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Social Economy and the Price System



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Social Economy and the Price System

AN ESSAY IN WELFARE ECONOMICS

RAYMOND T. BYE

Professor of Economics, University of Pennsylvania

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First Printing

To my beloved

MOTHER,

now ninety years of age, whose
extraordinary amiability and
strength of character have been
a lifelong inspiration.

Preface

A great many volumes have been written by economists on the subject of prices (or values), but most of this literature has been devoted to an explanation of how prices are determined, rather than to what prices do. Relatively little has been said about the functions which prices perform in the economic process, and (save for a few notable exceptions¹) most of this has been incidental and fragmentary. For many years I have thought that there was a task to be done here, but not until 1944, when I received a grant from the Rockefeller Foundation which enabled me to take a leave of absence from my university work, was I able to devote the necessary time to it. In the meantime some other books have appeared which deal more or less directly with this theme.² Notwithstanding these writings, I believe that there may be enough difference in my approach to warrant publication of the present study.

The sub-title of this book indicates that it is an essay in welfare economics. It might equally well be described as one in institutional economics; for the price system is one of our most important economic institutions. It is with the working of this system, and its interrelationships with other institutions, that this study is concerned. It differs in point of view from the work of typical institutional economists, however, in that it builds upon a foundation of economic theory of the traditional kind. I am hopeful that this combination of theoretical, institutional, and welfare economics may prove fruitful, and that it may be of interest to economists of all schools.

In the time which elapses between the writing of the manuscript

¹ For example, A. C. Pigou's *Economics of Welfare*.

² I have in mind especially Abba P. Lerner's *Economics of Control*, and several books (cited in Chapter Eleven, within) devoted to the problems of pricing in a collective economy.

and the reading of page proofs, the author sometimes becomes better able to view it more objectively than when he was engaged upon the writing. Thus I have become aware that critics of this volume may feel I have devoted too much space to the statement of elementary economic principles which must already be well known to most of my readers and some may feel that I have been guilty of too much repetition. This is doubtless the result of long teaching experience. If it makes the advanced reader somewhat impatient, I ask his indulgence for the sake of those who are less well versed in economic theory. Perhaps here and there among the chaff he may find enough kernels of thought to reward the reading.

I am deeply grateful to the Rockefeller Foundation, and especially to Doctors Anne Bezanson and Joseph H. Willits, of its staff, for the grant which made it possible for me to undertake this task.

Raymond T. Bye

UNIVERSITY OF PENNSYLVANIA

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CHAPTER ONE

Social Economy

THE FUNCTIONAL STUDY OF ECONOMIC PHENOMENA

The study of economic phenomena has been called by various names, among which are political economy, national economy, social economy, and economics. Of these, I think that the term social economy is the most appropriate for some purposes, because it stresses the social function which it is the task of the economic process to perform. That function is to economize in the use of the scarce means of production so that they will go as far as possible toward satisfying human wants or needs. In an economic system that is becoming increasingly planned and controlled, instead of being left to the play of spontaneous forces, it is important to keep this function in mind; for if planning and control are to be done intelligently, we must have a clear conception of what social economy is. Not until this term is carefully defined, and its broad implications explored, can social control be directed toward objectives that are consistent and wise. This means that the goals toward which the economic process should be aimed must be definitely formulated and clearly stated.

It may help toward the formulation of these goals to consider the procedure of the biologist. He studies the characteristics of living beings, and by examining critically the nature and functions of their various organs, he is able to judge of the fitness of these organs to serve the purposes of the creatures to which they belong. He takes as his criterion for such judgments the simple test of survival. If an animal is better adapted to its environment because of a given biological trait, so that its chances for survival are enhanced, the trait is

judged to be a good one; but if it contributes to the worsening of the animal in the struggle for existence, it is regarded as bad. For example, whiteness of fur or feathers is a beneficial character for beasts and birds that live in the snowy arctic regions; but albinism, which occurs occasionally among the fauna of the temperate zone, is a defect that brings an early death upon its possessor, because it makes him conspicuous to his enemies.

No one disputes the scientific validity of judgments of this kind; for if we accept survival as the test of fitness, the conclusions follow inexorably from the evidence. Should it not, then, be possible to make equally valid judgments of the fitness of economic institutions to perform their functions in the promotion of social economy? The answer to this question must depend on whether we can find a criterion, or set of criteria, that is as acceptable as the biologist's test of survival.

There are some scientific purists who hold that this is no business of the economist, because it lies outside the scope of scientific method.¹ Science, they believe, cannot attempt to say what are the ends or purposes of human existence; these are matters of ethics and moral values that must be left to philosophers. Carrying this reasoning a little farther, they maintain that economics (being a science) should not concern itself with policy making, but only with means to the attainment of given ends, once the ends toward which policies are to be directed have been decided by statesmen (or by politicians). If those who are in control of the state decide that the nation should attain to a condition of self-sufficiency, then it is the duty of the economist to serve this policy, by showing the authorities what economic measures are best calculated to promote the desired objective. If the leaders of the government should happen to desire a flourishing export trade at the same time, the economist may tell them that this cannot be accomplished without admitting some imports that will work against the attainment of self-sufficiency, but he must not tell them that the policy of self-sufficiency itself

¹ This is the view, for instance, of Lionel Robbins, in *The Nature and Significance of Economic Science* (Second Edition, 1935), and of Oscar Morgenstern, in *The Limits of Economics* (English translation, London, 1937).

will not lead to the highest well-being. To do that would be unscientific.

Now it is altogether commendable for the economist to be conscious of his own limitations; and certainly he should be careful to distinguish explicitly those of his conclusions which are based upon evidence and logic from those which are matters of opinion and personal preference. It is helpful, too, to distinguish pure economics, which describes existing institutions and processes in a matter-of-fact, cause-and-effect analysis, without judgments as to their goodness or badness, from welfare economics (or applied economics), which is concerned with the means by which economic activity can be made to contribute most fully to the social well-being. There is no need to quarrel with the economist who prefers to specialize in the former, to the exclusion of the latter; but it is going altogether too far to deny to the economist the right, *as an economist*, to inquire into the purposes that the economy ought to serve, and to reach conclusions about it. Purely descriptive analysis, by itself, is sterile. It can only be justified as something more than a mere intellectual game if its findings are subsequently employed to serve the ends of economic progress. It cannot be used in this way until the ends are known. And no one is in a position to arrive at a wise judgment about the ends unless he first acquires a thorough understanding of how economic forces work, and the consequences that flow from different sorts of economic policies. Neither the philosopher nor the statesman can decide whether self-sufficiency is a desirable objective until he knows what the economic results of such a policy will be. It follows that we are not likely to get wise decisions on the goals toward which economic policy should be directed until philosophers and statesmen become economists, or economists become philosophers and statesmen. In either case the end result is the same—a welfare economics that deals with the relation between economic phenomena and certain ends of social well-being. The present volume is a study in this field.

There is another school of writers who claim to be developing a body of welfare economics that adheres to scientific precision by

keeping away from ethical judgments.² They do this by adopting a definition of welfare which avoids any statement as to its content. Thus Reder³ says: "Instead of attempting to give content to the idea of welfare directly, we define a welfare indicator which increases and decreases with welfare—welfare is that which varies with this indicator. The indicator is defined as follows: *welfare increases (decreases) whenever one or more individuals become more (less) satisfied without any other individuals becoming less (more) satisfied.*" Welfare will be at a maximum when it is impossible to make one person better off without making some other person worse off. In a footnote he adds, "An individual is said to become more (less) satisfied if he is put onto a higher (lower) indifference surface." This last is not entirely clear, but it presumably means that the size of one's real income is to be the test of satisfaction, and hence of welfare.

Reder then goes on to elaborate this definition by using the concept of compensating taxes and bounties. A given economic change (e.g., tariff reduction) will usually benefit some persons (e.g., consumers) and injure others (e.g., producers of the formerly protected products). If the gain to the former could be made to yield a tax sufficient to compensate the losers, the change has increased welfare; if the possible yield of such a tax would not suffice to compensate those injured by the change, welfare has been decreased. This idea of compensating taxes and bounties must not be interpreted to mean that the taxes should actually be collected and the bounties paid in every case (although sometimes it might be wise). It is merely a conceptual device—a kind of calculus—for measuring the effect of a given policy upon welfare.

This concept of welfare and this calculus do have a limited usefulness. They permit of certain marginal comparisons which can be applied helpfully to a considerable range of problems. For instance,

² The leading exponents of this school are Hicks, Hotelling, Kaldor, Lange, Lerner, Reder, and Scitovsky. Their works are cited and their views well summarized in Part I of Melvin W. Reder's *Studies in the Theory of Welfare Economics* (1947). See also the able historical and critical analysis of various approaches to welfare economics given by Hla Myint in his *Theories of Welfare Economics* (1948), especially Part III.

³ *Op. cit.*, pp. 14ff.

they afford a basis for holding that welfare will be increased by transferring a factor of production from a use where its marginal product is less to a use where that product would be greater; or, for reasoning that maximum welfare requires that the relative marginal utilities between any two products must be the same for every individual who consumes both, for if the relative marginal utilities differ, each can gain (increase his satisfactions) by giving to the other some of the product whose marginal utility to the giver is low in exchange for the product whose marginal utility is higher. The analysis can also be made to show that monopolies interfere with the optimum allocation of productive resources; and Reder succeeds in making a limited application of it to certain problems of economic dynamics and monetary policy for maintaining full employment.

Nevertheless, this concept of economic welfare is very unsatisfactory, first of all because it begs a very important question, namely, What is meant by satisfactions? Apparently each individual is presumed to be competent to judge this for himself, so that we can take his demand schedules as a measure of welfare for him; but this is a very dubious presumption. Suppose he prefers whiskey to shoes for his child. Are we then to conclude that welfare will be maximized by letting him remain a sot, ignoring the needs of the little one? The difficulty here is that, in an effort to avoid unscientific value judgments about ends, a large group of welfare problems is evaded. Demands, as manifested in the market, are taken as the ultimate criterion for values, which is an untenable position. Just as it takes demand as its criterion of needs, so must this approach to the theory of welfare presumably take the pecuniary costs of the market as its test of sacrifices, because no scientific way of measuring sacrifice is known. So, if workers, ignorant of the ultimate effects of a given occupation on their health or morale, offer themselves for hire at a wage that does not take this effect into account, it is no concern of the welfare economist. Again, the concept begs the whole problem of unequal incomes. Science cannot deal with this problem, say the representatives of this school, because there is no valid way of comparing one person's satisfactions with another's; therefore welfare economics cannot be concerned with inequality.

This narrow approach will certainly not do. It is welfare economics with much of the welfare left out. It ignores some of the most important economic problems that confront us, and it offers no guide for policy on pressing issues about which decisions must be made. It is valid as far as it goes, but it does not go far enough. We must not close our eyes to important economic problems just because we have no scientific standard of values to proceed from. We must frankly face the fact that our statement of the *ultimate* ends to be served must depend mainly, if not entirely, on personal judgment and common sense—with maybe some admixture of intuition. Science cannot answer the question, what is the purpose of human existence. But it should be possible to arrive by empirical methods at a fairly accurate conception of the goals toward which people do *in fact* strive,⁴ and medicine and psychology should be able to tell us what are the essential physical and emotional needs of human beings.⁵ I do not doubt that in some such ways as these we will eventually succeed in establishing a fairly definite list of the ends that our social institutions ought to serve—a list that may lay some claim to scientific validity. In the meantime, we can make progress by trying to reach a consensus among social philosophers (including philosophically minded economists) concerning the general purposes toward which social policy should be directed. Economists cannot escape their duty to share in this work by eschewing it as unscientific, for it has to be done whether it is scientific or not, and a knowledge of economics is essential to the doing. Unless it is done, any attempt to control or direct economic life is senseless.

The general goals to be established by the above procedures are merely the premises which welfare economics takes as its point of departure. From there on the rest of this branch of economics can be strictly scientific; for if the ends of policy are given, it is then a

⁴ This is similar to, but not quite the same as, Jacques Rueff's contention that it is possible to build a scientific system of ethics by inductive study of prevailing ethical standards and attitudes. See his *From the Physical to the Social Sciences* (English translation, 1929). My idea is that we should study inductively, not the ethical viewpoints of men, but the objectives toward which they can be observed to be working.

⁵ George Soule has developed this idea interestingly and persuasively in Chapter X of his *The Strength of Nations* (1942).

matter of evidence and logic to arrive at measures of control that will lead in the desired directions. Here welfare economics takes the findings of pure economics concerning the way in which economic forces work, and applies them to obtain certain results, just as the physicist uses his knowledge of the behavior of electricity to create an incandescent lamp. The analogy with biology will hold here, also, and the findings reached will be equally valid; for just as the biologist can say that, if the purpose of life is survival, then protective coloration will contribute to it, so can the economist declare, with equal confidence, that, if one of the purposes of economic life is to maximize the social income, then free international trade will promote it.

To some extent survival may be taken as one of the goals for social policy, although it cannot occupy quite the same place as it does in biology. There are situations in which the lives of whole populations or social groups are at stake. This was the case with the Jews in continental Europe during the régime of the nazis. Here was a life-and-death struggle between two quasi-racial groups in which one of them almost became extinct, and would undoubtedly have become altogether so had the nazi system not been destroyed by outside intervention. There have been other cases in history where racial or national groups have more or less disappeared before the advance of peoples with a different civilization. In these cases, survival in the literal biological sense becomes the paramount social value. However, such cases are rare in modern times, and are likely to become fewer as civilization advances. The individual members of social groups are not often exterminated in the modern world. Although the Indian civilization has almost disappeared from the North American continent, the total Indian population today is probably greater than it was before the coming of the white man. The same is perhaps true in other parts of the world where primitive cultures have given way before the advance of occidental civilization.

This reasoning tends to reduce the importance of struggle for existence and survival in its literal sense as the ultimate criterion for social economy, but there is an analogous kind of survival which is of great importance. Social groups are trying to perpetuate them-

selves as cultural entities, and there is a struggle between these entities for supremacy and existence. It is a struggle in which established institutional patterns may become extinct. In their extinction individual members of the affected groups need not perish, but their status is likely to become greatly changed for the worse. For instance, the conflict between Japan and China which was presumably settled by the defeat of Japan in World War II, was one in which, had the Japanese been victorious, the feudal aristocracy of Japan would have maintained its position of socio-economic supremacy over the rest of the Japanese people, and the population of China on the whole probably would have had to occupy a position of inferior economic and social status under the overlordship of Japanese political and industrial leaders. At the present time rivalry between the United States and the Soviet Union is a struggle between two systems of political and economic organization in which the status of important classes of the population of these countries is at stake. If communism were to be imposed upon us, the present capitalistic classes would be executed, or placed in slave-labor camps, or forced into the ranks of the propertyless proletariat. This is not the whole of the struggle between our system and the Soviet system. It is not just a matter of protecting the property or lives or freedom of American capitalists; it is rather a question of maintaining a whole set of political, social, and economic institutions under which we have prospered, as against another system of culture which we believe would not make as satisfying a way of life for our people. The struggle between these two systems is very serious, one for which both sides are prepared to fight tenaciously if necessary. It is thus a struggle for social rather than biological existence, but one which occupies a preëminent place in our scale of values. So long as struggles of these kinds continue in the world, group survival in the sense here described must be a major criterion of social policy.

