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ECONOMICS OF MODERN INDUSTRY

AN INTRODUCTION FOR BUSINESS STUDENTS

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PREFACE

THIS book is written for a particular class of readers, and in preparing it I have tried to follow the well-tried maxim of teaching "Begin at the point of your student's interest." Most of the numerous elementary books on Economics follow the traditional division of the subject into Production, Value, Distribution, etc. This time-honoured arrangement has proved very suitable for those whose main interests are in social reform or the economic aspects of political questions, but experience has shown that there are other students to whom this method of approach does not appeal. The increasing number of young business men who take up the study of Economics, either for some professional examination or in the hope that it may assist them in their work, do not find this a congenial way of commencing their study of the subject. They are more interested in the play of economic forces upon an individual business and in the light the study may throw on matters within their range of experience. It is difficult for them to see the bearing of the Ricardian theory of rent, or of the theories of interest on their own business problems; and I am afraid that many, if not most of them, come to regard Economics as a remote, academic subject to which lip-service must be paid, but which is of little value when practical questions are being considered. This is a double misfortune. Economics loses a number of students who could contribute much to its development; and young business men fail to get either a proper acquaintance with the weapons of economic investigation or experience in handling them.

Experience has convinced me that an alternative introductory book is needed by many of these students

and I have therefore adjusted the treatment of the subject by basing it on the problems of the individual business. Some topics, such as the definition of wealth, the history of the theories of value and interest, and the theory of rent I have omitted altogether. This has enabled me to find room for other matters more closely related to their business problems, such as the effect of seasonal and cyclical fluctuations of output, unfair practices, collective agreements, etc. Two topics, currency and banking, and public finance, are only briefly dealt with, mainly because admirable books already exist, but partly from considerations of space.

The selection of topics I have made does not imply any denial of the usefulness of the study of general theory to business students, but is the outcome of a desire to find the method of approach most likely to lead them to a permanent interest in the subject. My hope is that some who would otherwise be discouraged from further reading in the subject will be led to study it more deeply, and to appreciate the importance of the more theoretical portion of the science.

I have drawn freely on the stores of information to be found in Government publications, and in the writings of various economists. I trust that the list of books at the end of the volume will be taken as full acknowledgment of my chief debts in this respect. The Borough Electrical Engineer of Southampton, the London and Cambridge Economic Service, and the Underground Railways Statistical Department have been kind enough to allow me to use the information on which the three charts are based. My colleagues, Miss Trout, Mr. R. Casson and Mr. A. Tomlinson have assisted me by reading either manuscript or proof. My chief debt is to Miss G. E. M. Jebb, Principal of Bedford College, to whose candid criticism this book owes much.

PREFACE TO THE INDIAN EDITION

In bringing out the Indian edition of "Economics of Modern Industry", attention has been paid to the requirements of Indian Universities and suitable additions have been made for adapting the book to the needs of Indian students. These additions include topics such as the Managing Agency System in India, the Supply of Business Finance in India, the Marketing of Agricultural Products in India, Indian Trade Unions and the Regulation of Wages in India.

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INTRODUCTION

"BUSINESS enterprise consists in an endeavour to secure money income by using invested capital in a series of bargains for the purchase and sale of work and goods." This definition states or implies most of the features of modern business. Its working turns on the getting and spending of money incomes. This distinguishes it from earlier types of organisation, such as the manorial system, in which agriculture was undertaken for subsistence rather than for the market, in which rents were paid in labour and kind, and not in money, and few were working for hire. The present system is, in consequence, a price-system, for the reward of economic activity is money income, and its stimulus, price. Production can be encouraged by a rise of price, discouraged by a fall. Work is bought by wages, salaries or fees. Property, businesses and goodwill, all have their prices. This characteristic is a source both of strength and weakness. By means of the price machinery, industries can be expanded and contracted, and labour transferred from one occupation to another by simple and automatic methods, but this smooth working is gained at the expense of directness of purpose. Production and consumption are regulated by prices, but if at any moment the prices do not accurately reflect the fundamental needs of the community, there is a misdirection of economic effort and waste of resources. Business enterprise assumes the existence of private property, of land, mines, plantations, and other resources individually owned and put to uses determined upon in the light of the movement of prices. It assumes the existence of numbers of persons able and willing to work for money payments and to take up occupations in

accordance with the money inducement offered. It also implies that those who receive money incomes can use them as they think fit in living at present, providing for the future and paying penalties for the past. Private property, the free choice of occupation, the free choice of consumption, work and sale for money incomes, these are its logical principles.

These principles are nowhere fully in operation, our arrangements for working and living being a product of growth and habit as well as reason. There are still many parts of the earth where numbers of people do not think in terms of money incomes, but consume their own crops and make their own clothes, needing only money enough to pay taxes and to purchase a few necessities not obtainable in the district. Much property is publicly and not privately owned, and many essential services are provided communally. All kinds of obstacles, emotional, political and economic, hinder persons in moving from one kind of work to another, and prevent them from exercising a free choice of occupation. People's consumption of some things is prohibited and of others discouraged by taxation. In some ways these limitations are increasing, for social legislation is placing more restraints on the institution of private property, while various states are hindering the movements of persons from country to country by immigration laws. On the other hand, the spread in backward countries of " plantation " agriculture and of modern factory methods is increasing the proportion of the world's total output which is produced for sale in the market, and enlarging the proportion of their populations which work for money wages. These qualifications have important results, weaknesses like the alternation of boom and depression being less severely felt in those areas and industries in which modern methods are ill-developed. In

western countries, however, the work and production to which the term " modern business " can be applied is the greater and more important part of the whole, and it is only through an appreciation of its principles that the peculiar position of the business man can be understood.

Many persons co-operate in a manufacturing or commercial enterprise. Skilled manual workers may be so essential that the fulfilment of contracts may be in danger if sufficient numbers of them cannot be obtained. The organisation of the workshop, the adaptation of plant, etc., is contributed by technical experts, but although the government of the concern as a purely technical unit rests upon them, they do not " control " it. Neither do the company lawyers, accountants, or sales experts, for they merely give guidance on special matters in their field. All these persons, skilled as they are in the matters in which they are specially competent, are subject to the control of the business man. This is only putting into personal terms what has already been stated in terms of stimulus and motive ; that technical, legal, and marketing considerations are subject to the overriding requirement of profit on the buying of labour and materials and the sale of products. In all the special matters which are the concern of the experts and workers the business man is likely to be less qualified than those whom he controls, but it is his decision which sets them to work, or renders their skill useless by waste, negligence or bad judgment. Ability to organise, a knowledge of processes, a market sense, an eye for the main chance, these are the qualities required of a business organiser in modern enterprise. Not that any average business organiser is likely to possess all these virtues in equally marked degree, for one man will run his business at a profit mainly through skilful internal management,

although he may be an indifferent salesman, while the works of another successful manager may be rather ill-organised and a little backward in technical procedure, but the concern profitable through his keen appreciation of the elements affecting the markets in which he buys and sells. In one way or another, the work of the labourers, technicians and salesmen must be co-ordinated by the business man in the light of the margin between costs and sale prices.

While the business man controls the other contributors to the efficiency of the enterprise and makes the vital decisions affecting its welfare, it is important not to overlook the fact that his powers of initiative and decision, wide as they seem compared with those of his colleagues, are circumscribed in many ways. When he wishes to erect the works, the price for land will in part depend on the bidding of others, his building plans must be approved by the supervising authority, and must conform to national standards in regard to safety. The number of cubic feet of air space for workmen, and the disposition of machinery will in some measure have been decided for him. The price of his raw materials will be set not only by his competitors, but by the organisations of the producers, and unless he buys a considerable proportion of their output he must take the prices much as he finds them. As regards his workers, he may have to negotiate with a district organiser of a trade union, and if he dismisses some man without what is regarded as "due cause," he may be faced by a withdrawal of labour, while strongly-held customs or actual agreements may prevent him from using certain men on certain machines, employing more than a specified number of juveniles, or undercutting his competitors by reduction of wage rates. He may be unable to exceed a specified output, or sell below a named price, or in certain

markets, because a national or international organisation of producers, which he has had to join through threats, has so decided. At every step, therefore, his freedom is limited. He may have commenced production on the assumption of a certain price level, only to find that the government and the central bank have so acted that months later the prices of his products scarcely cover the cost of materials and labour. Or they may have so manipulated the currency that he receives an unlooked for increase of prices, and becomes that object of mingled envy and scorn, the profiteer. The success of the business man turns in large measure on forces and persons outside his control. If it were really true that every individual seeking his own profit were led by an invisible hand to do only those things which promoted the general interest, if the business world conformed to the paradise some men dream of, and were without trade unions, trusts, tariffs or income tax, it might not be necessary for him to concern himself with economic study. In fact, so much of his future depends on the activities of others that he must needs understand something of the economic order of which he is a part, unless he wishes to rely on good luck alone.

If he turns his attention from his external relations to the internal organisation of his business, he will find another feature of the economic system which is of capital importance. Production is undertaken by the use of machinery, and this presents him with a double problem. His costs will be reduced if he subdivides processes into many simple motions for which machinery can be used, but expensive appliances can pay for the capital invested in them only by continuous operation. Idle machinery does not earn its keep. This raises the second aspect of the problem. The other factor in the productive process, the workman, does not

thrive on continuous working, high speed, and the perpetual repetition of small motions, for men love variety, prefer day to night work, demand regular rest, and do not naturally work at a uniform hourly speed. What an ill-sorted marriage is that between machine and man! Pioneers of machine industry had to accompany the introduction of the new productive instruments with the imposition of a new factory discipline, to harness to a grim, unremitting partner men who, however hard they worked, had been able to give play to their love of variety and irregularity, and to their creative impulses. The efforts of the earlier business organisers to give the machine full scope led to long struggles over the length of the working day and enabled one nineteenth century critic, Karl Marx, to write some of his most telling pages. For the truth is that the machine was more easily understood as a productive factor than man himself. Although the regularity and efficiency of our urban population, whose lives are ordered by the factory siren and machine, give evidence of the extent to which their working lives have been mechanised, the discipline has imposed all kinds of physical and nervous strains which lead to accumulated fatigue, sickness and accident and rob men of their full productive capacity. Economy of labour is no less important than the continuous operation of the machine, and the industrial psychologist than the engineer.

These, then, are some of the features of the modern system which are of importance to business men, and some of the problems which they have to solve. It is the purpose of the following pages to examine them in detail, to show what answers business men, in company with statesmen, technical experts and traders, have endeavoured to make to them, and wherein those answers are unsatisfactory.

PART I. FACTORS OF INDUSTRIAL AND COMMERCIAL EFFICIENCY

I. COST OF PRODUCTION

THE immediate interest of the business man is centred in two quantities, the sale price of his goods, and the cost of making them. On the first of these he can exercise considerable direct influence, if he happens to possess a monopoly, or belong, with other firms, to an association with an agreed price list, but where he is only one of a number of competing producers, the volume of goods put on the market is subject to so many influences other than his own will that he cannot significantly affect the course of sale prices. It is to cost of production, therefore, that he will turn his most active attention, for here at least, some of the elements are under his control.

In common use the term "cost of production" covers a number of distinct meanings. (1) It may refer to the charges made by all the agencies engaged in making and transporting the articles from farm or factory to the retailer's shop, and thus will include the payment for materials, the cost of carriage by sea and land, the commission of brokers, insurance premiums, retailer's expenses, etc. An example is provided by the Royal Commission on Food Prices, which analyses the price of the four-pound loaf into the costs of the various producers, carriers, and middlemen concerned in its

production. Taking prices as on the 31st January, 1925, the " average expense " was found to be :

	Per cent. of retail prices.
Producer	41·25
Charges for handling wheat (loading, unloading, commission)	4·50
Transport (wheat and flour)	9·50
Milling expenses (wages, other manufacturing and overhead costs)	5·50
Milling profits	2·75
Baking expenses	16·75
Cost of sale and delivery	11·75
Baking profits	8·00
	100·00

Analysis of this sort is useful as showing at what point in the chain of processes the largest costs are incurred, and may, if compared with similar facts for earlier dates, give some indication as to whether the charges made by any individual agency, such as transport, are forming an increasing proportion of the total or not. It is indeed the contrast between the prices at pithead or farm, and the prices paid by the consumer, which have led to an examination of the marketing arrangements for both coal and agricultural products.

(2) In any given stage of production, e.g., growing the wheat, or milling, cost varies widely from firm to firm. This may be due to differences in size of the business, in efficiency or equipment, nearness to sources of labour and materials, etc. In the case of coal mining, the figures set forth in the Report of the Coal Commission, 1925, show that there was a difference of 18% between costs in the smallest and in the largest pits.

(3) The proportions of the total costs which are accounted for by materials, labour, and other items vary greatly from one industry to another. The following figures taken from the Report of the Com-

mittee on Industry and Trade, analyse the costs of a number of firms in some typical industries, each heading being shown as a percentage of the total.

Heads of Cost.	Coal mining. 1925	Gas. 1924	Basic pig iron. 1913	Engineering. 1926	Agricultural Machinery 1923	Cotton Spinning 1923	A Heavy Chemical Industry. 1924-5
Materials ...	10·3	12·9	82·5	46·1	37·0	73·2	29·6
Wages and Salaries:							
Wages ...	70·7	44·3		34·2	37·7		20·6
Salaries ...	3·6	1·8		1·5	*		*
Total ...	74·3	46·1	8·9	35·7		12·8	
Other Expenses ...	15·4	41·0	8·6	18·2	25·3	14·0	49·8
Total	100·0	100·0	100·0	100·0	100·0	100·0	100·0

* Salaries included in "other expenses."

The table reveals striking differences in the relative importance of various factors of production. In the case of coal mining, three-quarters of the cost is absorbed in wages, while in cotton spinning this is the proportion spent on materials. In basic pig iron production, the materials cost eight-tenths of the total, in coal mining only one-tenth. "Other expenses" take up from one-tenth to one-fifth in coal mining, basic pig iron, cotton spinning and engineering, but practically one-half in the heavy chemical industry and two-fifths in gas production. These differences have many important consequences for business policy. Where materials account for a large proportion of the total cost, any variation in their price is of greatest importance. The fortunes of the cotton industry largely depend on the price of the material, for no less than three-quarters of the total cost recorded in the table comes under this head. The price was 2s. 6d. in 1920, fell to 10d. in 1921, and stood at 1s. 9d. in 1924 and 10d. in 1925. Fluctuations of this sort greatly increase the risk of business, especially if any considerable time elapses between the purchase of material and the sale of the article into which it is made, for the market valuation of the materials embodied in the goods at a later date may be less than the price originally paid for them. Various means of stabilising the price of the materials, or preventing adverse action by some trust which might control them, become a cardinal feature in the organisation of the trade. The creation in the cotton industry of a speculative market, in which a manufacturer can protect himself against losses of this character, and the practice of "using" firms in the iron industry, of amalgamating with or controlling businesses which provide them with their raw materials, are examples of the methods used to cope with this problem. Again, the frequent colli-

sions between coal owners and miners arise from the fact that in this industry, once a shaft is sunk, little capital, equipment or materials are needed, no less than three-quarters of the total cost being due to wages. Since a comparatively small percentage of reduction of wages rates would yield a considerable sum in total, it is as natural that owners should turn their attention to this item as it is for miners to resent the lightening of the pay envelope.

(4) Costs of production vary with the relation of the actual output to possible output, tending to increase as production falls below the maximum, and to drop to a minimum when they are running at full capacity. Even a single firm has no one cost of production, but a series of costs varying according to the scale of output. This is due to the fact that the different items of expense do not respond uniformly to changes in the volume of production, some of them altering as output alters, others remaining relatively constant. A simple illustration will make this clear. Let us suppose that the costs in a given firm producing at a rate of 100 units (the full capacity of the work), of 60 units and during a temporary shut down, are as shown in the following table :—

	100 units.		60 units.		Idle.	
Materials		4,800		2,800		100
Wages and Salaries :						
Direct	2,200		1,600		500	
Indirect	1,100		800		500	
Salaries	200		200		100	
	——	3,500	——	2,600	——	1,100
Other Expenses :						
Power, light, heat, etc.	300		200		50	
Depreciation ...	300		300		250	
Rates	200		200		200	
Miscellaneous	1,000		900		600	
	——	1,800	——	1,600	——	1,100
		10,100		7,000		2,300
Cost per unit	101		116⅔		0	

As a result of these changes, the fall of the output increases costs per unit from 101 when 100 units are produced, to 116⅔ where 60 units are produced, the item "other expenses" forming 17.8% and 22.9% of the cost respectively. Taking these items separately, the cost of materials falls as output falls, but even if the works have temporarily ceased production, some cleaning and maintenance will be needed, and oil, cotton-waste and other materials used. Amongst wages and salaries distinctions must be drawn. If the output declines some of the artisans and labourers will be "stood off," others may be on short time, and the total amount paid in wages will fall, but the manager, and the principal commercial and technical officers are unlikely to be affected, while the office staff will not find their work greatly diminished. The wages item may fall, but the salaries item will not be greatly altered. Even the wages item will not fall or rise at exactly the same rate as the volume of output alters. If the work is casual in character, and the men are paid a daily wage, or if the men are paid by the shift or by the ton, there will be a closer relationship between the volume of work and the labour costs than is the case where a trade agreement prescribes a basic minimum which must be paid during the currency of the agreement. Nor can the numbers of workers employed be reduced without limit in time of bad trade or even during a temporary shut down, for if the firm hopes ever to recommence, it must retain an efficient organisation capable of taking work when it comes; and some skilled men and foremen who are familiar with the works, the nature of the contracts, and the habits of the management, must be retained. Maintaining "nucleus staffs" has been a common feature of the post-war depression in shipyards and engineering works. The group of costs

under the heading "other expenses" is in a different category, the distinguishing feature of most of them being that bad trade does not diminish their burdens proportionately nor increase of output augment them. The rate collector takes no cognizance of the decline in the volume of contracts, nor is the item depreciation necessarily much affected. The Committee on Industry and Trade gives some interesting examples of the rise in "other expenses" per unit of production, in the post-war period as compared with 1913. Taking the cost per unit in 1913 as 100, a heavy oil engine firm working at 94% capacity showed a rise to 137, a bicycle firm, working at 90% capacity, a rise to 185, while locomotive construction firms, working at 35.5% capacity showed an increase to 320.

It is precisely in those industries which we regard as typically modern and which, in the case of Great Britain, employ a large proportion of the industrial population, that this problem of "overhead cost" or "constant cost" is most acute, for it is in them that large sums have been invested in fixed plant, and that the "variable costs" of human labour have been replaced by constant costs of the machine. Whether trade is good or bad, the constant costs have to be met, and if contracts are few, must be charged on a small volume of output, so that cost per unit rises and competitive power is endangered. It is this which explains the continual pressure on business men to reduce costs in the variable items, such as labour, by methods of scientific management, bonus systems, etc. It is at the root of the endeavours of the heavy industries to stabilise production by forming associations for the limitation of output, and its percentage allocation amongst member firms. It is behind the amalgamation of "using" and "making" firms, dumping, and price-cutting, and is one

aspect of the problems raised by "mass" or "flow production" methods. It is with one or other phase of this central problem that a great part of this book is concerned.

2. LABOUR: ITS SELECTION AND ORGANISATION

Having surveyed the "cost of production" in a general way, we may now turn to study the influences which affect the various items of expense either in their absolute amount, in the proportion they bear to the total cost, or in their variability.

(*a*) *The Selection of Labour.*—In selecting a starting point it is convenient to follow Adam Smith, who in 1776 noted the "division of labour" as the first characteristic of the newly-developing industrial system. He claimed that "division" or specialisation of labour, by reducing every man's work to a simple operation, increased dexterity, saved the loss of time due to passing from one sort of work to another, made possible the use of machinery, and encouraged invention. While his striking account contains most of the underlying principles, the development in both the theory and the art of organising labour has since been very great. The principle of division of labour has been so much applied since Smith wrote, that organisers of business are confronted with complicated problems which he could not have foreseen.

Specialisation of work often makes it possible to give varied human capacities the tasks which are most congenial to them, but the actual selection of the most suitable workers and the provision of the most appropriate task is a matter of great difficulty. For the reasons which induce people to select one occupation rather than another are often not economic, preference for work in a town where they have friends and relatives

often being given greater weight than the suitability of the job. The permanent interests and aptitudes of some boys and girls are often not apparent until some years after they have left school, and made a decisive choice. Some are sent to unsuitable work because their parents are ignorant of the real opportunities which lie before their children, others because the stress of low wages, and a young family in the house, make it necessary that the job offering the highest immediate pay should be taken. Boys tend to enter the same kind of work as their fathers, largely for the reason that a man knows the jobs going in his trade. All these motives sway people in their choice of occupations, as well as a cold consideration of aptitudes and prospects, and it is from among such applicants that the business man must choose his staff.

Modern advances in personnel selection have depended on making precise the tests of "suitability". In some cases the matter is simple. If physical strength is the only requirement the strongest lad can be chosen. But there is a large range of occupations where the principal aptitudes required can be closely specified and the applicant tested for them. While some occupations need "concentrated attention," the work of tram and bus drivers calls for a "comprehensive attention," the perception of objects, vehicles and pedestrians moving in different directions and at different speeds, and the engagement of men with an aptitude for concentrated work can only lead to excessive fatigue and accidents. The telephonist requires a memory for a span of figures, for the order in which they are stated, an ability to interpret individual words, clearness of speech, a visual memory, etc. The selection of girls on general impressions, instead of by a specific testing of these qualities, has led to an undue proportion of sick leave

and breakdown through nervous strain in more than one telephone service. Men's attitude towards monotonous work varies, and this must be taken into account when selecting for different types of occupations.

A number of methods have been adopted in devising selection tests. Sometimes the "central-capacity" required for the job can be tested. Munsterberg passed before tram drivers a series of cards showing a plan of streets, tram tracks and traffic situations, and a result was obtained composed of the time taken, and the number of danger spots omitted. The use of the test on drivers whose accident records were known, confirmed its selective value. Alternatively, instead of testing the central-capacity required, it is sometimes possible to break up an operation into a number of distinct parts demanding a different aptitude, and to test for each separately. Telephone girls have been successfully examined for each of eleven distinct processes :—memory for a span of numbers, order of numbers, etc., and an average taken of the results of the eleven tests. A diminution of sickness rate followed the use of the tests on applicants for posts. The work of staff selection has thus been revolutionised in many industries and occupations.

Great gains in efficiency and possibly also in the personal happiness of workers have resulted from the application of these methods of selection, but various difficulties confront the manager who desires to use them. They require the services of persons of special training both in the construction of the relevant tests and in administering them. Opposition may be encountered from the workers' side out of fear that older men may be dismissed. Experience suggests that tests of this kind should be used for the selection of new

entrants, and not for actual dismissal of established workers.

(*b*) *The Organisation of Labour.*—The study of industrial fatigue has profoundly modified our views of the proper organisation of the labour force. One of the articles of the economic creed of those who opposed the limitation of the hours of factory labour by law, was that the employer's profits were made in the "last hour," and it was an equally strong belief that it was the duty of an honest labourer to earn his breakfast before he ate it. Yet had it occurred to them actually to measure output, in the one case they would have found that in the "last hour," the employer was probably losing money and that in the before-the-breakfast spell, he was getting very little return for the wages paid.

The matter can be very simply stated. The aim of the organiser is to get the greatest results from a given expenditure of human energy. Certain methods of work use up creative energy faster than others, and so lead to diminished output, and wear out the worker. The fatigue may be muscular, and due to the non-elimination of the poisons through insufficient rest, or mental, in which case it may show itself as a failure to control the attention, and the persistent intrusion of other interests into the proper current of thought. Fatigue of either kind, if prolonged, may become acute, and lead to accident through tired inattention, or to nervous breakdown. It shows itself in accidents, in an increasing proportion of spoiled work, diminishing output, and an undue amount of leaving, and re-engagement of staff. The keeping of accurate records on these points makes it possible to trace the effects of fatigue and remove its causes. Tests made in various industries, *e.g.*, London docks and Lancashire textiles,

show that accidents increase as fatigue increases, the hours before the midday break, and the close of the day showing the highest percentages. One investigator has declared that "an accident caused by fatigue is no more accidental than typhoid fever caught from drinking bad water," and the closest study given to the causes of fatigue has shown that many, if not most of them, are removable. Needless standing, and work benches at inappropriate heights are illustrations of bad arrangements which cause an expenditure of energy on something other than the progress of the work itself. Defective illumination of the works gives warning in both directions. Increased illumination has led to increased output by as much as one-tenth to one-quarter, while the removal of bright, glaring surfaces had a like result. The hours of work may be inappropriate, either because they are too long, or because they are badly distributed through the day. Night work is rarely efficient, largely for the reason that day-time sleep at home is likely to be disturbed by children at play, street noises, etc. The before-breakfast spell is rarely very productive as the worker unconsciously "spares himself" during this period. The general reduction of the hours of labour from ten and nine to eight, has in many cases led to such an increase in productivity per hour, that the loss of working time has been more than made up by the increased output in the hours remaining. Experience in this is not uniform, for much depends on whether the speed of the worker is determined more by the pace of the machine than by his own activity. Tests made during the war showed that the increased output following a reduction of hours was not so great in the case of women milling a screw thread, where four-fifths of the time was spent in watching the

machine, as in the case of some women lathe-workers, who had to apply seven different tools in succession, and could quicken their pace at every stage. There is an obvious difference between reducing the hours of factory operatives whose increased hourly output can compensate for the shortening of the working day, and that of tram drivers, the reduction of whose hours may necessitate the employment of more men to run the same services. At the same time even a tram service may gain by way of diminished accidents, less sickness and greater contentment. Frequent overtime and Sunday labour are of doubtful value. As to the latter, one foreman remarked to investigators that he did not believe in "a holiday on double pay," while another declared that Sunday work gave "six days' output for seven days' work on eight days' pay." The Committee on the Health of Munition Workers pointed out that the onset of industrial fatigue can be avoided by (1) an intelligent observation of output; (2) by regular study of returns of sickness and lost time; (3) by prompt initiative in adapting the hours and conditions of work to physiological need; and (4) by providing proper facilities for feeding, resting and recreation.

Connected with the problem of selection and fatigue, is the question of "labour turnover." A working force maintained at a given size undergoes a continual change of personnel, some leaving through dismissal, others discharging themselves voluntarily. How wasteful these changes may be can be seen if one considers the work and expense of engaging men, the time spent in instructing newcomers, their lower output and the increased amount of spoiled work while they are learning the job. It is costly to the worker, as well as to the employer for he loses earnings in the interim between leaving one job and finding another, and may for a period

suffer low earnings in his new work. "Labour turnover" can be measured in a number of ways, of which the ratio

$$\frac{\text{total leaving—total laid off}}{\text{average total employed}} \text{ is one.}$$

There is a certain irreducible minimum of turnover on account of death, prolonged sickness, personal reasons, and fluctuations of work, but the actual excess of turnover, over this minimum, is much greater than it ought to be. When business men realise that, to take one estimate, every 20% of turnover adds 1% to the wages bill, more attention will be paid to it. At present there is a great deal of ignorance about the matter, because so many business men do not keep full records concerning their staff, and the reasons for leaving. In cases where records have been kept, they have revealed the fact that much of this wasteful turnover of personnel is traceable to defects of organisation in the works—men leaving because they are suffering from eye strain, or because they dislike the temperature or equipment. These reasons enter so much into men's motives for handing in notices that the phenomena have been given the vigorous name, "the strike in detail."

The valuable information which can be obtained by careful study of the whole of the conditions affecting the workman is exemplified in the Report of the Industrial Fatigue Research Board on "absenteeism" in coal mines. Absenteeism is important in its direct effects on the efficiency of the industry—the average time lost in all British coalfields in 1924 being 8½%, or the equivalent of four working weeks a year, while mutual charges as to its causes are a source of friction between employers and workmen. The investigation shows that in the collieries where tests were made, absenteeism is

affected by the depth of the pit, being nearly half as great again in deep pits as in shallow ones. When the air velocity in a pit exceeded a moderate figure, absence through sickness increased, and the accidents were more frequent. Accidents increased with the depth of the pit and the output, while they were four times more numerous where work was taking place at the highest temperatures than at the lowest. The investigation showed that the miner is extraordinarily sensitive to the conditions of his work, and that the best method of diminishing absenteeism is by careful attention to them.

(*o*) *Scientific Management.*—These fresh developments of knowledge have put the whole problem of selection and organisation of the working force in a different setting. New significance has been given to the work of the staff manager. Keeping detailed records, following up reasons for leaving, and using the services of industrial psychologists are all involved, so that the work of his department has become more technical and wider in scope. It is not his work only which is affected, for these fresh methods are in part an outgrowth of, and in part have passed into a wider movement for "scientific management." Taylor, to whom may be given the credit of originating the movement, declared that he asked for a new attitude to the problems of management in all its branches, but it is his practice in the training, organisation, and payment of the employees that has secured the most attention.

The claims of scientific management can be simply stated. There exists a science of management, which has its laws like every other science. The subdivision of work, the selection of the workers, and the methods of doing the job itself, in the "older" forms of management have been the result of tradition and prejudice.

Once the task was set, the detailed operations for its accomplishment were left to the skilled operatives. The onus rested on the worker, yet the method of apprenticeship gave him a body of practical knowledge inherited from older workmen, which however useful it might be, was traditional and unsystematised. The object of the scientific manager is to replace this traditional knowledge by methods arrived at afresh by people who are scientific in bent, and who subject each operation to vigorous tests for its efficiency. The appropriate methods of work and even methods of payment are thus placed outside the realm of tradition and become questions of scientific fact. Its application involves, (1) transferring the responsibility for the settlement of methods of work from the operative to the office, an increase of indirect labour as compared with direct labour being the consequence; (2) the settlement of the detailed operations and speed of work after scientific investigation; (3) the use of fresh methods of wage payment to secure the accomplishment of the detailed operations and the maintenance of output. The third of these points can be left over until the general question of wages is discussed. Time and motion study is a characteristic method by which the first two are applied. If in the performance of any task each man settles his own detailed operations and motions in accordance with his individual judgment and his training, the outcome of this freedom is much routine, many wasteful motions, and in the end no guarantee that the way most men adopt will be the best. For out of the various methods used, one must be the "best," in the sense of producing the greatest result with the least expenditure of time and energy. The scientific manager will watch and test each detailed motion, select from the whole series the

"best" or "shortest" at each stage, and prescribe for all workers a new standard set of operations or motions constructed out of the "best" so discovered. The whole will be based on a careful timing of the operation, and all operatives will be kept within a reasonable range of the time taken by a good active workman.

The general claims are supported by some surprising practical achievements. In the case of a gang of men shovelling various classes of material at a steel works, an endeavour was made to find out what was the "best" weight to be shovelled, including the weight of the spade. Experiments suggested twenty-one pounds including the spade, the men were then provided with ten different types of spades to use for different classes of material, with the result that the amount shovelled per man increased from sixteen tons to fifty-nine tons. Attention was given to the time the men were actually "under load," with a view to discovering the most productive distribution of time between rest and load. The time taken in fetching and carrying trays in a sweet factory was reduced to one-third, while the reduction of separate movements in folding cotton piece goods was from between twenty to thirty, to an average of ten to twelve movements. In another case, a foundry reduced its hours from ten to eight and three-quarter hours, reorganising its operations as a result of motion study, and yet it increased its production from forty-eight items to one hundred and forty-seven per day of a given kind of output.

Changes of this sort remove the initiative from the operative to the office, the decision as to the best way to tackle the job being taken from the workman, who receives detailed instructions on a card, and must follow them out strictly. The number of office and indirect workers is correspondingly increased as com-

pared with those directly engaged on the work. Taylor found that the older "omnibus" foreman, who was supposed to be disciplinarian, organiser, and expert in all kinds of processes, was unable to cope with the new situation, and replaced him by a number of specialised "functional foremen," one to interpret instructions and drawings, another to deal with the setting up of work, a third to deal with speed of machines and so on.

Yet one must not allow the undoubted achievements of scientific managers, or their enthusiasm, to lead one into an uncritical acceptance of either their larger claims, or all the details of their practice. Their claim is that all these matters, including the wage formula, are based on natural laws, and that once these are discovered, they are outside the realm of opinion, being unchallengeable facts. This is certainly unproved, opinion and bias entering into the matter more than they suppose. Taking motion study as an example, the conclusions arrived at can be influenced by the way in which the workers selected for the test are chosen, and their speed of work relatively to others, while the attitude of the investigator to the workman affects both his decisions and their response. The reaction of the workers is influenced by atmospheric conditions, the time of the day and year, and their mental and physical condition when they are tested, etc. The aims and intelligence of management are important, for there is no doubt that "fake" systems exist, and that there are cases where the cry of scientific management has been used to justify to the workmen every wage-change made against them. It is true also that many of the earlier investigators were engineers with an excellent knowledge of materials but not of the psychology and physiology of the workers. It does not always follow that a new motion made up of the "best"

parts of the motions of the individual workers is in total the best, for some motions which appear to be wasteful are naturally introduced as a means of resting the muscles, and adding rhythm to the movements. Again, some have endeavoured to insist on uniform output per hour, where psychological investigation shows that there is a preliminary "settlement" period of small but rising productivity, that as the operative gets into the swing of work his output rises to a maximum, thereafter falls as fatigue sets in, and is terminated by an end spurt at the close of the day when the prospect of finishing acts as a stimulus. The emphasis thus shifts to the study of the nature of the rhythm of the human organism. There has been a danger, indeed, that the error we made in our early use of the machine in forgetting that the pace of work must be adapted to the natural rhythm of the body, might be repeated in another and more modern way, but there is no doubt that we are discovering sources of great waste of human energy, and that the work of the industrial psychologist promises at some time a great increase of productivity, and a diminished fatigue of the workers.

It must be recognised that, at any rate in its larger claims, both the aims and methods of scientific management may be a cause of friction with organised labour. For Taylor held that its great virtue was that its conclusions lay outside the realm of opinion, that they could be no more a matter of bargaining than the law of gravitation. This view, the basis of which we have criticised, seemed to trade unions to deny the utility of collective bargaining, and to render them futile. They further objected that in its insistence on individual measurement it stripped the workman of the protection unionism gave him.

(*d*) *The Supply of Labour.*—In the recruitment of his labour the employer is by no means a completely free

agent, for he has to take account, not only of the competing demand for workers by other employers, but of the actions of other bodies interested in the supply of labour—trades unions, and the State. A collective agreement with a trade union, signed on his behalf by the federation of his industry, may bind him not to employ more than a certain proportion of apprentices to skilled men, or may limit the number of machines which one man may be set to attend. The State may, through a Trade Board, prohibit the employment of more than a certain proportion of old or inefficient workmen, while it may restrict the supply of boys and girls by raising the school age. Apart from these considerations, which affect his day-to-day actions, broader forces have an important bearing on the volume and character of the total supply of labour, and although he may neglect to observe them, they will nevertheless affect the industrial situation of which he is a part. The matters which are of importance are :—(1) the size and growth of the population as a whole. Between the census of 1881 and 1921, the population of Great Britain increased from thirty millions to forty-three millions, an increase of forty-three per cent., but the rate of increase has fallen rapidly during recent years. The main source of increasing population, the excess of the birth rate over the death rate, has fallen by no less than two-fifths in the last fifty years, and by 1941 England may have a practically stationary population. (2) The size of the industrial population, i.e., the proportion of the total population which is of working age. A falling birth rate affects the age distribution of the population, as well as its absolute numbers, for if the number of boys and girls born declines, then fourteen and fifteen years later there will be fewer boys and girls entering the labour market. By contrast, a fall in

the death rate means that people live longer, and have more years of working life in front of them. In England and Wales the average expectation of life of men in the years 1871-80 was 41.4 years, and of women 41.9 years, but in the years 1910-12 this was increased to 51.5 years in the case of men, and 52.7 in the case of women. The general progress of the public health has added in the short space of half a century from ten to eleven years of life of the population. It is shown in a more striking way by comparing the figures of 588,000 women and 429,000 men of seventy years of age and upward in 1901, with the estimated number of 1,306,000 women and 911,000 men who will be of that age in 1941. This increase in the length of the working life is more than offset by the fall in the birth rate, the joint result being that the industrial population is growing less rapidly.

(*e*) *Mobility of Labour*, that is, the willingness and ability of the worker to move from industries and places where he is less required, to work and to localities where the demand is increasing. Imperfect knowledge of opportunities in other trades and places prevents movement. It was to assist in surmounting this difficulty that the British Employment Exchanges were created. The essence of the system of the exchanges is that each local exchange shall receive notification of vacancies from employers wanting workers, and from workers who desire work. The efficiency of the system naturally depends on the extent to which both the workers and employers make use of its machinery. Through the administration of the Unemployment Insurance Acts unemployed workers can be compelled to register. This, however, is not enough—there must be a notification of vacancies, and although it is natural that some firms who have been successful in doing their own recruiting should desire to maintain their freedom

in this respect, the attitude of independence must be condemned as weakening the whole machinery. Ignorance of suitable jobs is but one of a number of influences hindering mobility of labour, and it is not now the most serious. In the case of the married man with children, removal to a fresh district may mean either the diminution of the children's earnings when he moves from a district where there are opportunities for the girls to a locality where the openings are fewer, or it may involve the break up of the family. If he has been thrifty and has purchased his own house, he will probably be unable to move until he has sold it, and this may, if unemployment is great in his district, involve him in a considerable loss. The cost of removal is often too heavy, and even if this can be met, the present difficulty of finding house-room may involve keeping two houses going at the same time. As to mobility between trades, a change from a depressed skilled trade to some other occupation would mean the abandonment of what has hitherto been the man's chief commercial asset, his training and experience. It is natural that men should prefer to wait in the hope of a revival of demand for their own craft. When they are willing to move, there may be difficulty in entering a fresh occupation, for a trade union or professional body, with or without the support of employers, may endeavour to safeguard its standard of skill and earnings by regulating the numbers entering the trade through a strict enforcement of apprenticeship.

3. THE LOCATION OF THE WORKS.

Cost of production will be affected by the appropriateness of the site selected for the works. In deciding which town is most suitable for his factory, the employer will consider the distance of the site from the sources of supply of the raw materials needed. If these are heavy

goods, and the cost of transportation is high, this will be of capital importance. Where the materials used are the by-products of some other industry, it is often true that the using firms will congregate around the major industry. In grain milling, the increased reliance during the last half-century on imported as compared with home produced wheat has caused a decline in the number and activity of inland mills, the most important ones being near the seaboard. Secondly, if the power used is derived from coal, proximity to its sources is important, for its transportation is costly and in some respects wasteful. The development of long-distance electrical transmission should make possible a greater dispersal of industry from the mining centres. Thirdly, the employer must ask himself whether he is near the markets for his products, for he cannot allow himself to be placed at a competitive disadvantage in either personal contact with the customers or in the costs of transporting his wares. In the case of Australia and New Zealand, although the great distance of these countries from the industrial population of the world may enable them more easily to build up certain manufacturing industries for home consumption, the high cost of carriage to the consuming populations of Europe and North America is a considerable barrier to the development of export manufacturing. In heavy industries, where both materials and products are weighty, the costs of transportation are vital. English blast furnaces, and steel works whose business is concerned with pig iron, steel ingots and castings, are mainly situated near the sea, close to the sources of iron ore and coal, and most of them near one of the greater ports. In consequence, while the average rail haul for all freight in 1921-24 was fifty-four miles, that for iron ore was only forty-four miles, and for ingots forty-one miles. Fourthly, the site must be within the

reach of an adequate labour supply. It is true that in some cases, the advantages of nearness to raw materials or power has been so great that it has paid employers to buy land and erect houses for their workmen, but in general the convenience of setting up near an adequate labour supply is very great. It is this which explains the location of much of the miscellaneous manufacturing of East London.

It is not often that any site will fulfil all these requirements nor must these conditions be thought of in any absolute way, the thing that matters being total competitive advantage or disadvantage as compared with rival producers. What some firms lose in high cost of transporting material, they may regain through marketing advantage. Nor will these considerations have equal force in different industries, for in one the bulk and cost of raw materials may be much less than in another. Yet it is likely that in any given industry, one or other of the elements of cost will be of dominant importance, and all the most successful firms will be gathered near the sources of material, or by the sea-board, or on a coal bed.

The considerations so far mentioned are mainly geographical, and although one might expect them to be of overriding importance, the actual distribution of British industry gives examples of concentration in apparently complete disregard of them. Why should Northampton make boots of leather from South America, and re-export the products to the places which provide the material? Why should Nottingham import cotton and export lace to the countries which provide it? Purely economic considerations may be more important than geographical ones, for once an industry has become established in any centre, even though it may have ceased to be entirely suitable from other points of view, any new employer desiring to set up a factory will pro-

bably be drawn there. The architects of the town will have special knowledge about the lay-out of modern boot factories, and there will be a selection of firms of leather and accessory dealers from whom he can buy. He will have less difficulty in getting skilled men than if he set up in another town with no other factory of the same kind, and much of the general labour he will require will have had some experience in other boot factories. If he wishes his junior clerks to increase their efficiency by taking evening classes, he will find there are already a sufficient number of other firm's employees to justify the local education authority in providing classes specially adapted to the needs of that industry. The railway company may find that the trade passes in sufficient bulk to enable them to quote a special rate to facilitate export trade, an advantage he might lose if he established himself in isolation elsewhere. Although he may have thought of setting up in some town in the south of England and endeavouring to capture the local market through economy in transport costs and special attention to its tastes, he will discover that the gains of producing in the same place as his rivals will be so great as to make it worth his while to forgo the advantage of nearness to his market.

Once he has decided on the town in or near which he is going to establish himself, he still has the option of selecting a site in the town itself, or setting up on the outskirts. In the former case he has all the advantages of a central position—easy access to goods, stations, repair firms, banks, and other firms with whom he will have dealings. But there may be a suitable piece of land a few miles down the railway line. It is cheaper than a town site, there is more room for extension, he can spread his works out on a single floor, and save the costs of heavier and more expensive construction

which additional storeys necessitate. His rates will be lower.

The tendency of the manufacturer to establish himself beside his competitors brings with it general gains to industry as a whole, especially in transportation costs. The denser the railway traffic per mile of line, the smaller is the share of capital costs and maintenance to be borne by each passenger and ton of freight. If the supply of overseas materials and food stuffs is important, as in England, then the concentration of the population and of industry near the ports diminishes the mileage the traffic has to be hauled. It is of considerable commercial advantage to Great Britain that nearly one-half of the population is within fifteen miles of the twelve largest ports, through which over eighty per cent. of our trade passes, and that instead of being widely scattered into thinly-populated districts, four-fifths of it is concentrated into towns, thus increasing the density of the traffic on road and rail. The consequences are important, for the average British haul for freight traffic of fifty-four miles compares very favourably with the ninety miles of Germany or three hundred miles of the United States.

