PURCHASING POWER AND TRADE DEPRESSION
A CRITIQUE OF UNDER-CONSUMPTION THEORIES

by

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CONTENTS

FURTHER TABLE OF CONTENTS

FURTHER TABLE OF CONTENTS

PREFACE

THIS work was begun in the autumn of 1929 when I was elected to the Senior Webb Medley Scholarship in the University of Oxford. For the academic year 1929–1930 I also held the Ricardo Scholarship at University College in the University of London. Since then I have been an Assistant at the London School of Economics and Political Science. I have to thank the Trustees and Electors of these bodies for making the execution of this work possible.

A considerable proportion of my time has been given to the study of the earlier forms in which the theory of under-consumption has appeared, and I have accumulated a great deal of textual work upon the writings of Malthus, Ricardo, Say, and Sismondi, bearing upon the subject. The results of this work are available for any student of economic science to whom they may be useful. As I became more interested in the modern forms of the theory and in their relation to public opinion on the one hand, and in the more complex theories of monetary circulation on the other, I became convinced that it would obscure the things I wished to say if I included any of this historical material in the

present book. Hence the first part of the book is concerned solely with the examination of the modern forms of the theory, and the second with my attempt to solve some of the more positive problems to which my rejection of the under-consumption theory at once leads. Some opportunity may occur in the future which will enable me to publish the results of my reading in the earlier literature.

In the first part of the book I have considered as carefully as I can the large body of work which is associated with the well-known names of Mr. J. A. Hobson, Messrs. Foster and Catchings and Major C. H. Douglas, and which has had and is still having such a great influence on contemporary public opinion. I have not found it possible to agree with these gentlemen, neither with their analysis of the monetary mechanisms of modern society, nor with the practical proposals to cure industrial depression to which their analysis leads. This leaves the problems of monetary circulation and the cause and cure of trade depression to be dealt with in the second part of the book. In Chapter V I have attempted the first of these positive tasks. I have tried to offer an explanation of the monetary processes involved in the alternation between prosperity and depression. Finally in Chapter VI I have stated very shortly

my view as to the nature of the banking policy which should be pursued if these variations in productive activity are to be avoided. I am perfectly aware that this is the least detailed and satisfactory part of the book. All that I have been able to do in the space and time available is to state what I believe to be the correct general principle of monetary policy and not to explain its detailed application to existing banking systems or to defend it from the various theoretical criticisms to which I know it will be subjected. To perform these two tasks satisfactorily would have involved writing a third section of the book as long as either of the existing parts on the general theory of credit policy, and thus turning the book away from its original purpose. But I shall hope to complete this unfinished task as soon as possible and make apparent the full reasoning behind, and the detailed meaning of, the solution to the problem of credit policy which I believe has been brought within our reach by the varied work on monetary theory which has been published in the last few years.

In writing this book I have been greatly aided by other people. My debt to my friend Hugh Gaitskell, who has read the manuscript and suggested the majority of the alterations that have been made in it, is greater than I can acknowledge.

I have also to thank Professor Robbins and Professor von Hayek for reading the book and criticizing the views contained in it, although I have been unable to accept all the suggestions which they have made. I have finally to thank my wife for helping me in the revision of Part I and for seeing the book through the Press. My debt to the written work of Mr. Robertson, Mr. Keynes and Dr. Hayek is too obvious to need any special acknowledgment.

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London School of Economics
November 1932

NOTE TO THE SECOND EDITION

I HAVE tried to fill one of the obvious gaps in the book by adding a new section to Chapter IV examining in greater detail the contribution which I believe the recent analysis of the relation between Saving and Investment makes to our understanding of the causes of trade depression.

E. F. M. D.

To

Lionel Robbins

PART I

CHAPTER I

THE CENTRAL THESIS OF THE UNDER-CONSUMPTION THEORY

§1

ONE of the most dangerous by-products of a period of depression is the crop of false economic theories which win popular credence and gain political support. It is common knowledge that since the middle of 1929 the world has been overwhelmed by another of those great industrial recessions which periodically visit the existing economic system. Every national economy has experienced the disorganizing effect of a sudden and severe fall in the level of prices and has consequently become burdened with a rising tide of loss, bankruptcy and unemployment. This book is concerned with one of the theories which seeks to account for these disastrous crises.

As in all previous depressions the commonest explanation which is offered to the mass of thinking people is some form of the under-consumption theory. In the last two years this theory has grown like a forest of mushrooms about us. It

claims far more adherents than any other theory, and the voices of those who believe in it drown all other counsel in the ears of democratic peoples. Trade Unionists and employers alike, and even the authority of the Church itself are enlisted to support the demand that the purchasing power of the people shall be reinforced. At least one organization exists for the sole purpose of advocating this policy, and conducts a continual and forceful propaganda in a striking and peculiar uniform.

It may be useless to seek to stem so powerful a tide by a single academic essay, but the activities of intellectual explanation cannot be limited by the bounds of common prejudice, and it is the business of this book to examine the intellectual grounds upon which the popular theories of the moment are founded. In the first part of this book I shall be concerned to state and criticize the theory of under-consumption itself. In the present chapter I propose to examine the theory in greater detail, and to discover the main steps by which it seeks to explain the phenomenon of industrial depression. In the next chapter I propose to criticize the existing theory and to explain the reasons for which I hold that such views in all their existing forms are unacceptable to pure reason. Then, in the last chapter of the

first part of the book, and the first chapter of the second part, I shall attempt to explain and then to defend the one important contribution which I think these theories have made. Finally, in the last two chapters I shall venture upon a short account of the general lines along which I believe that the true explanation of periodical depression is to be found, and to review the policies by which it might be cured.

Let me emphasize at the very outset the extraordinary intellectual difficulty of the matter with which this book is concerned. I hold that certain forms of the under-consumption theory are demonstrably wrong, but I cannot extend this scepticism to a positive dogmatism. It is impossible to argue that the more intricate analysis of monetary circulation has passed into the stage of generally accepted dogma, when gentlemen of distinction and intellectual penetration hold irreconcilable opinions with religious fervour. I have attempted to set forth a process of reasoning and a picture of monetary circulation which I hope is capable of throwing some light on the questions raised by the theories of under-consumption and the process of saving; but I do not for the moment believe that this analysis is valid in all its parts. Further reasoning and more profound imagination will amend and remodel the conceptions with

which I have worked and the conclusions at which I have arrived. It is only by this process of creative destruction that the inward labour of the mind can bring its clear fruits to the light of day, and the tireless growth of human reason imposes upon us all the harsh and salutary law of impermanence.

§2. THE CENTRAL THESIS

What is the general thesis of the under-consumption theory? In all its forms it consists in the statement that the industrial system does not provide consumers with sufficient purchasing power to enable them to buy all the products of industrial activity at profitable prices. There is, according to the theory, *a deficiency of purchasing power, a shortage of consumers' income*, in advanced capitalist societies. I am concerned to ask in this book whether there is any truth in this view. Does the industrial system fail to provide sufficient purchasing power for the purchase of its own products?

The outline of the main argument by which the under-consumptionists seek to prove their thesis is very plausible. They all begin by analysing the conditions of the market for consumption goods. This market, they hold, is the key point

in the industrial system. If all is well there, the complex structure of industry, which is piled up behind this market to serve it, will run smoothly. If the sale of bread or of boots to consumers is proceeding with a constant profit, then the production of milling machinery and boot-making machinery, of the agricultural products and the output of the mines and of the distributive industries, will all work with harmony and efficiency. But if the sale of the final products of the complex whole is frustrated or curtailed the system will suffer sympathetically in all its parts.

Periods of depression are associated with such a frustration in the selling activity of the industrial system. They are preceded and accompanied by severe falls in the general level of prices, and such falls are the proximate cause of unemployment and economic disequilibrium. Why do these falls take place? They must, according to the theories we are examining, arise from a deficiency of consumers' purchasing power. They would not arise if the amount to be spent upon finished commodities were greater. If the amount to be spent were larger than it is, the market for finished goods would expand, the market for all the commodities required for the manufacture of finished goods would grow larger, and so prosperity and employment would increase in every

part of the industrial machine. How then can the amount spent upon finished products be made greater?

The funds spent upon consumption goods originate from the income of the final consumers. But in an advanced economic society consumers only spend a portion of that income upon finished commodities. Part of their income they save. This, according to the under-consumptionists, is where the trouble begins. Saving is a peculiarly dangerous and self-defeating process, for it withdraws money from the purchase of finished commodities and makes their production less profitable, while at the same time it seeks to set up still further capital resources with which the production of finished commodities is to be increased. It is this paradoxical process which makes a deficiency of purchasing power inevitable. It increases the supply of and diminishes the demand for the products of the industrial system to the point at which production cannot be continued any longer with profit and at that point crisis and depression begin. Hence depression can always be prevented and relieved either by reducing the amount of saving or by stimulating consumption by the issue of new money. Arguments of this type are the main basis for the present campaigns for inflation.

This is, in the roughest possible outline, the main argument of under-consumption theories. It will be seen at once that the theory of under-consumption is not concerned with the problem of the value of money, or that of banking and monetary organization, but wholly with what I should term the theory of monetary circulation. That is to say, it is concerned with the way in which money moves through the economic system and the effect which it exerts on the prices of commodities in the course of its endless movement. According to these theories the critical point in this circulation is the market for consumption goods; the point at which the final products of the industrial process meet the volume of money expended by the consumers out of the income with which the industrial process provides them. And, as we have seen, the under-consumptionists hold that it is the occurrence of saving which disturbs equilibrium at this point, and causes loss to appear.

The theories themselves are extremely varied and numerous. It would be impossible to describe them all. Instead, I propose to select passages only from the most famous of them, particularly from the work of Malthus, Mr. J. A. Hobson, and Messrs. Foster and Catchings, to illustrate and expound the argument which is

common to them all. The argument falls naturally into three steps which I shall illustrate in the following pages. These steps consist in the first antithesis between spending and saving, the deduction from this antithesis of the effect which saving will have upon the price level of finished commodities, and the conclusion that prosperity depends upon diminishing the amount of saving or reinforcing the purchasing power of the consumer:

1. *The antithesis between spending and saving.*

All the theories, as we have seen, begin by drawing a sharp distinction between spending and saving.

> 'The money income received by any person engaged at any point in the industrial process as worker, capitalist, landowner, is composed of these payments made to him for single uses of some factor of production, and is seen to come out of a fund which flows from the consumer. The total money-income of this industrial community would in this case be equivalent to the aggregate of money expended by consumers for commodities which would be distributed, as we see, throughout the industrial world in payments for the use of labour, capital and land so as to maintain these factors and keep them in productive operation. The real income of the community would consist of the aggregate of commodities which passed into the hands of

the consumers, or, in other words, the goods purchased for consumption by the recipients of the money-incomes.'[1]

'If provision is to be made for commodities to meet the growing needs of an increasing population, the industrial system must be enabled to set up along all its productive channels an increased quantity of the instruments of production; before a larger variety of shop goods can be sold at a faster pace over the retail counter to an increasing number of customers, more capital and labour must previously have been set in operation at each of the processes of production.'

'Now in the modern industrial world there is only one way of bringing this about. *The whole money-income of the community must not be expended in buying finished commodities at the end of the industrial process for consumption; some of it instead must be expended in paying workers to make and set up more plant, machinery, etc., than existed before at the various points in the main stream and the tributaries of production,* and to use this increased capital to work up raw materials in the different productive processes, so as to be able to put into the shops of retailers a larger flow of commodities to be sold by them to consumers.'[2]

'Furthermore, even if producers disbursed all

[1] Hobson: *Industrial System,* p. 45.
[2] Ibid. p. 48.

their profits and all other incomes, and even if they acted promptly enough — which is impossible since profits cannot be distributed until after they are realized — there would still be a deficiency of consumer buying; for consumers must save, and usually they save in ways which increase the output of industry. *Thus a part of the corporate income which is received from consumers and returned to them, as wages, rent, interest and dividends, is used by them not to purchase goods, but to bring about the production of more goods;* and every dollar which is thus saved, instead of spent, increases the initial deficiency.'

In these passages we have the general underlying picture of monetary circulation. Moment by moment there is a stream of money income which is at once:

1. The total income of all consumers;

2. The total possible sale price of all finished commodities;

3. The 'costs of production' disbursed by the industrial system.

Moment by moment this stream is divided into two parts, one of which is 'spent' and is directed towards the current output of consumption goods; the other of which is saved, and is available for a subsequent process of investment, whose purpose is to increase still further the *production* of Con-

[1] Foster and Catchings: *Profits*, pp. 399-400.

sumption Goods. Hence the general effects of those two types of expenditure are diametrically opposed:

> 'This, however, is not a crucial distinction between money invested and money spent. *Far more important is the fact that money spent is used first to take away consumers' goods, whereas in many cases money invested is used first to produce more consumers' goods.* And when individual income is invested, and thus used twice in succession to bring goods to market, it creates a deficiency in purchasing power . . . To prevent such a deficiency, to maintain the balance between production and consumption, and thus to make sustained prosperity possible, money which is used in the production of goods must be used in the consumption of goods before it is again used in the production of goods; or the effect of such use on the annual equation must be offset in some way. In short, whenever money is used twice in succession to produce goods, as it is in many cases when individuals invest their income, it is doing its part, as our cases show, to stock the market beyond the capacity of consumers to buy at current prices.'[1]

2. *The effect of saving upon the price level of finished commodities.*

Having made clear the crucial distinction between spending and saving, the theories go on to

[1] Foster and Catchings: *Profits*, pp. 284, 285.

isolate and emphasize the effect of this process of saving upon the price level of consumption goods in particular. It forces this price level down by operating on both sides of the exchange between goods and money, first by causing a relative diminution in the money directed towards the purchase of consumption goods, and secondly by increasing the physical resources for producing them.

'How it operates is quite clear. If we suppose the stable society to become progressive, saving so as to provide for increased consumption in the future, what will happen is this. Some of the money which was regularly applied in bringing retail goods will no longer be applied there; and the retailers having less custom (*i.e. a lower price level*) will reduce, as far as they can, their expenses, employing less capital and labour, etc., and handing on less money to wholesale merchants in fresh orders. The merchants, finding their business similarly slack, will also curtail expenses and reduce their orders from makers; and so the reduction of spending will cause a general slowing down of all the industrial processes, both along the main stream and down the tributaries. This is what happens as the direct effect of a reduction of spending upon commodities. But, as we have recognized, saving (as distinct from hoarding) does not mean a refusal to apply the money stimulus, but only a refusal to apply it at the retail stage in "demand" for commodities. The "saving" persons who

reduce the "demand" for commodities apply the same quantity of "demand" at various interim points in the industrial process. They pay more money for developing new mines, they place contracts for putting up more mills and workshops, they give more orders for machinery. In other words, instead of applying all their money they apply some of it so as to set up more forms of plant, etc.

'The first effect of saving, which alone concerns us just now, is thus seen to be a slackening of the former even circulation of money and stimulation of industrial energy, and a substitution of an enhanced circulation and stimulation in certain parts of the industrial system in preparation for a general increased flow of productive energy towards commodities. . . .

'*Spending means buying commodities with income; saving means buying productive goods or instruments with income. Spending causes more commodities to be produced; saving causes more forms of capital to be produced.*'[1]

'But seldom do men intentionally invest in useless facilities; as a rule they increase their facilities in order to increase their production, and as a rule they succeed. The question as to what happens to the annual equation when they do succeed is, therefore, of major importance. What actually happens under the assumed conditions will be evident if . . . we allow our

[1] Hobson: *Industrial System*, pp. 49, 50. Italics mine. E.F.M.D.

Corporation in the following year to pay no dividends, but to use its profits to increase both its capital facilities and its output. Since total receipts are thus paid out as wages, and since the increased output is not put on the market until the following year, all goes well; supply and demand balance as before, and the price level is still 100.

'*In the following year, however, when the increased output is ready for sale, there is no possibility of selling the entire output at the current price-level, even though the Corporation returns to consumers all the money it receives from them . . .*'

'At this rate, year after year, the stocks of unsold goods will become larger and larger, since each year consumers can buy no more than the original output.'[1]

'National saving, therefore, considered as the means of increased production, is confined within much narrower limits than individual saving. While some individuals continue to spend, other individuals may continue to save, to a very great extent; but the national saving, in reference to the whole mass of producers and consumers, must necessarily be limited by the amount which can be advantageously employed in supplying the demand for produce; and to create this demand there must be an adequate and effective consumption either among the producers themselves or other classes of consumers.'

[1] Foster and Catchings: *Profits*, 1st ed. pp. 278–79.

'*Almost all merchants and manufacturers save, in prosperous times, much more rapidly than it would be possible for the national capital to increase, so as to keep up the value of the produce.*'[1]

Now these conclusions cannot be disputed. It is a mere arithmetical truism that saving will reduce the price level of consumption goods below what it would have been had that saving not taken place. At any moment there is a physical output of consumption goods of a certain size, and a total consumers' income of a certain size; and it must be true that the larger the fraction of this income which is saved, the lower must be the price level of the current output of consumption goods relatively to what it would have been had a smaller fraction been saved. The price level must always be relatively lower than it would have been had no saving taken place. But does this causal connection between the rate of saving and the *relative* height of the price level of consumption goods entail the conclusion that an increase in saving must necessarily, under all conditions, reduce the *absolute* price level of consumption goods? The analysis of the under-consumption theories is not unequivocal on this point, but the truth is not far to seek. The relative decline in the price level which is inevitable if the rate of saving rises, will only take the form of an

[1] Malthus: *Principles of Political Economy*, 2nd ed. pp. 400-401.

absolute decline if the quantity of money and the quantity of consumption goods remains the same. If either of these changes the same conclusion does not follow. If at the moment at which the fraction of consumers' income which was being saved increases the income out of which the increased saving was being made also rose by a corresponding fraction, it is obvious that the absolute amount of money spent in consumption goods need not change.[1] In such a case the price level of consumption goods is relatively lower through the increase of saving, because the price level has not risen; but it has suffered no absolute decline. In the same way, if the output of consumption goods contracted at the moment when the increase in savings reduced the quantity of money directed to their purchase, their price level would not fall. But if neither of these conditions is fulfilled, and it is obvious that there will be no tendency for the output of consumption goods to fall until after the increase in saving has reduced their price level, then the *relative* decline in price level of consumption goods will take the form of an absolute fall in prices. In short, unless the quan-

[1] If, for example, the consumers' income was 100 units of which 10 per cent was saved, then 90 units would be spent on consumption goods. If, then, when the rate of saving rose to 20 per cent the income rose by 12½ per cent to 112½ units, then the amount spent would still be 90 units, which would mean a constant price level if the output of consumption goods did not at once decline.

tity of purchasing power is increased, an increase in the rate of savings will produce an immediate fall in the price level of consumption goods; a fall which will be accentuated by the subsequent investment of savings in the production of more consumption goods. It is from this point that the theories of under-consumption continue.

3. *The disharmony of a falling price level and the conception of a maximum safe rate of saving.*

It is a familiar conception of economic science that a falling price level will be associated with disequilibrium. Costs do not fall as easily as prices. It may take years to reduce rents and fixed interest charges, and almost as long to reduce wages. In the meantime losses are incurred by entrepreneurs, and there is no alternative, after a period, except to reduce output. Hence the next step in the general theory of under-consumption leads to the idea that the Rate of Saving must never be sufficiently great to cause an *absolute* fall in the price level of consumption goods.

> 'For just as it is clear that waste ensues unless some accurate proportion is kept between the amounts of capital, skill and labour placed in the several productive processes required for converting raw materials into finished goods, so there is waste if these finished goods are not effectively demanded and consumed as fast as

the productive processes enable them to pass into the form of finished goods. In other words, consumption is simply the final link in a chain of economic processes, each of which should be kept in accurate proportion to the preceding ones, unless stoppage and waste are to occur . . . Having regard to the current condition of the arts of industry, there will be a just balance both between the productive power applied at the respective stages of production on the one hand, and between the quantity of purchasing power applied to buy the bread or boots, and the quantity applied to maintain and improve the productive processes as a whole, upon the other hand. And what applies to any kind of commodity applies to commodities in general. In the use of the current income there must exist, at any time, an economically right proportion between expenditure in withdrawing commodities from the retail shops for consumption, and expenditure in maintaining and enlarging the plant and materials functioning in each stage of production. Or, putting it otherwise, saving and investment for enlargement of production are only economically valid on condition that the enlarged production is accompanied or soon followed by a proportionately enlarged consumption. In the last resort the rate of saving (in this sense) must bear an accurate proportion to the rate of spending.'[1]

'In our day, consequently, we can continue to raise the standard of living only so long as

[1] Hobson: *Economics of Unemployment*, 1st ed. pp. 37-38.

increased per capita production induces them (the consumers) to buy the increased output; *sufficient, that is to say, to buy the increased output without a fall in the price level.* From now on we shall have much to say about adequate consumer purchasing power. Always we shall mean a flow of money sufficient to buy the output of industry *at the prevailing general level of prices.* We here make that qualification once and for all.'[1]

This is the underlying idea of this whole way of thought. *Any* fall in the price level of consumption goods will involve disequilibrium and unemployment in the last stages of production. As a result of this blocking of the final market for productive activity, the remainder of the system will be choked and ruined. The decline in the demand for, and in the output of, consumption goods will check the demand for capital, and it will be impossible to make use of the new capital resources which the increase of saving would otherwise have made available. If full employment is to be maintained, it is essential to prevent the consuming public from saving enough to endanger the stability of the price level of consumption goods. There is a certain maximum rate of saving which must not be exceeded: all this is the universal text of under-consumption sermons.

We are in a position to see, as a result of our

[1] Foster and Catchings: *Profits*, 1st ed. pp. 234-35.

previous analysis of the relation between saving and the absolute price level of consumption goods, that any increase in the rate of saving *will* involve this absolute fall in prices, unless the increase of saving is offset by a suitable degree of monetary inflation. The under-consumptionists themselves arrive at this conclusion:

> 'This then is the conclusion of our argument: Progress toward greater total production is retarded because consumer buying does not keep pace with production. Consumer buying lags behind for two reasons: first, because industry does not disburse to consumers enough money to buy the goods produced; second, because consumers, under the necessity of saving, cannot spend even as much money as they receive. There is not an even flow of money from producer to consumer, and from consumer back to producer. The expansion of the volume of money does not fully make up the deficit, for money is expanded mainly to facilitate the production of goods, and the goods must be sold to consumers for more money than the expansion has provided. Furthermore, the savings of corporations and individuals are not used to purchase the goods already in the markets, but to bring about the production of more goods. Under the established system, therefore, we make progress only while we are filling the shelves with goods which must either remain on the shelves as stock in trade or be

sold at a loss and while we are building more industrial equipment than we can use. Inadequacy of consumer income is, therefore, the main reason why we do not long continue to produce the wealth which natural resources, capital facilities, improvements in the arts and the self-interest of employers and employees would otherwise enable us to produce. Chiefly because of shortage of consumer demand, both capital and labour restrict output, and nations engage in those struggles for outside markets and spheres of commercial influence which are the chief causes of war.'[1]

'*The greatest economic need, therefore, is a flow of money to consumers, which, after providing for savings, would always be approximately equal to the flow of finished goods.* The certainty that people would have enough money to buy total output, no matter how large it might be, would be sufficient to induce both employers and employees to increase the output, year after year, for the very good reason that higher real wages and higher real profits would depend mainly on increased output. *If, to the highly efficient system which now provides money for production, we could add an equally efficient system for providing money for consumption, we could make rapid and sustained progress toward realizing the potential output of industry; rapid progress, therefore, toward higher standards of living.*'[2]

[1] Foster and Catchings: *Profits*, 1st ed. p. 409.
[2] Ibid. p. 406.