The survival of a social group depends above all else on its economic strength. This again is demonstrated by the war. It was the nation that could produce the most ships, airplanes, tanks, and guns that was bound to win. It was because the Axis powers were pitted

against the enormous productive capacity of the United Nations, and especially of the United States, that their eventual defeat (once the blitzkrieg had failed) was inevitable. And if the blitzkrieg had succeeded, its success would have been due to superior preparedness at the start, which again is largely a matter of economic organization and policy. This matter of economic strength involves many aspects of a nation's economy. Strength depends on the physique and morale of the people, and these are partly determined by such things as the level of income and the way in which it is distributed among the population. Strength depends also on the broad characteristics of the economic organization—its institutions of ownership, of management, and the methods of production that prevail. For this reason the conflict between capitalism, nazism, and communism in the war was not a competition between “isms” only, but between the groups that depended on these particular economic systems for strength to fight against the other groups. In the end, it is that system of organization that will make its group economically strongest that is likely to prevail.

However, survival (even in the special sense that has been explained) is not the only criterion of economic welfare, for not all of the choices that individuals and social groups can make are crucial for survival. This is especially true where matters of esthetics and personal taste are concerned. We can survive equally well whether our architecture is of Elizabethan or colonial style, whether our women wear their hair long or short, and whether we eat olives or sweet pickles. It does make a difference whether church doctrines are bigoted or tolerant, but, given a modernist point of view, it probably is of no consequence whether the dominant sect is Episcopal or Presbyterian. A country in which civil liberties are protected probably has a better chance for ultimate success in the struggle among nations than one in which individual rights are suppressed, but it may not matter much whether the form of government that is based on these rights be republican or parliamentary. As civilization progresses, it seems likely that the range of choice within

which survival is possible will be greatly widened, for as internationalism spreads, the competitive struggle between national groups will give way to coöperation within a single world organization. Within each part of this great union the struggle between different religious and racial groups is also likely to be resolved, at first by the growth of mutual respect and tolerance, reinforced by law, and eventually, perhaps, by complete amalgamation.

As these developments proceed, social philosophers will have to lay more stress on the so-called higher values of life. For the present, however, we shall not go far wrong if we make group strength a major (perhaps *the* major) goal of social policy. We can, then, erect a set of economic criteria on this basis. Such a standard will not neglect the esthetic and moral values as much as might be supposed—if, indeed, it will neglect them at all. For was not their flagrant disregard of good moral principles in both their domestic and international policies the real cause of the nazis' downfall? And who can deny that a social group in which beauty is appreciated and fostered will be better equipped for competitive struggle (other things being equal) than one which is steeped in ugliness? In view of these considerations, I feel justified in adopting social survival, which depends on group strength, as the starting point for a study of social economy.

It seems to me that there are three fundamental factors on which such survival must depend. They are: (1) efficiency of the individual members of the group, (2) effective forms of group organization, and (3) internal cohesion. Certainly, the group cannot be strong unless the individuals that compose it are strong, in the sense of being healthy, intelligent, and industrious. But efficient individuals are not enough; they must be welded together in a social group that commands their loyalty and coöperation, and that combines their efforts in effective joint endeavor. Internal cohesion is necessary to the stability of the group, for if its members are split into different classes with a serious clash of interests, there is a continual threat of revolutionary upheaval which may completely disrupt the society.

These basic requirements for group survival do not depend solely on economic conditions, but each of them does so to a considerable degree. Individual efficiency must include individual fitness for production; effective group organization requires efficient and continuous coöperative arrangements for carrying on industrial activity; and internal cohesion and stability cannot be achieved without equity between the members of the group in economic matters—especially in sharing the fruits of production. In all three of these requirements happiness is an important factor, for, unless human beings are happy in their work, they cannot be good producers or good coöperators; but above all, happiness is essential to group solidarity, for a discontented people is not likely to have cohesion and stability. Failure of the nazis to lay sufficient stress on this factor (along with their violation of good moral principles) would probably have wrecked the nazi organization eventually, even if it had not been defeated by its external enemies; for the nazi system relied too much on the imposition of force for its group cohesion, instead of promoting the happiness, and thereby the voluntary coöperation, of its citizens. Group survival is not a mere matter of mechanical efficiency. It is intimately tied in with the contentment and good-will of the people.

It is possible to formulate a conception of social economy that will be in conformity with the above requirements. This can be set forth in a number of general principles, from which detailed specific criteria for judging the fitness of our economic institutions can be developed. In this chapter I will state the general principles, leaving to subsequent chapters a more detailed elaboration of their content. I will not claim that these principles are scientific, in the strictest sense of that term; for they rest very largely on my personal judgment. I do believe, however, that they will appeal to the majority of thoughtful readers as wise objectives for economic policy, and as not only consistent with, but essential to, the broad goal of group strength and survival. If they be accepted as such, then much (and I hope most) of the subsequent analysis will follow as a matter of convincing logic.

THE CRITERIA OF SOCIAL ECONOMY⁶

The first general principle of social economy may be called *the principle of want selection*. It can be stated as follows: Wants should be provided for in the order of their importance; that is, the most urgent wants should be met before the less important ones are taken care of. To put it negatively, though perhaps more cogently: No want should be satisfied if a more important want is thereby excluded. In our world the means of production are so scarce that we cannot possibly satisfy all of our desires for goods. Except in periods of mass unemployment that would not exist in a well-ordered economy, the use of labor and capital in one direction necessarily involves giving up some possible alternative. We must, therefore, choose between those desires which we shall satisfy and those which we shall forego. Maximum economy is to be achieved by giving priority to those goods which are most important. It is clearly wasteful to dissipate our resources in the satisfaction of trivial wants if more important ones are to be sacrificed. Both individual and group efficiency depend upon the fulfillment of this principle, and so does human happiness, on which group cohesion depends.

The general idea embodied in the principle of want selection will doubtless command general acceptance; but many may question whether it is capable of very fruitful application, because of the lack of any valid standards as to which wants are to be preferred over others. It cannot be denied, however, that decisions concerning what shall and shall not be produced must be made somehow. The present economic process makes these decisions by accepting the choices of buyers in the market as its guide. If we are to subject the economy to intelligent control we must develop some criteria for judging whether the choices so made are wise or unwise, and whether they could be improved. I believe that it is possible to do this, and in

⁶ Most of what follows under this heading was originally read as a paper, entitled *Some Criteria of Social Economy*, at the annual meeting of the American Economic Association in January 1944. This paper was printed in the Supplement to the *American Economic Review*, Vol. XXXIV, pp. 1-8 (March 1944), and is reproduced here with the permission of the Executive Secretary of the Association.

a later chapter I will attempt to show how the problem can be approached.

Closely related to the principle of want selection is the question of whose wants are most important. Should everyone be treated alike, or are there some persons of such exceptional value to society that their needs should take precedence over others? In other words, should we have equality of incomes or inequality; and if we decide in favor of the latter, how great a degree of inequality is wise? The problem is one that affects both the productive efficiency of the economy and its internal cohesion. It affects productivity because people living in poverty may not be physically fit enough to make good workers, while at the other extreme there may be indolence or idleness on the part of those for whom life is made too easy. It affects group cohesion because if the contrast between riches and poverty is too great, revolutionary discontent may be aroused.

It may be that the method of dividing the social income that is most appropriate for one stage of economic development or type of economy will not be suited to another. The late Professor Simon N. Patten drew a useful distinction between what he called a deficit (or pain) economy and a surplus (or pleasure) economy.⁷ Perhaps the terms poverty economy and comfort economy would express his idea more aptly. A deficit, or poverty, economy is one in which the social product is barely sufficient to provide for the minimum needs of the population. A surplus, or comfort, economy is one in which there is a substantial excess above subsistence that can be used to provide for the growth of capital and to promote a progressive increase in economic well-being. It is obvious that the problem of dividing the social income equitably may differ somewhat in these two cases. For instance, if the surplus is very small the existence of a privileged class which is much better cared for than the mass of the people may be justified as a necessary means of giving a start to the growth of capital and the development of culture; but in a community where the surplus is large it would not be unreasonable

⁷ Simon N. Patten, *The New Basis of Civilization* (1907).

to require as a necessary condition for social welfare that this surplus be widely shared by the masses. The countries of western civilization enjoy a surplus sufficient to provide a considerable degree of comfort for their people. For the purposes of this study, therefore, it may be assumed that we are dealing with comfort economies.

I believe that there are four principles which should govern the division of income in such economies. These principles may be called: the principle of a guaranteed minimum, the principle of incentive, the principle of developing talent, and the principle of common surplus. These may be regarded as corollaries to the principle of want selection.

The principle of a guaranteed minimum is that the basic requirements for all should be met before luxuries are allowed to any. This principle rests partly on humanitarian grounds. Persons of refined sensibilities and sympathetic impulses do not like to see others suffer or starve. I believe that these altruistic sentiments should not be lightly disregarded, and that the principle might be defended on this basis alone. However, for those who may be inclined to construe this as a concession to weak sentimentalism, it can be shown that there is a more practical basis for the principle. Group strength and stability demand that the masses be supported at a fair standard of living. Poverty begets disease and crime, both of which detract from the strength of the social group. Their effects are not confined to the poor alone, but reach out to strike other members of society. Poverty also makes poor producers; for a man who is inadequately fed, clothed, and housed cannot be as good a worker as one whose minimum needs are better taken care of. So poverty reduces the social income. Furthermore, it makes for discontent, thereby reducing group cohesion and stability. The great contrast in eighteenth century France between the luxurious wealth of the aristocrats and the misery of the common people created such a feeling of outraged injustice that it finally produced the French Revolution; and a similar situation in Russia precipitated the communist revolution in that country after World War I. The rise of communism in China is mainly attributable to the same cause. These illustrations suggest

that a social structure cannot survive if it outrages the sense of justice of the common people.

The principle of a guaranteed minimum is already recognized and has been put into effect to some degree in the countries of advanced civilization. Our poor laws and public charities provide at least for the maintenance of life for those who cannot support themselves, and our expanding social security systems represent a further application of the principle. Undoubtedly our conception of minimum needs will grow as civilization progresses, so that we may expect a steady extension of this principle. However, if it is carried too far, there is danger that a premium may be put upon laziness. Group strength is not likely to be attained where there is a large proportion of drones. Society must not be so generous in guaranteeing minimum needs that the incentive to work is removed.

This suggests that there is a second principle which must also be made effective in the division of the social income. This may be called *the principle of incentive*. It states that rewards should vary with the socially useful productive accomplishment of the individual. While a minimum of subsistence should be guaranteed to everyone, the rule should also prevail that those who are able-bodied must work for a living. Society should assure to the lowest-paid workers a sufficient wage for the maintenance of health and decency, but it should support in idleness only those who cannot work because of illness, old age, or other disability. Beyond the minimum income, higher earnings should be possible for those whose achievement is superior. Human nature being what it is, this appears to be necessary in order that each may be stimulated to do his best. The result will be a considerable degree of inequality of incomes; but this is not likely to provoke revolutionary discontent if it is based on a just principle.

R. H. Tawney, in his penetrating criticism of some of the institutions of capitalistic societies,⁸ observes that too many people in the modern world are permitted to own wealth and to receive large incomes without rendering a corresponding service to society. He

⁸ Richard H. Tawney, *The Acquisitive Society* (1920).

suggests that where there is a right or privilege, there should be a corresponding duty to the social group. The principle of incentive would carry out this idea, by making the right to receive income (on the part of the able-bodied) conditional upon performing the duty of producing correspondingly.

The inequality to be permitted under the principle of incentive should be no greater than is necessary to accomplish the required degree of stimulation to endeavor, and it should be carefully limited by the condition that no one should be permitted to enjoy a reward for antisocial behavior. Income should be obtainable only by the performance of acts that promote the social welfare, and the amount received above the guaranteed minimum should not be permitted to exceed the value of the contribution.

It is not enough to guarantee a minimum of subsistence for all, and to provide a system of incentive rewards that will stimulate each person to do his best. There must also be provision for bringing out the capacities for useful achievement that are latent in each individual. This is what is meant by *the principle of developing talent*. In present society much talent goes undiscovered or is not developed to its fullest potentialities. The causes for this waste of human resources lie in a combination of circumstances, among which are poverty, ignorance and stupidity on the part of parents and teachers, and lack of effective social machinery for seeking out and cultivating inherent abilities. Society should provide the fullest opportunity for the education and training of all, regardless of their means. This does not mean that everyone should receive the same education or training, but only that he should get whatever opportunities are necessary to develop his particular socially useful capacities. The principle should be linked with the principle of incentive in such a way that the individual will find it advantageous to foster those of his talents that will contribute most to the common welfare.

In a prosperous society there may well be a surplus of income above what is needed to give effect to the principles of guaranteed minimum, incentive, and developing talent. If so, this excess should not be dissipated (as it now is) in undeserved prizes to a lucky few. Under existing institutions some individuals are the recipients of

enormous incomes that are far beyond what is necessary as a stimulus to endeavor, and that are out of proportion to any useful contribution made by the recipients to society. In many cases these incomes are not connected with any useful contribution at all. Indeed, too often they are the fruit of definitely predatory behavior. As a result, much of the surplus is wasted in extravagant living that adds nothing to group welfare, and that weakens group strength by arousing discontent on the part of those who are less fortunate. The proper disposition of the social surplus is to appropriate it for the common good. It could be used to increase the stock of capital in the community, or to provide for higher cultural needs, or to make possible increased leisure. The proposition that surplus income should be used for purposes that will contribute to the common welfare may be called *the principle of common surplus*.

Another problem, which is really a special case of want selection, concerns the comparison of present and future needs. How much should be sacrificed in the present for the sake of benefits thereby made possible in the future? It is clearly advantageous to sacrifice some consumable goods now in order to provide equipment that will increase the output of industry later. The progress of civilization and the continued increase in the economic strength of the group depend very largely upon this process of saving and investment. Some societies are too poor, and others are too shortsighted, to accumulate much capital. On the other hand, there are some economists who believe that very wealthy societies get into difficulties because of too much saving. However, what they have in mind is not the provision of equipment in excess of social needs, but in excess of the opportunities for profitable investment. The basic question for social economy is not how much saving and investment will yield a financial gain, but what is the right amount to maximize the social welfare. I am not sure that a precise rule can be laid down in answer to this question, for it must be partly a matter of judgment and preference; but the following four principles may be offered tentatively as a guide to correct decisions on the problem.

