

**SOME CAUSES AND CONSEQUENCES OF
DISTRIBUTIVE WASTE.**

By JOSEPH JOHNSTON, M.A.,

Fellow and Tutor of Trinity College, Dublin; Rockefeller
Fellow for Economic Research in Europe (1926-1927);
Chairman, I. L. O. Committee, League of Nations
Society of Ireland.

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The distinction between Effective Demand and Ineffective Demand is one of the commonplaces of Economics. An analogous distinction between Effective Supply and Ineffective Supply ought to be recognised. Ineffective Supply may be defined as that portion of a total supply which for one reason or other fails to be marketed at one or other of the various stages of distribution. The importance of this conception is very great with regard to the perishable and semi-perishable products of agriculture, and even with regard to such durable commodities as wheat, the "orderly marketing" of which involves an operation of credit, not always available so far as the farmer is concerned.

Owing to the inadequacy of agricultural credit, and owing to the haphazard and chaotic arrangements for the commercial disposal of agricultural produce, a large proportion of the annual output of agriculture is frequently wasted. The more perishable the crop and the more bountiful the harvest, the greater the proportion of waste or ineffective supply. The chief economic consequence of a bountiful harvest to the farmer is frequently that prices in the primary markets are depressed below the cost of production, and portion of the crop is allowed

to rot in the ground, as in the case of the British potato crop of 1922. On the other hand, the necessary costs of handling and transport, the accustomed profit margins of intermediaries, and the conservative price policies of retailers prevent consumers from gaining any great advantage from the bounty of nature. The total supply having a physical existence determines prices in the primary markets. The price policy of retailers, and the profits policy of other intermediaries, are the main causes which determine what proportion of this total physical supply shall be effective in the strictly economic sense. Of course the extent to which a reduction in retail price would be rewarded by an increase in consumption is not the same for different commodities since it depends on the elasticity of demand.

The commercial arrangements for the distribution of agricultural production are in most countries unsatisfactory from the point of view of both the producer and the consumer. As regards British conditions, these arrangements have been investigated by a Committee known as the Linlithgow Committee, and the results are embodied in a series of able reports. The British Ministry of Agriculture attaches so much importance to agricultural marketing problems that it has commissioned independent investigators to report on certain of these problems not only in Great Britain but in America. A number of reports have already been published. The investigation of agricultural marketing is included in the terms of reference of a League of Nations Committee now functioning.

In all countries whose currencies have successfully passed through the post-war inflationary crisis there has been a fall in the index numbers of wholesale prices and of the prices of agricultural produce, but the fall in the index numbers of retail prices and of the cost of living has been less considerable. In other words, the "spread" between producers' prices, especially those of agricultural producers, and consumers' prices has widened. In many countries this phenomenon has been accompanied by a high degree of unemployment, which in Great Britain threatens to become chronic. Professor Irving Fisher, in a recent number of the *International Labour Review*, has shown that there is a statistical correlation between the rate of change of the wholesale price level and the incidence of unemployment. The present writer has attempted to discover whether there is any similar correlation between unemployment and variations in the margin that separates the index numbers of wholesale prices and those of the cost of living in the case of certain countries.

However that may be, it is easy to show by *a priori* reasoning that the destruction of agricultural produce,* which is the incidental result of an inefficient system of distribution and of a high retail price policy, must react unfavourably on industrial production and tend to produce unemployment in the towns.

In terms of barter what farmers produce constitutes the demand for what the towns have to sell. If a large proportion of their production is wasted on its way to consumption their demand is diminished *pro tanto*, and what the towns can afford to give in exchange is limited accordingly. If by improving the system of distribution the farming community obtained a greater monetary return for their produce, and a larger proportion of it reached consumption, farmers as a class could buy more industrial products, and urban producers, sustained by the consumption of wealth which was formerly wasted, would produce a larger volume of industrial products in answer to this demand. One of the members of the Linlithgow Committee has calculated, that by the elimination of unnecessary services and the diminution of surplus profits in the distribution of the British milk supply, producers' receipts would be increased by £5,000,000 per annum. This money in its turn would constitute a demand for other goods, with the result that the production and consumption of useful goods and services would increase *pari passu* in both the country and the town. Thus a wasteful distributive system, besides depressing the economic condition of agriculturists, is a handicap to industrial development.

The farm production of potatoes in Great Britain was 5,203,000 tons in 1922, whereas the average for the years 1921-1924 was 4,080,000. The growers' price in Wisbech Market in January, 1923, was 40/- per ton. The monthly average retail price in the same month and year was £6 13s. 4d. In January, 1922, the corresponding figures had been 120/- per ton and £10 13s. 4d., respectively.† The growers' price fell disastrously; the retail price indicated a fall of much smaller dimensions.

It is in the interest of the farmer in such a case that retail prices should be lowered and consumption stimulated to the utmost degree, so that even if he must accept a lower unit price he may be compensated by the sale and consumption of a larger amount.

*It is estimated that the wastage in the case of perishable produce between farmer and consumer amounts to 40 per cent. in America. BOYLE: *Marketing of Agricultural Products*, p. 158.

†Report on the Marketing of Potatoes in England and Wales, p. 100, Economic Series No. 9 (British Ministry of Agriculture).

It is suggested above that distributive waste may possibly be a cause of business depression. The causes of the latter are manifold, and there is no intention of denying the efficacy of those not analysed in the course of this paper.

A good deal has been written about the importance of monetary factors in this connection, and there is indeed a certain justification for a close examination, in the first instance, of possible monetary causes, because money permeates the body economic as the nervous system does the human body. Moreover, money in its international activities readily overleaps the walls within which national economic egoism would seek to protect itself. Business depressions are notoriously international in their consequences, and there is a natural tendency to attribute a high degree of causality to something which is so international as money.

Yet monetary causes ought not to be considered *in vacuo*. The relationship between the monetary system and the distributive system of economically civilised countries is as close as that between the nerves and the digestive organs in the human body. Digestive disorders produce nervous symptoms, and nervous disorders have their reactions on the functioning of the digestive system. When confronted with a complicated case of this description the wise physician considers first the possibility that digestive troubles are the main cause of the illness. To say that the trouble is "all nerves" without first eliminating all other possible causes would be very bad therapeutics. To concentrate attention on possible monetary causes would in the parallel case be equally doubtful economics. In the end the economist may be driven back on a monetary explanation, but complete scientific proof of such an explanation will only be possible when every other diagnosis that theory and observation would suggest has been made, and the appropriate remedies applied.

It has often been pointed out that the production of important articles of food, *e.g.*, wheat, and of important raw materials of industry, *e.g.*, cotton and rubber, is catastrophic in character. The continuity of human need, as it manifests itself in a relatively uniform rate of consumption, is an obvious aspect of the difficulty of adjusting the rate of consumption to the rate of production.

In the language of economics the term "distribution" has a very special sense. What is ordinarily called the "Distributive System" is in economics treated as part of the "Productive System." It is convenient for our special purpose to use the terms "Distribution" and "Distributive System" in the

ordinary sense of those terms, and not in the technical economic sense, and similarly with regard to the terms Producer and Distributor.