A detailed example will indicate the character of the processes by which an industry establishes and alters its concentration. The concentration of the Boot and Shoe trade in Northampton, Leicester and other subsidiary centres is a combined result of war, standardisation of products, natural resources, mechanical invention and trade disputes. In the case of Northampton, the original causes of growth were favourable natural circumstances. The surrounding country provided ample supplies of oak bark for tanning, and was eminently suitable for cattle raising, so that as early as the thirteenth century, the trade in hides and skins was important enough to have

special tolls levied on it for building the walls and paving the streets of the town. The standardisation of products came when the early military levies were replaced by a national army uniformed and equipped. This involved the production of boots and shoes of standard types and sizes in large numbers, conditions which are favourable to the growth of concentrated industry. In July, 1642, for example, there were delivered to the Commissary for Clothing, for the use of the armies in Ireland, 7,500 pairs at 2s. 6d. per pair, and in August, 10,000 pairs at 2s. 5½d. per pair. In three months and a half, 21,000 pairs of shoes were shipped to Ireland. The government officers specified four sizes of shoes, some of them with "three" and others with "two" soles, and in their desire to simplify administration, made contracts with a number of producers jointly for a total sum. This was only the beginning of a long association of Northampton with Army contracts, each succeeding war bringing its stimulus to the industry. During one year of the Napoleonic Wars, a single firm handled no less than 30,000 pairs of shoes per week. By the beginning of the nineteenth century Northampton was the great centre of the Boot and Shoe industry.

Later developments are in part indicated by the following figures of the number of boot and shoe makers per 10,000 of the population at successive census dates.

Number of Boot and Shoe-Makers per 10,000 of the Population.

	1831	1841	1851	1861	1871	1881
Northamptonshire	208	302	624	745	789	876
Leicestershire	81	117	147	210	369	512
Other English Counties ...	104	110	124	115	88	70

This table shows vividly (1) the existence of a concentrated industry in Northampton in 1831, producing for

the needs outside its area, and its continued dominance even after it had outgrown local supplies of hides and tanning materials, and was relying on imports; (2) the gradual increase in the number of boot and shoe makers in all other counties as prosperity increased and standards of living rose; (3) the rise of Leicester particularly between 1851-61, and (4) the sharp decline in the hand boot and shoe makers elsewhere after the decade 1851-61, the industry now changing to a factory industry carried on in particular centres. The rise of Leicester as a rival centre was in part due to prolonged strikes at Northampton, resembling a guerilla warfare, through the years 1857, 1858 and 1859, against the application of the sewing machine to boot and shoe making. The operatives objected strenuously to working on machine-prepared tops, but a number of principal firms sent these tops to Leicester and other places to be made up and at least one firm removed from Northampton altogether.

At the end of the nineteenth and the beginning of the twentieth century, industry having changed from scattered hand production to a concentrated factory and machine trade once again began to disperse, but this time in the form of fresh centres of modern production, in Leeds, Bristol, Norwich, and Olney.

This detailed example shows the manifold nature of the factors influencing the establishment and development of concentrated industries and the way in which towns with an initial start can, when the original advantages have disappeared, continue in leadership simply through the economies of congregating numbers of firms of the same kind and their subsidiary industries.

4. THE SIZE OF THE BUSINESS UNIT.

The student of economics or business is not per-

mitted to forget the importance of the size of the business as an element in its efficiency. The present popularity of rationalisation, amalgamation and even nationalisation is in remarkable contrast to the suspicion with which amalgamations were regarded twenty years ago. In 1909, three great railways proposed to combine but were compelled to drop part of their proposals because of the public outcry and threatened Parliamentary intervention. In 1921 we compelled the railways to amalgamate, have abused the coal mining and cotton industries for refusing to follow suit, and by way of example are setting up a national electrical transmission system. There are fashions in business as well as in dress, and it is worth while to take thought lest the new-found remedy may prove to have more limitations than we are willing to suppose. Three questions have to be settled. First, granted the state of the technical knowledge in any industry, is there an " ideal size " of business which combines the maximum of advantages with the minimum of drawbacks ? Secondly, what determines differences in the " ideal size " as between different industries ? Thirdly, since there are in most industries a number of firms of varying sizes, what enables those firms of a greater or less size than the " ideal " to maintain themselves in competition with the more efficient units ?

In endeavouring to answer the first of these questions a distinction must be drawn between the size of the undertaking as a technical and productive unit, and its size as a business or management unit, for it is possible to unite under common management a number of works in different localities, all of them producing on a scale which gives the most efficient results. It is the state of the industrial arts of engineering, chemistry etc., which determines the most appropriate size from a productive point of view, while the scope for large-scale management

depends on the development of business organisation and administrative methods. On the whole technical influences are making for larger units. Costly specialised machinery may save but a small amount on each operation of the article, but cause a large aggregate saving if the total output is great. The International Harvester Company provided a striking example of this by introducing machines for shaping poles for harvesters and wagons, which cost $2,500, and saved but one per cent. per pole, an innovation which was profitable only because of the large sales. There are tea-packing machines which weigh the tea, make, fill, label and seal the packets, but they are complicated and expensive and yield a return only on a large output. A steamer of 10,000 tons capacity can deal with freight more cheaply than one of 5,000 tons, but it is wasteful if not fully used. Only if production is on a large scale can steam shovels and mechanical loaders be employed with advantage. Bulk consumers of power expect cheap rates. Similarly, the advantage of specialising labour can be best obtained when the number of men employed is large and the processes can be minutely subdivided. Standardisation in the sense of "flow production" yields its fullest economies only with a vast out-turn of goods.

Standardisation in the sense of fixing standard sizes, shapes and types by some external authority such as the Engineering Standards Committee, may aid firms of moderate sizes, for as Marshall points out in his *Industry and Trade*, if a few firms specialise in the manufacture of these, small manufacturers who use them may get them as cheap as a large rival who makes them for himself. Special plant for the utilisation of by-products will pay only if the scale of production gives an output of the subsidiary article great enough to justify the installation of machinery for dealing with it. The manu-

facture of violin strings by meat-packing concerns is a case in point. In all these examples, the condition of the use of expensive machinery is that it shall be fully employed. In some cases it does not seem technically possible to produce on a large scale with marked economy. Sometimes the materials used are not homogeneous, and do not lend themselves to uniform treatment by elaborate machinery, *e.g.*, diamond cutting. In the Boot and Shoe industry the hides used are not uniform, and for long it has paid British firms to employ specially skilled "clickers" to cut them out with a minimum of waste.

Large scale management implies the union in a single firm of a number of separate works. The success of chains of chemists, grocers, butchers, and shoe shops under the control of a single company is to be attributed to the economies of common management, rather than to any advantage in the size of the individual shops, for in that respect they differ little from their independent rivals. Sometimes a large concern may be created by a natural expansion of a successful enterprise, until it covers a large part of the field of production of the particular article with which it is concerned, but in the history of most of the great businesses deliberate amalgamation with other firms has played an important part. The underlying motive for expansion in the case of the heavy industries is often to be found in the desire of firms for stability of sale or output. Production with expensive fixed equipment makes possible the mass production of articles at a low cost per unit, but it also brings severe penalties for irregular or inadequate utilisation. To meet this difficulty the firm can endeavour either to control the market or to be independent of the market. In the former case it will endeavour to amalgamate with or absorb other works making the same article or rendering the same service, *i.e.*, it

will expand "horizontally." In the latter case it will endeavour to ensure a regular supply of raw materials by alliances with the firms producing them and to make sure of its contracts by amalgamating with firms consuming its products, thus avoiding purchase and sale on the open market. To this second type of expansion, since it brings together different stages of manufacture from raw materials to finished goods, the name "vertical" has been given. Examples of "horizontal" combinations are the Associated Portland Cement Company, which controls the output of the Thames and Medway district, and the British Portland Cement Company which manages the units scattered throughout the country. The British Oil and Cake Mills, Ltd., was an amalgamation of seventeen firms, the United Alkali Co., of forty-eight, the Calico Printers of fifty-nine businesses. Even retail trade exhibits similar tendencies, chains of shops being organised for the sale of tobacco, jewellery and dairy produce. Vertical expansion is found typically in the iron and steel trade, steel-making firms owning coal mines, lime-stone quarries, iron ore mines, blast furnaces, and varnish and paint works. Newspaper firms often make their own paper and own their own forests. In some giant concerns both tendencies reveal themselves, as in the case of the United Steel Corporation, which owns nearly all the sheet steel, tin plate and tube works in the United States, and produces half the country's steel rails and structural steel. These unions of firms under a single management make possible a number of commercial and administrative economies. Buying departments and staffs can be united, bulk purchases made, and materials standardised. On the marketing side there are economies in the selling staff and agencies, and advertising can be made more effective by concentration into the hands of a single manager. It is

often true that financial strength is increased. Gains are possible on the production side also. Data can be interchanged, processes hitherto restricted to one works can be generalised, and the associated businesses can afford to spend money on research. Even in certain classes of " chain " retailing savings can be made on the productive side, *e.g.*, restaurants can be provided with bread and confectionery from a central works by express delivery vans. While these examples illustrate the kind of economies which are possible in amalgamated businesses, it does not follow that any given amalgamation makes savings in all these directions, for much depends both on the nature of the industry and on the ability and determination of the organisers to explore the various avenues.

One of the many meanings of the word rationalisation refers to the attempt to realise more fully the productive economies of large scale management, and to combine them with the logical application of large scale production. The rationalisation programme implies that all the plants manufacturing a certain range of products should be brought under a single control, smaller and less efficient works closed, and the entire production concentrated in a few gigantic works, each specialised into producing a very limited range of articles. This programme of organisation is to be accompanied by devices designed to secure stability, such as price fixing agreements, etc. It is not possible at this point to enter into an examination of all the implications of, and virtues claimed for, rationalisation, but we may ask at once whether this conception of limitless expansion of the business unit leaves out of account some practical difficulties. We have already seen that, given the state of the industrial arts, for any industry there is likely to be an optimum size of plant or works which will give the lowest cost of production

per unit, and that enlargement beyond this point will lead to wastes and inefficiencies. Is there also a limit to the profitability of absorbing separate works under a single management? The limits of human capacity must not be overlooked. Many great concerns have been built up by men of genius, only to fall apart under the less able control of their successors. Their management involves a severe mental strain and implies an ability which is rare. Lord Melchett's dictum, spoken, it is true, before his more recent rationalising activities, that "it is quite impossible for human beings to control any industry beyond a certain magnitude" can be supported by many examples in England, America and Germany. Yet this objection takes insufficient account of the fact that control on a large scale depends not only on native ability but on the contrivance of methods of administration. These are just as much the subject of invention as technical methods of production, and the "Industrial Revolution" consisted no less in the development of factory administration organisation than in the elaboration of new machine technique. Boulton's claim to fame rests not only on his later association with Watt as the manufacturer of steam engines, but on his administrative capacity. Before the famous partnership, as his firm grew—it employed 800 persons in 1770—he consciously practised division of labour, specialising his men to particular tasks, arranged weekly meetings of partners and managers to discuss price lists, sales, etc., and developed systems of book-keeping. These changes attracted the notice of his contemporaries, Wedgwood of the Potteries, for example, corresponding with him on these subjects.

The amalgamation of the constituent railways into the great concern of the London Midland and Scottish demanded a readjustment of organisation, and a small

executive, consisting of a president and four vice-presidents, was elected for the purpose of ensuring close consultation and prompt action. In contrast to this, the great firm of Vickers, during the later stages of the Great War and the early years of peace, absorbed a great variety of enterprises producing lines of goods of which the firm had no previous experience and with marketing problems fresh to it. The result was that the shareholders lost two-thirds of their capital. Independent investigators suggested that not only should the firm get rid of some of its newly-absorbed enterprises but that three special boards should be set up to exercise a closer control over the remainder. It was a sharp lesson in the fallacy of the belief that mere increase of size is in itself a guarantee of stability or of reduced costs of production. While, therefore, personal factors do not set a permanent limitation on the scale of any business enterprise, and the invention of fresh methods of organisation and accounting, and even mechanical improvements like the telephone and the telegraph are constantly rendering possible the efficient control of even larger units, the success of great amalgamations depends on a recognition of the fact that an increased scale of business may demand not a mere parallel enlargement of the administrative machinery, but a change of its type.

In answering the first we have at the same time provided material for a reply to the second question, what are the causes which apparently make the ideal or optimum size of the business unit vary from industry to industry? The different technical and commercial conditions demand different types of organisation. In the iron and steel industry, which deals with large heavy masses, mechanical conveyors can be used if production is on a scale large enough to make them profitable. If the works are large enough, electricity

can be made from the waste gas of furnaces. Where the precise nature of the products demanded varies from individual to individual, as in the case of tailor-made clothing, or where personal contact with the customer is important, as in retail trade, a small unit is either necessary or at least has prospects of commercial success.

The third question concerns the survival of those firms which are either larger or smaller than the ideal or most efficient size. If those whose scale of output is at or near to the ideal figure reap all the gains of efficiency which have been mentioned, how can one account for the persistence of firms whose production is either smaller or larger? Some of the smaller firms, being newcomers into the industry, will expect to have the pace set for them by the established businesses, and will not be discouraged if at first their profits are below those normal in the trade. In other cases the competition between firms may be more apparent than real, as their products may in fact be different in quality and purpose, e.g., silica bricks and ordinary building bricks. It is possible that while technical considerations would suggest one size of output as the most efficient, commercial considerations may point to another, so that while expansion beyond a certain size may have disadvantages in actual production, it may from a commercial point of view be worth while. In this case, one firm may choose to emphasize technical and other commercial efficiency. Further, recurrences of successive booms and depressions make it possible for an inefficient firm to make enough during the prosperous years to eke out its meagre earnings in the bad years, thus retaining it in the industry as a reserve for use in times of especially heavy demand.

Two great industries, coal mining and agriculture,

in which the unit of production is dominantly small, show the possibilities and the limits of large scale organisation very clearly. The Royal Commission of 1925, speaking of the great diversity of conditions in which coal mining was practised, aptly compared it with farming. There are great varieties in the depth of coal, the thickness of seams, quality of the coal, "gassiness," the quantity of water to be dealt with, the proximity to ports, and the availability of sites for the workers' houses. It is not, they point out, an industry of similar undertakings, producing uniform articles under similar conditions. There are 2,500 mines, some employing fifty, others more than three thousand men. At the time they reported, some produced at a cost of 12s. per ton, others at 30s. per ton. Yet large scale production would give definite advantages in the purchase of supplies, in larger repair shops, in pumping, in getting barrier coal and in selling. The economical supply of wagons would be facilitated. The closing of pits—since "working out" of the mines is an essential feature of the industry—could be undertaken in an orderly fashion, if the area covered by the undertaking were large enough.

One may ask therefore, if the economies of production on a larger scale be obvious, why have the owners remained contented to work smaller and presumably less efficient units? The diversity of natural conditions accounts for much, legal obstacles for more. In English law the mineral belongs to the owners of the surface, and the leases for working coal must be arranged with them. The boundaries of surface property have no relation to the technically most suitable boundaries for getting coal beneath the ground, and extension of the mining unit would mean the persuasion of separate surface owners, a redrafting of leases with the difficulties as to areas, royalty conditions, and terms of years

for which they are to operate. Some of the reluctance may be due to the fact that towards the end of the last and the beginning of this century, the coal industry underwent a great expansion. Demand rose, new pits were sunk, and the industry was prosperous. In such expansive conditions, there was no stern pressure of necessity impelling owners to overcome natural and legal obstacles in their search for sources of saving, as fair returns could be obtained without so doing.

The conditions of agriculture are in some ways similar. There is similar diversity of natural conditions, and the same wide variety of products—so wide indeed that agriculture could be regarded as a series of distinct industries. There is no possibility of employing machine methods to produce vast numbers of uniform products. It is true that mechanical inventions like the tractor and the haymaker, have made for the large as against the small farms, but in the present depression the small farmer has on the whole fared better than the large farmer. The largest farms are found in East Anglia, *i.e.*, in the wheat-growing area, and the difference of prosperity in favour of the small producer is due not simply to the size of his unit, but to the fact that his output has been more varied, and that he has not suffered so much from the collapse of wheat prices. The disappointments which have faced those agricultural reformers who hoped to re-create the yeoman farmer through the small holdings movement, have been in part due to the failure to realise some of the essential conditions of success of small agricultural units. Legislation framed to promote the purchase of small holdings, both land and buildings, overlooked the fact that the potential purchaser was of limited means, that purchase would drain him of liquid capital necessary to work the holding, and that he probably would do better to hire a larger farm and employ

his meagre resources in its actual working. Further, a different type of production is needed. A profit of £2 an acre on a farm of four hundred acres yields £800, but the same profit on a holding of thirty acres gives a bare £60. The small holder must therefore engage in agriculture of a different type—market gardening, egg production, etc.

5. THE SUPPLY AND ORGANISATION OF CAPITAL

(*a*) *The Supply of Capital.*—It was explained in the introductory chapter that the modern economic system rests upon a progressive mechanical technique. The production of the world's common necessities—food and clothing, has been sub-divided into a large number of stages and each of these stages implies the use of fixed instruments of production—tractors, harvesters, railroad and steamships, pumping machinery, pipes, etc. The instruments of production must themselves be made —and thus an array of blast furnaces, rolling mills, and forges, comes into existence. The use of durable instruments of production, of capital, is the essence of the process. In addition to having proper relationship to the course of invention, the supply of capital must have reference to the number of persons for whom fixed equipment must be provided. An increase in population implies an increase in the number of houses, buses and factories which they need for shelter and work. It is true that the rate of increase of the English population is declining, but even if the population were completely stationary, supplies of savings would be wanted for replacement and for the new inventions. What then is the total volume of savings? From what sources are they derived?

The total capital of the country has been estimated at £24,000,000,000, and the national savings in 1924 at

£500,000,000 which represents an increase of about 2% per annum. Additions at this rate would increase the national capital by one-half in twenty years, while the population in the same period is unlikely to increase more than from 5% to 8%. These figures should be compared with pre-war savings, which amounted to between £350,000,000 and £400,000,000 or allowing for the change in the price level, the equivalent of £650,000,000 per annum. The figure of £500,000,000 thus reveals a serious decline of £150,000,000 a year. For the annual supply of savings we rely mainly on individuals, though "group saving," e.g., profits of companies which are not distributed and private traders' gains invested in their own businesses are of increasing importance, and amount to nearly two-fifths of the total. One of the striking achievements of the nineteenth century was its accumulation of capital. There was a great increase of productive capacity, the standard of life was raised, and savings increased. The creation of institutions for the receipt and use of savings had an important influence in the increase of the total volume. For example, while the National Savings Certificates were so advantageous that they attracted some savings which would have been made in any case, their small face value, the ease of withdrawal, the rate of interest, etc., encouraged people to invest sums which otherwise would have been spent in current consumption. Of this the large sums collected through schools and other savings associations are evidence. Appropriate institutions, from banks to investment trusts and savings certificates, the issue of shares of small denomination and the careful grading of risks, actually stimulate the flow of savings. Political security is important. Saving is provision for the future, and if the prospects of enjoyment of it are uncertain, either from restriction of personal liberty, or want of civil order, worldly wisdom

may suggest to potential savers that income should be enjoyed while there is yet time. Economic uncertainty also may diminish the volume of savings, great rises of price through inflation, for example, may so diminish the purchasing power of saved capital as to put a premium on immediate expenditure. Between 1914 and 1920, price changes reduced the purchasing power of the income derived from consols by two-thirds, and of the capital value by no less than four-fifths. In Continental countries, where the issue of paper money reached astronomical figures, the value of savings was almost obliterated. Ability to save is affected by the distribution of wealth. Rich persons are able to save a larger proportion of their income than the poor, for they do not thereby trench upon expenditure on the necessities of life. While this has little effect on the variations of the volume of savings from year to year—for the character of the distribution of wealth is remarkably stable—it has a significant bearing on any proposed changes in that distribution.

What are the influences which augment or diminish the rate at which capital accumulates? How far does a rise or fall in the rate of interest call forth or discourage the supply of the commodity for which it is paid? Some of the conditions favourable to the growth of the capital do not alter significantly in short periods of time. Strengthened desire to save might follow from greater political security, but this has been achieved in England, and no change in this respect is likely. Desire to provide for posterity is a factor of importance, but it is not clear that there is any significant change in this, except over very long periods of time. The last decade has witnessed an enormous growth of investment in life insurance, but this is partly due to the specific encouragement of tax rebates. The same conclusion

can be drawn regarding people's realisation of the needs of the future in a broader sense. The small capital accumulation of primitive tribes is due, not only to their poverty—there is little surplus over necessities which can be saved—but to their imperfect realisation of the economic needs of the future. The progress of civilisation, on the contrary, has been marked by an increasing vividness in the appreciation of the claims of the future, but the changes have been slow and difficult, and there is no evidence for supposing that this attitude alters except over very long periods. The alteration of the distribution of wealth in favour either of the rich or the poor would influence saving, as the former would probably save a large part of the added income, while the poor would naturally use it to build up and improve their standard of life. In practice the distribution of wealth is fairly stable. Changes in the rate of interest influence the actions of various savers differently, and it is not easy to give a clear-cut answer as to the probable effect of alterations. It is not conceivable that the rate of interest should fall so low as to prevent some people from saving part of their income for future needs, or should rise high enough to prevent others from using capital for present necessities or dissipations. The amount which some can put aside each year is more or less fixed, and moderate changes in the rate of interest are unlikely to cause them to modify their actions. On the other hand, the income of rich persons consists largely of dividends and other forms of interest on investments, so that a prolonged fall in the rate of interest would diminish their incomes and with them the sources from which their savings are made. As these are the largest contributors to the total volume of saving, a low rate for a considerable period would be unfavourable to the accumulation of capital.

Similarly, some of the factors influencing the demand for capital are fairly stable for short periods. The numbers of the people alter but slowly, no ordinary movement in the birth and death rates making a great difference unless long continued. The demands of governments for wars are important, since they are made spasmodically and large sums are borrowed in the space of a few years, thereby introducing irregular fluctuations in the rate. Changes in the course of inventions have been among the chief causes of fluctuations. The discovery of the possibilities of steam locomotion led to an immense demand for railway equipment all over the world, and the revelations of the manifold uses of electricity as power, light and heat, have opened up a wide field for the use of capital. At the same time inventions also react on the supply of it, for they raise productivity, and increase the means out of which savings can be made.

So far as the answer to our question can be stated briefly, we can say that the supply of capital will be encouraged or discouraged by a prolonged high or low rate of interest, but that for short periods the supply is not so quickly adjustable, and that in this case changes in the rate are caused mainly by the alterations in demand.

(*b*) *The Organisation of Capital.*—The savings accumulated are gathered up and applied to industry and trade in various ways, through both private, public and quasi-public enterprises. Private enterprise may be organised either corporately, as in the joint stock companies, or be managed by individual owners or partners. The relative numbers of businesses which do and do not accept capital from the public are not easy to determine, partly because many businesses, though owned entirely by one or two persons, adopt the joint stock form in order to secure its legal advantages. The Select Committee on Increases of

Wealth (War), noted that of the total field of profits liable to excess profits duty, no less than 77% were limited liability companies, and 23% were individual firms. How many of the limited liability companies were private firms? An analysis of 70,000 companies, presented to the Colwyn Committee on the National Debt, shows that as tested by the number of businesses, private companies were of more importance, 54,000 being private and only 16,000 being public. In terms of capital the situation is reversed, the public companies having three and one-half times as much paid up capital. Tested by profits the dominant importance of the public company is clearly shown. Three-quarters of the business profits came from corporate enterprise, both public and private, as distinct from individual enterprise, and of that, three-quarters or 56% of the total, came from public companies. "Public companies" are the typical form of organisation to-day, not in the sense that most enterprises are of that type, but that they control the great industries where large capital is needed, and that the bulk of the trade passes through their hands.

The private firm is still the dominant form of organisation in wholesale and retail trading, building, etc., for it is here that a man of energy and initiative can set up most easily. The amount of expensive fixed capital required is not large, and wares and materials can be obtained on credit. Setting up a small shop in a growing district, or advancing from repairing and decorating on contract work for a builder, to undertaking independent work, has been the history of many an established grocer and builder. One of the advantages of the private firm is, curiously enough, that it combines the things which it is the essence of the joint stock system to separate—interest and responsibility. In a private firm the manager

uses, risks, or wastes his own money, and the penalty of rashness or inattention is felt directly, while care and ability reap the full reward. There is a freedom of action, too, which may not be possessed by the joint stock manager, who must perforce consult directors and have regard to the shareholders' view of "undue risk." This does not mean that the owners of an independent business are more alert or more competent than company managers, for on the contrary we know that many of them are used to businesses only on a small scale and in one centre, while the latter may have experience of different centres and be generally more up-to-date. The question concerns the form of organisation, not personnel. It has often been said that the weakness of a private firm lies in its lack of continuity. There is no guarantee that the pioneer father, having built up a fine business from a small beginning, will hand down his ability together with his business. The sons of pioneers, brought up in greater comfort than their parents experienced, become habituated to more leisure and a less frugal standard than their parents' early struggle permitted. This is not universally true, for the history of British businesses contains no more honourable chapter than that of the Quaker families, which for a century built up and controlled the great banks now merged into one or other of the five joint stock banks. The same may be said of the equally competent management of the confectionery families, though the history is in this case shorter. Doubtless special circumstances account for a good deal, religious influences helping to insure the continuance of frugality and industry. Nor must it be forgotten how often in these family histories, marriage has added fresh resources and fresh blood. When these qualifications have been made, there is still much truth behind the criticism of the organisation of

private firms. The proverb that it is "but two generations from shirt sleeves to shirt sleeves," and that "it takes as much ability to maintain a fortune as to make it," summarises a great deal of experience.

Many of these weaknesses may be removed by partnerships. One man's need of capital and another's desire to use both capital and experience in active work, are the outstanding motives which lead to the formation of partnerships. Each of the partners can undertake that portion of the work which is most to his liking, or within the range of his experience. As in the ordinary partnership each of the partners is liable for all the debts of his firm, interest and responsibility are united. It has certainly provided an admirable training for younger men by placing them in close association with men of more experience.

The third important form of business organisation is the joint stock company. The clubbing together of men for commercial enterprises is not a new feature of economic life, although the conditions under which they now associate are comparatively recent, and the extent to which they do it is much greater than formerly. Whenever the risks are great, the returns distant, or the amount of capital required large in proportion to the wealth of individuals, some such form of organisation is likely to arise. Drake's piratical voyages and the Pilgrim Fathers' expedition were alike financed by the use of joint resources. The East India Company, the Hudson Bay Company and the Muscovy Company were but three of the more famous of a number of companies formed for expanding British trade in Tudor and Stuart times. The risks of opening up trading relations with distant peoples whose needs are not clearly known, and whose notions of contract were very different from our own, the perils of piracy, and the smallness and frailty of the ships were all factors

inducing men to join resources in overseas adventuring. The Monarch being too poor to maintain ambassadors in the countries concerned, e.g., India and Russia, the companies had to appoint and pay their own officers for this purpose, and to negotiate concessions of rights of trading and the security of persons. Sharing large risks and providing resources ample enough to make possible costly enterprises are features of the old and new joint stock companies alike. In the sixteenth and seventeenth centuries, though used for industrial operations like mining, they were typically concerned with foreign trade, but the development of industrial technique, the use of steam power, the change from wooden to iron and steel machinery, the necessity of large plant for chemical processes, made manufacturing costly to begin, and, since most of the plant could not easily be adapted for other purposes should trade be less than was anticipated, risky as well. For railways, shipping, iron and steel production, the use of the joint stock form was essential, if adequate capital were to be found by private persons. It was the wide application of this form of organisation to manufacturing which was so marked a development of the nineteenth century.

This extension was aided by the institution of "limited liability" in 1862. Instead of the participant being jointly and individually liable for the company's debt up to the whole of his resources, the claims against him were limited to the amount of shares held by him. It was only a logical development of the basic idea of joint stock, one of the reasons for embarking on a joint venture being to set a limit to the sums exposed to risk and loss, but it was an important change. New large classes of persons of moderate means could invest small amounts without fear of imperilling their general financial position. The appeal for capital has been further widened by the reduction in the

face value of shares. Whereas shares of £100 were once the common denomination, now shares of £1 are typical and it has become correspondingly easier for persons of small means to invest modest sums and spread them amongst different types of investment. Similarly, the grading of shares into different classes according to risk has been important. The London Midland and Scottish Railway has a capital of £414,000,000 of which over one quarter or £107,000,000 consists of 4% debenture stock, and £16,000,000 of 5% redeemable debenture stock. A further £33,000,000 is 4% guaranteed stock, £106,000,000, 4% preference stock, £10,000,000 redeemable preference stock, and £142,000,000 is of preference and ordinary stock. The first distinction to be made between these investments is that some own the concern and some merely lend to it. The debenture holder is not an owner, he has no voting rights, but he must, as a first charge on the company's profits, be paid his 4% to 5% as the case may be, even although the owners get no dividends at all. The debentures of a company are debts, and should be secured by a definite mortgage on the property of the company, and the holders should have power to take over the property of the company, if interest is not paid, and sell it. Some debentures are redeemable, *i.e.*, are debts repayable at a certain date, while others carry with them no right to demand repayment. Preference and ordinary stock or shareholders are owners—they take the risks of the business, receive larger dividends in times of prosperity, but none if the company earns only enough for the debenture holders, and if it does very badly, may see their property in the concern disposed of for the primary benefit of the debenture holders. They have bartered away security for the hope of larger if less constant gains, while the debenture holders give up ownership for the regular payment of interest on money lent.

The joint stock principle has been brought to a further stage of development by the devices of investment trusts and holding companies. These concerns raise capital from the public by the issue of shares and debentures in the ordinary way, but apply the funds so raised to investment in the shares of other companies. Sometimes their purpose is merely to provide small investors with the means of spreading their capital amongst different classes of risk, and in that case the directors of the trust will invest in different localities and different trades, so that any likely combination of unfavourable circumstances will not affect the capital value or the yield of more than a small proportion of their investments.

With a holding company the purpose is to secure a controlling interest in the shares of other companies. These companies may be turning out the same kind of product, or represent successive stages in manufacture, or be of such a character that their financial problems are similar and they can be usefully co-ordinated. The British Electric Traction Company, for example, has a controlling interest in about forty different tramway and 'bus companies in the United Kingdom. It holds forty-six per cent. of the shares of the Northern General Traction Company, but this company itself controls the Gateshead, Jarrow and Tynemouth Tramway Companies. The holding company is widely used in the United States for the co-ordination of public utilities. What advantages can be derived from this method of organisation? Some of the American holding companies maintain technical staffs on a scale beyond the reach of a small concern. Cost of construction and maintenance can be decreased by the standardisation of equipment. To these gains of skilled supervision and technical economies must be added the advantage of greater financial power, for the parent company, being larger and more

widely known, can attract capital more easily. The system is not without its dangers, one of the principal being that of over-capitalisation. The "pyramiding" of holding companies—*i.e.*, building larger and larger units by the successive formation of holding concerns, is almost certain to lead to this. The recent purchase by "holding" companies of electrical supply concerns at high prices illustrates another aspect of the same danger. The bulk of the economies made by consolidation may be consumed in paying profits on the excessive capital.

Besides these connections between businesses through holding companies, there are also relationships through directors. If the student turns to the "Directory of Directors," he will find opposite the name of each person a list of the public companies of which he is a director. Sometimes all the companies with which a man is concerned will be of a given type, *e.g.*, foreign telegraphs, or oil, or iron and steel, but there are also other significant combinations. Directors may be invited to join a board because they are interested in a company which can give contracts, or which can guarantee supplies of raw material, or give aid financially. These personal connections may thus represent an endeavour to meet certain business problems by personal ties rather than by direct amalgamation. Some of the more important men exercise great influence, occupying strategic positions on various boards of related businesses. A close study of the combinations of directorates these men build up is well repaid by the insight it gives into current business tendencies.

From this interlocking of businesses through the holding company and by directorates, an important consequence follows. A few men exercise wide powers of decision upon economic affairs out of all proportion to their personal wealth. Controlled only nominally

by the shareholders of the companies they manage, deferred to by their less powerful colleagues on the boards on which they sit, their power is added to by the great sums investors have placed under their control. The joint stock company system, theoretically based on a careful division of powers and the sovereignty of the shareholders has led to a great concentration of financial power into the hands of relatively few persons. It is by means of these arrangements that the great figures of modern business, like Rockefeller and J. P. Morgan, built up their positions.

(c) *The Managing Agency system in India.*—The development of industrial enterprise in India shows a very similar tendency of concentration of financial power into the hands of a few persons or firms known as 'Managing Agents.' The primary initiative for starting and expanding industrial undertakings in India was taken up by British business houses. Taking advantage of the unlimited opportunities offered by the country in respect of raw materials, cheap labour and a wide market, they promoted and managed a number of concerns in various industries including plantation, mining and textile industries. Apart from providing a suitable channel for investment of British capital in India, the British managing agents supplied the administrative and managerial abilities so sadly lacking in the initial stages of Indian industrial development. Without their pioneering help, the pace of industrial development in India would have been much slower.

The example of the British managing agents was followed by Indian merchants, especially in Western India where the cotton industry offered good scope for substantial profits. The system of 'the managing agency' as developed by the British managing agents was found suitable by the Indian business men and alongside the

British managing agency firms, there came to be established a number of Indian managing agency houses.

The managing agent may be a sole trader or a partnership or a limited company. He very often promotes a concern, finances it and enters into an agreement to 'manage' it. The managing agency agreement gives him wide powers of administration and supervision. It is interesting to observe how a number of forces operated to concentrate not only management, but also control into the hands of managing agents. It was usual for the managing agents to hold a solid block of shares and thus to enjoy the privilege of concentrated voting power, so getting control over the concerns managed by them. The managing agency agreement was carefully drawn up by the managing agent himself and he naturally secured effective control by putting into it such clauses as gave him supreme power in the affairs of the concern. Whether in respect of the tenure of the managing agency or the remuneration of the managing agent or the division of powers as between the directors and the managing agents, the agreements almost invariably secured for the managing agents the controlling powers which, in the absence until 1936 of any restrictions by the Indian Company Law, could be used with advantage to themselves. A further tightening of the managing agents' grip over the concerns under their management resulted from the financial dependence of these concerns on the managing agents. In respect of every source of business finance, the managing agents wielded a direct influence, and without their help the concerns could not get the necessary finance. Whether for getting share capital or debenture capital, the managing agents had to be depended upon. Even for attracting public deposits, the personal influence and reputation of the managing agent mattered a great deal. Loans from banks could not be obtained on the security

of the concern alone, for banks demanded in addition the signature of the managing agent of the concern as a guarantee. To add to all these powers of control, the managing agents also had the power to nominate members of the Boards of Directors and it was not unusual for a majority to be their nominees.

It may be argued that this concentration of control into the hands of the managing agents was in keeping with the so-called 'golden rule of capitalism'—*viz.* the close association of risk and control. It cannot be denied that the managing agency system brought with it a number of advantages to Indian industry. First, it secured a kind of administrative integration of the industrial concerns. The economies resulting from such integration are obvious. Centralisation of purchases led to the economies of bulk transactions, as well as an increase in the bargaining powers of the purchasing concerns. A joint marketing organisation resulted in a reduction of selling and advertising costs and meant better pooling of market information. In the field of supervision, expert technical advice and labour management, appreciable economies could be secured when an agency managed simultaneously a number of different industrial concerns. Further economies were possible in respect of office establishment, for the centralised office of a managing agency could easily look after the work of a number of different industrial concerns managed by it. Secondly, a managing agent could compare the efficiency of the concerns under his control and introduce changes where necessary. Thirdly, administrative integration resulted in better financial facilities. The small concerns could get the same financial facilities as the larger firms controlled by the same managing agent. Finally, the linking together of a number of firms through a common managing agent

resulted in better co-operation amongst the firms in respect of research and in meeting common difficulties. The history of the tea and jute industries in India is full of examples of a large number of concerns adopting a concerted policy to face a common danger such as a depression. It is doubtful if such a united front would have been possible in the absence of the compelling force in the form of a common managing agent.

The concentration of power in the hands of the managing agents was not without its disadvantages. It left the managing agents open to the temptation to misuse their powers. A number of unscrupulous business men did misuse them in a way which brought great discredit upon the whole managing agency system. Some managing agents cleverly manipulated the funds of the concerns under their management so as to make private profits for themselves. The surplus funds of financially strong concerns were utilised to prop up weak and inefficient concerns under their management. Sometimes the managing agent would even use the funds of his client concern for private speculation in bullion or share market or in some other commodity market. Such misuse of funds was serious enough to warrant the complete prohibition placed by the Indian Companies Amendment Act of 1936 on loans to managing agents by concerns under their management. Another great disadvantage resulting from the excessive dependence of industries on the finance supplied by the managing agents has been well put by Dr. Lokanathan in the words : ' Finance instead of being the servant of industry has become its master with injurious consequences.' One of the injurious consequences has been the relative inefficiency of the majority of industrial concerns in India as judged by international standards. A third disadvantage of the managing agency system has been the tendency of managing agency firms

to add to their burden of responsibility in times of prosperity only to find in times of depression that the burden is too heavy for their shoulders to bear. This resulted in a great deal of harm to industrial enterprise in India, for when a managing agent sank, he dragged down with him the companies he managed and thus gave a rude shock to the public who had invested in these companies.

An attempt was made in 1936 to bring the managing agency system under the regulation of the Indian Company Law. The amended Indian Companies Act for the first time provided a definition of the term ' managing agent ' and put a number of restrictions on his activities. Under Section 87(A) no new managing agent could be appointed to hold office for a term more than 20 years at a time. Managing agents who had been appointed before the Act could not continue for more than 20 years after its commencement, unless they were reappointed by the shareholders. Section 87(B) gives shareholders the right to remove a managing agent from office under certain specified circumstances and also provides that ' a transfer of his office by a managing agent shall be void unless approved by the company in general meeting. By Section 87 (C) the remuneration of a managing agent appointed after the commencement of the Act, shall be based on a fixed percentage of the net annual profits of the company, with provision for minimum payment in the case of absence or inadequacy of profits, together with an office allowance to be defined in the agreement of management. Any stipulation for remuneration additional to or in any other form than specified above shall not be binding on the company unless sanctioned by a special resolution of the company. This subsection of course does not apply to the managing agency agreements that were in existence prior to 1937, which would remain in force upto 1957.

The loophole provided by the section—that of a special resolution authorising remuneration in any other form—has of course been used by many concerns. The power to issue debentures or to invest the funds of the company cannot be delegated to managing agents by the directors of a company. No public company can make any loan to its managing agent or lend its money to any other public company under the management of the same managing agent. The use of a company's funds for buying shares of another company under the same managing agent requires the unanimous sanction of the directors of the purchasing company. The Act also provides that a managing agent cannot enter into trading contracts with a company managed by him except with the consent of three quarters of the directors present at the Board meeting. Directors nominated by a managing agent cannot be more than one-third of the total number of directors and a managing agent must not on his own account engage in any business which is of the same nature and directly competes with the business carried on by a company under his management. It has also been provided by legislation that Banking and Insurance Companies shall not be managed by managing agents.

The restrictions placed upon the managing agency system in 1936 were expected to curb many of the undesirable practices that had become apparent in the past. The Government of India have however received representations that these measures have not produced the desired effect and that managing agents are still conducting the affairs of the companies in their own interest. The common complaints made against the system are : (a) Though the managing agents are supposed to work under the direction of the directors of the companies, the managing agents often wield the real controlling power and the directors are powerless against

them. (b) Managing agents conduct the affairs of the companies so as to advance their own interests while disregarding the interests of the shareholders. (c) Managing agents appropriate to themselves a disproportionate share of the earnings of the company, leaving comparatively little for the shareholders. In a memorandum prepared by the Commerce Ministry of the Government of India on this topic, it is pointed out that the Government of India consider that the institution of the managing agents should be viewed more from the interests of the investors and consumers than at present. It is proposed therefore that the restrictive measures incorporated in the Indian Companies Act in 1936 should be further tightened up. The entire question of amending the Companies Act is at present under the consideration of the Government.

(*d*) *Intermediaries between Savers and Borrowers: The Money Market.*—Having examined the influences which affect the supply of savings, and the forms of business organisation by which they are used, we may now review briefly the institutions and agencies through which a business can obtain the capital it needs. It is a principal function of the banking system to act as intermediary between the savers who deposit money and the enterprisers who borrow it.

Business men's demands for capital are of two broad classes: they require the use of capital for short periods, and for long periods. When considering the effects of the price of capital on costs of production, we must also distinguish between the demands of industrialists and those of merchants. The latter use little fixed equipment, the numbers they employ are relatively small, and since they do not manufacture, the expenditure on raw materials is negligible, but they need large sums for short periods to purchase stocks and finance their transactions. A rise in the price of short period loans which would be

of considerable importance to them might have no appreciable effect on a manufacturer's cost per unit of product.

Amongst the agencies from which capital can be obtained for short periods, banks are first in importance. For a large proportion of their deposits are repayable on demand, and they have always declared that they must keep as much of their resources as possible in "liquid" form, readily available to meet emergencies. They endeavour to avoid locking up their funds in long-period investments or in properties not readily saleable, much of their lending consisting of short term loans to bill-brokers and to those who require it to finance stock exchange dealings, and of overdrafts granted to businesses for short periods. Secondly, a large but unknown volume of short period lending is in the form of trade credits. Credit is granted at nearly every stage of the long chain of transactions which connect producer and ultimate consumer. It is part of the ordinary service of the wholesaler to the retailer, of the dealer to the farmer, and of the merchant to the builder. The period for which the credit is allowed varies according to the organisation of the trade, the nature of the product, etc. The farmer, for example, may secure fertilisers on as much as six months' credit, while a builder may get his materials on one month's credit. The financing of ship construction appears to vary with the state of trade. In periods of bad trade shipbuilders will construct vessels for owners on the receipt of a deposit, allowing the owner to pay instalments over a period of years, the ship meanwhile being mortgaged to the builder.

