	25.7	26.0	8.1	6.6
	1929	28.9	31.0	42.8	45.8	22.1	22.3	7.0	5.6
Meat	1925	30.4	31.3	42.0	41.9	30.6	30.8	13.9	14.2
	1926	31.4	31.3	42.2	42.2	30.2	30.4	14.0	14.3
	1927	32.9	32.8	44.2	44.0	29.1	29.3	13.5	13.7
	1928	34.0	33.9	45.5	45.5	28.6	28.7	12.9	13.1
	1929	33.7	33.7	44.6	44.5	28.8	29.0	13.2	13.5
Colonial produce and hops	1925	3.7	2.1	3.7	2.1	1.2	0.7	54.6	53.6
	1926	3.2	1.8	3.2	1.8	1.3	0.7	57.2	56.0
	1927	3.1	1.8	3.1	1.8	1.0	0.6	62.5	61.5
	1928	3.5	2.0	3.5	2.0	1.2	0.7	55.4	54.4
	1929	4.4	2.5	4.4	2.5	1.2	0.7	56.5	55.6
Tobacco	1925	12.3	12.3	21.3	21.3	30.9	30.9	8.1	8.1
	1926	11.8	11.8	20.9	20.9	28.3	28.3	7.8	7.8
	1927	11.9	11.9	19.9	19.9	27.3	27.3	9.9	9.9
	1928	10.5	10.5	16.8	16.8	29.3	29.3	9.9	9.9
	1929	12.9	12.9	18.1	18.1	30.2	30.2	10.9	10.9
Vegetable-oil materials.	1925	13.0	12.6	18.2	18.6	15.9	17.6	9.9	10.2
	1926	11.4	11.0	16.3	16.7	16.9	18.8	10.7	11.0
	1927	18.4	18.0	22.9	23.2	13.0	14.3	9.8	10.2
	1928	11.6	11.3	16.8	17.4	13.7	15.2	9.8	10.2
	1929	20.0	19.6	25.3	25.7	12.8	14.4	6.6	6.9
Textiles	1925	12.1	10.9	19.0	17.5	30.3	32.3	6.2	5.9
	1926	11.9	10.7	18.3	16.7	32.3	34.6	6.2	5.9
	1927	13.9	12.5	20.9	19.1	26.4	28.2	6.2	5.9
	1928	13.9	12.4	20.8	19.0	27.5	29.3	6.2	5.9
	1929	14.6	13.0	21.4	19.6	28.0	29.8	6.1	5.9
Rubber	1925	—	—	—	—	—	—	5.4	5.4
	1926	—	—	—	—	—	—	4.6	4.6
	1927	—	—	—	—	—	—	4.9	4.9
	1928	—	—	—	—	—	—	3.8	3.8
	1929	—	—	—	—	—	—	2.7	2.7

Annex IV.

AND RAW MATERIALS, BY CONTINENTAL GROUPS, WEIGHTED BY :
(b) 1929 VALUES.

World Total = 100.