Equilibrium is only to be preserved if the income of final consumers is allowed to increase as the productive resources of society increase, so as to maintain the price level of consumption goods constant. The theories of under-consumption subscribe to uncompromising price stabilisation policies, and are the main force behind the present widespread demand on the part of the organs of democratic opinion that the banking systems of the world should be compelled to pursue a policy which has only this end in view. It is this which gives such a great contemporary significance to an examination of the arguments upon which these demands are founded.[1]

But before we turn to this critical examination it is necessary for us to describe a type of theory which, while falling within the 'Under-consumption' group, is so peculiar in form and so extreme in its conclusions, that it must receive separate treatment in the next section.

§ 3. THE DESTRUCTION OF PURCHASING POWER

All the theories from which I have quoted so far have one common characteristic of moderation.

[1] I am not arguing that all those who advocate 'inflation' and 'reflation' and 'price stabilisation' policies are under-consumptionists, but only that the theory is the basis of the main *popular* demand for monetary inflation.

They do not seek to deny that if a sufficiently small percentage of the total money income is saved, or that if nothing is saved, an equality between costs and prices can be maintained. In this they differ from a large group of more extreme views which I am about to describe and which hold that *even without any saving* there are certain parts of the total costs of consumption goods which cannot enter into the income of final consumers, so that perpetually the price of consumption goods must fall further and further below the costs of producing them. These theories hold that apart from saving, the existing economic system *destroys* part of the purchasing power necessary to cover the costs of production, so that unless there is a constant creation of new money it is impossible to maintain the sale of even a constant output of consumption goods. Once more it is impossible to set forth in detail more than a few examples of these peculiar views, but I have made selections which will throw light on the type of reasoning contained in them all.

1. *Lt.-Col. Powell and the Flow Theory of Economics.*

Lt.-Col. Powell tries to demonstrate that a certain selected list of the money payments made by producers cannot enter into the income with

which the consumption goods are to be bought; some can never enter into it, some cannot enter in time. Thus he writes:

'. . . Incomes (or Purchasing Power) must be at least equal to prices, in order that goods and services may be absorbed as fast as they are produced.'[1]

'Purchasing power, or income, is made up, as we have seen, of wages, salaries and dividends or profits. Now it is clear that no *dividends or profits* can normally be actually *distributed*, so as to become available as purchasing power, until they have been received by the sellers of goods. But profits are changed into selling prices at the time sales are made. The result is that if a quantity of goods, priced let us say at 100 units, contains say a profit of 20 units, up to the moment of selling only 80 units will have been actually distributed as purchasing power. The remaining 20 units will become available as purchasing power only after *all* the goods are sold and paid for.'[2]

'. . . it is well-known that very few businesses to-day can or do carry on their affairs without bank overdrafts, either temporary or more or less permanent. Hence nearly all businesses must provide for the item of *bank interest* as an intrinsic part of costs. In other words, bank interest forms a definite part of prices, at any rate in the majority of cases. . . .

[1] Lt.-Col. Powell: *The Flow Theory of Economics*, pp. 1-2.
[2] Pp. 12-13 (italics mine, E.F.M.D.)

'But, as we know, it is very unlikely that the whole net profit derived from interest charges will be distributed as dividends, and thus become effective as purchasing power. Some of it is almost certain to be carried forward in profit and loss account, or to be transferred to reserve. This, as we know, means that it is converted into suspended purchasing power.

'Some at least of it is likely to be invested by the bank; *it thus becomes destroyed purchasing power.*'[1]

'*Insurance* thus affords us *yet another example of a small, but steady, persistent and cumulative drain on purchasing power, causing prices to become steadily, persistently, and cumulatively less than total incomes.* And then we wonder how it is that manufacturers and traders experience such difficulties, which grow more and more serious every year, in selling their goods, and that more and more thought and energy have to be devoted to the selling end of business, so that salesmanship is rapidly becoming the most important aspect of modern business, the actual production of goods being relegated to a quite secondary position.

'With all these steady drains on purchasing power, resulting necessarily in accumulations of unsold and unsaleable goods and services, is it surprising that there is an unemployment problem?'[2]

According to Lt.-Col. Powell therefore the

[1] Pp. 34-35 (italics mine, E.F.M.D.)
[2] P. 40 (italics mine, E.F.M.D.)

whole of the money disbursed by the industrial system in the form of dividends, in the form of bank charges, and in the form of insurance costs, as well as the whole of saving and certain other types of payment I have not quoted, cannot be used for the purchase of industrial products so that the total price of those products tends to fall further and further below their cost of production. This is one type of extreme view.

2. *Major Douglas and Social Credit.*

Finally, Major Douglas advocates a different and even more striking proposition, namely: that unless *all* the money paid out by producers is paid *directly* to consumers, the price of the finished product will be forced below the cost of production by the whole of the sums paid to the other producers. Now in an advanced economic society this means an enormous proportion of total payments — perhaps 90 per cent — for in a complex productive system the great majority of payments are not made directly to consumers but are made to the producer of intermediate products.[1] A manufacturer of electrical equipment for example pays a large proportion of his costs for copper wire, turned and seasoned wood, metal points and

[1] It has been calculated that nine-tenths of the payments in this country and eleven-twelfths of the payments in the United States are made to producers and not to consumers.

expensive testing instruments, all of which have been manufactured by other producers, and only a small proportion of his costs accrue directly to consumers; to the labour of all types which he employs. Even in the case of an earlier stage of production such as a mine or a farm, a considerable proportion of costs is paid for mining and agricultural machinery, and such costs do not and cannot accrue directly to consumers. According to Major Douglas the whole of these payments represent an insufficiency of purchasing power and must be made up by the creation of new money. This is the crucial passage in his main work *Credit Power and Democracy*.

'In order to see that this is so it is necessary to restate in general terms an argument which has been dealt with elsewhere in detail (*Economic Democracy*). A factory or other productive organization has, besides its economic function as a producer of goods, a financial aspect – it may be regarded on the one hand as a device for the distribution of purchasing power to individuals through the media of wages, salaries, and dividends; and on the other hand as a manufactory of prices – financial values. From this standpoint its payment may be divided into two groups:

'Group A. All payments made to individuals (wages, salaries and dividends).

'Group B. All payments made to other organ-

izations (raw materials, bank charges and other external costs).

'Now *the rate of flow of purchasing power to individuals is represented by A, but since all payments go into prices, the rate of flow of prices cannot be less than A + B. The product of any factory may be considered as something which the public ought to be able to buy, although in many cases it is an intermediate product of no use to individuals but only to a subsequent manufacture; but since A will not purchase A + B, a proportion of the product at least equivalent to B must be distributed by a form of purchasing-power which is not comprised in the descriptions grouped under A.*'[1]

It will be seen that this second group of theories is much more extreme than the first. According to them the system is doomed, whether it saves or not, to increasing unemployment and surplus capacity. From this dismal fate it can only be rescued by a steady and enormous increase of currency and credit to supply the ever-growing deficiency of purchasing power. According to Major Douglas as much as 90 per cent of the necessary purchasing power must be provided from the increase of credit. This is the last extreme to which the theories of under-consumption reach, and we may now proceed to examine the logical ground upon which its various forms are based.

[1] Pp. 21-22.

CHAPTER II

THE OMISSIONS AND ERRORS OF THE THEORY: A CONSTANT RATE OF SAVING AND THE SIGNIFICANCE OF INVESTMENT

§1

In the last chapter I have set forth the contents of the main types of under-consumption doctrine. There are two such types, differing chiefly in the number of causes which they believe to be capable of causing a deficiency in purchasing power. In the first group only the activity of saving is credited with this power.[1] In the second group many other streams of purchasing power are thought to destroy equilibrium by entering into costs but never into the purchase of final commodities. According to this second group an economic system which never saved would still be faced by a steady decline in the price of consumption goods further and further below their cost of production. In these more extreme theories, it is held that certain types of money payment, such as the cost of raw materials

[1] See Chap. I, p. 22

or the interest charges made by banks,[1] payments which must enter into money costs, are supposed, like rivers in the desert, to disappear for ever. Hence the consumer's income *cannot* be sufficient to purchase the output of consumption goods, even in a static society, unless it is continually supplemented by refreshing showers of new money. It is this second and more extreme view that we must examine first and, I think, reject unconditionally.

The problem with which these theories are concerned is the relationship between money costs and money incomes. They claim that the total income of the consumer can never equal the costs of producing consumption goods, and that consequently the economic system can never continue production without permanent and increasing losses, for the total consumer's income sets the upward limit to the amount which can possibly be spent on consumption goods. If that upper limit is below the total costs of production, then even without the further subtraction of saving, net losses are inevitable. The first question with which we are concerned is therefore this: Is it true that the consumer's income *cannot*, under any conditions, be equal to the cost of consumption goods? What is the relation between producer's costs and consumer's income?

[1] Cp. Major Douglas, chap. I, §3.

§2. COSTS AND INCOMES

I wish to demonstrate that the relationship between costs and incomes is one of identity. If the economic system is simple enough, this identity will manifest itself at once, for it will then be obvious that every element in a producer's cost is an element in someone's income. Let us assume that industry is carried on by one producer, who makes all commodities, employs all the factors of production and who sells all the final products. It is obvious at once that anything which is a cost to him is an element in the income of some consumer. A rent which is a cost to him is an income of identically the same size to the man from whom he rents the land. A wage which is a cost to him as employer, is the income of the wage-earner. A rate of interest which he pays to a bank, a debenture-holder, or an ordinary shareholder, is an identical income to the owners of these different types of legal claim. What is true of these separate elements must also be true of their total. The total income of all consumers derived from this simple industrial system will be equal to the total costs of production, for the very good reason that every element in the sum of these costs constitutes into an element in some con-

sumer's income. Different methods of adding up exactly the same set of quantities will give the same result. This argument Messrs. Foster and Catchings, themselves under-consumptionists, have set forth with great clarity:

> 'Let us now assume that, year after year, the Corporation produces a given volume of goods, sells all the goods and pays out in wages all the money it receives for the goods (i.e. there is no saving). Under these conditions, the annual production consumption equation is perfect. All the money in circulation is used alternatively as wages to bring about the production of goods, and as expenditure in the market to bring about the consumption of goods. *Each year the Corporation disburses as costs all the money that consumers pay for the output of the previous year, and the consumers are therefore able to buy the entire product, year after year, without a change in the price-level.*'[1]

We can therefore conclude that in a simple economic system the total costs of production are necessarily equal to the consumer's income because they are identical with it.

Is this relationship of identity between costs and incomes changed very profoundly if we remove the assumption of simplicity and make the more realistic assumption that there are many stages and many firms working in each stage in

[1] Foster and Catchings: *Profits*, p. 269.

the production of each separate commodity? The moment we make the assumption that there are many stages in the production of each type of commodity it becomes literally impossible that the consumer's income should ever be equal to the total payments at all stages in production, for the very good reason that at every moment there are certain types of monetary payment which cannot in the nature of the case enter into any consumer's income. This makes it imperative to distinguish between total payments and the cost of producing consumption goods. If, for example, we assume that one producer makes bread in all its stages; grows wheat and employs farmers, mills the flour and employs millers, bakes the bread and employs the bakers — then the only payments incurred in the course of production are what he pays the farmers, the millers and the bakers — payments which are necessarily the same as the incomes of these people as consumers. But the moment that such a process is divided into three separate commercial stages a type of monetary payment has to be made which cannot enter into consumer's income at that stage — payments made in transferring the product of one stage of production to the next. Thus, when wheat is milled into flour and the miller has to buy the wheat, the cost at the milling stage is not only the cost of employ-

ing the miller and the mills, but also the cost of the wheat — a payment which contains the money with which the farmer and his factors of production are to be paid in the next stage backwards. And in the current production of bread the cost of making the bread must include not only the costs of bakers and ovens but also the price of flour which represents the future payment of both the millers and the farmers. As the number of these stages in the course of production grows greater, the number of payments which are necessary to buy the products of previous stages (and which cannot therefore enter into the present consumer's income) grows larger and larger. The consumer's income becomes a smaller and smaller fraction of total costs as the complexity of the industrial structure grows greater.

In order to understand the further significance of this conclusion it is important to realize that at the same time the relation which the *immediate* costs of producing consumption goods bear to the total cost of production is also changing. The immediate cost of producing bread is the cost of employing bakers, buying ovens and renting bakehouses. Now as the number of stages coming before this process increases and the number of times which payments have to be made to bring wheat and flour and steel one stage nearer

the final process grows larger, then the fraction which the costs of the final stage bear to the total grows smaller and smaller. So that in such a system it is impossible that either the immediate costs of producing consumption goods or the income of the consumer should be equal to the total costs of production.

This line of reasoning can be expressed in a different form. If there are six producers in a line; a producer of coal, a producer of steel, a producer of flour, a farmer, a miller and a baker — then only a fraction of the current costs of each one of them will accrue directly to consumers. The baker, for example, will only pay a *fraction* of his money costs to workmen and landowners who are consumers, because a large part of his costs must be paid for flour and ovens which are the products of previous stages of production and whose price cannot therefore enter immediately into consumer's income. The same will be true of all previous stages. Even the mineowner concerned with the production of coal, which is technically the first stage in production, will pay only part of his costs to miners and royalty owners. A considerable part of his costs will consist in the cost of coal-mining machinery. Hence at every stage only a fraction of the costs at that stage accrue to final consumers; and in the total structure of

all these stages only a fraction, plus a fraction of a fraction, plus a fraction of a fraction of a fraction, accrue to consumers.

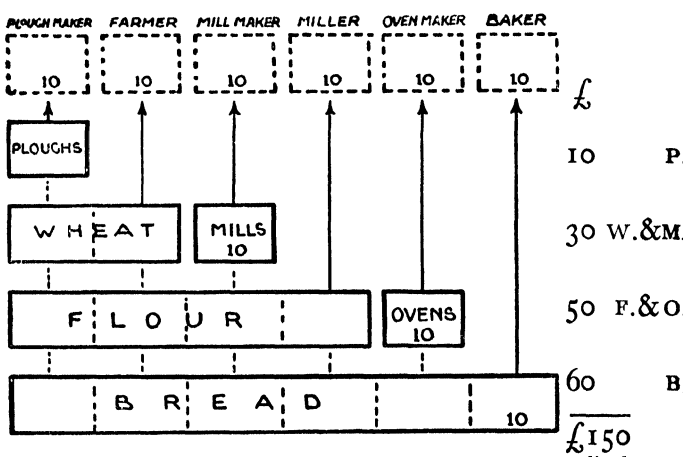
Is the fractional nature of the consumer's income a bar to equilibrium? Does it mean that moment by moment the industrial system only distributes a fraction of the income necessary to cover the costs of carrying on the current production of consumption goods? Major Douglas thinks that it does (see p. 43), but this conclusion is based on a simple fallacy. *It is not in the least necessary that consumer's income should cover the total current costs in the industrial system as a whole, but only the current costs of producing consumption goods.* It is these, and these only, that need be covered in order that the full output of consumption goods should be profitably sold. And it is perfectly easy to show that if no one is either saving or hoarding money the consumer's income will be exactly equal to the costs of the last stage in the production of consumption goods. This necessarily follows if we examine any element in the cost of those goods selected at random. For we shall find that ultimately every such element accrues to some consumer, and as long as all the stages are maintaining the same payments, the total of elements now accruing to consumers will be equal to the total costs now being incurred in the final stage of

production. Thus if we take the element in the cost of bread which represents the cost of the coal to blast the steel to make the plough which the farmer uses to grow the wheat ground by the miller to make the flour, it follows that as long as the production of bread, flour, wheat, ploughs, steel and coal is maintained, there is a current payment for coal accruing to the coal miner equal to that part of the cost of bread which is currently being paid out in the price of flour by the baker. In the end every element of final cost is currently entering into some final income in a static structure of production. What is true of one element is true of all. Although total consumer's income is only a small fraction of total costs, it is equal to the cost of consumption goods because the current cost of consumption goods is only an equally small fraction of total costs. This is a conclusion which is of fundamental importance to the understanding of all that follows.

Professor Hayek has devised a diagrammatic representation of this complex condition of production showing the size of the relative monetary streams flowing through the various stages when the system is in equilibrium.[1] Without examining anything implied in this diagram except the re-

[1] That is, when there is no tendency for any factor of production to move to a more profitable employment.

lationship between consumer's income and total costs which it makes manifest, I suggest the following as the adaptation of his diagram relevant to the reasoning of this chapter. Let us assume that there are the four stages in the production of bread, and that each stage spends the same amount on labour and machinery used in that stage. It is then possible to represent the system of costs in this diagram.



If we assume that each unit is £10 it is plain from the diagram:

(1) that the *total costs* are equal to the number of units in the areas representing all the stages of production, i.e., £60+£50+£30+£10=£150;

(2) but that only a fraction of each stage is currently accruing from that stage to ultimate consumers — in this case the fractions amount to only £60 out of £150;

(3) that nevertheless, the amount which so accrues is equal to the total current cost of producing consumption goods since that is also £60. This is true because in a complicated structure of this kind the cost of producing consumption goods is only a fraction of the total costs incurred within the system as a whole.

The more extreme theories of under-consumption with which we are for the moment concerned make the fatal mistake of assuming that some element in the cost of producing consumption goods will never accrue to final consumers,[1] or that it is necessary that the consumer's income should be equal to total current costs.[2] Neither of these assumptions is sensible. Of course it may be true that some element in the cost of consumption goods does *not* enter into the income of final consumers, but that must be because someone is not spending the money he receives but holds or 'hoards' it. If no one is hoarding then every element of cost enters into some consumer's income. As for the second assumption, there is no sense in it at all. The

[1] See p. 39.

moment there is more than one stage in the production of consumption goods it is not only unnecessary that consumer's income should be equal to total costs of production, it is impossible that it should be. The only thing that is required for an equilibrium between prices and costs to exist is that consumer's income should be equal to the costs of the last stage of production, and this it is as long as no one is hoarding.

There is no validity of any kind in the main arguments put forward by the second group of theories which we have examined.

A more difficult task now awaits us. Throughout this section we have assumed not only that people are not hoarding but also that they are not saving and investing. Many under-consumptionists are quite clear that apart from saving consumer's income will be equal to costs, but suppose saving and investment does take place? It is then, they argue, that trouble begins. Is this true? Is equilibrium conditional upon the *whole* of consumers' incomes being spent upon consumption goods? At first sight it seems extremely plausible. I have just proved that without hoarding, consumer's income is only *equal* to the total costs of producing consumption goods. Does it not therefore follow that saving will bring prices below costs?

§3. THE SIGNIFICANCE OF SAVING

In the previous section the conclusion we reached closely resembles the position taken up by Messrs. Foster and Catchings. If the total consumer's income is equal to the costs of producing consumer's goods in an economic system which is saving nothing, it seems to follow naturally that if any income is saved, the amount remaining to be spent will not be equal to these costs. Hence it would seem to follow that any rate of saving will reduce prices below costs to an extent determined by the height of the Rate of Saving. We cannot proceed beyond this point without some analysis of the general economic significance of the double process of saving and investment.

If we reflect upon the economic history of the last hundred years it is apparent that saving cannot always be disastrous. There has been during this period a great rise in the general standard of living and this increase has been accompanied by, and is clearly related to, the equally enormous growth in capital. Over the long period saving therefore appears to promote rather than to check consumption. To the individual the process of saving involves a reduction of consumption, and yet the saving of the nineteenth century accounts for

the multiplication of the output of consumption goods by five, ten and twenty fold. How is this apparent contradiction to be reconciled? The reconciliation lies in the double nature of the process we are analysing. The first activity, the mere abstention from consumption, is not the end of saving. All that this does is to release part of the purchasing power from the purchaser in the first instance and a fraction of the real productive resources in the second instance from the manufacture of consumption goods, so that they become free to increase the stock of capital instruments. This second activity of 'capital building' Mr. Keynes has distinguished by the term 'investment.' It is the purpose of *investment* to increase the productive resources of society and, in so far as it is successful, it must lead to an increase in the output of consumption goods. Moreover the increase in productive efficiency will enable those who carry a process of investment to a successful conclusion to pay a Rate of Interest either to themselves or to those from whom they borrowed the money in the first instance. The Rate of Interest which they can pay is a simple measure of the success or productivity of their investment.

All this is familiar elementary economic analysis. It does however make plain the true relationship

between saving and consumption. Saving releases part of the existing labour and capital for the production of more capital so that when the process is complete there will be a net gain of capital. The existing factors of production other than capital will then be able, working together with more or better capital, to produce, and everyone to consume, a greater output of finished goods. This process makes a rise in the standard of living possible and causes the paradox of continuous saving accompanied by increasing consumption to appear.

But this simple statement does not make apparent how the condition of *monetary* equilibrium can be maintained. It does not make apparent how the activity of saving can go on without reducing the reward to those who are producing consumption goods below the level at which they are able to carry on production. It is essential to translate the simple theory into a form which throws light upon the production and consumption of the finished goods themselves. It may very well be that in the long run saving, if it can be made successful, will increase consumption, but how can it proceed if its first effect is to destroy price equilibrium in the market for consumption goods?

To make this matter clear I propose first to

analyse the nature of saving under conditions of barter and to trace out the effect which the increase of productive efficiency will have upon the reward accruing to those responsible for the production of consumption goods, and later to translate this analysis into the terms of purely monetary equilibrium.

§4. SAVING UNDER BARTER: AND THE INCREASE IN THE REAL SOCIAL INCOME DUE TO SAVING[1]

It is important at the very outset to make a distinction which is not made in the theories we have examined and which is most material to the thesis contained in them. This is the distinction between the beginning of saving and a continuing process of saving. At the moment when saving *begins* the industrial system has not been, and is not at the moment, adapted to the monetary and technical conditions of saving. It is impossible, at such a moment, to discover the effect of a completed process of saving and investment upon the economic system as a whole, since at that moment no investment is currently being completed. One process of saving is, currently, being started; but no process of investment is, currently, being finished. Hence at this moment our view must

[1] For anyone not used to economic terminology and the habit of reasoning within the peculiarly simplified and unrealistic assumptions of barter economics, this section may be difficult; but it is not essential to the main argument of the book, and a reader in this position should turn on to the next section (see p. 71), where he will find substantially the same argument set forth in more realistic monetary form.

be incomplete. To understand the full effects of saving we must analyse quite a different set of conditions — the conditions in which the economic system has been accustomed to a continuous process of saving, and in which at each moment a process of past investment is completed as well as a new process of saving is begun.

To analyse such a condition let us imagine a simple society in which a process of saving is first begun, and then the same society as it would have been had a rate of saving been regular and habitual within it. Let us assume that there is an island community which produces only bananas, and in which the sole capital consists of knives with which to cut bananas. Let us further assume that the plantations are owned by a group of landlords to whom the whole output of bananas belong in the first instance, but who pay away the greater part of them in the form of wages to the workers who grow the bananas. We must examine this simple community first when saving begins; the situation envisaged by the theory of under-consumption; and then when a Rate of Saving has been maintained over a period of time.[1]

1. *The Beginning of Saving*

If no saving has been taking place the whole output of bananas will be consumed, either by the landlords or by the workers. Let us suppose that

[1] By the phrase a 'Rate of Saving' I shall mean a certain fraction, such as a tenth or a fifth, of the income out of which the saving is made. In this society it will consist of a certain fraction of the ripe bananas, while in a monetary society it will consist of a certain fraction of the consumer's money income.

the output is 100 units per unit period of time (100 tons of bananas per year for example) and that the landlords retain 10 per cent of this output, and pay 90 per cent to the workers, so that the workers receive nine out of every ten bananas that they produce. This is the first condition of equilibrium. The community now hears that the production of knives would greatly increase the output of bananas from their work as a whole if they were organized in two stages of production, one making knives and the other cutting bananas. In order to secure the production of the knives, however, a stream of bananas must be set on one side to form an income by which some of the workers now producing bananas may be employed to produce knives. As this process of investment is carried out the knives will be brought into use and the output of finished bananas will rise. If the saving necessary to finance the investment is done in this simple community by the common decision of the landlords and the workers no conceivable dilemma can arise. If everyone refrains from consuming one-tenth (shall we say) of their income and uses the bananas so released to employ part of the available labour to produce knives there can be no hitch in the course of production. Everyone will consume less in the short period because they are saving part of their income of consumption goods and because the income itself is smaller through the withdrawal of labour from the production of bananas to the manufacture of knives — while, in the long run, the process of saving and investment will increase their

consumption by increasing their productive efficiency. This process of simple adjustment is possible because the producers of consumption goods — the banana-pickers — themselves consent to a reduction in the real return to their labour. The decision to save one-tenth of the social income involves the reduction of their consumption from nine out of ten to eight out of ten of the bananas which they have produced, but they have themselves acquiesced in this reduction.