The second group of intermediaries concern themselves with facilitating borrowing for long periods. A large amount is lent by building societies, solicitors, and others by mortgages on real property, an increasingly large proportion of ordinary residences having mort-

gages upon them. The mortgage system is also much used in agriculture and by speculative builders to finance the construction of new houses. The latter buy estates and build houses by means of advances on mortgage from banks and others, though in this case the loans are for short periods. Numerous trust and finance companies raise money from the public by the ordinary method of issuing shares and debentures, some employing their funds in lending on houses, shops and other business property, while others may invest in various commerical enterprises, such as foreign railways, telegraphs, tea plantations, etc. Not all of these finance companies are reputable, but if well conducted their investing will be carried on with more expert knowledge and greater efficiency than it would be by the laymen who provide them with the capital by purchasing their shares. Insurance companies have large funds at their disposal. A life insurance office undertakes liabilities, the date of whose maturity can be closely determined by the aid of mortality tables. Apart from some disastrous epidemic, sudden drains on the funds are improbable. Subject therefore to the need of keeping the capital invested intact and as free as possible from fluctuations of value, a considerable portion of their funds can be invested in securities which are not readily realisable and therefore yield a high rate of interest. Well-selected mortgages for terms of years, corporation loans, and land improvement advances for a considerable period have been found suitable types of investment for life offices.

The third group of intermediaries is concerned with assisting new enterprises to borrow money in order to commence operations, *i.e.*, in floating new companies. The function of some of them is to value the probable earning-capacity of fresh ventures and to express it

in terms of the amount of capital required. This work needs expert knowledge and obviously offers opportunity for dishonesty. The promoters and finance houses then set to work a whole series of persons, banks, brokers and advertising agencies who lend the support of their name as a guarantee of reputability, recommend the venture to their clients, receive subscriptions, and give the project publicity. The institutions concerned in this work include the great issue houses like Rothschilds, smaller issue houses, trust and finance companies, and temporary groups of promoters formed to deal with specific ventures. The more famous issue houses of international reputation deal almost exclusively with first-class foreign and colonial securities. They make an exhaustive examination of the enterprises, employing experts of different kinds to test their soundness. Some trust and finance companies, and the smaller issuing houses, are permanently engaged in the work of issuing to the public shares in all kinds of new ventures, from foreign mining and oil companies to home industrials, so that their continued success depends on their reputation for supporting sound projects only. Much promoting is done by small groups of financiers who come together for the purpose of fostering some new enterprise, then disperse and enter into fresh groups for other ventures. They may be paid for their services by shares in the new concerns, and once they have sold these, their interest in them ceases. Their personal gains are thus bound up less with ultimate earning capacity of the new business than with the difference between the prices they pay to the inventor or owner of the product involved, and the price at which they sell the concern to the public. For this reason, while a large part of the work of promotion is honestly and competently done, many doubtful

ventures are foisted on to a too uncritical public.

Once a public company has been set on its feet, and commenced operations, dealing in its shares will take place on the stock exchange. Some of the original shareholders may wish to transfer their capital to other concerns, and the sale of their holdings will take place through the persons forming part of the exchange. The fact that individual shareholders invest their money in companies for short periods only does not make the stock exchange any the less one of the institutions for long-term borrowing, for it is the means by which the companies' need of permanent capital is reconciled with the desire of the individual investor to be able to draw out his own savings at the time he desires. The stock exchange provides an indication of the industries into which new capital should be directed. A rise in the value of shares of a given class of company, *e.g.*, iron and steel, or a fall in the value of others, *e.g.*, railways, gives an indication of the earnings and prospects of the companies and so encourages or discourages investment in industries of that type.

The arrangements for the supply of short and long-term credit have been criticised, not only because the opportunities for persuading an ignorant public to put its money into unsound projects are very numerous but because the existing institutions themselves perform some classes of work inadequately. Since the most famous finance houses devote themselves almost entirely to the securities of foreign and colonial governments and enterprises, the work in connection with home industrial companies is left to the smaller houses and trust companies, and is probably less efficiently done. No doubt the fact that home industrial issues are on a smaller scale than the foreign issues makes the big houses less willing to take on small

operations ; and it is said that the facilities for adequate investigation are less in the case of home issues. Further, a contrast has been drawn between British banks, which do not in principle like to put much of their resources into long-term investments, and German banks, which have in the past taken a more direct financial and supervisory interest in companies and have even nominated directors to their boards. This raises questions of banking policy which cannot be entered into here, and for fuller treatment of them, the reader is referred to the works named at the end of the book.

(*e*) *Supply of Business Finance in India.*—The assistance rendered by banks in India in long term financing is extremely inadequate. A number of industrial banks were started, but they soon took to commercial banking. The Reserve Bank of India and the joint stock banks have kept themselves strictly aloof from the work of supplying the long term needs of industry. The joint stock banks have played some part, though not a major one, in the supply of working capital to industries. They discount bills, advance loans and grant cash credits and overdraft facilities and advance against Government securities or pledge of stocks. Even when advances are made against stock, an additional guarantee is demanded. The system of cash credits also has its drawbacks in times of depression when elasticity is specially required, for the amount is repayable at short notice.

The dependence of Indian industries on the managing agents for financial help has already been emphasised. In the supply of both short term and long term financial requirements, the managing agents play a very important role. Apart from the direct aid which they give to the concerns under their management, their indirect influence in attracting public savings into industry is of very great significance. On the personal reputation of the managing

agents depends the popularity of a company's share among the investors. The amount of public deposits with industrial concerns for short or medium periods is also influenced by the reputation and integrity of the managing agent. The relative importance of these different sources of finance is brought out by the following table showing the percentage shares of total finance in the case of 64 cotton mills in Bombay as on 1st October 1930 :

	Percentage share of total finance
Advances by Managing Agents	21%
Public Deposits	11%
Advances from Banks	9%
Shares	49%
Debentures	10%

The table incidentally brings out the relative unpopularity in India of the debenture method of collecting capital. The absence of institutional investors, as well as of institutions to guide the public in the matter of investment makes it difficult to issue successfully a large number of debentures. The unhelpful attitude of banks towards industrial concerns issuing debentures is also responsible for their reluctance to make use of this method for raising capital.

A recent development in India has been the establishment of special institutions to cater to the needs of industrial concerns. The Industrial Finance Corporation of India was accordingly established in July 1948 for making medium and long term credits more readily available to them. The capital of the Corporation has been jointly subscribed by the Government of India, Reserve Bank of India, Scheduled Banks, Co-operative Banks and Institutional Investors. During the first year of its operation, the Corporation sanctioned loans to the tune of Rs. 3.42 crores as against Rs. 10.33 crores applied for. The effective rate of interest was 5% to 5½%, which

was substantially lower than the overall cost of borrowing from the open market. In considering applications for assistance, the Corporation was guided not so much by the value of the assets as by the profit earning capacity and prospects of the concern, and the technical soundness of the scheme, and by the national importance of the industry. Loans are primarily granted for fixed assets, as the Corporation does not want to compete with commercial banks in the provision of working capital. The Corporation also assists industrial concerns in preparing schemes of expansion or reorganisation. It watches the progress of the borrowing concerns by carrying out periodical inspections and calling for progress reports. Industrial Finance Corporations on similar lines are also being set up in a number of States in India.

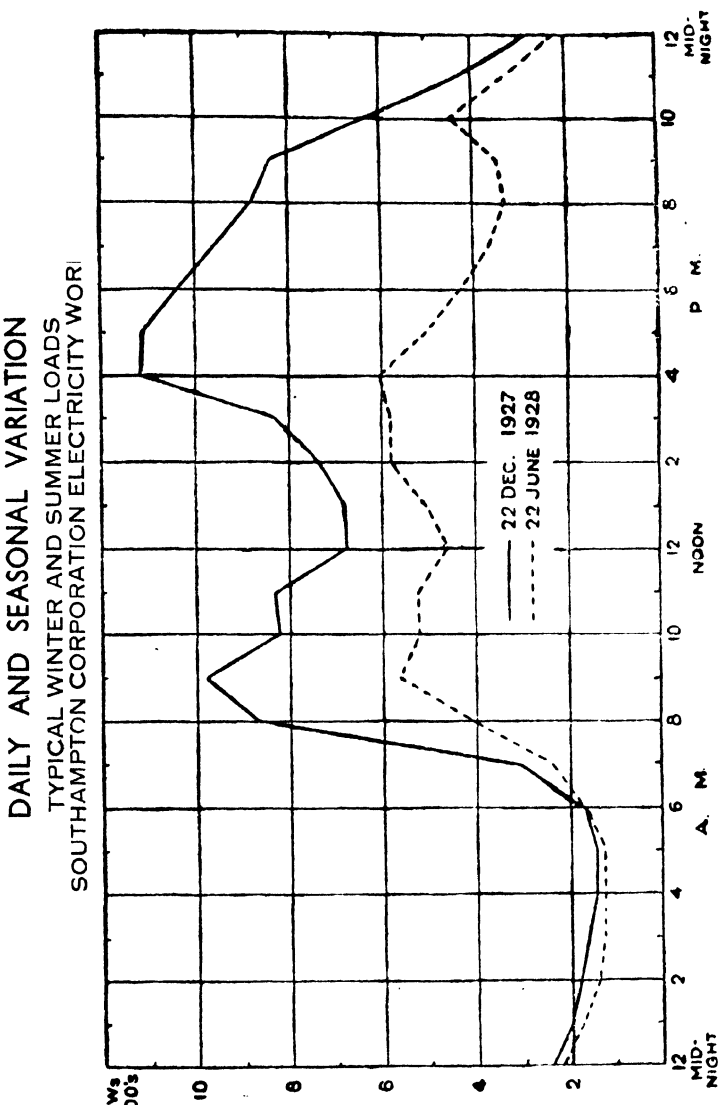
6. FLUCTUATIONS OF OUTPUT

The general importance of the scale of output on the costs of production of any article was referred to in the first chapter, and it is now possible to look into the matter more closely. The heavy expense of providing great plants and works is profitable only if there is an accumulation of modest earnings on a large number of items of production. The "full and steady utilisation of the works" must be the manager's motto. This is easier to envisage than to achieve, for all kinds of circumstances outside the control of the individual manager may lead to the establishment of excessive productive capacity in an industry, or to its spasmodic and irregular use. At present there is in Europe an excessive productive capacity in the shipbuilding, and the iron and steel trades, to name two examples. During the Great War the demand for iron and steel products far outstripped peace time figures, while the normal interchange between groups of belligerents

ceased, and even between allies was hindered. Each country endeavoured to enlarge its output to the utmost, so that when the war terminated each found itself with a productive capacity far in excess of the now contracted demand. Many countries greatly enlarged their shipbuilding capacity, partly to meet the insatiable demands of the fighting navies, partly to replace losses of mercantile ships from submarine and other enemy action. So great was this expansion of productive capacity that the British losses were comparatively quickly made up, and the shipyards were faced with the fact that the re-established mercantile fleet was partly idle through a diminished foreign trade. Contracts to provide for the normal growth of the mercantile marine and to replace obsolescent vessels dwindled. The increased efficiency of shipping added to the difficulties, since if greater speeds enable one vessel to do four journeys in the time usually occupied by three, less ships in total are needed. But the fewer the ships to be built in the yards, the larger must be the share of overhead expenses borne by each, and the cost of production per unit must rise.

In this connection consider a railway. The Southern Railway has spent great sums in providing a piece of fixed equipment. Surveying, promoting Parliamentary bills, purchasing land, compensating owners adversely affected, constructing the road with its bridges, embankments and tunnels accounts for no less than £119,000,000 of its capital. Another £17,000,000 is accounted for by its locomotives, carriages, and wagons, and £2,500,000 by docks, hotels, etc. A large traffic of passengers and merchandise is necessary to earn enough to pay the capital a minimum return, while only an insignificant fraction of this total of £156,000,000 represents plant which is capable of effective use for

any other purpose than conveyance by railway. Regarding current expenditure, 4.8% is absorbed in general charges, 18.6% in maintenance of ways and works, 17.0% in maintenance of rolling stock, and 59.6% on the actual conduct of transportation. How are these costs affected by changes in the scale of output, the amount of traffic carried? The first item, general charges, covers all kinds of head office expenses, the salaries of the managers and chief officials, clerical assistance, etc., none of which could alter with a moderate increase or decrease of traffic. The "maintenance of way" contains more variable elements, for the speed and weight of trains will affect the wear and tear of rails, especially curves and joints, and the road will need more packing if the traffic is heavy. Sleepers rot, rather than wear out, buildings are mainly affected by weather, and even rails will rust rather than wear out if the traffic is very light. Altogether, one might say that 60% of this item of expenditure is constant, whether the line is busy or slack. Half the expenditure of maintaining rolling stock—for weather accounts for a deal here—is comparatively constant. As regards the heaviest item, the conduct of transportation, one must distinguish between the passenger and the goods service. In the former case, so long as the same service of trains is retained, the existence of an empty compartment or two does not diminish the cost of hauling, or the station staff required. In goods traffic the connection is closer, and some of the costs vary with the tonnage to be handled. On a line which is concerned with passengers rather than merchandise, nearly two-thirds of the total expenditure will have to be incurred whether the traffic is heavy or light. This means that with a decrease of traffic the company could count on decrease of costs of one-third only, while


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22 JUNE 1928

in the case of any increase of traffic, the costs are not proportionately increased and most of the revenue from it is pure gain.

(*a*) *Daily and Seasonal Fluctuations of Output.*—Fluctuations of output are due not only to extraordinary events like great wars, but to causes which produce the alterations with such regularity that they may be termed "cyclical." Some of these are based on daily work and rest. Tramway services begin the day with a low level of use, the numbers of cars in service increasing as the successive waves of workmen, typists, clerks and shoppers proceed to their duties, followed by a drop in the middle morning, rising again at the midday break, falling in the afternoon, and rising to a maximum at five or six o'clock as all classes of workers return to their homes. The distribution of the "peaks" and "troughs" throughout the day will vary with each town, its size, the location of its factories and residences and its habits of work and pleasure, but in all there is the same contrast between peak load and average use. It is the margin between maximum and average use which is the source of waste and high costs, for equipment provided to cope with the maximum demand may be utilised but a fraction of its possible working day, and must be made to pay for itself in those limited hours. The following figures from a large British tramway system illustrate this point.

Hour Ending.	No. of Cars on Routes.	Hour Ending.	No. of Cars on Routes.	Hour Ending.	No. of Cars on Routes.
1.0 a.m.	155	9.0 a.m.	783	5.0 p.m.	800
2.0 a.m.	13	10.0 a.m.	680	6.0 p.m.	882
3.0 a.m.	13	11.0 a.m.	495	7.0 p.m.	847
4.0 a.m.	13	12 noon	570	8.0 p.m.	623
5.0 a.m.	37	1.0 p.m.	750	9.0 p.m.	523
6.0 a.m.	160	2.0 p.m.	730	10.0 p.m.	472
7.0 a.m.	320	3.0 p.m.	690	11.0 p.m.	467
8.0 a.m.	740	4.0 p.m.	635	12 midnight	448

Similar curves of daily use can be made for telephone, gas and electricity services. These undertakings are also subject to weekly variations, arising from the institution of the weekly day of rest.

There are also important seasonal fluctuations. Some of these are climatic in origin, winter demanding woollen and summer cotton clothing. If the same industry made both types of goods, the factories and operatives would be in regular work, but the materials are different, two sets of equipment and two bodies of workers being involved. The supply of fruit and vegetables to the jam making and canning industries is necessarily seasonal, while the same is true of the manufacture of mineral waters and of chip baskets for strawberries. A lighting and heating service like gas shows a low level of demand in the summer, with a heavy increase in the two winter quarters. Seaside resorts and all the persons and equipment catering for visitors, face the same problem of making the summer season pay for the lean winter. The production of electricity illustrates the difficulties very clearly. Generating stations would produce at lowest costs by continuous and full operation, whereas they are limited by the working day of industry. The industrial demand for electricity is restricted to about a third of the twenty-four hours, while the domestic demand, which is still almost entirely for lighting purposes, has even narrower limits. Roughly stations are in operation for little more than one-quarter or one-third of their possible maximum. The following index of British electrical production (excluding London and Wales), worked out for the British Electrical and Allied Manufacturers' Association for 1927, reveals a seasonal movement also :—

Jan.	158	May	138	Sept.	138
Feb.	157	June	126	Oct.	152
March	147	July	123	Nov.	166
April	144	Aug.	123	Dec.	180

A further example may be given. The following figures, taken from the London and Cambridge Economic Service Bulletin, No. 7, by Professor Bowley and F. K. Smith, show the percentage excess or deficiency, of the coal export, shipping cleared with cargoes, and seamen shipped in each month as compared with the average.

PERCENTAGE DEVIATIONS FROM AVERAGE

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Coal exports	—9	—11	—4	—4·5	+9·5	+1	+8	+3	+4	+7·5	0	—2
Shipping cleared with cargoes	—6	—14	—1·5	—1	+8·5	+2	+6	+4	+3	+5·5	—1·5	—5
Seamen shipped	—5	—16	—4	—0·5	+9	+2	+1·5	+7	+9	+4	—6·5	—14

The shipping figures average the years 1895-1913, the numbers of seamen shipped the years 1905-13, and coal exports 1902-13.

There is an obvious connection between coal exports and the demand for the services of shipping and of seamen, and the diagram reveals in each a seasonal movement of the same general form. The correspondence is not exact, for other factors besides coal export affect shipping and the volume of seagoing employment. The moral to be drawn is the same in all these variations, that the difference between the maximum and the

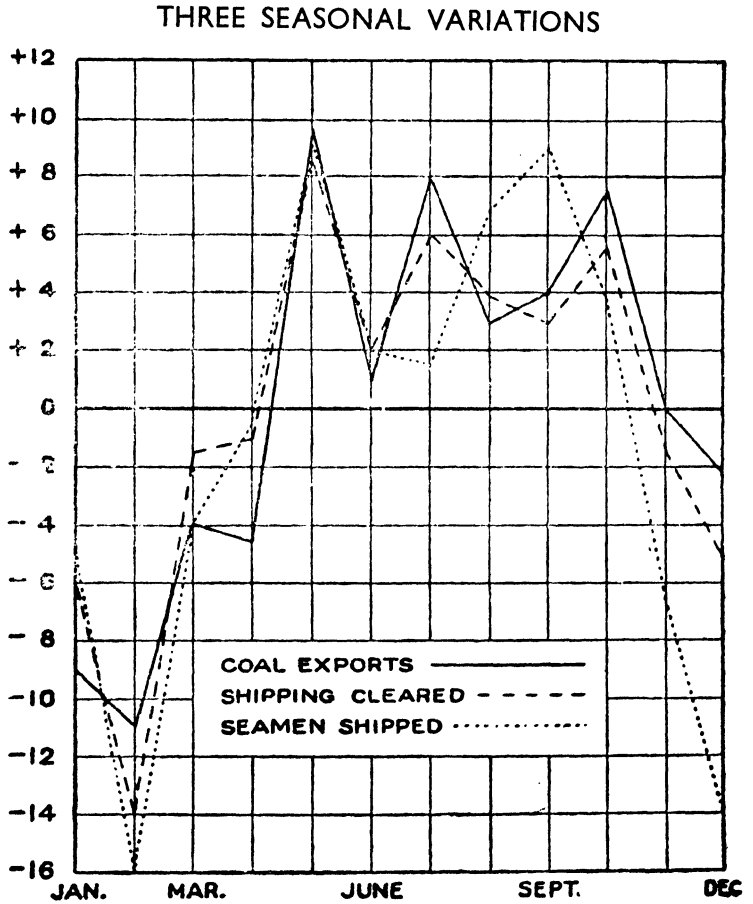


CHART ILLUSTRATING FIGURES ON PAGE 76

average use is the measure of equipment provided but not fully utilised, and that if by technical improvement or commercial devices production can be regularised and continuous operation achieved, wastes can be eliminated and costs reduced.

What must be the reply of the business organiser to these difficulties? Irregular production increases costs per unit, steady utilisation of plant reduces them. (1) He can regularise his production by making for store, i.e., by manufacturing steadily, keeping the surplus made in periods of slack demand ready for sale in the busy season. This can be done in industries which produce staple goods easily capable of storing, but not in those where the articles are liable to changes of fashion, or where they are made of the specific kind and quality demanded by each customer. If the goods are perishable, or very bulky, the risk and cost of storing will be too great, and in any case making for store involves locking up money in stock, and is limited by the financial resources of the individual firms. Coal "perishes" by prolonged storage, but gas can be kept more easily than electricity, and the smaller fluctuations of demand can be smoothed out. (2) He can try to stabilise production by stabilising demand. If he manufactures an article of summer clothing, such as cotton goods or straw hats, he can endeavour to balance the summer demand in the northern hemisphere by winter exports to the southern. Where seasonal goods, *e.g.*, articles for Christmas sale, are concerned, something can be done by inducing retailers to give orders well in advance of delivery, and by the alternative policy of offering discount for accepting delivery ahead of the season. The discovery of alternative uses for the commodity has possibilities. The daily demand for gas, at first used mainly in the evenings for domestic

and public lighting, has been made steadier by the spread of the gas cooking stove, and the use of gas for various industrial processes, but the gas fire is a fresh use in the winter quarters, and does nothing to alleviate the seasonal variation. The opportunities for improvements of this sort vary with different towns, some having a large industrial and domestic cooking demand, the public and domestic lighting being mainly electrical, while in residential towns a large industrial use is not possible. In the production of electricity also, stimulation of fresh types of demand by encouraging domestic heating and cooking is of assistance, but bulk consumption for power is the greatest factor. The erection of large scale generating stations, and long distance transmission, by giving each station a wide service area containing a great number of industries with diverse periods of demand, will give a steadier load, and should make possible a great reduction of the margin of spare plant necessary. It is hoped that under the Electricity Acts, the percentage margin necessary may be reduced from 50% to 20%. (3) The obvious method of pushing sales in times of slack demand is to cut prices. A large city can tempt traffic of some of those persons who can choose their own times for travelling from the rush hours to the afternoon, by an actual reduction in the money to be paid, or by lengthening the journey per penny, in the middle afternoon hours say from two to four o'clock. This policy can also be adapted to encourage the use of the facilities during the week end. Gas and electricity companies can do a little by making a distinction between summer and winter prices, seaside resorts by "season" and "out of season" prices. The connection between seasonal variations and "dumping" is referred to later.

(*b*) *Long-Period Fluctuations.*—In addition to these

seasonal variations of business affecting particular industries and services, there are wider wave-movements of production and prosperity, in which periods of good trade and rising prices are followed by periods of depression, with falling production and prices, and increasing unemployment. The absence of adequate statistics makes a complete measurement of the variations, particularly of the earlier ones, impossible, but by using either the percentage of unemployment amongst trade union members, or the changes of the bank rate, substantially the same picture is obtained—alternations of boom and depression, with peak or crisis years in 1873, 1882, 1890, 1900, 1907 and 1913.

These long-period variations offer several points of contrast with the seasonal ones. (1) They affect all industries together, seasonal and stable ones alike. (2) They are international in scope, involving countries as far distant as Japan and Great Britain. (3) They are connected with the capitalistic organisation of industry, being traceable in England for two and a half centuries, and becoming more evident as the modern system established itself. They are more severely felt in highly-developed countries like the United States and Great Britain than in France, where industrial production for an overseas market is less marked, and peasant agriculture more prominent. (4) Unlike seasonal changes they are not easily predictable, for although each wave of prosperity and depression has features in common with preceding waves, each has characteristics of its own, and the periods at which they appear are not absolutely regular, being sometimes ten, seven, five, or even four years. (5) They vary in violence, some being moderate in force and easily dealt with, while others are extremely violent, the turn from prosperity into adversity being marked by a sharp crisis involving a chain of bankruptcies,

shattering business confidence, and causing a damping down of production. (6) Not all industries are equally affected, the heavy iron and steel, engineering and shipbuilding trades showing both upward and downward movements earlier and in a more marked way than trades making staple goods for immediate consumption. (7) The world production of pig iron rose from 9,000,000 tons in 1865 to 66,000,000 tons in 1910, an average increase of 4.5% per annum. This growth did not take place evenly but was at a rate of 30% to 40% in periods of prosperity, while in depressions the production did not even maintain itself but fell below the previous levels, sometimes by as much as 10%. Trade depressions have, therefore, sometimes been defined as " periods of the relative unemployment of the permanent means of production."

These fluctuations of business activity have been fastened upon by social reformers and economists as responsible for grave social evils. They cause prolonged unemployment, diminishing family incomes and so impairing the physique of workmen and their dependants. Business men face periods of difficulty and low income, while many investors are deprived of dividends and may suffer reductions of capital. It is true that even depressions bring some gains, for incompetent firms are weeded out, unhealthy speculation is checked, and manufacturers are driven to seek out better and more economical methods, but efficient firms suffer as well as ill-managed ones, and the competent are hindered in their activities by general lack of confidence and stringent money conditions. Taking a broad view, these fluctuations, like daily and seasonal ones, imply the existence of factories and plant utilised at maximum periods but only partially utilised in depressions. Steady progress and more stable production, " filling in " the depressions at the expense of foregoing some of the peaks of prosperity,

would mean an economy of resources as well as an increase of human welfare. Can this be accomplished ?

The answer to this question depends on how far we can point to the precise causes. That they are connected with some of the characteristic features of the capitalistic system is clear. The volume of production is the result of decisions made by large numbers of independent producers estimating the future course of demand, each in ignorance of the intentions of others. When the trade outlook is hopeful each producer, endeavouring to secure for his firm an ever-increasing share of the total trade, tends to overestimate the proportion of any increase in the aggregate demand which he can obtain. It is impossible for all these ambitions to be realised together. If all increase their production above the point to which they would take it if they knew the truth, over-production and a fall in prices must result. This tendency is strengthened by the use of " roundabout methods of production," by the fact that production takes time. An increased demand may at first be met by working overtime, and pressing old machines into service, but if the demand continues to grow, it can be satisfied only by additions to the labour force, fresh machinery, extension of works and the establishment of new factories. These increases in the productive capacity of an industry cannot be made immediately, and the delay in itself tends to exaggerate the scarcity, raise the price, and over-induce extension. A third condition prolongs the ill-effects of errors. Machinery purchased, and plant laid down is likely to be useless for any other purpose, or if transformation is technically possible, it can be made only at considerable expense. Machines must stand in partial or complete idleness until trade once again takes an upward movement.

Finally, the monetary system reacts on these move-

ments. Prices rise in the prosperous periods and fall in the times of depression, but the prices of all commodities and services do not rise or fall equally. During a boom a business man will find his income from the rising prices of his produce increasing, but many of his payments either fixed or rising but tardily. His rents are fixed, railway freights, especially where they are subject to state control, are notoriously slow in rising and the same applies to wages. The business man thus receives a kind of bonus, or unearned increment, at the expense of other participants in production, and he is stimulated to enlarge his production more than is profitable to the general community. Presently wage agreements come up for renewal, rents begin to rise, the railway companies establish their case for an upward revision of freight rates, and his unearned gains disappear. The tardiness with which these payments rise is paralleled by a corresponding slowness to fall. After the break of the boom the business man finds that while the prices of his products are falling, many of his expenses are undiminished, the conditions which aided him in the prosperous period working to his disadvantage during depression, and just as in the one he was over-stimulated, so in the other he is discouraged from producing.

So deep seated a characteristic of the modern system as the trade cycle is more easy of analysis than remedy, for it is clear that the individual business man is in the grip of forces he cannot hope to control by any isolated action of his own. On the movement of the general price level he can exercise no influence, and in his own trade his contribution to the total output may be a modest one, so that his policy must perforce be directed primarily to warding off the most serious blows of the depression. He can try to keep his works running at a steady pace by stabilising his sales, but the methods which offered some

hope of dealing with seasonal movements are little applicable to these longer variations. Making for store over a period of years is out of the question, nor is it easy during an international trade depression to find a new market to counterbalance the impoverished ones. Stimulating sales by price-cutting is a policy which needs caution in application. The market may be so "dead" that the total sales would not be proportionately increased, the industry losing more by the price reduction than it gained by increased trade. If one firm cut prices, it might save its own skin by taking trade from rivals, but there is a danger that competitors might follow, and a ruinous price war be the consequence. When the goods concerned are novelties, it is sometimes possible to keep the works running by devising a new product. An American stationery company contrived two new paper products during the boom of 1919-20, but instead of making and selling them during that period of abnormal activity held them back until the depression, meanwhile having all the advertising prepared for issue when the break came, the company put them on to the market, with the result that its sales actually increased. Another line of policy is to endeavour to prevent over extension in the boom. In the turn of the tide from boom to depression in 1920-21, many large departmental stores, wholesale grocers, etc., lost very heavily in the depreciated value of their stocks. Losses can be limited by conservative buying towards the end of the boom, so that when the break comes stocks are down to a minimum. This implies an intelligent study of the various indices of business activity, and some knowledge of the behaviour of the trade cycle.

While by methods like these individual firms can minimise their own losses, any real control of the trade cycle requires wider action. We have seen how much is

due to the producer's ignorance of the true economic facts, and how errors of judgment through either over-optimism or over-pessimism have cumulative results. A primary need is that each producer should have more adequate information as to the state of industry, the volume of production of important commodities, the volume of contracts placed, indices of the total physical output, data as to stocks, the consumption of materials, etc. Secondly, the state can try to ameliorate the ill-effect on unemployment by postponing contracts for public works from boom to depression periods. This proposal is examined in greater detail in Chapter V. Finally, the pursuit of a flexible currency and credit policy by the Central Banks and the Treasuries is a hopeful line of approach.

7. INSURANCE

A man may provide against any losses he fears will occur in the future in three ways. He may set aside sums from his income each year to build up a fund to meet the emergencies, though where the loss may be heavy, as in a marine loss, the amount he would have to provide to make the fund adequate would be inconveniently large. Or he may agree with a number of others faced with the same risk to bear losses collectively, each undertaking to pay, as occasion required, a levy sufficient to compensate the individual affected. This arrangement would relieve him of the task of setting aside excessive sums. Insurance is a combination of the former method, saving, with the latter, which is the pooling of risks. Each member of the group agrees to contribute a sum regularly instead of paying a levy at irregular intervals when an actual loss has occurred. If the requisite data relating to the risk are recorded for a large enough area or a sufficiently numerous body of persons, an average experience

of losses can be worked out, and each person told how much he must contribute to build up an adequate fund. Not all risks are insurable. They can be treated in this way only where the events, like fire or death, are such that although the individual to whom they will occur at any moment cannot be picked out, the frequency with which they will happen in a large population can be stated with approximate accuracy. The effect of insurance is to turn large and damaging losses occurring at odd times, into small regular premiums.

The history of insurance has been one of extension of the principle to fresh classes of risk, as means have been found of discovering average experience, and of the development of different types of organisation to undertake the risks. It began with a loose association of persons at Lloyd's, and, as an understanding of its principles spread, mutual societies, profit-making companies, friendly societies, and finally the State entered the business. In England, insurance naturally arose to meet marine losses because of the great risks involved, and spread to fire, death, accidents, sickness, etc., as it became possible to make actuarial calculations. As the purpose of insurance is to provide against involuntary loss, its development is limited also by the possibility of safeguarding against losses wilfully or negligently incurred. In the case of marine losses, undue claims could arise not only from the desire to defraud, but because the sense of security given might cause the insured to relax the care and attention he gives to preventing the loss occurring. The same is true of fire insurance, but is negligible in the risk of death. In the case of the liability of an employer for accidents occurring to his work-people, something depends on the type of organisation undertaking the risk. In Germany, employers' mutual societies, paying no profits to independent shareholders, were naturally

interested in reducing the premiums to be paid and so in preventing accidents. They framed safety rules and could put any firm in a higher hazard category if it did not carry them out. Though an independent company is interested in preventing claims rising above the average, its inducement to reduce the general average is perhaps not quite so keen.

The development of insurance during the last twenty-five years which is of most importance to the employer consists of the various forms of social insurance—workmen's compensation, health, unemployment and pensions insurance. The sums which the employers pay in premiums each year on account of these liabilities, though not a large proportion of their total costs, are nevertheless considerable in amount. Important questions of principle are involved. Why should the employer be called upon to pay premiums against this class of risk? Should the workman and the State also contribute? Should each industry, with its peculiar circumstances and special risks, have a scheme of its own?

In common law, if any person causes injury to another by negligence or wilful act, he may be sued for damages. This applies to the case where the person injured is a workman and the injury has been caused by the employer's negligence. If the employer's premises or machinery are unsafe, or proper appliances are not provided, or if he employs an incompetent servant whose stupidity contributes to the accident, the employer makes himself liable. Special legislation has sharpened and defined the responsibility more closely. The Employers' Liability Act of 1880, and the successive Workmen's Compensation Acts since 1906, have defined the meaning of "accident," the cases which do and do not arise out of and in the course of employment, and the occasions when a workman's disobedience may disqualify him from claiming compensation.

The reason for throwing the whole liability and therefore the entire payment of premiums, upon the employer is that the law is only a development of his common law liability and that he has most control over the conditions which cause accidents.

Unemployment Insurance is provision against involuntary idleness. A condition of insurance benefits (as distinct from State relief of distress caused by it), is that there should be some means of distinguishing involuntary from voluntary unemployment. The best test is the offer of suitable work, and for this reason trade unions were in a strong position in the administration of their own out-of-work benefits. Making the cash benefits lower than the insured person would receive if in full work, and commencing the payment of benefit only after the lapse of a certain number of days, are two other devices contrived for testing the genuineness of claims. The existence of a system of employment exchanges was a condition of a successful State scheme. Insurance also implies an actuarial basis, and at the commencement of the arrangements in 1911, this was found in the records kept by trade unions of unemployment amongst their own members. A true "insurance" scheme would limit the benefits so that they bore some relation to the number of contributions paid, *e.g.*, by allowing one week's benefit to every three or four weeks of contributions paid; and it would probably separate industries whose risk of unemployment was exceptionally heavy from those whose risk was less. The original plan of 1911 did limit the benefits and contemplated special arrangements for particular industries. The difficult condition of post-war unemployment has led to benefits being provided out of proportion to the contributions paid, while the receipts from all industries have been put into a common fund. The scheme has become a protection of individuals,

all of whom, apart from distinctions of age and sex, pay a flat rate contribution and receive uniform rates of benefit. As unemployment is concentrated in a few great industries, suggestions have been made that the scheme should be remodelled and placed on an "industry" basis. This would have the advantage of penalising those industries which have a high rate of unemployment on account of their defective methods of recruiting and organising labour. On the other hand, in the industries at present most affected, premiums large enough to provide reasonable benefits would be impracticable, and heavy subsidies would be necessary to meet the exceptional conditions; while the causes of unemployment in any one industry are not limited to it alone, each industry reacting on others and contributing to the general problem.

Health insurance also is met by contributions from employers, workers and the State. The employer's contribution can be justified on the ground that much of the ill-health of adult workers is due to the strains of industrial life, and that many of the conditions affecting it are under his control. The State contribution can be explained on narrower grounds. If it is true that workers would probably not save enough for these purposes without compulsion, it is also the case that compulsion would be inacceptable and perhaps impracticable without the inducement of additional contributions. The difficulties of the scheme lie in its complicated, if not chaotic, administrative machinery. An unwholesome combination of local authorities and central authorities, of profit-making companies and friendly societies which are not local at all, but have scattered memberships selected on religious or other grounds, it leads to the unfortunate result that two men paying the same premiums but members of different friendly societies, get entirely different scales of benefits.

The question of "free" benefits is becoming increasingly important, for the steady increase in the amount of contributions to be paid by the employer raises acutely the effect of these charges on the costs of production per unit of product. The characteristic feature of the social insurance schemes is that the cost to the employer varies with the numbers employed : the more workers he takes on, the greater is his burden. The cost is unevenly distributed between those trades which employ a relatively large and those which employ a relatively small volume of labour. It has been suggested that it would be better not to raise the money by a tax which enters immediately into costs of production, but by general direct taxation. The costly and cumbersome arrangements of weekly stamps, and all the labour of collection involved, would be abolished. The case is obviously strong for health insurance. For unemployment insurance such an arrangement would involve (1) adequate means of testing the genuineness of claims, and probably also the compulsory notification of vacancies by employers ; (2) some means of providing that unemployment above a certain level would have to be met by industries themselves. This would be necessary to penalise those trades which add to the volume of unemployment by their defective arrangements for recruiting labour.

NOTE TO PART I

MEASUREMENT OF CHANGES IN GENERAL EFFICIENCY

We have seen in our brief study of the "trade cycle" that it is intensified by the ignorance of independent producers of the true facts of production and trade, and this alone is enough to account for the increasing attention given to the construction of "business barometers." The close dependence of the fortunes of individual businesses

on the movements of national and international prosperity renders necessary precise means of measuring prosperity, of testing whether changes in industrial organisation have increased or decreased national productive power. We are still a long way from the goal of which many economic statisticians dream—the possession of reliable business barometers, but we have enough statistical data to enable us to gather something of industrial prospects as a whole. Most of the principal sources of information are official, or are ultimately derived from official sources. For business purposes the chief of these are the ten-yearly census of population, which gives the number of persons classified by age, occupation, industry and locality; the five-yearly census of industrial production, which gives the number employed in industries, the machinery used, the net output, and other data; the employment statistics of the Ministry of Labour; the Trade and Navigation statistics of the Board of Trade; the return of railway traffic and receipts, and the statistics of the national revenue. There are a large number of other facts which are of use—the number of bankruptcies, receipts of taxes on articles of common consumption, wage statistics, etc. A few illustrations will show the kind of use to which these can be put to throw light on the various factors of efficiency dealt with above.

(1) *The Growth and Decay of Industries.*—This can be tested by comparing for various dates figures of the numbers of insured persons in the industry concerned. Between July, 1923, and July, 1927, the numbers of insured workers in the distributive trades, road transport, electrical engineering, and motor manufacture, increased by one-quarter, one-fifth, one-third, and one-fifth respectively, whilst other trades were contracting, general engineering by one-tenth, shipbuilding by one-

fifth and marine engineering by rather more than one-tenth. It can also be traced from the census of production, which shows that the number employed in cotton spinning and weaving fell from 572,000 in 1907, to 517,000 in 1924, the numbers in the jute, hemp and linen industries from 82,000 to 61,000. Rolling, smelting and iron founding showed a decrease of 11,000 between the same dates. The census of population also gives the numbers engaged in certain occupations and industries, and by this means also, ten-yearly changes in the numerical strength can be traced. In the intervals 1891 to 1901, 1901 to 1911 and 1911 to 1921, the numbers engaged in mining and quarrying increased by 26%, 30% and 14% respectively, this rapid expansion contrasting with a decrease of 9% in building and contracting between 1901 and 1911, and a further fall of 12% between 1911 and 1921. The numbers of employed persons are a good but not perfect test, for the greater use of power-driven machinery and changes in organisation may result in reduction of staff, but leave output undiminished or even increased. The importance of this varies from industry to industry, for some, already highly mechanised, cannot greatly augment their use of power, while others will show no increase through the difficulty of using power-driven machinery for their work, or through a lack of the spirit of improvement. Between 1907 and 1924, the textile industries showed an increase of power available per person employed of 39%, and mining and quarrying of 25%, but the industries concerned with skins and leather, and woodworking show increases of 217% and 162% respectively.

(2) *The Migration of Labour and Industry.*—An illustration of the use of census figures for tracing the migration of industry has already been given on page 33. They have the disadvantage of being taken only

at ten-yearly intervals, and published a year or two after the census year. Changes are more frequently shown by the number of insured persons in the different industries and divisions of the country. The tendency of industry to move south and south-east, is shown by the fact that there was an increase of over 7% in the London division between July, 1923 and July, 1927, 16% in the south-east division, 9% in the south-western, as compared with only 3% in the north-eastern, and 4% in the north-western part of England. Some of the industries actually show a growth in the south, but a decline in the north, as in the case of stove, grate and iron founding, and the manufacture of matches, hats and caps, and soap.

(3) *The Productive Result of Industry.* (*a*) *Foreign Trade.*—We also wish to measure the result of the efforts of those engaged in industry. If more power-driven machines have been introduced, amalgamations taken place, and marketing methods improved, have these resulted in an increase of output proportionate to the improvements made, or has there been some unnoticed slackening of efficiency elsewhere to offset the improvements ? Part of the country's production is sold abroad, and part at home, and for long the only part measured was that exported. Counting was easier, for all the traffic passed through a limited number of ports, where a customs service was in existence. These figures are so well known that no special illustration is needed, but one or two dangers in interpreting them should be avoided. A decreasing import of any article may indicate the growth of a home manufacture, and be followed later by the export of the commodity as home production increases, but it may also be due to a declining public taste for the article which adversely affects home products as well as foreign. Decreasing imports may imply either the

development or decay of industry. Increased trade through the export of textile machinery may later be followed by a decreased export of cotton goods, which the foreign country may be making with the machines exported, but increased export of locomotives may be adding to the development of a meat or wheat raising area, which will purchase more manufactures. Joy over an increased sale of boots and shoes to South America may be tempered if an analysis of South American import figures shows that the United States has increased its sales even more and is capturing the largest proportion of the growing demand.

(*b*) *Home Production.*—Figures regarding total production are more recent, censuses having been taken only in 1907, 1912 and 1924, but comparing the broad results of 1907 and 1924, the numbers employed have increased by 17%, and the "added value" per head over and above the cost of materials purchased and used and the wages paid, has grown by 90%. Between 1907 and 1924, prices rose greatly, the Board of Trade index for wholesale prices being 83% greater, so that the increase of added value per head was small. This is in spite of many years' improvement in organisation and invention, both much stimulated by the war, and the much greater availability of mechanical power, the engine power installed having increased in total by three-fourths and the power per head by one-half. It is a disappointing result. Industrial depression no doubt accounts for much, but in U.S.A., the increases of production and power per head were 64%.

(4) *An index of "physical production."* The censuses of production are normally to be made every five years, but for purposes of aiding statesmen and business men to observe and take action, figures more frequently published and more briefly expressed are required. In

the section on the trade cycle, we saw how over-optimism and over-pessimism affected the judgments of business men and how accurate data—*e.g.*, the changes in the volume of physical production—issued frequently, would assist in checking these and other errors of judgment which affect the course of trade. The London and Cambridge Economic Service compiles an index which gives the following results for 1920-1928, the production in 1924 being represented by 100 :—

1920	...	104·7	1924	...	100·00
1921	...	75·3	1925	...	101·1
1922	...	89·3	1926	...	90·2
1923	...	91·1	1927	...	110·2
			1928	...	108·3

(5) *Other measurements of progress.* There are a large number of other measurements which give to those who care to follow them indication of various aspects of progress and efficiency. The numbers of bankruptcies are periodically published, the rise and fall of working class prosperity can in some measure be judged by the import, consumption and revenue from taxes on articles of broad consumption. Trade activity reflects itself in railway receipts, both from passenger and goods traffic, and in the number of "ton miles." The future employable population can be obtained from combining the census results with birth and death rates and migration figures.