Africa		Asia		Oceania		World		Groups of Products
(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	
2.6	2.6	6.1	5.7	1.3	1.1	100		Cereals.
2.6	2.6	6.1	5.7	1.8	1.5	100		
2.8	2.7	6.2	5.9	1.4	1.2	100		
2.8	2.7	5.2	4.9	1.7	1.5	100		
3.2	3.1	5.9	5.5	1.4	1.2	100		
2.5	2.4	23.8	22.8	1.4	1.0	100		Cereals and other food crops.
2.5	2.3	24.0	23.1	1.7	1.3	100		
2.7	2.6	23.8	22.7	1.5	1.1	100		
2.6	2.4	23.1	22.2	1.7	1.3	100		
2.9	2.7	23.7	22.5	1.5	1.1	100		
3.1	3.0	6.8	6.8	3.6	3.3	100		Meat.
3.2	3.1	6.7	6.7	3.7	3.3	100		
3.1	3.1	6.6	6.7	3.5	3.2	100		
3.0	3.0	6.5	6.5	3.5	3.2	100		
3.1	3.1	6.7	6.7	3.6	3.2	100		
7.3	9.3	32.9	34.1	0.3	0.2	100		Colonial produce and hops.
6.7	8.6	31.3	32.6	0.3	0.2	100		
5.7	7.2	27.4	28.7	0.3	0.2	100		
6.9	8.8	32.7	33.9	0.3	0.2	100		
6.8	8.7	30.8	32.3	0.3	0.2	100		
2.8	2.8	36.8	36.8	0.1	0.1	100		Tobacco.
3.0	3.0	39.9	39.9	0.1	0.1	100		
3.5	3.5	39.3	39.3	0.1	0.1	100		
2.8	2.8	41.1	41.1	0.1	0.1	100		
2.3	2.3	38.5	38.5	—	—	100		
12.2	11.6	42.8	41.2	1.0	0.8	100		Vegetables-oil materials.
11.9	11.4	43.2	41.2	1.0	0.9	100		
10.2	9.8	43.2	41.7	0.9	0.8	100		
11.9	11.5	46.7	44.8	1.1	0.9	100		
12.2	11.8	42.0	40.3	1.1	0.9	100		
6.1	6.1	29.7	30.5	8.7	7.7	100		Textiles.
5.7	5.8	28.4	28.9	9.1	8.1	100		
5.6	5.6	31.5	32.7	9.4	8.5	100		
6.0	6.1	30.1	31.2	9.4	8.5	100		
6.2	6.2	29.5	30.6	8.8	7.9	100		
1.0	1.0	93.6	93.6	—	—	100		Rubber.
1.2	1.2	94.2	94.2	—	—	100		
1.1	1.1	94.0	94.0	—	—	100		
0.9	0.9	95.3	95.3	—	—	100		
0.7	0.7	96.6	96.6	—	—	100		

Annex IV (*concluded*).

PERCENTAGE DISTRIBUTION OF AGGREGATE PRODUCTION OF FOODSTUFFS AND *(a)* 1925 VALUES;

World Totals = 100.

Groups of Products	Years	Europe				North America		Latin America	
		Excluding U.S.S.R.		Including U.S.S.R.					
		(a)	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*
Wood-pulp	1925	48.0	48.2	48.5	48.8	48.0	47.8	0.3	0.3
	1926	46.6	46.9	47.5	47.8	48.7	48.5	0.3	0.3
	1927	49.1	49.4	50.2	50.5	45.9	45.6	0.3	0.3
	1928	48.9	49.1	50.0	50.2	46.0	45.8	0.3	0.3
	1929	50.1	50.4	51.7	52.0	44.4	44.1	0.3	0.3
Cement	1925	40.4	40.4	41.6	41.6	50.7	50.7	.	.
	1926	40.9	40.9	43.0	43.0	48.5	48.5	.	.
	1927	41.9	41.9	44.3	44.3	47.1	47.1	.	.
	1928	43.4	43.4	46.1	46.1	45.6	45.6	.	.
	1929	44.1	44.1	47.3	47.3	44.0	44.0	.	.
Fuels	1925	33.7	34.6	36.0	36.8	50.9	50.3	4.5	4.2
	1926	28.5	29.3	31.5	32.3	55.3	54.8	4.4	4.1
	1927	33.6	34.6	37.0	37.9	50.2	49.5	4.2	3.9
	1928	33.3	34.3	37.0	38.0	49.2	48.6	5.2	4.8
	1929	33.3	34.4	37.3	38.3	49.3	48.6	5.5	5.0
Metals	1925	39.1	38.6	40.6	40.2	49.7	50.4	3.3	3.4
	1926	36.6	36.2	39.0	38.6	51.2	51.9	3.5	3.5
	1927	42.5	42.1	45.4	45.0	44.7	45.3	3.5	3.6
	1928	40.4	39.8	43.3	42.8	46.6	47.2	3.6	3.8
	1929	40.1	39.5	43.3	42.8	46.7	47.4	3.6	3.7
Chemicals (fertilisers)	1925	58.0	59.1	58.1	59.2	15.2	16.9	19.6	16.0
	1926	59.4	59.7	59.7	60.0	16.9	18.7	15.8	12.8
	1927	63.3	63.0	63.6	63.2	16.1	17.8	12.2	9.8
	1928	57.3	57.3	57.6	58.3	15.4	17.2	19.6	16.1
	1929	58.7	59.1	59.1	59.5	15.2	17.1	18.5	15.3
Total Production	1925	27.2	28.6	36.4	38.0	30.7	31.5	8.5	7.9
	1926	25.5	26.7	35.2	37.0	31.5	32.2	8.7	8.1
	1927	27.7	29.1	37.0	38.8	29.8	30.5	8.8	8.2
	1928	27.6	28.9	36.7	38.4	30.4	31.0	8.7	8.2
	1929	29.3	30.7	38.3	40.2	29.2	29.9	8.2	7.7
Foodstuffs	1925	27.3	29.0	40.2	41.9	25.2	25.8	10.5	9.6
	1926	26.0	27.4	39.8	41.6	25.0	25.5	10.9	10.0
	1927	26.6	28.1	39.5	41.5	25.3	25.7	11.3	10.3
	1928	27.3	28.7	39.7	41.7	25.8	26.2	10.9	9.9
	1929	29.5	31.0	42.1	44.2	23.4	23.8	10.4	9.5
Raw materials	1925	27.0	28.0	30.6	31.5	39.0	40.7	5.5	5.2
	1926	24.7	25.7	28.6	29.6	41.0	42.8	5.3	5.1
	1927	29.4	30.6	33.4	34.6	36.3	37.8	5.2	5.1
	1928	28.2	29.2	32.4	33.4	36.9	38.5	5.6	5.5
	1929	29.1	30.3	33.4	34.6	36.9	38.6	5.3	5.3