But the situation is radically different if we drop the assumption that the banana-pickers — the producers of consumption goods — consent to this reduction. If the reduction in their standard of living is forced upon them by the savings of other people then the easy adjustment of the system to the process of saving may be indefinitely postponed. Let us assume, for example, that the landlords, to whom the whole product belongs in the first instance, decide that they do not wish to reduce their own consumption, but that they do wish to secure the production of the knives, so that they attempt to retain a further ten per cent of the output to finance the production of knives.[1] By this decision the reward to the banana-pickers is reduced as before from nine out of ten to eight out of ten of what they produce.

[1] I am of course aware that this is contrary to the assumption that the wages of the banana-pickers were determined by competition and marginal productivity. I am making, for purposes of illustration, the contrary assumption that the landlords are a monopoly able to do this – an assumption necessary to emphasize the power of society as consumer to reduce the reward of the producers of consumption goods at will.

But there is no longer any reason to believe that they will consent to this reduction in their real income, and if they will not consent to it the dilemma envisaged by the theories of under-consumption will be realized. Suppose that the banana-pickers refuse to go on working or are unable to go on working. The saving will then be rendered fruitless. Even if the landlords can begin the production of knives, the knives themselves cannot be used in the production of bananas for that production has stopped, and after a time the funds out of which the saving was made will themselves disappear. The landlords in attempting to secure the knives and increase the productive powers of the community have rendered it impossible to carry on production at all. The process of saving has rendered the production of consumption goods impossible.

Now it is the second assumption which more closely resembles the condition of monetary society. The producers of consumption goods in a monetary society do not voluntarily consent to the reduction in their real income which the process of saving involves. The fall in the price level of consumption goods imposes upon them a strain which they do not want and which they may not be willing or may not be able to sustain.

In my parable the landlords represent society as a body of consumers with whom rests the decision as to how much shall be saved and how much spent, while the banana-pickers represent the same group of people in their activity as producers of consumption goods, in which activity

they will not continue if losses are made in the production of consumption goods. Once more we are faced by the dilemma of saving. Does not society as consumer frustrate, all unconsciously, its purpose as producer by rendering the production of consumption goods unprofitable? We cannot answer this question until we have examined the same society under conditions of constant saving.

2. *The Full Process of Saving and Investment*

The moment we turn to discuss the condition of our hypothetical community if a rate of saving has been the normal state within it, and to which it has become adapted, we are brought face to face with the critical omission which all theories concerned with the beginning of saving must make, and that is *the effect of the regular construction of capital on the productivity of the whole system.* The only reason that trouble arose in the first case was because the percentage reward and the absolute reward to the banana-pickers fell below a certain anticipated and conventional standard. Trouble of this type might not arise if a decline could be avoided by an expansion on the total production of bananas. Now this is precisely the thing which the investment of the bananas is calculated to bring about. For what purpose are the bananas saved? In order to produce knives. For what are the knives wanted? Purely because their use will make it possible to increase the total output of bananas.

Let us then assume that the landlords have

always set aside ten per cent of the output for the purpose of producing knives, as well as the ten per cent which they consume themselves, so that the conventional return to the banana-workers, below which their reward must not decline, has been fixed in the past at eighty per cent of their output. Will the occurrence of saving progressively reduce the reward to the banana-pickers in these circumstances? Under these conditions ten per cent of the current output is set aside to produce knives in each period of time, but now in each period of time the output of knives from the previous act of investment comes into use, and causes an increase in the total output of bananas. Hence in each period there is a process of saving and a current increase in the output of consumption goods. *It can easily be shown that whatever this constant rate of saving may be, there can be no tendency (under the conditions here assumed) for the reward to the banana-pickers to fall, but that, on the contrary, the percentage return to their labour will, by definition, remain constant, while the absolute reward will steadily rise at a rate determined by the physical productivity of investment.*

It is essential, before I can make this result plain, to make some assumption about the physical productivity of investment, for upon that depends the rate at which the total output will grow, but I shall go on to show that this particular assumption is in no sense necessary to the central conclusion. Let us then assume that the physical productivity of investment is 100 per cent. This means that if you save ten bananas in one period,

then when these bananas have been used to produce knives and the knives so produced have been brought into employment, the output of the group of knife-producers and banana-pickers taken together will be ten bananas more each year than it would have been had the investment not taken place. The saving of ten bananas increases the total output in the next period by ten bananas also.[1]

We are now in a position to trace the course of the real reward to the banana-workers (i.e. the producers of consumption goods) throughout a complete process of saving. Let us take sections at two points in the stream of production, saving, and capital construction. We will begin when the continuously growing output has reached 100 units.

Then: (*a*) In the *first period*—
the total output has grown to 100 tons
of which 10% (or 10) go to the landlords,
and 10% (or 10) are saved (i.e. go to the knife-producers).

Hence the return of the banana-pickers is 80% (or 80 at this level of total output.)[2]

(*b*) In the *second period* the knives produced in the first period have come into use and have raised the output by an amount determined by the physical productivity of the knives — which we

[1] Needless to say this assumption involves certain assumptions about the demand curve for capital, but I shall return to the nature of these assumptions in the next chapter.

[2] There is of course no reduction in the output of consumption goods to be allowed for, since the increase in the output of consumption goods due to a *continuous* process of saving is a net increase – after the relative reduction due to the transfer of labour to the production of capital has been allowed for.

have assumed to be 100%. Since 10 bananas were saved in the first instance, the total output must have increased by 10 to 110. Hence we have this condition:

The total output is 110 tons
of which 10% (now 11) go to the landlords
and 10% (now 11) are saved,

so that the return to the banana-pickers is 80% which has now become 88 in total. *The reward to the producers of consumption goods, despite the continuance of saving, has remained a constant percentage of their output — and in absolute terms has risen from* 80 *to* 88 (*or* 10%). The sole condition of equilibrium — the maintenance of the return to the banana-pickers, is amply fulfilled.

Nor does this theory in the least depend upon the peculiar assumptions we have made about the Rate of Saving or the physical productivity of capital. Let us vary the assumptions about the quantities.

In the *first place* let us assume that the Rate of Saving was 20% and not 10% — then in the first period of time the banana-pickers would be used to the loss of 30% (10% to the landlords plus 20% saved) and the conditions would be:

Output	100 tons	
Landlords	10%	or 10 tons
Saved	20%	or 20 ,,
Banana-pickers	70%	or 70 ,,

while in the second period, 20 having been saved in the first and the physical productivity of capital being 100%, the output would be up to 120 tons and the division would be this:

Output 120 tons
Landlords .. 10% or 12 tons
Saved .. .. 20% or 24 ,,
Banana-pickers.. 70% or 84 ,,

Once more the percentage reward to the producers of consumption goods is constant, and their absolute reward has risen from 70 *tons to* 84 *tons per unit period of time.*

In the *second place* let us assume that the physical productivity is not 100% but only 50%, so that if you save 10 bananas in one period of time, the total output of bananas in the second period only increases by 5, and not by 10. We shall still find the same constancy in production, and increase in absolute reward to the banana-pickers. In the first period the condition will be this:

Output 100 tons
Landlords .. 10% or 10 tons
Saved .. .. 10% or 10 ,,
Banana-pickers.. 80% or 80 ,,

Ten bananas were saved in this period, but the physical productivity is only 50% so that the total output will only increase to 105 and not to 110. The condition will now be this:

Output 105 tons
Landlords .. 10% or 10.5 tons
Saved .. .. 10% or 10.5 ,,
Banana-pickers.. 80% or 84 ,,

Thus the essential condition is still fulfilled. *The percentage return to the banana-pickers is constant while their absolute reward has risen from* 80 *to* 84.

This analysis is of great importance to the understanding of existing theories of under-consumption, for it reveals the critical fact that they have neglected the effect of investment on the real reward available for the producers of consumption goods, or the power of investment to increase the efficiency of the productive system as a whole. If we take account of this effect, it becomes apparent at once that it is quite untrue that a continued process of saving involves any reduction in the real reward to the producers of consumption goods. On the contrary, a constant rate of saving involves a constancy in the proportion of the total real output accruing to the producers of consumption goods, and a continuous increase in the real standard of living afforded by this constant proportion. Such a conclusion is fatal, *if it can be translated into monetary terms*, to existing under-consumption theories.

Let me state at once that all that I have here set forth is a mere arithmetical truism. The only thing that is demonstrated by these arithmetical examples is the conclusion, scarcely surprising, that if you take 20% away from any total you will be left with 80%, and that if this total grows the 80% will grow with it! But it is essential to understand the idea that these examples have emphasized, and that is, that in a simple *barter* society there can be no conflict between a constant Rate of Saving, and the profitability of, and real reward to, the producers of consumption goods. The total reward will steadily rise at a rate determined by the physical productivity of investment.

This conclusion must follow from any intelligible definition of constancy in the Rate of Saving. But the question at once arises whether this argument can be translated into the more realistic conditions of a *monetary* society, and whether the conclusion holds when we can no longer assume that the producers of consumption goods are not directly faced by the *real* return to their labour, but, on the contrary, are only concerned with the relation between their money costs and the money prices of consumption goods. Unless the conclusion holds true of this monetary economy, the conclusion of the barter analysis will be useless and suspect.

§ 5. A CONSTANT RATE OF SAVING IN A MONETARY ECONOMY, AND THE CONSEQUENT REDUCTION OF MONEY COSTS

We have already seen (p. 55) that in a monetary economy the total money income of consumers and the immediate costs of producing consumption goods must be equal to each other if no hoarding[1] is taking place; and that in the absence of saving the whole of this income will be spent on the output of consumption goods so that the amount spent on consumption goods will be equal to their cost of production. In such a condition costs = incomes = prices; the *sine*

[1] That is, if no one is increasing the money balances which they hold idle, but are spending all that they receive either on consumption goods or on maintaining the volume of their production.

qua non condition of monetary equilibrium. But from this it seems to follow (just as at first sight it seemed to follow in the case of the barter society) that the occurrence of any saving will bring prices below costs and create losses in the production of consumption goods. Before saving took place income was equal to costs, but now part of this income is to be spent upon things other than consumption goods so that it seems necessarily to follow that any degree of saving will destroy the equilibrium between prices and costs by an amount determined by the height of the Rate of Saving. Yet, in the case of the barter society, we discovered that a constant rate of saving will increase the real income of those producing consumption goods. How is this apparent contradiction between the two methods of inquiry to be reconciled?

Once more, I am convinced, the solution is to be found in the analysis of a continuing process of saving, and in the necessary effects upon productive efficiency of a constant rate of capital construction. If we ask, not what is the effect of the first process of saving upon monetary equilibrium, but what is the effect of a continuous process of both saving *and* investment upon that equilibrium, we shall arrive at a very different conclusion, for in the second case we shall be

led at once to inquire why those savings are wanted, why those who demand them are capable of paying a Rate of Interest upon them, and what effect the process of investment has upon the *costs* of producing consumption goods? It is by answering these questions that a solution to the dilemma can be found.

Why is saving demanded at all during periods in which there is no monetary inflation?[1] Anyone who borrows will contract to pay the current Rate of Interest upon the full amount of the savings which he borrows. If there is any Rate of Interest at all, it must imply that on the average those who borrow are succeeding in fulfilling the obligation they have undertaken, for otherwise the Rate of Interest would decline. How is it that these additional sums for the payment of interest can be found? If prices in general were rising it would not be difficult to understand why, after a period of time, the borrowers of these savings could provide extra sums for the payment of interest. But in the absence of inflation, this general rise in prices cannot take place. From what possible source can the payments for interest be made? Clearly only from the other side of the

[1] That is during a period in which there is no increase in the quantity of effective money and no increase in total spending. By 'inflation' I shall mean, throughout this book, any increase in the quantity of effective money.

relation between prices and costs, the side of costs. If prices are not rising, borrowers can only contract to pay interest, and only succeed in paying it, because *the investment of the savings has brought into existence new capital of a type which enables costs to be reduced, on the average, to the full extent of the current Rate of Interest.* This is the critical consideration. Prices are not rising and therefore the Rate of Interest must be paid out of reduced costs, and if, under such conditions, a Rate of Interest *is* actually paid, it means that in fact the investment of the saving has, on the average, reduced money costs; not only below the old level of prices, but also below the new level made necessary by the increased output of consumption goods. Only if this has happened will entrepreneurs be able to meet their interest liabilities. And this diminution of average money costs is the precise analogue of increasing physical production in a barter economy.[1]

Let me make this argument more explicit. I have been trying to show that the view that saving must *necessarily* reduce prices below costs is

[1] Such a condition of course implies that each producer before investment takes into account the general nature of the demand curve for his product and will only make the investment if his costs are reduced below the price to which the product will fall when the output is expanded. This makes the ordinary assumption that the positive and negative errors of judgment on the part of entrepreneurs will, on the average and apart from monetary disturbances, cancel out.

wrong because it neglects the effects of new capital on the costs of production, and concentrates wholly upon the effect of saving on prices. I wish to show that it is *possible* that investment can reduce average costs so as to maintain equilibrium, and that it must do so under the conditions here assumed if a Rate of Interest exists over the period in question. To make this argument more explicit it is necessary to make some assumption about the productivity of investment just as it was in the case of barter. In the case of the monetary economy the assumption must be one concerned with the *value*, and not the physical productivity of capital. Now the value productivity of investment is determined, in the absence of rising prices, by the power of new capital to reduce the money costs of production; which is itself determined by the rate at which invention is extending the field of profitable investment on the one hand, and the quantity of savings which is being embodied in new capital on the other. The activity of invention continually adds to the number of ways in which the existing level of costs can be still further reduced, while the activity of setting up new capital continually uses up a certain number of the possibilities which exist. The rate at which it is anticipated that costs can be lowered by appropriating new savings

depends upon the balance between these two tendencies. Let us assume for simplicity's sake that a relatively steady Rate of Invention, accompanied by a relatively steady rate of new investment, has maintained the margin of possible improvements constant — that is, that the demand price for the available quantity of savings has been maintained. In the next chapter we shall remove this type of assumption, but in the meantime I want to know what is the mechanism of monetary equilibrium by which this condition of affairs could become possible?[1]

The condition of its possibility is given in the effect of the increasing quantity of capital on the average money costs of production. It is the simplest proposition of theoretical economics that a greater quantity of capital renders the other factors of production more productive. It therefore must lower the costs per unit other than the costs of capital in the production of the commodities in which the increased capital is employed. A period of investment is associated with

[1] It is not always realized that the existence of a Demand Curve for different *continuous* Rates of Saving implies the existence of a *Rate* of Invention and not a field of investment which is used up as saving proceeds. If there are only a limited number of possible investments the Rate of Interest would steadily fall, but if new inventions are continually being made or old ones are used up, it is possible for a constant Rate of Saving to be accompanied by a constant Demand Price and hence by a constant Rate of Interest. Such a constant Rate of Interest implies a constant reduction in the level of money costs as shown by the general argument of the section.

a decline in the average costs of production other than interest charges. Now if a Rate of Interest can on the average be paid upon this investment, it must follow that the effect on the average costs must exceed by the Rate of Interest itself the effect of the corresponding process of saving upon prices. It is if, and only if, the reduction in the level of costs made possible by the increase in capital is greater than the fall in prices due to the occurrence of saving and to the increase in the physical output of consumption goods that the entrepreneurs will obtain the sums that they need in order to fulfil the interest obligations which, by definition, they do fulfil. This constitutes the possibility of monetary equilibrium during a period of constant investment. What has really happened is that the whole structure of production has become equipped with a greater quantity of more efficient instruments, so that the same groups of factors other than capital can produce a larger output of finished commodities at the same total cost. The money costs *per unit* of the finished commodities — the average cost of production — have been so reduced that the Rate of Interest can be paid at the new lower level of prices.

Even at the cost of wearisome repetition I must emphasize that as long as a Rate of Interest upon new saving exists over a period of time, that rate

is an average of the interest payments actually made, and can only, under the assumptions we have made, arise out of a reduction of costs. If this is not so, since prices are falling, there will be no demand for new savings and consequently no Rate of Interest. Hence if there *is* a Rate of Interest, costs must be falling with a sufficient rapidity. And this is exactly the result we should have anticipated from our previous analysis of barter-conditions, for the analogue in a monetary economy of increasing physical productivity in a barter economy is a reduction of money costs. It is because the real physical productivity of the industrial system is increasing that the money costs are declining. It is therefore apparent that the way in which equilibrium is preserved in a monetary economy is through the fact that as prices decline, costs fall just as rapidly, so that at each point total costs are equal to total prices as equilibrium requires.[1]

[1] In such a condition of economic society the Rate of Saving, the Rate of Invention and so the Rate of Interest are all constant; while the money prices and the money costs are falling by a percentage dictated by the physical productivity of capital. I have assumed that the money income of final consumers is constant, as is necessary for these conditions to be fulfilled, and this implies that the increase of capital and of the complexity in the structure of production has gone on either without any increase in the balances of money held by the industrial system as a whole or that the necessary increase in these balances, but only that increase, has been provided by the banking system in the form of new credits. This I believe, contrary to Dr. Hayek's doctrine of a constant circulation, to be the real criterion of a 'neutral' monetary system, and I shall return to discuss this subject briefly in the last chapter (see p. 184).

§ 6. CONCLUSION

We are now in a position to deduce an important conclusion in our study of the theories of under-consumption. They have all neglected the effect of the increase in physical productivity which investment makes possible. It is this increase which maintains and increases the real income of the producers of consumption goods in the barter example. It is the same increase which reduces money costs in a monetary economy. And the possibility of this increase is the necessary condition for the existence of a demand price for saving and a Rate of Interest, while the existence of a Rate of Interest over a period of time proves the existence of this productivity.

It is impossible to avoid the conclusion that all the existing forms of the under-consumption theory are quite wrong when they seek to show that all types of saving are disastrous, and must *necessarily* destroy monetary equilibrium in the production of consumption goods. I have tried to show that any constant Rate of Saving, if it is accompanied by a Rate of Interest, must have exerted such an influence on the general structure of production that costs have been reduced sufficiently to preserve equilibrium. But of course

I realize that this analysis does not exhaust the possible situations. I have explicitly assumed that the conditions are artificially constant in all the important determining quantities. It is essential to go on to ask whether the monetary equilibrium, whose existence can be demonstrated within an economic system in which the Rate of Saving and the Rate of Interest are assumed to be stationary, can be demonstrated as easily when the determining quantities are changing, and the economic system is called upon to adjust itself to *increasing* Rates of Saving or to falling Rates of Interest. If equilibrium cannot be established so easily with changing Rates of Saving and Interest, our problem will appear in a different light, and the theory of under-consumption may yet contribute something of importance to the understanding of economic phenomena. To this possibility we turn in the next chapter.

CHAPTER III

THE CONTRIBUTIONS OF THE UNDER-CONSUMPTION THEORY: INCREASING RATES OF SAVING

§1

THE analysis of the process of saving contained in the last chapter has carried us only a little way on the road to reality. It has shown that under the very artificial conditions in which the economic system is not called upon to adapt itself to any *changes* in the Rate of Saving or the Rate of Interest, saving can go on without defeating its own purpose. It is able to do this through the power which investment possesses to increase the productivity of the system as a whole and hence to lower the money costs per unit of finished commodities. But now we must ask whether the system is equally able to adjust itself to changes in the determining quantities of saving and investment. Can the system easily adjust itself, for example, to an *increase* in the Rate of Saving which involves a fall in the Rate of Interest?

There is an *a priori* presumption that it can. The whole weight of the analysis of equilibrium under competitive conditions justifies the belief

that a predominantly competitive system can adapt itself to any change in the preferences of the consumers however quantitatively great these changes may be. If, for example, the consumers cease to demand cotton clothes and begin to demand silk clothes, they will exhibit this change in their preferences by spending less on cotton goods and more on silk goods; and then the losses which are made in the one line of production and the profits which are made in the other will bring about the successive movements of the factors of production from one production to the other according to the degree of mobility which the factors exhibit. Equilibrium will be reached once more when the return to equally efficient factors of production is the same in each line of production. Now an increase in the Rate of Saving is, from the point of view of the consumer, an exactly similar change in his preferences. Just as, in the first case, the consumer desired to buy less cotton goods and more silk goods, so he now desires to buy less consumption goods and more capital goods. Will not *this* change, as much as the other, cause differential profits in the production of capital goods and differential losses in the production of consumption goods and begin a process of movement in the employment of the factors of production which will restore equilibrium as

easily as it did in the case of cotton and silk? If this is so, the last vestige of importance will be denied to the theories of under-consumption.

But it should be apparent that the technical relationship between consumption goods and capital goods is not precisely the same as that between cotton goods and silk goods. Silk and cotton stockings are simply and directly competitive in use, while capital goods and consumption goods are not. Silk stockings are not wanted in order to facilitate the production of cotton stockings — quite the reverse. But the only economic significance of, the sole financial demand for, capital goods is to facilitate the production of consumption goods. Capital goods as a whole and consumption goods as a whole are certainly competitive in production, in the sense that the output of both of them cannot be increased at one and the same time with the same general productive resources. They are also competitive in the sense that consumers with fixed incomes cannot demand more of both of them at the same time. But neither of these senses must disguise the fundamental way in which the relation between consumption goods and capital goods is not competitive. They are not competitive in *demand* within the general structure of industry. Capital goods are wanted solely because they can be used in the

production of consumption goods, and it is therefore not at all clear why the demand for capital to make consumption goods should increase at the very moment when the demand for the consumption goods themselves is falling off, any more than it is clear that the demand for machinery to make cotton goods will rise when the demand for cotton clothes falls off. We must therefore examine more particularly the relationship between the price level of consumption goods and the demand for capital at the moment when the Rate of Saving increases.

§2. AN INCREASING RATE OF SAVING AND THE PRICE LEVEL OF CONSUMPTION GOODS.

Let us assume once more that there has been a certain Rate of Saving which, interacting with a certain Rate of Invention,[1] gives rise over a period of time to a steady rate of increase in the physical output of all types of intermediate and finished goods. In the absence of monetary inflation this process will have been accompanied by a steady fall in the price level of consumption goods. We will imagine that a certain Rate of Saving has caused a 10 per cent expansion in the output of finished commodities, and consequently a 10

[1] See footnote, p. 76.

per cent fall in the price level of consumption goods.[1] Let us assume that the Rate of Saving now *rises*. At once two new processes are started to which the economic system is called upon to adjust itself.