PART II. PRICES

I. GENERAL PRICE MOVEMENTS

PRICES have a two-fold function, they regulate production and limit consumption. Investors, manufacturers and workers alike will decide on their course of action, whether capital shall be invested in railway or rubber companies, or whether the works shall be extended or men paid off, according to the actual or anticipated movement of prices. With limited natural resources, limited knowledge and a defined population, it is not possible for limitless human needs and desires to be satisfied completely. Some checks on consumption there must be, whether determined by the State, as in a war rationing scheme, or operated through a system of prices which, although it allows each individual to choose freely how he shall use his income, yet by excluding those who cannot or will not pay the prices fixed, restricts the consumption of each article. If the business man hopes to interpret the economic significance of the waxing and waning of desires, alteration of methods of production, or the exhaustion or opening out of some natural resource, it is to the study of price changes that he must apply himself.

Some of these changes concern only particular commodities and may be due to bad harvest, invention, or a shortage of some rival commodity, while other price changes affect all commodities and services together.

Alterations in the general level of prices are not less important because they are less likely to be promptly observed and understood than changes in the price of the particular article which a man produces. He may even be led by the rise in the price of his own goods into overlooking the fact that prices as a whole are falling. "The general level of prices" consists not of a number of prices of particular commodities in a constant relationship to one another, but a level which may be rising or falling as a whole, while any individual price may be falling, rising or immobile. This level has been likened to the tidal level of the sea, which may be rising or falling, while the separate prices may be regarded as the undulating waves.

Precision can be given to the impression of a general price level by the use of index numbers, which attempt to express its movements in a single figure. The principles on which they are based are simple enough, although any detailed application may be difficult. Let us suppose that the price of some article was £1 5s. 0d., per ton in 1913, and £1 17s. 6d., in 1929, we would write 100 for 1913, and 150 for 1929, so having an easy means of comparison. If a little island produced five commodities only, we could make an index number for each and then combine them into a general total, thus :—

	A	B	C	D	E	Aggregate Index No.	Average Index No.
1913 ...	100	100	100	100	100	500	100
1929 ...	150	120	90	110	130	600	120

For convenience we could average the total, as in the last column of the table, so as to make easy the comparison of individual with general prices. In the construction of a suitable index number, a series of problems arise which it is important to understand

if the index numbers in use are to be appreciated. (i) The selection of a suitable base year. (ii) The selection of suitable commodities. It would be impossible to include all prices and some must be taken as representative. Which shall these be ? The raw materials or the finished articles ? An index number of retail prices is difficult, for not only is it the case that the farther one goes in the stages of manufacture from materials to finished goods, the greater becomes the number of *qualities* and types of articles from which the selection must be made, but some qualities alter and even disappear from use altogether, so that no comparable figures could be obtained. For raw materials and certain standard types of goods there are reliable standard wholesale price quotations, and it is easy to select those which are really representative of the production of the industry in question. (iii) The importance of commodities. We have to remember that while copper may be representative of copper-using industries, leather for the boot and shoe and allied industries, and cotton for the cotton industries, these industries are not of equal importance in the national economy, whether tested by volume of output, capital involved or numbers of workers employed. A rise in the price of material used by a small group of industries is not so important, or so representative as a rise which affects a group of large industries. This difficulty can be surmounted by "weighting" each article, that is, multiplying it by some factor which indicates its relative importance. If in the table above, A were regarded as eight times and B twice as important as the other three commodities, the general average index figure for 1929 would be 136 instead of 120. (iv) Combining the separate prices into a general average. There are a number of ways of solving this, for example, taking their arithmetic average, as above, or their geometric

average. The geometric average of the figures above would be :—

$$\sqrt[5]{150 \times 120 \times 90 \times 110 \times 130} = 137.4$$

The geometric mean is less affected by abnormal fluctuations of any one of these commodities.

There are a number of well-known index numbers whose changes the students of business should form the habit of observing. Sauerbeck's index number, continued by the *Statist*, uses the wholesale price of forty-five articles, nineteen being foodstuffs, eight textiles, seven minerals, and eleven miscellaneous. A rough weighting is given by taking separate quotations for wheat, flour, pig iron, steel rails, beef and mutton, etc. The combined number is an arithmetic average of the separate prices. The *Economist* index number is an arithmetic average of forty-four articles. The Board of Trade index number of wholesale prices includes one hundred and fifty articles and the prices are mostly the average import and export prices. In this case the commodities are put into eight classes, and combined into a geometric average. Index numbers are also useful for giving a representation of the movement of prices of some special range of articles and services, etc., such as shares or shipping rates. The *Economist* publishes an index number showing share prices and the Chamber of Shipping one showing freight rate movements. As share and freight rates sometimes show sharp variations of the price in individual cases, both of them make use of the geometric mean. The Ministry of Labour Cost of Living Index is an endeavour to create an index measuring the changes of prices in those articles which enter into working class consumption. The various articles are "weighted" according to their importance in working class expendi-

ture as revealed by an analysis of two thousand family budgets in 1904.

Changes in the general level of prices are important because the rise is spread unevenly amongst the particular commodities and because incomes adjust themselves unevenly to the change. The influence on the trade cycle of the fact that in periods of rise and fall, the prices a manufacturer receives for his goods change more rapidly than some of his expenses has already been noted. An examination of separate groups of articles included in the index numbers and of other data, brings out the following facts. (1) Wholesale prices are more likely to change over periods than retail prices, in the sense that the rise or fall is greater in extent and the response to new conditions occurs sooner; (2) the prices of raw materials are more likely to change than those of the finished goods made out of them; (3) the prices of goods used for further production are more liable to change than prices of things used for direct consumption; (4) the prices of raw materials fluctuate more widely than the prices of foodstuffs.

What are the causes of the rise and fall of the general level of prices? A full answer to this question would take us into questions of currency theory which are beyond the scope of this book. Briefly, it depends on the quantity of money in use, the rapidity with which it circulates, and the state of trade. Prices tend to rise when the volume of the currency increases, whether the money concerned is gold coin, Bank of England notes which can be changed into gold, or emergency paper money issued during a war. When the country is "on the gold standard," *i.e.*, when the pound, the mark, or the dollar are equal in value to a fixed and invariable quantity of gold, the movement of the general level of prices is clearly connected with the supplies of the

metal. Professor Cassel estimated that in the period from 1850 to 1910, a production of gold each year of 3% of the stock in that year would have been just sufficient to allow for loss, for the increase of population and the greater productivity of industry, and would have kept world prices steady, a greater rate of output causing prices to rise, a smaller rate being followed by a fall. A sudden discovery of new sources of gold supply, such as the Australian or Californian "gold rush," tends to raise prices in gold-using countries, while any increase in the demand for gold such as an addition to the gold-using countries not accompanied by a corresponding increase in the supply, tends to bring about a fall in prices. Changes in price level can be manipulated as well as just permitted, but management of this sort requires not only a high degree of economic education on the part of those who control central banks and government Treasury departments, but an appreciation of difficulties and a willingness to sacrifice immediate interests on the part of the different groups of producers and salesmen who conduct the world's business traffic.

2. PRICES AND DEMAND

Turning from a consideration of the general movement of prices, to examine the influences which affect individual prices, we may note that three types of questions face the manufacturer. (1) Will a given alteration of selling prices produce a large or small alteration in the number of effective buyers? (2) Will a given alteration in output have a large or small effect on prices? (3) What effect will a given alteration of price and sales have on the total amount spent on goods and thus on the "proceeds" of an industry?

The answer to the first of the questions lies behind the discussion of the rival policies—"high prices and small volume of sales" or "low prices and a large

turnover " and we should not expect the same policy to be appropriate for all commodities and circumstances. Responsiveness of demand to price changes is termed " elasticity." The demand for an article is elastic when a small fall or rise in the price will lead to more than a proportionate increase or decrease of demand, or is inelastic when the increase or decrease of demand is less than proportionate. Just as demand for the motor car has been the great type of an elastic demand, so that for writing ink or domestic salt in England, are types of the other, for they are so low in price that most people can get as much of either as they need, and there is little reason for supposing that a reduction of price would greatly increase their consumption. The increase of demand consequent on a reduction of price may come from two sources, increased buying by classes which are already purchasing, and the fresh demand of a new group of consumers who now find it possible to buy. It is the second of these sources which has been the basis of the rapid growth of the motor industry. Every successive reduction of price which Ford made placed his car within the reach of groups whose incomes were lower than those previously catered for. Use, first by the rich, then by the " middle " and professional classes, finally by the artisans and labouring classes, has been the history of many an article which began as a luxury and ended as a stable product of wide consumption. Bananas were once a luxury, but are now widely bought, and grape fruits, once a rarity in England, are beginning to find their way on the hawkers' barrows. The conditions of elasticity are often a check to a monopolist who endeavours to raise prices, for if the price he fixes goes above a certain figure he may find that some consumers are taking less of his article than formerly, and that a whole large class has been excluded from purchasing altogether.

There are no precise means of discovering the elasticity of demand for various articles, for the facts lie buried in the accounts of the firms who sell them. We do not know the total sales over any given period, nor whether all the sellers charged the same prices, so that we are reduced to a number of common sense rules based on experience. For any article for which there is a substitute, the demand will be elastic, since the consumers can defeat any endeavour to raise the price by transferring their purchasing to the rival article. It would be very difficult for the monopolist to raise the price of beef unless he controlled the supply of mutton. The same holds true, though in less degree, of tea and coffee. Much depends on the importance of the article in the budget of the consumer. If he regularly buys a number of the articles and spends a significant proportion of his income upon them, then a small rise in the price of each will have a substantial effect on his total expenditure and he will be compelled either to go without other things or reduce his purchases of them. In such cases the demand tends to be elastic. We must consider the relation of the price of the article to the income of the various classes of actual and possible consumers. Changes in the price of meat and butter have a marked influence on the demand of the working class, while rich people can buy as much as they want. But there are so few well-to-do, and so many poorer persons that the total demand is moderately elastic. Again, if the article is a luxury, the demand tends to be elastic, while if it is a necessity, it is likely to be inelastic, but the purchase of an habitual luxury on which a relatively small proportion of the income is spent is unlikely to be restricted by a rise in its price.

In the second case, we look at the facts in the reverse way, and instead of asking what would be the effect on demand of a change of price, we enquire what would

be the effect on price of a change of output; and the statement of the relationship correspondingly alters. If the demand for an article is *inelastic* a given increase in production will lead to a *more* than proportionate reduction of price. An interesting example of inelasticity is provided by the Report on the Marketing of Potatoes issued by the Ministry of Agriculture. The two sets of figures following show, first, the percentage change from the previous year in the annual production of certain varieties of main crop potatoes, and secondly the percentage change of price per ton :—

Percentage change from the previous year.

	Production.	Price.
1913	+ 21	— 24
1914	+ 4	+ 19
1915	— 5	+ 26
1916	— 21	+112
1917	+ 47	— 33
1918	+ 20	+ 25
1919	— 33	+ 48
1920	+ 23	— 22
1921	— 9	— 12
1922	+ 30	— 59
1923	— 31	+149
1924	— 1	+ 3

There are other factors influencing prices than the size of the crop, but in spite of this, the table shows that a fall in price is generally greater than the rise in output.

The third aspect of elasticity naturally arises from the other two. What is the effect of an increased output and a fall in price on the total money spent on the article, *i.e.*, on the "proceeds" of the industry? If the demand for the article is inelastic, an increase of output means a more than proportionate drop in prices, and a decrease of the total amount spent on the article, while if the demand were elastic, production could be

increased without proportionately depressing prices, and the proceeds of the industry would be increased. It is important to look at the matter from this angle also, for two reasons. It is out of the proceeds of the industry that the various factors of production must be paid, and if there is a fall, some re-adjustment of the payment made to them will be necessary. Secondly, decreased expenditure on the article implies that the consumers have purchasing power left which can be deflected to other articles, while increased expenditure, on the other hand, implies that economies have been made elsewhere.

3. PRICES AND THE COST OF PRODUCTION

An examination of any competitive industry will show that contributing to the total output are firms of all kinds, large and small, new and old, efficient and inefficient, and that instead of there being a single cost of production of the article or service there is a wide range of costs. A table in the Report of the Coal Commission (1925) shows that the following were the costs per ton in British coal mines, grouped according to size of output.

Yearly output of undertaking 1,000 tons				Per cent. of total output	Cost per ton. Shillings.
5 and under		200	...	12·7	20·2
200	„	400	...	16·9	19·2
400	„	600	...	16·3	18·0
600	„	800	...	8·9	17·8
800	„	1,000	...	8·4	17·7
1,000	„	2,000	...	26·2	17·5
2,000 and over		...	...	10·6	17·1

Nearly 30% of the output was produced at a cost at least 12% higher than that of the most favourably situated set of producers, and nine-tenths at a cost of

fourpence per ton more than the remaining one-tenth. If we ask which of these differing costs of production is the most important one in the fixing of the sale prices, we must look to the cost of the firm which is on the margin of profitability. If the market demands the full 215 million tons of coal represented in the above table, it must pay such a price as will enable the firms in the least favourable circumstances to continue to produce, and to receive the profit normally expected for the mining industry. At any given moment there are to be found firms who are producing for no profit at all, and even at a loss. They may often stay in the industry for many years, using up family wealth or shareholders' capital, and their contribution to the supply must in some measure influence prices, but in the long run, the prices the consumer pays must take into account the fact that output can be continuously obtained only if, taking the good years with the bad, the normal expectations of capital and enterprise for the mining industry are realized. The grade of firms which are to be regarded as on 'the margin of profitability' varies with circumstances, for a fall of demand might so lower prices as to throw the category producing at twenty shillings into idleness, or an increase of demand bring into activity pits which have been waiting an improvement of trade to recommence production. It is to this inter-play of demand and costs at a variable 'margin' that we must look to understand best the forces affecting prices. To use the term of economic theory, we must watch the marginal costs of production. This conclusion is not essentially altered by considering a manufacturing instead of a mining industry, for although in this case many of the firms could enlarge their output without adding to the cost of production, and even diminish them by spreading the constant charges over a larger number of

units of product, it is still important to watch the forces as they affect the least favourably situated producer. Even the less efficient firms may be able to reduce their costs by extending production, and the "highest cost" may be continually falling, with the sale price hovering about it at any given moment. If the costs of four producers were 1s. 6d., 1s. 3d., 1s. and 9d. per unit, the price would be at first fluctuating about 1s. 6d., but the better methods of the leading firms would spread to the others, and the costs might fall to 1s. 3d., 1s., 9d. and 6d. The "pace" would be set by the stronger and more progressive firms, and yet it would be no contradiction to say that price at any given moment is fluctuating about the cost of production of the least well-placed producer—the one "on the margin."

A second feature of the relationship between costs and prices centres round the difference between an individual producer's average costs and the costs of additional output. Taking the example on page 11, two distinct figures of "costs" are possible, one the average costs, *i.e.*, total expenditure divided by total output, and the other the additional costs incurred at each stage in order to increase output above the previous total. The additional net cost of producing the first sixty units, *i.e.*, the extra costs over and above those already incurred when the plant is idle, is 7,000 minus 2,300, or 4,700, or 78⅓ per unit. The additional cost of producing the next 40 units, *i.e.*, of raising the production from 60 units to 100 units, is 10,100 minus 7,000 or 3,100, that is, 77½ per unit. The additional net cost arises from extra materials used, the wages of more men actually on the job, more cleaners, power-house men, larger office expenses, etc. What is the relation of these two costs to price? What is the significance of the difference of 38⅓ between the average

cost for an output of 60 units, and the additional cost! Average cost must be covered if the concern is to pay, but it is the additional cost which looms large in the consideration of a manufacturer quoting a competitive price. Apart from exceptional circumstances, if the contract does not pay for the labour of the men on the job, and the materials they use, the firm is better without it. The additional cost is the minimum figure which leaves the firm no loss.

There are circumstances in which it will be good business to charge only additional costs, plus anything extra the consumer can be persuaded to give, even although it be much below the average cost. In the depth of a trade depression, when contracts are scarce, a firm with much fixed plant and heavy overhead expenses, may find that it pays to sell at a price only slightly above additional net cost, for even that small excess may contribute something to the payment of the constant charges. Similar problems present themselves in industries and services with seasonal andother fluctuations of output. Provision of equipment for "peak" demand implies idle plant in the other periods, and just as charging a low price fixed at or a little above additional net cost can assist manufacturers in depressions, so a like policy will help these services in the out-of-season months. Reduced winter charges at pleasure resorts, or cut summer gas prices, may help to attract business which would not otherwise be obtained, yet average cost must be covered, and some limits must be set to the reduction of prices to the lower level. Nor is the problem limited to conditions arising from periodic fluctuations of output. Every substitution of machines for human labour, of an invariable for a variable cost, adds to the burden of constant charges, while the stress of competition tends to produce an excess productive capacity in an industry.

New firms set up simply to get a footing in the trade by capturing a share of existing markets. They may start off with more modern machinery and layout than established rivals, and this tends to facilitate their progress. In conditions such as these, endeavours to keep or seize trade may result in driving prices down to additional net cost, that is, in cut-throat competition. For example, competitive building followed by price reductions on U.S. railways in the 70's at one time reduced the fare from Chicago to Kansas, some 400 miles, to 2s. 1d. Useful though it may be in some circumstances to make additional net cost the basis of price, in times of severe competitive strain, it may prove to be the first step on a slippery path to destruction.

4. DIFFERENTIAL CHARGING

A specific feature of the relationship between prices and costs on the one hand, and prices and demand on the other, is the practice of differential charging. The maxim " that in any market there can be but one price at any given moment " states explicitly the expectation that in ordinary circumstances the price charged for an article (difference of quality, etc., apart) will be uniform to all consumers. In practice businesses have found it possible and profitable to separate their customers into two or more classes, charging some higher than others. Many of the industries which use this method of price fixing, such as gas and electricity concerns, are monopolists in their own area, and in any case where an article can be obtained only from one producer, he is in a position to sell on his own terms. This has sometimes led people to think that differential charging is possible only to a monopoly of some kind, but the motive for " discriminating " charges lies in overhead costs. A specially low

price may enable a works to secure orders in an off-peak period, that is to utilize productive capacity which might otherwise be idle. A low price may tempt in a new class of consumers, and the gain is the greater if the prices to the old consumers can be maintained unimpaired. The essential to success is not monopoly, though this is an aid, but that the classes or areas between which distinctions are to be made should be separate, neither the article being capable of profitable resale by one class of buyers to another, nor the consumer himself being able to move from the area or class which is highly charged to one which is more favourably treated.

Charges may be varied according to the time at which a service is used. Where an electricity concern's principal sale is for lighting, an extra demand during the day may be worth a reduction of rates, one works, for example, charging 4d. per unit for lighting, 1d. per unit for cooking, and 1½d. per unit for power. Similarly, gas companies may stimulate a daytime consumption by low rates for industrial users. Telephone systems charge less per minute during the night hours. Reduced tram fares for afternoons and week-end travelling are instances in another connection. Discrimination can be made between those who consume at one season rather than another. In the "residential tariffs" of electricity companies, the standing charge per room for the two summer quarters, may be only one-half that of the winter quarters. Differences of this sort are based partly on cost. Equipment provided for the peak load will be but partly used during the periods of slacker demand, the service is therefore more costly, and the charges correspondingly higher. As the administration of a single large account is simpler than dealing with many smaller ones, persons who buy in bulk expect easier treatment. Those who

use a service regularly think themselves entitled to favourable consideration, as compared with others who use it spasmodically, as in the case of season ticket holders.

Account may also be taken of the income of consumers—doctors' fees, for example, being higher to the rich than to the poorer patients for the same service rendered. Sometimes different classes can be differently levied, by packing identical wares in superior containers, the extra cost being more than made up by higher prices. This is clearly the case with toilet accessories, from scents to health salts of various kinds. First and limited editions of books at higher prices are followed in due course by cheaper editions of books for the wider public. There is a story of one millionaire who ordered his agent to buy the most expensive copy of the best editions of certain classes of books, and Austrian publishers, much put to by post-war circumstances to maintain the output of the beautiful but expensive books for which they were famous, printed a few most elaborate copies of certain books, priced highly, using the proceeds to help with their ordinary publications. Weekly and other periodicals occasionally favour new customers as against old ones, by offering six months' trial subscriptions at reduced rates. Discrimination can take the form of presenting the buyer with gifts, or extra quantities of produce.

Two other classes of discrimination call for more detailed attention—dumping and railway rates. The term "dumping" in popular discourse sometimes carries with it the idea that its effects are injurious, if not destructive, to home industries, that it may be the chief weapon of organized attack on them by a foreign monopoly, and that energetic measures to counteract it are necessary. The controversies which have been aroused in connection with it, have led to the term

being used rather loosely, to cover four distinct cases, some of which cannot be truly called dumping at all. Goods may be sold abroad (1) at a price less than their sale price at home; (2) at a price less than their cost of production; (3) at a price less than the cost of production in the country where the goods are dumped; (4) at a price less than that charged by the producers of the importing country. The third and fourth cases could arise in the ordinary process of competition between producers who had more advantages and were more efficient than others, and do not involve any special price manipulation by the sellers. It is better to restrict the use of the word to the first meaning *i.e.*, selling abroad at prices lower than those charged at home. In that case, it may sometimes happen that the second meaning—selling abroad at less than cost of production—is also applicable.

A variety of circumstances may lead the exporters of one country to dump goods in another, but not all cases are equally injurious to the producers of the country which imports them. Occasionally any industry may have surplus stocks which cannot be easily got rid of at home, but can be sold off at low prices in a foreign market. The occasional competition need not do any serious injury to the foreign producer. The dumping may be seasonal, that is, an endeavour on the part of the exporting industry to stabilize its production in an "off" season at home by sales at cheap rates abroad; or goods may be dumped only in the sense that manufacturers may be charging low rates on new products to familiarize the foreign public with their use, and this again is not likely to continue for very long. A more important motive for dumping is that a large volume of sales may enable cost of production so to be reduced that the loss due to price cutting is more than made up. Let us suppose that

without dumping, the amount sold, and the prices and costs were as follows :

	£
100,000 units sold at 1/-	5,000
Produced at 6d.	2,500
Profit	2,500

If dumping is introduced, the greater output may be produced at lower costs per unit, for the constant charges would not be correspondingly increased. The account might then stand as follows :

	£	£
100,000 units sold at 1/-	5,000	
50,000 sold at 6d.	1,250	
Income		6,250
150,000 units produced at 4d.		2,500
Profit		3,750

The enlarged output has been produced at lower average cost, and any loss incurred through dumping is more than recouped by the economies of larger production.

Dumping is particularly prevalent where the industries use much fixed capital and where there is a trust or some other form of combination. It is difficult to maintain a difference of price against the home consumer and in favour of the foreign buyer, where there is keen competition amongst the makers. Organised and continual dumping generally pre-supposes the existence of a ring or combination of some kind, or at least the dominance of the market by one or two concerns. Tariffs naturally aid industries to dump since they make easier the maintenance of the home price. Some questions of practical importance arise. How much dumping actually takes place ? Does it seriously injure the producers in the importing country ? If so, how can it be remedied ? To these complicated questions only the barest answer can here

be given. Dumping is, in the nature of the case, not easy to detect or to establish, but an American authority declares that "a substantial fraction of the manufactured and semi-manufactured goods entering into foreign trade are sold at dumping prices." The second question is still more difficult to answer. We naturally expect that every industry should be prepared to stand competition, but much depends on how intense we think the competition should be before it can be declared "injurious." Something depends on whether the dumping is temporary or permanent. Further, although country A is exporting to country B at prices below its home prices, and even below the prices charged by B's producers, the price may still not be lower than the price at which B's producer can sell at a profit. A number of states have tried special anti-dumping legislation, but it is not uniformly successful, much depending on the soundness of the administrative arrangements. Generally, the method least unlikely to fail of its object is the imposition of a special tax equal to the difference between the home price of the exporting country and the price at which it dumps.

In Chapter I reference was made to the costs incurred in making and running a railway, and to the effect of fluctuations of output upon the different classes of expenditure. We may now view the matter from a different angle, and enquire how far these costs may be divided amongst the multitudinous items of traffic, and made the basis of charges. A great part of the capital cost has been incurred in promoting and establishing the company, and in constructing a road, bridges, etc., which are used by all classes of traffic. In the provision of rolling stock distinction can be made between the passenger and goods engines, and between coaches and wagons, but engines will, on occasion, do both classes of

work, while the expenditure on coaches and wagons is not a large part of the whole. As regards running costs, the expenditure on maintaining the road is not divisible with any ease between the users of the service, for most of it would have to be incurred if any given class of traffic ceased to use the railway altogether. Signalling and watching the line is common to various types of traffic, and while the cost of running goods stations is separable from that of passenger stations, in a large number of country stations the work is mixed, the time of the staff being divided between the two kinds of traffic. In consequence, even in the cases of the two major classes of service rendered to passengers and goods, an exact statement of the separate costs is not practicable, and the specific charges made for the work done must be settled on some basis other than cost. The total revenue received must be made to cover the total costs incurred, but this gives no guide as to the proportion of the total cost to be set against each class of traffic.

If there are difficulties in allocating the total costs between passengers and goods, still greater are the obstacles in stating the full costs of carrying particular kinds of commodities. Railway companies have therefore adopted the policy of charging "what the traffic will bear," a vague phrase which calls attention to the character of the demand in each case, and in practice means "differential charging." In a country where the general standard of life is low and the capacity of the passengers to pay is limited, the tendency must be to place the greater charges on goods, while where incomes are higher, and the competition of other means of goods transport, such as rivers and canals, is keen, as in Holland, the tendency will be for fares to be high and rates on goods low. Heavy and bulky goods like coal, bricks and sand, would not pass by rail at all if the

charge per ton were high, but articles of luxury, which are light and valuable can stand high charges. In England for purposes of charges, goods are grouped into twenty-one separate classes, the place of any article in the classification depending in large measure on its capacity to "stand" the charge. Roadstone and grain, hay and straw, are granted lower rates than confectionery, salmon, sealskins or bananas. Cost has some influence on classification—the same article will be charged at a lighter rate if sent in large quantities than in small, or if packed in ways which save handling or prevent damage—but this is only a modification of the general principle that the rates are based on the character of the demand for the service of transporting the article in question.

5. PRICE CUTTING AND TRADE COMBINATIONS

What is the effect of the relationship between prices, costs and demand which we have just examined on the working of competition? The London traffic services provide a clear example of competing concerns, some with large overhead costs, daily and seasonal fluctuations of demand, and in some measure excess productive capacity. Some years ago the services consisted of competing companies, the L.C.C. tramways, private enterprise tramways, mainly suburban, competing tube and underground services, and the suburban trains of the main line railways. Some of the main line and underground railways were constructed only at a very high capital expenditure per mile. These services are by their nature subject to considerable variations of traffic, each of them having heavy "peak periods" at the beginning and the end of the working day, with an average use on a markedly lower level. There are noticeable variations between the months of the year, passengers tending to use the underground

services in the winter, but to forsake them for the surface vehicles during the summer, and to this must be added the ease with which small 'bus companies are able to place vehicles on the roads. How was the problem created by this excessive productive capacity to be met? Attempts to stimulate the use of the services by lowering fares resulted in a severe price warfare inimical to the interests of all concerned, and a period of cut-throat competition was thus followed by the creation of the Traffic Combine—the L.G.O.C., the underground lines and certain suburban trams.

Since that date the situation has been complicated by the further development of areas outside London as places of residence, and the increase in the number of the vehicles on the streets. The results have been congestion, a general slowing down of traffic, and uncomfortable, if not dangerous, conditions in the rush hours. Two committees of enquiry have stated that to meet these difficulties in east and north-east London, vehicles must be removed from the roads by the construction of new underground railways, and by reconstructing and electrifying the main line suburban services. Both these would be very costly, and the companies declare that they are unable to make the expenditure unless there is some guarantee that it will be remunerative, for under present conditions competition will deprive them of a return. Both enquiries came to the same conclusion—that there was no solution of London's traffic problem unless its competing services were placed under common management, with a pooling of receipt.

Another striking instance can be found in an entirely different industry, rubber production. A rubber-boom was followed by the establishment of many new plantations, and its later consequence, excessive production; the normal consumption being estimated in 1920 at

300,000 tons, while annual production was 380,000 tons, plus 20,000 tons of wild rubber. Necessary stocks

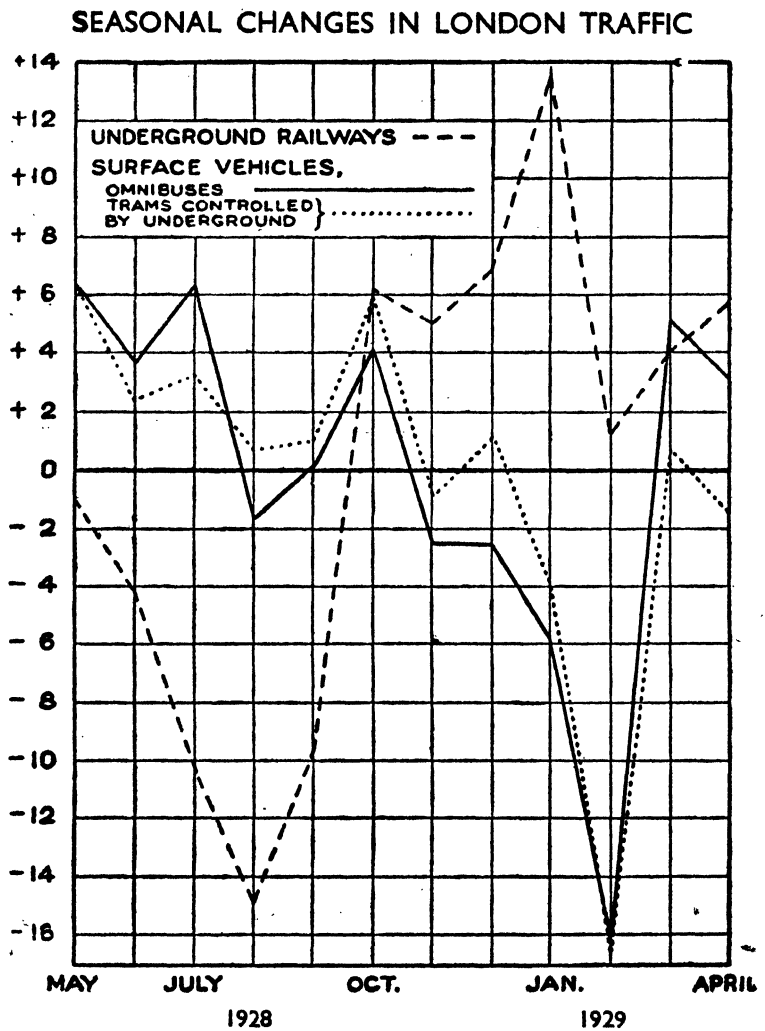


CHART SHOWING THE PERCENTAGE BY WHICH THE NUMBER OF PASSENGERS CARRIED IN EACH MONTH EXCEEDS, OR FALLS SHORT OF, THE AVERAGE FOR THE YEAR FOR EACH CLASS OF VEHICLE. NO ALLOWANCE HAS BEEN MADE FOR THE VARIED LENGTH OF THE MONTHS.

were estimated at 200,000 tons, whilst actual stocks were 310,000 tons. This placed the industry in a very critical position, and rubber prices fell to an unremunerative level, a diminution of production by 25%, plus something more to allow stocks to be eaten into, being required to bring the industry to a normal condition. Several attempts were made, without success, to induce an adequate number of firms to join an association which should arrange for the restriction of output, but without any permanent success, for apart from the usual difficulties of creating an association which should include both British and foreign producers, many of the stronger producers held the definite view that a price war which would weed out the inefficient, was the only real way out of the difficulties. Government action was tried, in the form of an export tax on rubber levied in British producing areas, but after several years failed in its object, partly because the pivotal price was fixed too high, and partly because Dutch producers not under British control were unaffected by the tax, and reaped the profits of high prices without sharing the sacrifices which made the high prices possible.

The need of the industries for stability, imposed on them by the burden of heavy fixed charges, is the source of the many varieties of restrictive trade practices. The creation of business opinion against "spoiling the market" is a primitive form of restraint. The term is a vague one, but certain specific meanings can be attached to it. Selling at a price which does not cover fixed charges may "spoil the market." Cutting prices in a depressed market may clear stocks but not increase total sales, or if ill-judged, may cause the public to think that prices will fall still farther and actually induce them to refrain from buying in expectation of this. As a remedy for the evils of excessive price-cutting, the

creation of a public opinion amongst business men may not be very effective, for there is no means of enforcing it on individual sellers, and in any case it may be weak and fitful if there are a large number concerned. Where, however, the sellers are few in number, and are in close contact, it may act as an effective restraint. From a mere holding of opinion against low prices, a group of traders may advance to holding of informal meetings. There are many examples of these amongst local traders, the London Coal Merchants being an outstanding case. These price understandings may restrain undue price-cutting, but they are agreements as to price only, and do not imply any greater efficiency in the industry on the productive side.

In contrast to these two informal methods of restraining competition others presuppose the formation of a definite association, with rules, subscriptions and penalties, and elected officers. Each firm retains its autonomy, and produces as it thinks fit, but agrees to abide by a schedule of prices fixed for some specific period. Where they supply local authorities, they often arrange to send in exactly the same quotation, the firm which is successful in securing the contract paying a percentage into the pool, or they may agree to register all contracts with the secretary, who will add a percentage to each before they are sent to the authority. Associations which concern themselves with prices have the advantage that they may restrain undue competition, but since the firms are independent, no economies of large scale production arise, and there is some danger that the consumer may be exploited. They labour under the disadvantage that they are difficult to maintain; for prices cannot be kept up independently of changes in the volume of output.

It is natural for associations which begin by fixing prices to add to their functions some kind of control of

output, but determination of the total output implies a limitation on the production of the individual member firms, and some means of assuring each participant that the other members are honouring their promises. Much closer organisation is necessary. Often an association will appoint the principal of a reputable firm of accountants as secretary, giving him the power to examine all the books of members, so as to determine the percentage of the total sales made by each firm. Periodical meetings of the association are held, at which the total to be produced is settled, and the secretary informs each firm privately what its output for the ensuing period is to be. Some associations add to these arrangements clauses requiring firms to pay a deposit, and imposing fines for exceeding output, with compensations to firms who produce less than their quota. A Committee under the Profiteering Act, reporting on the Cut Nails Association, stated that firms representing 99% of the total output were members, that each firm deposited £1,000 caution money, and paid one shilling per ton to a reserve and expenses fund. Minimum prices were fixed and output regulated, with fines of £2 10s. 0d. for exceeding, and compensation payments of an equal amount for falling short of, the quota. Arrangements may be made even closer by adding a joint selling agency. This has the effect, not only of enforcing the agreement between firms, since if goods must be sold through the central agency, evasion of terms of the agreement is less easy, but of maintaining prices by preventing competitive selling. This form of arrangement—the Kartel—has been typical of German industry, whose adoption of it was partly influenced by the character of German law which makes contracts of this sort between firms enforceable in the Courts. From the point of view of general efficiency these output associations have a

number of defects. The separate firms retain their own identity, and are not merged into a single financial and productive unit, and to this extent it is not possible to reap the full benefits of large scale production. It may even be the case that the allocation of a specific output, especially if based on the actual shares of previous sales, tends to prevent the more active and efficient firms from taking an increasingly greater share of the trade. The existence of a system of fines and compensation strengthens this tendency. There are cases of weak firms ceasing output altogether and living like pensioners out of compensation payments, though such a practice would be suicidal unless it were certain that the association would never break down and business have to be recommenced.

As contrasted with combinations in which individual firms retain their financial independence, in consolidations and trusts they are financially interconnected or definitely merged into a single firm. One of the firms may absorb the others by purchase, or a new holding company may be created to buy all or a voting majority of the shares in all the firms. The companies may continue to work as separate concerns, subject only to the general direction of the parent company, or the new concern may actively manage the united business. The most famous of this type of organisation is the "Trust." This name was given to a method of combination developed by Rockefeller in building up the Standard Oil Company. Using the device of trusteeship, whereby one person can be designated to hold and administer property for the benefit of another, Rockefeller evaded legal attacks for acting in restraint of trade, by persuading shareholders of thirty companies to hand over their shares to three trustees, to be administered for the shareholders' benefit. Later,

provision was made for enlarging the number of trustees, for electing successors, and issuing certificates to shareholders. There were many imitations—the Sugar Trust, Whisky Trust, Cotton Seed Oil Trust, etc. Whatever the legal devices by which combinations of this kind are organised, from the economic point of view the essential difference between them and output associations is that the firms lose their independence, and can be treated as a unit, both financially and technically. Patent processes owned by one works can be spread through all of them, large-scale buying is possible, while the smaller works can be closed and production concentrated in the larger units. The Sugar Refining Trust closed eighteen out of twenty-four establishments, and the Whisky Trust sixty-eight out of its eighty distilleries. It is in this aspect of trustification to which attention is called in the term "rationalisation," and has won for trade combination a popularity almost as strong as the hostility which it previously encountered. A trust can decrease its expenses by concentrating production, but if an output association limits its output, it is likely to be achieved by diminishing the production of each firm proportionately, thus increasing the costs per unit.

How far have these various forms of combination been successful in dealing with the problems of excessive competition and incomplete utilisation of the plant? They have often been successful in putting an end to cut-throat competition, and to this extent have brought stability to the industry, but as against this gain there must be set a number of deductions. Concerns are often bought up at excessive prices, and neither subsequent economies through organisation on a greater scale, nor gains through increased prices have been able to give enough revenue to yield a profit on the excessive

capitalisation. In 1888 the Salt Union bought eighty works, but at unreasonably high prices, the dividends fell to 1%, and for seven years none was paid at all. American enquiries into trust activities indicate that often the "common stock" of the new concerns represents anticipated monopoly profits, and that these are persistently overestimated. The striking financial successes of some trusts have tended to obscure the dreary history of lean years of others, and of attacks by spirited independent companies, followed by their continual and reluctant admission into the combine. They have not always reduced costs by concentration of output in a few large works or by other methods, for where circumstances have been favourable, it has proved easier to obtain profit by manipulating prices than by close attention to technical efficiency. During the Great War the Salt Association was assailed in a Report by the Committee on Profiteering for charging high prices based on antiquated open pan methods. Amalgamation does not in itself bring economies in production, it merely provides opportunities for making them. In the case of the railways, the economies, through amalgamation in 1921, are not yet as great as many had hoped, the merging of staffs formerly competitive, and the co-ordination of various methods of operation and administration presenting formidable difficulties. It is indeed, only too tempting for amalgamated concerns which have a substantia hold on the market to justify themselves to the shareholders by price manipulation, rather than the more exacting method of reorganising technical and commercial methods.

6. UNFAIR PRACTICES

It is not to be expected that the adoption of trade combination as a solution of the problem of overhead

costs and excessive competition, should be free from difficulties. The exceptional powers possessed by monopolists may be abused by the exploitation of the consumer, and the ruthless use of competitive strength to crush independent concerns. Since the beginning of trading, men have feared and abused merchants who used their control over supplies and necessities to wring high prices from helpless consumers, whilst the exercise of strength by great producers against independent concerns has called forth reprobation since Ahab overcame the reluctance of a small owner to sell out by procuring his murder. Modern trust methods have included a number of practices generally felt by the public conscience to be "unfair," to constitute not merely competition against, but the clubbing of an opponent. A large concern making several lines of goods can select an article made by an independent producer as a "fighting brand," cutting prices on it and relying on other lines to make up the profits, until the smaller rival is driven out of business. It is a common practice of large motor omnibus concerns to attack small owners, by reducing fares to an unprofitable level on the competitive routes alone, and by sending buses immediately before, and immediately following the rival vehicles, so as to prevent their obtaining traffic. One American tobacco concern endeavoured to crush an independent firm which made plug tobacco, not only by making this a fighting brand, but by actually sending its agents through some of the principal American cities giving away plug tobacco free. According to the Report of the Bureau of Corporations on "Trust Laws and Unfair Competition" (1915), the Standard Oil Company resorted to the use of "bogus independent concerns," who lured genuine independent firms into ruinous price wars, ignorant of the fact that their rival was not a rash and impecunious

competitor with a limited capacity for standing continual losses, but was in reality financed from the vast resources of a great combine. A nation-wide combine can beat local concerns out of the field by local price discrimination, *i.e.*, cutting prices in their area only, sustained by profit from the rest of the trade. A number of firms have used "tying" contracts to enforce their control, *i.e.*, have supplied certain essential machinery, over which they have patent rights, only on condition that other machines are taken at the same time; or have leased machinery instead of selling it outright, on the same restrictive conditions. If to this a condition is added providing that the purchase of any machine from another maker will cause the loss of the machines already leased, control of an industry may be established, which will be almost impossible for any buyer or independent producer to shake off. Harassing rivals by ill-founded and vexatious law-suits over patent rights, etc., enticing key employees; bribing railway servants to give information regarding a rival's customers and the amounts consigned to them; securing secret freight preferences from railways, have all been established against American concerns whose names are household words. Competitors may also be damaged by various methods which have the effect of closing the means of distribution against them. By an "exclusive" contract, a manufacturer may be able to secure that many retailers will not sell some competing product, and if he can so bind the most important dealers in any area, rival manufacturers will be unable to find an outlet for their wares except through less important retailers, or at the expense of creating a special retailing organisation of their own. Where the producer controls some specially well-known commodity, *e.g.*, a camera, the demand for which is so great that a dealer must stock it, he can adopt the practice of "full line forcing," *i.e.*,

compelling dealers to take his other goods, such as chemicals, films and accessories of various kinds, as a condition of being supplied with the cameras. A firm which can combine full line forcing with exclusive dealing, can secure a hold on the agencies of distribution which a competitor will find difficult to break down.