The first may be called *the principle of capital maintenance*. It

is sound social policy to keep the fund of capital equipment intact by replacing it as fast as it wears out. Good business practice takes care of this by depreciation allowances, and wise policy would require that a similar provision be made in the public domain. There are times of emergency, such as war, when the entire energies of a nation must be devoted to the urgent provision of munitions and supplies in the present, even at the expense of depletion of capital. In such circumstances the principle of capital maintenance may have to be abandoned temporarily; but the society that fails to make provision for maintaining its economic equipment in the long run will retrograde, and thereby become weakened in relation to other social groups which pursue a wiser policy.

A progressive community will not be satisfied with mere maintenance of its capital equipment; it will go further and make some provision for increase. Certain additional principles then come into play.

The provision of capital equipment is difficult and painful for a poverty economy because it is so poor that there is no excess of income above the most pressing needs of its people, so that saving and investment can take place only at the expense of acute privation and suffering. In a comfort economy, on the other hand, there is a surplus, so that the accumulation of capital need not involve a sacrifice of basic requirements. As Hobson has suggested,⁹ wise social policy will see to it that a part of this surplus is invested to provide for growth in the community's equipment, and that the funds so invested come from those who have the surplus, and not from those who have not yet attained to a comfort level. This may be called *the principle of invested surplus*.

The principle may come into effect automatically by acts of individual saving and investment on the part of the well-to-do; but it could also take place by social appropriation of the surplus and its use by the government for public investment. There are circumstances in which the latter procedure may constitute a desirable supplement to private saving, and in collectivist economies it may constitute the chief, or perhaps the only, form of capital accumula-

⁹ John A. Hobson, *Work and Wealth* (1914), Chaps. VIII and XII.

tion. In any case, it should not be necessary for those who live in real poverty to give up present necessities in order to provide social capital, when there is a surplus that can be used for this purpose without requiring any comparable sacrifice on the part of those who possess it. It seems to me that this rule is valid even though the motive for saving on the part of the poor may be to safeguard their own future. Under the principle of the guaranteed minimum it should not be necessary for them to make this sacrifice.

The most appropriate amount or rate of investment will depend on the size of the surplus that is available. A poverty economy cannot be expected to invest a very large proportion of its income in capital equipment. The example of the Soviet Union, however, shows that much more can be done in this direction (under a collective régime) than was formerly thought possible. Had war not intervened, the enforced saving imposed on the Russian people by the five-year plans would undoubtedly have yielded great benefits in the form of more consumable products in one or two decades. Nevertheless, so rapid an industrialization of a rural economy may be purchased at too great a price. Certainly the Russians have been forced to live at very low levels while the process of providing industry with modern equipment was taking place. After it has once become industrialized, an economy provides thenceforth a surplus of income that makes the accumulation of further equipment ever easier, and that progressively increases the size of the surplus. Hence an economy can reasonably increase the *rate* of its investment as it becomes more prosperous. It does not follow, however, that the rate should continue to rise indefinitely; for although a society whose income is growing can afford to devote an increasing proportion of its product to provision for the future, its need for such provision becomes ever less acute. Therefore the proportion (though not the absolute amount) of its income devoted to capital growth can reasonably be reduced. A larger share of the increasing surplus can thereby be set free for present benefits in the form of more luxuries and increasing leisure. There is a principle here that may be called *the principle of progressive-regressive investment*. It can be stated in this way: The proportion of the social income to be invested in

capital equipment should first increase, then decrease, as the size of the social surplus grows.

Another problem in connection with social provision for the future concerns the direction of investment. Savings should be invested in those forms of equipment that promise to be most productive, in the sense that they offer the greatest prospect of future social benefits. The special interpretation here put on the word productive is important, because it will be shown that profitability is often not synonymous with social desirability. We may call this criterion for directing the use of savings *the principle of selective investment*. It follows the general principle of want selection stated above, differing from it only in that it involves the special problem of forecasting those wants which promise to be most important in the future, and of directing investment accordingly. Due consideration must also be given to the risks of possible interruptions and mistakes that may interfere with the fruition of plans for the future, and to possible changes that may be brought about by the discovery of new goods and improved processes.

Progressive increase in the social income takes place, not only by the progressive accumulation of capital, but even more by the discovery of new products and the development of new methods of production. While a considerable amount of technical progress of this sort may take place spontaneously (as it has done to a surprising degree in the United States), a matter so important should hardly be left to chance. There should be definite social provision for the discovery and development of inventive genius, for the promotion of experimentation and research, and for the widespread introduction and use of new products and technologies that are found to be worth while. There is here a principle that can be called *the principle of technical progress*, to the effect that there should be social institutions for the promotion of progressive improvement in industrial products and techniques.

The criteria of social economy so far developed are concerned with the direction which production should take. They may therefore be regarded as ramifications, and perhaps as corollaries, of the broad

principle of want selection. In addition to the question, what things should be produced, there is the further question of how much of each thing should be produced. Here there is another basic criterion, which may be called *the principle of surplus utility*. This can be worded as follows: The production of every good should be carried to (but not beyond) the point that maximizes the surplus of its utility in consumption over the disutility occasioned by its production. I use the terms utility and disutility here, not in the hedonistic sense of individually felt and nicely calculated sensations of pleasure and pain, but much more broadly, as a neat way of characterizing the antithesis between benefits and sacrifices that is basic in all economic activity. I have in mind something similar to Hobson's contrast between human utility and human costs.¹⁰ The point is that goods should yield a surplus of something worth while sufficient to overbalance the sacrifices incurred in creating them.

The want-satisfying power of some goods is so small in relation to the sacrifices of onerous work, personal injury, impaired health, lowered morale, or loss of leisure associated with their production, that they are not worth producing at all. Moreover, there is the law of diminishing utility to be reckoned with. According to this law, even the most beneficial goods can become so plentiful that the extra gain to be derived from any more of them is not worth the extra effort required to produce them. When this point has been reached it would be waste to go any further. Application of this principle involves such matters as the proper length of the working day, the health, safety and contentment of workers in industrial establishments, and the conditions which should govern the employment of women and children in industry. It also raises questions of the qualitative and quantitative contribution of different goods to the general welfare; hence it is related to the principle of want selection.

The welfare economist is at a disadvantage here because the concepts of utility and disutility are quite imponderable. It is a disconcerting fact that we have no standard measure of these, the most fundamental elements of economics. In the absence of units of measurement we must fall back partly upon judgment and common sense

¹⁰ John A. Hobson, *op. cit.*, especially Chaps. I and III.

in dealing with the principle of surplus utility. Nevertheless, I hope to show in a later chapter that it may be possible to develop objective measures of some of the phenomena with which this principle is concerned.

Corollary to the principle of surplus utility is *the principle of full employment*. This principle states that every productive resource that is capable of yielding a surplus of utility over disutility should be kept fully employed, except when needed as a reserve for future contingencies. As here used, the term productive resource includes both labor and capital.¹¹ The proviso concerning future contingencies makes allowances for conservation of natural resources, which should not be depleted too rapidly at the expense of future generations. Except for this proviso, the community loses potential income when either labor or capital is idle. In the case of labor the loss can never be made up, because a working day once passed in idleness never returns. A machine that is out of operation for any period of time presumably will have its life lengthened by a corresponding amount; but this is hardly true of human beings.

The waste of unemployed resources in contemporary society is so great that it constitutes one of our most serious problems. It weakens group strength, not only because of the loss of income which it entails, but also because the unemployment of labor deprives the workers of a means of livelihood and thereby arouses revolutionary discontent, which is a threat to internal cohesion and social stability.

In order to give effect to the principle of full employment it is necessary to establish a standard for determining when employment is full. It will be shown in Chapter Seven that such a standard can be derived from the principle of surplus utility.

It has already been stated that in a world of scarcity the use of resources for any particular product requires the giving up of some other good that might have been produced in its stead. In order to

¹¹ It should be further explained that I here follow Irving Fisher in using the term capital to denote a stock of material wealth. By this usage, the word includes both land and man-made wealth. To denote durable wealth made by man I use the term equipment. See my *Principles of Economics: a Restatement* (1941), pp. 70-72.

reduce this sacrifice to a minimum, the most economical methods that are feasible should be used in the making of every product. That is, the output per unit of the factors of production should be maximized, provided that no factor is pushed beyond the point where it no longer yields a surplus of utility over disutility. This broad principle of social economy may be called *the principle of least costs*. It can be formulated as follows: Each good should be produced in the manner that requires the least sacrifice. The implications of this will be explored in Chapters Six and Eight.

The meeting of this requirement depends partly upon pecuniary accounting and partly upon the structural organization of industry and the details of industrial management. A producing concern can be organized in the form of a single enterpriser, a partnership, a corporation, a coöperative, or a state undertaking. Each of these has its peculiar characteristics which adapt it for particular kinds of production. If maximum efficiency is to be attained, each industry should adopt the one of these several forms that is most appropriate for the work it has to do. Then there is the matter of the scale of operations. Large-scale production brings into effect certain economies that reduce costs very markedly in some cases; but this method is not equally adapted to all industries, and is not at all possible for some. Presumably there is for each kind of production an optimum size of plant that will bring costs to a minimum. This size should be ascertained and put into effect in every case. Beyond the size of the plant, there are often possibilities for further economies by bringing several plants—or even whole industries—under one management. Horizontal integration makes it possible to avoid duplication of facilities and avoid competitive wastes; vertical integration facilitates close coördination of the successive stages into which production is split; and complex lateral integration promotes more complete utilization of by-products and articulation of related branches of industry. Here again, social policy should be directed toward promoting the most efficient organization, with due safeguards against the abuse of monopoly power. These three factors of form, scale of operations, and degree of integration can be summed up in one comprehensive principle of economy, which I shall call *the principle of optimum industrial*

structure. It is stated thus: Each industry should be organized in the form, on the scale, and with the degree of integration that promotes the greatest efficiency of production. This is a corollary to the principle of least costs, as are also the next three principles.

In the operation of an industrial plant the cost of producing a unit of product varies with the quantity of output. Each plant has a certain maximum capacity. Within the limit set by this maximum, the output can be varied. According to that part of economic theory which deals with the equilibrium of the firm, the average unit costs will ordinarily be high for a very small output, and will descend as the output increases until a certain minimum is reached, after which they will rise again and continue to rise until the plant is operating at its maximum. When the average costs are at their lowest point they are said to be at their optimum, and the plant is then operating at its optimum output. Obviously, if the principle of least costs is to be fulfilled, each plant should be operated at this optimum output (it being assumed that costs will be calculated so as to reflect social sacrifices accurately). Here is a second principle, subordinate to the general principle of least costs. It can be called *the principle of optimum output*.

In the operation of an industrial plant, the reduction of costs to a minimum depends not only on output, but also on the quality of the management. Some men have greater capacity for leadership and organization than others. Those who have these abilities in the greatest degree should somehow be brought into the highest administrative positions in industry (as well as in government). The principle of developing talent is closely related to this problem. Then, in the details of supervising a producing establishment there are certain techniques that have been shown by recent studies and experiments to be most efficient. Management is no longer just a matter of common sense and experience, but is becoming an applied science or technical art. Methods can now be prescribed for the most effective handling of such problems as those pertaining to plant layout, movement of materials, scheduling of work, speed of machinery, selection, training, placement and promotion of personnel, incentive wage systems, the detailed performance of each task, maintenance of morale, cost ac-

counting, market analysis, and many others. The principle of least costs requires the use in each plant of the most efficient methods in matters of this kind that have been devised. These requirements concerning the quality and methods of management can be summed up in one criterion—*the principle of efficient management*. In formal language, it runs to this effect: Producing establishments should be directed by the most competent persons, and should use the most efficient methods of management.

There is another principle of efficiency within the plant, subordinate to the broad principle of least costs, that may be called *the principle of factorial combination*. It is that the factors of production should be combined in such a way as to minimize the use of those which require the most sacrifice, and to maximize the use of those which require the least sacrifice. In the production of any good there is usually possible a choice of ways in which the various factors can be combined. For instance, routine tasks can be performed by unskilled labor or by machinery, crops can be grown by using much fertilizer on a little land or by using more land and less fertilizer, and so on. In order to minimize the sacrifice of alternative opportunities, the scarce factors (such as highly skilled labor) should always be reserved for those uses in which they are most indispensable, the more plentiful types (such as unskilled labor) being employed wherever it is possible to do so. In applying this principle we are again confronted by difficulties of the sort mentioned in the discussion of surplus utility. In the first place, the various productive factors differ in kind, so that they have no common denominator. An acre of land is not comparable to an hour of work, and the difference between the work of a skilled artisan and that of a common laborer is one of quality rather than of quantity. In the second place, scarcity is not an absolute magnitude; it is a relative concept. A thing is scarce in relation to the need for it. Later I shall attempt to grapple with this problem. In the meantime it is clear enough that the principle itself is a valid, and indeed a necessary, criterion for the attainment of social economy, no matter how difficult it may be to apply it with quantitative exactness.

The principle of technical progress, which was stated above as a phase of the problem of providing for the future, is also relevant here.

It is upon such progress that we depend for the gradual reduction of production costs over the years. New inventions and processes, by making it possible to produce goods with less employment of the scarce factors of production, release resources for the production of other goods, and thereby add to the real income and strength of the social group.

This completes the list of criteria by which the degree of our success in the pursuit of social economy can be tested. It may be worth while to bring these criteria together in outline form, in order that they may be easily seen as a whole in their relationships to each other. This is done in the following outline:

I. Criterion pertaining to the selection of wants.

The principle of want selection:

Wants should be provided for in the order of their importance.

II. Criteria pertaining to the division of income.

The principle of a guaranteed minimum:

The basic requirements for all should be met before luxuries are allowed to any.

The principle of incentive:

Rewards should vary with the socially useful productive accomplishment of the individual.

The principle of developing talent:

The capacities for useful achievement that are latent in individuals should be discovered and developed.

The principle of common surplus:

Surplus income should be used for purposes that will contribute to the common welfare.

III. Criteria pertaining to present and future needs.

The principle of capital maintenance:

Capital equipment should be kept intact by replacing it as fast as it wears out.

The principle of invested surplus:

In a comfort economy the growth of equipment should come from investment of surplus social income.

The principle of progressive-regressive investment:

The proportion of the social income to be invested in equipment should first increase, then decrease, as the size of the social surplus grows.