1. *The Price Level of consumption goods starts to fall at an accelerated rate.*[2]

Previously the increase of capital and the consequent reduction in the average costs of production permitted a 10 per cent increase in the output of consumption goods, and a 10 per cent decline in prices per unit period of time in response to a constant volume of expenditure. At the moment when the saving increases there is no tendency for the output of consumption goods to contract. At that moment the output continues to expand at the old rate, at the rate of 10 per cent per unit period of time; but the volume of expenditure upon that output, as a result of the increase of saving, falls off. In such circumstances the price level of consumption goods must fall faster than it has been falling

[1] Assuming once more that the banking system has provided any increase in idle balances held by the growing industrial system.

[2] This fall occurs at the moment when saving increases. Any subsequent decrease in the production of consumption goods due to the movement of resources to the capital good industries will only occur after investment has taken place successfully, and will be caused by the price fall in the price level of consumption goods. And of course I am going on to argue that this investment will be difficult or impossible, so that investment becomes less than saving (see p. 89).

before, while at this moment extra investment has not yet taken place and hence there is no present acceleration in the rate at which costs are declining. Before the change took place costs and prices were falling at the same rate, but now prices are falling more rapidly while costs are falling at the same rate, and therefore prices are falling more rapidly than costs. Losses are being made in the production of consumption goods!

If this is the only process set in motion by the increase of saving then the situation foretold by the under-consumptionists will arise and the equilibrium of the whole structure of production will be endangered by an increase in the Rate of Saving. But it is certainly not the only thing that is happening. There is an equally important change in the quantities determining equilibrium in the market for new savings. In that market there has been an increase in the supply of new savings and no corresponding increase in the demand for them. Thus there is a second change made inevitable by the increase of saving — that is, a change in the level of the Rate of Interest.

2. *The Rate of Interest will fall to a new equilibrium.*

The supply of new savings has gone up, but the demand for them has certainly not risen. This

demand is determined, on the one hand, by the rate at which new inventions are being made, and on the other by the rate at which profits are being made in the production of consumption goods. No change has occurred in the rate at which new inventions are being made, while profits in the production of consumption goods have fallen rather than risen.

In this situation a fall in the Rate of Interest must occur. That fall must be of such a sort (if there is such a thing as a Demand *Curve*[1] for new savings) that it equates the supply of, and the demand for, new savings at the new and higher Rate of Saving.[2]

This new equilibrium involves the presumption that the additions to the stock of capital made possible by the increase in the Rate of Saving are capable of reducing costs below the new lower level of prices by the smaller margin indicated by the lower Rate of Interest. If, for example, the old Rate of Interest was 5 per cent and the

[1] That is a series of Rates of Interest at which increasing Rates of Saving will be taken from the market. As we have seen (see p. 76) the existence of such a curve implies the existence of a continuous rate of *new* inventions.

[2] I am not concerned with the secondary tendency to decumulate (or save less) which the original increase in the Rate of Saving may have induced in the minds of the producers of consumption goods. As Mr. Keynes has shown, this tendency may cause considerable difficulties to the setting up of a new equilibrium, but they are not relevant to the matter under discussion here, and as I have written of this elsewhere I shall assume that the producers of consumption goods do not finance their losses by the sale of securities.

new *equilibrium* Rate is $2\frac{1}{2}$ per cent then the existence of this new equilibrium implies that there are sufficient avenues of investment which are capable of reducing costs below the lower level of prices not by as much as 5 per cent, the old criterion, but by $2\frac{1}{2}$ per cent the new. Unless there are enough such processes the demand will not be sufficient to take up the whole supply of savings and the Rate of Interest must fall still lower. It must ultimately reach a point at which equilibrium can be maintained if any supply and demand theory of interest holds true.

Is this all that there is to be said about the adjustment of the economic system to changes in the Rate of Saving? If it is, then there is no substance whatever in the theories of under-consumption, for it follows that there is no peculiar significance in changes in the quantity of saving. Such changes are precisely similar to changes in the demand for clothes or bread.

There are many distinguished economists who hold that this is true, and that therefore there is no sense in which increased saving can produce disequilibrium different from the sense in which an increased demand for silk stockings at the expense of cotton stockings can produce disequilibrium. But to me the simplicity of this particular piece of equilibrium analysis is unsatis-

factory. I should not for a moment deny that a second period of equilibrium can be reached — indeed I have gone out of my way to affirm that such an equilibrium must exist — but I doubt if the reaching of it is a short period phenomenon, and I believe that it could only be reached through a period of *general* disequilibrium. By 'general' as distinct from 'partial' disequilibrium I refer to losses in all lines of production instead of losses in some offset by profits in others. It seems to me that a change in the Rate of Saving involves a general disequilibrium as distinct from the partial disequilibrium involved in any other change in the underlying preferences of the consumer. This doctrine appears to me to be the one contribution to the truth made by the under-consumption theories, and I must go on to defend it.

The simple equilibrium theory involves the belief that the fall in the Rate of Interest will either prevent the appearance of losses in the production of consumption goods, or offset those losses to such an extent that the demand for capital goods will expand. Only if this is true will the fall in the price of consumption goods be accompanied by an expansion of the demand for capital. This analysis seems to me to be unsatisfactory for two reasons.

In the *first* place it seems to me to confuse the

temporal sequence of events and to disguise the fact that the appearance of *net* losses in the production of consumption goods is inevitable.[1] When saving increases, the price level of consumption goods falls at once, while the costs of producing them cannot be effected to any considerable extent by the fall in the market Rate of Interest, even if that fall should be immediate. And in practice the fall in the Rate of Interest will be anything but immediate. There are a multitude of forces which economists have analysed in recent years which make it plain that the Rate of Interest cannot fall as it should. The Rate of Interest is a notably 'sticky' element in the economic system, and without attempting to set forth in detail the various reasons which have been given by economists for this rigidity, I may mention that the inability of the Banks to detect an increase of saving through their deposits[2] and the tendency of the producers of consumers' goods to consume their capital if they make losses,[3] offer a clear demonstration of the inability of the Rate of Interest to fall to a new equilibrium with sufficient rapidity.

[1] I shall deal with this point at greater length in the next chapter. I am of course assuming at this point that Investment has not taken place and that therefore Saving is greater than Investment.

[2] D. H. Robertson, *Money*, ch. v. *Banking Policy and the Price Level*, passim.

[3] J. M. Keynes, *Treatise*, vol. I, bks. III and IV. *Economic Journal*, 1932.

But even if it did fall at once, its fall will not affect the costs of producing consumption goods to any appreciable extent *in the short period.* The fraction of the direct costs of producing consumption goods which are immediately affected by a fall in the Rate of Interest on new capital must be very small. If we think of our representative baker or silk stocking producer it is at once apparent that there is no necessary correspondence in the short period between the extent to which his prices fall and the extent to which the parallel fall in the Rate of Interest will affect him. In the extreme case where all his capital was raised by the fixed interest stock and he has no overdraft, the fall in the Rate of Interest will not affect his costs *at all*, and his profits will suffer to the full extent of the fall in prices. And it is plain that in general the fall in prices will be much greater than the *immediate* fall in costs and will continue to be greater until the construction of new capital has itself lowered costs?[1] This is implicit in the original conditions of equilibrium for the Rate of Interest. This equilibrium is a long period condition in which the reduction of costs by investment *has been allowed for.* Hence it follows that an increase in saving involves net losses in the production

[1] It is a familiar idea in economics that costs fall less rapidly than prices and my whole emphasis here is on the immediate effects of an increase in saving.

of consumption goods before these reductions in costs are realized, however rapidly the Rate of Interest may fall. Few economists would dispute this proposition, but it leads to a second argument that many would dispute.

In the *second place* I hold that the appearance of these net losses in the production of consumption goods will involve a short period contraction in the demand for new capital. The purpose for which capital goods are demanded is to increase the output of consumption goods, and I cannot believe that at the moment when losses are being made in the production of these goods the demand for capital will there and then increase. I am of course aware that in denying this I am denying one of the fundamental tenets of a school of thought whose general position in this matter I shall have to examine in the next chapter — but for the moment I must assume that my own point of view is true. If it is true, a conclusion of great importance for our present purpose emerges — and that is *that an increase in saving may cause a general depression*. The increase of saving has occasioned direct losses and hence a contraction in the production of consumption goods. It is followed, if I am right, by a sympathetic contraction in the demand for capital goods. Hence everywhere in the economic system there is a

halt, a fall in the demand for the factors of production, and the concomitant features of general depression.[1]

No doubt as a result of this temporary depression the entrepreneurs will, after a period of time, be reconciled to the new level of prices and seek to reduce their losses by building new capital and so increase efficiency and lower costs. This process will involve the adoption of just those particular new investments which are made possible by the fall in the Rate of Interest, but in the interval the increase of saving will provoke a condition of *general* disequilibrium. The competitive economic system, because of the existence within it of a necessary technical integration without a corresponding commercial integration, cannot adapt itself as easily to changes in the Rate of Saving as it can to vertical changes in the relative demand for, and output of, finished commodities. As I have said — this view seems to me to be the main contribution of the theories of under-consumption. In the next chapter I shall seek to defend this doctrine from the current attacks upon it.

[1] It is scarcely necessary to point out that during such a period the Rate of Saving would have risen without a corresponding increase in investment, so that investment is less than saving, and there is little or no tendency for the shift of factors of production away from the production of consumption goods to the production of capital. There is therefore little or no tendency for a decrease in the output of consumption goods to affect the fall in price. (See further footnote on p. 144).

In the meantime, it is necessary to enquire whether this one strand of truth can be elaborated into a theory of the Trade Cycle. What is the Trade Cycle? I cannot here examine all the statistical and descriptive material which is now available. As most of my readers will know, and as the name implies, the Trade Cycle is the phenomenon of oscillation which has been empirically observed and statistically verified in the life of rapidly developing economic systems. Although advance is steady and uninterrupted on the average, the rate at which development takes place oscillates without cessation. Periods of rapid capital construction, sometimes accompanied by rising prices and wages, always accompanied by increasing physical production, are succeeded by periods of relative depression, characterized by a sharp fall in capital values and a prolonged relative decline in capital production. All the evidence goes to show, both that the major movements are in the capital good industries and that the process of oscillation is continuous. These characteristics of the phenomenon set the conditions of a scientific explanation. A scientific explanation must consist of a body of hypotheses which show how the forces operating to bring about an expansion must, as they work, generate within themselves the causes of their own negation and

reversal; and how the processes of contraction in their turn bring about an inevitable impulse to expansion. This is the requirement of a scientific explanation. For the moment we must consider whether the view that upward fluctuations in the Rate of Saving may cause the general phenomena of depression can be elaborated into such a closed sequence of self-motivating oscillation.

§ 3. THE TRADE CYCLE

I have tried to show that an increase in the Rate of Saving from a position of equilibrium would cause temporary but general depression by causing losses to appear in the production of consumption goods. If this is true it will also be true that from this position of disequilibrium a diminution of the Rate of Saving will raise those prices and make recovery possible. Here we have the elements of a theory of cyclical oscillation. If it can be proved that during the process of expansion certain forces are generated which cause the Rate of Saving to increase, then the process of expansion will end in a crisis characterized by the appearance of losses in the production of consumption goods; while if it can be proved that during the period of contraction opposite tendencies are released which cause an ultimate rise in the price of con-

sumption goods, then the recovery will naturally follow in an inevitable sequence.

Now I do not think that it is difficult to suggest a possible mechanism for such a process, given certain assumptions which most economists would accept. During the period of expansion and the process of monetary inflation which accompanies it, it is profit incomes and variable incomes in general which are expanding, and expanding relatively to fixed incomes. On the average profit incomes and variable incomes constitute the group of large incomes in the existing structure of distribution, so that the process of inflation makes large incomes relatively larger and the whole structure of distribution relatively more unequal. It is also a familiar truth that a bigger fraction of the group of larger incomes is saved than from the group of smaller incomes. Hence we arrive at the conclusion that during the period of monetary inflation large incomes are growing relatively to small incomes, and *a process is begun which leads to a greater fraction of the current money income being saved.* After a period of time it is possible that this increase in the Rate of Saving catches up the absolute expansion in the total money income which is taking place, so that less money is spent on the output of consumption goods. Suppose that the total money income is

growing at the rate of 5 units per annum, while the Rate of Saving is doubling each year, starting from $2\frac{1}{2}$ per cent. Then it can easily be shown that the amount spent on consumption goods will decline from the third year.[1] Here we have exactly what we set out to find — a chain of hypotheses which makes it clear why a process of expansion should end in a crisis brought on by the very process of expansion itself.

The period of contraction exactly reverses the mechanism of expansion. During the period of contraction fixed incomes are expanding relatively to variable incomes, so that a larger proportion of the total income is going to small incomes. Since less is saved out of small incomes than out of larger incomes, the process of contraction will bring about a reduction in the Rate of Saving. It is possible that after a period of time the reduction in the Rate of Saving will catch up the reduction in the total income so that more money will be spent upon the output of consumption goods. The prices of consumption goods will then rise, or stop falling, and the process of expansion will begin. In this way it is possible to elaborate

[1] The figures in question are these:

Year	1st	2nd	3rd	4th
Income	100	105	110	115
Saved	$2\frac{1}{2}$%	5%	10%	20%
Spent	97·5	99·75	99	92

i.e., Consumers Income and Consumers Outlay have followed this course:

a simple theory of the Trade Cycle out of the propositions of the theory of under-consumption. By contrasting the expansions and contractions of the total income with the changes in the Rate of Saving which these expansions and contractions bring about in the existing institutional and distributive system it is possible to construct a self-contained mechanism of oscillation.

But is such a theory true? I think it can be proved to be false by comparing it with two empirically established characteristics of the Trade Cycle, firstly the conditions of the market for consumption goods in the various periods of the cycle — and secondly, the moments at which the relative expansion of investment begins and ends.

In the *first* place, the theory involves the supposition that the market for consumption goods will grow less and less profitable up to the moment at which losses are first made and the crisis begins. Upon the supposition that the crisis is due to a rising Rate of Saving overtaking an absolute expansion in consumers' incomes, it will follow that up to the crisis the rate at which the expenditure on consumption goods is increasing will fall until, at the crisis, it becomes zero and then negative. Now this is contrary to the actual course of events. There can be little reasonable

doubt that the profitability of producing consumers' goods *increases* right up to the moment of the crisis, and is maintained for some months and even years after it. It is a familiar fact that the distributive and finishing trades continued to show remarkable profits for months after the crisis of 1929. The moment of crisis, so far from being the moment at which profits in the production of consumption goods ceases altogether, is the moment at which these profits are at a maximum — profits which are only destroyed by a prolonged period of subsequent deflation. This fact is fatal to any theories of under-consumption proper, which must depend for their validity upon the appearance of a deficiency of consumers' purchasing power at the onset of depression.

In the *second* place, the theory will not bear the test of another line of inductive verification. If the theory which I have outlined were true it would follow that the activity of investment would show a relative fall at the beginning of recovery and a relative increase at the moment of crisis. This conclusion follows from an examination of the conditions of the Rate of Saving at those two moments. For we are not concerned, in this chapter, with any divergences between the Rate of Saving and the Rate of Investment, so that we are bound to assume that the Rate of Investment

is controlled wholly by the Rate of Saving.[1] Now at the moment of crisis the Rate of Saving first overtakes the rate at which the general income of the consumers is expanding, so that it is only at that moment that the fraction of the total income which is being saved and invested actually rises. Up to that moment it has been falling, but falling at a rapidly diminishing rate. But the moment of crisis must be the moment (according to this theory) at which the fraction of income which is being invested rises relatively to that which is being spent, and in exactly the same way the moment of recovery must be the moment at which the fraction of the consumers' income which is saved and invested first falls off; in short, the theory of under-consumption requires that the crisis should be brought about by an increase of investment and the recovery by a decline in investment.[2] This is contrary to all empirical evidence. Recovery begins when investment starts to increase, and there is every verification for the view that the period of recovery is a period of steadily increasing capital investment, and not a period of contracting investment as the theory of under-consumption would require. I think there can be no doubt that a

[1] Although, of course, the Rate of Investment would not be equal to the Rate of Saving from the crisis onwards. All I mean is that we are not concerned with the *method* of reasoning which traces all disequilibrium to a divergence between Saving and Investment.

[2] Mr. Keynes has emphasized this point. See *Treatise on Money*.

theory derived exclusively from the existing theories of under-consumption could not possibly surmount these inductive obstacles. There is no escaping the conclusion that the application of these theories involves processes which are the very opposite of the observable facts.

I have now completed the first part of my task. I have set forth the theories of under-consumption as they are explained and believed in to-day. I have described the characteristics in them which are unacceptable to pure reason, and which invalidate them as a basis for practical policy. If we are to offer any scientific explanation of the economic phenomena exhibited by the world in which we live, or attempt to control our economic destiny and remove for ever the fluctuations from which we do not wish to suffer, then we must build upon more secure intellectual foundations than these theories offer. But I do not argue that there is no single cornerstone which they can contribute to a new foundation. On the contrary I hold that the theories of under-consumption contribute an essential element to our understanding of economic processes. They show with accuracy the relationship which saving bears to the price level of consumption goods, and they proceed upon the right assumption as to the short

period relationship between this price level and the demand for capital, so that they contribute an essential element to the true theory of the Trade Cycle. Holding this opinion two tasks remain to me. In the first place I must defend the validity of this opinion from the attacks which are currently made upon it, and in the second place I must try to show the other elements with which this strand of under-consumption theory must be combined in order to build up a system of hypotheses which account for all the observable phenomena of the Trade Cycle.

PART II

CHAPTER IV

THE CRITICS OF THE THEORY OF UNDER-CONSUMPTION

§ 1

I MUST now begin an entirely different and a more difficult part of my task. Throughout the whole of the first part I was concerned with the internal consistency of the theory itself. As a result of this examination I drew the conclusion that although the existing theories of under-consumption contain profound errors in logical analysis and lead to a faith in the most mistaken policies, they contain a single strand of thought which is of importance for any complete theory of monetary circulation and the function of saving. The strand of thought in question is the belief that the demand for capital goods is derived from the demand for consumption goods and that this irreversible relation gives to changes in the Rate of Saving a peculiar significance not shared by any other change in the underlying preferences of the consuming public. Having drawn this conclusion it is the purpose of the Second Part of this book

to investigate the significance of such a conclusion to the general body of contemporary monetary theory; and in particular to work out its importance for any true theory of the Trade Cycle.

In the first chapter I propose to examine the most important work on the Trade Cycle which has a bearing on the theories of under-consumption. In the second chapter I shall attempt to construct from elements contained in the various theories which I shall have considered the positive theory in which at the moment I believe. The subject of monetary and Trade Cycle theory is obscure and controversial at the present moment, and it would be premature to claim that anyone's views possessed final authority or were likely to remain unchanged in the process of sympathetic criticism. All that follows in this part of the book must therefore be read with this qualification in mind.

The work of outstanding importance which has appeared in English in the last three years[1] and that has a bearing upon the theory of under-consumption and monetary circulation in general is the work of Mr. J. M. Keynes and of Professor F. A. von Hayek. Neither of these gentlemen holds that the theories of under-consumption have any value. To Dr. Hayek's general views I have

[1] 1929-1932.

already referred, and to them I shall return. Although Mr. Keynes's views are far less sweeping in their condemnation, he seeks to differentiate very strictly between his own theory and that of the under-consumptionists and to state that the value of the former is merely that of indicating the existence of a problem and not that of contributing to its solution:

> 'Mr. J. A. Hobson and others deserve recognition for trying to analyse the influence of saving and investment on the price level and on the Credit Cycle, at a time when orthodox economists were content to neglect almost entirely this very real problem. But I do not think they have succeeded in linking up their conclusions with the theory of money or with the part played by the rate of interest.'[1]

It will be obvious from the first part of this book that I share Mr. Keynes's view that all the existing theories of under-consumption have failed to take account of the importance of the activity of investment in the solution of problems of monetary equilibrium, but I hold that the real mistake they have made is that of neglecting the effects of investment upon output, efficiency, and costs rather than the effect on the total of monetary payments; and I do not think that Mr. Keynes himself has fully apprehended the significance of

[1] Mr. Keynes: *Treatise on Money*, vol. I, p. 179.

the problems with which one aspect of the theories of under-consumption is concerned. In the case of Dr. Hayek I shall have to examine, and in part contest, the views which he holds as to the relation between the demand for capital goods on the one hand and the demand for consumption goods on the other. To these two matters we must now turn.

§ 2. MR. KEYNES AND THE RELATION BETWEEN SAVING AND INVESTMENT.[1]

We have already seen that as long as all the money which is saved is used for the purposes of current capital construction there is no reason to believe that there is any tendency for the prices of consumption goods to fall below their cost of production. On the other hand I have argued that this conclusion is unlikely to be fulfilled if the Rate of Saving rises. Now Mr. Keynes emphasizes the first proposition and uses it to draw the conclusion that there is nothing peculiarly significant in the height of the actual Rate of Saving or in any movements which the Rate may undergo *as long as* the Rate of Investment keeps accurate pace with the Rate of Saving. Nor do I

[1] Throughout this section I am referring to Mr. Keynes's views as expressed by him in the *Treatise on Money*, vol. i, bk. iii, *passim*.

wish to dispute this proposition as it stands. But it is my business to emphasize that it may be upward movements in the Rate of Saving which in themselves render an equality between Saving and Investment impossible without any autonomous change in the Rate of Investment. Mr. Keynes has suggested this possibility himself in certain places, but he has not connected his opinions on this subject with existing theories of under-consumption.

In order to make plain the relationship between my own conclusions and Mr. Keynes's analysis of monetary circulation, I must examine as briefly as I can the construction of Mr. Keynes's Fundamental Equations. They can be built up from Messrs. Foster's and Catchings' proposition that without any saving: total costs = total incomes = total prices.[1] Mr. Keynes calls total incomes E, and denotes the price level of output (O = number of units with any given cost) by the usual symbol P. In the absence of any saving the whole output must consist of consumption goods. Then the Price Level of consumption goods is given by the equation $P = \frac{E}{O}$. This implies that E (total

[1] I am not suggesting that Mr. Keynes owes anything to these gentlemen, but only that the relation of his work to the theory of under-consumption is best understood through approaching his equations in this way.

incomes) = PO (total prices and total costs) which is the first condition of monetary equilibrium. If then saving takes place (at a rate S) the dilemma of the under-consumption theories at once appears, for prices must fall by an amount determined by the height of the Rate of Saving, i.e., $P=\frac{E-S}{O}$. Costs have been $\frac{E}{O}$; prices are now $\frac{E-S}{O}$, so that if S is positive prices are below costs.

But in terms of purely monetary equilibrium we must allow for that part of the savings which is spent upon some sort of output in the activity of Investment. Suppose that the Rate of Investment is equal to I, then the price level of output as a whole (which Mr. Keynes denotes by π) will rise above what it would have been if no investment had taken place by an amount determined by the height of the Rate of Investment, i.e., $\pi=\frac{E-S+I}{O}$

Two price levels have appeared at this moment because as soon as investment begins there are two types of output; there is an output of capital goods. If we are to abstract the Price Level of consumption goods (P) from the price level of output as a whole we must make allowance for the possibility of profits in the production of capital goods — i.e., of money maintaining the

price level of investment goods alone, and not entering into the streams of money which currently affect the price level of consumption goods. This difficulty Mr. Keynes surmounts by letting I = the expenditure upon capital goods (or their value) and I′ = their cost of production so that I − I′ gives the profits or losses peculiarly associated with the production of capital.[1] It is I which affects the price level of output as a whole so that we have $\pi = \frac{E-S+I}{O}$ or $\pi = \frac{E}{O} + \frac{I-S}{O}$; while it is I′ (that part of I which is not merely creating profits upon investment goods) which affects the price level of consumption goods whose output = R. So that $P = \frac{E}{O} + \frac{I'-S}{R}$. These are Mr. Keynes's two Fundamental Equations.[2] How do they and the analysis based upon them bear upon the theory of under-consumption and the view that changes in the Rate of Saving are likely in themselves to destroy a pre-existing equilibrium?