Annex IV *(concluded).*

RAW MATERIALS, BY CONTINENTAL GROUPS, WEIGHTED BY :
(b) 1929 VALUES.

World Totals = 100.

Africa		Asia		Oceania		World		Groups of Products
(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	
—	—	3.2	3.1	—	—	100		Wood-pulp.
—	—	3.5	3.4	—	—	100		
—	—	3.6	3.6	—	—	100		
—	—	3.7	3.7	—	—	100		
—	—	3.6	3.6	—	—	100		
.	.	6.5	6.5	1.2	1.2	100		Cement.
.	.	7.3	7.3	1.2	1.2	100		
.	.	7.3	7.3	1.3	1.3	100		
.	.	6.9	6.9	1.4	1.4	100		
.	.	7.4	7.4	1.3	1.3	100		
0.8	0.8	6.9	7.0	0.9	0.9	100		Fuels.
0.9	0.9	7.0	7.0	0.9	0.9	100		
0.8	0.8	7.0	7.0	0.8	0.9	100		
0.8	0.8	7.0	7.0	0.8	0.8	100		
0.7	0.8	6.6	6.6	0.6	0.7	100		
0.6	0.7	4.5	4.2	1.3	1.1	100		Metals.
0.5	0.6	4.6	4.3	1.2	1.1	100		
0.6	0.7	4.6	4.3	1.2	1.1	100		
0.6	0.8	4.8	4.4	1.1	1.0	100		
0.7	0.8	4.7	4.4	1.0	0.9	100		
2.1	2.6	3.1	3.1	1.9	2.2	100		Chemicals (fertilisers).
2.3	2.8	3.5	3.6	1.8	2.1	100		
2.6	3.3	3.6	3.7	1.9	2.2	100		
2.1	2.6	3.6	3.7	1.7	2.1	100		
2.1	2.6	3.4	3.4	1.7	2.1	100		
2.9	2.9	19.1	17.7	2.4	2.0	100		*Total Production.*
2.9	2.8	19.1	17.7	2.6	2.2	100		
2.9	2.8	19.1	17.6	2.4	2.1	100		
2.9	2.8	18.8	17.4	2.5	2.2	100		
3.0	3.0	18.9	17.2	2.4	2.0	100		
2,8	2.7	19.4	18.3	1.9	1.7	100		Foodstuffs.
2.8	2.7	19.3	18.3	2.2	1.9	100		
2.9	2.9	19.0	17.9	2.0	1.7	100		
2.8	2.8	18.6	17.5	2.2	1.9	100		
3.1	3.0	19.0	17.8	2.0	1.7	100		
3.1	3.1	18.7	16.9	3.1	2.6	100		Raw materials.
3.0	3.0	18.8	16.8	3.3	2.7	100		
2.8	2.7	19.2	17.2	3.1	2.6	100		
3.0	2.9	19.0	17.1	3.1	2.6	100		
3.0	2.9	18.6	16.3	2.8	2.3	100		

Annex V.