The principle of selective investment:

Savings should be invested in those forms of equipment that promise to be most productive of future social benefits.

The principle of technical progress:

There should be social institutions for the promotion of progressive improvement in industrial products and techniques.

IV. Criteria pertaining to quantity of production.

The principle of surplus utility:

The production of every good should be carried to (but not beyond) the point that maximizes the surplus of its utility in consumption over the disutility occasioned by its production.

The principle of full employment:

Every productive resource that is capable of yielding a surplus of utility over disutility should be kept fully employed, except when needed as a reserve for future contingencies.

V. Criteria pertaining to efficiency of production.

The principle of least costs:

Each good should be produced in the manner that requires the least sacrifice.

The principle of optimum industrial structure:

Each industry should be organized in the form, on the scale, and with the degree of integration that promotes the greatest efficiency of production.

The principle of optimum output:

The output of each plant should be kept at the point of lowest average costs.

The principle of efficient management:

Producing establishments should be directed by the most competent executives, and should use the most efficient methods of management.

The principle of factorial combination:

The factors of production should be combined in such a way as to minimize the use of those which are scarcest, and to maximize the use of those which are most plentiful.

The principle of technical progress (repeated from III):

There should be social institutions for the promotion of progressive improvement in industrial products and techniques.

INTERNAL AND EXTERNAL CONSISTENCY OF THE CRITERIA

When these criteria were first presented in a paper at the annual meeting of the American Economic Association in 1944, Professor

John J. Spengler, in the formal discussion, made the cogent observation that any such set of standards should meet the test of internal and external consistency.¹² By internal consistency, he meant that the criteria should be in harmony with each other—they must not work at cross purposes. By external consistency, he meant that the economic values set up should be compatible with other, non-economic, social values. Let us consider whether the criteria do meet this test.

The most likely source of internal inconsistency is to be found in the second group of criteria—those pertaining to the division of income. The principle of incentive requires that rewards should vary with the productive accomplishment of the individual, whereas the principles of a guaranteed minimum and of developing talent appear to require the payment of incomes regardless of the recipients' productivity. Also, it might be argued that if each is paid the full value of what he produces, this may absorb the whole product, leaving no surplus for other purposes, including the guaranteed minimum, the development of talent, the promotion of the common welfare, and (going over into the third group of criteria) the provision of capital for future needs.

So far as the guaranteed minimum is concerned, I have already suggested that, in the case of the able-bodied, this should be conditioned on willingness to work (and it is assumed that work will be made available, by putting into effect the principle of full employment). In an efficient economy it should be possible for even unskilled labor to earn the modest minimum that is here contemplated; and it will still be worth a man's while to work for his own advancement, so that ample scope remains for the principle of incentive to operate. In the case of minors and the infirm, I see no objection to waiving the principle (indeed, this is already a part of our mores); and in the case of the aged, it is possible to work out kinds of retirement annuities that will depend partly (and perhaps wholly) on the previous accumulations of the annuitants, so that here the working of incentive is not seriously interfered with. Neither is it abrogated by providing for the development of latent talent. Here the subsidy to the individual is only temporary, and, if thought desirable, it could be

¹² See the citation in footnote 6.

so arranged that it would eventually be repaid by the beneficiaries out of the future earnings that their education will presumably make possible.

Turning now to the argument that the earnings of the producers might absorb the whole of the social product, so that the guaranteed minimum, development of talent, needs of the future, and promotion of the common welfare could not be provided except by taking away from producers that to which they are justly entitled under the principle of incentive, the answer is that this principle does not require that each person should be given, for his own use, the full value of his product. The purpose of providing a sufficient stimulus to endeavor is served if one gets substantially more as his service is greater, even if he does not get all that he produces. In a progressive comfort economy there should be a substantial surplus above what is needed to make incentives effective. Besides that, if the productive contribution of human factors is measured by the marginal calculus, there will be a considerable product imputed to land that can readily be appropriated for social purposes.

These are I believe, the matters of internal consistency that are most likely to be questioned. If there be others that arise in the minds of discerning readers, I suggest that they be held in abeyance until we reach the detailed development of each of the various criteria that is to follow in succeeding chapters. Most of the matters that have been rather sketchily presented here will be considerably elaborated there.

To deal adequately with the problems of external consistency or inconsistency would take us far beyond the subject of economics into the fields of politics, sociology, ethics, and philosophy—to mention only a few. This would not be inappropriate, and a full treatise on economic welfare would perhaps require it; for economic problems cannot be settled in terms of economics alone. The social fabric is a mixture of many threads which must be woven into a common pattern if its function is to be well served. Nevertheless, a degree of specialization is permissible here, as in other fields of learning, so long as one is not too narrow in his outlook, is conscious of the broad

ramifications of the problems he is considering, and is cautious in reaching conclusions. The economist may be pardoned if, recognizing the limited scope of his knowledge, he confines himself to those aspects of welfare that depend most closely on economic conditions.

The present study does not attempt the task of defining the whole of welfare. Neither does it pretend to be a general treatise on economic welfare. It is a specialized study, aimed at appraising the possibilities of pricing as a device for guiding the economic process in welfare directions. I have, however, tried to define the content of economic welfare; and I have sought to avoid narrowness in the definition by making allowance in the criteria for including the broadest possible considerations. For instance, questions of ethics are clearly involved in the principle of want selection and in the principles suggested for the division of income; policies of education are relevant for the principle of developing talent; and matters of health and morals are implicit in the principle of surplus utility. Other illustrations will be apparent to the reader as the analysis proceeds.

From these remarks it should be clear that I am not an economic determinist, if by that is meant one who believes that economic factors constitute the sole primary force that ultimately controls all aspects of human society. Social life is the resultant of a complex of forces—biological, geographical, religious, political, economic, and other—all of which act and react upon each other. Economic forces are among the strongest of these, but they are not alone responsible for what takes place. If in what follows, then, the discussion appears too confined to the economic aspects of the problems to be dealt with, it is to be attributed to the natural preoccupation of an economist with things economic, and not to any intent on his part to represent the economic factors as the prime mover of history.

Being thus an economic specialist, not possessed of the competence to deal with all the problems of external consistency that may be involved in the criteria of economic welfare that have been set forth, I may nevertheless mention two of the more obvious ones.

The first concerns the possible repercussions of the guaranteed minimum upon the growth of population. Will removal of the threat of privation so weaken the checks to population in prosperous coun-

tries that the number of people will increase, until the pressure on the means of subsistence will reduce the standard of living for all, lowering the economy from a comfort level to one of poverty? I do not think so. It is an observed fact that the largest families, as a rule, are found among the poor. As families rise to higher standards of living, they grow smaller, not larger, in size. It seems reasonable to suppose that this tendency will continue as more people are brought out of poverty into positions of comfort. The tendency is reinforced by the widening spread of education and culture. As people become more familiar with the amenities of the higher economic life, they are less willing to be confined by the restrictions imposed by the rearing of numerous children. They come to prefer one, two, or three children, to whom can be given a first class education and all the advantages of comfortable living, over an existence in which both the parents and the children must have less of these advantages because the family purse will not suffice to provide them for a greater number of persons. These influences, coupled with the wider knowledge of contraceptive devices that is gradually being made available to the poorer classes (and that can be more definitely promoted, if need be), would seem to be enough to dispel any fear that there is a conflict between the principle of a guaranteed minimum and the biological urge to reproduction.

Another possible difficulty that looms large in contemporary discussion concerns a possible conflict between the means necessary to put the criteria of social economy into effect and such non-economic values as individual liberty and initiative. If the criteria are not capable of realization except in a régime of totalitarian regimentation, their desirability as goals of social economy may be questioned. Here, then, is a possible conflict between economic and political desiderata. The present study should shed some light upon it, but cannot settle it. It can shed light by showing to what extent the price system is capable of guiding an economy of free enterprise spontaneously in the directions indicated by the criteria. We would do better to wait, therefore, for the further development of this theme, before considering the question further. If we find (as we must expect to find) that prices cannot lead to the goals without a considerable measure of

governmental control, the question will still present itself. It is a question more political than economic, and therefore one on which an economist, as such, can contribute little. I shall pose the question again in my concluding chapter; but I do not think that even the political scientist, at this crisis in the development of politico-economic society, can give a reliable answer.

CHAPTER TWO

The Price System

TESTING THE PRICE SYSTEM

The basis of all economic activity is found in the conflict that arises between the multiplicity of human desires and the scarcity of the means of supplying them. The complex industrial system of modern capitalistic economies has grown up in the effort of man to make these scarce means of production satisfy his desires more completely. The maintenance of order and balance in an industrial process so complicated is a very intricate problem. When production is carried on in thousands of separate enterprises, each specializing on one or a few products, it is necessary to coördinate the various parts into an articulated whole. Without such adjustment there would be chaos. There must be direction and guidance if the different enterprises are to coöperate in producing the goods which men desire. In the economic processes of modern capitalism there is no central planning body whose task it is to perform this work. There must, then, be some natural mechanism which guides the process and achieves such measure of system and order as prevails in it.

The price system is a spontaneous apparatus of social accounting that performs this function. It provides a sort of automatic mechanism for recording and giving effect to the individual judgments and decisions of all the myriads of individuals who participate in economic life. By spending their money according to their desires for this or that, consumers record their choices in demands. These demands are reflected in active or passive price offers (readiness to buy) which guide enterprisers in deciding what things to produce and how much of each. On the basis of their past experience, the enterprisers estimate how much they can expect to get for this or that product,

and they proceed accordingly. Through them, consumers' demands are passed on as derived demands for the factors of production, and are reflected in the prices of those factors. Since the owners of the factors are generally seeking the highest prices which they can obtain, production is thus drawn into the channels where demand is greatest in relation to the factors employed; for where demand is strong, prices will be relatively high. Therefore, the farmer devotes his activity to the crops for which he can get the best prices, in proportion to the land, labor, tools, and materials he must use; the investor of savings puts them into those forms of equipment which will yield products whose prices are greatest, in proportion to savings invested; and even laborers, skilled and unskilled, tend to select those occupations which offer the most wages for labor of their grade—which means that they will be employed in those industries whose products command the highest prices, in proportion to the level of skill required. So the price system constitutes the directing mechanism of an exchange economy. Working automatically, so to speak, it records the choices and judgments of millions of persons and thousands of business men, and causes production to be directed in correspondence therewith.

Stress should be laid on the fact that, through prices, circumstances in the economy beyond the direct knowledge of a particular individual are brought to bear upon him in such a way as to make him adapt his policy to them, in spite of his ignorance of the sources which are ultimately the cause of his decisions. This is well illustrated by the following passage from Hayek:¹

It is worth contemplating for a moment a very simple and commonplace instance of the action of the price system to see what precisely it accomplishes. Assume that somewhere in the world a new opportunity for the use of some raw material, say tin, has arisen, or that one of the sources of supply of tin has been eliminated. It does not matter for our purpose—and it is very significant that it does not matter—which of these two causes has made tin more scarce. All that the users of tin need to know is that some of the tin they used to consume is now more profitably em-

¹ F. A. Hayek, *The Use of Knowledge in Society*, an article in *The American Economic Review*, Vol. XXXV, pp. 519-530 (September 1945). Copyright, 1945, by The American Economic Association. Reproduced by permission.

ployed elsewhere, and that in consequence they must economize tin. There is no need for the great majority of them even to know where the more urgent need has arisen, or in favor of what other needs they ought to husband the supply. If only some of them know directly of the new demand, and switch resources over to it, and if the people who are aware of the new gap thus created in turn fill it from still other sources, the effect will rapidly spread throughout the whole economic system and influence not only all the uses of tin, but also those of its substitutes and the substitutes of these substitutes, and so on; and all this without the great majority of those instrumental in bringing about these substitutions knowing anything at all about the original cause of these changes. The whole acts as one market, not because any of its members survey the whole field, but because their limited individual fields of vision sufficiently overlap so that through many intermediaries the relevant information is communicated to all. . . . The marvel is that in a case like that of a scarcity of one raw material, without an order being issued, without perhaps more than a handful of people knowing the cause, tens of thousands of people whose identity could not be ascertained by months of investigation, are made to use the material or its products more sparingly; i.e., they move in the right direction.

Even in a centrally planned and controlled economic system, such as that which is visualized by the proponents of collectivism, a price system is most likely to be employed to assist in the work of guidance. Goods will be made available to consumers, at least in part, by offering them for sale at prices, and to some extent the factors of production will be allocated to this or that branch of industry on the basis of prices. Although some important decisions might be based on other than price considerations, and prices might be manipulated in such a way as to differ substantially from those of a capitalistic economy, they would at least occupy an important place in the economic process, both as a device for cost accounting and as a means of controlling the economy in accordance with the plans.²

In the preceding chapter a number of criteria were set forth as objectives toward which the economic process should be directed. The question now arises, is a price system a suitable mechanism for giving effect to those criteria? Will an economic process guided by the

²These are matters that will be much more fully dealt with in Chapter Eleven.

spontaneous influence of demand and supply in the market bring into realization the principles of social economy that have been explained? If not, can it be made to do so by appropriate modifications in the pricing process, or in the institutional structure within which it operates? Or, if the price system, upon analysis, proves to be too defective, is there any better device to which the economy might turn for guidance? These are the problems with which this essay is concerned, and which will be considered in detail in the chapters to follow.

Many economists have held that the spontaneous, unregulated price system of a competitive economy tends automatically toward the best possible use of our economic resources. They have argued that such a price system constitutes a sufficient guide to social economy without the necessity for other formal criteria. It is perhaps not too much to say that this is the traditional position of classical economists, and to some extent also of the neoclassicists. These writers opine that the ultimate test of human wants or utilities is to be found in the free choices of consumers, these choices being accurately registered in their schedules of demand. It is reasoned that producers, in following demand, are thus led to direct the use of resources into the channels that will contribute most to human satisfactions. As to the problem of whose wants should be given most consideration, the defenders of the competitive price system would argue that this is correctly determined by the marginal productivity principle (inherent in that system) which gives the largest shares of income to the owners of the factors of production that are scarcest in relation to the demand. They would further hold that pecuniary costs are a correct measure of disutilities and scarcities, that present and future needs are properly balanced by the device of the interest rate, and so on. Therefore, all that we need to do is to take the competitive price system as our ultimate criterion and rely entirely upon its guidance, with complete confidence that it will lead to the optimum use of our resources.

More than that, economists of this persuasion might argue that prices constitute the only possible common denominator of such heterogeneous things as utilities, sacrifices, and scarcities; therefore it

is futile to look outside of the price system for criteria of social economy. If this view is correct, it would follow that the whole discussion of the previous chapter is both unnecessary and in vain.