At *first* sight the equations appear to be antagonistic to this thesis, and in general Mr. Keynes

[1] By 'Profits' Mr. Keynes means all money returns over 'normal returns' to any type of factor – 'normal returns' being the money income the factors would receive in a condition of equilibrium. The existence of profits is not, therefore, compatible with equilibrium.

[2] There is a Third Equation to be derived from these two giving the Price Level of Capital Goods.

interprets them in this sense — as for example in the passage I have already quoted.[1] Let us see how the antagonism arises. The conditions of equilibrium in the monetary system are given by total incomes = total prices = total costs or $P = \frac{E}{O}$ ($E=PO$). Now both Mr. Keynes's equations simplify into this condition of equilibrium if Investment is equal to Saving. If I (the value of Investment) is equal to S, then in the equation which represents the price level of output as a whole $\pi = \frac{E}{O} + \frac{I-S}{O}$ the second term $\frac{I-S}{O}$ becomes zero, and we are left with $\pi = \frac{E}{O}$, as required by equilibrium; while if I′ (the cost of investment) is equal to S, then the second term disappears from the equation $P = \frac{E}{O} + \frac{I'-S}{R}$, and we are left with prices equal to costs in the production of consumption goods. It is only if the second term is positive or negative; that is, if Saving and Investment diverge that the conditions of equilibrium are disturbed. All that a change in the Rate of Saving will involve is corresponding changes in the other quantities which will render the second term of each equation equal to zero:

[1] See p. 107.

i.e., $\pi_1 = \frac{E}{O_1} + \frac{I_1 - S_1}{O_1}$ (when $I_1 = S_1$) will become

$$\pi_2 = \frac{E}{O_2} + \frac{I_2 - S_2}{O_2} \text{ (and } I_2 = S_2).^1$$

Hence at first sight it appears that Mr. Keynes's equations demonstrate that disequilibrium can only be *caused* by autonomous changes in the relation between savings and investment; changes which are not necessarily caused by a rise in the Rate of Saving.

But a *second* and more careful examination will show that there is really nothing in this which is antagonistic to the argument advanced in the last chapter. For it is at once apparent that there is nothing in Mr. Keynes's equations which suggests that an increase of saving will not be accompanied by net losses in the production of consumption goods. If Investment is kept equal to Savings at the moment when the Rate of Saving rises, the rise in the Rate of Saving will lead, in terms of Mr. Keynes's equations, to profits in the production of *investment* goods ($I > I'$), which must be offset by *equal losses in the production of consumption goods*, since when investment is equal to saving and no new money is coming into existence, total profits

[1] This change merely implies the simple condition that the increase in the amount of money spent on new capital is equal to the increase in saving.

must be equal to zero.[1] Hence an increase in the Rate of Saving, whether or not it causes profits to appear in the production of capital goods, must cause losses to appear in the production of consumption goods. This is also clear if we realize that the current output of consumption goods has been produced at the level of 'normal' costs and profits but that less money than is sufficient to cover these costs is now being spent upon them. We thus reach by way of Mr. Keynes's Equations the position which I sought to establish in Chapter III. Now I do not expect that Mr. Keynes is likely to think that the appearance of losses in the production of consumption goods will increase the demand for capital or stimulate investment. But if Investment falls, or remains constant, or fails to rise as much as the Rate of Saving has risen, the Rate of Investment will be below the Rate of Saving and net losses will appear in the system as a whole, and with them all the phenomena of depression will set in. It is precisely this that I have been arguing. An increase in the Rate of Saving has, by itself, caused losses to appear in the production of consumption goods, has diminished or failed to increase the Rate of Investment, so that it has created without the

[1] In terms of Mr. Keynes's Equations $Q_1+Q_2=0$, where Q_1 = the Profits in the production of Consumption Goods, and Q_2 = the profits in the production of capital.

intervention of any other cause the condition in which Savings are likely to exceed Investment. There seems therefore to me to be nothing in the thesis of the last chapter which is contrary to Mr. Keynes's position.

§ 3. THE INEQUALITY OF SAVING AND INVESTMENT

Before continuing the main argument of the book I must briefly examine the light which the distinction between Saving and Investment throws upon the causes of monetary disequilibrium.

In Chapter II I attempted to prove that the process of saving did not, in certain circumstances, reduce the total market for industrial output. This is true, in the first instance because the expenditure of the savings increases the market for certain types of production; and in the second instance because the capital improvements which the savings have made possible reduce the money costs of the larger output, and keep them equal to the smaller monetary expenditure. Throughout the process, the preservation of prosperity depends

upon an equality between total prices and total costs. If, as we have just seen, the money paid for the output of industry as a whole, capital goods and consumption goods taken together, falls short of the amount paid away as costs to the factors of production, then somewhere in the industrial system there will be a net loss, and contraction and unemployment will result. Now a condition of this sort will be brought about if any of the money paid out by the industrial system to the factors of production is saved (i.e., not spent on consumption goods) by the consumer to whom it ultimately accrues; *and is not returned, either by him or by someone else, to the industrial system through the purchase of capital goods.* It does not matter whether the money is returned in this way by the person who saves it, or by someone else after a whole series of monetary exchanges have intervened. What does matter is that the money spent by the group of individuals who buy capital goods should be equal to the money saved by the different group of individuals who refrain from buying consumption goods. It does not matter, for example, whether Mr. Smith, who saves £100 in 1932, should buy £100 of government loan from Mr. Brown, who buys a South American State Loan from Mr. Jones, who buys an existing debenture from Mr. Robinson, although none of these

purchases increases the market for capital goods, as long as Mr. Robinson at the end of the series does buy a new security which represents *new* investment, or spends the money himself on capital improvements or consumption goods. As long as the money saved by Mr. Smith is ultimately spent upon the output of some industrial concern, the conditions of equilibrium are fulfilled. As long as the stream of money pouring out of the investment market for the purchase of industrial products is equal to the stream pouring into it from the pockets of individual savers, the market for total output is constant. If with Mr. Keynes we designate all moneys not spent on consumption goods as 'savings'; and all the money spent on industrial output other than consumption goods as 'investment'; then the general condition of full employment without losses can be maintained only as long as investment is equal to saving.

A great deal of time has been spent by the 'Cambridge' economists since the War in analysing the circumstances under which this condition of equilibrium will not be fulfilled. In the present context I must content myself with a short catalogue of the causes which they have discovered for divergences between savings and investment.

1. *Increasing Production and the Velocity of Circulation.*

Mr. Robertson has suggested[1] that if there is a good harvest, or an invention in the production of certain commodities, the consequent increase in physical output may indirectly cause saving to exceed investment. This will happen if the commodities are of such a type that less is spent upon a greater physical quantity than upon a smaller — i.e., that the price falls by a greater percentage than the physical output increases. As the output increases, consumers spend less upon this particular commodity, and unless they spend more upon some other commodity the total receipts of the industrial system will fall short of its previous costs by the amount they fail to spend. In our terminology, saving has increased. If such saving causes an immediate fall in the rate of interest, and an immediate increase in the volume of investment, nothing more serious than a transfer from one kind of production to another is necessary to restore equilibrium. But if we suppose that instead of this the consumers only become aware of a relatively small reduction in their expenditure, and therefore allow a small increase in their bank deposits or in their cash balances to take place, then a very small change

[1] *Industral Fluctuations.*

in the balances held by a large number of individual consumers may represent a very considerable reduction in the market for a single industry.

In circumstances such as these the public are really depositing more with the banks. They are leaving deposits with them for a longer period of time, and all that is necessary is that the banks should lend these increased savings to producers who will invest them. Unfortunately the banks are not necessarily aware of what is happening. The total of their customers' deposits remains unchanged. One set of individuals — the consumers — are holding larger balances, while another set — the traders — are of necessity holding smaller balances. But the public does not, and cannot change the total. Moreover the banks in order to lend more may be forced to lower either their rate of interest or the degree of security which they require in a way that may not be immediately profitable to them. Any cause which may lead to an increase in saving through the banks does not therefore necessarily lead to an increase in investment by the banks, and from this cause alone investment may fall short of savings and general unemployment appear.

Reasoning of this type has been familiar since Mr. Robertson first analysed this cause of disequilibrium in 1926.[1] There are, however, some

[1] *Banking Policy and the Price Level. Passim.*

difficulties in believing that the disequilibrium due to such causes can be very grave. It is a disequilibrium which must have some external cause. The disequilibrium arises because some people spend their bank balances less rapidly, and because there is no mechanism which makes the banks aware that such a fall in the velocity of circulation is taking place. It is difficult to see, however, why the increase in physical output should be predominantly of the type which reduces the velocity of circulation, or that there are no mechanisms which inform the banks of the situation. In the *first* place, if the public begins to hold larger balances or hold them for a longer period of time, the customers of the banks will tend to transfer their money from current account where it earns nothing, to deposit account where it earns something and the banks will be faced by an expansion in that part of their business which actually costs them something and brings in nothing. At the same time, the losses made by traders will bring about a contraction in the volume of loans which the market is willing to take, and therefore an increase in the disposition of the public to hold bank deposits will contract the loan business of the banks and expand their customers' interest-bearing assets. The banks are not likely to be unaware for long of this tendency. It is

not true that the banks are unable to detect a fall in the velocity of circulation. Nevertheless it *is* no doubt true that the banks are unwilling or unable to reduce their rate of interest sufficiently rapidly to off-set the fall in profits which the tendency to hold bank deposits has caused, and if this is so, savings will exceed investment, and losses will be made in industry at large.

2. *Sale of Securities.*

The source of disequilibrium discussed in the last section can be expressed in terms of the Rate of Interest. An increase in the desire to hold bank deposits is really an increase in the supply of savings; and equilibrium requires that the Rate of Interest should fall far enough to increase the sums borrowed from the bank despite the fall in the prices of consumption goods due to increased saving. Mr. Robertson has suggested that there are reasons why the *banks'* Rate of Interest will not fall in this necessary fashion if the increased saving is done through the banks. This may be true or not, but Mr. Keynes has gone on to suggest that even if the saving goes to the ordinary security market and not to the banks, the Rate of Interest may still fail to move downwards to the necessary extent.[1] The only way by which the

[1] *Treatise on Money*, Book III, and in the *Economic Journal*, 1931.

Rate of Interest in the ordinary security market can be reduced is by a rise in the price level of existing securities, while the dividends upon these remain stable or actually decrease. As soon as the relation between the price of existing securities and the dividends upon them changes, the terms upon which new loans can be raised will change also. If the price of securities rises relatively to the level of dividends the rate of interest at which new loans can be raised will fall to a proportional extent.

It has been the orthodox view in the past that an increase of saving, directed to the security market, will raise the price level of existing securities, lower the rate of interest to new investment, and so bring about an increase in investment equal to the increases in saving. Mr. Keynes now suggests that if the producers of consumption goods meet the losses they sustain through an increase in saving, by the sale of securities or a reduction in the rate at which they buy them, then the supply of securities will increase at the same time as the demand for them increases. There will therefore be no necessary change in their price level and no necessary reduction in the Rate of Interest. Once more the Rate of Interest is above the rate which would make investment equal to saving, and net losses will result. The

same argument may be put in an alternative form, by arguing that if the person who saves uses his savings to buy a capital asset held by the producer of consumption goods who makes a loss equal to the quantity of new savings, there will be no tendency for the original loss to be offset, and a condition of insolvency will creep in general paralysis over the production of consumption goods, and spreading out from them infect the whole industrial system. This would constitute the most serious result of an increase in the Rate of Saving.

It certainly may be possible that movements such as these will hold up the Rate of Interest, and that depression is unquestionably intensified by them. At the same time it is important to realize that the cause of the trouble is the failure of the Rate of Interest to fall, and that it is not easy to see why it should be maintained indefinitely. For equilibrium to exist the market Rate of Interest should be equal to the current rate of profits on new investment. As a result of saving the latter has fallen, while the rate of interest is maintained. But why, in general, should it be maintained? How can the market Rate of Interest be above the rate of profits for long? The movement to withdraw funds from productive enterprise of all kinds, in order to earn the higher

money return offered in the security market, must soon restore the equality of the rate of return in industry and in financial speculation and the resources of the consumption industries must ultimately be used up. As soon as this equality is restored the market Rate of Interest will be equal to the rate of return on the cost of new investment, as equilibrium requires. It is, therefore, difficult to see how this process can be a serious or permanent cause for losses and unemployment, unless it is further assumed that the level of money incomes can never be reduced. Moreover it is impossible to believe that a process of this kind can constitute the main impulse to cyclical fluctuation. It depends as much as the underconsumption theory itself upon the assumption that the crisis which ends the 'prosperity' phase of the cycle is preceded by a steady contraction in the demand for consumption goods. It is only because of such a contraction that losses are made in the production of consumption goods and the sale of securities to maintain incomes is ever begun. Now in fact no such previous contraction ever takes place. The crisis supervenes at a moment when the market for consumption goods is expanding most rapidly and even before the level of retail profits is at a maximum. There can therefore be no question of

an 'underconsumption' limit to industrial expansion. This is fatal to the view that a divergence between Saving and Investment due to a contraction in the market for consumption goods is the sole course of cyclical depression. As we shall see[1] this analysis of Mr. Keynes is invaluable in enabling us to understand the processes which take place during the depression itself, processes which make the depression hard to cure; but it does not provide the clue to the cause of the cycle itself.

3. *A Decline of Investment.*

It is finally suggested, along this line of reasoning, that the Trade Cycle occurs because the rate of savings is inherently more stable than the rate of investment. According to this view Saving is so much a matter of habit and is so bound up with the maintenance of conventional standards of living that it may be regarded as an invariable element in the system; while Investment, on the other hand, is the uncertain fruit of confidence, technical invention and business enterprise — all unstable factors and subject to wide fluctuations. If then a group of profitable inventions is fully exploited during a period of active investment and high interest rates, the Rate of Interest will fall

[1] See Chapter v.

sharply and investment will cease when the new processes are fully installed; while saving continues at very much the old level. At once the condition of equilibrium is destroyed. Saving exceeds Investment.

There can be no doubt that this *could* happen. But it is doubtful whether technical invention does proceed in this fitful fashion, or whether it is sufficiently concentrated in one part of the industrial system for the exploitation of one set of inventions to cause any general collapse. It would seem more probable that in the period in which invention is exhausted in one direction, it is active in another, and that on the average the technical opportunities for investment are maintained. At the same time periods of capitalist depression are patently periods in which Investment contracts sharply, without reason to believe that Saving contracts first. The problem is really to understand *why* Investment falls off with the remorseless inevitability of the Trade Cycle, and it is not sufficient merely to say that it does fall off. That is very near to mistaking cause for effect.

From this account of the recent analyses of the relation between the Rate of Saving and the Rate of Investment it certainly follows that this relation is of a crucial importance for the maintenance of general monetary equilibrium. It contri-

butes one essential element to our understanding of monetary processes and it throws great light, as I shall argue in a subsequent chapter, on the nature of the depression phase of the Trade Cycle. But it does not provide us with any explanation of the cyclical process as a whole. It does not lay bare the source of these periodical impulses to set up a rate of investment that cannot be maintained and in dealing with this problem the exponents of the analysis always assume, at some point, a change in the relation between Saving and Investment without showing why that change is inevitable. At the same time there is nothing in this body of work which is radically opposed to the general thesis of this book and I believe that it is possible to incorporate most, if not all of it, into a final synthesis. In the meantime we must turn to examine an entirely different line of thought.

§4. DR. HAYEK AND THE STRUCTURE OF PRODUCTION

The opinions expressed by Dr Hayek, as distinct from those held by Mr. Keynes, offer no opportunity for a pacific settlement of disputes. His opinions are directly and irreconcilably

opposed to the view that an increase of saving can create general disequilibrium. In his case, moreover, the difficulties of exposition are graver: in the first place because his analysis of monetary circulation is itself more complicated, and in the second place because the type of construction which he uses is so very unfamiliar to English eyes and ears. In the circumstances there is no alternative except that I should offer a short exposition of what I understand Dr. Hayek's general position to be and I must apologize both to him and to the reader if I show in my exposition that I have not understood all the implications of his profound but intricate work.

Before I begin my analysis of the central argument of *Prices and Production*,[1] it will perhaps be best to explain its relevance to the general subject of this book. I am engaged in defending the view that an increase of Saving presents a problem of adjustment to the existing system which is of a different degree of difficulty from any other type of change. The stages in the construction of this argument are twofold; in the first place I have argued that from a position of equilibrium an increase of saving will inevitably cause the appearance of net losses in the production

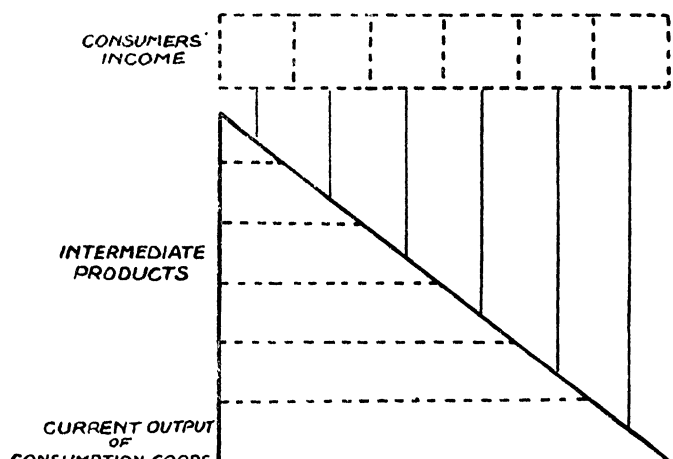
[1] *Prices and Production.* Dr. F. A. von Hayek – especially Lectures II and III *passim.*

of consumption goods despite the fall in the Rate of Interest, and in the second place I have gone on to argue that the appearance of these losses will involve a sympathetic contraction in the demand for capital goods. From these two propositions it follows that an increase in saving may be accompanied by a contraction in the output of both consumption goods and capital goods and that this will result in general unemployment. This I hold despite the fact that it conflicts with some of the propositions of general equilibrium. Dr. Hayek denies this final position in total. In his view an increase in saving can do nothing but add to the real prosperity of the system. Now the purpose of my analysis of his views is to discover which of the two essential propositions he denies, and I hope to show that his own construction prevents him from denying the first but that he very explicitly denies the second. Hence my disagreement with Dr. Hayek turns upon the account which he gives of the relation between the demand for consumption goods and the demand for capital goods, and my task becomes that of showing that Dr. Hayek cannot justly deny that increases in saving involve losses in the production of consumption goods, but that he does deny that these losses reduce the demand for capital.

The elucidation of Dr. Hayek's views turns upon his general picture of production, his account of the process and results of saving, and his account of the significance of the Rate of Interest. To explain his views he makes use of a diagrammatic representation which we must now examine.

(i) *The general picture of production.*

Dr. Hayek's general picture of production is set forth in a diagram founded upon a triangle of value which represents goods in process of manufacture:



This diagram Dr. Hayek uses to represent a large number of things at the same time:

1. It represents the *technical progress* of goods downwards from the upper or higher stages which consist of the production of the ultimate raw materials of machines, down through all the successive instruments of production to the later stages in which the raw materials for, and the finished stages of, consumption goods are reached at the foot of the diagram. This technical progress is accompanied by a steady *growth in value* which is represented by the broadening of the triangle; and which is equal from one stage to the next to the value of services rendered by the factors of production other than intermediate products which are employed at that stage. The process of technical change and the growth of value goes on in time, so that a *movement in time* takes place from the top to the bottom of the diagram. It must be remembered however that in a stationary system all the stages exist in a constant relation to one another at any single moment. Having regard to the temporal and technical progress it is sensible to speak of the 'earlier' and 'later stages production' referring to the upper and lower sections of the diagram.

2. The diagram represents in its second general sense the *application of the primary factors of production* (land and labour, or labour only) to the successive stages in the production of con-

sumption goods. These primary factors are applied at each stage to work upon the product of the stage before in order to transfer it to the next technical and value stage in production. Thus fixed capital does not appear in the diagram except in so far as it requires certain quantities of the primary factors of production to maintain it in good repair. An example may make the position more clear. Let us suppose that the first stage is the mining of coal, then labour used to dig the coal and the use of the land for which royalties are paid are one group of the primary factors and the labour necessary to keep the mine in good condition is the other; but the actual winding and drilling machinery does not appear in the diagram at all except in so far as labour is required to maintain its efficiency. The wages of all these types of labour, the royalties, and the returns to all types of capital constitute the value of the coal which moves on to the next stage. In the next stage it is used to smelt iron, and once more the labour and land used in smelting and the factors of production used to maintain the foundry are the primary factors used in the second stage, but the actual fixed capital of blast furnaces and railway sidings do not appear except in so far as allowances must be made for their depreciation. And in the same way the diagram proceeds

through all the stages, representing the primary factors used in any way at that stage, but not the fixed capital already there.

3. As a result of this construction the diagram can be used to represent a third type of quantity and that is the *backward streams of money* which maintain this structure of production in any given condition. From the purchase of consumers' goods at the foot of the triangle the money streams back through the system, divided at each stage between the primary factors working at that stage and the finished product of the previous stages. It is essential for this use of the diagram that the fixed capital should be omitted since the only way in which fixed capital enters into the system of monetary streams is in respect of interest payments and depreciation charges. In this form the diagram represents the monetary condition of the streams of money existing in a stationary system of production; makes plain the relation between consumers' income, total costs and the costs of producing consumption goods; and as such contributes a great deal to an understanding of the theory of monetary circulation.[1]

Dr. Hayek next uses the diagram to explain his theory of saving.

[1] Such a use of the diagram does not involve all the intricacies of the other uses to which Dr. Hayek puts it. It was in this sense that I used the diagram in Chapter II.

(ii) *The function of saving.*

The most significant thing about saving, according to Dr. Hayek, is that it brings about a change in the shape of the triangle. This is made plain in the following manner.

1. It is the fundamental technical fact that to lengthen the triangle — that is, to intercalate new and more specialized stages into the course of production — will increase the output of consumption goods from any given set of primary factors. This is the precise translation into these terms of the idea that investment increases productivity which I set forth in Chapter II. Such an increase in complexity can only be brought about by the investment of savings, since it is only in this way that the purchasing power necessary to set up new capital or convert old capital can be obtained.

2. That this lengthening of the process involving capital construction or reconstruction can only be brought about by spending relatively less on consumption goods and relatively more on capital goods, because it is only by this method that the returns to the mobile factors of production can be raised in the stages which produce capital relatively to the stages which produce consumption goods. Saving consists in spending less at the lower stages and so rendering these stages unprofitable and lowering the return to all

factors of production working at that stage, while the investment of these savings causes more to be spent at the higher stages concerned with the production of capital and raising the rates of return to the factors of production of those stages. Since in the equilibrium which existed before the increase in saving the rate of return to equally efficient factors of production was the same at all stages, it is now unequal in the different stages of production, and those factors which are capable of movement will move to the higher stages of production. The fact that a smaller proportion of the primary factors of production are employed in the direct production of consumption goods means that the base of the triangle is proportionally contracted, so that the effect of saving is to render the triangle of value longer and narrower, other things being equal.