From the social point of view the function of distribution is to adjust inequalities of supply to a demand which is more or less uniform and continuous. In free competitive conditions the sole mechanism which is available for contracting or expanding economic demand to correspond with available supplies is the machinery of price fixing. The adjustment between supply and demand may be made in either of two ways: (1) by fixing a price which causes the whole of a given supply to be ultimately consumed, economic demand being at that precise point exhausted, or (2) by fixing a price which equates indeed Effective Supply and Effective Demand, but arrives at that result by making ineffective a certain proportion of the supply physically available, because at the price fixed there is no effective demand for that particular portion of the supply. From the point of view of the individual distributor it makes no difference which procedure is followed so long as a maximum total profit is realised. From the social point of view, and that of the general economic interest, it makes a profound difference.

From an examination of the facts, not confined to any one country, the present writer is convinced that, owing to a variety of causes, the second method of procedure is followed to a very considerable extent. The wastefulness of the distributive system varies from year to year, being most wasteful in years when nature is most bountiful. Considerations of theory suggest that the incidental economic consequences of distributive waste are likely in their turn to become causes of business depression and unemployment. Such statistics as it has been possible to acquire are on the whole consistent with this theory, except in years of rapidly changing wholesale price levels.

Potatoes allowed to rot in the ground and wheat which is used to fire boilers are ineffective portions of the total supply of potatoes and wheat in the sense that they are not marketed. The existence of such an unmarketable surplus is effective enough in lowering the price in primary markets to a level which fails to cover the costs of production of producers, and sometimes causes widespread financial disaster among them.

Even in the case of manufacturing industries there is frequently a lengthy chain of agents, wholesalers and the like, between the producer and the ultimate consumer. The initial processes of distribution in the case of agriculture generally involve a kind of inverted retail trade. Agricultural products

are marketed in small quantities and must be collected before they can be distributed. The Linlithgow Report shows that such simple things as lettuces and strawberries frequently require the services of half a dozen distributors, at successive stages, before they reach the consumer. Quite apart from the question of high profits, every one of these successive stages is a possible source of distributive waste, which is profitable to no one—the waste which is incidental to making the adjustment of supply and demand by the anti-social procedure referred to above.

It follows from this that not only is that portion of a given supply which fails to be marketed in primary markets ineffective, but a certain proportion which is effective at one stage of distribution is ineffective at a later stage. It enters indeed the channels of distribution but fails to attain the goal of consumption. The costs of all this economic waste are ultimately reflected in unnecessarily high prices to consumers and low prices to producers, while the net profits of distributors are not in any wise enhanced by their *failure to sell portion of what they have bought*. The distributive system resembles a system of water-pipes, the joints of which are leaking, with the result that there is a lack of adjustment between the consumption of water by the users of the system and the outflow from the reservoir.

The term "production," as it is generally used in economic treatises, is ambiguous. If by production is meant only that portion of a given supply which survives the process of distribution, it is literally unthinkable that there could be any disharmony or disproportion between production and consumption. On the other hand, between production in the physical sense and consumption some degree of maladjustment is chronic and perhaps inevitable, while at different times with regard to all commodities, and at the same time with regard to different commodities, there are wide variations in the extent of this maladjustment.

The economic consequences of a wasteful distributive system are of course experienced by the whole community. The number of persons engaged in distributive activities of various kinds is formidable in itself, yet the number of those who do productive work (in the everyday sense) in agriculture and in urban industry is very much greater in the economic world as a whole than is the number of distributors. Exchange is reciprocal between the individual producer and all the rest of the economic world. If the distributive system is wasteful, the effect is to depress the purchasing power of all genuine producers, with consequent reactions on employment, production and consumption.

Owing to causes already suggested, agriculture is liable to suffer in a supreme degree from the wastefulness of the distributive system. Clearly the inefficiency of a distributive system manned by 10,000 is capable of depressing the purchasing power of 100,000 farmers, with an effect on their reciprocal demand for the products of urban industry, of which their relative superiority of number affords some indication.

It must be emphasised that this is not a question of the profits of distributors. Distributors make no profit in respect of what they buy but do not sell. If the farmers' loss were in every case the distributor's profit then the total volume of the reciprocal exchanges between all members of the community would be unaffected. The net incomes of the distributive classes would be very much higher than they are at present, and the productive activities of the world would reflect the manner in which these incomes were used, but there is no reason why general overproduction and unemployment should result from this state of affairs however inequitable.

The investigations of the Linlithgow Committee have revealed the enormous complexity of the arrangements that exist for the distribution of various kinds of agricultural produce in Great Britain. On page 11 of their final Report they express the view, that while distributive costs are a far heavier burden than society will permanently consent to bear, yet the services now rendered by different types of intermediaries are typical of those which will always be required. They consider that the present system requires reorganisation in the general interest, and that such reorganisation should tend to make it more efficient and less costly.

It also becomes clear, as a result of the researches of this Committee, that the margin of gross profit on which those who may be called pre-retail distributors work is in general a small one, that they have in consequence an interest in making the largest possible turnover, but that, on the other hand, the margin of gross profit on which retailers in general work is a larger one, a rate of 100 per cent. being nothing unusual. The present writer has found examples of a 100 per cent. rate in the retail trade in vegetables and fruit, where such a rate is quite normal, and indeed in other trades where it had no possible excuse.

Consequently a closer examination of the retail trade stage of distribution would be likely to reveal important causes of wastefulness in the distributive system as a whole.

Economists are familiar with a valuable conception known as the "friction of retail trade." The importance of this force in producing the well-known lag between retail prices and

wholesale prices, when the level of the latter is changing, is a commonplace of economic discussions. Yet, so far as the present writer is aware, no one has ever worked out what might be called a Theorem of the Friction of Retail Trade. No one appears to have studied the causes on which the friction of retail trade itself depends, and the conditions that must be fulfilled if that friction is to be reduced to a minimum, as the public interest requires.

The half-truth that water tends to find its own level will not in itself supply the whole of the theoretical knowledge required, if water is to be brought from a reservoir situated at a certain height and distributed in the most economical possible manner to a number of potential users. Similarly the dictum that "prices depend on supply and demand" is only the beginning of economic wisdom in the sphere of practical economics.

Before a single pipe is laid the engineer has to calculate the conditions that must be fulfilled, if a certain number of gallons per day are to be delivered at a certain level, the elevation of the reservoir and the capacity of the catchment area being what they are. One of the most important factors to be considered is how best friction can be minimised, for it is not true that water finds its own level. It finds a level determined by the force of gravitation less the force that friction has exercised on it in the process of distribution. The principle that must be borne in mind in this connection is that the smaller the pipe the greater the friction. For friction depends on the circumference of the pipe, which in pipes of different sizes varies directly with the length of the radius, whereas the capacity of the pipe depends on the sectional area which varies directly with the *square* of the radius. On the other hand, the cost of the materials involved would limit the advantage to be derived from using pipes of more than a certain size. Taking into account all the conditions of the case, among which the estimated requirements of consumers are a factor of primary importance, the engineer's problem is to calculate what may be called the "optimum" size of pipes in the various parts of the distributive system.