This is entirely too easy a solution to the difficult problem of making our economic system conform to social welfare. These writers have fallen into a pitfall. They have become so enamored of the mechanism of prices that they have allowed themselves to become apologists for it. There is a fascination about demand and supply curves and the tendency of prices toward a nice balance of demand and supply in the consumption and production of each product; and one can easily become enthusiastic in contemplating the picture (painted by economic theory) of a complicated economic process working spontaneously toward one grand general equilibrium in which all the resources at the disposal of society are fully employed and nicely adjusted to the free choices of consumers. In such contemplation, one's enthusiasm easily passes over into defense, and description of the normative tendencies within the price system becomes identified with justification. But this identity is not valid. It is one thing to say that prices tend toward a general equilibrium; it is quite a different thing to say that this equilibrium represents the best possible use of resources. Mechanical balance between demand and supply must not be confused with social welfare. We cannot know whether the general equilibrium fostered by the price system accords with economic welfare unless we have some external criteria by which to test it. There are many questions which must be answered before we can arrive at any conclusion on the matter. For instance, is consumer demand a satisfactory measure of human needs? Are the pecuniary costs of production that are found in the market a true reflection of human sacrifices incurred in production? Is payment to the owners of productive factors on the basis of the value of the marginal contribution of those factors to production a satisfactory basis on which to divide the social income among the members of society? We cannot beg these basic questions, which are crucial, by a too easy acceptance of the spontaneous price system. It must be subjected to critical analysis.

It may be thought that the principles of social economy which were set forth in Chapter One are too vague and intangible to be used for the purposes of such a critical examination. Utilities, disutilities, and scarcities cannot be measured. Basic requirements and surplus are subjective concepts. Capacities and incentives are matters of uncertainty. These difficulties are real, but we cannot escape them if we will, for they are inherent in the nature of the problem. The problem is admittedly elusive, but there is no use in running away from it on that account; and it is running away from it if we merely accept the guidance of prices without attempting to probe behind them. I am not sure that the concepts of utility, disutility and the like are any more intangible and imponderable than were those of the atom and the electron when first conceived by physicists, or the idea of the gene in the minds of contemporary biologists. We must first conceive of the ideas that we would like to use, then hunt for means of giving them objective reality; and we must not be discouraged if we do not achieve success in this all at once. If we go forward resolutely in search of appropriate methods, we shall make progress. It is surprising what empirical procedures can do toward uncovering subtle theoretical relationships in the actual world when they are directed toward that end with intelligence and imagination. However, the present study is not an attempt to develop the criteria of social economy in empirical form. It is rather a qualitative analysis, which seeks to show how far an economy guided by prices tends to give effect to the criteria above explained, in what directions it tends to depart from them, and the lines along which closer conformity between the economic process and economic welfare might be attained.

FOUR TYPES OF PRICE SYSTEMS

There are four types of price systems that may exist in different circumstances. These may be designated as natural (or free), protected, normalized, and manipulated, respectively.

A *natural (or free) price system* is one in which prices are allowed to seek their own positions in a market that is substantially free from

government interference. This does not mean that the state plays no part in the economy where such a system prevails. Since the maintenance of private property will be necessary to the operation of the system, the state will have to protect such property against forcible seizure and against loss from the more obvious forms of theft and fraud. However, the state will follow a hands-off policy in the actual operations of industry. The exploitation of property once owned will be subject to little or no restriction, and the process of higgling and bargaining in the market will not be molested or controlled. Consumers will enjoy freedom of choice in spending their incomes for such goods as they desire, enterprisers will be allowed to establish businesses on the basis of their own judgments and at their own risk, capitalists will invest their savings where they please or devote their property to such purposes as they find to their advantage, and laborers will be free to enter into such occupations as they prefer and to accept or refuse employment on such terms as the market affords.

This kind of setting conforms to the individualistic social order that largely prevailed during the early stages of capitalism. Perfect competition does not necessarily prevail in such a system. Elements of monopoly may be present. The existence of slavery is not incompatible with it. Wages and working conditions are substantially free from governmental regulation. As a result of the laissez-faire policy of government, prices might deviate considerably from their normals as they are pictured by the economic theory of perfect competition. Deviation from the normals would be caused by monopolies and the many irregularities of the market, such as seasonal and cyclical fluctuations, and monetary disturbances. Nevertheless, there would be a tendency toward such normal prices (except in the case of monopolies) in the sense that departures would presently be counteracted by movements in the opposite direction, through the operation of the forces of supply and demand. That is, prices would fluctuate more or less widely about their normals like the movement of a seesaw about its position of equilibrium. Such a market might be characterized by many abuses, such as exorbitant

monopolistic prices, unfair methods of competition, exploitation of labor, and monetary inflation and deflation—all of which would tend to distort prices from their normalistic tendencies. Few, if any, informed observers of the economic scene would advocate the maintenance of such a system today.

A *protected price system* differs from a natural one in that, although consumers, investors, laborers, and enterprisers still have substantial freedom of choice, they must now conform to enlightened rules of fair dealing. Antisocial uses of property, such as the operation of houses of ill-fame or ruthless exploitation of natural resources, may be prohibited. Monopolies will either be suppressed, or, if their continued operation is found to be in the social interest, their rates and services will be regulated so as to prevent exorbitant prices and to compel good service; and unfair methods of competition will be restrained. In the labor market collective bargaining may be encouraged, minimum wage laws may prevail, and in times of unemployment the government may employ idle workers in public works projects of one kind or another; but in the main, employers will be free to hire and fire, workers will be free to enter such occupations as they please and to take such jobs as they care to accept, while wages above the minimum will be determined by demand and supply. Individuals will be free to save such portions of their incomes as they choose and to invest them in whatever directions they think wise, and on such terms as borrowers will freely offer; but there may be regulations (such as those of the Securities and Exchange Commission) to prevent the promotion of fraudulent enterprises and similar abuses in the investment market. The purpose of all these regulations is to permit the mechanism of the price system to function according to its own principles, but under the most socially desirable conditions. Prices would be permitted to gravitate toward their positions or normal equilibrium, although, of course, there would be considerable short-run deviations. An economy of this kind would retain the essence of liberalism in a somewhat refined form, but some of its most serious faults would be eliminated. This is the kind of a society that is favored by the more progressively minded of contemporary liberal economists.

A *normalized price system* would be one in which prices were held at or close to their competitive normals by deliberate state control. Such a price system could exist only in a centrally planned and directed economy in which the controlling authorities adopted as their guide the spontaneous tendencies toward normal equilibria that are inherent in the free choices of the market, and endeavored to guide the economic process in accordance therewith. In such an economy the free choices of consumers would be sovereign, in the sense that the satisfaction of consumers' demands would be accepted by the planners as the goal toward which production should be directed. However, consumers might be influenced in socially desirable directions by means of education, advertising, and various forms of propaganda. Wage-earners would have free choice of occupation within the limits set by their own ability and the wide range of opportunities for employment that the economy presumably would offer. Investors would have a similar range of choice, although in some circumstances it might be necessary to bring controls to bear upon them to prevent the supply of intended voluntary savings from exceeding the opportunities for profitable investment. Enterprisers would be allowed to organize production within their plants and manage the details of their operations in accordance with their judgments, but they would have to follow the plans of the central authority concerning the kinds and quantities of goods to be produced. The determination of wages and prices might be left to the play of the market, but the plans would be drawn with the intent of arriving as nearly as possible at the long-run equilibriums conceived by economic theory. If the plans were successful, therefore, prices would conform closely to their normals without serious market deviations. This is the type of economy that is contemplated by those economic theorists who believe that a socialistic state could achieve a closer approach to the normal prices of economic theory than any other form of social organization.

The three types of price systems that have just been described have this in common: They are all dominated by a tendency toward the normal prices of economic theory. In each of them prices tend to equal optimum average costs in the long run; hence the whole

system tends toward a general equilibrium in which all demands and supplies are in balance. In each of them the economy uses the price system as its guiding mechanism, relying upon it to register consumers' desires and scarcity of productive factors, and to reconcile the antithesis between them. The three price systems differ only in the institutional setting within which they are permitted to operate. In a natural price system there are various obstacles (such as monopolies) to the normative influences, and there are no safeguards to prevent antisocial behavior. As a result, prices may deviate widely from their normals, and they may guide the economy away from, rather than toward, the social welfare. In a protected price system an effort is made to prevent the more obvious kinds of antisocial behavior, so that prices are more likely to guide the economy in the direction of welfare, but there may still be many obstacles (such as mistakes of judgment, lags of adjustment, and an imperfect monetary system) to cause prices to fluctuate far above or below their normals, at least for short periods. Hence the guidance of the economy by the price system is imperfectly realized. In a normalized price system, not only are antisocial activities suppressed, but an effort is made to prevent wide deviations of market from normal prices by careful centralized planning and control. Hence the price system is permitted to operate only toward ends judged to be in the interest of the general welfare, and there is an effort to make the economy follow the guidance of prices within this framework as closely as possible.

Since all three of these types of economy are guided, in general, by the same kind of price tendencies, we may group these price systems together under the general heading of *normative price systems*. It is important here to distinguish the word *normative* from the word *normalized* that was used to describe the third type of price system. Normative price systems are dominated by a tendency toward normal prices, but the tendency may be blocked so that normal prices are not, in fact, achieved, and may be widely departed from. In a normalized price system, however, prices are kept at or close to their normals by deliberate control. Normative thus means working toward the normal, while normalized means achieving the normal in fact.

Although this essay will deal primarily with normative price systems, there is a fourth type of price system that should be described, and which will be dealt with incidentally as the occasion arises. This may be termed a *manipulated price system*. In it prices, instead of being directed toward their normal equilibria, are deliberately manipulated by the state to achieve certain objectives that are considered desirable. For instance, if there are some goods whose consumption it is desired to encourage, they may be offered for sale at prices which are less than their costs of production; or they may even be given away free. On the other hand, where there are goods whose consumption it is felt should be discouraged, they may be priced considerably above their costs so that they will be more expensive to acquire. Again, wages may be pushed up above the value of the marginal product of labor for substandard groups of workers who might not otherwise be able to receive a living wage. This kind of a price system prevails in the Soviet Union, where the wages of labor are artificially fixed, some costs are arbitrarily calculated, and the rule of normative price systems that the prices of goods should tend to equal their costs of production is frequently violated.

The price system now existing in the United States, as well as in most capitalistic economies, does not conform entirely to any of the four types that have been described, but is a mixture of all of them. We have some prices that are left to the free play of market forces, with little or no regulation. Fresh vegetables probably conform to this description. Here the principles of natural price systems operate. We have other markets in which an effort is made to set up standards of fair dealing and prevent abuses. For instance, we have commodity exchanges that are regulated by commissions which attempt to suppress such abusive practices as cornering the market, and our securities market is regulated by the Securities and Exchange Commission in such a way as to prevent fraudulent promotion projects, manipulation of security prices on the stock exchanges, and the misleading of investors by misrepresentation of the securities offered to them for sale. In such cases as these the principles of a protected price system may be said to be in operation. Our public utility services,

such as gas, electricity, and transportation, are controlled by public commissions that protect consumers from exorbitant charges. Here an effort is made to keep the rates at prices that equal the costs of supplying the services in question. This may perhaps be construed as an illustration of normalized prices, although there are some theoretical difficulties in the way of this interpretation. We have also some manipulated prices. For instance, books are carried by the postal system at rates which are probably below costs, because it is desired to encourage their widespread use. In publicly subsidized housing, also, living quarters are rented to families of the poor at prices which are less than the costs of their production. On the other hand, the price of silver is held at an artificially high figure by federal law; and federal crop controls are now keeping many farm prices at figures perhaps above their normals. Finally, our government supplies some goods to the public without benefit of price at all, either because the mechanism of charging prices would be difficult and onerous, or because it is desired that the goods in question be widely used by the poor without restriction. Thus most of our highways are free in order that the nuisance of tolls may be avoided, and a public school education is made available to all in order that the children of the poor may be assured of at least a common school education. The number of manipulated prices in our economy, however, is so small a proportion of the total that it would not be inaccurate to say that our price system as a whole is dominated by normative tendencies, and this is true of capitalistic economic systems in general.

THE PROCEDURE OF THIS ESSAY

It should be clear from what has already been said that a price system of any kind is merely a means to certain ends toward which the economic activities of society are directed. It is a guiding mechanism, or implement, through which the choices of consumers, or of some central planning body, as to what the economic process should produce are somehow recorded and followed, and through which the scarcities of the means of production that are available for such purposes are measured and taken account of. The problem of

this essay is to inquire how good a mechanism the pricing process offers for this purpose. In pursuing this inquiry, I shall take up, one by one in successive chapters, the criteria of social economy that were set forth in the first chapter, and I shall raise the question, to what extent a price system can be used as an instrument of guidance to bring these principles into effect. In doing this it will be necessary to consider whether the desired objectives would be attained by a natural price system, working on its own principles in an uncontrolled setting, or whether it might be made to conform better to the criteria if the institutional setting in which it operates could be sufficiently protected or controlled. Since the price systems of existing capitalistic economies are predominately normative in character, and since there is a recent tendency on the part of socialistic theorists to favor a normalized price system for collective economies, I shall be mainly concerned with price systems of the normative type. However, the possibilities of manipulated prices must not be entirely overlooked.

In proceeding with the discussion, it will be necessary to distinguish carefully those properties that are inherent in any normative price system from those which are the result of the external institutions in which the pricing process operates. For example, the normative influence of prices tends to attach a certain rent to a piece of land on principles which are a well-established part of neoclassical economic theory. The characteristic that the rent of land tends to equal the value of the surplus product obtainable on that land over what could be produced by an equal amount of labor and equipment applied at the intensive or extensive margins of cultivation is inherent in the price system; but the private ownership of land, and hence the private appropriation of this rent, is not a necessary part of the price system at all. The same principle of rent could apply in a collective economy where all the land was publicly owned and its rent received by the state. Therefore, the system of income division prevalent in a capitalistic society that permits the receipt of rent by private landowners cannot be attributed to the price system as such. Again, there is inherent in a normative price system a tendency to fix

wages at the value of the marginal product of the different grades of labor; but it does not necessarily follow that the income of labor must be restricted to that amount. Society can, if it chooses, give to some workers free income from some other source in addition to their wages. Thus it is possible to shape the economy in different ways within the framework of a normative price system. In the subsequent analysis I shall have occasion to show in greater detail how this can be done. But we may also encounter situations in which it may appear desirable frankly to depart from the guidance of the price mechanism; and before the analysis is concluded the question must be raised whether some other system of economic guidance is possible, or even preferable, in which the guiding mechanism of the price system would be entirely abandoned.