Much of this reasoning can be stated verbally in more familiar terms. The relative expansion in the demand for capital will lead to profits appearing in the production of capital goods, which in its turn will attract the mobile factors of production away from the production of consumption goods since this is the only method by which the real physical output of capital can be increased. The increase in the volume of capital will render the other factors of production more efficient and

will increase the output of consumption goods from the same quantity of the primary productive resources. As a result of this increase, the prices and costs of consumption goods and of all intermediate products will decline; and as a result of the transference of the factors of production to the production of capital, the fraction of income earned in the direct production of consumption goods and the proportion which the direct costs of producing consumption goods bear to the total costs of production will permanently decline. This is a simple form of Dr. Hayek's own position.

Finally he analyses the influence of movements in the Rate of Interest during the course of any process of saving:

(iii) *The function of the Rate of Interest.*

The movements of the Rate of Interest are essential to the process of change. The Rate of Interest guides the system from one equilibrium to another in two senses.

In the *first* and ordinary non-monetary sense that it selects the more profitable from the less profitable lines of investment and sees that all the most profitable investments which can be made with the current supply of savings are actually made. This view is not controversial.

In the *second* less familiar monetary sense that

it is movements in the Rate of Interest which lower the money costs of production not only below the new level of prices caused by the occurrence of saving, but also below the level made necessary by the increased flow of consumption goods. Hence, according to Dr. Hayek, the fall in the Rate of Interest is capable of maintaining monetary equilibrium in the production of consumption goods when prices are falling, and by maintaining this equilibrium and rendering capital the relatively cheaper factor of production cause the demand for capital to increase just when it should after the supply of new savings has risen. This last conclusion is, needless to say, the very opposite of the view I am defending and I propose to return to this point in the next section. In the meantime I must explain the uses which Dr. Hayek makes of this general theory of monetary circulation and the function of saving.

Dr. Hayek uses this complicated construction for two purposes, the first concerned with the general theory of the Trade Cycle, and the other bearing more directly on the under-consumption thesis we are examining. In the *first* place Dr. Hayek uses his theory to decry any tendency to inflation, and he bases his theory of the Trade

Cycle upon his analysis of the mechanisms of inflation. As I shall want to examine this theory in the next chapter it may be well to refer to it briefly now. In his theory Dr. Hayek holds that the underlying phenomenon of the Trade Cycle is an oscillation in the real structure of production brought about by the action and reaction of inflation upon the demand for capital. That the Trade Cycle consists in an alternate expansion and contraction in the demand for capital has long been a familiar notion to economists, but Dr. Hayek has given to this feature of the Trade Cycle a far greater significance than it possessed before by connecting it with his theory of monetary circulation. The demand for capital consists of the quantity of money which is offered by entrepreneurs for the purchase of capital goods and the relative demand for capital is the fraction which this monetary demand bears to the total monetary demand. Now the equilibrium of the real structure of production consists in the adjustment of the real factors of production to this relative demand. Thus if one-tenth of the total money expenditure is voluntarily directed by consumers to the purchase of capital, equilibrium in the real structure of production exists if one-tenth of the real productive resources, no more and no less, are attached to the industries concerned with the

production of capital goods. Dr. Hayek argues that the mechanism of inflation prevents this equilibrium from being reached. Producers' credits at the moment of their creation increase the demand for capital and lead to a relative concentration of the factors of production into the capital good industries, but in a subsequent period of time the credits accrue to consumers who, by definition, are only saving a constant fraction of their incomes. Hence the consumers spend so large a part of those new credits upon consumption goods that the fraction of monetary income which is directed to the purchase of capital is forced down. Dr. Hayek then holds that the resources directed to the production of capital goods by the original issue of producers' credits cannot be re-employed in the production of consumption goods, so that the phenomenon of the unemployed resources in the industries concerned with the production of capital goods now appears.

An arithmetical example may make this intricate argument less obscure. Suppose that in the first period of time no saving is taking place and that the expenditure on consumption goods (and therefore consumers' income) is one-quarter of the total costs within the system, and the public are not saving any part of their income. Further let us suppose that producers' credits are now

issued to the extent of one-quarter of the total circulation. The demand for goods other than consumption goods now rises from 3 : 1 to 4 : 1; and the transference of resources to the production of new capital begins, since in the production of new capital the return to the factors of production has risen. This is the period of capital expansion. But in the second period of time these new credits will accrue to consumers, and will be spent by them on consumption goods in an attempt to retain their previous standard of living, since they are not willing to save and the output of consumption goods is falling off.[1] The credits will accrue to them at least at the rate at which they accrued before;[2] which means that

[1] It is sometimes thought that it is an arbitrary assumption of Dr. Hayek's that the credits will be spent upon *consumption* goods as they accrue to consumers. But this is not, of course, true. Any issue of credits means a greater Rate of Saving than the consuming public is prepared to finance, and as the credits accrue to them they must in bidding against each other spend all the new money which comes into their hands in order to *retain* their previous standard of living. Otherwise the spending of the producers' credits will draw away the factors of production from the production of consumption goods and so reduce the standard of living. The only assumption which would invalidate Dr. Hayek's reasoning at this point would be the assumption that the consumers saved the whole of their increased receipts, or that their Rate of Saving changed in just the way dictated by the increase in credits. Such an assumption would be contrary to all reason.

[2] That is to say that the new credits will be divided between the products of the previous stage and the primary factors in that stage in the same proportions. Personally I hold that since the new credits represent profits to entrepreneurs at least a fraction of them will not be reinvested in the products of the previous stage but will be spent on consumption by the entrepreneurs. In so far as this happens it will greatly exaggerate the subsequent reversal of relative price levels.

one-quarter of the old circulation and one-quarter of the rejected credits will come into their hands. They will therefore spend one-quarter of the total circulation upon consumption goods, and the relative demand for capital will at once fall to the old proportion of 3 : 1. This is the period of crisis. It will be impossible, according to Dr. Hayek, to reabsorb the factors of production into the production of consumption goods, and so the period of crisis will be followed by a period of unemployment concentrated in the industries associated with the production of capital goods.

With this very inadequate account of Dr. Hayek's theory I must be content. We are not here directly concerned with the detail of it, but I hope that I have said enough to make it clear that there are three outstanding features in the theory:

First the view, not peculiar to Dr. Hayek, that the central feature of the Trade Cycle is an oscillation in real structure of production about the equilibrium dictated by the voluntary saving of the consuming public.

Secondly, that this oscillation is caused by the process of inflation. Producers' credits lead to an expansion in the Rate of Investment beyond the Rate of voluntary saving at the moment of their creation, and then through the course of monetary

circulation to an increase in consumers' income which reduces the relative demand for capital to the pre-inflationary level or even below it.[1]

Thirdly, that the crisis is brought on, and the reduction in the demand for capital is begun and finally rendered inevitable, by the *rise* in the price of consumption goods. It is this last proposition which is so inimical to the thesis that I am defending. This theory of the Trade Cycle is the first use which Dr. Hayek makes of his analysis of monetary circulation.

For the moment however I am chiefly concerned with the *second* use which Dr. Hayek makes of his construction, and that is to suggest that there is no possibility of general disequilibrium arising from a rise in the Rate of Saving. Now I hope that it is abundantly clear from my account of Dr. Hayek's theory of saving (see p. 121) that he does not deny, and cannot deny on his own showing—that an increase in the Rate of Saving will cause net losses in the production of consumption goods. Implicit in his own construction is the demonstration that it will. Any increase in saving is only made effective, as Dr. Hayek emphasizes, by the transference of the factors of production away from the direct production of consumption goods,

[1] If any of the profits are spent by the entrepreneurs as in footnote on p. 140.

and this transference is rendered possible by the fact that the return to the factors of production in these stages has fallen, while the return to them in the stages concerned with the production of capital goods has risen. In the original position of equilibrium before saving began the return to the factors of production in all stages was equal, and therefore the condition of unequal returns is the same thing as the existence of profits in the production of capital goods *and of losses in the production of consumption goods*. Up to the moment at which savings began there was a relation of equality between prices and costs in the production of consumption goods. A large part of these costs will be contract costs (costs which cannot be automatically reduced); and the automatically variable elements include what Mr. Keynes would call 'normal profits'. When saving takes place the first effect must necessarily be a sharp fall in the prices of consumption goods in general, and the whole weight of this fall must be borne by the variable monetary payments being made in the last stages of production. This state of affairs contains within itself the whole conception of losses in the production of consumption goods. Therefore I am right to argue that Dr. Hayek, so far from denying that an increase of saving will involve net losses in the

production of consumption goods, uses a type of construction which claims that the appearance of these losses is a *necessary* step in the mechanism of all real saving. And yet he denies that saving can produce general disequilibrium.[1]

It will be remembered that I based my argument that an increase of saving could produce the phenomena of temporary depression upon two separate steps of reasoning; first, that an increase in saving involved losses in the production of consumption goods; second, that these losses involved a sympathetic contraction in the demand

[1] Dr. Hayek has suggested to me in conversation and in *Economica* (Feb., 1932) that 'losses' in the production of consumption goods will be avoided through the contraction in the output of consumption goods which will follow the increase in real investment, since that increase can only be brought about by a withdrawal of the mobile factors of production from the production of consumption goods. At this later period the price of consumption goods will tend to rise, and Dr. Hayek suggests that the fall in the Rate of Interest, which he believes will accompany an increase in the Rate of Saving, will make it profitable for the producers of consumption goods to hold stocks until the time when prices will rise as a result of the fall in the output of consumption goods. But this, of course, has nothing to do with my main argument. I want to show that saving will only be effective, and the transference of resources away from the production of consumption goods will only be initiated, if there *are* 'losses' in the production of consumption goods – and that once there are losses investment becomes more difficult. The force of my argument lies in the contention that an increase of saving will render investment more difficult in the short period and *if* the investment does not take place *there is no contraction in the output of consumption goods because no resources have been drawn away*. In any case, as Dr. Hayek has argued so forcibly himself, you cannot have your cake and eat it too in the matter of saving and consumption — if capital is to increase, factors of production must move from the production of consumption goods and if they move there must be some reason for their moving and the only reason can be the appearance of losses in their present employment.

for capital. I hope I have shown with sufficient clarity that Dr. Hayek cannot deny the first of these steps but that he does deny the conclusion. It must therefore be the second step which he disputes. He must dispute the proposition that the demand for new capital in general is determined by the profits made in the production of consumption goods, and he must oppose the view that the way to increase the output of capital is to increase the profitability of producing consumption goods. In his controversy with Mr. Keynes he says:

> '. . . *the increase in the demand for consumers' goods* if not offset by a new increase in the amount of money available for investment purposes, so far from giving a new stimulus to investment, *will, on the contrary, lead to a decrease in investment* because of its effect on the prices of the factors of production . . .'[1]

And again in his paper on the 'Consumption of Capital' he writes:

> 'Money which is spent for consumption goods to-day not only does not increase immediately the buying power of those who produce for the future but, since there is always the choice open whether to invest the available factors of production for a longer or shorter period of time, it actually competes with the demand of those

[1] Dr. Hayek. *Reflections on the Pure Theory of Money of Mr. Keynes. Economica*, 1932. Italics mine.

who want to produce for the future and whose command of money is determined not by present but by past prices of consumers' goods. All those who tacitly assume that the demand for capital goods must always be directly proportional to the demand for consumers' goods seem to forget that consuming and saving are alternatives and that you cannot, at the same time, consume more and postpone consumption in order to increase your stock of intermediate products.'[1]

These passages prove beyond dispute that the ground of difference between Dr. Hayek's position and the simple theory that I am attempting to defend centres upon the relation between the price level of consumption goods and the total demand for capital.[2] It is this relationship that we must turn to examine if we are to advance our study any further.

§5. THE RELATION BETWEEN THE PRICE LEVEL OF CONSUMPTION GOODS AND THE DEMAND FOR NEW CAPITAL

There are two views that are held at present about this important economic relationship, and

[1] *Kapitalaufzehrung*. Zeitschrift des Instituts fur Weltwirtschaft, 1932. Dr. Hayek's own English version.

[2] By the 'total demand for capital' I mean the amount of money which will be spent on new capital at any given Rate of Interest. How will this amount be affected by changes in the price level of consumption goods?

both these views are held with strong conviction. The first of these is the more familiar English view and the second is the view defended by Dr. Hayek, and, I am told, by other Austrian economists.

According to the *first* of these views, the demand for capital is derived from the demand for consumption goods and therefore increases with any increase in the profitableness of producing consumption goods, and the general structure of production can be adequately represented by dividing the industrial system into a group of industries concerned with producing consumption goods (bread) and the raw materials for consumption goods (wheat and flour) on the one hand; and a group of industries concerned with the production of the capital instruments (mills and ploughs) which are used in the manufacture of consumption goods on the other. It is not supposed that any industry is of a pure type, but only that the types of production are pure types, and that the distinction is important in analysing the nature of monetary circulation and the demand for capital. Now the first group of industries demand the product of the second group and in equilibrium consume the whole of its potential output. The group of consumption good industries demand the output of the capital good industries for three purposes:

1. To replace existing capital as it wears out.

2. To increase the quantity of the *existing* types of capital when it is profitable to increase production under the same technical conditions, i.e., when more than normal profits are being made in the current production of consumption goods.

3. To set up *new* types of capital, the process with which we have been chiefly concerned in the preceding chapters of this book. In this type of demand for capital the central consideration is the relation between the Rate of Interest on the one hand and the rate at which average costs will be reduced below average prices by the installation of new machinery.

If one has this picture in mind, and I think most English economists have, it follows at once that the monetary demand for capital will vary *directly* with the price level of consumption goods for the very good reason that it will pay to increase the scale of your business (the second source of the demand for capital) if prices are rising, while it will do nothing to diminish your demand for capital to reduce costs. Hence it follows naturally from this picture that the money demand curve for capital will be moved to the right (i.e., the money spent upon new capital at any given Rate of Interest will

increase) by any increase in the prices and profits to be made in the production of consumption goods.

According to the *second* view held by Dr. Hayek the foregoing analysis is guilty of a fundamental error in reasoning. It is impossible that the *real* demand for capital should rise at the same time as the demand for consumption is increasing. The two groups of industries, one producing capital and the other producing consumption goods are *competing* for the services of the ultimate factors of production, and it is therefore silly to imagine that the real output of the two types of production can move upwards at the same time. It would be as sensible to assume that with a fixed total of ultimate resources you could increase the output of all types of consumption goods at once. It is abundantly clear in this case that if you have more wheat you must have less barley, and if you have more cinemas you must have less cars, and so forth according to the arithmetical truism lying behind the doctrine of 'opportunity costs'. But exactly the same reasoning holds true for the output of consumption goods as a whole on the one hand, and the output of capital goods as a whole on the other. You cannot have your cake and eat it too. If the profits on consumption goods rise they will rise

relatively to those appearing in the production of capital goods, and if the volume of money is constant the factors of production will move to the production of consumption goods *away* from the production of capital goods. The one type of production must fall as the other rises. In terms of Dr. Hayek's own construction it follows necessarily that as profits appear in the later stages the non-specific (mobile) factors of production will be drawn away from the earlier stages leaving the specific factors in these stages high and dry, unemployed and wasted.

This difference appears to be sharp and final. Moreover if the view held by Dr. Hayek is true without modification the thesis of this part of the book must fall to the ground. Is it true? It certainly sounds convincing. Indeed I am sure Dr. Hayek's view is true for the long period. It must be true that in the long run any two mutually exclusive but comprehensive groups of industries must compete with each other for the ultimate factors of production, and it naturally follows that the production of both groups cannot expand at the same time. It is perfectly certain that the output of all the products which are red in colour cannot in the long run be expanded without a relative fall in the output of the products which are not red. But does this conclusion hold during

the short period, the period relevant to the Trade Cycle? I hold that it does not.

If we are to understand the true relations between these speciously antithetical groups of propositions we must distinguish clearly between relative and absolute expansions of demand and output. It is a mere arithmetical truism to argue that if the profits to be earned in the production of consumption goods rise relatively to those which can be obtained in the production of capital goods, the *relative* demand for capital has suffered a contraction. But the problem with which we are concerned for once is a problem of absolute and not relative levels of demand. What we want to know is this: If there is an *absolute* expansion in the monetary demand for consumption goods will there or will there not be an *absolute* expansion in the monetary demand for, and the physical output of, new capital? This is the question relevant to the theory of the Trade Cycle.

Now it is essential at this point to understand that the answer depends on the assumptions that are made about the condition of total employment, or the distribution of unemployment. If you are assuming that all the factors of production are employed, or that there are none unemployed in the capital good industries, it will naturally

follow that it is impossible for the expansion of profits in the production of consumption goods to increase the output of capital. There are no unemployed resources available to increase that output. In such circumstances all that the rise of profits in the production of consumption goods can do is to draw mobile resources away from the production of capital goods and leave the non-mobile specific resources in those industries unemployed. This is the condition which is explicitly assumed in *Prices and Production*, and Dr. Hayek's conclusion therein is formally valid on this point.

But what a different set of conclusions follow the moment we remove the critical assumption of total employment! At once it becomes untrue that an increase of profits in the production of consumption goods involves any *necessary* contraction in the real output of capital. It involves the opposite conclusion. If there are unemployed capital resources it implies that the money rates claimed by these resources are above their monetary marginal productivity at the existing level of monetary demand for capital. Any increase in the money demand for capital will therefore involve an immediate increase in the real output of capital by bringing the unemployed resources into active production. But can there be any

doubt that an increase in the profitableness of producing consumption goods will be accompanied by an expansion in the *absolute* monetary demand for capital? Entrepreneurs will be encouraged to invest courageously, they will borrow more from the banks, the margins at which they will replace capital and embark upon new capital schemes will all be lowered — and an inflationary tendency will be released. I am not for a moment arguing that this inflationary demand for capital can be maintained or that it is desirable that it should be started; but I am contending that once the assumption of full employment in the industries producing capital goods is removed it becomes radically untrue that an increase in the profitability of producing consumption goods is accompanied by a contraction in the real output of capital. On the contrary, it starts an inflationary tendency which in the short period *increases* the output of capital. This demonstration is the one advantage of the simpler and otherwise misleading English picture of the structure of production. Given unemployment in the capital good industries — the type of unemployment which clearly exists during any period of depression — it follows at once that the more normal view that profits in the production of consumption goods and the real output of

capital move together can be justified by the most rigid logic.[1]

I therefore hold that I have defended my own view from the attack to which it might be susceptible from those who hold a form of the Austrian theory of capital. I have argued that an increase in saving could cause a decline in the output of capital by causing losses to appear in the production of consumption goods, and this view involves the corollary (antithetical to the position taken up by Dr. Hayek) that an increase in profits or the cessation of losses in the production of consumption goods may expand the demand for capital. I have tried to demonstrate that Dr. Hayek's position and this view are not in reality opposed to each other. The difference between them is purely that of the assumptions upon which they are based. If there are no unemployed resources in the capital good industries, then it naturally follows that an increase in profits will diminish the real output of capital as Dr. Hayek makes clear, but that if there *are* unemployed resources in these industries the simplest theoretical analysis of the causes of unemployment makes it certain that an increase in

[1] It would, by the way, be impossible to understand on any other thesis the great increase in the output of physical capital which accompanies those inflations which proceed by the payment of paper money to consumers (the Government employees).

the absolute level of derived monetary demand will increase the physical production of new capital. How does this conclusion affect the general theory of the Trade Cycle?

§6. THE THEORY OF THE TRADE CYCLE

In analysing Dr. Hayek's theory (see pp. 141-2) I suggested that there are three important propositions contained in it. The first of these is that the Trade Cycle consists in an oscillation in the real structure of production, or a periodical tendency for the rate of capital expansion to rise above and then fall below the rate which can be financed out of the current voluntary savings of the consuming public. The second proposition is the theory that this oscillation is begun and made inevitable from start to finish by the creation of producers' credits in excess of those required to make the rate of voluntary saving effective, since it is this process and this process alone which can cause the Rate of Investment to exceed the Rate of Saving.[1] And the last proposition is Dr. Hayek's belief that the process of expansion is *ended* and the crisis begun by the relative rise

[1] It is not always realized that the Rate of Investment can never exceed the Rate of Saving unless new money is created, but that if new money is created when no saving is going to waste, then Investment will always exceed Saving.

in the price level of consumption goods. I think that it will be obvious that my own arguments seek to modify only the third of these propositions.[1] I am convinced that every line of theoretical reasoning justifies the belief that the Trade Cycle consists first in setting up a Rate of Investment that cannot be maintained and then in recovering painfully from the muddle into which this process has forced us. I also believe that the original impulse to set up an unstable Rate of Investment is to be traced to the process of monetary inflation and to the prevalence of price stabilization policies. I think that the only cure for the Trade Cycle is to stop this periodical inflation.[2] In all this my debt is to Dr. Hayek's published work, and I feel sure that economic science is indebted to him for making the first excursion into the difficult field of the mechanisms of inflation, the field in which alone the solution to this intricate problem must finally be found. But there is one point upon which I feel it is necessary to amend his conclusions and that is in the question of the short period relationship between the price level of consumption goods and the demand for capital.

[1] Of course given the assumption of full employment Dr. Hayek's argument is right at this point. Indeed I have nothing on this score against the internal consistency of *Prices and Production*, only that its assumptions about employment are not the correct ones for an analysis of the actual Trade Cycle.

[2] See Chapter VI.

In this matter I hold that the relationship between the relative and absolute movements of demand and production turns wholly upon the assumptions which are made about the condition of unemployment. In *Prices and Production* Dr. Hayek makes the assumption of full employment, and his conclusions are therefore formally valid, but I hold that the right assumption to make about a system which has actually suffered a series of Trade Cycles is a different one. I hold that for such a system one must hold that during depression and the first period of recovery you are dealing with a system that has a relatively large surplus capacity in the production of capital goods and a relatively small surplus capacity in the production of consumption goods. If this is true then it becomes essential to work out a theory of the Trade Cycle upon these more realistic assumptions, assumptions which involve the view that when the price level of consumption goods begins to rise the output of capital will increase. *Prices and Production* is a prolegomenon to a more detailed theory of the Trade Cycle. It is to the beginning of this task that I must now turn.

CHAPTER V

THE COURSE OF THE TRADE CYCLE

§ 1

THE Trade Cycle with its rhythm of increasing and diminishing productive activity presents three problems to the analytical economist:

(i) The source of the impulse to begin a Rate of Investment which cannot be maintained. This is the problem raised by the later period of recovery and the period of uncontrollable boom.

(ii) The actual mechanism by which the Rate of Investment is finally curtailed and unemployment first created. This is the problem of the forces at work during the period of crisis and the onset of recession.

(iii) The reason for the obstinancy of depression. Why is it that prosperity does not return with the relaxation of the monetary strain and the return to easy conditions in the money market? This is probably the most difficult problem of the three.

I believe that no existing theory has successfully solved all three of these problems or knit

the separate explanations of each of them into one consistent body of hypotheses and reasoning. But I do believe that since the War a number of separate contributions have been made to a common stock of knowledge out of which a single explanation can be built.

Here are three main strands of reasoning which I think contribute greatly to a solution:

(1) The latest of these is Dr. Hayek's attempt to fuse the Austrian theory of capital with a realistic picture of monetary circulation and the structure of different price levels in an advanced capitalistic economy. Without subscribing to the detail of this particular attempt I would claim that it is only by some such construction that it is possible to see in the Trade Cycle the underlying oscillation between more and less capitalistic structures of production or lay bare the movements of producers' credits through which the instability of the Rate of Investment is made inevitable. I do not however feel, as the last chapter will have shown, that Dr. Hayek has made use of his construction in the most realistic way.

(2) For the second contribution to a final explanation I think that we must return to Mr. Hawtrey's earlier and more familiar work in which he explains how the impulse to a profitable monetary inflation is necessarily checked within a

banking system which is compelled to maintain a fixed relation between credit and cash. His explanation of the mechanism by which an external cash drain from an open system and an internal cash drain within a closed system must arise shows how a period of inflation must finally be checked for purely banking reasons, as long as the total quantity of available cash is limited in any way.