In the economic sphere the so-called distributive "system" is not the result of any systematic economic engineering, and it would be nothing short of miraculous if it represented the last word in scientific elimination of economic friction at every stage of distribution. The statistical data available are perhaps not sufficient to enable a theorem of distributive friction to be worked out, but all the available evidence tends to

show that the system which has grown up haphazard in an atmosphere of economic freedom approximates much more closely to a "pessimum" than to an "optimum" system.

The main feature of the distributive system in most countries appears to be the excessive number of retail trading businesses of all sorts, conditions and sizes—excessive, that is in relation to the requirements of the community for this kind of service. If the personnel of even the most heroic army were allowed freely to choose the kind of work each one should do, it is probable that the number of those engaged in supply and transport would be excessive, and the front line trenches sometimes inadequately manned.

Much the same kind of result appears to have taken place in many countries of European civilisation as a consequence of unregulated economic freedom. People desert the uninteresting drudgery of country life and crowd into the towns and villages, or even open shop in the country itself and attempt to make a living by means of retail trade. The overcrowding is worst in the retail stage of the distributive system, because the latter is easiest to get into and is commensurate with almost any scale of business enterprise. The process reminds one of the economics of the islanders who are said to have lived by taking in each other's washing. The consequence of all this is that prices and gross profits in the retail trade are unnecessarily high, while the net incomes of retailers, as a class, are on the whole much less than popular imagination supposes them to be. Because of the excessive numbers engaged in retail trade the average turnover is small, because the average turnover is small overhead expenses eat up a large proportion of the rate of gross profit charged, and necessitate a higher level of retail prices than would otherwise be necessary, and because retail prices are so high consumption is restricted and the proportion of goods bought but not sold is increased. The loss in respect of unsold goods, of which no statistics are available, is, according to the Linlithgow Report, a serious item, particularly in the retail trade in perishable produce. This loss makes a further inroad on the rate of gross profit. For a retailer must make a net profit of 10 per cent. on the sale of 10 articles before he compensates himself for the total loss of one article.

The ordinary processes of economic competition, and the principle of the survival of the fittest have been looked to in the past as the natural and self-acting remedies for a condition such as now exists in the retail trade of certain countries. It may be doubted whether these remedies were, even before the war, the whole of the treatment that a comprehensive diagnosis

of the malady would have suggested. Farmers do not grow turnips on the principle of the "survival of the fittest." When they have reached a certain size the unfit and the superfluous are thinned out. No doubt if they were left to themselves the fittest would survive, but they would be much less fit in consequence of the exhausting struggle they had waged with their weaker but more numerous rivals. And a great many useless specimens would also survive.

What is needed is the discovery of a kind of automatic mechanism which will promote the survival of the fittest amongst retail traders, while maintaining the conditions of free competition on a less wasteful basis than the present one.

Before the war period of easy profits had demoralised the character of large numbers among the distributive classes it is probable that competition among retail traders did aim at increasing trade for the successful by driving the less efficient out of the business, and that the policy in fixing prices had this object in view. Even then it was true that the "marginal," or least efficient, among the surviving retailers fixed the prices at which the whole of his similarly situated rivals could and did sell, and that a price level which just enabled the marginal trader to survive afforded a differential surplus of net income to the others who were more efficient.

Since the war there appears to be a greater disposition amongst retail traders to practise a policy of "live and let live." The least efficient of them charge what they must; the others charge what they can. Competition for trade indeed survives, but the lowering of prices with a view to capturing a large trade by pushing less efficient rivals beyond the "margin," appears to be incompatible with the ethics of post-war retail trade. In other words, the margin of business efficiency has been lowered.

Business efficiency is commonly regarded as altogether a matter for the business man and his staff. Important conditions of such efficiency are frequently external to the individual business. The efficiency of a particular retail business depends to a great extent on important objective factors such as its situation, and, as already suggested, on its turnover being sufficient to give full employment to premises and staff, thus lessening the burden of overhead expenses. Redundancy of shops diminishes the efficiency even of the best managed among them. Under present conditions any individual business man who adopts a policy of lowering prices in the hope of attracting a larger trade would require a large reserve of capital, since the diminution of gross profit would be immediate, and

the ultimate compensation by way of larger turnover long delayed and problematical.

The Linlithgow Report suggests that traders as a class would serve their own more permanent interests by reducing their present margins of gross profits, but it is doubtful whether they would gain any ultimate advantage from this, unless incidentally their policy reduced the members of their class, and thus increased the average turnover of the survivors. Under present conditions counsels of this description are counsels of perfection. The problem will require some more drastic solution, the nature of which will be considered presently.

The considerations outlined above would suggest that small retail businesses involve a considerable degree of distributive friction, and that the uneconomic size of the business units engaged in retail trade is therefore an important cause of distributive waste.

The available statistics with regard to the number of shops and the average size of turnover are inadequate, though the Linlithgow Report and the Report of the Royal Commission on Food Prices contain certain interesting data in this connection.

With regard to the Irish Free State an attempt was recently made to ascertain the total number of retail shops of all kinds, by counties, both in the rural areas and in the towns. A large proportion of the shops situated in small towns, villages and country districts sell tobacco, and in order to be able to do this legally it is necessary to have a tobacco retailer's licence, the cost of which is nominal. According to a return furnished by the Revenue authorities the number of tobacco licences issued in the year ending 30th September, 1924, was 29,139, while in the following twelve months' period it was 30,690. This in itself was an indication that the number of small shops was increasing. Since then the Prices Tribunal has obtained direct evidence that such is indeed the case in certain parts of the country which it visited. An attempt is now being made to obtain that evidence on a comprehensive statistical basis for every significant area in the country.

The banks were also asked to furnish, by counties, the number of their customers who practised retail trading in any degree and in any of its forms. The total given by the bank returns amounted only to 33,076. The proportion of tobacco sellers among the total number of retailers, though large, cannot be as large as these figures suggest. It appears to follow that there must be thousands of shops which are so small that they do not keep a bank account at all. It is for this reason that a more comprehensive census is necessary.

The total number of shops (including those which have no bank accounts) cannot be less than 40,000 in a country the population of which, according to the recent census, has shrunk from 3,139,688 in 1911 to 2,972,802 in 1926. That amounts, roughly, to a ratio of one shop to every 75 inhabitants.

According to the last Census of Production the net output of agriculture in all Ireland in 1908 was 45.5 millions sterling, while that of industry was 23 millions. The level of prices is now nearly twice as high, and the production of wealth may have increased to a certain extent in the interval, yet the total production of wealth in all Ireland is hardly likely to exceed two hundred millions sterling in the present year, and on a basis of relative population, the share of this that belongs to the Free State can hardly exceed £130 millions. Forty thousand shops distributing one hundred and thirty millions pounds' worth of goods would give an average turnover of just over £3,000. But as a matter of fact important portions of the national wealth do not pass over the counters of retail traders, and it is very unlikely that the average turnover exceeds £2,000. There must be numerous small shops doing a trade of £1,000 or less in which the ratio of expenses to turnover is necessarily very high. It is quite certain that the elimination of a large number of inefficient business units, whatever their size, is a first condition of cheapening the cost of distribution and ultimately bringing down retail prices.