Percentage Distribution of Aggregate Production of Foodstuffs

(a) 1925 Values;

Total of Each Continent = 100.

Groups of Products	Years	Europe				North America		Latin America	
		Excluding U.S.S.R.		Including U.S.S.R.					
		(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)
Cereals	1925	32.2	30.3	38.0	36.1	31.6	31.1	21.1	22.1
	1926	31.2	29.8	38.3	36.6	30.0	29.2	21.5	22.1
	1927	27.3	25.9	33.7	32.2	32.3	31.5	21.9	22.4
	1928	28.3	26.9	33.8	32.2	32.9	32.0	23.0	23.4
	1929	29.0	27.7	34.2	32.7	28.1	27.6	18.2	18.9
Food crops other than cereals	1925	9.5	11.6	9.1	11.4	1.1	1.2	15.8	9.2
	1926	8.6	10.5	8.5	10.6	1.1	1.3	14.8	8.8
	1927	9.1	11.3	8.9	11.2	1.3	1.5	13.6	8.1
	1928	8.9	11.0	8.9	11.1	1.3	1.5	14.8	8.9
	1929	9.1	11.3	9.0	11.4	1.2	1.3	14.9	9.0
Meat	1925	18.6	20.5	19.3	20.7	16.6	18.4	27.3	33.6
	1926	20.6	22.2	20.1	21.6	16.1	17.9	27.2	33.3
	1927	19.9	21.3	20.0	21.5	16.3	18.2	25.7	31.4
	1928	20.7	22.3	20.9	22.4	15.8	17.5	24.8	30.6
	1929	18.6	19.9	18.8	20.2	15.9	17.6	26.0	31.7
Colonial produce and hops	1925	0.2	0.1	0.2	0.1	0.1	—	10.4	10.0
	1926	0.2	0.1	0.2	0.1	0.1	—	11.6	11.0
	1927	0.2	0.1	0.2	0.1	0.1	—	14.7	13.9
	1928	0.2	0.1	0.2	0.1	0.1	—	10.9	10.5
	1929	0.3	0.1	0.2	0.1	0.1	—	12.6	12.0
Tobacco	1925	0.5	0.7	0.6	1.0	1.0	1.7	1.0	1.7
	1926	0.5	0.8	0.6	1.0	0.9	1.5	0.9	1.7
	1927	0.4	0.7	0.5	0.8	0.9	1.5	1.1	2.0
	1928	0.4	0.6	0.5	0.7	1.0	1.6	1.1	2.0
	1929	0.5	0.7	0.5	0.8	1.1	1.7	1.5	2.6
Vegetable-oil materials	1925	1.5	1.4	1.6	1.6	1.6	1.8	3.7	4.2
	1926	1.4	1.3	1.4	1.4	1.7	1.9	3.8	4.3
	1927	2.2	2.1	2.1	2.0	1.4	1.6	3.7	4.2
	1928	1.3	1.2	1.4	1.4	1.4	1.5	3.5	3.9
	1929	2.2	2.1	2.1	2.1	1.4	1.6	2.6	2.9
Textiles	1925	4.8	3.5	5.7	4.2	10.8	9.4	8.0	6.9
	1926	5.3	3.8	5.9	4.3	11.6	10.2	8.1	6.9
	1927	5.2	3.7	5.8	4.2	9.1	8.0	7.3	6.2
	1928	5.5	3.8	6.1	4.4	9.7	8.4	7.6	6.5
	1929	5.4	3.8	6.1	4.4	10.4	8.9	8.0	6.8
Rubber	1925	—	—	—	—	—	—	0.8	0.3
	1926	—	—	—	—	—	—	0.7	0.3
	1927	—	—	—	—	—	—	0.8	0.3
	1928	—	—	—	—	—	—	0.6	0.2
	1929	—	—	—	—	—	—	0.6	0.2

Annex V.

AND RAW MATERIALS BY GROUPS OF PRODUCTS WEIGHTED BY :

(b) 1929 VALUES.

Total of Each Continent = 100.