(3) Finally, Mr. Keynes's later and more difficult analysis of the processes of monetary *contraction*, falling velocities and the financing of losses by the private consumption of capital — an analysis which Mr. Keynes himself attributes in large part to Mr. Robertson — contributes an essential element to our understanding of the obstinacy of depression. Mr. Keynes makes it intelligible[1] why the Rate of Interest cannot fall to an equilibrial level after the crisis and why the occurrence of losses in the production of consumption goods tends to perpetuate and exaggerate itself until the painful process of reducing money incomes at last begins.

It is these elements which, in my opinion, must be combined into a single consistent theory of cyclical fluctuations and to them I would add two further suggestions:

(4) I think it is essential to interpret Dr.

[1] As we saw in Chap. IV, §3.

Hayek's analysis of monetary circulation in a way which he rejects. It is necessary, in my opinion, to emphasize the dependence of capital construction upon the profitability of producing consumption goods. Hence I hold that it is important to understand that the output of capital will be stimulated by a rise in the price level of consumption goods as long as there are unemployed resources attached to the capital goods industries and that the output of capital will be sharply contracted if the price level of consumption goods falls off whether or not any unemployment existed before the price level fell. The *proportional* decline in capital good production will of course be determined by the proportion which the output of new capital, at any given level of profits in the production of consumption goods, bears to the output of capital which is required for the mere replacement of the existing quantity of capital.[1]

(5) Finally, I hold that an important element of the truth is to be found in a simple corollary of the proposition that the Trade Cycle is due to over-investment. If over-investment has taken place in the past then it follows that there is

[1] If, for example, the replacement of existing capital represents 50 per cent of the capacity of the capital good industries, then a decline to zero of the profits to be obtained by extending the production of consumption goods would cause the production of capital to decline by *one-half*.

a permanent surplus capacity in the capital good industries which is always available for increased capital production and which strongly predisposes the whole system to fluctuation. This idea is remarkably neglected in all existing theories of the Trade Cycle! Yet surely it is clear that in any system which has undergone many waves of over-investment the industries concerned with the production of capital instruments will have attracted to themselves a supply of the factors of production in excess of those which can be profitably employed by voluntary saving and which will be permanently attached to those industries in a specialized and immobile form. This will be true of both physical capital and human workers, for it is an elementary error to assume that labour is less specialized and more mobile beyond a certain age than the machines with which labour works. But if there is an excessive complement of all the factors of production permanently attached to the industries producing capital then the system is peculiarly liable to fluctuation for the very good reason that there is a great surplus of productive power which can easily be taken up the moment that the demand for capital in the production of consumption goods increases; and by bringing new men and machines into work and providing an avenue for inflation can continue

to raise the demand for consumption goods in a cumulative cycle. There is, so to speak, a 'bulge' in the real structure of production, a surplus capacity in certain types of industry, which is very likely to be filled out, or taken up, by the very least impulse to inflation.

Let us now see whether it is possible to construct out of these elements a unified theory of the Trade Cycle. To do this we must return to the three problems into which I divided the phenomenon of rhythmical expansion and contraction.

§ 2. THE 'RECOVERY' AND THE 'BOOM'

Let us assume that investment has started once more after a period of severe depression and languishing capital production. How the recovery has been made inevitable we shall discuss at the end of the cycle. Investment has recommenced without inflation, and as a result of investment, costs *and prices* are tending to fall in the way I have described at length in Chapter II. But the fall of prices due to the fall in costs is singularly unwelcome. No one except an economist seeks to distinguish between a fall in prices due to a fall in costs and one not due to a fall in costs. All downward movements in prices are dreaded. Depression is still fresh in people's minds, and

that depression was 'caused' by a sharp fall in prices so that any renewed tendency for prices to fall will be watched with fear and suspicion. Moreover, the banks are in a perfectly safe position and could make large profits by increasing credit and allowing monetary investment to take place at a greater rate than the current modest savings of a depressed community will permit. Finally it is obvious that such inflation will increase employment![1] There is no possibility in the past and present temper of monetary thought but that the banks should pursue their usual 'reserve-position-cum-price-stabilization policy.' In short they will seek to stabilize prices despite falling costs.

Prices are stabilized and costs are falling as a result of new capital construction so that net profits are appearing and the demand for money will begin to grow. An alternative formulation of this condition is to say that the money Rate of Interest is below the real Rate of Interest, or as I should prefer to say, the Rate of Interest is below the Rate of Profits.[2] Whatever the precise mode of expression the simple fact is that a price

[1] Because there is unemployment in the consumption goods industries which can be taken up at this stage of depression by any increase in the volume of spending.

[2] That is that the expenditure of £100 will increase the margin between prices and costs by more than the Rate of Interest upon the £100.

stabilization policy will increase the demand for money and cause the Rate of Investment to exceed the current Rate of (voluntary) Saving. Whether or not the price level of consumption goods is rising the physical output of capital will increase. The 'bulge' is filling out, the surplus capacity of the capital good industries is taken up and the movement is reinforced by any tendency on the part of the prices of consumption goods to rise; for such a rise stimulates still further the demand for capital, and there is no need for resources to move from the production of capital goods because there are unemployed resources everywhere. Recovery leads to boom, and it is only in the most extreme types of boom, and then only in the later stages, that there is 100 per cent effective employment.

§ 3. THE 'CRISIS'

But the process cannot go on. In the first place for purely banking reasons the monetary inflation cannot continue indefinitely. As Mr. Hawtrey has made clear, the Banks cannot continue to satisfy the increasing demand for money indefinitely, because their reserve positions are rendered more and more dangerous both through the increase of credits and through the increasing rate

at which the inflow of cash falls short of the outflow.[1] After a certain time they must reduce the rate of increase of credits, and even contract their liabilities. Even if this process does not intervene (as it does in nine cases out of ten) the increase in monetary investment could not go on indefinitely increasing the real capital output because beyond a certain point the whole surplus capacity in the industries producing capital goods is taken up. Beyond that point the two types of industry become competitive, and the output of capital could only be increased at the expense of consumption goods as Dr. Hayek has argued. Even so I cannot agree with Dr. Hayek that the process will be brought to an end when the transference of factors to the production of consumption goods begins. The transference of factors to the production of consumption goods only takes place because the price of consumption goods is high, but in my view this will mean that the derived demand for capital in monetary terms is still increasing,[2] and therefore that all the factors of production can be employed at rising money rates. As I see the matter, there is no real limit to the process at

[1] See Mr. Hawtrey's *Currency and Credit*, chaps. i-iv, in which he shows how the accumulation of cash balances during a period of monetary inflation is bound to cause an internal cash drain from the Banks.

[2] i.e., General monetary inflation is still taking place.

all, and beyond the point at which the surplus capacity is fully taken up pure inflation unaccompanied by significant real change could go into the stage of 'high inflation'. Hence I hold that the *crisis*, but only the crisis, is a 'purely monetary phenomenon'. There comes a point at which the choice is between pure inflation and the critical step of credit restriction. This crisis is inevitable from the moment at which prices fail to fall as rapidly as costs.

We are now at the moment of crisis. The Banks in order to protect themselves refuse to extend credit any further, and to offset the continuing net outflow of cash they may even seek to reduce the outstanding volume of credit. No doubt they think that the present level of employment can be stabilized or more likely they don't think at all. But even if they do hope for stabilization at the boom level they will be disappointed. Investment has been undertaken on the assumption that the rise in prices or the stable level of prices will continue. The change in credit policy means that this expectation is not fulfilled. At once it becomes unprofitable and even impossible to complete the existing plans of investment, not as Dr. Hayek argues because mobile factors will be drawn away to the production of consumption goods, but because the money which was necessary to finance

them is not forthcoming from the Banks and the course of prices which justified them has run contrary to all previous expectations. As soon as the Rate of Investment falls to a lower level the whole existing structure of production is rendered unstable because the contraction in the stream of active money will exert a depressing effect upon the price level of consumption goods and render still further degrees of investment unprofitable. A cumulative process of losses, contraction and bankruptcy must begin.

It is no doubt true that the rise in the market Rate of Interest exerts some effect on the costs of production and to that extent diminishes investment and accelerates the crisis, but as I have argued at length in Chapter III I do not believe that this effect is considerable having regard to the small fraction of money costs which are directly affected by movements of the Rate of Interest.[1] In my opinion the whole of post war monetary theory attaches far too much practical importance to the height of the market Rate of Interest because movements of the Rate have been of so much political significance.[2] Bank charges in total constitute such a small element in costs,

[1] See p. 91.

[2] I do not mean to suggest that movements in the official Bank Rate have not been associated with important monetary changes, but only that these movements are the signal for the release or restriction of inflationary tendencies on the part of the Banking System, rather

while every part of the system is so very sensitive to changes in prices that I am convinced that all major charges must be traced to movements in prices and in the crude relationship between money and goods. The real cause of the crisis is not the change in the market Rate of Interest but in the course which the price level takes as a result of the forcible restriction of the circulation. It is no doubt true that this contraction is required in order to make the higher Rate of Interest effective, but the immediate cause of the crisis is the reversal of the crude inflationary movement, and not any subtle changes dependent upon the fractional movements of the market Rate.

Whatever the precise and varying *modus operandi* may be the Banks are somehow forced to precipitate the crisis which therefore first appears in the markets for money and securities. Depression now sets in.

§ 4. THE 'DEPRESSION'

Contraction in real investment and in employment soon follows, and follows inevitably, after the purely financial crisis. The tides of activity recede from the capital good industries as soon as the

than the direct economic cause of such changes. It is the actual rate at which credit is created or restricted which depends much more on the class of security accepted by the Banks than on the small changes in the costs of borrowing.

first bankruptcies and retrenchments are enforced by credit restriction, but the production of consumption goods will continue to be relatively profitable as long as the producers' credits which flowed out from the banks in the later stages of recovery are still passing down through the structure of production into the hands of final consumers. The rate at which the consumer's income was rising will fall very soon after the crisis and may become negative after a while. This contraction in consumer's income brings down the price level of consumption goods and exerts a cumulative depressing effect upon new investment. But the change in the rate of increase does not necessarily involve an absolute movement in consumer's income for some time. The stream of new credits will continue to circulate through the system and accrue to consumers long after the increase has been cut off at the source. Consumer's income may continue to rise for months after the financial crisis. It is only when the contraction in capital investment has caused a considerable degree of unemployment in the capital good industries, that the secondary fall in confidence and velocity will reduce consumer's income so severely that unemployment will appear in the production of consumption goods and the phenomena of what Dr. Hayek calls the 'secondary

deflation' will set in. This is the period of maximum depression.

Now why is it difficult to cure this condition of acute depression? This period of depression is the most commonly recognized phase of the Trade Cycle. It has borne the weight of democratic censure. It has been the subject of most detailed analysis by economists, politicians, and political economists. It has been attacked by inflationary campaigns on the part of national banks, by international arrangements and by State-aided public works, and it is now to be bombarded with the heavy artillery of world inflation. But the inflationary experience of America in 1930 and our own experience with public works does not lend authority to the view that much can be done to relieve cyclical depression during the earlier stages of recession. It is not hard to believe that many of these admirable attempts have only made matters worse.[1] Even the probable 'success' of world inflation is to be attributed more to the lateness of the period of depression in which the attempt has been begun than to the intrinsic value of this particularly powerful instrument. Why is this? Why is depression so powerful

[1] By rendering the production of consumption goods a little less unprofitable than the production of capital goods and so preventing general liquidation without rendering their production really profitable and so stimulating capital investment.

against its enemies, so very able to postpone for its own pleasure the hour at which it can be exorcized?

This is perhaps the most difficult part of the theoretical problem at present. It would be easy to prove that no existing theory gives any adequate explanation. Dr. Hayek does not show why the economic system should be so sensitive to upward movements in the Rate of Interest at the time of crisis and so completely insensitive to the rapid fall after the crisis is over.[1] According to Mr. Keynes's theory all that is necessary to restore prosperity is a policy of forced investment, and on his authority this policy is advocated by numberless economists and politicians, but the experience

[1] Dr. Hayek actually argues that it is more easy to absorb factors of production into the production of new capital than it is to reabsorb them into the production of consumption goods, so that saving can always be increased without disequilibrium but never decreased without it. But I have not yet discovered any adequate reasoning to prove the existence of such an asymmetry. It is sometimes said that it is always possible to start a new capital stage but that it is impossible to absorb new factors at later stages because the available supply of specialized factors is limited at these later stages. But it seems to me that the production of new capital requires just as many specialized factors, just as limited in supply, as the production of consumption goods, and that therefore it will be just as difficult to absorb factors of production displaced from the production of consumption goods by an increase of saving as it is to absorb them into the production of consumption goods after a decrease of saving. The cases seem to me to parallel and the mistake to have arisen from identifying the abstract stages represented in Dr. Hayek's diagram with the concrete stages of capital production when it appears to follow that an increase of capital implies the starting of new stages with non-specific factors alone. In fact, of course, the increase of saving merely means producing more capital instruments with the labour and capital specialized for the production of capital instruments.

of those countries which have really tried it provide very little empirical justification for such views. I can only offer a few tentative suggestions as to the reason for the obstinacy of depression.

(1) I would suggest that the 'secondary deflation,' analysed with so much penetration by Mr. Robertson and Mr. Keynes takes place on such a large scale that it overwhelms after a severe 'boom' all but the most insane campaigns of inflation. It is probable that the velocity of money falls so rapidly that losses are financed by the sale of securities to such a large extent, that people become 'bearish' to such a degree, and that the Banks throw good money after bad with so much determination, that nothing short of inflation at the point of a pistol could stem the tide of contraction. Only if a Government threatened to shoot anyone who refused to accept £1000 notes free of charge on condition they were spent on capital construction could anything much be done. And even then many people would risk death and imprisonment in order surreptitiously to pay off their overdrafts with them. 'A 'boom' has to be expiated by economic pains and ills sufficient to satisfy the most neurotic of 'sadistic deflationists'. But it is not very clear that those who wish to repeat the whole process by a second

inflation are so wholly free from the love of suffering for its own sake.

(2) In the second place it is essential to emphasize that the problem of short-period cure is that of increasing *capital investment* or making investment really profitable. Merely to increase the dole or stimulate consumption by public works will do nothing if it merely offsets the losses which are being made in the production of consumption goods during the second period of depression. That will not really stimulate interest in new capital. All that it will do is to maintain the traditional level of money incomes in the production of consumption goods and stimulate the slow transference of real resources *away from* the production of capital. It must be remembered that during the years following a crisis confidence has received and continues to suffer from a great shock. The entrepreneur and the control of industry in general has got into trouble because too much was invested; those who made the greatest capital investment may very well be those who suffered most heavily; caution is abroad and safety the criterion of efficiency. In such a moment only a very great increase in profits in the production of consumption goods would provide a great stimulus to investment, and the spending of a few millions to produce non-

available output and hold up the price of consumption goods will only serve to attract the factors of production to this more profitable type of production.

Hence the peculiar dilemma of depression arises. Mild inflationary policies do nothing, or very little, to offset the collapse of velocity and may even force down the output of capital still more; while a policy of whole-hearted inflation will merely repeat the Trade Cycle and lead to a new crisis. The economic system is between the devil of unemployment in the capital good industries and the very deep waters of unbridled inflation. How then does recovery ever come?

§ 5. 'RECOVERY'

If we suppose that no conscious policy of inflation is pursued how is it that recovery finally comes? It comes because entrepreneurs are convinced after a time that the low level of prices that has resulted from the previous crisis is in a large part permanent and they then look about them for other methods of increasing their profits. They can only do this by reducing their costs. Now they can reduce their costs either by wage reductions or by capital improvements.

The work of science and of factory experiment has not ceased during the period of depression so that the usual field of new investments is open for entrepreneurs, and the number of these available improvements is greater than usual because the pace at which the stock of inventions is used up has been very much damped down during the period of depression. Also the market Rate of Interest is low. This is a situation that promotes investment. Inventions and improvements available, the Rate of Interest upon new capital very low, monetary conditions very easy, and prices no longer falling catastrophically but still showing no tendency to rise and deflect the entrepreneurs' interest away from the reduction of costs. Investment will begin again. The increase in capital construction will lower average costs and before inflation begins prices will start falling once more, but this time in proportion to costs. We are back at the point at which we began, with falling costs and with the banking system making its choice between allowing prices to move slowly downwards and stabilizing the price level by the issue of new producers' credits. This completes as far as I am able a theory which shows how the phases of the Trade Cycle follow inevitably upon one another given the degree of foresight which at each stage it is sensible to imagine that most people possess.

§ 6. CONCLUSION

I have now reached the end of my task. I have described the main ideas upon which all theories of under-consumption are based; I have submitted those ideas to the test of internal consistency and I have tried to show the ways in which they fall short of the standards required by logical thought, and I have tried to clarify the contribution which they make to the theory of monetary circulation. I have attempted to defend that contribution from the attacks which have been made upon it, and I have finally sought to use the contribution of the theory of under-consumption together with the valuable elements of the other theories of cyclical fluctuation which I have examined to construct a more realistic theory of the process of oscillation. This theory differs from that of Mr. Keynes in tracing the cause of the Trade Cycle to an attempt to stabilize prices when costs are falling and also in denying that inflation will do anything to cure the Trade Cycle; while it differs from that of Dr. Hayek in assuming that a rise in the price of consumption goods will stimulate the demand for capital, and in insisting that the relation between the real output of capital and the demand for consumption goods is controlled wholly by the volume of unemployed resources attached to the

industries capable of producing capital goods. At the same time it will be perfectly clear that although the theory I have here propounded differs in important elements from both of these theories, it derives many of its elements from them, and is in its nature eclectic rather than original.

CHAPTER VI

THE PROBLEM OF POLICY

IF what I have written in the last chapter is true, a number of important conclusions about the theory of under-consumption can be derived from the propositions contained in it. In the first place it follows that the theory of under-consumption is radically wrong in tracing the origin of cyclical depression to a shortage of money. If the theory I have advocated is at all correct the appearance of trade depression is due to an excessive supply of money. It is the attempt to do precisely what the under-consumptionists propose, that is, to increase the volume of money in proportion to the increase of physical output,[1] which forces prices above costs, starts the boom and renders the depression inevitable. This is not to say that increasing the supply of money will *never* do anything to relieve unemployment or to increase production. I have done my best to emphasize my belief that the demand for capital is derived from the price level of consumption goods and that when there is unemployment in the capital good indus-

[1] See Messrs. Foster and Catchings, ch. I, p. 37.

tries inflation will increase the demand for all the factors of production at once. It naturally follows that inflation at the bottom of a depression will increase income, output and employment, and appear to remove the disequilibrium from which the economic system is suffering. This is undoubtedly how recovery actually comes.

But this, in its turn, does not alter the more important fact that it is the policy the under-consumptionists want to pursue which is the fundamental cause of the disease they wish to cure. It is the attempt to stabilize the price level of consumption goods which causes net profits to appear and the boom to begin. Nor does it alter the fact that inflation at any stage merely perpetuates the Trade Cycle, for inflation does nothing to alter the disequilibrium from which the system is really suffering. What then would happen if the policy of the under-consumptionists were pursued and the volume of the circulation was increased by the same percentage as the physical output of consumption goods is increasing? In general it would merely cause the Trade Cycle to appear. If pursued with sufficient vigour during the period of depression it will start the recovery but it will sow the seeds for the next boom. If pursued at any other time it will merely accentuate the process of cyclical fluctuation.

If inflation is not the permanent cure for the Trade Cycle, what is the cure? A permanent cure must eliminate the disequilibrium which predisposes the system to oscillation. I have argued that this underlying trouble is the 'distortion' in the real structure of production caused by successive inflations. By this I mean that the capital producing industries are larger than the current volume of voluntary savings will maintain in equilibrium once the inflation is over; they have attached to themselves a larger fraction of the ultimate productive resources of the community than can be employed there under conditions of stability. If for example the voluntary Rate of Saving normally averages 10 per cent of the social income then the capital good industries have more than the suitable proportion of the productive resources of the community attached to them; and they are really much too big.[1] That is why these industries suffer such great relative depressions. If this is true then the only policy of permanent cure is one which seeks to deal with this top-heavy capital structure, and there are clearly two ways, and only two ways, of doing this.

[1] If for example the Rate of Saving is 10 per cent and the direct production of consumption goods employs a quarter of the total resources the right fraction of the resources which should be devoted to the production of new capital is approximately a quarter of 10 per cent or 2½ per cent. If the successive inflations have attracted 5 per cent of the resources to the industries producing new capital these industries are really 100 per cent too big!

Either the rate of voluntary saving must be increased or the size of the capital good industries must be diminished.

1. To increase the rate of voluntary saving implies a redistribution of the social income. If we are assuming that the Rate of Saving is ten per cent when the proportion of resources attached to the capital good industries is twice as large as this Rate of Saving will employ, then equilibrium will be restored if the voluntary Rate of Saving can be doubled. Such a change can only be secured by redistributing the income in favour of those who save a larger fraction of their incomes than other people — that is, the rich. This is the real purpose of wage reductions, for wage reductions will involve the contraction of small incomes and the expansion of large incomes, and it is out of the latter that the highest proportion is saved and invested. Wage reductions will undoubtedly increase the permanent demand for the output of the capital good industries. But the process of wage reduction is a difficult and unsavoury business. It involves the strengthening of the inequalitarian tendencies of the existing system and implies a further departure from the Rate of Saving which would maximize the satisfaction of an equalitarian society.

2. The other alternative is to reduce the size

of the capital good industries. This policy involves the maintenance of the existing distribution of income and leaving the excessive capacity in the capital good industries to disappear slowly as the old workers die off and the old capital wears out and the stream of young labour and new capital moves into the less unprofitable production of consumption goods. No one familiar with the slow adjustment of the English economic system to a change on the large scale in the relative demand for her products in the last fifteen years will question the fact that this process of cure is also a harsh and painful one.

It is scarcely to be doubted that when the only choice lies between wage reductions on the one hand, or a painfully slow reduction of unemployment in the heavy industries on the other, it will be difficult to *cure* the Trade Cycle. It is natural that the policy of inflation is usually preferred. Yet I have tried to show that such a relief is temporary at the best, the source of the recurrent trouble in the future. It is undoubtedly true in theory that 'reflation' after a depression can be carried without danger to the point at which all the factors capable of producing consumption goods are brought back into full employment, but can there be any doubt that *in practice* a policy which had already cured part of

the depression could not be stopped at any point short of full employment for all the factors of production? Long before that point had been reached the damage would be done and the subsequent crisis and depression made inevitable. It therefore seems to me that there is no real alternative to the slow and painful readjustment of the structure of production to a lower rate of capital accumulation.

CREDIT POLICY

It may not be out of place to describe briefly the nature of the credit policy by which the Trade Cycle could be cured before bringing this book to an end.[1] What credit policy ought the Banks to pursue if the Trade Cycle is to be avoided and full employment to be maintained over the long run? There are two extreme views which have been held on this subject. The *first* of these common to all under-consumptionists and other and more orthodox economists is the view that credit policy should be directed to the stabilization of the price level of consumption goods. The significance of these 'price stabilization' views to the course of the Trade Cycle I have already

[1] The subject of the right credit policy is a far larger one than I can deal with fully in half a chapter, and I hope that it may become the subject of a further publication.

discussed at great length and need not repeat here. The *second* view swings to the other extreme and proposes that credit policy should be directed to the stabilization of the circulation so that there would be no increase in the quantity of money at all. Dr. Hayek holds that it is a constant circulation, involving a fall in prices not only due to increasing technical efficiency but also to the accumulation of credit balances on the part of an expanding industrial system, which alone can prevent the appearance of an unstable rate of capital accumulation.[1] Now a constant circulation[2] imposes upon the economic system two kinds of adjustment:

1. Prices will tend to decline as efficiency increases because there is no increase in the consumer's income to maintain prices as physical output grows larger. This is a sensible and desirable adjustment since it prevents the appearance of the net profits which are the immediate cause of unstable expansions.