The wastefulness of the distributive system would thus account for some portion of what is called the "spread" between producers' prices and retail prices. The difficulty of measuring this "spread" is very great, partly because retail prices vary more or less from one district to another, and even from one street to another. Such measurements as it has been possible to apply suggest that the "spread," which of course varies from one commodity to another, varies also according to the season of the year, and that in the course of the business cycle there is a significant variation from year to year in the "spread," as indicated by the difference between the index number of wholesale prices and that of the cost of living.

Since 1881 the market prices of Irish agricultural products have been observed, the quantity sold at each price estimated, and weighted average prices worked out and recorded, both by the month and by the year. The present writer has copied the prices thus shown for potatoes, eggs, creamery butter, beef, mutton and pork for every month from January, 1908, to December, 1922, for all Ireland, and from January, 1922, to May, 1926, for the Irish Free State.

It seemed desirable to establish the normal pre-war relationship of farmers' prices and retail prices in the case of those commodities, and afterwards to compare the relationship in the period of monetary inflation (1914-1920) and the subsequent period of agricultural depression.

The cost of living index number for the Irish Free State only goes back to 1922. Consequently it was considered expedient to express the farmers' price shown as a percentage of a corresponding retail price in the same month, and by doing this as far as possible for at least four separate months equally spaced throughout the year to obtain an average indicating the "spread" for that commodity in each year as a whole. The results are shown in Table I.

The Report of a Board of Trade Enquiry into the Cost of Living of the Working Classes in 1912 (Cd 6955) gave the retail price of all important articles of food in Dublin in October, 1912. The housekeeping records of a certain institution in Dublin, which has maintained a uniform standard of living since 1908, were found to correspond very closely with the prices shown in the above Report at the point of coincidence in October, 1912. By putting together records derived from these and other miscellaneous sources it was possible to establish, with unfortunately many gaps, the prevailing retail prices paid by middle-class householders between 1908 and 1922. After that year the official records of retail prices made for "cost of living" purposes were available. For the sake of uniformity in the comparison only those concerning the particular district where that institution is situated were used for the period subsequent to 1922.

In going through these records, and comparing them with farmers' prices, it was interesting to observe the wonderful stability of retail prices in the pre-war period. From January, 1909, to May, 1912, the price of rashers was 10d. a lb. in practically every month, though the corresponding price of pork to the farmer was different in every month, having been as low as 47/- a cwt. in January, 1909, and as high as 62/5 in June, 1910. Within the year it was also possible to observe seasonal variations in the "spread" in the case of eggs and butter. The periodic variations that are observable in comparing the pre-war period, 1909-1913, with the period of war inflation, 1914-1920, and the period of post-war depression, 1921-1925, are, however, of greater interest and importance.

It will be noted that in every case, except that of creamery butter, the "spread" is much the same in the first two periods. The farmer's share of the final price, in the case of creamery

butter, rose from 81·5 per cent. in the pre-war period to 91·4 per cent. in the period of war inflation, and fell afterwards only to the level of 85·5 per cent. in the period of post-war depression. This is in accordance with the statement commonly heard that butter is one of the least profitable "lines" of the retail provision merchant. Farmers in Ireland are relatively well organised for the sale of creamery butter, and this probably accounts for the large share of the retail price which they still obtain. On the other hand, there is a significant fall in the percentage of the final price of potatoes, eggs and bacon which goes to the farmer. The fall is even more noticeable in the case of beef and mutton, but is accounted for to some extent by a post-war change in popular taste. The percentage relationship shown is between the dead weight price of the carcase of beef and the retail price of sirloin. In the case of mutton it is between dead weight carcase price and the retail price of leg of mutton. Both these are rather superior joints, and the popular demand has shifted towards them, with the result that butchers have difficulty in disposing of the less desirable joints, and must compensate themselves by enhancing the prices of those that are in greater request.

It is not clear from the incomplete data contained in Table I., but is abundantly proved by general statistical evidence that the "spread" narrows during the upward swing of the business cycle. The widening of the "spread" during the downward swing is illustrated also by Table I. In spite of the narrowing of the margins on which they operate the net profits of retailers, as of other businesses, are greatest in periods of rising prices. This must be accounted for to some extent by the probable fact that under such conditions an important cause of waste is eliminated. Everything which is bought is sold. The temporary disequilibrium between wholesale and retail prices increases, so to speak, the pressure and drives the goods more rapidly through the narrow channels of retail distribution. The friction of retail trade, in this case, has the effect of creating a time lag and a disproportion between the increase of retail and of wholesale prices. The rate of consumption is stimulated by the relatively low level of retail prices and thus in its turn gets out of harmony with the actual rate of production. Moreover, the signal which the rate of retail distribution gives about the ultimate capacity of the demand is falsified, and producers, at the new and higher price level, are encouraged to produce a volume of goods which, when passed on at the necessary increase in the retail price level, has the effect of glutting the market. It might be argued in this way

that the friction of retail trade, even when it takes the apparently philanthropic form of delaying an increase in retail prices, tends ultimately to aggravate, if not to produce, a crisis of over-production. A flexible distributive system, which made consumption keep step with production under all circumstances, might be a salutary thing, even in times of business prosperity.

In the downward swing of the business cycle the effect of the friction of retail trade in slowing down the rate of consumption, and thus intensifying a crisis of over-production and unemployment, requires no emphasis.

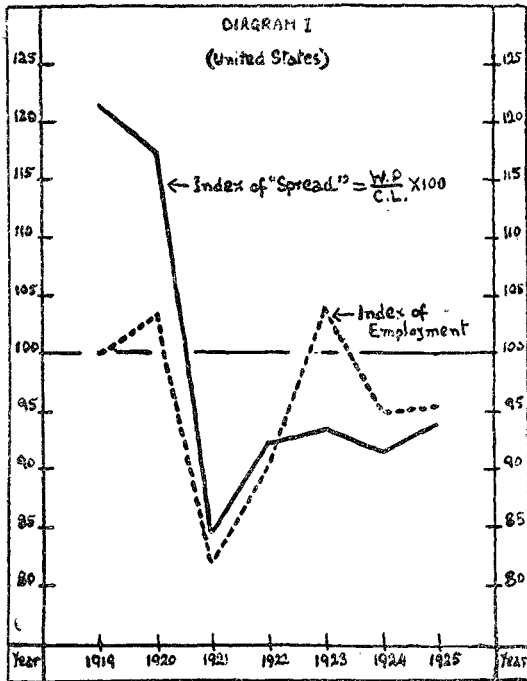
It has already been suggested that, whether looked at from the point of view of barter or monetary exchange, the result of distributive waste is to diminish the effective production, and therefore the consumption of wealth, in the economic system as a whole. If there is reason to believe that the degree of distributive waste varies from time to time, one would expect corresponding variations in the various indices of economic welfare, more especially in the indices and percentages of total employment. On the other hand, if it is remembered that distributive waste is only one cause among many, and that there may be counteracting causes at work, one would not expect a close and exact correspondence between the manifestations of these two phenomena. If any degree of correspondence exists at all, it would suggest that this possible cause of unemployment and business depressions is worthy of further investigation. One important object of this paper is to make out a *prima facie* case for the serious investigation of the economic consequences of distributive waste.