Those economists, politicians and business men who in the nineteenth century sang the praises of free competition, conceived of the struggle between individual firms as taking place in terms of greater efficiency, lower costs of production and lower prices, and in so far as this was a correct view of the facts, it was possible to argue that the competitive process contributed to the common good by ensuring a steady elimination of the less by the more efficient businesses. But the singling out of individual concerns for attack and clubbing them by the devices of the kind described above, cannot be regarded as necessarily leading to the survival of the fittest productive unit, or leading to the triumph on the market of the best products. Who will say confidently that the world-famous firms who have practised these methods, have not succeeded as much by their resort to them as by any initial superiority in the quality of their wares? Professor Foxwell, writing in the *Economic Journal* in 1917, pointed out that in 1851-4 the *Lancet* made an enquiry into the purity of fine drugs and chemicals, investigating thousands of products from many firms; none of those firms, he states, whose products were shown to be absolutely pure has survived, while some whose wares were doubtful in this respect are among the best-known firms to-day. While it is true that most business activity to-day aims at rendering good service in the hope of securing good profit as a reward, it cannot be doubted that there is a great deal which aims at profit primarily and is ready to adopt the most direct

means to that end, even if it includes "unfair practices" and adulteration. When business is divided mainly between a few giant concerns the interests at stake are so great that their attention is liable to be directed more to crushing out rivals by the use of financial strength, political weapons and any other device, bruta or otherwise, which seems to lead to victory, than to the advancement of technical efficiency. It does not follow that the most efficient fighting machine is the best from the point of view of long-run economic efficiency.

Modern states have consequently been led to pass laws concerning trust activities, not only because they may exploit the consumer, though this motive has always been a dominant one, but also to regulate their relations with other producers. In England the law is such that some practices which in other countries would be regarded as abuses of trust power are left unregulated. The attitude of the law courts is based on the doctrine of the "restraint of trade." A contract in restraint of trade is one that impedes or tends to impede the free course of trade, the free use by any individual of his capital and labour as he thinks proper. It is not a doctrine expressly laid down in any act of Parliament, but is an ancient common law doctrine which, since there are no hard and fast rules concerning it, must be interpreted by the Courts for each individual case as it arises. Not all contracts in restraint of trade are illegal, for if the restraint is such as merely to give a reasonable protection to the interests of the persons concerned, and does not materially interfere with the interests of the public, the courts do not regard them as illegal. Further, if the contract is illegal, it is so only in the sense that the law will not enforce it if an action is brought by either party against the other. From this two results follow:—(1) If any group of manu-

facturers or traders form an association, agree to restrict output, pay penalties, etc., and otherwise "restrain trade," the members will be free to carry out the agreement or not as they think fit, and the courts will not intervene to force any recalcitrant member to do so. The general effect of this is to emphasize and safeguard free competition. (2) But where an association takes economic action against a member or another producer, such as withholding supplies, the courts may refuse to prevent them, on the ground that the association is restraining trade only in defence of legitimate trade interests, that it is not unreasonable, nor contrary to public policy. A few cases will illustrate these points. A number of traders in Cork formed an association and agreed not to sell liquors at less than a fixed price within a radius of sixteen miles from Cork, but any member could terminate the agreement at six months' notice. This contract was held to be binding, but the agreement of a number of mineral water manufacturers not to sell mineral waters anywhere at less than ninepence a dozen, the period of the agreement being ten years, was not binding. There was a great deal of difference between the two cases as to the area affected, and the time limit of the agreement, the stiff terms of the agreement in the second case making it unreasonable. It follows that in England trade combinations have a fairly wide range within which they may exert pressure and coercion on individual firms. In 1892 an association of steamship companies regulated freight, divided the amount of cargo amongst them, and offered special rates to shippers who dealt with them exclusively. One firm, the Mogul Steamship Company, desired to join the ring but was refused admission, and when they sent two steamers to Hankow to secure cargoes, the ring reminded shippers there that shipping by them would

mean the loss of privileges given for exclusive dealing; and some of the members of the ring dismissed agents who had acted for the Mogul Company. The court decided that the ring had not violated any legal right of the independent company. Similarly, the Scottish Co-operative Wholesale Society brought an unsuccessful action against the Glasgow Fleshers' Trade Defence Association. This association told the salesmen in a certain cattle market that they would not in future bid, unless they refused to accept bids from the Co-operative Society. The salesmen did refuse their bids, and as the market was the only place in Scotland where American and Canadian cattle could be landed, the Co-operative Society was embarrassed. It was held that the butchers were acting within their legal rights. In 1921 the Motor Trades Association boycotted a dealer for re-selling at other than a fixed price, and his appeal to the courts was dismissed on the ground that associations have a right to use such weapons in defence of their trade interest. Again, the courts decided in 1925 that a newspaper association which cut off supplies from a wholesaler because he supplied certain retailers, was acting lawfully.

In contrast to this, the United States has passed legislation enabling the Courts to dissolve trusts into the constituent companies, and forbidding certain types of "unfair practices." The Clayton Act of 1914 prohibits local price discrimination, although concerns may reduce prices in any area to meet an efficient competitor there, but not so as "substantially to reduce competition"; and it prohibits tying contracts. It further prohibits holding companies, where the result will be substantially to lessen competition between the holding and the "held" company, while no one may be a director of more than two companies of capital, surplus and undivided profits exceed-

ing a million dollars, if they have heretofore been competitors. An aggrieved person may bring an action for three-fold damages. Germany has followed a policy different from either England or the United States, by recognising contracts between firms entering trade combinations, so that cartels have a proper legal basis, and this has at the same time provided a means of controlling the actions of associations against the consumer and individual producers. In 1923 a Cartel Tribunal was set up to examine cases arising out of the competitive methods of combinations. Where the trading conditions or methods of price-fixing are calculated to injure industry in general or the commonweal through an economic monopoly, a member of a cartel who is threatened within the cartel by a group of more influential firms has the right to be released from his contractual obligations to the association. Before it is applied, any boycott or other injury must have the sanction of the tribunal, and this can be refused if it would injure industry in general or the commonweal or unfairly restrict the economic freedom of the persons affected.

PART III. MARKETING

I. THE FUNCTIONS OF MARKETING

THE interest of business men and economists in marketing has much increased in recent years, several changes having contributed to make it much more important than it used to be. The increased division of labour has led to an increase in the proportion of the world's traffic entering international trade, and the circumstances which affect the prices of commodities are more far-reaching. Producers and dealers are affected by harvests, or hydro-electric developments at the other end of the world, and new factors, not easily calculable, and outside their control, have to be taken into account. In some manufacturing industries the revolution made in production by "mass" or "flow" methods has but served to emphasize the importance of marketing, for such methods bring in their reward when output is on a great scale, so that the creation of demand, its maintenance and increase, becomes vital. As the needs of the great industrial towns for perishable foodstuffs, like milk, butter, etc., can be provided only from a territory of wide radius, it is impossible for the actual producers to have personal contact with the consumer; the way is open for the intervention of middlemen, and with them, of a sharp conflict of interests.

The function of marketing is to equate a continuous flow of products with the demand of the consumer. The term thus covers two distinct activities, first, physical distribution, actually gathering commodities from numerous producers to a central point and dispersing them to

individual consumers; and secondly, the transfer of the legal title or ownership of the articles. Physical distribution includes transportation, which may present practical problems of considerable magnitude, as in the case of vast cereal crops of the United States and Canada. It may involve the provision of special appliances, like refrigerated trains for dairy produce, refrigerated ships for meat, special vessels for carrying oil, and various means of mechanical loading. Where time and speed are important, the route which the produce actually travels may be determined by the lay-out, appliances, and labour organisation of competing ports. Storage is important. Where goods of a particular size and quality are produced for an individual consumer, this problem does not arise, but the bulk of commodities to-day are produced for the market in general, in the expectation of demand arising, and storage is an essential part of the problem. The most convenient points of storage must be settled, arrangements made for supervision and sorting, and for refrigeration and other special facilities.

The other aspect of marketing, the transfer of ownership or title, the actual buying and selling, raises problems which are less easy of solution. To begin with, a good market should be characterised by two features, (i) uniformity of price,—that is, there should be but one price in one market at the same time, and (ii) equilibration, that is, steadiness of price through time. Neither of these is always easy of accomplishment. Wide divergences of price due to inadequate knowledge of some producers means loss and possibly a discouragement of production not warranted by the general situation. It is important that those concerned in fixing the prices should be under no delusion as to size and character of supplies. The publication of crop estimates, *e.g.*, cotton by the United States, of potatoes

by the British Ministry of Agriculture, of imports, stocks, sales, etc., of wheat and other commodities by reputable private firms, are endeavours to provide a basis of accurate facts. Everything which adds to the dealers' knowledge of the facts as to stocks and prices, whether it be production statistics, the publication of prices, or the telephone will assist in securing uniformity of prices. Violent changes of price through time are an inconvenience both to producers and consumers, for they involve sharp contractions or increases of output, make production speculative, and so add to the cost to the consumer. For example, the 1913 crop of British hops was about 256,000 cwts., and realised an average price of £9 3s. 0d. per cwt. The crop of the next year was much larger, being 507,000 cwts., and the price £3 19s. 0d. The range of fluctuation of price was much greater than that of the volume of the crop, and the growers actually received less for the larger harvest. The case of Brazilian coffee is classic. The coffee plant does not produce marketable berries for five years, and large crops with low prices have meant reduced plantings five years afterwards. The large crop of 1910 occurred five years after the small crop of 1905, and the small crop of 1911 followed the large crop of 1906. The adverse effects of these changes on producers led to a great outcry and to intervention by the Brazilian Government.

2. AGENCIES OF MARKETING

The methods of marketing developed to perform the functions just described are of bewildering variety, the problem of physical distribution and of finance varying from trade to trade. A manufacturer may produce to order a steady stream of uniform products, or may by the skilful use of travellers, maintain sales steady

enough to keep the works running without undue fluctuations. Compare this with the problem of marketing wool. Wools are not uniform, and cannot be graded easily, the quality varying with breed and climate, while the supply from any individual farm is variable, as well as the total clip. Direct sale by the producer to the consumer is possible, where the producer lives near his customer, as in the case of eggs, milk and butter in small towns, or where the advantages of large scale operation have driven the manufacturers to exercise more control over the sale of their products and to use brands and specialities. A single product may be sold by alternative methods. Boots and shoes may be sold direct to the consumer in shops owned by manufacturers, or sold to dealers who resell to independent local tradesmen. In the north of England four-fifths of the wool is sold to the merchants, in the south as little as one-third.

The bulk of agricultural produce is raised on scattered farms in small units, and to satisfy the requirements of the great consuming urban areas it must be "assembled" or "concentrated" at various points, and then dispersed to numerous retailers and consumers. The performance of the functions of collection and distribution involves the services of a chain of middlemen. Dealers, higglers, country wholesalers, town wholesalers, commission salesmen, factors, auctioneers, producers' co-operative selling agencies and speculators are found, with varying degrees of importance, in the marketing organisation of various commodities. Some of these middlemen purchase goods outright, and thereafter take the risk of deterioration, slow sale, adverse price changes, or fall of demand. This is true of merchants, wholesalers and retailers. Commission salesmen and brokers do not themselves take ownership in the goods, but act for the buyer or the seller, being paid a commission, usually a percen-

tage on sales, for their work. Auctions are used in the marketing of agricultural and especially of perishable produce. Sometimes they occur near the source of production, as in the great wool auctions of Dorchester and Winchester, and the country auctions of cattle and eggs: at others near the consumer's end of the marketing chain, or at the port of arrival, as in the case of imported fruit at Southampton, and of Australian and New Zealand wool in London. The firm or organisation conducting the auction collects and distributes the payments, receiving a commission for its services.

So far the chain of marketing agencies has been described as of the pattern producers—commission salesman —wholesaler—retailer, but developments of recent years make this an incomplete account, for there has been a rapid growth of producers' selling associations, consumers' buying associations, and even of middlemen's associations. In the case of manufactured articles these are represented by the cartels already described, but in farming and mining they are more recent, and have been formed to deal with definite evils. At present the demand for coal is inelastic, variations of output tending to cause disproportionate changes of price. The demand for basic agricultural products such as wheat, is probably moderately inelastic, and the regulation of the supplies put on the market would therefore offer hopes of steadier prices. This is especially important if the articles are perishable, independent or "disorderly" selling by numbers of competitive producers leading to shipments being made when markets are already glutted. It was to tackle this evil that the New Zealand Government set up the Meat Producers' Board, which consisted of representatives of producers, stock and station interests, and gave it power to regulate shipment, and the exclusive right to make freight contracts. The painful efforts of

coal-owners to set up organised selling arrangements are in the last resort traceable to the same economic cause. Some farmers' associations have sprung up through the resentment of producers at the retention of too large a profit by middlemen, their neglect to pay adequately for high-grade products, or excessive charges by railways. An essential characteristic of these organisations is that they do not aim at making a profit on the selling operation, but at securing for the farmer higher prices for his crop.

Two examples will serve to illustrate these points. The Californian Fruit Growers' Exchange has ten thousand members for whom it collects, grades and packs. There are two hundred local district exchanges and a main exchange. Growers make binding contracts with the association, which has its own brand and has conducted very successful advertising campaigns for its "Sunkist" products. Seventy per cent. of Californian fruit goes through the exchanges, and is consigned to one individual, who represents the growers in the United Kingdom. The great Canadian Wheat pools aimed at securing a united front, both against the middleman in respect of grain prices and the railways in respect of freight rates. Farmers entered into binding contracts with the pools to sell all their grain to the association for a short period of years, nearly a half of the wheat of the three greatest producing areas being marketed through their agency. It is worthy of note that they often chose the shortest rail journey and diverted exports from the Eastern ports to Vancouver.

A final example will show how changing conditions give rise to new marketing problems, and cause the growth of fresh agencies. The direct marketing of milk by farmers is a natural course for the trade to follow where towns are small and farms within easy reach, and if one

includes large retailing concerns with their own farms, about one-quarter of English milk is distributed in this way. As the increasing population of the big towns and the growth of their demand for milk have rendered the production of the immediate neighbourhoods insufficient, milk must be brought long distances, the farmer's chance of direct touch with the consumer being correspondingly diminished. Middlemen have not been slow to take advantage of the opportunities so created. About one-half of the national milk production is marketed through one intermediary only, the retailer, who makes seasonal contracts with the farmers. In the largest towns this arrangement has given place to one allowing for a second intermediary the wholesaler. While in 1865 there were still forty thousand cows kept in London, to-day the population within ten miles of Charing Cross gets its milk from areas outside a radius of forty miles, and this mainly through the agency of two large distributors. These large wholesale firms possess pasteurisation plants, manufacture dairy produce from surplus milk, retail through their own shops, and supply independent milk retailers. This change has given rise to many interesting problems. The United Dairies Company controls a large part of London's wholesale trade, and one-third of the retail trade. Can this company use its power to crush the independent retailers? Do the small independents together constitute an effective competitive check on the large concern? How have the farmers adjusted themselves to the displacement of retailers competing for their milk by an "only buyer"? With regard to the last question, in 1922 a decision by wholesalers to reduce the price paid to the producer from two shillings to eightpence a gallon led to the threat of a milk strike by the farmers, followed by the conclusion of a national milk agreement between the National Farmers' Union and

the National Federation of Dairymen's Associations. The older forms of distribution have thus been replaced by the intervention of a second intermediary and by bargaining between two organised groups.

3. CREDIT AND RISK

The process of marketing involves two special problems of great importance. First, means must be found for financing the holding of stocks, and for bearing the risk of changes in their value during the journey from producer to consumer. Production may be seasonal and consumption regular, or consumption seasonal and production regular, but in either case there must be a holding of stocks. Wheat, cotton and wool are all "harvested," the total supply in any country coming into the market within a few weeks, but in the case of motor cars and some kinds of clothing it is demand which is seasonal. In either case, stocks of raw material or manufactured articles must be accumulated for the use of the mills or the retailer. In the bottling and canning industries the fruits and vegetables are both harvested seasonally and are perishable, so that stocks must take the form of finished products. Which of the parties concerned in the distributing process is to undertake the burden of locking up funds in holding stocks? The manufacturer has to buy materials and pass them through lengthy processes before he can obtain any returns, while the farmer's difficulties are commonly even greater, some of his expenses being incurred many months before the product is sold. Neither will wish to add to their financial burdens.

The answer is in part determined by the financial strength of the various agents in the distributive process. Agricultural producers are commonly weak in such matters, so that the financing of stock-holding and even

the advanced payment of farmers' expenses are frequently undertaken by dealers. This is not necessarily the best arrangement, for the financially strong can turn their power to their own advantage, and the general scheme of marketing may be less efficient or of less service to the producer. Farmers who receive supplies of materials from dealers on credit, feel an obligation, if they are not in practice compelled, to market their produce through the dealers who finance them, and this has often proved an obstacle to better and less wasteful methods of marketing. In the case of imported fruit, individual producers, or groups of producers consign to a broker or commission salesman. In many cases these middlemen have ceased to be merely salesmen, and have begun to finance the growers, advancing freight expenses, the cost of packing and shipping, and occasionally buying a part interest in the growing crop. Their agents go through the producing areas, trying to secure crops for their principals, and it is said that they bid against one another in the form of increased financial facilities.

Retailers also have their problems. Many small shopkeepers have little money available for investment in stocks, and are really financed by the wholesale firms who grant them book credits. The carrying of stocks by the great departmental stores implies financial strength either in funds which are actually put into stocks, or in reputation upon which large scale borrowing can be done. The retailer himself may be a credit-giver to his customers by allowing weekly or monthly accounts, unless he decides to forgo this means of attracting custom, and to adopt the principle of cash and low prices as the basis of his trading.

The second problem is that of providing against the risk of loss through a decline in the value of materials. A manufacturer who has contracted to deliver flour or

cotton goods at a stated price may find that, in between the time the contract was made and the date of delivery, the prices of his materials have risen so much that his anticipated profit has disappeared and been replaced by a loss. What steps can he take to protect himself against such adverse price changes?

It is in this connection that the speculative produce markets are so important. These are not necessarily markets in the sense of places for the actual physical collection and distribution of commodities, but are organisations of dealers making a quoted price available for either sales or purchases. Their distinctive features are:—(1) they are organised associations with conditions of membership, rules as to advertising, deposits of money, etc.: (2) the members are concerned less with physical supply to manufacturers and retailers, than "making a price." They are dealers who endeavour to make a turn on their transactions by anticipating the movements of market prices. To make their profit they must bear in mind that the immediate and future course of prices will be influenced by crop prospects, actual harvest volume, the stocks in sight or at ports, stocks at principal points of storage, the amount of shipping available, changes of taste, trade disturbances, etc. Unconcerned with manufacturing, released even from the work of arranging the actual supply to wholesalers or others wanting the material, the dealers can devote the whole of their attention to watching the influences which play upon prices, and to taking the opportunities of gain which present themselves.

It is to these persons that the manufacturer turns for the means of protecting himself against changes in the price of his material. For besides buying and selling for immediate delivery, contracts can be made for purchase and sale for *future* delivery at a special price. A

dealer who sells a "future" in effect gives a guarantee that a specified amount shall be obtainable at some future date at a specified price, or more strictly, since he may not have the wheat or cotton in his possession, that the money needed to obtain it at that price shall be available. The risk of price changes is thus shifted from the shoulders of the buyer of the future to those of the seller, and since there are dealers who make the purchase and sale of futures their sole business, the effect of the organisation of the futures market is to throw the task of accurately forecasting price movements on to a class of men who specialise in the work.

A manufacturer making for stock who wishes to protect himself in this way will make two contracts in opposite directions, one being an ordinary trade contract, the other an insurance or protective contract, "a future." At the time of his purchase of materials he will sell a future. If prices fall, he will lose on his trade contract, but he will gain on the future, for this was in effect a guarantee to sell at a specified price, and assuming he were called upon actually to supply the commodity, he would get it at the lower prices of the open market, and so make a profit equivalent to the loss on the other. Similarly, if prices rise, he will gain on his trade contract, for the materials are now of greater value, but he will lose on the future, for if called on to supply, he might have to purchase in the open market at the higher prices. The process of "hedging," as it is called, balances a loss on one contract against a gain on the other. The manufacturer obtains security against losses by a fall of price, but only by giving up the chance of profit through a rise. Merchants who have contracted to supply material some time ahead will buy futures. If prices rise, they may lose on their trade contract, but will gain on the future. The advantages gained have led

to the buying and selling of futures being extensively practised in the wheat and cotton trades, by exporters in the producers' area, importers, merchants, spinners, and millers. There are futures markets in Winnipeg, Chicago, Kansas, Minneapolis, Buenos Aires, Rosario and at Liverpool. Ninety per cent. of the holdings of the great American wheat elevators are said to be protected in this way.

It is not necessary that the professional speculators who make their living by dealing in futures should possess any of the material they buy and sell for futures delivery. It is enough that they should study all the factors influencing the course of prices, and be willing to make contracts on the basis of their forecasts. The dealers themselves seek some protection, for one who has incurred a liability by the sale for a future will probably buy a future from another dealer to cover part of his risk. It is not easy to discover precisely what relation the number of futures contracts bears to trade contracts, but in Winnipeg, in 1921, the futures transactions amounted to six and a half times the volume marketed.

Speculation in futures has been the subject of continuous criticism, and even restrictive legislation. Dealing in futures, it is said, induces the spirit of gambling in foodstuffs, and causes great fluctuations of price which yield profits only to the gambler at the expense of the producer, or the consumer, or both. The cost of production is increased, since the same wheat or cotton is sold over and over again, and on each occasion a turn of profit is added to the price. What truth is there in charges like these? Although speculation gives a certain measure of security to some persons, does it create more uncertainty than it prevents? To this question there is no simple answer. The presumption that there is a balance of advantages in speculation not only

to the sections of trades which make use of it, but to the business community as a whole, is strengthened by the fact that many of the world's futures markets were organised in periods of special uncertainty. The American cotton market arose because the interruptions of cotton supply during the Civil War led to such great price fluctuations that dealers needed some method of insuring against them. It was reported by a German Commission in 1892 that every speculative market in Germany arose through increased uncertainties of trade. Further, an analysis of price movements suggests that as a result of futures dealing, while price changes are more frequent, they are much less violent, prices altering by an accumulation of small changes rather than by sharp leaps. This is probably a gain to business.

It is universally admitted that their benefits are dependent on the skill and integrity of the professional speculators upon whom the task of price-forecasting is thrown. If these are well informed and shrewd, their activities should tend to steady prices, while if they act on inadequate or scanty information, they may do more harm than good. If they use their knowledge to tamper with or manipulate the market, they may increase their own gains at the expense of the prosperity of others. It has been a common thing for groups of dealers who have reason for believing that prices will rise owing to a shortage, to sell extensively, thus giving to others a false impression of the probabilities. These also sell, prices being correspondingly forced downwards. Meanwhile the group will buy up secretly, and later make gains on the price difference artificially created. Speculation by " outsiders " who have little knowledge of the trade, and are ill informed on the varied influences likely to determine the course of prices, is akin to gambling: Their activities are unlikely to steady prices, for they do not

bring to the market the informed foresight of the professional dealer who specialises in the work. That as a class these outside gamblers are more likely to lose than gain is poor consolation if their activities add to the uncertainties of prices. The financial arrangements of the exchanges often make it very easy to conduct large operations on small capital, and it is known that the volume of outside speculation is very large.

These considerations indicate the difficult nature of the problem. There are admitted abuses and admitted benefits; the balance is not easy to strike. Many of the relevant facts are difficult to arrive at. Something depends on the detailed technical arrangements of the various exchanges. The matter has been closely investigated by economists, and by official and unofficial enquiries in various countries, and opinion is not unanimous. In England and America the conclusion has generally been that the advantages are greater than the evils, but the German Government prohibited future contracts in grain.

4. RETAILING

At present the central functions of the retailer are three in number: (1) to purchase in bulk, and break into small quantities for customers; (2) to give credit to well-to-do and very poor customers; (3) to transport goods to the home of the consumer. The statement represents only his chief functions at the moment, for retailing is in a state of transition, his work having enlarged in some directions, and in others contracted. Increased competition between the one-man business and the chains of company shops expresses itself not only in price but in "service," and of recent years he has been compelled to accept the obligation of providing carriage to all buyers whose custom is worth an

effort to retain. The increased interest of manufacturers in the sale of their wares has transferred many functions from the shops to the factory. It used to be part of the duties of a grocer to roast coffees and blend teas, but now customers prefer well-advertised and nationally known brands. The ironmonger makes his paints less, but sells a large maker's range of graded colours more. The old apothecary distilled, decocted and dispensed, while the modern chemist sells remedies and medicines, ready packed in standard sizes and advertised throughout the land. The development of proprietary brands of all kinds has deprived the retailer of his old-time functions of blending, weighing and wrapping, and in the sale of many articles has reduced him to the rank of "mere distributor." Even in this the manufacturer has begun to aid him with printed bill-heads, sale cards, window displays, etc.

Changes are taking place also in the relative importance of the various types of organisation in retailing, the one man business tending to give place to the chain and departmental stores. One older form, the small general stores, has almost disappeared, save in country districts, though small shops selling a variety of goods can be found in the poorer centres of the population. The small retailers have begun to specialise in a given line of wares, while great inroads have been made on their position by co-operative societies and company chain shops. They cannot, like the former, rely on the loyalty of their customers, nor can they advertise so profitably as the latter, for the cost of advertisement by the "chain" and "company" shops, of which there may be several in one town, are spread over the sales of a number of branches, whereas for the one-man business it would be proportionately higher per unit. They cannot buy on a large scale, and they are unlikely to borrow so easily, but they have one great advantage, the personal attention and super-

vision of the owner. This counts for much, as the financial prosperity of so many "tradesmen" shows. The large sums paid to local tradesmen by the various drapery and other "holding" companies, which are now creating national "chains" out of purchased businesses, are adequate indications of the hard work and care which this class of entrepreneur has put into his task. There is much inefficiency in one-man business retailing, but it has yet to be proved that the new managers of the businesses now incorporated into chain systems will be as efficient as the owners they have replaced. The departmental store gains by its use of skilled buyers, while the advantage of being able to satisfy a number of needs in the same store is an attraction to the customer: but many articles of every-day use are standard in make and price, and the housewife can obtain them equally well from some small shop near at hand. It is not in the sale of such goods that the distinctive successes of departmental stores have been made. On the contrary, it is in the marketing of standard articles that chains of shops like Maypole, the International Tea Stores, Boots, etc., have established themselves. As compared with the one-man business, they reap great economies in mass buying, they can meet competition in one area by reducing prices, while maintaining them in others where their trade is secure, and they can introduce standard systems of accountancy, often a weak point with the small owner. Telephone and rapid transport enable them to dispense in some measure with large local stocks, and to rely upon stocks concentrated at central points and in the aggregate, smaller. Sometimes the "chain store" serves as the means by which the manufacturer retails directly, as in the case of boots and shoes. If the branch managers are unequal to the best

of the owners of the one-man business, the average of ability, and certainly of training, is higher. While the "company shops" have driven many independent retailers out of the field, there are others whose positions they are unable to shake, in spite of their superior financial power. Marked ability on the part of the independent man is sometimes the explanation, though often enough, in spite of the drawback of crude book-keeping methods, men in a comparatively small way are able to maintain themselves against severe competition by reason of their freedom and initiative and the advantage of personal contact with customers. Finally, there are the co-operative societies, which are progressing steadily both in numbers and members, sales and branches of activity. A fifth of the country's families buy half of their groceries from them, and their tea-buyers dominate the market. They do not touch the well-to-do classes to any great extent, their clothing is standardised rather than fashionable, and in things other than foodstuffs and clothing they have not proved very serious competitors to other forms of retailing. Both co-operative stores and company-shops have been succeeding as against the private trader, but the test of their efficiency against one another is yet to come.

5. MARKETING OF AGRICULTURAL PRODUCTS IN INDIA

The problems of marketing agricultural products in India deserve special mention in view of the predominance of agriculture in the country. The movement of the crop from the field to the market involves the use of the services of a large number of middlemen. Where facilities for transport are satisfactory and the crop is substantial, the producers may themselves take it to the nearest

market. Alternatively, the crop may be sold in the village by the cultivators—either to the village merchant (who may be a moneylender) or to some travelling commission agent. The illiteracy of the Indian farmer is a great handicap to him in the marketing of his produce, for the shrewd business man may trick him out of his proper dues by some malpractice or other. He may be required to pay excessive marketing charges of various types. He may be compelled to sell his produce at uneconomic prices or may fail to get adequate premium for a better grade product. Ignorant of the intricacies of the market situation, he may unload his product in the market at times when he should have withheld it for a rise in prices.

Some attempts have been made to protect the interests of the cultivators in the marketing of their products. These include the establishment of regulated markets, which function under the supervision of specially constituted Market Committees. In these markets, marketing charges are clearly defined, transactions are regularised, correct weighing is ensured and there are suitable arrangements for the settlement of disputes. Various facilities and conveniences are provided to the cultivators and reliable and up-to-date market news is made available. Besides, the regulated market also serves as a useful centre for propaganda and training for agricultural improvement.

The cultivators' difficulties in respect of marketing can also be solved by the method of co-operation. Producers of agricultural commodities form themselves into co-operative societies for the purpose of marketing their products. The method of co-operative marketing has been tried with considerable success in the marketing of cotton in Bombay State as also in the marketing of milk, ghee, fruits and other products. There is however still considerable scope for further development and extension of the system of co-operative marketing in India.

PART IV LABOUR

I. WAGES, LABOUR COSTS AND EARNINGS

To the student of business the interest of the theory of wages lies in the help it may give him in answering certain practical questions. For example: (1) What is the effect on the worker's output and on labour costs of paying wages by time, piece, or on some special bonus system? (2) Under what conditions can a sale of goods to an overseas country be continued in competition with a native industry based on a lower level of wages? Granted that we are able to maintain British industries in competition with foreign imports, although our wages may be higher, how low must the foreign level of wages drop to enable foreign producers to undersell us effectively in the home market? Are sweated foreign goods efficient competitors? (3) How much more must a skilled man be paid than an unskilled man, and what determines that amount? Is the relationship so definite that a man going round a works could, by observing closely the degree of skill required of men in different classes of work, be able to say within a shilling or two, how much his wages should be? (4) To what extent can trade unions insist on the payment of a certain standard? From what source, the consumers or shareholders, is any increase to be obtained, or is it in part derived from other workers, who may be dismissed as not being worth the new and higher rate of wages? (5) If the state insists on the payment of some

minimum sum, will unemployment be caused, and how much? It is to these and similar questions that answers are required.

Confusion is sometimes introduced into the study of these problems by the vague way in which the term "wages" is used. It may refer to the rate of wages calculated at so much per hour, per week, or per ton of output, or it may refer to the earnings carried home at the end of the week. High "tonnage" rates for miners, or a high rate per shift for dockers will not give them large earnings if they work only three days a week. If a general reduction of working hours were made without any readjustment of wage rates, those men who were paid by the hour would lose, while the income of those paid by the week would be unaffected. Workers paid by the "piece"—so much per dozen made or packed, or per ton raised—would lose also, unless the reduction of hours so improved their health and efficiency that they worked fast enough in the shorter day to reach their previous output. If the employer did not demand an alteration of the rates, the introduction of machines might increase the earnings of piece workers, but leave those of time workers unaffected. Attention must be paid to the chances of employment as well as the rate at which work is paid for when obtained. In some industries the high earnings of a busy season are offset by unemployment and short time at other periods. In a period of expanding trade, the wage rates in a particular industry may not rise, yet the earnings both of individuals and of the whole group of workers improve, because unemployed men are taken on, and those already engaged have more regular work.

We must also distinguish between "wages" and labour costs. Although wage rates have risen, and

weekly earnings increased, labour costs per unit of product may fall if the workers are stimulated to increase their output enough. Labour costs may rise without any increase of wage rates if for any reason the worker's output falls or the management becomes less efficient in organising its labour. High wage rates and high earnings are not inconsistent with low labour costs per unit of output, if the workers are provided with elaborate machinery which enables them to turn out large numbers of standardised products at a great pace.

2. METHODS OF WAGE PAYMENT

It is necessary to-day for a business man to be able to steer through the controversies as to whether it is better to pay wages by the week, or to reward each man in accordance with his output. The former gives the same income to all men of the same skill and on the same jobs, the latter makes earnings vary with individual performance. Both systems have a common basis, for payment by the week carries with it an understanding that a reasonable amount of work must be performed, while the price per unit of output under a piece-work system must be so fixed that it will enable the ordinary workers of each grade to carry home at the end of the week the sort of earnings they need to maintain the standard of life to which they are accustomed. They are alternative methods of payment, not different scales of payment. This does not mean that the method of payment is of no importance, for one form of payment may stimulate greater efforts on the part of the worker, while another may discourage the efficient and energetic.

Payment by results is not possible unless the output is measurable. Signalmen, tram-drivers and conductors

seamen and other transport workers must therefore be paid by time. There is no measurable output in general clerical work or in most service in retail shops. In agriculture the possibilities vary with the branch of the work. Those engaged in stock-raising must be paid by time, but fruit-picking can be paid at so much per pound or per basket. The purpose of a piece-work system is to relate the worker's earnings to his personal efficiency. Payments by results cannot be introduced unless the conditions of work are so uniform that the expenditure of a given amount of skill and effort by different men gives the same amount of product; otherwise, the differences of pay would be due to factors outside the men's control. Defective materials, unnecessary waiting for the sharpening of tools, or delay in receiving assistance from other workers may influence earnings adversely, and be a source of inequality between man and man. It is not always necessary that the machines provided should be identical, if equally efficient workers can in the same time produce a similar quantity and quality of stuff. Where there is a great variety of machines and products the difficulty can be surmounted by adopting a detailed price list so drawn up that it makes proper allowances for these differences.

The popularity of payment by results with employers is explained by the existence of large standing charges. As these do not increase as fast as output increases, the proportion of them which have to be charged to each unit of output falls as total production grows. Systems of payment which increase the out-turn from each machine by stimulating the worker will therefore have their support.

The attitude of the worker varies. The time rate system is simple and intelligible, and, unlike a piece rate,

(which brings into prominence the worker's individual qualities), it emphasizes his needs in common with his fellows, and makes it easier for a trade union to bargain for a wage appropriate to the standard of life and skill of all the men of that class. Where, as in the cotton industry, the speed of the operatives is largely determined by the speed of the machinery, the existence of a time rate might permit overdriving and intensification of the work by the employer, while a piece system places some check on this, by guaranteeing the worker at least some of the results of speeding-up. In certain classes of engineering, piece systems are much opposed and will be accepted only with reluctance. Sometimes the opposition is due to the desire to maintain a high standard of craftsmanship, the fear being that in order to obtain large earnings men will speed up at the expense of the standard of work done. The competition for large output and earnings is said to lead to unhealthy "racing," which enables the employer to put undue pressure on the slower worker, by pitting the best man against him. Others object that the increased output may "saturate the market," cause prices to fall heavily, and lead to unemployment, but that is an argument which can be directed against any other scheme for increasing output and is not pertinent to methods of wage payment alone. Finally, there is the fear of rate cutting by the employer. It has frequently happened that after the fixing of a piece rate the workers have very greatly augmented their earnings, and the employers have thereupon "cut the rate," thus presenting the operatives with the alternative either of maintaining their new speed of work to secure the old level of earnings, or of increasing their rate of work still further in order to reach the new level of earnings again. This is always bitterly resented, the workers feeling

that they have been trapped by a "price-fixing dodge" into giving much more work for the same wages. Fear of rate cutting, unfortunately by no means without a solid basis of experience, naturally leads to an understanding amongst the men to restrict output as a protection against its occurrence. Not all demands for reduction of rates have this somewhat dishonest basis. A genuine error in fixing a new piece rate too high may so increase the worker's earnings, and in consequence the amount paid by the employer, that the firm could get the work done cheaper by engaging men in the open market at an ordinary time rate. His motives for asking for a reduction of rates are nevertheless almost certain to be suspected and it is to obviate these difficulties that various forms of bonus systems of payment have been contrived.

In premium bonus systems a basis time is fixed in which the job can reasonably be done, and a bonus is paid proportionate to some fraction of the time saved. The bonus is not paid until a certain output is reached, and as the workers do not get the benefit of the whole of the time saved, the ill-consequences of any error in fixing the basic rate too high are limited. In the Halsey system, in addition to the ordinary time rate for the number of hours actually spent on the work, a bonus is given amounting to some definite fraction, e.g., one-half, of the time saved. The principle can be shown thus :—

$$\text{Earnings} = \text{time rate} \times \text{time taken} + \frac{\text{time saved} \times \text{time rate}}{2}$$

With the bonus the hourly rate of payment becomes,

$$\text{Time rate} + \frac{\text{time saved}}{\text{time taken}} \times \frac{\text{time rate}}{2}$$

This in essence, means that every percentage increase

in output gives the worker some fraction of that percentage rise in wages. An alternative, the Rowan system, has the effect of giving a diminishing percentage increase of earnings as output increases :—

$$\text{Earnings} = \text{time rate} \times \text{time taken} + \frac{\text{time saved} \times \text{time taken}}{\text{time allowed}} \times \text{time rate}$$

With the bonus, the hourly rate of payment becomes,

$$\text{Time rate} + \frac{\text{time saved}}{\text{time allowed}} \times \text{time rate}$$

In this system it is not possible for the man to double his earnings, a peculiarity which has commended itself to employers because, by limiting the increase of wages, it does not raise any question of cutting the rates. The gains to the employer are twofold. In both systems he saves in constant costs, for if the bonus stimulates the worker to save time on the job, a larger number of units can be produced in a working day, and the share of constant costs charged to each correspondingly diminished. There is also a saving in wages, since although the man's hourly rate increases, the wage per job declines as the time saved increases. The difference between the systems lies in the way in which the saving of wages is shared between the worker and the management.

Even under a premium bonus system errors can sometimes be made, and the difficulties of large earnings and rate cutting occur, for the basic time is quite arbitrary, and can be fixed generously so as to allow most workers the chance of feeling the stimulus of a bonus. "Task" or "efficiency" systems replace the arbitrary basic time by a carefully-defined, standard task. Selected men are made to perform the job under the eyes of the rate fixer, who times them with a stop watch, eliminates wasteful motions, and from the data

so obtained, works out a time in which the job can be performed by a good man. A high rate is paid to those workers who reach or exceed the standard task so constructed. In Taylor's system a bonus of, say, one-third is given to those who perform the standard task, but as there is no guaranteed time rate, the slower and less efficient workers may have very low earnings indeed. The effect of the system is that the workers are divided into two classes, those reaching the defined task receiving a high piece-rate, and those falling short of it, and getting considerably lower piece-rates. Systems of this kind are much resented by trade unionists, who regard them as a definite threat to the standard of life. The Gantt system endeavours to meet this objection by guaranteeing a time rate, not necessarily a high one, but nevertheless giving the security of a minimum of some kind. A piece rate is fixed, and a bonus is given to all those who perform the standard task. In both the Taylor and the Gantt systems, the effect of the bonus is that there is a marked leap of earnings once the task is performed, the advantage of this being that the inducement to perform the task is clear and obvious. The Emerson system endeavours to combine this advantage with a recognition of the fact that there is a considerable range of differences in workers' efficiencies. In order to make a closer adjustment to these individual variations, the payment of the bonus begins at an output somewhat lower than the full standard task, and is graduated. It is paid at a lower rate when output is below the standard task, but it increases rapidly as the full task is reached, and increases thereafter more slowly. There are innumerable varieties of these systems, differing as to the point at which the bonus begins, the amount of the bonus, and the rate at which it increases.

There has been a great deal of hostility to these systems within the engineering trades, partly because of the tendency of some rate-fixers to regard the formula arrived at as something "scientific" and beyond dispute. This claim, first made by Taylor in his natural enthusiasm for his discoveries, has already been commented on elsewhere. It certainly cannot be sustained. Not only can there be a well-grounded difference of view regarding the representative character of the man selected for the test, but the workers respond differently to test conditions, some being stimulated, and others worried by working under observation. On many points of detail, the judgment of a rate-fixer intent mainly on speeding up and driving the men would be open to criticism. More important is the fact that all these systems assume the existing relationship between the wages of different grades of men. Once a general formula is agreed upon, what determines whether the rate for a unit of output is 3d., 6d., or 1s.? The rate-fixer will compare the earnings which would be made at these different amounts of bonus, with the earnings which the class of men he is concerned with would ordinarily obtain. They would not accept a formula which gave a large number of them less than this, and we have already seen that if the rate were fixed so high that it yielded earnings greatly in excess of it the manufacturer might gain by dropping his formula, and hiring men at the usual time rate. These systems of calculating earnings do not, as some of the earlier and less-guarded exponents of scientific management claimed, produce wage rates scientifically worked out and subject to no appeal. They are based upon and assume levels of income for different classes of skill and work which are settled by broad economic forces,

neither subject to the control of the manager, nor regarded as final and satisfactory by trade unions.

These criticisms do not mean that these systems are valueless. Many of the older piece-work systems were full of anomalies, the differences between them being without rhyme or reason, and their replacement by methods based on definite principles has brought a much needed consistency and clarity.

Family Allowance Systems.—In considering various methods of wage payment, some attention must be given to the proposals to modify present methods of calculating a man's wages solely on the basis of the presumed value of his work, by taking into account his needs as indicated by the size of his family. A variety of circumstances have tended to popularise the notion. The "separation allowances" paid to soldiers during the war, which varied with the number of children, affected a large number of workers throughout Europe, and left the idea deeply implanted in the minds of many. In Australia, the wage courts in giving awards on wage claims began to consider the "normal needs of the employee regarded as a human being in a civilised community", and a Royal Commission, in trying to give precision to the definition, worked out the cost of this standard for a man, wife and three children, as ranging between £5 6s. 2d., and £5 7s. 0d., but as the boards and courts were laying down figures of £3 15s. 0d. to £4 5s. 0d., the public was startled to hear that the full operation of the principle would add £100,000,000, to the national wage bill. Not all employees are married, fewer still have three dependent children, so that the payment of a wage based on an average family of five would have involved, according to Australian estimates, paying for 450,000 non-existent wives and 2,000,000, non-existent children. The

principle of modifying the ordinary basis of wages according to the "need" of the man as measured by the size of the family leads naturally to the "endowment of children" or family allowance system. In Europe, family allowances were introduced partly as the result of the plunge from the short and dizzy period of post-war prosperity into trade depression. Reductions of wages became inevitable, but to soften the hardship caused by them, in many countries both employers and trade unions alike agreed to differentiate between single and married men, adopting allowance systems as a means of leaving the earnings of those with families diminished as little as possible. In Germany, Austria, Czecho-Slovakia and Holland, the system has been established by collective agreements between employers and employed, though in France and Belgium allowances have been introduced mainly on the initiative of the employers. It is significant that the Coal Commission of 1925-26 recommended that English coal owners should organise allowance systems for the purpose of shifting the main burden of any reductions of wages on to the shoulders of those with few or no dependants.