2. But it also involves an entirely different adjustment and that is the reduction of the general level of money incomes as the increasing complexity of the economic system requires a larger

[1] The only exception Dr. Hayek makes is in favour of increasing the circulation when the population is rising.

[2] By a 'constant circulation' I mean a constant total of deposits or bankers' liabilities with a constant population.

and larger number of firms to hold balances in an increasing number of technical stages against an increasing number of intermediate products. If the total outstanding volume of credits remains the same while the proportion of the total product of industry which has to be financed at intermediate stages grows larger, the proportion of any total monetary circulation which is directly accruing to consumers will grow smaller and smaller. Hence if the total is constant equilibrium could only be established by a steady decline in the absolute total of money incomes. Such a steady reduction in money incomes of all types would provoke endless resistance and frictions.

For a penance so severe as this I can see no reason at all. Indeed it seems directly contrary to the requirements of equilibrium. If, on the average, the industrial system is *holding* a larger quantity of money there is no reason why the increasing 'idle balances' should not be supplied by the banks since such holdings will exert no effect on relative price levels. The trouble in the case of credit creations which prevent prices declining in proportion to costs is that they are *spent*, and not held, so that they force the price level of finished commodities above the level of costs. But if the industrial system is doubling its demand for idle balances a doubling of the

quantity of credit provided by the economic system need not exert any independent effect on prices at all. It will merely maintain the level of money incomes and allow prices to decline in proportion to costs. In technical terms the transaction velocity and the income velocity of money will be kept constant by this increase of credits, while if credits are not increased the income velocity is forced down and savings run to waste.[1]

It therefore seems to me that the *third* and right policy for banking system to aim at, the policy which will avoid a painful income deflation on the one hand and a profit inflation on the other, is the maintenance of a *constant consumer's income per head*. This will mean that prices will fall as the economic system develops and accumulates capital,

[1] For the argument of this section I am indebted to Mr. Maurice Allen and Mr. James Meade of Oxford, although they are in no way responsible for the interpretation that I have put upon the views that they expressed. It is surprising to me that Dr. Hayek should hold that the building up of balances by an increasing population should be offset by the creation of new credit on the part of the banks, but that the same process performed by an increase in the number of firms (or stages) should not be so offset. In both cases disequilibrium arises because part of the current savings during the period in which the values are built up are not used for the building up of new capital and the employment of the factors of production but are used instead to increase the idle holdings of the industrial system. This is a clear case in which the Rate of Investment is held below the Rate of Saving. The Rate of Interest which would keep Saving and Investment equal to each other and prevent the 'wastage of savings' is one which will lead the industrial system to increase its borrowings to the full extent of the necessary balances – or so it seems to me. I am of course aware that the whole subject is one of great intricacy and is only to be dealt with at all suitably in some further work at much greater length.

but this fall will originate from a fall in costs and will not therefore be accompanied by any disequilibrium, while there will be no tendency for the total of wages, rents and profits (the consumer's income) to decline at all. Consumers will take the increasing real standard of living made possible by the accumulation of more efficient capital wholly in the form of falling prices and not at all by the increase of money incomes.

I may say, in passing, I do not wish to suggest that it is absolutely impossible to stabilize the price level of consumption goods, because that would not be theoretically true. If it were possible to issue credit to consumers in general in just the right amounts, and keep the issue of new consumers' income and new producers' credits in just the proportion required by the continually changing rate of voluntary saving then it would be possible to stabilize *all* price levels and avoid the appearance of net profits. But in the absence of co-ordinated banking, industrial, trade union and Government action such a policy cannot be executed; and the essential fact is that it is not necessary.[1] If it were possible to maintain a constant consumer's income then saving would proceed by virtue of its power to reduce costs.

[1] This is not to say that it could not be carried out in a planned economy – one of the many unsolved problems of the planned economy.

It is the fundamental error of the under-consumptionists to think that income inflation is necessary to equilibrium, and this opinion is derived from the prior mistake in their analysis of saving. The neglect of the power of saving to reduce costs lies at the root of all the mistakes they subsequently make.

If what I have said in this chapter is true then a conclusion of great importance can be derived from it. It is not possible for us to enjoy an easy road to salvation in the cure of the Trade Cycle. We must choose between the relief of inflationary policies and temporary prosperity or settle down to a cure which is slow, which is devoid of spectacular success, and which in the first instance is as painful as the disease. It is unlikely that the opinion of democracy has yet reached a sufficiently advanced stage of realism to permit the execution of a policy which involves the continuance of immediate distress and whose benefits can only be reaped in a period as long as ten or twenty years ahead. Particularly is this so when the way to an immediate relief is at hand. But that is no reason why we should not attempt to face the truth, if it is the truth, and do our best to overcome the conscious and unconscious hostility which is bound to meet all those who attempt to discredit a popular faith.

I write this critical essay at a time when the theory of under-consumption is more powerful than it has ever been before, and when in a dozen different forms it is influencing the decisions of legislative and financial bodies towards inflation. This theory has been preached with consuming passion to the Labour Movements throughout the world, and has found support in the business communities of at least one great industrial people. To some it has appealed as sound business sense, to others it has come as a first intellectual discovery, and to the great mass of its believers it represents a golden cure for poverty and distress, for unemployment and insecurity, and opens the road to a better economic order. I am sorry that I cannot join their number or share their hope. I believe with reluctance that this theory does not tell us the truth about the processes of monetary circulation or describe the real alternatives that are before us, and that if we are to have the courage to live with open eyes and to accept the hard discipline of an uncompromising realism we must turn away from the false hopes of prosperity which the theory of under-consumption has everywhere called forth.

APPENDIX

THE VIEWS OF MAJOR DOUGLAS AND CERTAIN OTHER GENTLEMEN[1]

WHAT is a right credit policy? It is common knowledge that the mere provision of money is no use to anyone. We cannot live upon Treasury notes or clothe ourselves in bank credits. Money is finally a means to an end — the end being the real commodities: houses, food and clothes, which the productive system turns out. These finished commodities can only be produced by real productive resources such as natural resources, skilled and unskilled labour, and the instruments of production, with which labour must work, and which are termed real capital. Moreover the production of finished commodities can only be increased and the general standard of living raised if the quantity or the quality of these ultimately productive resources is increased. Apart from any increase in the population, the chief way in which the available resources can be increased is through the process known as saving. Saving consists in setting aside

[1] Since I wrote this short essay it has become plain to me that Major Douglas has not always held the particular fallacy here exposed. Furthermore a few better—indeed a brilliant—analysis of Major Douglas's work has been written by H. T. N. Gaitskell and published in Mr. Coles *What Everybody Wants to Know about Money*. All readers interested in Major Douglas's work should read Chapter VIII. At the same time, since Major Douglas once advanced the view here examined and since a large number of people still believe in it, and above all since the positive argument contained in this essay refutes *all* the conclusions arrived at by Major Douglas and has never been answered by him, I am leaving the Appendix as it is.

part of the current social income in order that part of the existing resources may be directed to the production of new capital instead of devoting the whole of them to the production of goods to be consumed here and now. The production of consumption goods and the production of new capital are the two fundamental economic processes in any society. What part does money play in the execution of these two central tasks?

In one sense, the part which money can play is a purely negative one. The creation of money in the absence of any increase in real productive resources will merely raise prices and no one will be any better off — everyone will spend more money, but since prices are correspondingly higher, everyone will receive the same quantity of houses, food, clothes, entertainment, etc., which they enjoyed before. The utmost which monetary policy can do is to keep all the existing real resources in full employment in order that the maximum output of finished commodities and new capital may always be maintained. This, of course, is no small task, but it is possible to exaggerate the difference to the general standard of living which the successful execution of it would imply. It is estimated, for example, that during the last ten years, the average percentage of unemployment has been 10 to 15 per cent, and the fall of physical productivity due to this unemployment is a rather smaller percentage. It is therefore clear that the execution of a successful monetary policy could only have raised our physical productivity at the rate of approximately 10 per cent over the whole period, and although the saving of the human misery involved in unemployment is well nigh immeasurable, it is clear that the increase in the general standard of living which would be secured is not in-

calculable, but on the contrary is quite moderate.[1] Our task is now plain. We must discover the credit policy which will maximize employment over the long period, and we must fit such a policy into a general qualitarian programme without exaggerating the productive advantages which can be derived from it.

Now there is a policy which is commonly advocated which is both mistaken in its proposals and which grossly exaggerated the advantages which any policy can make to the degree of our productive efficiency. I refer to the views of Major Douglas. Major Douglas holds that maximum efficiency is to be obtained by a regular and enormous expansion in the supply of money and that such an expansion will secure an equivalent growth in the total product of industry.

> 'If we assume that an overall industrial efficiency of 75 per cent is attainable (by which we mean 75 per cent of the output possible with a given number of man-hours, working on a given plant, might be obtained and distributed), and we also assume, as is the case, that the United States is able to produce all she wants by working at the low efficiency quoted by Mr. Gantt, *then without working harder, she could, under proper conditions, produce the same amount by the same number of persons working one-fifteenth of the time they now work*—i.e. about thirty minutes per day instead of about eight hours, or by one-fifteenth of the present number of persons working the same hours. As the economic distribution stands at present, such a condition of affairs is impossible of attainment, because, although the goods would be produced, the purchasing-power to buy them would not be distributed. The enormous

[1] The actual increase might be somewhat greater than this since part of the original increase of production might go to increased saving. In so far as this happened the increase would be cumulative, but it would remain of the order of 10 per cent.

increase of sabotage of all descriptions which is the outstanding feature of contemporary industry is due to the blind effort to equate purchasing-power to production without altering the principles of price-fixing' (italics ours) C. H. Douglas *Credit Power and Democracy*, pp. 16-17.[1]

Such views grossly exaggerate the benefits which can be derived from the right credit policy. As we have seen, the maximum advantage which can be obtained is measured by the average amount of unemployment which appears in the existing economic system, that is of the order of 10 per cent. Major Douglas suggests that the figure is nearer 1500 per cent. This is clearly a ridiculous conclusion. Where does the error lie?

Major Douglas starts from the very sensible position that the economic system cannot work smoothly unless consumers possess sufficient purchasing power to buy the whole product of industry at a price which will cover cost of production. The costs of production are, however, made up of payments which pass directly or indirectly into the hands of consumers. Wages which are a cost of production to the producer, pass into the hands of the

[1] This remarkable conclusion is based upon the statement of a certain Mr. Gantt, an American industrial engineer, who is quoted by Major Douglas as saying that the 'industrial efficiency' of the United States was 5 per cent in 1919. This statement of course refers to the *physical* efficiency of the ordinary sources of power such as steam and internal combustion engines, and has no *economic* significance whatever. Only the progress of scientific invention will make any difference to this figure. After over one hundred years of careful experiment, the physical efficiency of the ordinary steam engine still remains under 10 per cent and nothing but technical discovery will raise it. At the point of which Mr. Gantt wrote (1919) there was full employment in the U.S. and the economic efficiency – the potential output under the existing technical conditions was well nigh 100 per cent. Major Douglas was led astray at this point by comparing mechanical with economic ideas.

workers who are consumers. Rents pass into the hands of landlords, and all salaries and profits are received by some person who is a consumer. Even when a payment is not made directly to a consumer, but to another producer, as for example when a baker buys his flour, it will come into the hands of a consumer in the end. Since the second producer, or the third producer in the sequence, must pay the people whose labour or property *he* employs, and they are consumers. There is therefore a fundamental tendency for consumers' receipts to be equal to the costs of producing final products.

But, of course, many of these payments are not made *directly* to consumers. Some of them must pass through the ten or a dozen hands before they reach final consumers. When a car is bought, payment is made to cover the cost of mining the iron ore which was used for the cylinders of the car, but before this payment reaches the consumer who produced the steel, it will have to pass through the hands of the retail merchant, the wholesale merchant, the manufacturer of cars, the manufacturer of the finished steel, the smelter of the original ore, the owner of the mine which raised the ore, before it reaches the ultimate consumers who work in the mine. In any advanced economic society there is bound to be a large number of payments between producers before the cost of the final product accrues to consumers. It is upon this feature of our present economic system that Major Douglas focuses his criticism. Consumers, he argues, must have enough money to make all these payments unless prices are not to fall short of costs. Here is the central passage of Major Douglas's work:

'In order to see that this is so it is necessary to restate in general terms an argument which has been dealt with

elsewhere in detail (*Economic Democracy*). A factory or other productive organization has, besides its economic function as a producer of goods, a financial aspect – it may be regarded on the one hand as a device for the distribution of purchasing-power to individuals through the media of wages, salaries and dividends; and on the other hand as a manufactory of prices — financial values. From this standpoint its payments may be divided into two groups:

Group A — All payments made to individuals (wages, salaries, and dividends);

Group B — All payments made to other organizations (raw materials, bank charges, and other external costs).

Now *the rate of flow of purchasing-power to individuals is represented by A, but since all payments go into prices, the rate of flow of prices cannot be less than A + B. The product of any factory may be considered as something which the public ought to be able to buy, although in many cases it is an intermediate product of no use to individuals but only to a subsequent manufacturer; but since A will not purchase A + B, a proportion of the product at least equivalent to B must be distributed by a form of purchasing-power which is not comprised in the descriptions grouped under A.*' (op. cit. pp. 21-22. The italics are Major Douglas's.)

This is a critical argument. If it is true, as Major Douglas claims, the consumers' income must cover all the payments between producers, then all that he says must follow and all his proposals for credit extension will be sensible. But if the argument is wrong, most of what he says will fall to the ground, and I claim that it is clearly wrong.

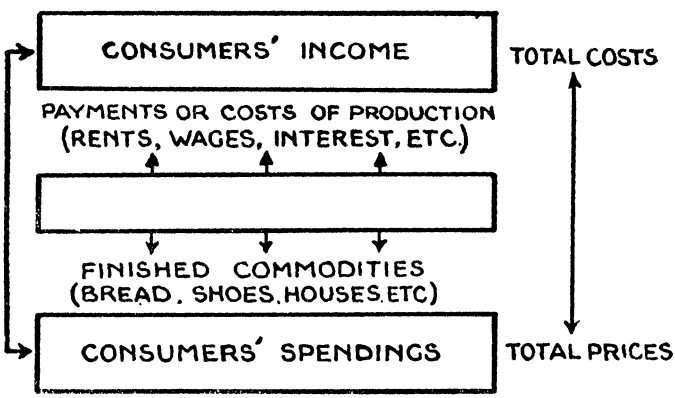
In the first place, we have only to imagine that it is

true, to see what an amazing conclusion would follow. Major Douglas seems to imagine that his Group B payments — payments between producers — is only a small fraction of total payments, while in fact it is an enormous proportion of them. It is calculated that payments between producers are roughly nine times as great as payments to consumers in Great Britain, and over eleven times as great in the United States of America. If Major Douglas is right, the consumers' incomes should be multiplied by 9 times or 900 per cent. Of course, everyone knows that this would mean a gigantic inflation, which would send prices shooting to the skies and disorganize the whole of production for the whole period in which the policy was pursued.

In the second place, it is not difficult to find the mistake which Major Douglas has made, the fallacy contained in his reasoning. Of course, it is not necessary that the consumers should have enough money to cover the payments between producers, because they are made at later stages of production, at a time when the money spent on finished products has had time to stream back from the last stage of production. *All that is necessary is that consumers should have enough money to pay for the immediate costs of producing consumption goods, and this they will have as long as no money is held up in the movements through the economic system.*

The mistake which Major Douglas made and also the main position can best be explained by the aid of some diagrams. If the economic system were managed as one commercial unit in which there was only one financial control which employed all the factors of production and sold all the final products, then it would be perfectly plain that consumers' receipts were equal to the total

costs of production since there would be no other costs than the payments which the single concern was making to people whose labour and property it employed. And it would naturally follow that if they spent all their money on the finished products of the single trust, the trusts receipts would be exactly equal to its costs of production. Such a simple condition can be expressed in this diagram:

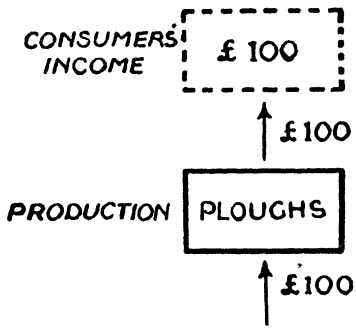


In such circumstances it is plain that the income of consumers is exactly equal to the total costs of production, since they are the same payments, looked at from two different points of view; and as long as the consumers spend the whole of their receipts the producing system received back in exchange for its products just as much as it paid out in costs. This simple monetary circulation can then continue for ever.

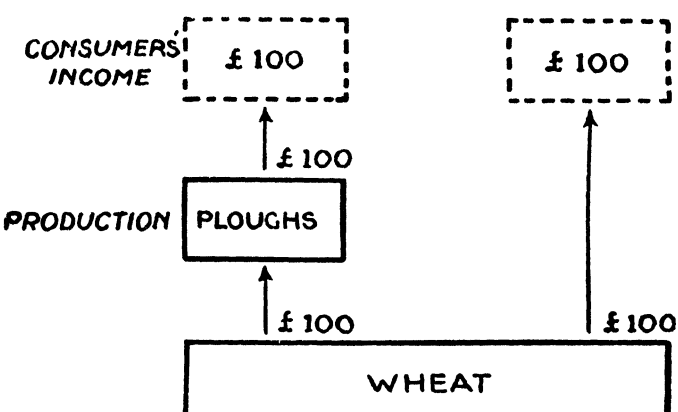
But, of course, the existing system is not as simple as this, and Major Douglas's argument is concerned with the more complex system of the real world. Now the

important difference between this simple system and the real world is that in the real world, the various technical stages in production are under different financial managements so that the product in the course of its technical production is exchanged against money more than once. Let us take the production of bread as an example of this difference. Under the simple system in which the consumers' income provided by the production of bread is equal to the total costs in all stages of production, these stages, the production of flour, the production of wheat, and the production of all the necessary ovens, mills and ploughs, would all be under one management which would pay all the bakers, millers, farmers and all the wages, rents and interests, which were incurred in the complex course of production. It would then necessarily follow that the income which this one producer provided and his total costs of production would be equal since there are no other payments in the system except those between producer and consumer. But in the real world, the production of bread is under the control of one producer, the production of flour under another, the production of wheat under a third, and that of ploughs under a fourth; and as a result there will be an entirely different type of payment — the payments between these producers which are necessary to bring the product of each stage into the next stage. Now what difference does this make to the relation between consumers' income and the total costs of production? Let us assume that all six of these producers pay an equal sum of money per week in wages and capital charges to consumers and that each producer buys the product of the previous stage. Then the whole technical system of production can be built up into the following diagram:

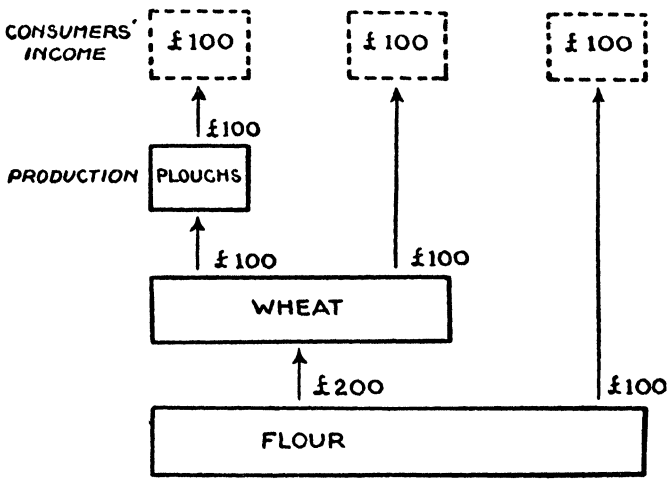
The producer of ploughs employs labour and capital directly and pays £100 a week, shall we say, directly to consumers thus: —



The producer of wheat, who is the next producer in the sequence, buys the ploughs and also employs labour and capital to the tune of £100 a week, so that his costs are £200 a week — which are met by the sale of wheat thus: —

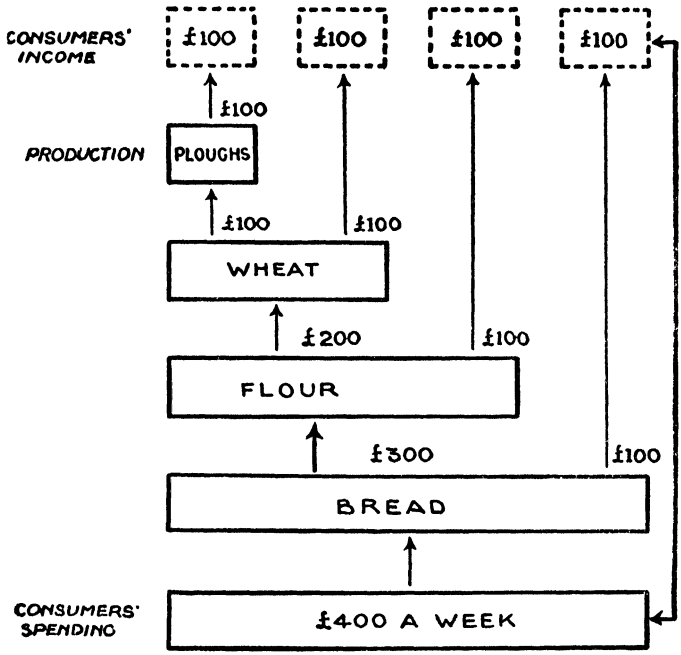


In the same way the miller buys the wheat at £200 and employs labour and capital to the tune of £100 a week, so that his total costs are £300 a week which he receives as follows: —



Finally the baker buys the flour at £300 a week and employs labour and capital at £100 a week, so that his costs are £400 a week (as in diagram on page 190.)

This is the last stage in production, and the bread must be bought for £400. From where is the money to come? It can only come from consumers. Can the consumers provide enough? To do so they must be able to spend £400 a week. But an inspection of the diagram, and the simple reflection that four producers are each paying consumers £100 a week will serve to show that their income is just £400 a week. If then they spend all that they receive they will make the price of the finished



product just equal to its cost of production, and the system can maintain itself in a state of continuing production. This is the true circulation of money in an advanced economic system.

The nature of Major Douglas's mistake should now be plainly apparent. He is perfectly right in arguing that the consumers' income is necessarily less than the *total cost of producing everything*. In my example the total cost of producing bread, flour, wheat and ploughs is £400+£300+£200+£100=£1000 a week. But where Major Douglas is wrong is to go on to say that consumers' income *ought* to be equal to these *total* costs. It is quite

impossible that it should be. If it were to become so for a moment, the most enormous inflation would have to take place. But it is necessary that consumers' income should be equal to the *cost of producing finished commodities* — the cost in the last stage of production. And this it necessarily is as long as no money is held up or hoarded in the general system of industry. In our particular example the cost of producing finished articles is £400 per week and the consumers' income is £400 per week. As long as the consumers spend this income all will be well. In the last stage of production the costs will be £400 a week, of which £100 a week will go back to consumers and £300 a week to the purchase of flour. In the production of flour, £300 a week will be divided between £100 a week to consumers and £200 a week for wheat, and finally the £200 a week will be divided between consumers and ploughs, and all the stages will be solvent and the circulation of money will continue. Major Douglas's proposals would merely involve a large, continuous and disastrous inflation.

INDEX

INDEX

INDEX