Since in any case economic waste of all kinds is undesirable, if appropriate remedies can be suggested which would tend to diminish distributive waste, there is no reason why the practical application of these remedies should wait for the solution of the various theoretical problems that are involved. Indeed the theoretical problems will become easier of solution when the ground has been cleared by a preliminary reform of the distributive system.

The immediate difficulty is that of measuring variations in the degree of distributive waste. It is not practicable to measure variations in the "spread" between producers' prices (whether farmers' or manufacturers') and consumers' prices. That portion of the "spread" which occurs between the wholesale and retail stages of distribution may be indicated, though perhaps not very accurately, by the relative movements of the index of wholesale prices and of cost of living in the same country or group of coun-

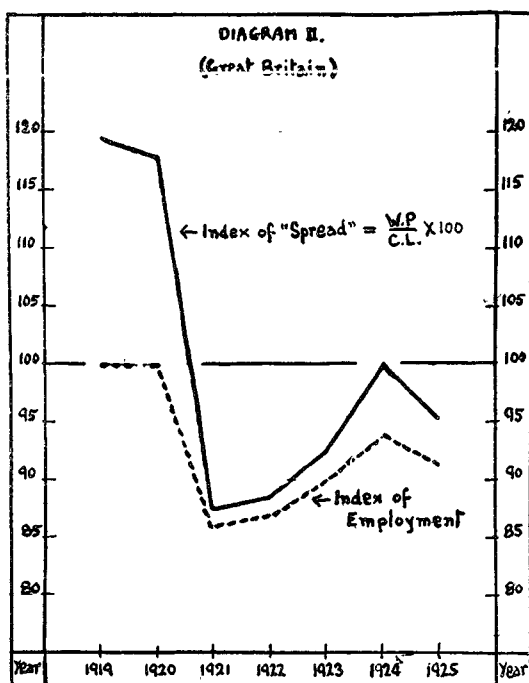
tries. The degree of accuracy which such a measurement possesses could only be ascertained by a minute study of the way in which the respective indices in different countries are arrived at. It has not been possible for me to carry out that investigation up till the present.

The regular publication of cost of living index figures is, of course, a phenomenon of the war and post-war period. Since 1921 the cost of living index figure, calculated on the base July, 1914, has in general, in all countries enjoying a sound currency,



been higher than the index figure of wholesale prices calculated on a base of the same month or of the previous year (1913). Since 1921 there has also been a significant and varying degree of unemployment in the same countries. The general procedure adopted has been to express for the United States, for Great Britain, and for a group of six small countries, the index figures of wholesale prices in each year as a percentage of the cost of living index figure for the same country or group in

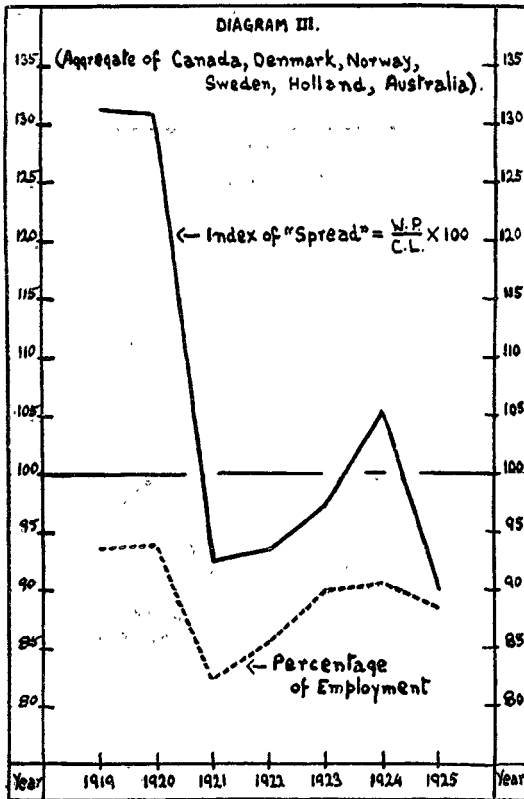
the same year. The result, in general less than 100, is then compared for a series of post-war years with the indices of employment in the case of the United States and Great Britain, and with the percentage of employment as calculated for the group of six small countries from data provided by the *International Labour Review*. Curves have then been plotted in each of these three cases. (See Diagrams I.-III.) The data on which these curves are based are given in Tables II., III., IV. of the Appendix.



Although the figures have been calculated for the years 1919 and 1920 no significance is attached to the movement during these years. The causes, monetary and otherwise, that were at work in those years in most countries were too numerous to enable the effects attributable to any one cause to be distinguished. For the same reason no attempt has been made to apply this method of calculation to countries whose

currencies are as yet unstable, nor would it serve any useful purpose to apply it to the actual period of the war.

It will be observed that in all three cases there is a general correspondence in the movement of the curves. In the case of America they reach a peak in 1923, in the case of Great Britain

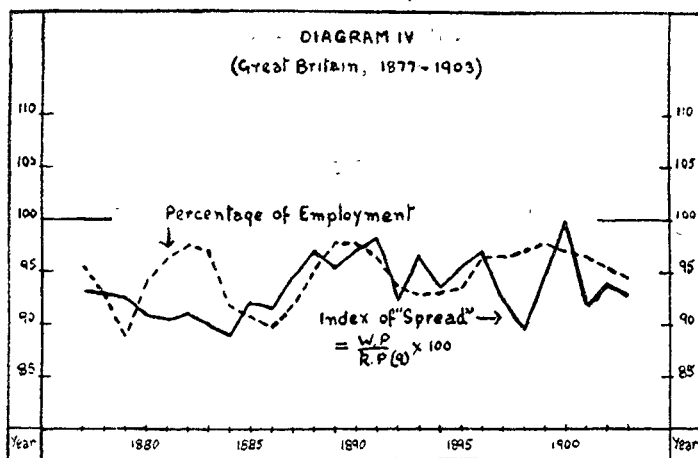


and the six small countries they reach a peak in the following year.

In the *International Labour Review* of June, 1926, Professor Irving Fisher has discussed this problem. He has plotted a curve showing the index figure of wholesale prices in the United States between the years 1903 and 1925, and another

curve showing the indices of employment as calculated for the same years by the Harvard Committee of Economic Research. He expresses the view on page 288 that if we attempt to correlate this curve (of wholesale prices) with a curve for employment or unemployment, we find very little relationship. He then derives from the index figures of wholesale prices a curve showing a kind of moving average of the rate of change in price level, and shows that between this derivative curve and the curve of employment there is a correlation as high as 90 per cent. during the period 1915-1925.