Africa		Asia		Oceania		World		Groups of Products
(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	
25.1	24.7	9.0	8.9	14.9	15.4	28.2	27.9	Cereals.
25.0	24.8	8.9	8.9	18.6	19.2	27.7	27.4	
25.7	25.4	8.8	8.8	15.1	15.6	26.8	26.5	
25.6	25.5	7.5	7.5	17.7	18.3	27.0	26.6	
26.8	26.5	8.0	8.2	15.3	15.9	25.5	25.4	
10.8	9.6	43.3	44.7	8.8	5.6	13.8	13.7	Food crops other than cereals
10.1	8.9	42.5	44.1	7.4	4.7	13.2	13.2	
12.3	11.1	41.2	42.7	8.9	5.8	13.3	13.4	
10.3	8.8	42.1	43.6	8.4	5.3	13.4	13.4	
9.8	8.5	40.6	42.4	8.9	5.8	13.2	13.3	
17.6	20.0	5.9	7.3	24.6	30.3	16.7	18.8	Meat.
18.4	20.9	5.8	7.2	23.5	28.6	16.8	19.0	
18.2	20.6	5.8	7.2	24.2	29.4	16.7	18.9	
17.4	19.8	5.8	7.1	23.3	28.4	16.8	18.9	
16.7	19.0	5.7	7.1	24.4	29.6	16.2	18.2	
4.0	4.8	2.8	2.8	0.2	0.2	1.6	1.5	Colonial produce and hops
4.1	4.9	2.9	2.9	0.2	0.2	1.8	1.6	
4.0	4.7	3.0	3.1	0.2	0.2	2.1	1.9	
4.1	4.9	3.0	3.1	0.2	0.2	1.7	1.6	
4.2	4.9	3.0	3.1	0.2	0.2	1.8	1.7	
1.0	1.7	2.0	3.5	—	—	1.0	1.7	Tobacco.
1.1	1.8	2.2	3.9	—	—	1.0	1.7	
1.2	2.1	2.0	3.7	—	—	1.0	1.6	
1.0	1.6	2.2	3.9	—	—	1.0	1.7	
0.8	1.3	2.1	3.9	—	—	1.1	1.7	
13.0	13.0	7.0	7.5	1.3	1.3	3.1	3.2	Vegetable-oil materials.
12.7	12.7	7.0	7.4	1.2	1.2	3.1	3.2	
11.8	11.8	7.5	8.0	1.3	1.3	3.3	3.4	
12.7	12.7	7.7	8.1	1.4	1.4	3.1	3.1	
12.9	13.0	7.2	7.6	1.4	1.5	3.2	3.3	
22.5	19.5	17.0	15.8	39.7	34.8	10.9	9.2	Textiles.
22.3	19.2	16.8	15.5	39.5	34.8	11.3	9.5	
20.3	17.2	17.0	15.9	39.9	35.2	10.3	8.6	
22.3	19.2	17.3	16.1	39.7	35.3	10.8	8.9	
22.1	19.0	17.0	15.9	40.2	35.6	10.8	9.0	
0.4	0.2	6.2	2.4	—	—	1.3	0.5	Rubber.
0.6	0.2	6.8	2.7	—	—	1.4	0.5	
0.6	0.2	7.2	2.8	—	—	1.5	0.5	
0.4	0.2	6.8	2.7	—	—	1.3	0.5	
0.4	0.1	8.7	3.5	—	—	1.7	0.6	

Annex V *(concluded).*

PERCENTAGE DISTRIBUTION OF AGGREGATE PRODUCTION OF FOODSTUFFS AND RAW MATE-

Total of Each Continent = 100.