In other words, the objectives of this study are twofold: (1) to discover what potentialities and what obstacles are offered by a normative price system as a mechanism for guiding the economic process in accordance with the principles of social economy that were set forth in Chapter One, and (2) to find what institutional features of the contemporary world hinder or thwart the realization of such potentialities as there may be, and what changes in these institutions are indicated as desirable.

In considering how changes in the institutional setting within which prices operate might make the price system a better guide to welfare, it would be easy to extend this essay into a detailed blueprint for economic reform. It would become a comprehensive treatise on applied economics. However, the present study will not undertake so ambitious a task. Its central problem is to appraise the possibilities and limitations of the price system. It would be wandering too far from that center to follow into their detailed applications all the proposals for change that might suggest themselves in the course of the analysis. Therefore, to the extent that the operation of prices is found wanting as a means to the attainment of welfare, I shall merely call attention to the nature of the difficulties to be overcome, and point out the general direction of reforms that seem to be needed, without attempting to describe specific legislation for put-

ting them into effect. I do not hope to do more here than to compare the kind of guidance we get from prices with the goals of welfare toward which our economy should be pointed, and to suggest in very broad terms the kinds of changes that would bring us nearer to those objectives. This is primarily a work in the *theory* of welfare economics.

CHAPTER THREE

The Selection of Wants

THE PRICE MECHANISM FOR SELECTING WANTS

The first criterion of social economy set forth in the opening chapter was the principle of want selection. This was stated as follows: Wants should be provided for in the order of their importance. An alternative statement was offered, to the effect that no want should be satisfied if a more important want is thereby excluded. This principle is vital for the attainment of social economy; for the first and most basic question that the economy has to decide is, what things are to be produced, and in what quantities.

Normative price systems leave this decision to the more or less free choices of individuals, as expressed in their demands for goods. As it has often been expressed, the consumer is sovereign. Each adult consumer or family head has at his disposal a certain money income which he is free to spend according to his judgment, habit, or whim. The readiness to spend of the myriads of consumers gives rise to schedules of demand, which are set off against sellers' schedules of supply. Since there is not enough productive capacity in the economy to satisfy all the demands to the point of satiety, there arises competition for goods among the various consumers. This gives rise, in turn, to competing demands for factors of production on the part of enterprisers. This latter competition forces each enterpriser to pay as much for the factors that he employs as his competitors will offer in the uses to which they would like to put them. So there is brought into operation the principle of opportunity costs, which states that the use of any factor in production involves a cost which is determined by the prices offered for that factor in its possible alternative uses. The effect of this principle is to direct the factors toward the satisfaction of those de-

mands which are greatest. So, the price system as a whole tends to allocate the resources of the community toward the maximum satisfaction of consumers' demands. No lesser demand can obtain the services of productive factors so long as demands of greater strength have not been met.

If demands could be taken as a valid indication of social needs, this mechanism would be a perfect one for fulfilling the requirements of the principle of want selection. It therefore becomes a crucial question for the attainment of social economy, whether or not demands based on the free choices of consumers are in fact a reflection of socially desirable goals. Are the free choices of consumers the best possible guide for production to follow?

The marginal utility theory, on which the traditional explanation of demand has rested ever since the days of Jevons, Menger, and Walras, may be thought to support an affirmative answer to this question. This theory assumes that each consumer makes a rational comparison in his mind of the amounts of utility to be derived from the various goods available for purchase in the markets. He is supposed to carry his consumption of each good down to the point where the marginal utility derived from the last unit is exactly equal, per dollar of expenditure, to the marginal utility of every other good that he buys. Or, to put it a little differently, he compares the marginal utility of a dollar with the marginal utility of each good whose purchase he contemplates, and he buys enough of the latter to make its marginal utility equal to that of the dollar. It can be demonstrated that if a consumer does this, the total utility of all the goods he purchases will be at the maximum that is possible within the limits of the money income which he has to spend. For if the marginal purchase of any good yields a higher increment of utility than that of some other good, some increase in total satisfaction will be possible by spending a little more for the first and a little less for the second. Not until the margins are equalized throughout the whole range of the consumer's expenditure will no further increase of utilities by such shifting be possible.¹ On

¹ For a fuller explanation of this idea, with illustrative diagrams, see my *Principles of Economics: A Restatement* (1941), pp. 588-592.

the basis of this theory, liberal economists (by which I mean those who favor a system of free enterprise) have generally held that the free choices of consumers, in a natural or protected price system, work toward an optimum allocation of our economic resources. This is to say, such choices offer the best possible guide for fulfillment of the principle of want selection.

To this optimistic conclusion there are five fatal objections. The first is that consumers are not as rational in making their decisions as the theory assumes. We humans are not calculating machines that accurately measure the potential satisfactions of every good displayed in the markets; rather we are mostly creatures of impulse and habit. Secondly, we could not make the intricate calculations implied by the marginal utility theory if we tried. The greatest mathematical genius that was ever born could hardly accomplish such a feat. Certainly no ordinary person could do it. Undoubtedly, most people do sometimes weigh the alternative gains to be derived from two or more possible kinds of expenditure, especially when the purchase of some expensive article, like an automobile or a piano, is being contemplated; but in our ordinary everyday purchases this is far from being the case. Here habit and caprice rule our decisions much more than rational calculations. Thirdly, even if consumers made their choices carefully, after full deliberation and the weighing of all alternatives, and were capable of making the calculations assumed by the marginal utility analysis, their decisions could be no better than their standards of value and their knowledge of the goods offered in the market. It will presently be shown that both of these are faulty. Fourthly, even if consumers were completely informed, all-wise in their judgments, and mathematically precise in calculating all their purchases, they could still only maximize their satisfactions within the limits set by their individual incomes. Before we could conclude that this would lead to the optimum allocation of the community's resources, we would have to make sure that incomes were apportioned among the people in the manner most conducive to social welfare. The marginal utility theory does not suffice to dispose of this issue, as we shall see. Finally, what benefits (or may be thought to benefit) one person may injure

another; hence, if each is allowed to follow his own choices, without regard to his neighbors, the net result may fall short of maximizing satisfactions for all. Illustrations of this will be given below. In view of these five objections, it must be concluded that the liberal defense of a normative price system as a means of directing the economic process toward maximum satisfactions is quite inadequate.

Recently a somewhat different theory of consumers' choices has come into vogue, based on the indifference curves described by Pareto and Edgeworth, and further elaborated by Hicks.² Instead of taking utility as its point of departure, this theory proceeds on the assumption that there are various combinations of two (or more) commodities that are equally desirable to an individual. For instance, a consumer might be willing to accept more or less sugar as a substitute for flour in his diet. In that case it might be a matter of indifference whether one had, say, five pounds of flour and three of sugar, or four pounds of flour and four of sugar, or three pounds of flour and six of sugar; but he would be sure to prefer six pounds of flour and four of sugar, or five of flour and five of sugar, to any of these, because the latter combinations constitute a greater quantity of real income. On this basis it is possible to erect a series of higher and lower indifference curves. The various combinations lying along any one curve are of equal appeal to a consumer, but he will always prefer any combination on a higher curve to any conceivable combination on a lower one. Given his money income, it is possible to show how much of each commodity he will buy at every possible price, for he will presumably select always the combination that lies on the highest indifference curve he can reach. From demand schedules so calculated for each individual consumer, schedules of demand for the whole market can be derived.

This approach is held by its advocates to be superior to the marginal

² See John R. Hicks, *Value and Capital* (Oxford, 1939) Chaps. 1 and 2. A concise and very lucid explanation of the theory is to be found in George J. Stigler's *The Theory of Price* (1946), pp. 67-79. Ruby Turner Norris gives a fuller and more critical analysis of it in her *Theory of Consumer's Demand* (1941), Chaps. II and III.

utility theory because it is said to avoid the assumption that the amount of utility in a good is a definite quantity known to the consumer. As Stigler puts it:

It is assumed that the consumer is able to decide whether two combinations of goods are equivalent or whether he prefers one to the other; but it is not assumed that he can tell by how much he prefers one combination to the other. This is the fundamental difference between the present and the older (marginal utility) theory of demand.³

Hicks himself says (to the same effect):

. . . we need only suppose that the consumer has a preference for one collection of goods rather than another, not that there is ever any sense in saying that he desires the one collection 5 per cent more than the other, or anything like that.⁴

I do not find this argument convincing, for it seems to me that the notion of known amounts of utility is implicit in the whole chain of reasoning. How can a consumer know which of several combinations are matters of indifference to him, and which are to be preferred, unless he has some means of estimating the amounts of utility they represent? One of my colleagues argues, by analogy, that if we hold a weight in each hand we may know which is the heavier without knowing how great (in pounds or ounces) is the weight of either; but this overlooks the fact that all measurements are relative. The only way we know the weight of anything is by comparing it with something else that has been arbitrarily chosen as a standard for such comparison. If we have in one hand a weight so chosen as a standard, and we hold in the other a weight that feels equal to it, we can say approximately how much it weighs. Similarly, in the theory of indifference, all we need to do is to choose any one commodity as a standard; then if a consumer is indifferent between it and some other commodity, we can say how great (in terms of the standard) is the utility of the latter. I would argue similarly against Boulding, who explains that indifference graphs are contour maps derived from a three-dimensional figure whose height is determined by the amounts of utility in the various combinations of goods, then goes on to say that we do not

³ *Op. cit.*, p. 76.

⁴ *Op. cit.*, p. 18.

need to assume that consumers know these amounts, any more than we need to know the height of a mountain to visualize its contour.⁵ There is no denying that it might be possible, by rare coincidence, for indifference curves derived from two (or more) different utility surfaces to coincide; so that the same curve would represent different amounts of utility; but this does not dispose of the fact that the curve *is* derived from a utility contour. The significant thing is that utility is one of the three dimensions of Boulding's and Hicks' figures. Both writers begin with marginal utility curves of the traditional type and derive their indifference curves from them. How, then, can they assert (as they do) that they have escaped from any of the assumptions of the older theory? The kinship of the two theories is further revealed by the slopes of the indifference curves. These slopes show that it takes increasing amounts of a given commodity (X) to compensate for the loss of successive increments of another commodity (Y). The reason for this is that the marginal utility of X decreases as more of it is possessed, while the marginal utility of Y becomes greater as more of it is given up. The theory supposes the consumer to know just how many units of X will compensate for giving up successive units of Y; he must then be able to estimate the utility of one in terms of the other, which is essentially a process of measurement. I repeat that all measurement is merely accurate comparison.

It appears, then, that the basis of the two theories is identical. They start out from a common origin and reach the same destination, but by somewhat different routes. The destinations are the same because both approaches lead to identical schedules of demand. But the indifference theory is much more awkward. Its terminology is more clumsy (witness the replacement of the term "marginal utility" by the ponderous phrase "marginal rate of substitution"), and its mechanics is more complicated (demand schedules can be derived much more simply from marginal utility schedules and curves than from indifference tables and maps). This is an unnecessary inconvenience. All in all, I am led to the conclusion that the new theory is not as good as the old—which makes it very bad indeed.

Regardless of the relative merits of the two theories as explana-

⁵ Kenneth G. Boulding, *Economic Analysis* (Second Edition, 1948), p. 738.

tions of consumers' demand,⁶ it is clear that the indifference approach affords no better a defense than its rival of consumers' free choices as a means of fulfilling the principle of want selection. It is open to precisely the same objections on this score that were made against the marginal utility analysis. That is, it wrongly assumes rationality and precise calculation on the part of consumers, it erroneously supposes them to have adequate information and ethically satisfactory standards of value, and it ignores the problem of income distribution.

A CRITIQUE OF CONSUMERS' DEMAND

The previous section has shown that the kind of guidance given to production by a normative price system under the influence of consumers' demand cannot be accepted on the easy basis of either the marginal utility or indifference theories. It must be subjected to more critical analysis. Such an analysis reveals some serious faults.

The existence of great inequality of incomes in society creates a serious discrepancy between consumers' demands and social needs. Full discussion of the whole problem of inequality in its relation to the price system will be reserved for the following chapter; but it is necessary to call attention to it at this point because of its obvious bearing on the principle of want selection. It is easy to see that where there is great disparity of incomes, the desires of some people have much greater influence on the market than those others. As a result, much production is diverted into supplying trifles for the rich while some of the most important needs of the poor go unprovided for. So we have such unnecessary luxuries as private yachts, mink coats, gold house keys, musical powder boxes, and fancy cigarette lighters, while

⁶ It should perhaps be said that both the marginal utility and the indifference theories, although based on an explanation of consumer *choices*, are directed primarily toward an understanding of consumers' *demand*. Although it is desirable to push the analysis of demand as far back into primary causes as we can, I doubt if a definite, complete theory of consumers' choices is possible in the present state of our knowledge of psychology. At any rate it cannot be based on the assumption of generally calculated, rational behavior. But an underlying theory of choice is not absolutely necessary to an explanation of demand. In my *Principles of Economics: a Restatement* (1941), pp. 320-329, I have set forth a theory of demand which is entirely free from both marginal utility and indifference implications.

the poor lack adequate housing, medical service, vitamins in their diet, and other basic necessities. One need only to visit the gift aisles in our city shops just before Christmas to see thousands of articles of very little practical utility that are made only to lure a few dollars from the pockets of people who have more than they know how to use wisely. Contrast with this sort of thing the poverty of our urban slums and some of our rural shacks, the undernutrition and disease that prevail among the masses of the poor; and consider how the resources frittered away in these trifling extravagances might be used to alleviate these conditions. How can it be thought that the kind of economic guidance which leads to such distorted results represents an optimum allocation of our resources? It does not accord with the principle of want selection.

The choices of consumers are largely determined by group cultures, prevailing social values, established standards of living, and customs. This can well be seen in the varying modes of dress and kinds of diet that prevail in different parts of the world. Religious traditions are among the social factors that influence the styles of clothing and kinds of cookery used by different people. Witness the plain garb of the early Quakers and the taboo against pork of the orthodox Jews. National customs affect architecture, dress, and many other things. For instance, contrast the pagodas and kimonos of Japan with English cottages and Dutch peasant costume. The Russians drink vodka, the French absinthe, and the Germans beer. The literature of consumption economics abounds with other illustrations of the various ways in which the things people demand in the markets are conditioned by the social conventions of the groups in which they have been reared.

It has been suggested that these social patterns may be the result of a long process of natural selection that sorts out those standards that are good and eliminates those that are found to be bad, just as in the biological world there is a struggle for existence that preserves the fit and destroys the unfit. Probably something of this sort is going on in certain cases. The widespread use of wheat and potatoes in our diet is no doubt due to the fact that these foods offer more fuel for the body in proportion to the resources required to produce them than any

other product. Likewise, the use of fish in the diet of the Japanese is probably economical in view of their lack of land for the raising of meat animals and their island location surrounded by ocean.