Professor Fisher admits that this relationship might conceivably not be causal. Both might conceivably be caused by some third influence. In this connection the possible effects of

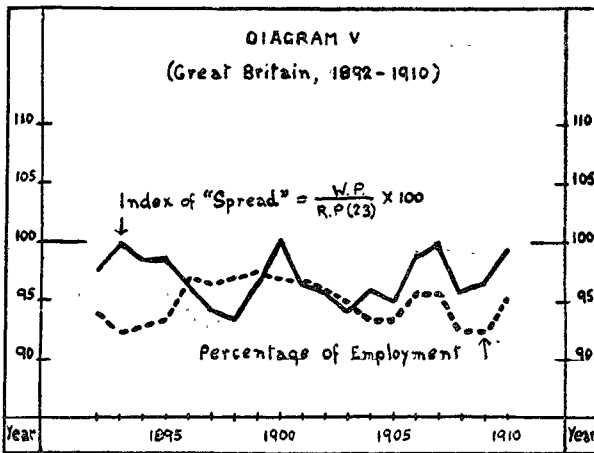


an inelastic distributive system are worthy of further study. After all, as Professor Fisher insists, the significant thing is not the actual level of wholesale prices, but the *rate of change* of those prices. The effect on the relationship between production and consumption caused by the impact of a highly mercurial productive system on a not over sensitive distributive system may possibly be the ultimate factor that gives its significance even to the *rates of change*.

The statistical evidence hitherto adduced is consistent with the theory that distributive waste is a cause of the minor fluctuations of business activity in a period of tolerably stable wholesale prices.

It was desirable to test the theory by applying it to a sufficiently long period before the outbreak of the Great War. The necessary statistics of unemployment and wholesale prices exist with regard to Great Britain. Unfortunately the cost of living index numbers do not go back beyond the war period.

The Report of the Board of Trade Enquiry in 1912 into the Cost of Living of the Working Classes gives, on page 302, index numbers of the general level of retail prices for the years 1892 to 1912, derived from the observation of the retail prices in London of 23 articles of food. This table is overlapped to some extent by an older series of index numbers, based on the retail prices in London of nine articles of food



during the years 1877 to 1903. For convenience these separate series will be referred to as R.P. (9) and R.P. (23) respectively. R.P. (9) is given on page xlv. of the same Report. The standard year in each case is 1900.

As the data contained in these index numbers of retail prices would have formed important elements in a pre-war cost of living index number, if such had existed, the former have been treated in the same way as the post-war cost of living index numbers are treated above for purposes of comparison with percentages of employment. The result is illustrated in Diagrams IV. and V. The data on which these curves are based are reproduced in Table V. of the Appendix.

The curve showing percentages of *employment* is reproduced as closely as possible from a curve showing percentages

of *unemployment* in England, published on page 133 of a work issued in 1913 in connection with the International Exhibition at Ghent by the Statistique Générale de la France. The title of that work is "Historique et Travaux de la fin du xviii^e siècle au début du xx^e."

Comparison of the curves for the period 1877-1903 indicates that from about the year 1885 the general trend of the curve calculated from R.P. (9) is much the same as that of the curve indicating variations of employment. In the second case the curve calculated from R.P. (23) corresponds in its general trend with the curve of employment between the years 1896 and 1910, but fails to correspond between 1892 and 1896.

With regard to the lack of correspondence between 1877 and 1885 it should be borne in mind that these years were, on the whole, years of rapidly falling wholesale prices. The period from 1885 to 1910 was on the whole a period of relatively stable wholesale prices. The index figure of wholesale prices was lowest in the year 1896 (88.2), and it may not be without significance that the lack of correspondence in the second case noted above occurs within a period which includes the year 1896. The curve calculated from R.P. (9) corresponds indeed for a longer period, which includes the years 1892 to 1896, but the value of this correspondence is diminished to some extent by the failure of the curve calculated from the more comprehensive data contained in R.P. (23) to do likewise.

Viewed as a whole, the results shown in these curves, inadequate as they are and in themselves unconvincing, may nevertheless be held to strengthen the statistical evidence, already produced for the post-war period, which indicated a correlation between variations of distributive waste and variations of employment.

If our analysis of the causes of distributive waste is sound, the remedies that suggest themselves will concern mainly the extremes of the channels of distribution—primary markets and retail trade. There is need for better organisation of the arrangements for collecting the products of small-scale manufacturing and agricultural activity. Even the linen industry of Northern Ireland is said to suffer from a plurality of intermediaries between the factory and the consumer. Only the large concerns can deal direct with the wholesale distributor and still fewer with the retail trade.

But the necessity for a better organisation of primary markets is greatest of all in the case of agriculture. The most successful developments in this direction have in many countries taken the form of co-operative associations of farmers for the

marketing of their products. Every improvement in the organisation of marketing and distribution necessarily lessens the "spread" between producers' prices and consumers' prices, by raising the former and lowering the latter. This can be seen most clearly when a district, formerly isolated, is opened up by modern methods of transport. Producers' prices in the district concerned tend to rise, while, owing to the increase in the quantity of goods that reach consumers' markets, prices in the latter tend to fall, if only in a minute degree.

It is interesting to observe that as soon as a suitable number of farmers have bound themselves by a firm contract to market only through their own organisation, they become in their collective capacity suitable recipients of accommodation from the banks in the ordinary way of commerce. Practically every successful large scale co-operative marketing association in America and elsewhere is financed in this way.

It has been pointed out that the farming industry in most countries is not integrated with the monetary system to the same extent as ordinary commerce and manufacturing industry, and it might be suggested that the tendency of the economic system to a somewhat lopsided development may be partly due to this cause.

We now see that the scientific organisation of large scale agricultural marketing, which is indicated as a partial remedy for distributive waste, tends also incidentally to give the farming industry its proper share of the services which banks exist to provide.

When every possible distributive waste has been eliminated and the farming industry fully integrated with the monetary system, it will be easier to isolate and discover the possible defects of that system.

The objects to be aimed at in the reform of retail distribution have already been indicated. The State can play an important part in improving the objective conditions of efficiency. The means ready to hand are its powers of taxation.

Hitherto it has been the custom to tax persons who make a profit. For obvious reasons this custom is likely to continue. If our analysis is sound there are, however, excellent reasons why certain other persons should be *taxed for not making a profit*. The inefficient retail trader on the margin of a number of retail traders, which is in any case excessive, seems to be the main cause of high prices, and his high prices to be the main cause of the high prices and high rates of gross profit of his more efficient rivals. Why not raise the margin of business efficiency by taxing these unprofitable servants of the community out of existence as business men?

It is interesting in this connection to observe the incidence on retail trade of the income tax system which our Government has inherited from the former *régime* and still maintains. On a rough estimate, 13,000 is the number of retail traders brought under review for income tax out of a possible total of at least 40,000 retailers. (See p. 374.) The total amount of income tax paid by these in the year 1924-1925 may be estimated roughly at £400,000. It is probable that not all of the 13,000 retailers "brought under review" actually paid any income tax in the year in question. It is a well-known fact that the great majority of retail traders in Ireland, and a substantial proportion even in Great Britain, keep no accounts worthy of the name. Assessment proceeds largely by guess-work in their case, and the time of the income tax officials is fully occupied in catching those other victims who cannot hope to escape. Consequently, it is quite probable that the number of those 13,000 retailers who actually pay income tax does not exceed 10,000. The total amount of income tax that is paid, if it were spread evenly over the total turnover of retail business, would not exceed one half of 1 per cent. on turnover. If the turnover of the 10,000 who do pay were known it is probable that income tax in relation to it would not greatly exceed 1 per cent. In any case, it cannot be regarded as in itself an important factor in the high retail prices by which public opinion in the Free State is seriously agitated.