Family allowances are supported on wider grounds than a mere redistribution of the total wage paid between single and married men. In France and Belgium, the desire to increase the birth rate and perhaps also to diminish the infant death rate has been prominent, while in England the feeling that the incomes of large numbers of working-class families are below the amount needed for maintaining health and efficiency, has led to the appearance of proposals for grants out of the public funds on a family basis. An allowance of the latter sort ceases to be wages and involves issues which lie outside the scope of this book.

In so far as allowances are true increments to a basic wage, a number of special administrative arrangements are necessary, for a scheme for each individual firm could only lead employers to give single men a preference in employment. "Pooling" in a whole industry, or by district is thus implied, each firm contributing to a fund according to the number of its employees, and redrawing for payment to married men the requisite amount for supplementing their basic wages. In a number of ways the arrangements can raise sharp conflicts with trade unions. Some of the pooled funds do not pay the allowance during a dispute, nor unless the worker has been employed for a certain period, and may withhold it for breaches of discipline. Practices of this sort arouse opposition as attempts to use the system as a means of introducing divisions between single and married men, and to turn it into a weapon for strike breaking. These features are not essential to the principle and although, so far, English employers have held aloof, the fact that some millions of workers on the Continent are paid on this principle, indicates that the possibility of making wages fit the needs of the recipient more closely than they have hitherto done, is worthy of consideration.

3. WAGES IN DIFFERENT OCCUPATIONS AND COUNTRIES

The difference between the average earnings received by different kinds of occupations and skill and between men in the same trades in different countries have to be taken for granted by the employer in his daily practice, but it is none the less important that he should understand something of the play of economic forces which determine them. This is quickly apparent if the ordinary relationships are upset. The fact that in

England many highly-skilled men are being paid at lower rates than unskilled men, as well as receiving lower earnings through unemployment, is of importance in its effect on the future supply of labour. A disturbance of the relative levels of wages in any given industry, in England and some other country, so that one begins to pay very much lower rates compared with the other, may so affect costs per unit of production that the relative competitive power of the two industries is altered.

What determines the distinction in pay between the plumber and his mate, the bricklayer and his labourer? If everyone were free to choose his occupation at will, no one would put up with the low earnings of the period of training, or face the cost of preparing himself for a skilled occupation, unless he hoped to receive, over and above the ordinary rate of wages, something to balance the postponement of earnings and expense incurred. In fact, the extra reward of skill tends to be substantially more than this. A person contemplating the expenditure of £1,000 for training for the medical profession, could alternatively get £50 per annum in a safe investment, and more if he bought an annuity, which, like the reward of skill, terminates at death. The difference in income between the boy who has had this amount spent on his training and the boy who has not, is likely to be far greater than £50 a year, or even the value of an annuity. The same principle applies to the skilled manual worker. The cost of training him is less than the cost of training a surgeon, and his extra gains are less, but taking the whole working life, they are likely to be greater than those of the boy who goes straight into an unskilled occupation, by more than the interest which could have been obtained if the money spent on his training had been invested. No doubt some fitters and turners are less

intelligent and energetic than some unskilled men, and this defect of personal qualities may reduce their average earnings to a level very little higher than those of an alert and energetic labourer. In this case we are not thinking of the differences of individuals in the same trade, but of the average level of earnings in different trades. This surplus of gain over and above the value of an annuity is due primarily to the unwillingness or incapacity of many parents to meet the expenses of training. The poor cannot from their own resources provide £1,000 for a son's medical course, many cannot even spare enough to maintain lads and girls during training for skilled manual occupations. Many apprenticeships, especially those where there are no indentures, are broken off as the lads grow older and less patient of the difference between their own earnings and those of their friends not apprenticed. There is in consequence a sharp limitation in the numbers of boys and girls who can be trained for the various skilled occupations, and this limitation raises the earnings of those who are successful in entering them.

Numerous circumstances can alter the relative level of wages of different grades of skill. If the whole or part of the cost of training of poor boys and girls is provided by State or private munificence through scholarship and apprenticeship schemes, greater numbers can enter the better-paid occupations, and the increased competition will tend to bring down earnings in them as compared with the lower grades. A decreased demand relatively to the numbers in the trade will tend to depress earnings. This may arise from a decreased desire of the consumer for the product of their work, or from a change in industrial methods. The more minute subdivision of processes often makes it possible to substitute unskilled for skilled labour in

the narrower operations, so that in effect the skilled operative's job is divided up amongst a number of men at lower rates of pay. Skill, like other things, can decline in market value. On the other hand, the difference between a skilled man and his helper seems often to have no more substantial basis than custom. Apparently the bricklayer's labourer's wage has been about two-thirds that of the skilled man for about a century, and although building has not been subject to technical changes like the metal trades, one would have expected the growth of industry and the spread of educational opportunities to have made some difference. This industry has consisted largely of local firms supplying local markets, and comparatively sheltered from competition from other areas.

These differences of wages between occupations persist even when national boundaries are crossed, wages in engineering and skilled manufacturing industries being almost everywhere higher than wages in agricultural occupations. This does not prevent the wages in one country being on a definitely higher scale than wages in another, so that each occupation taken separately receives higher earnings. The relative order in which the trades are arranged from the best paid to the worst paid may be the same, yet each one in the scale be better off. Agricultural wages, builders' and mechanics' wages are all higher in the United States than in England, and higher in England than in Poland. To what are these national differences due? How do they affect the competitive power of the countries concerned? The personal efficiency of workers in one country might be greater than in another, and if a contrast were made between very unlike countries, such as a western area with a high standard of life, and some eastern state with a standard too low for physical health, some of the difference might

be due to this, but the superiority in purely personal qualities of American workmen over English workmen is unlikely to be large, and certainly not great enough to account for the difference between their earnings. The greater output of American than British coal miners is sometimes quoted as a reason of the contrast in wages, but that superiority is far more likely to be attributable to the amount and kind of instruments of production with which they are provided, the general business and technical efficiency of the industry, etc. In 1924, the output of coal per man was 655 tons in U.S.A., and only 217 tons in the United Kingdom. But in 1901 only 1½% of the total British output was cut by machinery, in 1924 still less than one-fifth, while in U.S.A., one-quarter of the bituminous coal was machine cut even at the earlier date.

If capital and labour moved from one country to another quickly and easily, these considerations would have to be modified, for then the workers in each occupation in the country where they were less well paid would migrate to similar jobs in the country where they were better paid, till the competition of increased numbers brought the higher wages nearer to the lower levels. The supply of capital would also become more uniform between the two countries, so that differences in efficiency on this account would be eliminated. If any difference then remained it would be due primarily to the fact that the workers of one country were less efficient personally than those of the other. In fact, migration neither of capital nor labour is as easy as this, for State restrictions on immigration and emigration, ignorance, sentiment and poverty all hinder free movement, and keep workers and capital employed in places where it is less advantageous for them to stay from a purely economic point of view.

Bearing these broader considerations in mind, it is easy to see why, despite the fact that American wages are higher than English, English wages than Continental, and western than eastern wages, America can successfully export to England, England to the Continent, and all the industrialised countries to China and India. For although the exporting countries pay their workers better, those workers may be more efficient, better trained, and aided by a more ample supply of modern appliances and the advantages of "concentrated industry." Their labour is more costly, but it is also more productive than that of less well paid countries. On the other hand, it is not necessarily lower wages which make it possible for foreign producers to compete effectively with us, for they may have other advantages of skill, natural position or organisation. If for any reason the wages in a foreign industry were much reduced relatively to the level of its other industries, e.g., if Polish miners' wages were greatly reduced while Polish textile and other wages remained about the same, then the disturbance of the normal relationship might favour exports of Polish coal. Wages abnormally low in this sense would create conditions favourable to competition by the industry paying them.

4. WAGE AGREEMENTS: PRACTICE AND THEORY

The wages to be paid to employees, and the conditions of work generally, are in practice settled in one of three ways:—(1) by direct arrangement between employers and individual workmen. Wages in the distributive and commercial occupations are agreed upon largely in this way. (2) by arrangement between employers, either separately or in association with other employers, with workers collectively through their trade

unions. This is the practice in the great staple trades of mining, engineering, shipbuilding, textiles, etc., (3) by decree of State, or through some organisation for wage determination set up by the State. Sometimes the wages decreed have the force of law and can be enforced in the Courts, while in others the authority of the body making the decision is great enough to make it to the mutual advantage of both parties to acquiesce in it. The box and chain making trades are examples of the former, while of the latter, railwaymen's wages are a special case. In all some four million workers are covered by collective agreements between employers and employees, and by trades boards. The wages of a large proportion of the total of occupied workers are determined by the decision of bodies outside the individual employers and individual workmen.

To what extent can the rates of wages and the volume of earnings be influenced by insisting on legal minimum wages, or by the organised bargaining of trade unions? Can either method for any long period maintain the rate of wages above the figure at which they would settle in the course of free bargaining between employers and employees? If highly organised unions or the State enforce the payment of high rates, will this be at the expense of the employment of other workers whose work is deemed by their employers not to be worth the high rates so imposed? In order to answer these questions it is necessary to examine the wage fixing machinery of trade unions and the minimum wages boards, and to assess their results in practice.

Two things are fundamental to English trade unionism: the standard rate of wages, and its regulation by collective agreement.

The characteristic of the standard rate of wages is that it is intended to apply to all workmen of the same class

doing the same work. It does not matter whether the firms which employ them are large or small, prosperous or unsound, well or ill-managed, for trade unions do not think that the rate of wages which a craftsman receives should depend on differences of organisation and success outside his control. The rate so fixed is naturally a minimum and not a maximum, though occasionally employers pay more than a prescribed rate in order to retain a specially competent staff. The standard rate does not always imply equality of income, for it may take the form of a list of piece-prices, in which case the workers will receive greater or lesser earnings according to their output. The rate is intended to apply to the ordinary worker, not to the best worker only; and unions are very chary of allowing deviations from the rate on grounds of age or special disability.

The endeavour to maintain a rate of this sort by trade union action explains the growth of many trade union practices. It must be enforced against the bad employer, by strike if necessary, lest by competition he should break down the capacity of the willing employer to pay it. Unemployed men must be prevented from accepting less by the provision of "out-of-work benefit." The non-unionist by insisting on individual bargaining is equally a danger. To prevent evasion by bad employers and bad trade unionists alike, through working longer hours than customary, the length of the working day or week must be defined and insisted upon. Systematic overtime must be penalised by insistence on "time and a quarter" or "time and a-half."

These results—and in particular the application of standard rates to large numbers of competing workers and competing employers—can be best obtained by collective agreements between organisations representing both. That the workers should be anxious to secure

them is obvious, but to the employer also there are advantages. It is more convenient for him to deal with responsible negotiators, who will come to him only with difficulties sufficiently grounded for a practical negotiator to bring them forward, while the enforcement of equal standards on competitors, which an agreement negotiated by representatives of organisations of both sides implies, is a guarantee that any concessions he makes will not turn out to be a competitive disadvantage. Collective agreements range from short documents regarding a standard time rate, and the length of the working day, to elaborate instruments covering the whole conditions of employment—wages, hours, numbers of apprentices, holidays, overtime, and changes of machinery. Often they set up more or less permanent machinery for settling small disputes and preventing local grievances from developing into wider disputes. For example, one agreement included clauses dealing with the following matters:—(1) an undertaking that employers wanting workers would apply in the first instance to the unions; (2) an undertaking by the employers to require that all workers should be members of one or other of the unions concerned in the agreement; (3) the machinery for protest by the individual workman against the conditions of work; (4) the right of the employer to introduce piece work, provided that it was based on collective work and payment, and the rate was agreed upon by both sides; (5) fixing minimum time rates; (6) fixing the length of the working week, and penalising overtime and night work by higher rates of pay; (7) setting up a reference board for the settlement of disputes, and providing for the appointment of an arbitrator if the reference board could not agree; (8) arranging for penalties for breach of the agreement and the deposit of caution money by both sides.

Some unions aim at securing a "national agreement" covering the whole country. This does not necessarily imply a uniform rate to be paid alike in country districts and in great towns without reference to the cost of living, for the arrangement may merely be one aiming at national settlement and national enforcement of varying district rates. The purpose is clear: if the works in the different districts are competitive, negotiations by district may mean that a "weak" area will be compelled to accept a low rate, which will afterwards be quoted as a reason for scaling down the rates of other districts proportionately. A national agreement enables a union to keep the various districts more easily in line with one another. On the other hand, the fact that some sections of the engineering trade are depressed and some prosperous, has led the Amalgamated Engineering Union to depart from its usual practice of trying to secure an increase of wages for all districts at the same time, and to seek higher wages in prosperous districts only. In other industries, for example, baking and tramways, the employers in different districts do not compete with one another, so that other factors important in the individual districts can be taken into account, and separate district rates be negotiated, without the danger that trade competition will drag down the higher rate districts to the lower ones.

One of the remarkable achievements of collective bargaining in England has been the drafting of schemes of standardisation of wages and the grading of workers. A union naturally desires that all its members employed on the same work, should receive the same rate of pay, taking differences of cost of living into account. Further, the classification of workers was so different from town to town that unions felt that sometimes injustice was being done. To surmount such difficulties an interesting grading

scheme has been worked out for tramways, the main principle of which can be seen as follows. The towns were divided into six groups, the maximum rate for motormen being, for Group 1 towns, 63s. 6d.; Group 2, 61s. 6d.; Group 3, 59s. 6d.; Group 4, 57s. 6d.; Group 5, 55s. 6d.; Group 6, 53s. 6d. Similar rates were fixed for conductors, car cleaners, depot and shed staffs. Grouping of towns and grading of employees in an industry where rates have been built up haphazard is full of difficulties, and cannot be the result of scientific principles of adjustment only, since regard must be given to the rates already existing, for a standardisation which involved too great a fall of wages, or too great a rise, would not be acceptable either to employers or employees. Thus Birmingham and Manchester appear in Group 1, but so do Chesterfield and Middlesborough; Brighton is in Group 2, and Hastings in Group 3. In the case of electricity undertakings, the country is divided into districts and the undertaking "zoned" or "graded" according to plant capacity and other factors.

In England collective agreements are not enforceable in the Courts, the success of this method of wage settlement depending on the attitude of both employer and employed. Both must be prepared to enforce the agreement in the factories of all the signatory firms, and upon all the union members. Friction is introduced into the smooth working of the system both by non-unionist workers and by non-federated employers. The employer who refuses to join his appropriate federation and in consequence is not a party to the agreement, is often as great a difficulty to the trade union as the non-unionist. True, he sometimes gives better terms than the federated employer, but more usually he pays less, and therefore, if he is an important producer, he may jeopardise the whole scale of wages. With their own members the

way of the trade unions is clearer, if not more easy to follow. Individual members can be fined for breach of rules, suspended, or even expelled, in which case they may lose all claim to benefits and to the contributions paid, but recalcitrant branches or districts present more difficulties. They may persist in striking, or continuing to strike, after a settlement has been agreed upon by the national officers, because their demands are not fully met, or because provision has not been made for some special local difficulty. The union executive may discipline them by withholding moral and financial support, thus bringing about the collapse of the dissident movement. Any action of this kind is bound to lead to disunity and loss of membership, and is very reluctantly pursued.

To these two principal purposes, the maintenance of the standard rate and the collective agreement, the provision of various forms of insurance may be regarded as supplementary. The benefits which are usually offered include trade protection, dispute and victimization pay, out-of-work benefit, and the ordinary friendly benefits—funeral, sickness and superannuation. Sometimes there have arisen new trade unions embodying some fresh principle of organisation, and following a more militant policy, in which dispute pay has been the only benefit provided, but after the pioneer years are over, and a stable membership is obtained, the friendly benefits have been gradually added. They help to attract and retain members, while providing unions with a means of discipline. The insurance side of trade unions has often been criticised as actuarially unsound. It is certainly true that the benefits are less secure than those of a well-managed insurance company, for they can be superseded or modified at any time by rule, and are often reduced when prolonged trade depression drains the

funds and diminishes contributions. The income of the union from all sources, including its insurance funds, can in the last resort be used for strike purposes and repaid later. What are seen as blemishes to some, are regarded as virtues to the union official, for by this means he can accumulate large funds which can in an emergency give a union an extra staying power which would make all the difference between success and failure. Benefits are paid in the main out of current income, with the backing of a small accumulation of funds, and provided that the unions are maintaining their membership, and that young men are joining in sufficient numbers to maintain the proportion of those who contribute rather than draw benefits, no serious practical difficulty may arise.

These arrangements raise the old question as to the powers of trade unions to raise wages above the level at which they would settle in conditions of unrestricted bargaining between employers and individual workmen. According to some of the older theories wages could not for long rise above subsistence level, or were limited by the fact that they were paid out of a more or less rigid wage-fund. On either ground it was impossible to admit that trade unions could make any long run or substantial improvement in wages. We need not examine the various exaggerations or errors which these theories contained. There was an element of truth in the emphasis they laid on the strength of broad economic forces. Investigations by Sir Josiah Stamp and by Professor Bowley show that the distribution of wealth and the proportion of the total national income received by labour has remained steady over considerable periods. Stamp found that while the total national income greatly increased during the nineteenth century, and the income of the poorer sections of the people improved, the relative position of the classes

did not greatly alter. The increased wealth was spread amongst all, in such a way that the main lines of distribution were not changed. Professor Bowley, studying the period 1880-1913, arrived at much the same conclusion. Average wages rose at about the same rate as the national income, and the share of labour as distinct from that of property, was not significantly altered. These results must not be interpreted as proving that trade union activity has been or is likely to be ineffective as a means of raising wages, for the distribution of wealth is the result of many factors, including the growth of wealth and population, as well as minimum wage legislation and workers' combinations. It is not possible to assign to each of these factors a precise quantitative share in producing the total result. Nevertheless, a realisation of the comparative stability of the scheme of distribution is a useful reminder of the strength of factors other than the pressure of trade unions, and of the limits within which the latter work.

The endeavours of a union to fix a price for the labour of its members may be compared with that of a monopoly selling its products. When the demand for labour is inelastic, a small rise in its price will cause a less than proportionate fall in the demand for it, so that while some men may be dispensed with, the aggregate earnings of the whole group will be increased. When the demand for labour is elastic, a small rise in its price will cause demand to fall in greater proportion, and the earnings of the whole group will be decreased. From this point of view, the question resolves itself into the conditions of elasticity of demand for labour. Where the cost of labour is a small fraction of the total cost, the demand for it is inelastic, and its price can be raised without any considerable effect on the total costs. While in coal mining a small percentage change may

have a marked effect on the fortunes of the industry, in the railway industry the problem of the union is easier, for though feeling the effect of a rival method of transportation, the railways are not subject to the wide fluctuations in the price of their services which are so characteristic of mining. A moderate decline of traffic does not materially affect the railway companies' demand for labour, for so long as the passenger services are maintained unchanged, a moderate fall in the number of passengers cannot be offset by a proportionate reduction in staff. Adjustments are somewhat more easily made for changes in goods traffic, but the labour used in maintaining the safety of the roads and the equipment cannot be readily reduced on this account.

Raising wages by union pressure is likely to cause a certain amount of unemployment, a number of men who might have been employed at lower rates not being engaged at the newer ones. How significant the volume of unemployment so caused will be, will depend on the elasticity of demand for labour. This fact does not make union activity unwise, for the maintenance of standards of living is important both as a stimulus to efficiency, and as the means of maintaining it. A special class of skilled labour engaged on some special process can maintain its rates by limiting its own numbers through its control of admission to the trade, though by so doing it may limit the employment of unskilled labour used to help it, as for example, bricklayers and their labourers. On the other hand where work is casual and there is no limitation on the numbers taking up work in the trade, an increased rate of wages often acts only as a bait to that class of labour which undertakes it, the competition of newcomers tending to bring down earnings by decreasing the chances of work for each individual. Further, it is sometimes possible for a union to maintain a rate in

spite of considerable technical changes. The Amalgamated Engineering Union has fairly successfully maintained the rate of fitters although changes of process have broken up the old fitter's work into half a dozen processes requiring less skill.

The matter may be approached in another way. If a union presents an employer with a wage demand, from what sources could he obtain the funds to meet it? He could endeavour to pass it on to the consumer; and if the article forms but a small part of the cost of making some other article and there are no substitutes for it, this can be done successfully. The policy could not be simultaneously applied to all industries, for if all played to the game of "taking it out of the consumer," the trade unionist would soon lose as consumer nearly as much as he gained as producer. Or the rise could be obtained at the expense of the other participants in production, either from the salaries of managers, technical and administrative staff, or by reducing the reward to capital. It would be folly to attract only the less competent managers, or diminish their incentive to work and plan, but although there is sometimes talk of the scarcity of "£10,000 a year" men, there is evidence that in some firms and industries some of the higher posts receive salaries not justifiable on either of these grounds, and that often amalgamations have not been followed by the abolition or reduction of redundant posts. The total "surplus" due to economies in the remuneration of these persons would not, spread amongst the more numerous manual workers, be a large sum per head. The rewards of capital can be trenched upon without injury to the business if the gains are exceptional ones derived from monopoly, whether based on patent or deliberate combination for that end. Even the "normal reward" of capital can be tapped for a period, though difficulties would arise

when renewals or extensions were required, for fresh supplies of capital might not be forthcoming.

"Improvements in organisation" covers many possibilities. When men are unorganised, and ill-informed, it is easy for a manager to seek low production costs by reducing wages, but if a strong union places obstacles in the way, he must perforce look for them in other directions. An American group of engineers, defining "waste" as the difference between actual and potential production, which was estimated on the basis of the adoption of the best standards of current industrial practice by all works, found a great gap between them. In the textile industry, 50% more waste was found in the average firms than in the best ones, and in the metal trades four and a half times as much. They placed the responsibility for three-quarters of it on the shoulders of the management. Statements similar in character, though less precise, were made by the Board of Trade Committee on the Engineering Trade after the Great War. The evidence presented to the various Coal Commissions from 1919 to 1926 confirms the impression of how far actual may sometimes fall short of potential production. In so far as the pressure of unions to maintain or advance a rate stimulates or compels the management to work out these possibilities of economy, both in commercial and technical organisation, union activity may successfully maintain and raise wages.

5. TRADE UNION POLICY

Wage agreements, far reaching though their consequences may be, are not the embodiment of consistent economic theories. They are often arrived at during the critical moment of last-hour negotiations, and represent compromises between opposing forces as well as practical applications of doctrine, while the

urgency of peace may lead to an exchange of concessions with little regard for principle. This is not to deny that there are consistent trends of policy discernible in the successive wage agreements of various industries, but they are the outcome of many factors. It is from this point of view that a close attention to trade union policy and all the influences which help to shape it, is so important. The principal influences determining union policy are connected with (i) the character of the organisation, (ii) the every-day environment of its members, and (iii) contemporary currents of social and economic theory.

(*a*) *Policy as affected by Organisation.*—The trade unions which have been built up by workmen experimentally during a century and a half have varied greatly in type. Differences in ideas as to their final purpose, changes in technical methods affecting the status of the workmen composing them, alterations in the laws governing their organisation and activities, and the changed attitude of the employers towards them, have all affected trade union constitutions. Sometimes preference has been shown for great unions embracing all classes of workers, skilled and unskilled, men and women, townsmen and agriculturists alike ; at others for solid bodies with membership restricted to skilled men of the same craft, bound together by closely knit, if narrow, interests. Union constitutions thus contain an endless variety of experiments in organising constituencies, methods of voting, control of representatives by the rank and file of voters, the use of the referendum, the relation of the executive and officers to one another and to the members, and other important matters. Fascinating though such a study of the habits and machinery of representative democracy is, we are here concerned with them only in so far as they affect the

economic policy pursued by trade unions and the manner in which the policy is put into operation. Who formulates the programme of the unions? The secretary, the executive or the members? Who is responsible for calling strikes and terminating them? To what extent is power to declare disputes concentrated in the hands of the executive and to what extent must the members be consulted at critical stages of negotiations?

The prominence of the names of Mr. Thomas, Mr. Bevin and Mr. Cook, the secretaries of their respective associations, calls attention to the question of their power in these respects. What part does the general secretary play in shaping policy? Is his position such that he can 'make the policy' of the union, or is he rather the mouthpiece of a powerful executive? No answer drawn simply from a reading of trade union rules can be complete, for much must depend on the ability, tact and personality of both secretary and executive, but constitutions may be so drafted as to create opportunities for an able secretary and to provide him with sources of power which may make him very much the most powerful member of the organisation. So long as unions were small and confined to a very limited area, the chairman was probably the real leader, but as unions widened in scope, and membership increased, correspondence multiplied, and full-time paid secretaries became necessary. The position of the two officers was then reversed. The full-time secretary is in continuous contact with the administration and the members, and those able men who aspire to leadership in their union will fix their eyes upon his office, rather than that of chairman or president. In some unions the situation is frankly recognised, each year seeing a new president or chairman, but the same

permanent secretary. It is not always the case, for in the Miners' Federation, the relations of president and secretary, whether represented by Mr. Smillie and Mr. Hodges, or by Mr. Herbert Smith and Mr. Cook, have always been interesting, and the clearly expressed diversity of view on matters of policy held by these two powerful officers have had an important influence on the course of negotiations. Again, in the Amalgamated Engineering Union, the president, who is a full-time officer, has remained the natural leader of the organisation. For most unions, the problem of controlling the general secretary remains, if the rank and file members are to ensure that their policy will be carried out, and the gathering of too much power into his hands avoided. Some unions have elected executives composed of men still working at their trades, all or some of whom retire periodically, but they meet only once a month or once a quarter, and this is insufficient to give them enough continuous contact as a group to enable them to exercise a real and efficient control. For although in theory the servant of the executive, the secretary also is elected by ballot of members, and in any serious difference of view can claim to be equally representative of the popular will. Other unions try to meet the situation by having a full-time executive. This certainly tends to diminish the importance of the general secretary, but only at the expense of placing them all under the criticism of forgetting workshop conditions and creating a small bureaucracy, the members of which may drift by natural sympathy into an unexpressed understanding to defend the official point of view as against that of working members.

The prominence of the full-time officers of the societies should not obscure the real importance of the

leaders in the branches and localities. It is true that the officers and executive members visit districts and branches giving information and advice, and suggesting solutions, but much active formulation of demands is made in the branches themselves by active members. Grievances and resentment show themselves in resolutions sent forward first by a few, and then by an enlarging number of branches until the executive must perforce take action. No rules can state the actual relationship of the leaders and the rank and file in these matters. An alert executive can anticipate these movements, giving them direction while fostering them, but even terms for settlements of strikes which have been recommended to members by executives, have nevertheless been rejected.

The principles on which unions recruit their members influence their economic policy. What difference is made in aims and effectiveness by the organisation of the craftsmen and unskilled workers in any industry into one union, or into separate unions for each? For craft unions—those catering for a single type of skill, such as engineers, carpenters, and locomotive drivers—though now somewhat out of fashion in trade union circles, showed in the middle of last century that the close bond of common interest between the members, the similarity of standard of life, and the more united view on questions of apprenticeship and demarcation of work, was a very effective basis for the defence of the interests of a limited class of men. They were able to build up vital though unwritten codes of workshop practices regulating the introduction of machines and the rights of different types of skill. The tendencies of the times are against them. Changes in methods of production in engineering are breaking up skilled men's jobs into a series of smaller operations requiring less

training and intelligence. Their exclusion of the unskilled labourer led to the formation of general labourers' unions which catered for the large numbers of unskilled men in blast furnaces, factories, gas works and transport. Such general labour unions have often been successfully militant, but they suffer from the great disadvantage that their numerical strength is liable to wide fluctuations in prosperity and depression, for their members feel the full force of unemployment, and their low wages give them smaller resources out of which to tide over distress. Arrears in contributions and loss of membership are the natural consequences. More recently the tendency has been to create "industrial" unions" *i.e.*, organisations claiming to embrace every grade of worker in an industry. The National Union of Railwaymen, and the Miners' Federation are examples, though neither have in fact completely achieved their purpose. In the railway industry there is in addition a separate union for the clerical and supervisory grades, while at least half the drivers are in a union of their own. Some of the craftsmen in the railway workshops are in the N.U.R., but others belong to the various craft and general unions. These experiments are nevertheless clear enough to show the merits and demerits of this type of organisation. To the union, large scale organisation gives greater resources, and means of bringing pressure to bear on employers in a particular industry at all stages of the work. It is easier to replace the general labourer than the skilled man, and the former gains by alliance with a grade of workers, the withdrawal of whose labour strikes more vitally than the cessation of his own. The advantages to the skilled man are not so obvious. It is true that a strike of all other workers at the same time as himself may aid him in his own battles, but

their personal resources and staying power are likely to be less, and as they are more numerous, their dominant voting strength in the union may lead to his special interests being overlooked or under-emphasized. That this fear is real, the existence of a strong drivers' union side by side with an all-grades union bears witness, while the fact that the wages agreements negotiated by the N.U.R. during the Great War took the form of flat rate increases, thus diminishing the differences in pay between skilled and unskilled men, indicates the dangers.

(*b*) *Policy as Affected by Members' Everyday Environment.*—The nature of a man's occupation is not the only factor influencing his attitude to wage policy, and to the broader problems that surround it. Regard must be paid to the whole of the circumstances affecting his judgment. Union tradition counts for something. In the mining villages, where short disputes over some dismissal or a local piece-rate are common, a boy's earliest memories may be the marching of a strikers' demonstration, so that it is not hard for some middle-aged miner to recall fifty such disputes, great and small, which have affected his family. The risk of a strike is more easily understood and perhaps less feared than where organisation is weak and fitful. There is an obvious difference, for example, in the N.U.R., between the men of isolated country stations and the open line, who are perhaps the only trade unionists in their villages, with wages better than most of their neighbours and the communities of railwaymen congregated near the termini in great towns, or between those working in residential towns like Brighton and those who live near the workers in other great industries, as in South Wales. The circumstances in any dispute may lead some of the more conservative-minded to

support an aggressive policy, or they may cause more militant members to acquiesce in a cautious attitude. A particular general secretary may rely on the backing of some of the groups to cajole or coerce the others into acceptance of his tactics, but the policy pursued must be based on recognition of these differences.

Reporting in 1917 on South Wales, the Committee on Industrial Unrest analysed the situation there as follows. The area was not a large coal producer until well past the middle of the nineteenth century, and was then rapidly industrialised, large numbers of workers being drawn in from other parts of the country. Social amenities failed to keep pace with the growth of industries and population, and as the newcomers were largely unmarried men, the usual preponderance of females in the population was replaced by a dominance of males. Owing to the physical structure of the country, rivers, roads, railways, and the apparatus of mining occupied most of the suitable ground in the narrow valleys, the sites available for housing being strictly limited. Houses are often jammed close to the appliances and waste products of industry. Nearly all the adult males are miners, the small remainder being managers, shopkeepers, and professional men. It is easy to understand why these men, deprived of many of the amenities of civilised life, seeing in the village but two classes, manual workers and a minority of employers and traders, and dominated in work and sleep by the appliances of their industry, should show a readiness to accept the Marxian doctrine of economic determinism and class struggle. Compare this with the problem of many manual workers in London, jostling against clerks worse off than themselves, seeing the city's varied scale of skill and income, and influenced by the constant ceremonial of an

imperial capital. These examples illustrate the importance of not limiting one's study of trade unionism to constitutions and rules, but of searching out the various elements which contribute to forming the union's "point of view".

(c) *Policy as Affected by General Economic and Social Theories.*—Besides the diversities of view within the unions arising from the nature of the workaday environment, union traditions, race and general social surroundings, there is a sense in which the trade union movement as a whole shows a certain unity of policy. At one time they may be inclined to question the adequacy of the economic system as a whole, at another willing to accept it provided that specific evils are ameliorated.

For example, after the termination of the Napoleonic Wars the price level fell for many years, not reaching its lowest point until the middle of the century; the national revenue was inexpansive, and several sharp crises occurred. The standards of life of the older artisans were being broken down by the competition of the new system of factory production, which at the same time imposed a new kind of life and discipline on the factory operatives. Women and children were overworked and underpaid. The early response of the workers to this new situation was an emotional one—machine breaking and factory burning—but the reasoned theories were also hostile to the new order of things. Robert Owen attacked profit-making and demanded the "Co-operative State," others asserted that labour was the source of all wealth and that the labourer had the right to the whole produce. Unions were wide in membership, keenly critical of the actual state of society, and credulous of the ideal. Owen's "Grand National" called in all classes of workmen, and in a

mood of exultation expected to take over industry and organise it into guilds under the control of the workmen. Even the idea of the general strike, under the more appealing name of the "National Holiday," became part of the stock in trade of many labour men. When the movement collapsed, fervour found its outlet in the gigantic torchlight processions of the Chartist agitation.

This may be compared with the unions' attitude in the middle of the century. Prices were rising and trade expanding. England had completed a net-work of railways, and by adopting a free trade policy facilitated the import of cheap raw materials and food. The much more favourable prospects of employment and wages affected union policy. The typical organisations were composed exclusively of skilled men, engineers, carpenters and joiners, who were doing well. They opposed neither free imports, nor the introduction of machinery, accepting the capitalist system on condition that they were provided with factory laws, and public education, and that their unions and co-operative societies were given a proper legal basis. The unions were used simply as instruments for driving with employers the best business bargain as to the price of labour.

On the other hand, after 1900, prices rose faster than wages, and in the years before the war great strikes of railwaymen, miners, dockers and others followed one another in rapid succession. Syndicalist and other theories attacking the organisation of society fundamentally, spread rapidly. The ferment of the Great War sharpened criticism, and the phrase "working-class solidarity" was more and more frequently used by union spokesmen. But the break of the post-war boom, and the sharp fall of prices, led to unemployment and successive demands on iron moulders,

engineers, miners and transport workers, for wage reductions. Strikes and lockouts came rapidly, while unions found themselves involved in unemployment and loss of funds by disputes primarily affecting others, so that practical necessities, as well as sympathy in common misfortune, gave further strength to the notion of working-class solidarity, now indeed termed the "united front." But the facts had changed. The ideas of mass action against capitalism had taken root in a period when labour was scarce, unions growing and their funds increasing, but they were applied when employers could dispense with workers, and trade union funds had already been weakened. Put into operation in a trade depression, the weapon of mass action, generously used by various unions in support of the miners in 1926, led to common disaster. Weakened in funds and membership, most of all in prestige, and faced by rationalisation and portentous technical changes in industry, the unions once more reverted to the doctrine of industrial peace.

(*d*) *Trade Unions in India.*—Trade Unionism in India, as in most other countries, has been the product of industrial development. The origin of the Indian labour movement can be traced to the year 1890, when the Bombay Mill Hands Association was formed. Modern trade unionism, however, arose out of the intense industrial unrest following World War I, when the cost of living was steadily rising and wages did not rise in the same proportion. There was no law in the country for the registration and protection of trade unions till 1926. The first Indian Trade Union Act was passed in 1926. The trade union movement has made considerable progress since then and particularly during the World War II and subsequent years. The Trade Union Act does not make registration compulsory, but registered trade unions are

required to submit annual returns. According to these returns the growth of trade unions and their membership was as follows :—

Year	No. of registered trade unions	No. of unions sending returns	Membership of unions sending returns
1927-28 ...	29	28	100,619
1932-33 ...	170	147	237,369
1937-38 ...	420	343	390,112
1942-43 ...	693	489	685,299
1947-48 ...	2,666	1,628	1,662,929

In spite of the spectacular rise in the number of trade unions during the recent years, it is still true to say that a large sector of the industrial population is outside the scope of registered trade unions. Besides, quite a large percentage of the registered trade unions are small-sized. In 1947-48, 30% of the trade unions sending returns had a membership of above 100 but below 300 each, whereas as many as 23% had less than 100 members each. Only 1% of the unions had a membership of 20,000 or over.

Since so many unions are small, they have a limited income. Though they derive their income from various sources, contributions from members and donations are the most important. The financial returns submitted in 1947-48 by 1613 workers' unions revealed that their average annual income was about Rs. 2,317 per union. It is natural that with such limited resources the unions are not able to do much in the way of benefitting their members.

The Indian trade union movement has been labouring under many serious difficulties. The illiteracy of the workers prevents them from understanding properly the principles of trade unionism. In the absence of such an

understanding, a number of workers continue to remain outside the sphere of trade union organisations. The migratory character of the Indian labour force makes it difficult for them to take a permanent interest in trade union activities. Both employers and Government were apt to look with suspicion at trade union work in the past, and this was hardly the atmosphere in which trade unionism could be expected to thrive. Moreover, as pointed out earlier, the limited financial resources of the trade unions naturally put a limit on the scope of the benefits they could offer and the workers who expected something tangible in return for their trade union subscription were likely to lose interest if the movement did not produce any spectacular results. Another peculiar feature of the trade union movement in India is its dependence on outside leadership. Trade union officers, etc. are rarely drawn from the ranks of industrial workers. Most trade unions have to depend upon the leadership of lawyers or social workers who have little technical knowledge of the conditions of the industry. Moreover, most of them have to work in an honorary capacity and are connected with several trade unions at the same time. These are some of the factors that explain the inefficiency and backwardness of the Indian Trade Union Movement.

The principles governing the legislation for regulating trade unions may here be briefly stated. The Trade Unions Act lays down the procedure for registration. Registered unions are required to submit annual returns giving details of membership, income and expenditure. Registered trade unions enjoy certain rights and privileges as defined in the Act and they are subject to certain obligations. Certain practices are defined as unfair practices and penalties are laid down for unions and for employers adopting any such unfair practice. It is thus an 'unfair practice' on the

part of a recognised union (i) for a majority of the members to take part in an irregular strike, or (ii) for the executive to support or instigate such a strike, or (iii) for an officer of the union to submit returns containing false statements. On the part of the employer, it is an unfair practice (i) to interfere in any way with the rights of his workmen to organise a trade union, or (ii) to interfere with the formation or administration of any trade union or to contribute financial or other support to it, or (iii) to discharge or otherwise discriminate against any officer of a trade union or any workman because he has made allegations or given evidence against the employer and (iv) to refuse to negotiate with such a union. The penalty for unfair practice by a union is withdrawal of recognition, whereas an employer found guilty of an unfair practice may be fined upto a maximum of Rs. 1,000/-.

6. DISPUTES

The innumerable differences of view concerning terms of employment or conditions of labour which occur between workmen and employers are not usually dignified with the term "dispute" until numbers of men are affected, or there is a concerted refusal or common understanding on one side or the other to cease to work or offer employment. Disputes are thus the natural outcome of collective bargaining. The workers have a minimum below which they will prefer to risk a stoppage, and a maximum beyond which it would not pay them as a group to push their claims, while the employers have a maximum above which they will not offer employment, and a minimum below which it will not be wise for them to depress wages. "Unionisation" on both sides of the wage bargain leads to the possibility of a wage rate being fixed anywhere between certain upper

and lower limits, and either side may regard that margin as worth fighting for. Disputes may arise not only on questions of the actual wage rates, but on all the rules adopted by unions to safeguard them—the kinds of workers to be used on certain jobs and machines, the number of apprentices, the engagement of non-union men, and the border lines of management, including questions of dismissal, the attitude and appointment of foremen, etc.

It is not easy to assess the utility or otherwise of strike by any precise methods. Is the strike a really serviceable weapon in the hands of the trade union, or does it defeat its own object? Attempts have been made to collect statistics showing whether strikes have ended in success for the workers, success for the employers, or "compromise," while impressive figures of the losses caused by disputes are frequently given. Such figures are misleading. The majority of strikes end by compromise, and it is very difficult to decide which side "won most." Even an immediate defeat for the trade union has often been followed by a substantial improvement, because the contest has shown the union's strength to be greater than was supposed, and made employers less willing to face a stoppage of work. Nor is it possible to measure the gains peaceably conceded by employers or the earnings retained by the delay of reductions because the strike weapon was in reserve, ready for use.

Strikes and lockouts are subject to legal restrictions. In many countries they are prohibited or limited in those industries the interruption of whose services might be dangerous or cause severe hardships. In England, any employee of a company or authority supplying gas, water or electricity who wilfully breaks his contract of service, knowing that the probable consequences of his action will be to deprive consumers of their supply of these

things, is liable to a penalty of £20, or three months' imprisonment. Any person who breaks his contract knowing that the probable consequence of so doing will endanger life and expose valuable property to destruction or serious injury, may incur the same penalty. The Trade Dispute and Trades Union Acts of 1927, passed after the "national strike" of many trades in 1926, introduced fresh limitations. Issues so controversial as the Act aroused are difficult to summarise shortly, but the chief are: (1) "the sympathetic strike." The unions hold that the workers in any industry have the right to strike not only in furtherance of a dispute in their own trade, but to assist men on strike in another, their argument being that if they allow workers in another industry to have their standards beaten down, the low wages imposed will be used later as an argument for the reduction of their own. The basic industries are so mutually interdependent that a stoppage of work in one very soon affects employment in another. In contrast to this, the view on which the Act is based is that trade unions and strikes were legalised to enable men to bargain better with their employers about their own conditions of work, and that a sympathetic strike is objectionable, both because it inflicts losses on a group of employers who have nothing to do with the dispute, and because large scale conflicts involving the stoppage of essential services inflict hardship on consumers and the public. The only logical purpose which the sympathetic strike can have is the coercion of neutral employers and the public to use Parliamentary means to alter the course of the dispute, so that the sympathetic strike is a use of union force for political ends. Strikes and lockouts with such characteristics are declared by the Act to be illegal, and the commencement of them, or the use of money for carrying them on is illegal. (2) If an em-

ployee of the public authority breaks his contract of service knowing that the probable consequences of his action will be to cause injury, danger and grave inconvenience to the community, he is liable to a fine or imprisonment. Established civil servants may not in future belong to a union which includes persons not permanent servants, or to a union which is affiliated to other unions or organisations including persons not government servants. Under another Act, policemen are prohibited from joining a trade union, but may belong to an official Police Federation. The purpose of these clauses is to prevent the possibility of civil servants or police from being called out on sympathetic strike by reason of their affiliations to the Trade Union Congress, or of their being tangled in politics because their union is affiliated to a political party. Civil servants, it is argued, should not be bound to support the policies of a political party, when they have to execute impartially the will of whatever party is in office. All established civil servants are included in the prohibition, including manual grades, but the dangers attendant upon the political affiliation of postmen doing routine work, are not so easy to see as in the case of officials of high positions who have access to confidential information and possess powers of discretion. (3) The management of a strike necessarily includes the posting of pickets at works entrances and other places, for the purpose of notifying members that a dispute is in progress and of persuading them to cease work. The dangers of intimidation of men who refuse to stop work are obvious. Use of violence, persistent following, and "mass picketing" are amongst prohibited activities. The controversy turns on the definition that intimidation means causing in the mind of a person reasonable apprehension of injury to him or to his family, etc., a matter difficult of real proof.