But social standards of consumption on the whole cannot be defended as the product of an evolutionary sifting in which injurious modes have been (or are being) eliminated. There are too many cases of customs long established that hinder, rather than help, the social group. For thousands of years before Western civilization modified Chinese culture, Chinese women of the wealthy class were made helpless by binding their feet from infancy, until the feet were so deformed that they could not walk. The use of white bread in the United States is based, not on its nutritional superiority over the whole wheat product, but on an effete desire for excessive refinement. It is now being discovered that in the bleaching of flour to achieve this whiteness, a chemical is used that probably makes such bread a slow poison. Many of our homes are heated to the point where they are almost dry ovens—a condition which contributes to colds and other diseases. One investigator offers an interesting illustration to show how national and racial food habits result in deficient diets. Out of one hundred and five families of Italians, Jews, and Negroes included in a certain study, sixty-one per cent had less than three thousand calories of food per day—not because of insufficient incomes, but because of bad customs. The Italians had the most. Only thirty per cent of the Jews and nineteen per cent of the Negroes had the standard amount. In some of the Jewish homes no milk whatever was consumed, yet Roman cheese was bought in small quantities at \$1.25 per pound. As a result most of the children in this group had rickets.⁷

If it be argued that these detrimental social habits are even now in process of being eliminated as unfit, the answer is that the process is too slow to be accepted with equanimity. It means that at any one time there are in existence too many prevalent modes of consumption (not yet eliminated) that are contrary to the general welfare. Besides,

⁷ Cited by Leland J. Gordon on p. 83 of his *Economics for Consumers* (1939), from Velma Phillips and Laura Howell, *Racial and Other Differences in Dietary Customs*, in the *Journal of Home Economics*, Vol. 12, pp. 396-411.

while some undesirable practices are being weeded out, new ones are springing up to take their place. The result is that socially determined consumer choices cannot be regarded as an altogether satisfactory guide for production to follow.

Within the broad limits set by social standards there is always room for considerable individual choice as to what one shall buy. Social conventions may determine the general style of a woman's dress, but there remains much opportunity to exercise her taste in the selection of color, fabric, design, and trimmings. National habits may fix the general proportions of meat and vegetables that prevail in the diet, but one can exercise his fancy in the selection of beef or lamb, peas or beans, apples or pears, and so on. Some consumers are sufficiently well-informed and intelligent to make such choices wisely, so that they look well dressed and provide themselves and their families with balanced diets; but on the whole there is much folly and ignorance which result in unwise selections. The kind of lunches eaten by shop-girls and university "co-eds" at the noon hour is notoriously bad, and there are many people who do not know how to dress themselves attractively. Social workers state that, in the homes of the poor, housewives are very inefficient in their expenditures, purchasing foods of little nutritive value in proportion to the money they pay out. The widespread use of narcotic drugs and excessive indulgence in intoxicating liquors show how many individuals fall into destructive habits of consumption.

Thorstein Veblen has called attention so forcefully to the way in which emulation and conspicuous consumption dominate American habits of living that economists are not likely ever again to overlook it. As a result of this factor, things are consumed, not because of any capacity to contribute to general human welfare, but simply as a means of exhibiting the great opulence of their possessors. Veblen showed that this desire to acquire distinction permeates our standards of dress, our recreation, our art, and even our religious customs. It filters down into the consumption patterns of the poor and moderately well-to-do by their imitation of the rich. Many a working man drives a flashy automobile to impress his neighbors, when perhaps he

does not have a bathroom in his home, and often a shop-girl will sacrifice things far more important to her health and well-being in order that she may buy a fur coat. It is probable that women, who do most of the buying for American homes, are more subject to the influence of this spirit of emulation than men, though the latter are by no means immune to it.⁸

Looking at the picture as a whole, it is hardly to be denied that the decisions of individual consumers are far from reflecting the best standards of human welfare. As a result of their unwise choices, much production is diverted into channels of waste.

This waste is aggravated by the fact that the consumer is hampered by his lack of expert knowledge about the things he buys and by the absence of reliable standards for judging of their quality. Business firms, in buying raw materials, machinery, or stocks of goods, are in a position to purchase intelligently because they know thoroughly the narrow range of products that they use. Frequently they buy on specifications, and the larger firms employ purchasing agents who are experts in their line. The consumer cannot usually buy on specifications, and he must purchase so many different kinds of goods that he cannot possibly have expert knowledge about all of them. Hence he cannot know whether he is getting the best possible quality for his money unless the goods are graded according to standards which are publicly known. Most commodities sold at retail are not so graded, and they are not displayed or described in a manner that gives the consumer a basis for intelligent, discriminating choice. This, coupled with the fact that he is easily swayed by emotions, makes it easy for him to be misled.

Producers take advantage of these handicaps to influence and deceive consumers. In theory, the consumer is sovereign in the market. Producers are supposed to accept his decisions and follow his de-

⁸ Walter B. Pitkin, in the *The Consumer: His Nature and His Changing Habits* (1932), pp. 279-312, states that women do eighty-five per cent of the buying of all goods sold at retail, and he expatiates upon the foolishness of their buying. While his diatribe is certainly exaggerated, it is not without some measure of truth.

mands. Back in the days when most goods were made by hand, this was to some extent the case, for the consumer could order his goods in advance and describe just how he wanted them; but nowadays goods are made ahead of sales, and the consumer must take what is offered on the market. In the last analysis it is still true that consumers' decisions are final, but the producer can influence those decisions by the various devices of persuasion that are open to him. The enormous quantity of advertising that is now done in this country affects consumers' choices to a very great degree. By this means buyers are persuaded to choose higher-priced goods that are often no better than lower-priced merchandise which is not so widely advertised. Trifling gewgaws, useless luxuries, flimsy or shoddy merchandise, and even injurious products (such as certain patent medicines) are foisted upon the ignorant and the gullible. This is not to say that all advertising is contrary to the social interest. Advertising, if properly controlled, could play a useful role in educating the consuming public to the use of new products and in enabling consumers to know where they can find the things which they desire; but under existing standards much advertising is wasteful, and in considerable measure it distorts consumption away from welfare in the direction of what Ruskin called illth. The consumer is the more easily misled by advertising because of the opposition of business men to clear and definite standards of quality and labeling for consumers' goods. Instead, they prefer to use suggestive and deceptive terms, such as "fancy," "extra fancy," "select," "de luxe," "super de luxe," and "custom built," which have no precise meanings and may even conceal inferior quality.

There are some high-principled business men who regret these practices, and they have sometimes formed associations to prevent them. Such organizations as better business bureaus, some trade associations, and the American Medical Association have set up standards of fair dealing to which their members are expected to conform; but these standards are too often made in the interest of the members of the organizations, and any benefit accruing to the consumer is incidental. Much of the activity of some of the trade associations is

monopolistic in character and definitely contrary to the consumers interest.

Another defect in the mechanism of demand as a guide to production (mentioned briefly above) is the fact that what benefits a particular individual may have injurious effects upon others. A person is very likely to buy things that he wants without much thought of their consequences upon his immediate neighbors or upon the community at large. One man's chickens may scratch up his neighbors' gardens. Dogs, when allowed to run at large, may become a nuisance in the community. A blaring radio may be very objectionable to the people who live in its vicinity. A tall apartment building may shut off the light from small homes nearby. One person's smoking may start a fire that spreads to another's house, and one's consumption of liquor may lead to an automobile accident in which others are injured. A natural price system lends itself to this abuse because the mechanism of demand is suited for registering the choices of those who want the chickens, dogs, radios, apartments, tobacco, alcohol, and so on, but it offers no means of registering the protests of those who object to these things. Hence we cannot rely entirely upon the spontaneous pricing process for guidance here. There is need for some supplementary governmental regulations, such as zoning laws, to protect the social interest.

TOWARD CRITERIA FOR WANT SELECTION

In a sense, the mechanism of prices is a neutral device that has no bias toward either welfare or illfare. It gives effect to whatever choices are brought to bear upon it, and it directs production accordingly, regardless of where the choices may lead. For this very reason a natural price system, in which consumers' demands are taken uncritically as given, must guide economic activity to a large extent in wrong directions. It is incompatible with maximum social well-being. On the other hand, if we could somehow condition consumer choices so that they would be well-informed, intelligent, and consistent with the social welfare, prices would respond and production would be directed into the proper channels. Such conditioning of

consumer demand would be one of the features of a protected price system.

This raises two important questions: Are there any suitable criteria for the selection of wants that might constitute a better guide to production than consumers' choices as they are now made? If so, how can these criteria be made effective?

Wants can be broadly classified into the three categories of necessities, comforts, and luxuries. The distinction between them is largely subjective, and they cannot be sharply separated, for the differences are of degree rather than of kind. Nevertheless I believe it would be possible to draw up a list of items in these three general categories that would command fairly general approval. Just as social workers have found a way to distinguish between minimum and comfort standards of living, so it should be possible to reach a consensus for distinguishing between goods of greater and lesser importance, so as to give empiric content to the principle of want selection. Most persons would agree that there are certain basic requirements of food, clothing and shelter that are more important than such frivolities as race horses and pleasure yachts. For each kind of goods, it should be possible to specify an order of importance in some detail. For example, in the category of food, bread and meat would clearly take priority over desserts and preserves. In the matter of housing facilities, one bathroom is a necessity, but a second is a luxury; no less than a stove or a pipeless furnace is required for heat, but an automatic oil burner is clearly a luxury. In home furnishings, beds are necessities, wool blankets are comforts, and eiderdown quilts are luxuries. By developing an extensive classification along similar lines it ought to be possible to form a reasonable judgment as to the order of priority which should prevail in production. Perhaps there should be added to the classification a category of undesirables, to include the various forms of illth which now enter so largely into consumption. These would be excluded in a wisely directed economy.

It is not necessary to rely entirely upon subjective judgments for determining the order of importance of goods. A great degree of research is going on which may eventually provide an objective foun-

dation for the principle of want selection. Most progress has been made in the field of health. The applied science of nutrition is giving us a knowledge concerning the part played by proteins, starches, fats, vitamins, and minerals in the human organism, from which the diets that are requisite to health can be prescribed. Objective studies of ventilation, humidity, lighting, heating, and plumbing are being made, from which standards can be set up for houses that are comfortable to live in and factories that are healthy to work in. Physicians now know enough to prescribe the types and frequency of physical examinations that are needed to uncover our physiological weaknesses and how best to treat those weaknesses when they are found. So much has already been done in these fields that our knowledge of what might be accomplished is far ahead of our achievements.

There are further possibilities in other directions. For example, in the matter of clothing, the types of yarns (whether wool, cotton, silk, or rayon), weaves, and even colors, that are best for different purposes and different climates can be found by suitable experiments. In the field of intellectual development we are just beginning to make progress in intelligence tests, teaching methods, vocational guidance, and training. Not as much progress has yet been achieved in outlining our emotional needs, but psychiatry holds out great promise of further developments in this direction.⁹ Even esthetic standards may eventually be developed by scientific analysis. Elizabeth Hoyt points to the fact that some esthetic satisfactions spring from exact mathematical relationships (for example, music), and she cites two writers who have made some effort to deal with this general problem.¹⁰

There are some broad principles or precepts concerning what is wise in consumption that may be used to supplement the subjective

⁹ George Soule, in Chapter X of his *The Strength of Nations* (1942), develops this theme in an interesting and suggestive way. He rejects the idea that science is not concerned with ends or purposes, and emphasizes the role of psychology and psychiatry in this connection. "What science ought to be able to do in this realm is to explore emotional needs that are less generally admitted or understood, to straighten out tangles when needs seem to conflict with each other, and to aid in building the kind of culture in which the needs can be better fulfilled than at present." pp. 236-237.

¹⁰ Elizabeth E. Hoyt, *The Consumption of Wealth* (1928), Chap. XVI.

and objective standards that have been described. Simon Patten set forth three such precepts, which he called the laws of harmony, of variety, and of least social costs.¹¹ The law of harmony states that goods should be consumed in harmonious combinations. In eating, in drinking, and in all our habits of life, it is possible to choose things that do not go well together, bringing indigestion, ugliness, or some other fault, or to choose things that blend harmoniously, making for health and beauty. The law of variety states that, all other things being equal, variety in consumption gratifies more desires than does uniformity. This follows from the law of diminishing utility, which implies that if the consumption of any one good is repeated, its monotony causes the satisfaction derived from it to decline. Therefore, variety in consumption is true economy, leading to greater total utility than does uniformity. The law of least social costs states that those goods are most economical whose cost of production is least in proportion to the utility they yield. For instance, a meat diet is probably wisest for those people who have at their disposal large areas of grazing land; but a fish diet is more economical for those who live in congested areas, close to the sea. No doubt other rules of choice could be formulated as a guide to wise consumption.

The general objective of all such rules should be to develop human capacities and give outlets for human urges that will promote individual health, both physical and emotional. If such standards can be made effective they will at the same time contribute to the strength and stability of the social group of which these individuals are a part. The problem is how to give effect to these criteria, as they are developed. One possibility would be to subject consumers' choices to some kind of collective control. This will be considered in the following section.

COLLECTIVE CONTROL OF CONSUMPTION

The benefits yielded by some goods are so general in character that it is not feasible to attach prices to them and sell them to individual users. National defense (or conquest) is not a consumers' good of which individuals can buy as much or as little as they please. It is a

¹¹ Simon N. Patten, *The Consumption of Wealth* (1889).

service whose benefits (if any) are so widely diffused that they must of necessity be provided by the state. The same holds for police and fire protection, the courts, and penal institutions. They cannot be sold to individual users, and yet every one benefits to a certain extent in the protection of life, property, and other rights which they provide. Physicians can be hired and medicines can be bought to treat specific ailments, but the preventive work of mosquito control, research into the causes of disease, and other broad kinds of public health work cannot. Other cases that raise a similar problem are agricultural pest elimination, flood control, drainage, forest preservation, the maintenance of harbors and waterways, poorhouses, and various forms of fact-gathering and research, such as taking the census, making weather observations and forecasts, and agricultural experimentation. We are dealing here with collective (or communal), rather than individual, wants. In all such cases the pricing mechanism of individual demand is definitely incompetent as a means of guiding production in the needed directions and allocating the goods to consumers. So, in these circumstances the state usually decides how much of the goods to provide. It pays for them out of general taxes and supplies them gratuitously to the public. Some of this service may also be done by privately financed foundations and educational institutions. The Rockefeller Foundation's promotion of medical research is a good illustration.