Indirectly, however, the failure of the income tax administration to insist on proper account-keeping encourages a lazy and unbusinesslike method of conducting business. The retailer is content not to know his own income if he has the hope of concealing it also from the income tax collector, and evading in that way his fair share of the tax. The business man who keeps proper accounts for himself must either pay in full or take obvious risks.

As it actually operates in the case of retail trade the income tax system appears to be a tax on honesty and proper business organisation, and a premium on all the unbusinesslike qualities which depress the margin of efficiency and indirectly maintain maximum retail prices.

A licence duty of about £5 for each establishment, payable by all retail traders whether they make a profit or not, but credited as a *prepayment of income tax* in the case of those who prove to be liable for that amount of income tax or more, would operate in the opposite direction. The efficient would pay no more taxation in all than before, and would have no possible excuse for raising prices. The incidence of the tax

would thus be on the less efficient or the less honest. The tendency would be for their numbers to diminish, and the tax could be operated in such a way as to result in the survival of an optimum number of retail traders by the euthanasia of the unfit.

The raising of the margin of business efficiency would tend to lower prices and rates of gross profit. At the same time the *net profits* of the survivors would be quite likely to increase, in consequence of the increase in average turnover and the diminished incidence of overhead charges.

There would, however, be a possible danger of a position of partial monopoly being abused. A theoretical remedy for this is to foster the growth of consumers' co-operative societies. One possible method of doing this is to levy the retailer's licence duty at a lower rate on such societies. It would be more scientific and also more effective from this point of view, to substitute a "turnover tax," at a rate which should not exceed 1 per cent., for the licence duty, to treat this, as in the other case, as a prepayment of income tax, *but not refundable*, and to levy the "turnover tax" on consumers' co-operative societies at a lower rate, or altogether exempt them from it.

The non-existence of the habit of account keeping is one of the reasons why it might not be practicable to begin with a "turnover tax" instead of with the licence duty.

Since 1808 there has been in existence in France a law which deserves to be better known in other countries. The eighth article of the "Code du Commerce" requires the keeping of accounts from all business men and business establishments. The sanction imposed is liability to prosecution for fraudulent bankruptcy, in certain events, if proper books have not been kept.

A useful beginning in the reform of the methods of retail business could be made by enacting a law of this character.

CONCLUSION.

This paper contains a provisional statement of certain conclusions I have come to as a result of the work I have been doing during the last ten months, and of ideas which have floated vaguely before my mind during the last ten years. A point has now been reached at which the expert criticism of a body such as the Social and Statistical Enquiry Society can be most helpful, and I shall gladly modify any views which such criticism or further investigation, may prove to be defective.

According to Hesiod, to know all things of oneself is indeed the ideal, but to listen to sound advice is a good practical alternative. I hope to prove myself a good listener.

APPENDIX
TO
SOME CAUSES AND CONSEQUENCES OF
DISTRIBUTIVE WASTE.

NOTE I.

According to the Census of 1921 there were in England and Wales 390,520 proprietors and managers of dealing businesses. This gives a ratio of 1 : 97 of the total population.

The Census of 1921 in Denmark showed a total of 36,226 proprietors and managers (exclusive of large department stores). The ratio in this case is 1 : 91.

According to the Census of 1920 in Holland the number of independent shopkeepers was 58,640—a ratio of 1 : 116.

The Census of 1920 in Norway shows a total of 17,385. The ratio is 1 : 152.

In the case of Switzerland the Census of 1920 gave 22,120 as the total number of shopkeepers. The ratio is 1 : 176.

With regard to Belgium, France and Germany my information relates to pre-war years.

According to the professional census of 1910 in Belgium the number of proprietors and managers of *wholesale* and *retail* businesses was 130,895. The population of Belgium in 1913 was 7,550,000. The ratio in this case is 1 : 58.

The French Census of 1911 showed a total of 1,007,043 persons engaged as proprietors or managers of *wholesale* and *retail* businesses. The population of France in 1913 was 41,476,000, and the ratio in consequence 1 : 41.

According to the industrial census of 1907 in Germany the total number of commercial enterprises, *wholesale* and *retail*, was 840,808. If the population of Germany in 1907 is estimated at 62,000,000, the ratio works out at 1 : 74.

I give these figures with some hesitation because I have not been able, up to the present, to consult the sources from which they have been obtained.

According to Professor Boyle in his "Marketing of Agricultural Products" (p. 87) the ratio of retail traders to total population in 1920 was 1 : 75 in the United States. This is the same as the ratio we appear to have in the Free State. The national income of the people of the former country was in

1919 about £130 per head, at least twice the amount that the most optimistic estimate could assign as the national income of the people of this island in the most prosperous of recent years. A ratio of shops to population which may be right for America is utterly wrong for us. It seems unnecessary to look any further for the main cause of the high retail prices from which we suffer.

TABLE I.
Percentages of Farmer's Price to Retail Price in Dublin.
Period 1909-1913.

	1909.	1910.	1911.	1912.	1913.	Average. 1909-13.
Potatoes ...				72.4		72.4
Eggs ...	71.5	75.0	77.8	79.7	78.7	76.5
Creamery Butter ...	79.8	80.7	81.8	84.0	81.0	81.5
Beef*	...			79.2	80.6	79.9
Mutton†	...			77.8	89.5	83.7
Bacon ...	57.9	62.2	56.2	53.9		57.6

Period 1914-1920.

	1914.	1915.	1916.	1917.	1918.	1919.	1920.	Average. 1914-20.
Potatoes ...				73.8	63.9		60.9	66.2
Eggs ...			73.9	84.8	81.1	78.0	72.1	78.0
Creamery Butter ...			87.9	88.2	90.6	95.8	94.4	91.4
Beef* ...	78.6			76.3				77.5
Mutton† ...	90.6			77.2				83.9
Bacon ...			55.5	54.8	52.6		58.1	55.3

Period 1922-1925.

	1922.	1923.	1924.	1925.	Average. 1922-25.
Potatoes ...		55.9	58.1	56.8	56.9
Eggs ...		61.1	62.5	63.5	62.4
Creamery Butter ...		83.2	86.6	86.6	85.5
Beef* ...	52.4	49.6	52.3	51.8	51.5
Mutton† ...	62.0	62.4	72.3	69.7	66.6
Bacon ...	39.7	37.9	41.5	42.9	40.5

*The percentage shown is that between the dead-weight price of the carcase of beef and the retail price of sirloin. See page 366.

†The percentage shown is that between the dead-weight price of the carcase of mutton and the retail price of leg of mutton. See page 366.

TABLE II.
Index Figures of Wholesale Prices, Cost of Living, and
Employment in U.S.A.