Groups of Products	Years	Europe				North America		Latin America	
		Excluding U.S.S.R.		Including U.S.S.R.					
		(*a*)	(*b*)	(*a*)	(*b*)	(*a*)	(*b*)	(*a*)	(*b*)
Wood-pulp	1925	1.6	1.6	1.2	1.2	1.4	1.4	—	—
	1926	1.8	1.8	1.3	1.3	1.5	1.5	—	—
	1927	1.8	1.7	1.3	1.3	1.5	1.5	—	—
	1928	1.7	1.7	1.3	1.3	1.5	1.5	—	—
	1929	1.8	1.8	1.4	1.4	1.6	1.6	—	—
Cement	1925	1.4	1.4	1.1	1.0	1.6	1.5	—	—
	1926	1.6	1.5	1.2	1.2	1.5	1.5	—	—
	1927	1.6	1.6	1.3	1.2	1.7	1.6	—	—
	1928	1.6	1.6	1.3	1.3	1.6	1.6	—	—
	1929	1.6	1.6	1.4	1.3	1.6	1.6	—	—
Fuels	1925	13.2	11.8	10.5	9.4	17.7	15.6	5.6	5.1
	1926	11.8	10.6	9.5	8.5	18.5	16.5	5.4	4.9
	1927	13.6	12.2	11.3	10.1	18.9	16.7	5.4	4.9
	1928	13.0	11.7	10.9	9.8	17.5	15.5	6.4	5.8
	1929	13.0	11.6	11.1	9.9	19.3	17.0	7.6	6.8
Metals	1925	14.2	14.6	11.0	11.4	16.0	17.3	3.8	4.5
	1926	14.5	14.9	11.2	11.5	16.4	17.8	4.1	4.8
	1927	16.2	16.8	13.0	13.4	15.9	17.2	4.3	5.1
	1928	15.8	16.4	12.8	13.2	16.6	18.1	4.5	5.5
	1929	15.9	16.5	13.2	13.6	18.6	20.3	5.0	6.2
Chemicals (fertilisers)	1925	2.3	2.5	1.7	1.9	0.5	0.6	2.5	2.4
	1926	2.5	2.7	1.8	1.9	0.6	0.7	1.9	1.9
	1927	2.5	2.6	1.9	2.0	0.6	0.7	1.5	1.5
	1928	2.6	2.7	1.9	2.1	0.6	0.8	2.8	2.7
	1929	2.6	2.8	2.0	2.1	0.7	0.8	3.0	2.9
Total Production	1925-1929	100	100	100	100	100	100	100	100
Foodstuffs	1925	60.5	62.6	66.5	68.3	49.4	50.7	74.6	74.8
	1926	60.7	62.6	67.1	68.9	47.2	48.5	75.0	75.3
	1927	56.5	58.6	62.8	64.9	50.0	51.2	75.8	75.8
	1928	58.1	60.2	63.7	65.8	50.1	51.1	73.5	73.3
	1929	57.0	59.1	62.2	64.4	45.3	46.5	71.8	71.6
Raw materials	1925	39.5	37.4	33.5	31.7	50.6	49.3	25.4	25.2
	1926	39.3	37.4	32.9	31.1	52.8	51.5	25.0	24.7
	1927	43.5	41.4	37.2	35.1	50.0	48.8	24.2	24.2
	1928	41.9	39.8	36.3	34.2	49.9	48.9	26.5	26.7
	1929	43.0	40.9	37.8	35.6	54.7	53.5	28.2	28.4

Annex V *(concluded)*

RIALS, BY GROUPS OF PRODUCTS WEIGHTED BY : *(a)* 1925 VALUES; *(b)* 1929 VALUES.

Total of Each Continent = 100.