7. AGENCIES FOR PROMOTING INDUSTRIAL PEACE

Experience shows that the chances of promoting industrial peace are improved if in time of crisis agreed machinery is already in existence. In some countries the State plays a prominent part, the parties being compelled or encouraged to refer their disputes to specially constituted courts, where the cases are heard in a semi-legal atmosphere and awards are made. In others the principal arrangements are those voluntarily made between trade unions and employers. The State has its own organs of inquiry, conciliation and arbitration, but these are a kind of reserve power, used only if the voluntary machinery fails to achieve its purpose. Although the State-created machinery is more widely known, because of its use in the critical stages of large disputes, the voluntary machinery deals with a far larger number of disputes, and since it is concerned with quarrels in their early stages, has more chance of producing favourable results.

(1) *Voluntary Conciliation and Arbitration Machinery.*—The precise nature of the arrangements varies with the degree and organisation and the temper of the two sides to the wage bargain in the several industries. In the most developed arrangement there is a provision for reference from local to district and national bodies, for an umpire or other authority to give a final decision in the last resort, and an undertaking by unions and employers' associations to follow the arrangements made before calling a strike or declaring a lock-out. In the iron and steel trades, small disputes are settled by conference between the management and workmen concerned, a union representative being present if required. If this fails, a committee is appointed composed of members belonging to associated works, but neutral to the works

where the dispute exists. If no settlement is arrived at, the matter is dealt with by a conference between representatives of employers and employed, or is referred to arbitration. For questions affecting more than one works, local, district or national conferences are held. A distinctive feature of arrangements in this trade is that representatives on boards and committees are chosen by the works and not by an organisation. In contrast to this, the boot and shoe trade has an elaborate system of conciliation and arbitration which has been in operation for thirty years. Strikes or lockouts may not be entered into by the associations which are parties to the agreement, and monetary penalties can be imposed for breach of the agreement. An umpire can give binding decisions on disputed matters. Arrangements as close and binding as this are rare, and are unlikely to commend themselves to either employers or employed in most of the great industries, for generally both parties wish to be free to push their claims in the last resort by a stoppage of work. Sometimes a distinction is made between local and minor disputes, and those concerning wider matters such as wage changes, which affect the whole or large sections of an industry. In the cotton industry, it has been agreed that work shall not be terminated in the first class of cases, until the matter has been considered by the local or central joint committees of the employers and workers. Large issues are dealt with directly between the central bodies, but there are no standing arrangements for arbitration, a defect for which Lancashire has recently paid dearly. Railways are in a class by themselves. When the railways were amalgamated into the four great groups, on the request of both companies and unions there were inserted into the Act clauses setting up a Central Wages Board, and a National Wages Board. The Central Board is composed exclusively of eight representa-

tives of companies and eight of the three railway unions. The National Wages Board, to which matters are referred if left unsettled by the Central Board, includes four members appointed to represent railway users, nominated by the General Council of the Trade Union Congress, the Co-operative Union, the British Chambers of Commerce and the Federation of British Industries. There is an independent chairman appointed by the Minister of Labour. The inclusion of the users' representatives may be more apparent than real, for it said that two of them usually vote for the companies and two with the unions but no doubt they are sometimes able to assist in building a bridge between the main participants. These clauses have been supplemented by agreement between the unions and the companies that no stoppage of work should occur before the National Wages Board gives its award. This elaborate scheme is filled out by sectional councils for each railway, local committees, etc.

These illustrations indicate both the variety and the elaboration of some of the voluntary arrangements. Not all industries are so well organised in this respect. Defective organisation on the trade union side or on the employers' side, or both, leaves some industries without authoritative bodies, while sometimes periods of ill-will and bickering will cause conciliation machinery to lapse into disuse; but in well-organised trades, a considerable part of the work of trade union officers and employers' representatives is taken up in the operation of peace-promoting machinery.

(2) *Mediation Machinery of Trade Union Congress.*— In practice one of the most useful contributions to industrial peace has come from the General Council of the Trade Union Congress. Stoppages in great basic industries, like transport and mining, throw workers in other trades into involuntary unemployment, and prompt

settlements are of common interest. During recent years, at the critical stages of disputes, (usually when the Government has already intervened, and the negotiations are in danger of breaking down,) it has been the practice of the General Council to offer the services of its members for the purpose of mediation. These men, themselves trade union officers who have had long experience of collective bargaining, by bringing to the crisis a considerable knowledge of the technique of negotiations, have often been able to detect openings for agreement which have escaped those already tangled in the situation. They can support fellow-unionists in maintaining principles which are considered important to trade unionism generally, and for this reason their services are appreciated. They can also assist a trade union to retrace its steps, if it appears that it has pushed a claim so far that a stoppage is inevitable, for it appears that trade union representatives will confess to them things they would not state either to the employers or to the Government, and that the mediators can speak to their fellow trade unionists with a candour that an employer dare not use.

(3) *Arbitration.*—The Industrial Courts Act, 1919. Another expedient for promoting industrial peace is arbitration. There have been many experiments in the use of arbitral methods, which may vary from an obligation on the part of the unions of employers and employed to submit disputes to the arbitration of a court and to accept the awards as binding, to the institution of a special enquiry for finding facts only, leaving acceptance to common sense, the pressure of public opinion, or to an agreement between two parties at the last moment or even after the commencement of the stoppage. Arbitration finds a prominent place on the shelves of those who deal in " cures " for industrial strife, and the simple plan of an impartial person making decision after a hearing of

evidence on both sides has a "selling-value," but it rests on too simple a view of the passion with which men will defend an established standard of living, or employers an encroachment on the "functions of management." The usefulness of arbitration must depend on the character of the issues in dispute, on the general attitude of the employing and working classes to one another and to the industry, and on the historical experience and temper of the people.

(*a*) Wages Disputes.—Where disputes centre about the amount of the wage rate, there is a field for the arbitrator, not so much in discovering an "economically right" rate, which gives the maximum benefit to the workers and the least unemployment, etc., but in finding the rate which lies between the two limits set by the opposing groups. The existence of *margin* between the lowest rate the workers will accept without striking, and the highest rate the employer will pay rather than shut down, creates the possibility for arbitration by an outsider. Finding out the width of the margin, and suggesting some figures reasonably within it from both points of view, is the task of the arbitrator. Even this does not guarantee the acceptance of the arbitrator's findings, for if the margin between the upper and lower figure is fairly wide, whether the arbitrator's figure is fixed near the upper or lower limit then involves a sum substantial enough to make one side unwilling to accept it without a struggle. Either party pushing a claim too hard, in ignorance of the extent to which the other side is willing to go, may precipitate a conflict. (*b*) Questions of principle.—The possibilities of arbitration in other classes of dispute are smaller. Where the issue is not simply the appropriateness of the wage rate, and hours of work, but some principle which may affect the whole method by which a union fortifies its standard rate, such as the allocation of

workmen to machines, the number of apprentices, the right to be consulted in the introduction of the piece system, etc., the question of a "margin" does not arise in the same way, and a union may be unwilling to allow an arbitration court to decide whether it shall use one of its traditional weapons. Similarly, employers may be unwilling to submit a matter involving the rights and functions of management to an outside body. (c) Interpretation of old agreements and the making of new ones.—A distinction must be drawn between disputes which concern the interpretation of clauses of a wage-agreement with some time to run, and the questions arising on the negotiation of a new agreement. The former is a good subject for conciliatory and arbitral methods. Sometimes the question is merely one of fact—has a particular firm or group of workmen taken all the steps and followed all the stages of procedure set forth in the agreement? At others, a new case may arise and circumstances develop in ways unforeseen at the drafting of the agreement, and here the task is one of extending the spirit and intention of the principle of the agreement to cover a new situation. Cases of this sort are analogous to the application and interpretation of civil and criminal law by the Courts, and failing settlement by joint meetings of both sides adjudication by an impartial person seems appropriate. But changed conditions of trade, foreign competition, alterations of technique and organisation, are common grounds for both employer and employed to advance in support of reductions or increases of wages, or the incorporation of fresh principles into new agreements and it must be confessed that many of the elements of such problems are matters of opinion and speculation. This is true also of matters like the appointment of foremen, and the dismissal of workmen, when the proper functions of management come under discussion. Where

the dispute concerns matters of opinion the field for arbitration is limited, and any decision is bound to leave one of the parties dissatisfied. (*d*) When should arbitration begin?—This is a question of importance in a country like England, where so much collective bargaining is carried on voluntarily through associations of employers and workers, and in particular where an arrangement of local, district and central committees has been set up for the express purpose of settling disputes, and giving ample means for consultation, so that details of local importance and interpretation are disentangled from questions of principle requiring the attention of the more important leaders of both sides. If arbitration machinery is set up, it must be supplementary to, and not in replacement of, arrangements already working. It is better that unions and employers should learn to rely on their own skill and patience in dealing with the difficulties of their industry, than be tempted to weaken their efforts by premature suggestions of reference to an impartial court. (*e*) Compulsory Arbitration. Should the awards be binding?—The arguments in favour of making the awards binding on employers and employed alike are clear. The formation of a national organisation of workers and employers has widened the area of any stoppage of work, so that damage and loss are inflicted on other great industries and the public generally. Strikes and lockouts are brutal implements uncertain in their results, for it is the greatest fighting strength rather than the soundest case which wins the dispute; victories by force do not necessarily give substantial justice. Expediency and equity alike suggest that the State should insist on a settlement without resort to a cessation of work. The practicability of compulsory arbitration depends on the temperament and tradition of the country concerned. In

Australia a fairly long history of State regulation in various forms has made the idea easier of acceptance, while in Great Britain both unions and employers' associations have declared themselves strongly opposed to it, preferring the ordinary process of collective bargaining. Both wish to preserve the right to strike or to lockout in the last resort, and to use it as and when the circumstances seem to call for it. The objection of the principal persons concerned is decisive, for no system would work without their good will. Enforcement is in any case difficult if either side is fundamentally against the award, for it is not easy to punish either large numbers of men or a group of powerful employers determined not to obey it. A further difficulty is that "court procedure" leads the organisations of both sides to depend on lawyers to present their cases; but lawyers are rarely familiar with the technical details, a false atmosphere of quibbling is introduced, fine but unsubstantial points are dealt with at great length, and expenses mount. No one can read the reports of these courts, or, to take an instance from another sphere, the early proceedings of the English Railway Rates Tribunal, without perceiving how serious is the danger of introducing legal hair-splitting into economic issues. There is more to be said for establishing a court which may give an award or opinion on the merits of the dispute without making that award binding. Such reference to arbitration may ensure delay, investigation and publicity as to the facts, its influence in inducing settlement depending on a rallying of public opinion in favour of the award and against the disputants who refuse to accept it. As a means of securing peace it is imperfect, for an obstinate group of workers or employers can ignore unorganised public opinion.

The Industrial Courts Act, 1919, provides for either Industrial Courts or Courts of Enquiry. The former

are courts of arbitration with a power to make awards which are not binding. There is a panel of workers' and employers' representatives and of independent persons. Disputes do not come to the court except on the initiative of one of the parties, or of the Ministry of Labour if both parties consent, although the Minister may without their consent refer to the Court any matter relating to a dispute for its advice. But the court may not be used for either of these purposes, until any voluntary machinery which may have been set up by employers and employed for dealing with disputes, has been used without success. Courts of Enquiry only, which may sit in public or in private, may be established by the Minister to report to him, and persons may be compelled to furnish information or to give evidence on oath, but no particulars relating to the internal affairs of a trade union or a business which are not available in any way except through the enquiry, may be published without the consent of the persons affected.

The Canadian Industrial Arbitration Act is a combination of compulsory arbitration with freedom to reject the awards made. In certain nationally-important industries, such as transport and telegraph, an employer may not declare a lockout nor an employee go on strike, before the dispute has been referred to the Board of Arbitration and Investigation. Either side must give thirty days' notice of an intention to alter wages or hours, and employers may not make any change effective, nor an employee strike, until the dispute has been dealt with by the Board, and each of the parties has received a copy of its report. Thereafter, each of the parties is free to act as it thinks best. The features of the Act are delay, which ensures to both parties time for consideration, and impartial enquiry, with a report whose influence on the parties depends on general public opinion. It appears in

practice that the chief virtue of the Act is in the interpretation placed upon it by members of the Board of Investigation, who have used the opportunities the Act creates for them to promote conciliation by informal methods.

(4) *Industrial Disputes in India.*—Isolated industrial disputes were known in India as early as 1880. They did not however become serious until 1918. After the World War I, workers came to realise the strength of strike as a weapon. Trade unions began to be organised. Scarcity of labour due to expansion of industry and influenza epidemic made the position of workers stronger. Since 1921, the Government of India have been publishing figures showing the number of industrial disputes, the number of workers involved, the number of working days lost and the classification of disputes by Provinces as well as by Industries and the results of the disputes.

Settlement of Industrial Disputes.—It is realised that the settlement of industrial disputes requires a proper and recognised machinery which can come into action as soon as a dispute is apprehended or started. The machinery may be either (i) internal or (ii) external to the industry. Some attempts have been made to start Works Committees which can play an important part in the settlement of disputes. The Royal Commission on Labour reported : " Some committees have been successful and there are probably few that have been without use ; but generally speaking the results achieved have been disappointing." This was due probably to the suspicion with which the experiment of works committees was looked upon both by employers and by trade unions. Where internal machinery does not exist, it may be created by law. Thus the Bombay Industrial Relations Act of 1946 provides for the formation of Joint Committees whose constitution and functions have been defined in

the Act. The Industrial Disputes Act (1947) of the Government of India also provides for the setting up of Works Committees. Under the Act, the appropriate Governments are empowered to *order* any employer employing 100 or more workers to set up a Works Committee. Its function is to promote harmonious relations between employers and employees. Trade unions can also establish a procedure of collective bargaining which may lead to the settlement of a number of disputes without any outside intervention. The trade unions in India have yet to build up a healthy tradition of collective bargaining. Trade union legislation has as its object the development of a sound trade union organisation, in the belief that a properly organised and well developed trade union movement can ensure industrial peace.

As internal machinery failed to develop satisfactorily, more emphasis was laid on external machinery for the settlement of industrial disputes. The Trade Disputes Act (1929) authorised Governments to appoint (*a*) Courts of Inquiry with the duty of investigating the matters referred to them and to report thereon, and (*b*) Boards of Conciliation with the duty of effecting a fair and amicable settlement and to report to the appointing authority. The appointing authority was expected to publish the report as early as possible. Reliance was then placed on the pressure of public opinion to induce the parties to accept the recommendations made in the report. The main defect of this arrangement was that the creation of these bodies—whether courts of inquiry or boards of conciliation—was left entirely to the discretion of the Government, which may or may not move in the event of a dispute breaking out. This defect could be removed by the establishment of external machinery of a permanent character. Trade disputes legislation therefore began to provide for the appointment of Labour Officers,

Conciliation Officers or Conciliation Boards of a permanent character. The existence of such machinery was found extremely useful by the workers, who could depend upon the intervention of these officers for quick settlement of disputes. Of late, there appears to be a tendency to make this machinery a very elaborate one. *e.g.* the Labour Relations Bill (1950) of the Government of India provides for the constitution of the following machinery :— (1) Registering officers, (2) Conciliation officers, (3) Boards of conciliation, (4) Standing conciliation board, (5) Commissions of inquiry, (6) Labour courts for adjudication, (7) Labour tribunals, and (8) Appellate tribunal. It is feared by some that such elaborate machinery is likely to create some confusion particularly in respect of the jurisdiction of the several authorities.

Standing Orders.—In order to eliminate the causes of friction arising out of the day to day relations between employers and employees, the Bombay Industrial Relations Act (1946) provided for the framing of Standing Orders by the employers. The existence of standing orders which are approved by both employers and employees is expected to reduce the area of possible disagreement and thus to reduce the frequency of disputes. The Government of India passed in 1946 the Industrial Employment (Standing Orders) Act, which applies to all industrial establishments employing 100 or more persons. Under the Act, every employer is required to submit to the Certifying Officer five copies of the Standing Orders which he proposes to adopt. They must provide for certain specified matters. The officer then certifies the orders, after taking into consideration the objection of the employees. The Act however does not empower the authorities to adjudicate upon the fairness or reasonableness of the provisions of the Standing Orders. This has caused some dissatisfaction among the workers. The

situation is expected to improve in this respect in the near future, for the Labour Relations Bill (1950) at present before the Central Legislature provides:—
'After giving the employer and the employees an opportunity of being heard, the Registering Officer may, by order in writing, either confirm or modify the draft Standing Orders.'

Negotiations between Employer and Employees:—Friendly negotiations between the parties to a dispute can result in a solution. They must be attempted at an early stage and in a proper atmosphere—not after a strike has already taken place or after a Conciliation Officer has been forced to come on the scene. In the Labour Relations Bill (1950) provision has been made for one party to send a notice requiring the other party to start negotiations within seven days. Where negotiation or collective bargaining or conciliation fails, the dispute may be referred to a Labour Court or a Labour Tribunal by the appropriate government. The Bill also provides that no employee shall go on strike until he or the bargaining agent has entered into negotiations or collective bargaining and until these have failed, or, if he is employed in a public utility service, until a notice of strike as required is given to the employer on failure of negotiations. During the pendency of any conciliation proceedings before a board or a tribunal and during any period in which any settlement or award is in operation, no employee shall give any notice of strike or go on strike.

8. WAGE FIXING BY THE STATE

Most modern industrial states have been compelled to pass laws regulating the payment of wages, though the extent of their activities varies a great deal, some subjecting a large number of trades to detailed regulation, the work of others being more restricted in scope,

both as to trades covered, and the extent of the control exercised. In Great Britain the principal topics dealt with are (1) the terms and conditions under which the wage is paid—money or kind, fines and deductions; (2) the amount of wages paid; (3) the hours of labour; (4) disputes between employers and employed. The motives for such legislation have been varied, sometimes crude and indefensible abuses of the fines system causing an outcry, while at others the public conscience has been shocked by the discovery that the earnings of the workers in particular occupations are so low that healthy physical life cannot be properly maintained upon them. A wider field of action opens when the motives are not dominantly to protect ill-paid or badly-treated workers, but to assist in preventing strikes and lockouts.

(1) *The Terms and Conditions of Payment.*—Before the State took action to protect them, it was possible for workers to find the nominal earnings whittled away by unscrupulous employers, on various pretexts, to an amount substantially smaller. By compelling employees to spend part of their wages at a particular shop where exorbitant prices could be charged, by substituting for cash goods which were unwanted, or not worth the sum for which they were supposed to be the equivalent, by levying heavy fines for trivial and arbitrarily determined offences, or by charging excessively for materials supplied or damage done, employers could make serious inroads into the workers' wages. To meet these conditions the Truck Acts generally prohibit the payment of wages in kind. Certain exceptions are made. If an employer provides medicines, medical attendance, tools, lodgings, etc., he may make deductions, but they must not exceed the true value of the article supplied, and in some cases proper accounts must be kept and audited. Agricultural workers are in an exceptional position, for they have

customarily been supplied with cottages free, or at rents which are merely nominal, a garden, sometimes privileges with respect to firewood, etc., and these time-honoured arrangements are not interfered with. The Truck Act o 1896 deals with some of the abuses of fines and deductions. The terms of these must be made known to the employee, either by giving him a written contract which he must sign, or by exhibiting them constantly in the works. The offences for which fines can be imposed must be clearly stated, they must not be trivial, but must be such as to cause loss or hindrance to the business, and the amount of the fine must be fair and reasonable. When there are deductions for use of materials, light, heat, etc., they must not exceed the value of the things supplied.

The case of the seaman is exceptional. By the nature of his work some of his wages will be paid in the form of accommodation and food, and some steps must be taken to ensure that these shall be adequate. There is also the question as to what is to be done if the master of the vessel discharges him in a foreign country. Who is to pay for medical attention given to a seaman during a voyage, the owner or the seaman? For what illnesses? If he dies, who is to bear the expense of his burial? In this case the regulations imposed by the State are wide in scope and concern the most minute details. For example, provisions must be supplied on a scale laid down in great detail, the water must be adequate, and both can be inspected by the Board of Trade, while three or more of the crew may appeal to the commander of a British warship, or a British consul, to have the water or provisions examined but as an unjustified complaint renders the complainants liable to the loss of a week's wages, the use of these powers is unlikely to be excessive. The seaman's accommodation

must be at least 120 cubic feet of air space. If he is discharged abroad without proper consent, the cost of his return, with wages and maintenance, must be provided by the employer. If he is sick through no fault of his own, he is entitled to medical attendance and maintenance until he is well, or returned to port. In the case of death during the voyage, the expense of burial must be borne by the owner.

(2) *The Amount of the Wages Paid.*—In Great Britain it was the desire to remove abuses and to protect certain classes of workers which led to the first experiment in the fixing of minimum wages by the State, the term "sweating" sufficiently indicating the reproach made against certain employers. A Royal Commission in the 'eighties revealed much as to its extent and causes. Sweating may be due to the oversupply of workers to a trade, through ignorance of its real opportunities, and of the chances elsewhere, or to the fact that the work is such that it can be taken up by wives, widows, and others who cannot move into another district. If the wages paid are piece-rates, *i.e.*, are on the basis of output and not of time, and the amount of skill and experience needed is not very large, aged and inefficient persons may enter the trade easily and add to the stress of competition. Ignorance of the labour market, and the scattered nature of the occupation may hinder trade union organisation. It is the inability of workers to protect themselves which justifies State action.

An anti-sweating campaign roused public opinion enough to secure the passing of the Trades Boards Act of 1909, which made possible the establishment of trades boards for sweated industries. The boards are bodies with equal numbers of representatives of employers and employed, and an independent chairman. The wages are fixed trade by trade and can be enforced either by

personal action on the part of the worker, who can sue for the amount due, or by prosecution through the activities of government inspectors. Boards were set up in chain making, cardboard-box making, lace making, shirt making and the sugar and confectionery trades. It was expected that after the Great War there would be a sudden fall in the wages of unskilled and semi-skilled workers, and to prevent untoward results, the Act was extended in 1918, so that the boards could be set up where the rate of wages prevailing suggested that one was expedient or where there were no properly-organised unions of workers or of employers or other adequate machinery for regulating wages. By 1921, twenty-eight new trades had been provided with boards, and there are now a total of thirty-five, covering one and a half million workers.

What are the results of this legislation? Can it be enforced? Are the wages fixed so high as to cause unemployment? Has there been any adverse influence on the export trade owing to a rise of costs? Has the fixing of a minimum by law caused employers to adopt it as a maximum?

Once granted that the law is passed, it is to the interest of the best employers, who may be already paying as much or more than the Trade Board rates, to have the law adequately enforced, to prevent their being undersut by less scrupulous competitors. Enforcement is not easy. Where workers are scattered and ill-organised, it is difficult to discover violations, while the worker himself is often reluctant to give evidence lest he should have difficulty in finding employment afterwards. Employers can evade the regulations by withdrawing privileges not part of the wage, *e.g.*, the provision of certain materials. Is the minimum wage to be paid to all workers irrespective of their quality, to the best workers, or the

average worker? If the average worker only is meant, an employer could evade the rates by engaging a large proportion of workers who can be deemed to be below average, unless he is prevented by regulations requiring that the rate must be paid to a certain percentage of the workers in his factory, or by some other means. In general, states have been unwilling to appoint an adequate number of inspectors, those in England being unable to visit more than four per cent. of the works each year.

As to economic results, analysis has shown that the Boards have led to the levelling up of the wages of the least-skilled workers, mainly women and juveniles, but that the earnings of the skilled workers do not appear to have benefited so much. The rates have not necessarily tended to become maxima, the most reputable firms in some of the trades paying higher wages than those legally required. In the early years of the experiment, which fell in the times of peace, there were those who declared that success in prosperous times, when employers might not feel the pressure very severely, was no guarantee of success in a season of adversity, and of this the Great War was a severe test, for a period of exceptional rise of prices was followed by a sudden and drastic fall. It was difficult to make wage rates fixed by prolonged discussion keep pace with the rapid change of prices, so that wages moved upward rather less quickly than prices, while their fall was less rapid. There is no doubt that the existence of the Boards did delay the fall and that the outcry against them by certain employers arose from this. There were also fears that the fixing of the legal minimum would force up wages to such a figure that many dismissals would follow, and that unemployment would be increased. This does not appear to have been the case. Where the wages had been too low for real physical efficiency, a better standard of living in the

end meant more efficient workers. Cheap labour is often not economically used, and the increased cost of it has led employers to turn it to better account by the use of machinery and by improved organisation. This also explains why, in those cases where the product was sent abroad, the export trade has not been damaged by the compulsory minimum. What matters is not the cost of labour per hour, but the cost of labour per unit of product, and if greater efficiency leads to greater output per man, the fixing of the minimum does not produce any adverse result.

Legal minimum wages are in existence for agriculture also, the interesting features of this experiment being that large numbers of workers are involved, and that the industry is subject to severe foreign competition. During the Great War, the urgent need of increasing home food supplies led to the passing of the Corn Production Act, 1917, which encouraged the farmer to extend his operations by giving him a guaranteed price for wheat and oats, and, partly to make sure of an adequate labour supply, partly because the State could not very well undertake liability to pay farmers millions of pounds without doing something for the workers, there was established an Agricultural Wages Board. It consisted of thirty-nine members, sixteen representing the farmers, sixteen the workers, the remaining seven being appointed by the Ministry of Agriculture. District Wages Committees, formed with equal members representing farmers and workers, and one or more "appointed" members, recommended district rates for confirmation by the Central Board, but in no district could a wage be fixed below 25s. a week, which was the minimum figure for the whole country. Thereafter the agricultural minimum wage was the sport of politics and currency policy. The arrangements were to last until 1922, and in 1920, to give further

certainty to farmers and workers alike, an Act was passed continuing both the guarantee of prices and the Wages Boards, the Act to remain in force for four years. Agriculture, it was said, would now be able to settle down to a period of improvements and expansion. But eight months later the Act was repealed, and the guarantee withdrawn. The wages machinery was scrapped, and replaced by voluntary conciliation committees, which, if they agreed, could submit rates of wages to the Board of Agriculture for registration, after which they had to be paid in the district concerned. The complete alteration of the whole conditions of the industry made farmers unwilling to take much part in wage arrangements, so that in 1923 there were but nineteen areas with agreements, and no less than forty-six without. This was not entirely the result of a double dose of original sin in the politician, though the matter was shamelessly handled, for the "deflation" policy of the Bank of England and the Treasury led to a drastic fall of prices, wheat for example, which stood at 80s. 10d., in 1920, falling in succeeding years to 71s. 6d., 47s. 10d. and 38s. 7d., in 1923. Such a revolution in the whole condition of business—a fall in the price of the product by more than one-half in so short a period—would have strained the best established and most perfect machinery for adjusting wages, and it naturally broke down the system only recently established, without traditions and with little experience, which even at the best of times had been regarded with but little favour by most of England's individualistically-minded farmers. The compulsory committees were re-established in 1924, this time without the general minimum applying to the whole country. But times had become less unfavourable, for although the industry was far from prosperous, the price level was more stable.

The fixing of the legal minimum wages in agriculture has not been undertaken in happy conditions, either for farmers or labourers. The worker is isolated, and the employers so used to going their own way that enforcement of the law is not easy. The inspectors have been but few, and in the test inspections made, there were evasions in no less than one-sixth of the number. The principle of allowing the wage to vary according to the district has enabled account to be taken of the varying types of agriculture and of the fact that the competition of the more highly-paid manufacturing industry for labour is stronger in Lancashire for example, than Dorset. The Acts on the whole seem to have led to a greater realisation of the importance of the rural standard of life, but whether the improvement effected has been great enough to stop the "flight from land" as some hoped, remains to be seen, for the temptation to leave agriculture is small when urban unemployment is heavy. It is the return of prosperity to manufacturing industry which will test the efficiency of the agricultural minimum in this respect.

This system of regulation under the Trades Boards and Agricultural Wages Committees, contrasts in methods with the arrangements of other countries. In some cases wages are fixed by a special court, with proper legal procedure, after evidence has been presented by both sides, but in England we have worked on the principle that industries prefer to regulate themselves, and the board system ensures mutual discussion. In the Trades Boards there are appointed chairmen, it is true, but in practice they endeavour to use their independence not to make themselves arbitrators, but to bring the two sides to common agreement. Difficulty is sometimes encountered in making up the representation on each side. The workers are likely to be unorganised

or ill-organised, and if so, officers of trade unions who may be put in to represent them may have little knowledge of the detailed conditions of work, while the non-federated employer who refuses to join the employers' association, will be unrepresented on the board, and may later obstruct the operation of the agreed minima. In no system has the enforcement of minimum wages been really adequate : even in Great Britain the inspectors have not been numerous enough, nor the penalties meted out by the court always sufficient to be deterrent.

Apart from administrative difficulties, the employers' and workers' representatives have to decide on what principles the minimum should be fixed. In the case of agricultural wages, the State gave a lead by naming a figure in the Act, and allowing no area to fix a rate below it. With the Trade Boards, the existing rates were merely named as " exceptionally low." In practice some begin their task of regulation by commencing with a figure near the existing rates, and gradually working experimentally upwards. But the existing rates included those paid by good and bad employers—which were to be taken as the basis ? A rate which the most reputable firms could bear comfortably would press severely on others, admittedly inefficient and surviving only because of the low wages they pay, and the result might be the dismissal of workers. This possibility has to be faced, and it is probably desirable that such firms should be presented with the alternative of improving their methods or losing trade to more competent rivals. After all, there are persons who can be correctly described as " undesirable employers," and that they should be forced out of the industry is in the interest of good employers as well as of workers.

(3) *Regulation of Wages in India.*—Prior to 1936 there was no legislation in India to regulate the payment of

wages to workers. As a result of the recommendations of the Royal Commission on Labour an Act was passed in 1936 known as the Payment of Wages Act. It applies to persons in receipt of wages and salaries averaging below Rs. 200/- per month, and employed in any factory or in railways. The Act requires the fixation of wage periods which should not exceed one month. Undertakings employing less than 1000 persons must pay wages before the expiry of the seventh day, and in other cases of the tenth day after the wage period. Discharged workers must be paid before the expiry of the second working day from the day on which their services were terminated. All payments must be made on a working day and in current legal tender. Certain kinds of deductions from wages are permitted. Fines can be imposed only for acts and omissions specified in notices approved by the competent authority. The total amount of fine is not to exceed an amount equal to $\frac{1}{2}$ anna in the rupee of the wages payable in the wage period. All fines must be recorded in a prescribed register and credited to a fines fund, which can be utilised only for approved purposes beneficial to workers. The Act was extended in 1948 to coal mines. Provincial Governments have extended it to motor transport, tramways, plantations and printing presses.

The Minimum Wages Act (1948).—The Central Government passed in 1948 the Minimum Wages Act for fixing minimum wages in certain employments wherein sweated labour is most prevalent. The Act requires Governments to fix within a specified period minimum rates of wages to employees in specified industries. These industries include carpet making, rice and flour mills, oil mills, tobacco manufactories, plantations, local authority, stone crushing, building, tanneries, public motor transport and agriculture. The Government can extend the Act to any industry wherein, in their opinion, statutory minimum

wages should be fixed. The Act authorises the Government to appoint Committees and Sub-Committees to hold inquiries and advise in fixing minimum rates of wages, to appoint Advisory Committees and Sub-Committees for revision of rates and Advisory Boards to co-ordinate the work of Committees. All these bodies are to consist of an equal number of employers' and employees' representatives and of independent persons not exceeding one-third of the total number of members. Governments are empowered by the Act to fix the number of hours of work, to provide a weekly holiday and to provide for the payment of overtime wages in scheduled employments. The Act was amended in April 1951 and Government have now accepted 31st December 1953 as the deadline for the fixation of minimum wages in agriculture. In respect of fixing minimum wages in the specified sweated industries, the time limit has now been extended to 31st December 1952.

During and since the World War II, the rise in the cost of living of industrial workers was much more than the rise in their earnings. This was bound to lead them to put up their demands for a rise in wages. Such demands formed the central matter in many industrial disputes which were referred to Industrial Tribunals or Adjudicators for arbitration. The arbitrators' awards are binding on both parties to the disputes. These awards have fixed the basic minimum wages of workers in different industries and for different occupations, *e.g.*, the monthly minimum basic wage for an unskilled worker in the Cotton Textile Industry has been fixed at Rs. 30 in Bombay, Delhi and Kanpur, Rs. 28 in Ahmedabad, Rs. 26 in Sholapur, Madras and Indore and Rs. 20-2-5 in West Bengal.

PART V. ECONOMIC ACTIVITIES OF THE STATE

THE activity of the State in economic affairs is still to some business men "interference" with the healthy free enterprise which made Britain famous. The dislike of constraint is partly the heritage of an older economic doctrine, fully expressed by Adam Smith, which was severely critical of the whole code of detailed regulations relating to industry and commerce which had been built up in the seventeenth and eighteenth centuries. The *laissez faire* campaign went very deeply into British consciousness. Beginning with Adam Smith and the economists of the early years of the nineteenth century, faith in the virtues of economic freedom spread to politicians, business men and even workmen, till a great volume of opinion expressed itself in the Free Trade agitation, and swept away duties on food, raw materials, and manufactures alike. The freedom of the individual to pursue his own interests as he thought fit became part of a good Englishman's make up. Some forgot that England had merely rid herself of the inappropriate regulations inherited from earlier days, and that even when the intervention of the State had been reduced to a minimum it was still an important participant in economic life. The terms in which every valid business contract is made, the conditions of its legal fulfilment and its actual enforcement are determined by the State. So are the conditions of property-owning. Inheritance laws and all that they mean both for production and distribution of wealth

are another aspect of its activities. In the Anglo-Saxon countries there is almost complete freedom of bequest, so that estates can be divided amongst the family, or concentrated in the hands of one member only, at the discretion of the person making the will, while in others each member of the family must receive a specified proportion of the property, full discretion being allowed in respect of only a fraction of the total property. Even in England, the State will restrict freedom of bequest, where that freedom works against the public interest. An ingenious gentleman thought to make a distant successor owner of a great part of the property of the country by leaving a considerable sum to accumulate at compound interest over several generations, the total sum then to go to his most direct descendant, but a special Act was passed to invalidate the will as contrary to the public interest. These are but two examples of the way in which, when business men thought themselves most free from the attentions of the State, every one of their business acts assumed the existence of the State and its controlling activity. Determining what is fraud, settling the conditions of bankruptcy and the action of the bankrupt, defining what is "good delivery," creating fictitious legal persons, and undertaking certain forms of production and trading are other instances of the widespread activities which the State undertook and which the men of the nineteenth century never challenged.

Nevertheless, the point of view of the business man and that of the State are necessarily different. His immediate object is to make his livelihood by some kind of making or trading, and he hopes that at the same time he may be rendering the commonwealth genuine service. The promotion of his own interests may in fact sometimes lead to a contrary result. The destru-

tion of the American forests through continual use without replanting, or actual burning to make clearances, was either directly profitable to the persons concerned, or scarcely avoidable by any one firm faced with the eager rush of competitive enterprises. State action to "conserve the natural resources" implies the imposition on all individuals concerned of a fresh and different point of view. The same may be said of legislation regulating the hours of factory labour and the healthiness of the conditions of work. In the first experiments with factory production in the nineteenth century, working days of incredible length were not easy for any one firm to avoid, if all other competitors were willing to adopt them. The State can have regard to long-run effects more easily than business men under the necessity of maintaining each day their position in the competitive struggle, for the vision of both is governed by the span of their own life. This does not mean that the State in formulating its plans is more free from errors of judgment than the individual, for quite apart from belief in fantastic or unwholesome economic doctrine it may decide that "defence is more than opulence" and pawn economic progress for military glory.

What power of influencing economic life does the State actually possess? To what extent and in what direction should its powers be used?

(1) The State may be said to bear the overhead costs of the nation's industry. Just as a single business has its standing charges incurred for running services and departments essential to the work as a whole, so some of the expenditure of the State can be regarded as general expenses necessary for the efficiency of industry. The construction and upkeep of roads and bridges, maiatnining research institutions which undertake

scientific work of assistance to industry, and the organisation of the police force in so far as it deals directly or indirectly with commercial matters, are examples of such services. State contributions to unemployment insurance may be placed in the same category, for while some industries are partly responsible for their own unemployment, much of it is due to the inter-relation of industries and to wider causes, some of which are within the control of the State. The cost of maintaining the labourers during their periods of enforced idleness may be regarded as an overhead cost. Seen in this light, many of the hampering regulations of a modern state, and some of its excursions into the actual production of goods and services, no longer appear as the excessive zeal of a meddlesome bureaucracy, but as the proper activity of a well-run and many-sided national business.

(2) The State may undertake the direct provision of goods and services. There are in various countries state railways, state mines, state production, transmission and sale of electricity, public manufacture of water and gas and municipal provision of local transport. The arrangements under which the State concerns itself in production are varied. It can both own and operate services, as in the British Post Office and in the municipal trams, gas and water works, or it can own the enterprise and grant leases for its operation to a private company, as in the case of the Beam Wireless Service, which is owned by the State and leased to the Communications Company. British tramways could at first be owned but not worked by municipalities. Finally, it can itself operate a privately-owned system, as was the case with some German railways, and is still the situation of a few tramways in England. This form of control is found where running rights over

some private concern's lines are needed to complete a state-owned system.

It is impossible to decide off-hand, as propagandists do, that every State undertaking is either more or less efficiently run than if it were conducted by private enterprise. Statistics of losses and profits convey little, for municipal trams, gas and electricity works can, like private concerns, be grouped into those which are losing, those which are paying their way, and those which are making a substantial profit. State, as well as private undertakings have bad as well as good years, municipal tramways, for example, losing heavily in 1921 and 1922, when private tramways lost also, the causes of depression being general.

The effectiveness of State ownership and operation of industries is unlikely to be the same in all industries. No one suggests the nationalisation of photography or of laundries, but nearly all accept the idea of a national post office, and no one quarrels with public water. State administration of business where demand is steady, and administration routine, as in the case of the water supply, does not present the difficulties which would be found in the public operation of an industry where there is a large element of foreign competition, or where the product is exported. There would be some criticism of risks taken with the tax-payers' hard-earned money, while the public insistence that a State service shall "treat all persons alike" would be a positive hindrance in dealing with foreign competitors. Few would suggest State enterprise in articles much subject to fashion. Wide fluctuations in the price of raw materials would also involve difficulties for State service. On the other hand, where the industry must for technical reasons be a monopoly, and where it is felt that the service is so important to the

consumer that public control is necessary, then State or municipal ownership and operation is a natural solution. These statements have abundant illustrations in the history of British municipal enterprise. Gas production developed first under conditions of unrestricted competition. Birmingham had one company in 1819, a second in 1825. Glasgow had two companies, when a third was threatened in 1859; the Corporation had offered to buy both, but when the companies refused, was spurred by complaints of services and charges to project setting up a third undertaking. Eventually Parliament persuaded the companies to sell to the corporation. In London there were four companies, three of which were working in the same areas, and actually laying mains in the same streets. The economies of unified service, the desire to protect the consumer against exploitation, as in Glasgow, or to obtain revenue for the relief of local taxation as in Birmingham, have been prominent motives for municipalisation. The history of the Brighton telephone system is a striking example of technical reasons for nationalisation. As a counter to the service of the National Telephone Co., the Corporation established municipal telephones but the result was that subscribers to the "National" list could not communicate with the Corporation users and vice versa, while a few persons had two telephones. The difficulty was settled when all were taken over by the Post Office. The early development of electricity was hindered by fears both of monopoly, and that existing municipal gas services would be adversely affected. Privately run electricity undertakings were placed under severe restrictions, *e.g.*, leases were granted for seven year periods only, with an option of purchase without compensation for compulsion. Municipal undertakings thus deve[illegible]m

at the expense of commercial ones. Technical reasons largely account for the municipalisation of tramways. Since tramways involve the construction of permanent tracks in the public streets, they could not be run in any area without the local authority's consent, and local authorities were given the power to purchase them at the end of twenty-one years at actual value; but when invention made necessary the change over to electric traction the capital could not easily be raised if the undertaking were nearing a period of compulsory purchase. Municipal purchase was thus a condition of modernisation.

Four reasons are commonly advanced against existing or proposed State services. First, that the lack of the sharp spurs of competition and of the clamour of shareholders for dividends makes for slackness in administration. There is something in this, but commercially-run enterprises, if they are monopolies, are free from competitive strain, and in any case both companies and public authorities alike rely on paid officials. In contrast to public companies, the mass of whose shareholders are negligible factors as far as immediate interest in the government of the industry is concerned, not even the selection of directors being really in their hands, the public criticism of State services by committees or members of Parliament is often continuous and effective. Secondly, State services often show a lack of enterprise and initiative, and an unwillingness to take risks. This, in England, is in large measure the result of the public attitude to the Civil Services. The exercise of initiative implies occasional failure as well as success, but losses and deficits in the public service are always subject to fierce criticism and protest, and they are regarded as proper occasions for energetic members of Parliament

to shine at the expense of ministers. It is no doubt healthy and beneficial that this should be so, but ministers prefer a quiet parliamentary life, or at least, not to have losses to explain or defend, and they would be more than human if they did not encourage the avoidance rather than the seeking of risks. A changed public attitude to the services is needed, if there is to be freer experimentation and fuller exercise of initiative. Somewhat the same may be said in answer to a third criticism, that State control means "bureaucracy." The dangers have been admitted by those who desire to nationalise the country's basic industries, and they have taken pains to present schemes with a measure of decentralisation. The influence of "Whitehall" is not got rid of quite so easily, for its source, too, is to be found in Parliamentary control. So long as the budget of a nationalised mining, railway, or other industry is connected with the Treasury, so long as any deficits may have to be made up from the public taxes or public borrowing, the Treasury and the departments concerned must make rigid rules to prevent these eventualities arising.