Year.	Annual Average W.P. (Base July, 1914 = 100)	Mid-Year C.L. (Base July, 1914 = 100)	Employment (Base 1919 = 100)	$\frac{W.P.}{C.L.} \times 100$
1914	100	100	—	—
1919	215	177	100	121·5
1920	233	217	103·2	107·4
1921	152	180	82·1	84·4
1922	154	167 (June)	90·4	92·2
1923	159	170 (June)	104·0	93·5
1924	155	169 (June)	95·0	91·7
1925	163	174	95·3	93·7

NOTE TO TABLE II.

The Index Figures of Wholesale Prices and of Employment are copied from a table given in page 342 of the *Bulletin de la Statistique Générale de la France* of July, 1926.

The Index Figures of the Cost of Living are copied from the *International Labour Review*, Volume VI. ff. Instead of taking the mid-year figures it would have been preferable to take the annual average figure. That was not available in the sources consulted. Following the practice of the *International Labour Review* in publishing these figures it was necessary to substitute the June figures for the July figure after 1922. So far as I have been able to test it, the difference between the mid-year and the annual average figure appears to be very slight.

[Table III. overleaf.]

TABLE III.
Index Figure of Wholesale Prices, Cost of Living and
Employment in Great Britain.

Year.	Annual Average W.P. (Base July, 1914 =100)	Mid-Year C.L. (Base July, 1914 =100)	Employment (Base 1913 =100)	$\frac{W.P. \times 100}{C.L.}$
1914	(July) 100	(July) 100		
1919	249	208	100	119.7
1920	301	255	100	118.0
1921	194	222	86	87.4
1922	160	181	87	88.4
1923	158	171	90	92.4
1924	170	(June) 170	94	100
1925	165	(June) 173	91.7	95.4

NOTE TO TABLE III.

The Index Figures of Wholesale Prices and of Employment are copied from a table given on page 343 of the *Bulletin de la Statistique Générale de la France* of July, 1926.

The Index Figures of the Cost of Living are copied from the *International Labour Review*, Vol. VI. ff. The same remarks apply as in the case of the United States.

TABLE IV.
Average Index Figures of Wholesale Prices and Cost of Living, and Average Percentages of Employment in an aggregate of six small countries (Canada, Denmark, Norway, Sweden, Holland, Australia).

Year.	Average W.P.	Average C.L.	Average % of Employment.	$\frac{W.P. \times 100}{C.L.}$
1919	272.8	207.7	93.8	131.3
1920	306.8	234.2	94.0	131.0
1921	199.7	215.8	82.6	92.5
1922	174.7	187.0	85.7	93.4
1923	183.3	188.4	89.9	97.3
1924	193.0	183.2	90.6	105.3
1925	170.0	189.2	88.5	89.9

NOTE TO TABLE IV.

The wholesale index figures from which the average given in Table IV. has been calculated are copied from a table given on page 106 of the "Memorandum on Currency and Central Banks," 1913-1925, Vol. II. (French Edition), published by the League of Nations. The index figures there published are calculated back to a uniform base, 1913=100. In the case of Denmark the "Finance Office" figure has been chosen, in the case of Canada the "Dominion Bureau of Statistics" figure, in the case of Norway the "Economic Review" figure, in the case of Sweden and Holland the Official Figures, while in the case of Australia the "Melbourne" figure has been taken. The Swedish figure for 1919 is missing from the average as calculated.

The cost of living figures from which the average given in Table IV. has been calculated are copied from the *International Labour Review*, Vol. VI. ff, except in the case of Canada, in which case an official publication entitled "Prices in Canada and other Countries, 1925," has been used. The Canada figure is that for July in each year (with two exceptions), as extracted from a table given on page 18 of that publication. In 1919 it was necessary to use the December figure and in 1921 the June figure.

The appropriate cost of living figure for Australia in 1923 was not obtained, consequently for that year the average is for five countries only.

In Volume X. ff of the *International Labour Review*, quarterly percentages of unemployment are published with respect to various countries. In the case of the six countries under consideration *annual* averages of unemployment were worked out for each year. The average unemployment for the aggregate of the six countries was then ascertained for each year, and expressed as an average of employment as shown in the table.

TABLE V.

Index Figures of Wholesale Prices, Retail Prices, London (9 articles of food), Retail Prices, London (23 articles of food).

Year.	W.P.		R.P. (9)		R.P. (23)		W.P. × 100		W.P. × 100	
	Base 1900	Base 1900	Base 1900	Base 1900	Base 1900	Base 1900	R.P. (9)	R.P. (23)	R.P. (9)	R.P. (23)
1877	140·4	...	150·7	...	...	93·2	...	...
1878	131·1	...	141·1	...	...	92·9	...	...
1879	125·0	...	134·8	...	...	92·7	...	...
1880	129·0	...	142·3	...	...	90·7	...	...
1881	126·6	...	140·2	...	...	90·3	...	...
1882	127·7	...	140·1	...	...	91·1	...	...
1883	125·9	...	139·9	...	...	90·0	...	...
1884	114·1	...	127·9	...	...	89·1	...	...
1885	107·0	...	116·2	...	...	92·1	...	...
1886	101·0	...	110·3	...	...	91·6	...	...
1887	98·8	...	104·9	...	...	94·3	...	...
1888	101·8	...	104·6	...	...	97·3	...	...
1889	103·4	...	108·3	...	...	95·5	...	...
1890	103·3	...	106·3	...	...	97·2	...	...
1891	106·9	...	108·8	...	...	98·3	...	...
1892	101·1	...	108·9	...	103·9	92·8	...	97·3
1893	99·4	...	103·1	...	99·3	96·4	...	100·1
1894	93·5	...	100·0	...	94·9	93·5	...	98·5
1895	90·7	...	95·0	...	92·1	95·5	...	98·5
1896	88·2	...	91·0	...	91·7	96·9	...	96·2
1897	90·1	...	97·6	...	95·5	92·3	...	94·3
1898	93·2	...	103·9	...	99·5	89·7	...	93·7
1899	92·2	...	97·4	...	95·4	94·7	...	96·6
1900	100·0	...	100·0	...	100·0	100·0	...	100·0
1901	96·7	...	105·1	...	100·4	92·0	...	96·3
1902	96·4	...	102·6	...	101·0	94·0	...	95·4
1903	96·9	...	104·3	...	102·8	92·9	...	94·3
1904	98·2	...	...	...	102·4	...	...	95·9
1905	97·6	...	...	...	102·8	...	...	95·1
1906	100·8	...	...	...	102·2	...	...	98·8
1907	106·0	...	...	...	105·0	...	...	100·1
1908	103·0	...	...	...	107·5	...	...	95·8
1909	104·1	...	...	...	107·6	...	...	96·7
1910	108·8	...	...	...	109·4	...	...	99·5
1911	109·4	...	...	...	109·4	...	...	100·0
1912	114·9	...	...	...	114·5	...	...	100·3

NOTE TO TABLE V.

The Index Figures for Wholesale Prices are copied from page 308 of the Report of the Board of Trade Enquiry of 1912 (Cd. 6955).

The Index Figures R.P. (9) and R.P. (23) respectively are copied from page xliv. of the same Report.

As stated elsewhere, the curve showing percentages of employment is adapted from a curve showing percentages of unemployment, as published by the *Statistique Générale de la France* in 1913.