Africa		Asia		Oceania		World		Groups of Products
(a)	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*	*(a)*	*(b)*	
—	—	0.1	0.2	—	—	0.8	0.9	Wood-pulp
—	—	0.2	0.2	—	—	0.9	1.0	
—	—	0.2	0.2	—	—	0.9	1.0	
—	—	0.2	0.2	—	—	0.9	1.0	
—	—	0.2	0.2	—	—	1.0	1.1	
—	—	0.3	0.3	0.5	0.6	0.9	0.9	Cement
—	—	0.4	0.4	0.5	0.6	1.0	1.0	
—	—	0.4	0.4	0.5	0.7	1.1	1.1	
—	—	0.4	0.4	0.6	0.7	1.1	1.1	
—	—	0.4	0.5	0.6	0.7	1.1	1.1	
2.9	2.7	3.9	3.8	4.0	4.5	10.7	9.7	Fuels
3.1	2.9	3.9	3.9	3.6	4.0	10.6	9.7	
2.9	2.8	4.1	4.1	3.8	4.3	11.3	10.3	
2.9	2.8	4.1	4.0	3.2	3.6	10.8	9.9	
2.8	2.7	4.0	4.0	3.0	3.4	11.4	10.4	
1.9	2.7	2.3	2.6	5.2	6.0	9.9	10.8	Metals
1.8	2.5	2.4	2.7	4.7	5.5	10.1	11.0	
2.0	2.7	2.6	2.8	5.3	6.2	10.6	11.6	
2.4	3.3	2.7	3.0	4.7	5.5	10.9	11.9	
2.6	3.7	2.9	3.3	5.0	5.8	11.7	12.8	
0.8	1.1	0.2	0.2	0.8	1.3	1.1	1.2	Chemicals (fertilisers)
0.8	1.2	0.2	0.2	0.8	1.2	1.1	1.2	
1.0	1.4	0.2	0.3	0.8	1.3	1.1	1.2	
0.9	1.2	0.2	0.3	0.8	1.3	1.2	1.4	
0.9	1.3	0.2	0.3	1.0	1.5	1.3	1.4	
100	100	100	100	100	100	100	100	*Total Production*
57.6	59.1	61.0	63.7	48.5	51.5	60.2	61.9	Foodstuffs
57.6	59.4	60.1	63.1	49.7	52.7	59.5	61.2	
60.3	61.9	58.8	61.7	48.3	51.0	58.9	60.7	
57.5	58.9	58.4	61.2	49.5	52.2	58.9	60.5	
57.4	58.9	57.3	60.8	48.9	51.5	56.7	58.6	
42.4	40.9	39.0	36.3	51.5	48.5	39.8	38.1	Raw materials
42.4	40.6	39.9	36.9	50.3	47·3	40.5	38.8	
39.7	38.1	41.2	38.3	51.7	49.0	41.1	39.3	
42.5	41.1	41.6	38.8	50.5	47.8	41.1	39.5	
42.6	41.1	42.7	39.2	51.1	48.5	43.3	41.4	

Annex VI.

National Indices of Industrial Production.

1925 = 100.

Country	Canada (a)	United States (a)	Germany	France (b)	Poland (c)	United Kingdom		Sweden	U.S.S.R.	
Source	Monthly Review of Business Statistics	Federal Reserve Board	Institut für Konjunkturforschung	Statistique générale	Institut de recherches sur le mouvement des affaires	Board of Trade (d)	London and Cambridge Economic Service	Svensk Finanstidning	Institut de Conjoncture	State Bank (d)
Original base	1919–24	1923–25	1928	1913	1925–27	1924	1924	1923–24	1923-24	1928
1925 (average)	100	100	100	100	100	.	100	100	100	.
1926 ,,	117	104	95	116	98	.	77	103	139	.
1927 ,,	125	102	120	102	123	(107)	111	108	164	(e) (80)
1928 ,,	138	107	120	119	138	(106)	105	104	198	(100)
1929 ,,	154	114	122	130	138	(112)	113	127	(f) 223	(124)
1930 ,,	131	93	101	131	113	(103)	101	124	.	(153)
1925 I	94	101	100	103	104			107	85	.
II ...	94	101	103	102	97	.	105	106	88	.
III ..	93	100	104	101	103			86	92	.
IV ...	92	99	104	100	103			112	88	.
V	93	99	104	99	105	.	101	94	89	.
VI ...	100	98	103	98	106			102	96	.
VII ..	96	99	100	98	100			100	88	.
VIII .	100	99	98	99	98	.	92	96	97	.
IX ...	100	97	99	100	99			103	117	.
X	111	100	97	104	98			95	124	.
XI ...	118	103	98	108	96	.	102	93	115	.
XII ..	109	105	91	110	90			96	124	.
1926 I	111	103	86	110	79			99	122	.
II ...	115	102	87	114	81	.	105	96	129	.
III ..	111	103	87	115	84			108	136	.
IV ...	120	103	87	117	87			110	140	.
V	121	102	90	118	88	.	74	97	122	.
VI ...	123	104	93	118	94			112	135	.
VII ..	118	103	91	119	99			101	121	.
VIII .	112	106	96	120	105	.	59	96	135	.
IX ...	113	107	100	120	111			105	151	.
X	128	107	103	121	115			96	153	.
XI ...	125	105	109	121	121	.	71	99	157	.
XII ..	106	102	109	116	117			106	163	.
1927 I	121	102	110	110	113			104	153	(e) (77)
II ...	118	104	111	107	115		114	103	160	(78)
III ...	138	107	115	102	112			118	169	(82)
IV ...	126	104	119	97	(c) 117			113	158	(77)
V	131	107	124	97	119		111	108	161	(80)
VI ...	130	104	122	98	119			102	150	(72)
VII ..	121	102	122	98	123	(107)		99	131	(64)
VIII .	126	102	123	100	123			102	157	(76)
IX ...	118	101	125	101	126		109	110	176	(88)
X	121	99	125	103	127			104	183	(88)
XI ...	121	96	127	106	128		110	113	179	(88)
XII ..	129	97	120	107	130			113	192	(95)