Fourthly, State services are often charged with being subject to "political" influences in appointments, and to being warped in administration on account of political pressure. (cf. the French charges that deputies are able to secure the provision of unprofitable lines and services by state railways through their constituencies.) How far this is true may depend on the political health of the country concerned. Where the public services have a strong tradition of clean dealing, and proper systems of recruiting staffs through examinations and otherwise, there is not much fear of nepotism. It must be admitted that there is much inefficiency allied with petty corruption of this sort in

some of the smaller English boroughs, but there has been a striking advance in this respect in the last half-century, and it should be remembered that in the public services the dangers of appointments on grounds other than competence are no greater than in private business, where the taking of relatives and friends of chief officials into the business is a normal method of recruiting. Many of the dangers can be avoided by placing public productive services outside *direct* public control, by making them autonomous business bodies, independent in finance, with full discretion in the management of the business and not directly represented by a minister. If the beam wireless and cables now controlled by the Communications Company had been so treated, the cables would have been purchased by the State, and placed, together with the beam wireless, under the control of a Commission or Corporation with an autonomous system of accounts. The "Commission" system of operating publicly-owned enterprises affords an escape from some of the risks of undue political influence, bureaucracy and lack of enterprise, while each service would be compelled to stand on its own financial feet, and to balance the losses of one year with the gains of another, without resorting to State funds in bad years.

(3) The State may affect the size of the labour supply by encouraging or discouraging births, and by preventing or tolerating infant deaths. It can give praise and money to the parents of large families, it can extend its provision of free schooling and other services to diminish the cost of rearing them, it can see that the taxes levied on married men take account of the fact that more persons have to live on their incomes by giving income tax rebatements for children, or it can subsidise rents on a scale related to the size of the family. If a

who are already miners but are "surplus" men in their own areas. These experiments—organised transference, the legal limitation of recruiting—suggest that we are beginning to develop a technique for dealing with the complicated social problems of declining industries.

The third aspect of mobility, the migration from one country to another, has long been the subject of political regulation. Countries have desired to retain their own sons within their borders as a reserve of man power in case of war, or have encouraged them to go to colonies, while they have discouraged the immigration of other colours and races in order to avoid the complexities of inter-racial marriages, and to maintain a homogeneous population. Economic motives are often more important. "The White Australia" policy is conceived not only in terms of "colour" but also of the standard of life, just as it is the economic threat of the black population of Africa which makes the white labourer so hostile to his penetration into the "white men's occupations." Similarly, it is the fear of competition with an Eastern standard of life which lies behind the restrictions of the immigration of the Chinese and Japanese into America and Canada, and the immigration laws of America limiting the ingress of peoples from those European stocks which have low standards. It is obviously difficult for workmen to maintain standards by union action and otherwise when competitors for jobs are pouring in at the national gates. Looking at the matter from the broadest point of view, there can be no doubt that the existence of relatively unpeopled areas, rich in fertility and resources, side by side with areas crowded with people implies a maldistribution of population, and that the regulations governing immigration and emigration which prevent the readjustment of the two are, from a wider point of view, detrimental.

(5) The State exercises a considerable control over the conditions under which labour works. For over a century successive Factory Acts have steadily increased the classes of persons and kinds of industry to which their clauses apply and the range of topics within their scope. They began with pauper apprentices, but were extended to include other children, young persons, women and finally adult men. Cotton was the first industry to be tackled, but other main and subsidiary textile industries were brought in, chemical works and mining following, until all work in factories and workshops came within their purview. The main concern of the earlier Acts was with the hours of labour, and as these were successfully controlled, questions of the fencing of machinery, ventilation and other details of organisation were taken up.

Throughout the history of the legislation interest has always centred round the limitation of the hours of labour. The law has placed limits on the hours of children, young persons and women, but those of adult men, except in the case of the coal miner, have been left to direct arrangement between employers and employed. Indirectly the hours of men are restricted, since the regulation of the hours of young people and women often limits those of men in the same works. At present factory legislation lags behind industrial practice. According to the Factory and Workshops Act of 1901, the normal working week of women and young persons in textile and certain allied industries is 55 to 55½ hours, and in other factories 60 hours per week. Before the Great War the hours actually worked varied considerably, but for most workers were between 52 hours and 56 hours per week. Immediately after the war, the hours of labour were reduced in a large number of industries by collective agreement between employers

and employed to 44, 47 and 48 hours, the average reduction being about six hours per week. Most of the trades boards penalise the working of more than 48 hours per week by fixing higher rates of pay for any time worked in excess of this number.

We have already seen that the results of investigations show that excessive hours of labour may actually give a smaller output per man and per week than a shorter working day. Why then has it been necessary to compel employers to reduce the hours of labour when in their own interests they should have made the change voluntarily? It must be remembered that excessive as the hours of labour of a hundred years ago now appear to us, the earlier industrialists using machinery were experimenting with new instruments, and their proper use in relation to labour had to be learned by experience. Both in this and in other countries now industrialised, there was a tendency to think of the proper length of the working day in factories in terms of the longer hours worked in agriculture. The factory operative had to convince his employer and the State that his conditions were so different that a shorter working day than that of the farm labourer was expedient. The major difficulty lies in the fact that as the period of service of individual workers with an employer is often very short, the employer would not perceive the long-run effects of excessive hours on the health and efficiency of his men. Hence the State, able to take a longer view, found it expedient to impose a statutory limitation.

The effect of the reduction of the working day on the earnings of the worker depends on the extent to which his output recovers and on the elasticity of demand for his labour, and for the product. The reductions of 1919 and 1920 were met by an increase of time, shift,

and day rates which left earnings undiminished; and in some cases piece-rates also were readjusted. Assuming that in any industry the results of a reduction were to diminish the output, then if the demand for labour were inelastic, the contraction of the output would tend to raise the price of labour in greater proportion, and, unless the methods of manufacture had meanwhile been altered so as to diminish the need for it, would probably raise earnings also. If the demand for labour were elastic, the earnings of the worker would tend to diminish. An increase of working time, *e.g.*, raising the legal maximum for coal miners from seven to eight hours per day, would tend to depress earnings if the demand were inelastic. The additional output would be put on to a "saturated" market, prices would fall and earnings with them. Maintaining either wage rates or weekly earnings would not necessarily prevent the reduction of income. If the law or collective agreement enforced the payment of a minimum wage, the fall of income would show itself in the decreased frequency with which that minimum was received, *i.e.*, in unemployment.

(6) The State can affect the distribution of the country's resources of capital and labour as between different industries, or between different areas, favouring and encouraging development in certain lines and in certain places as against others. This can be seen in minor ways. A man's choice of site for his works may be restricted by the power of the local authority to license and regulate dangerous and offensive trades, while under the Town Planning Acts towns may make regulations for areas in course of development, restricting the use of certain districts for residential and others for manufacturing purposes. This power not only enables them to prevent intermingling of homes and

factories, which has been so unhealthy a feature of the past, but also enables them to control and plan more definitely for industrial road traffic. Again, if the State aids railways so that the rates for export goods are specially reduced, the works situated in inland places are favoured as against those in or near the ports.

The primary instrument which the State has used for this purpose is the tariff. The aim of a tariff is, by taxing the import of goods which compete with home-produced articles, to enable home industries to increase their sales, and so the resources and labour they employ. Since in the last resort exports are the only means by which a country can pay for its imports, we may say generally that any reduction of imports caused by a tariff will correspondingly diminish exports. The balance between imports and exports at any moment is not exact, for nations borrow and lend, and such transactions will give rise to imports or exports not at the time counterbalanced by exports or imports. There are also a number of what have sometimes been called "invisible exports," such as the services of shipping, banking, etc., for which payments have to be made by those who receive them. With these and other qualifications we say that a cutting down of imports will lead to a counterbalancing reduction of exports. The effect of the tariff is in consequence to readjust the distribution of the country's capital and labour between its industries, in such a way as to increase the amount applied to protected trades, and to decrease the amount put into those industries making for export. At the same time the imposition of a protective duty alters the distribution of industry between the home and foreign countries. If we proceed to ask whether the redistribution of re-

sources will in the long run be more advantageous, we launch at once on to a difficult and controversial topic. In the settlement of State policy, many non-economic issues are involved, such as the desirability of encouraging the production of certain commodities in order to ensure supplies in time of war, or the wish to strengthen Imperial connections. The economic issues are complicated. It is true that tariffs tend to shift the country's capital and labour from export trades in which the country is more able to compete, to the protected trades in which, since they cannot hold their own successfully without special assistance, its efforts are relatively less effective. But in the case of infant industries, the weakness may be due not to any inefficiency of workers or management, or to any natural disadvantage of the country in undertaking them, but merely in the fact that, as they produce on a small scale, they do not reap the economies of large-scale production. If once they were well started, their costs might decline side by side with their growth. To the difficulties caused by dumping reference has already been made.

Questions of procedure in placing an industry upon the "protected" list are very important. Tariff making is full of technical difficulties. Ascertaining the comparative costs of production in competing industries, the relation of the article to its substitutes, to the price of articles which it is used to make, fixing a rate of tax having proper relation to all the interests concerned, are matters of complexity and a close study of detail is essential. Further, the advantages of protection to particular firms may be so great that the temptations to intrigue, to mutual support and even definite corruption, are very great. Many countries have notoriously been unable to prevent log-rolling and undue pressure. The

followed by all applicant industries, and of impartial enquiry by an independent expert board, free from political or business influences, have been among the devices found essential by various countries.

The State can also encourage any given scheme of distribution of capital and labour between industries by means of subsidies. In theory, a case may be made for the view that the grant of a subsidy will in certain circumstances be of common benefit. When the technical and administrative conditions are such that an increased application of capital and labour to industry will increase the output more than proportionately, *i.e.*, will reduce the costs per unit of production, it is easy to conceive of circumstances in which the reduction in costs per unit through the economies of enlarged production, might be definitely greater than the cost per unit of the subsidy, the gain to the consumer being greater than the cost of the bounty to the State. In agriculture, enlargement of output can normally be obtained only by extending cultivation to less fertile fields, or by the use on fields already tilled of extra loads of artificial manures, etc., which though profitable, may not yield so great a return as the early applications. The grant of a subsidy might stimulate a greater output from these industries, but only at the expense of increasing the cost of production per unit, and that increase might in the aggregate be greater than the total cost of subsidy. It so happens that the recent demands for subsidies have come from precisely those industries for which they are theoretically least justifiable. The coal mining subsidy of 1925-26 enabled "marginal pits" to continue working when otherwise competitive conditions would have forced them to close. A suggestion made during the dispute, that to prevent the contraction of the industry, subsidies should be given only to those pits which would have to close with-

out them, singled out for adoption the most objectionable type of subsidy that could be devised. An alternative proposal, that a bounty should be given to coal destined for export, would have given assistance to well-placed and well-managed pits as well as marginal ones, but would have resulted in giving foreign manufacturers consuming British coal a competitive advantage over the manufacturers of the country providing the money for the subsidy. An agricultural subsidy could be paid either (*a*) at a flat rate per acre put under cultivation, (*b*) per bushel produced, or (*c*) in the case of beet, by sugar-content per ton. The first form would encourage the breaking up of new land, fertile and infertile alike, the second would favour the best areas and the best cultivators, though bad weather conditions would penalise them, while the third, assuming it to be practicable, would be based on yield differently tested. State subsidies are subject to a number of administrative dangers. Besides the cost of administration, there is the prevention of fraud, a grave danger where the temptations are so great, and the details determining whether a grant is payable or not so often arbitrary. There is the possibility, too, that an assisted trade will learn to depend more on the subsidy than on its own efforts by labour and organisation, and that every wind of adversity will bring forth the cry " more subsidy."

(7) The State can encourage or discourage the formation of business units of certain sizes. Two contrasting trends of policy are noticeable, the one arising out of the consumers' insistence on protection against trusts and aiming at the destruction or limitation of the power of great combinations, the other conceived with a desire to improve general efficiency, and encouraging or compelling small competing units to form themselves into well organised, large scale undertakings. The former

tendency shows itself in American "trust-bursting" legislation, in the English profiteering committee's enquiries into the price activities of combinations, and in the establishment of the Food Council. The second policy is more recent in origin. The Sankey Commission (1919) to enquire into the coal industry was a landmark in more than one way, and in none more than the manner in which the evidence, cross-examination, and reports popularised the notion of unification and large-scale working as conditions of efficiency. The majority report selected nationalisation as the form of unification they desired to recommend, while a minority report advocated district unification. Railways have an interesting history in this respect. In the early part of the nineteenth century, Parliament deliberately encouraged the formation of competing companies, and almost till the end its policy was to hinder combination. It can be admitted that its attitude fully represented the popular view, for a projected arrangement between the Great Northern, the Great Eastern and the Great Central Railways was partly abandoned because of the great public outcry. The Great War, the general lesson of the Sankey Commission, and the propaganda for nationalisation had sufficiently converted public opinion to allow Parliament in 1921 to amalgamate a hundred-odd railways into the four great groups. There are not wanting critics who are willing to apply the lesson of compulsory legislation to other industries as well, and it is interesting to observe how much the modern campaign for nationalisation emphasizes the economies brought by unification.

(8) Stabilisation of Prices. It is natural that the great fall of prices since 1921 should have led to the demand of producers for the "stabilisation of prices." Some proposals concern the general price level, and involve questions of monetary policy which cannot be

discussed here, but others are put forward as suggestions for the improvement of individual industries, such as agriculture, which are specially liable to damage by price fluctuations. Producers in this industry, whether they are British farmers, Canadian wheat growers, or Australasian meat producers, have for years been insisting on the need of steadier prices for the health of their industries. In agriculture an exceptionally long period elapses between expenditure on seeds, fertilisers, ploughing and sowing, etc., and the returns from sales, the "lag" being as much as fourteen months for cereal growing. If prices fall, the produce may bring scarcely enough to cover the costs incurred at the commencement of the season. These special circumstances in part explain why some experts have declared that the rise and fall of the general price level have been responsible for more misfortunes in agriculture than any other single cause, a fact overlooked by those who have argued as if foreign competition were the primary evil, and regarded a tariff as the sole and adequate remedy. Again, unlike factories turning out a continuous stream of products which can be augmented or diminished to meet changes in market conditions, the farmer, having sown his ground, must sell whatever crop results and accept the prices the market gives. The demand for agricultural products, in the case of foodstuffs at least, is moderately inelastic, crops much exceeding the average tending to depress prices in greater proportion. There are in addition seasonal variations of prices, considerable falls occurring after the harvest, when farmers, unable to finance the withholding and storing of crops, must sell as soon as possible.

Leaving aside remedies suggested for changes in the general price level, a number of proposals have been made for deliberate efforts by the State to eliminate or modify those fluctuations peculiar to agriculture. Refer-

ence has already been made to some of those which concern agricultural exports. One element of instability in the prices received by the British farmer is the variation in the prices of imported foodstuffs which compete with his products. It has been suggested that a State Wheat Import Authority should be given a monopoly of the purchase of overseas wheat and flour, and a Meat Import Authority a similar monopoly of the buying of meat imports. These authorities could make long-period contracts with foreign producers at stable prices, one element of the farmers' uncertainty thus being removed. One variant of the proposal is that the Wheat Authority should also be empowered to purchase the whole of the British wheat crop on the basis of long-term contracts at stable prices.

These interesting proposals, made by three agricultural experts in a report published by the Board of Agriculture, and by Mr. E. F. Wise before the Food Prices Commission, present a number of difficulties. Since the machinery could not be used to control world prices, which are dependent on world harvests and other factors, but only internal prices, the controlling authorities would be compelled, at some times, to purchase at higher world prices to sell at lower home prices, so involving financial loss, and at others to buy at lower world prices to sell at higher internal prices, a policy which the consumer would find it difficult to understand. The Import Boards might lead an uneasy life between the alternating protests of enraged taxpayers and indignant consumers. Put in this way, the difficulty is overstated. The Import Boards would have to experiment until sufficient knowledge had been acquired to enable them to determine for what periods they could keep prices steady. Smoothing out the constant monthly and seasonal fluctuations would not be an impossible task, but the accomplishment of

this more limited object would be a great boon to the farmer. The Import Board should be able to see that wheat prices did not fluctuate more frequently, urge the writers of the Report, than petrol prices fixed by the great oil companies. Secondly, there is the danger that the Boards' actions might exaggerate rather than minimise the changes of price, for if an authority controlling the whole volume of purchasing were to hold off buying when prices were falling, the withdrawal of so large a demand would cause prices to decline still further. Thirdly, the use of the powers of the State to promote the interests of the British producers and consumers might lead it into controversy with foreign powers, diplomacy being called to the aid of business bargaining, and giving rise to fresh occasions of international friction. The force of these objections depends on how far the work of the Boards is conceived as an endeavour to use monopoly power to beat down the prices paid to foreign producers in the interests of British consumers, or whether their primary purpose is stability of price in the interests of British producers. If the former, then no doubt these difficulties are of importance. If the essential aim be stability, there should be support from overseas producers, for these, as the existence of the Canadian Wheat Pools and of the New Zealand Meat Export Board testify, are anxious for release from instable conditions. In so far as there is present amongst agricultural producers and their governments a desire for such stability, the political and other dangers do not seem so large.

Mr. Wise, besides suggesting purchasing boards in the interests of steadier prices to home producers, gave as an additional reason for their creation the fact that overseas farmers were all over the world developing co-operative selling organisations, and that in some

branches of the food trade, large commercial companies controlled the whole products. The English consumer is in danger of being faced by monopolies controlling all his imported foods and should endeavour to counter seller's monopolies by buyer's monopolies. Just as the chances of the monopolist producer in raising prices depend on whether he controls a large proportion of the total supply, so the powers of the buyer's monopoly in beating down producer's charges depend on the proportion of the total demand it controls. In this respect the English position is becoming steadily less favourable as the years pass, other industrialised countries now making claims on the world's exportable food surplus, thereby providing growers with an alternative market and reducing the proportion of the demand which could be manipulated by a British Import Board. The United Kingdom was once the only great consumer of imported beef, but since the war the situation has greatly changed. In 1913 we imported 477,000 tons of beef, whilst France, Germany, Belgium, Norway and Italy together purchased only 13,000 tons, so that we were practically in the position of "only buyers." In 1924, however, while our own imports had risen to 640,000 tons, those of the other countries had increased to no less than 400,000 tons and were rapidly expanding. The fact that the growth of alternative markets is making the supply to Great Britain more and more elastic raises doubts as to the possibility of a centralised purchasing authority reducing prices to any considerable degree, as distinct from stabilising them.

(9) Stabilising the Volume of Employment. It has been suggested that the State should ameliorate the variations in the volume of unemployment which are a feature of the trade cycle, by delaying and advancing the placing of contracts for public works. The proposal

was first made by Professor Bowley in evidence before the Royal Commission on the Poor Laws, 1901-05, and has since been developed by various persons. An examination of changes in the volume of unemployment in pre-war years shows that while the general average was about 5% it might vary from a peak of 7.5% in the worst years to only 2½% in the good years. Taking wages to be about 80% of the total spent on public works, if expenditure of £80 million were held over from the first three good years and spent in the next three, and if, further, £37 million were advanced in the seventh and eighth years, the wave of unemployment would be reduced to a practically uniform level. It is claimed that much of the public works undertaken by central and local authorities are of the nature that can be postponed or accelerated. In essence, the proposal is that the Government should exercise the control over the demand for labour it possesses as a consumer, to vary it in a contrary direction to that of the trade cycle, increasing it when the general business demand falls, decreasing it when the business demand rises. Much work is certainly not urgent in the sense that it must be done in a particular year, for example the building of schools, the extension of tramways, water works, electric lighting, road construction, telegraph and telephone extension, etc. It is probable that the total volume could be made to vary in an organised way, and in sufficient volume to bring a welcome alleviation to the wave of unemployment and distress, if the effects of postponing contracts are as claimed. It has been suggested that as the money for financing public works must come ultimately from the tax and ratepayers, these must have less to spend on private employment. Employment may be created by the Government, but only at the expense of diminishing the work which can be offered by private persons. This

objection implies that there is a fixed fund of capital available for developments by private and public enterprise, and that its use by one must restrict the amount available for the other. The matter is one of some controversy, but in the view of most economists this notion is unsound. It proves too much. For if the amount available is fixed, then the limitations apply also to private enterprise, and the commencement of any new works involving capital expenditure by one private firm could only be at the expense of work provided by other firms. The question turns on whether there are sources of savings which can be tapped for expansion. In prolonged periods of depression the State pays out large sums on poor relief and unemployment benefit, and some of the funds needed would be found by a reduction of these claims. Sums lent to foreign borrowers could be diverted to home use. Something depends on the relation of savings to investment and credit during different phases of the trade cycle, but for a detailed examination of this and other aspects of the problem, the reader is referred to the works named at the end of the chapter. The view of most experts is that if the practical difficulties are surmountable, some alleviation of the waves of unemployment is possible.

(10) The State can affect business by its methods of spending and raising money. One may suppose that there will always be some business men who will declare that the Government's expenditure is too high, however economical it may be, and that there will always be others ready to point to fresh objects of useful expenditure. Is there a limit to the amount the country can bear in taxation? Proof that a certain State expenditure would have useful results, say some writers, is not a sufficient justification for making it. Every item of expense beyond what is absolutely necessary to preserve

the social order and protect from invasion should be eliminated. The strict application of this test would not only prevent a country spending money on schemes of afforestation and social services, but would also deprive the public parks of their flower-beds and render impossible State processions at the opening of Parliament; most people would recoil from living up to so severe a maxim. Others declare that the country "cannot stand a budget of 800 millions a year"—though it is significant that this figure is ten times greater than that regarded by Gladstone as a conceivable maximum. Regard must be paid to the relationship of the total sum raised in taxation to the size of the national income, for a figure at one time excessive may become less burdensome with the progress of national wealth. Nor can the question of the total maximum be separated from the way in which the money is spent. £800 million spent wisely might be a much smaller burden than half that sum frittered away on irrelevant luxuries. There is a clear difference between spending on water and electricity and, to take an extreme example, offering free radio sets to all who care to apply. State expenditure is not a deduction from the national income, but a transfer from the taxpayer, by means of the State machinery, to others who may render services in return.

Taking some of the principal items in British national expenditure, one of the most important is the service of the national debt. A distinction must be drawn between paying interest on debts held in foreign countries (like the debt to America) and that held by individuals within the country. Payments in respect of internal debt involve only the transference of purchasing power from the taxpayers who provide the money to the debt holders, there being no loss to the country taken as a whole; but only a readjustment between its individual citizens. This

readjustment may be important in its effect on the distribution of wealth, for if the debt is held mainly by the rich, and the taxes are paid mainly by the poor, the inequality of wealth will be increased. Where, as in England, considerable sums are raised by taxes on large incomes this danger is not so marked, though it is not to be ignored. An external debt is a burden in a sense in which an internal debt is not, for the payment of interest and principal to the citizens of another country must in the last resort take the form of the exports of goods and services, and is a transfer of real resources.

Another large item is expenditure on defence. On this an economist can say little, except to observe that the hundreds of millions spent annually on armaments could be much more usefully employed in industry and in promoting social welfare. How far the item can be reduced depends on the progress of international pacification. The phrase which has been applied to it, "insurance against risk," is unfortunate, for insurance implies payment of a premium, and compensation if the event insured against, occurs: wars do not have such happy endings. The money spent on old age and war pensions may be regarded as an endeavour to maintain the consumption of certain persons whose standard of life would otherwise fall below a reasonable minimum. As the avowed purpose of this class of expenditure is to enable the recipients to spend the money on current needs, and the taxes to provide it are levied on the richer persons, on balance the total amount of saving is probably diminished. This statement must be qualified where the pension is an "insurance benefit," for part of the money comes from deductions from wages, and is the result of compulsory saving.

Expenditure on health, education and other social services may lead to increased efficiency, prolong the

working lives of the people, lessen the number of days' loss of work through sickness, and in other ways tend to increase production. It may also affect the distribution of wealth, for some, though not all of the expenditure will benefit the poorer members of the community more than the richer ones. The educational service by its scholarships system, may also increase the number of entrants to certain grades of employment which would otherwise be the preserve of the more well-to-do sections of the people who can afford to pay for the training of their children out of their own purse, and may thus tend to reduce the level of earnings in those callings. The current controversy as to whether more or less should be spent on "social services" arises partly from the fact that there is no means of measuring precisely the "return" for these services, in such a way that it can be compared with the sums disbursed. At any given point of time there is some limit beyond which any enlargement of the social services will directly or indirectly contribute to production less than the cost of providing and administering the service. This limit is narrower than is sometimes realised, for the beneficial results of social expenditure show themselves largely in the health, efficiency, skill, and other personal qualities of the recipients which do not appear until the lapse of an interval after the first expenditures are made. A large and sudden increase in the spending on these services might not add to productiveness and wealth immediately, and if the money for them had been diverted from other productive uses, or obtained in such a way as to discourage saving, production might for a time be diminished.

The effect of taxation on business costs depends on the methods used. Rates are based upon the rental value of the premises occupied, and in consequence do not

vary with alterations of output, so that the proportion they form of the cost of production falls with increased and rises with decreased output. They are indeed apt to rise in periods of bad trade, as at those times more money is required to relieve the distress caused by unemployment. Payments on account of Health and Unemployment Insurance, and Workmen's Compensation, do not usually come to more than two or three per cent. of the total cost of production, but the cost per unit of output may be important enough to affect competition. In the case of some steel products these items are said to account for from five to eight shillings per ton.

On the other hand income tax varies with the prosperity of the business, rising as it rises, and falling as it falls. What is the effect of a high income tax on prices? Is it passed on to the consumer? Or borne exclusively by the profit receivers? Does the tax make it less easy to compete in the export trade? Does it diminish people's willingness to enter into risky enterprises by taking away from them too much of the rewards for the risk-taking? Only an outline of the answers to some of these questions can be given here. Unless there were some alteration in the general conditions of demand, a rise in price would take place only through a diminution in the volume of supplies. This, it is argued, is exactly what happens with a high rate of income tax, for business men will calculate the rate of profit less the tax, and if the tax is very high, the residuum of profit may be so small that they may decide that it is not worth while to take the business offered. It is very doubtful if in practice many men can or will take this attitude to business opportunities. If the high rates of tax are continued for a considerable period, it is improbable that there will be a slackening of business efforts on this account. Just as there is rising a young generation to whom the talk of

their elders about pre-war prices is meaningless, because they had no experience of them, so even if the older men were discouraged by prolonged taxation, the younger generation of business men will be used to a lower scale of rewards, and will not be discouraged because they do not receive them on the older and higher scale. People get used even to high income taxes.

Does a prolonged high income tax affect people's willingness to invest money in the riskier lines of business? If people can get 5% without risk, and need 8% to make them invest in the types of business where the risks are larger, a 50% tax will diminish the difference between the returns by 1½%. Will this be sufficient to attract capital to speculative enterprises? If not, we should expect people to divert their savings from risky trades to the safer trades. In practice the present high rate of tax seems to have had a moderate effect in making investors and business men shy of big risks.

Note on Agricultural Marketing Schemes

The current agricultural Marketing experiments lend point to the prominence given to the theory relating to this topic on pages 103-105, 136-139, and 239-243, as well as to the theory of monopoly. The genesis of some of the schemes can be understood if the figures illustrating elasticity of demand in pages 104 and 134 are studied. It is clearly possible to increase the total proceeds accruing to any industry by raising the prices of its products, if the demand is inelastic, especially if, as in these two cases, there is statutory authority for keeping out new producers, or imposing penalties on extensions of acreage. It is possible to extend output by subsidies, either open or indirect, and to increase production if

competing imports are partly excluded, but it follows, as indicated on page 237, that production takes place at higher marginal costs.

Higher prices have been regarded as desirable, even if stimulated by monetary means, in the hope that they would restore profits, stimulate output, and so increase employment. But a rise in prices obtained by restricting output, as in some schemes, makes the means an end in itself, and by hypothesis does not increase employment but decreases it. Subsidised production may increase output and may increase employment, though if accompanied by technical improvement involving the greater use of machinery, may not lead to any substantial increase in the volume of employment. Maintaining the retail price of any commodity, *e.g.*, milk, must in some degree limit consumption, and may at the same time stimulate production, unless as with the wheat scheme, the aid takes the form of a bonus which declines as output increases after a certain point. If it does stimulate production, then other uses must be found for it at reduced prices.

These schemes have a variety of objects and use a variety of methods for obtaining them. Some of the general theoretical issues they suggest are indicated above, but a detailed study of the schemes is well repaid.

CONCLUSION

HAVING examined some of the instruments of control of economic life which the State has at its disposal, we can now ask if the tendencies and facts presented in the previous sections give any indication of the extent to which the organised efforts of the State are needed. It is clear that the British people are at a critical stage in their economic fortunes. After the long strain of the Napoleonic Wars, population greatly increased and wealth multiplied. The nineteenth century was a period of great strides both in methods of production and in organisation. Coal came into its own as a source of power, railways were constructed, machinery spread while chemical progress was immense. Savings increased. The mass of the people were better provided with food, clothing and shelter than ever before, and some of the most persistent economic insecurities were ameliorated. Apart from the ups and downs of booms and depressions, there was a steady rise in the real income of all classes. It was no wonder that the Victorians were complacent.

Once again at the end of a Continental war, we cannot but admit that the prospects are much less favourable. So far from showing any signs of the phenomenal increase of last century, the population is growing at a diminishing pace, and may even be stationary at about fifty millions in 1941. That in itself will make a profound change in English economic life. Without fearing any slackening in the world's inventive capacity, we can scarcely count on a series of inventions so revolutionary in character or so far reaching in consequences as those of last century; Victorian England was fortunate in having so many discoveries falling to its lot. Thirdly, the prosperity of England was partly built upon a priority of time in the

creation of the modern system of industry, and it enjoyed a temporary but profitable monopoly of factory-made products. At present, so far from being in a position of bargaining advantage in this respect, many of our staple industries are suffering under the competitive power of our one-time customers. If the standard of life is to be maintained and advanced, the nineteenth century advantages can no longer be relied upon, and our hope lies in organisation.

This general impression is confirmed by the study of our industries in detail. The recorded increase in the volume of production in the last census does not, when every allowance is made for price changes, show a very substantial rise since 1907, in spite of invention, and a large increase in the available mechanical power. At the same time the results of Government inquiries into some of our great staple industries leave one with a disquieting conviction of wasteful methods and bad organisation. No one can read the Coal Commission Reports of 1919 and 1926, or the Balfour Committee Reports on the Metal and Textile industries, without coming to this conclusion. A further complication is the change in the relative importance and distribution of our industries, what have hitherto been our "leading lines" of coal, cotton, shipbuilding, and engineering diminishing in size, while certain newer trades like motor car manufacture, chemical, and electrical industries are growing. Industries are either declining or tending not to increase so fast in the "industrial north" as in the area south and east of a line drawn from the Wash to Portsmouth. This change of distribution has revealed one unsuspected weakness in our industrial organisation, and that is in the mobility of labour. It is something that our official machinery for making it fluid is better than that of any other country, but it is

nevertheless true that migration to new trades and districts is taking place more slowly and with much more friction and distress than is desirable.

More disturbing are some of the wider forces affecting British prosperity. As indicated in the chapter on prices, Professor Cassel has estimated that, on the basis of pre-war experience, for prices to remain steady the gold supply should increase by about 3% per annum. If pre-war experience in this matter is valid under post-war conditions, Europe may be faced with a period of slowly falling prices, for the gold supply may not increase at that pace. How much a fall in the price level can hinder British business the past few years has shown all too painfully, but a crucial question is whether it will hinder us more than it does our international competitors? There is perhaps insufficient evidence to enable us to say precisely wherein the difficulty lies, but it seems that British business finds it more difficult to adjust its cost downwards than German or other Continental enterprise, and to this extent our competitive disadvantages may be increased. A second disquieting tendency is the great increase of American purchases of holdings in important British businesses such as electrical concerns, for it is shortsighted to give up control of "industries of the future" as these are, even for very good purchase prices.

While no detailed discussion of the wider issues of British economic policy is possible here, enough has been said to show how closely the future fortunes of business men are bound up with the favourable solution of these problems. It is incontestable that, whereas in the past, we have been able to rely upon an established lead, and because of the immensity of our resources to tolerate wasteful methods and defective organisation, circumstances have turned so much against us that it is only by

much closer attention to organisation, in individual firms, whole industries, and as an industrial nation, that we shall maintain the position which our recent past warrants us to expect. There is no doubt that in this task of readjustment the State has an important part to play, and we can look for an extension rather than a contraction of its economic activities. The reconciliation of new necessities with old individualistic habits will not be an easy matter. In helping us to change our ways of thought and shake off habits which belong to a vanished generation nothing can be more pertinent than an acquaintance with the weapons of economic investigation.

The general tenour of the Conclusion, which was written before the financial crisis and the abandonment of the gold standard in 1931, has been borne out by events. In particular, the reference to the perils of our rigidity and high level of costs has been too amply justified. Our loss of trade before that event was not due simply to the failure of war-impoverished Europe to buy, for we lost trade most in those countries which were not touched by the War; nor to the competition of countries with inflated currencies, for we lost trade to countries which did not inflate. Our own monetary policy was mistaken, but other countries which followed similar policies progressed more than we did. The defective organisation in our staple trades has been emphasized, but we did not secure the share of new trades which our industrial experience seemed to warrant. Rigid costs and inelastic methods must be blamed for some of our trouble. The departure from the gold standard has eased our problem by making in effect a flat rate cut in our costs, but the problem of these rigidities has not been squarely faced.

LIST OF BOOKS FOR FURTHER READING

1. General Economic Principles.

Good introductions to general economic theory are :—

E. and A. R. Burns' *Economic World*,

Marshall's *Economics of Industry* and Cannan's *Wealth*.

The standard larger works are Taussig's *Principles of Economics* and Marshall's *Principles of Economics*.

Wicksteed : *Commonsense of Political Economy*, Vol. I.

2. Particular Industries.

A number of recent Government publications contain much information on industrial organization and on particular industries. The reports of the Balfour Committee on Industry and Trade, and in particular the *Survey of Industrial Relations*, and *Factors of Commercial and Industrial Efficiency*, are mines of information on the general problems of industrial organization.

For the textile and metal industries, the two volumes of the Committee on these trades can be consulted. For the coal industry, the report of the Royal Commission on *Coal Industry* (1925) is invaluable. The report of the Royal Commission on Food Prices contains much information on the commercial organization of the food trade.

3. Part I.

The best work on the organization of labour is P. S. Florence's *Economics of Fatigue and Unrest*. The report of the Health of Munition Workers Committee also contains results of investigations up to the date of its publication. Myer's *Mind and Work*, Gilbreth's *Primer of Scientific Management* and Muscio's *Psychology and Industrial Efficiency* deal with various aspects of scientific management. Hoxie's *Scientific Management and Labour* explains the trade union attitude. The economic theory relating to saving and the rate of interest can be found in works noted above. For the organization of companies, Dickee's *Business Organization* should be consulted, while J. A. Hobson's *Evolution of Modern Capitalism* (revised edition) contains a study of the relations of companies and directors. Students should consult the Stock Exchange Year Book, for information on the public companies in which they are interested, and should work out their relations with other companies, either directly or indirectly, by consulting the Directory of Directors, which gives for each director a list of the other companies with which he is concerned. Meade's *Corporation Finance* and Lavington's *English Capital Market*, chapters XXVIII and XXIX discuss company promotion.

For the organization of the money market, the best work is that of Lavington. Withers' *Meaning of Money* and *Stocks and Shares* are readable introductions. Gregory's *Return to Gold* is the best

introduction to currency theory. On overhead costs and their relation to fluctuations of output the best source is J. M. Clark's *Overhead Costs*, which contains both critical analysis and interesting American examples. Beveridge's *Unemployment* examines the problem of seasonal fluctuations from the point of view of employment. For the trade cycle Lavington's *Trade Cycle* can be followed by the larger works of Wesley Mitchell on *Business Cycles*, Robertson's and Pigou's books on *Industrial Fluctuations*. These works contain discussions on the changes of price level and other important aspects of the trade cycle not dwelt upon in this book. Allen : *Organization of British Industries*.

PART II.

Secrist's *Statistical Methods* and Mills' *Statistical Methods* discuss the principles of index numbers. For the theory of value in competitive monopolistic conditions, the books on general theory noted above should be consulted. The works on trade combinations, Fitzgerald's *Industrial Combination in England* is the best recent course. This should be compared in tone with Macrosty's *Trusts and the State*, which is more hostile. The report of the Committee on Trusts, 1919, contains details up to the date of the report and an interesting memorandum on the theory relating to trusts. E. Jones' *Trust Problem in America* is an able examination of trust claims to have promoted technical and commercial efficiency. Urwick's *Rationalisation*, which states the general case, should be supplemented with Meakins' *New Industrial Revolution*, which gives the results of German experience. On differential charging Clark's *Overhead Costs* is invaluable. Acworth's *Railway Economics* is the best short account of railway practice in this connection. Sherrington's *Economics of Railway Transport*, Vol. II, is a later book, and covers a wider range of topics. Viner examines the theory and practice in relation to foreign trade, in *Dumping*. On unfair practices Davis' *Trust Laws and Unfair Competition* is the best source. The report of the Royal Commission on Shipping Rings, 1909, contains an account of the rebate system. Information on particular points can be found in the report of the Imperial Shipping Committee on the *Deferred Rebate System*, and on freight rates in the Canadian flour and New Zealand trade. The results of enquiry into particular trades can be found in the reports of the Profiteering Committees set up after the war. In particular the reports on the Cut Nails Association, Glass, Tobacco, Uniform Clothing, Cable Making, and the two reports on Cotton Thread should be read. Fetter : *Masquerade of Monopoly*. For advanced students, Chamberlin : *Theory of Monopolistic Competition*.

PART III.

The best books on marketing are American. A useful general account is Clark's *Principles of Marketing*. The reports of the Empire Marketing Board, and of the Ministry of Agriculture contain useful information, especially the reports on *Large Scale Co-operative Marketing in the United States*. *The Marketing of Wool, and The*

Marketing of Potatoes. J. G. Smith's *Organized Produce Markets* is the best account of the speculative produce markets, and contains a critical discussion on the utility of futures, and the relation to future prices. Webb, in *Industrial Democracy*, Part III, chapter ii, argues that the seller is always at a bargaining disadvantage with the buyer. Dunlop, in the *Economic Journal*, September, 1929, analyses the costs of retailing. Information on this point can also be found in various chapters of the Food Commission's Report and in *Further Factors of Industrial and Commercial Efficiency.* On co-operative sale, Fay's *Co-operation at Home and Abroad*, and Webb's *Consumers' Co-operative Movement* are the best sources.

Neal: *Retailing and the Public*; Braithwaite and Dobbs: *The Marketing of Consumers' Goods.*

On agricultural marketing, the reports of the Ministry of Agriculture relating to the marketing of various products, e.g., Report of Milk Reorganization Commission.

PART IV.

The theory of wages can be found in any general works on Economics. Rowe's *Wages in Theory and Practice*, and Hamilton and May's *Control of Wages*, examine the possibilities of trade union action. For methods of wage-payment, Cole's *Payment of Wages*, and Emsley's *Factory Costs*, are the best sources. On trade unionism, Lloyd's *Trade Unionism*, and Cole's *Organization of Labour*, are the best introductions. For more detailed study, Webb's *Industrial Democracy*, and *The History of Trade Unionism* should be consulted. A. Milne-Bailey's *Trade Unionism Documents* is an invaluable collection of documents relating to the organization and policy of trade unionism.

Burns' *Wages and the State* and Sell's *British Trades Boards System*, examine the principles and practice of wage regulation. See especially chapters XII to XVIII of the former, which discuss the principles on which the basic wage is determined.

On the problem of industrial peace, the discussion in the books on trade unionism noted above should be supplemented by the relevant chapters in Pigou's *Economics of Welfare* and Askwith's *Industrial Problems.* The report of the Committee on Industrial Unrest, 1927, on South Wales, was a notable contribution to the general problem. This can be followed by the South Wales Regional Survey. *Labour Supply and Regulation*, by Wolfe, gives the British experience of wartime control of labour. Lord Amulree's *Industrial Arbitration in England* discusses the possibilities of the Industrial Courts.

Dobb: *Wages.* Hicks: *Theory of Wages*, is suitable for more advanced students. Hutt in *Theory of Collective Bargaining* is inclined to deny that union activity can benefit workers as a whole; but some parts of the argument must be read critically: For advanced students, Zeuthen: *Problems of Monopoly*, chapter IV, on "*Economic Warfare*" and Robinson: *Imperfect Competition*, pp. 22 and 23.

PART V.

Pigou's *Wealth and Welfare* contains many interesting chapters on theory relating to different kinds of state authority. The annual reports of the Ministry of Labour give an account of its work in connection with insurance, trade disputes and employment. Seymour's *British Employment Exchanges* and the report of the Committee on Industrial Transference, gives information on the present organization of the exchanges and the problem of mobility. On the stabilization of prices, the Ministry of Agriculture's report on *The Stabilization of Prices* should be consulted. Mr. Wise's proposals are dealt with in the report of the Royal Commission on Food, and are given in detail in the evidence. It can also be found in a pamphlet published by the Independent Labour Party. Proposals for the stabilization of employment can be found in *Is Unemployment Inevitable?* edited by W. T. Layton. Some objections are considered in Henderson and Keynes' *Can Lloyd George do it?* The theory relating to public finance can be found in Dalton's *Public Finance*. The examination of the present position is found in the report of the Colwyn Committee on the "National Debt".

Loveday: *Britain and World Trade*, especially the chapter bearing that title; *The Report of the Macmillan Committee on Finance and Industry*, Cmd. 3,897; and Robbins: *The Great Depression*. On the Agricultural Experiments, see Orwin: *The Agricultural Register*, 1934; and Astor and Murray: *The Planning of Agriculture*. In view of the growing importance of public utilities, e.g. London Transport, see Glaeser: *Outlines of Public Utility Economics*.

4. SELECT BIBLIOGRAPHY ON INDIAN TOPICS.

Dr. Lokanathan's *Industrial Organisation in India* (George Allen & Unwin Ltd., 1935) gives an analysis of the Managing Agency System. The reports of the Indian Tariff Board on various industries in India also contain much information on the working of the Managing Agency System.

The reports of the Indian Central Banking Enquiry Committee (1931) and the Bombay Provincial Banking Enquiry Committee (1929-30), discuss the problem of the supply of business finance in India.

The report of the Royal Commission on Agriculture in India (1928) and the several reports issued by the Marketing Adviser to the Government of India throw considerable light on the problems of marketing of agricultural products in India.

For a more intensive study of the problems of Indian labour, reference may be made to the Indian Labour Year Book issued by the Government of India and to B. Shiva Rao's *Industrial Worker in India* (George Allen & Unwin Ltd., 1939) as well as to *Industrial Labour in India* (The International Labour Office, 1938).

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