(a) Adjusted for seasonal variations.
(b) Partly adjusted for seasonal variations.
(c) Adjusted for seasonal variations since April 1927.
(d) Original base has not been changed as figures for 1925 are not available.
(e) 1927 : excluding coke.
(f) Average for January-August 1929 ; the index of the Institut de Conjoncture has been discontinued since August 1929.

Annex VI (*concluded*).

National Indices of Industrial Production.

1925 = 100.

Country		Canada (*a*)	United States (*a*)	Germany	France (*b*)	Poland (*c*)	United Kingdom		Sweden	U.S.S.R.	
Source		Monthly Review of Business Statistics	Federal Reserve Board	Institut für Konjunkturforschung	Statistique générale	Institut de recherches sur le mouvement des affaires	Board of Trade (*d*)	London and Cambridge Economic Service	Svensk Finanstidning	Institut de Conjoncture	State Bank (*d*)
Original base		1919–24	1923–25	1928	1913	1925–27	1924	1924	1923–24	1923-24	1928
1928	I	128	102	119	109	132			78	196	(98)
	II ...	133	104	123	111	135	(109)	108	66	192	(96)
	III ...	135	105	126	114	136			71	207	(104)
	IV ...	129	105	126	116	136			99	178	(92)
	V	150	105	124	119	135	(104)	106	110	193	(100)
	VI ...	141	105	124	121	137			115	185	(93)
	VII ..	138	105	125	121	137			99	172	(83)
	VIII .	145	107	123	121	139	(100)	98	106	200	(97)
	IX ...	137	110	123	121	140			112	208	(107)
	X	150	112	118	122	140			118	221	(112)
	XI ...	141	112	102	123	145	(108)	108	125	207	(107)
	XII ..	132	113	110	125	146			121	219	(113)
1929	I	167	113	114	128	146			140	224	(117)
	II ...	163	113	109	127	136	(111)	111	126	214	(110)
	III ..	160	114	119	129	139			127	229	(118)
	IV ...	158	117	130	130	143			138	240	(127)
	V	160	119	131	130	138	(112)	114	123	201	(107)
	VI ...	152	121	132	132	136			122	222	(113)
	VII ..	154	119	126	130	135			122	219	(110)
	VIII .	155	118	124	130	135	(111)	111	125	233	(122)
	IX ...	140	117	122	129	138			124	.	(133)
	X ...	158	113	122	132	139			126	.	(142)
	XI ...	157	104	122	134	134	(114)	118	129	.	(141)
	XII ..	129	97	115	135	134			123	.	(150)
1930	I	150	100	114	135	125			142	.	(146)
	II ...	132	103	111	134	116	(111)	112	136	.	(144)
	III ..	134	100	111	135	110			141	.	(163)
	IV ...	136	103	114	135	110			141	.	(155)
	V	149	100	108	135	111	(103)	103	132	.	(140)
	VI ...	135	96	100	135	110			116	.	(134)
	VII ..	132	91	97	132	111			123	.	(124)
	VIII .	125	88	96	130	113	(99)	93	113	.	(132)
	IX ...	124	88	94	128	116			120	.	(158)
	X	125	84	93	127	117			119	.	(173)
	XI ...	124	82	91	126	113	(99)	95	113	.	(172)
	XII ..	110	79	88	125	109			113	.	(193)

(*a*) Adjusted for seasonal variations.
(*b*) Partly adjusted for seasonal variations.
(*c*) Adjusted for seasonal variations since April 1927.
(*d*) Original base has not been changed, as figures for 1925 are not available.

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