There are many other goods which could be sold individually to consumers, but which the state has found it wise to give away freely, in the interest of the general welfare. Examples of this are public schools, free health clinics and hospital wards, garbage collection and disposal, sewers, parks, playgrounds, public swimming pools, governmentally supported museums, art galleries, and musical concerts. In each of these cases the price system might be allowed to function in its usual way. The schools could charge tuition fees (as private schools now do), hospitals could demand payment from all patients, admission fees could be charged for the use of parks and playgrounds, householders could be made to pay for having their garbage collected, and so on. However, this method of payment has been rejected, either because some of the people are too poor to pay for such

things as schooling and hospital care, or because they do not have enough appreciation of their own interests to pay for them voluntarily. Since they cannot or will not pay, and the state considers it essential to the social welfare for them to have these services, it provides them collectively. In some cases (such as the public schools) it even compels their use.

The principles of the price system are not entirely rejected in the case of these communally provided goods. Prices are abandoned as a method of distributing or rationing the goods to consumers, but they are retained as a means of allocating economic resources to the production of those goods. The state buys the factors of production in competition with other purchasers who wish to use them. Labor and capital are drawn into the service of the police and fire departments, public health work, the weather bureau, schools, hospitals, garbage collection, swimming pools, etc., by payment of wages, interest and rents, the same as in other kinds of production. But the state substitutes a single demand schedule of its own for the composite schedule, made up of individual demands, that prevails in the case of other goods. The demand schedules of the state probably conform to the law of demand that characterizes the usual type of demand schedule, but they are likely less elastic. That is to say, the state will employ more police protection, forest maintenance, free education, and so on if these things can be cheaply obtained than if they are dear, but it need be less restrained by high costs than individuals are because, unlike the latter, it can always command a larger income (within limits) by merely increasing its taxes if it wants more goods.

Another device at the disposal of the government for encouraging the consumption of socially desirable goods is for it to produce them and sell them at less than cost, making up the deficit, either out of sales of other goods (such as alcoholic liquors) at above cost prices, or (more often) out of taxes. Or, it may subsidize private business to produce them. The postage rates for books in this country are set at less than cost of handling them because of their educational value. Part of the cost of social insurance in certain cases is paid for by the state in order that the more poorly paid workers may receive the benefit of retirement or other allowances, the full cost of which

would be too heavy a burden upon them. Cheap housing, subsidized by the state, is now being developed for the sake of eliminating slum conditions and protecting the public against disease, vice, and poverty that spring from poor housing. In these cases we have a system of manipulated prices, designed to encourage the increased use of certain socially important goods where a spontaneous pricing process would fail to achieve this result.

The device of manipulated prices is also sometimes employed to discourage undesirable consumption, by forcing prices up above costs. The leading example of this policy in the United States is the heavy taxation of alcoholic liquors. By requiring manufacturers and sellers of intoxicating drinks to pay heavy excises and license fees, the extra levy is passed on to customers in higher prices, in the expectation of making the drinks so costly that less of them will be consumed.

In a few cases the state has gone further by absolutely prohibiting the production and sale of products whose use is considered to be seriously against the public welfare. The leading examples of this are habit-forming narcotic drugs, prostitution, and organized gambling.

The above examples of publicly provided goods and the collective control of consumption show that we have already departed considerably from the spontaneous guidance of a natural price system in favor of deliberate authoritative regulation; and the list of goods to which these principles are being applied is growing. The development of public works projects during the great depression of the nineteen thirties, the establishment of the Civilian Conservation Corps, the creation of the Tennessee Valley Authority and proposed similar authorities in other river valleys, and the trend toward public housing, all afford illustrations of the evolutionary movement in this direction.

These developments raise the question whether the tendency toward the collectivization of consumption should be further extended. It should be made clear that collective ownership and operation of industry does not necessarily mean the collectivization of consumption. Publicly owned and operated industries can sell their products to the

consuming public on the same pricing principles as private enterprises. This is commonly done in the case of public water systems, municipally owned street railways, and the postal service. It is approximated to a degree in the case of public services financed by taxes levied on the users of those services, as where highways are paid for out of gasoline taxes. True collective control of consumption exists only if direct restraints are imposed (such as outright prohibitions or prohibitive taxation), or if goods are supplied gratuitously (as in the case of public schools and parks), or if the publicly provided services are sold at prices which are less or more than the costs of their production (for the purpose of encouraging or discouraging their consumption). The question here raised is not whether there should be an increase in public enterprises, but whether these various controls that are designed to influence consumption should be extended to make the criteria of want selection more effective.

Experience indicates that efforts to curtail the consumption of undesirable products by outright prohibitions or by discriminatory taxes that raise prices, while leaving the individual free to buy the undesirable product if he chooses, are not usually very successful. The people do not react well to sumptuary legislation. They resent it and they evade it. The prohibition amendment to our Constitution led to widespread violations, in spite of elaborate enforcement machinery. It was so unpopular, and was believed to have been the cause of so much law-breaking, that it was finally repealed. Prostitution flourishes in every large city in spite of attempts to suppress it. The laws against the narcotic traffic have been somewhat better enforced, but the traffic continues large. The consumption of alcoholic liquors remains very high in spite of high license fees and other taxes. All in all, there does not appear to be very much hope for improvement in consumers' choices by measures of this kind.

The prospects for encouraging consumption in directions that accord with the social welfare by the collective provision of basic needs gratis, or at less than costs, seem somewhat brighter. Developments of this kind in the fields of public housing and socialized medicine that are now taking place should have very beneficial effects upon the health and behavior of the poor. A free public school edu-

cation through high school has already been provided in most states. Wider provision of free college or university training for those who are qualified to benefit by it would probably be desirable. Increased recreational facilities, such as playgrounds and public parks, would do much to divert youthful activities away from criminal channels into more useful directions and to raise the morale of the people generally. We have already provided public roads, although (where paid for out of gasoline taxes) they are not entirely free. Might it not be desirable to make available a limited amount of free railway travel and free vacations? Some railroads in this country are already doing the former for their own employees, and the Soviet Union is providing both for some of its workers. Perhaps the time may come when the state will consider it part of its duty to offer to every citizen a basic ration of essential foodstuffs and simple clothing as a way of carrying out the principle of the guaranteed minimum. Although there might be some waste involved in these extensions of communal goods, it is doubtful whether it would be as great as the waste resulting from the guidance of production in wrong directions under the present method of free individual choice.

Dickinson¹² proposes three conditions that should be met in the case of goods that are to be provided communally. (1) They should be goods an increase in the consumption of which would improve the social welfare; (2) they should be of such a character that they would not be used wastefully if supplied gratis; and (3) they should not be too directly competitive with goods sold in the market. These seem to be a good set of criteria, and I am inclined to accept them, although I am not sure that we should be bound by the third in every case. Dickinson believes that there are three categories of goods which will meet these tests. They are: (1) Certain things which, though individually consumed, may well be provided communally because of the great contribution which their free distribution would make to the general welfare. Free education, free medical care, and public parks are illustrations. (2) Goods which are communally, rather than individually, consumed, such as national defense, the

¹² H. D. Dickinson, *Economics of Socialism* (1939), Chap. 2.

administration of justice, and some public health measures, including sanitary inspection and sewers. (3) Certain broad satisfactions that cannot properly be appropriated by individuals, but which should be enjoyed by all. Among them would be liberty, equality, security, and leisure.

Communists look forward to a time when all goods will be provided freely to all, out of the product of collectivized industry. However, there are a number of reasons for thinking that too wide an increase in the number of communal goods would be undesirable. (1) Many of the goods that are offered gratis by the state today are so provided in order to offset poverty. This is the case with public schools and low-cost housing. But one of the goals that we should be working toward in our social organization is a more equitable division of income that will eliminate poverty. To the extent that we are successful in doing this, it will be less necessary to provide goods without price. When everyone has enough money to buy all that he needs, it will be necessary to provide goods collectively without price only where they are of so generally diffused a character that they cannot be individually appropriated, as in the case of police and national defense. (2) If too many goods are provided free, there is a danger that reward will be separated from effort, so that people of indolent tendencies will be inclined to loaf, not having enough ambition to want to raise themselves to higher standards by working for a surplus above the goods which are given to them. This would violate the principle of incentive and so lower the productivity of the economy. (3) Too much collective control of consumption would lead toward onerous regimentation. A substantial amount of individual liberty is a value to be preserved, even though it be at the cost of some (not too much) loss of efficiency. (4) As people progress from a poverty level toward one of comfort or luxury, there is more room for variety of choice and the expression of personal tastes in consumption. It is desirable to allow the individual as much freedom as possible in matters of this kind. A price system, with its schedules of demand derived from personal choices, is well adapted to this pur-

pose. In the case of comfort and luxury goods it is probably superior to any other method of guidance, provided some of the more serious imperfections in consumer choices can be reduced by a more equal distribution of income and by the measures that will be suggested below. (5) Finally, it would be entirely too complicated a business for the state to go too far in setting up machinery outside of the price system (such as ballots or questionnaires), for providing a wide variety of goods in conformity with individual preferences. Economy in the administration of collective enterprise suggests that it would be wise to allow the price system to function for most of the products of industry.¹³

Some years ago there appeared an interesting little pamphlet by Prestonia Martin entitled *Prohibiting Poverty*.¹⁴ It contained the suggestion that each young person spend a certain period in service to the community comparable to the period of military service that is now required in many countries. Her idea was that these young people could be used to produce the basic necessities for the entire population, instead of military service. The goods so produced would be supplied gratis to everyone. After this period of service, each person would spend the rest of his life working for wages or profits in producing comfort and luxury goods, under the same economic arrangements as those which now prevail. This plan would take the simple goods that make up the minimum requirements for healthful living out of the price system and place them in the category of collective goods; but comforts and luxuries would be produced under the system of free enterprise and the guidance of prices. The pamphlet attracted very little attention, but it is not without merit. However, the proposal raises the question of the principle of incentive again. There is a danger that it might too seriously weaken the stimulus to endeavor that lies in the policy "He who does not work shall not eat."

¹³ For an argument (by Maurice Dobb) advocating a much wider departure from consumer choices than I am inclined to favor, see the section, *Normative Pricing in Collectivism*, in Chapter Eleven.

¹⁴ Prestonia M. Martin, *Prohibiting Poverty: Suggestions for a Method of Obtaining Economic Security*. (Fifth Edition, 1933).

IMPROVING CONSUMERS' CHOICES

Notwithstanding the continued growth of communal goods, it seems desirable that the major proportion of total production should continue to be directed by individual choices registered through schedules of consumers' demand. Improved guidance in this section of the economy must depend on measures that will make consumers wiser and better informed about the goods they buy.

Included in the program to accomplish this objective should be measures to prohibit the manufacture and sale of injurious and adulterated products, and to make available to consumers accurate information about the goods offered on the market. Such a program requires the standardization of consumers' goods, accurate and informative labeling of the same, and the curbing of misleading advertising. All these things should be done under government egis. Some progress has already been made by the federal government along these lines through federal meat inspection, the pure food, drug and cosmetic laws, and the work of the Federal Trade Commission. As the result both of amendments to the laws concerning them and of increasingly favorable court interpretations, these agencies are improving their services to consumers. The 1938 Food and Drug Act was much better than the original act of 1906, and the Federal Trade Commission is enlarging the scope of its work. Originally that commission existed primarily to protect business firms against unfair practices on the part of their competitors. It could act only on the complaints brought to it by producers, so that any benefit accruing to consumers was merely incidental. Since the Wheeler-Lea Act of 1938 the commission has had power to act directly on its own initiative to suppress business practices which it finds unfair to consumers. Consumers have also benefited to some extent from its trade practice conferences, which give precise meaning to such trade terms as "full-fashioned," "all wool," and "Wilton" carpet, and thereby help to standardize these commodities. The National Bureau of Standards has also done much to set up specifications and establish standards for many products; but here again any benefit derived by consumers is

incidental, for the bureau acts primarily in the interests of government departments in their purchases, and in that of trade associations and other business organizations that may seek its coöperation. It could be of real assistance to consumers in their buying if it would publish a list of the firms and the brand names of products that it has found to conform to its standards.

A number of other departments and bureaus of the federal government help consumers more or less indirectly, and some of the state governments have created organizations to promote consumer interests. Taken all in all, however, these agencies are scattered and do not meet the need. What is needed is some central body to administer a positive, comprehensive program of consumer assistance and guidance. It has been suggested that this could be accomplished by the creation of a new federal Department of the Consumer, to be headed by a member of the President's cabinet. Such a body would coördinate all the work now being done in the interests of the consumer by the numerous agencies now scattered in various federal departments and bureaus. There would be grouped together in the new department the food, drugs and cosmetics enforcement administration, the Bureau of Standards, the Bureau of Home Economics, the Children's Bureau, the Public Health Service (now curiously located in the Treasury Department!), the Bureau of Public Housing, and any other agencies that now exist or that might be created for consumers. This suggestion is an excellent one.

A centralized federal department of this kind could do much to remedy many of the imperfections that now make consumers' demand so poor a guide for production. It could prevent deception of consumers on the part of sellers, by setting up definite specifications and standards for all kinds of consumers' goods, and by promoting legislation that would compel manufacturers to label their products accurately and fully, in accordance with those standards. It could be given greater power to regulate advertising than that now possessed by the Federal Trade Commission, in order that exaggerated claims and misleading suggestions could be suppressed. It should have authority to ban the sale of any products that were found to be injurious to the health of consumers. It could issue bulletins for the in-

formation of consumers, explaining the nature of its specifications and standards and giving the results of its testing of the various products offered on the market, with lists of those which meet, as well as those which fail to come up to, its specifications. In addition to these various protective measures, it could initiate a general program of consumer education through its own publications and through the public schools.

Consumers can do a great deal to help themselves toward wise choices by organizing for that purpose. Three types of such organizations are already at work, although so far they are reaching only a small proportion of the consuming public. The first of these types consists of associations to press for legislation in the consumers' interest. The American Home Economics Association is doing work of this kind, and the People's Lobby is also doing it to some extent, although the scope of activities of the latter body is not confined to measures of the type here under discussion. A second type of organization engages in research to set up standards of quality for consumers' goods, to test commercial products in the light of those standards, and to report its findings, with recommendations, to its members. Consumers' Research and Consumers' Union are both doing work of this kind. Although these organizations can hardly be expected to reach as large a group of consumers as federal departments could reach, working along the lines above suggested, they are significant pioneer groups that demonstrate the possibilities to be achieved in this direction. If they should grow in membership to the place where they represent, say, one quarter of the consuming public, they would probably be strong enough to force producers to meet their standards, and many of the evils that now impair the functioning of the consumers' market would be eliminated. Finally, consumers have organized their own stores (consumers' coöperatives) which enable them to buy goods with more assurance of quality and at slightly lower cost than retail stores of the usual type. These stores have been growing quite rapidly since the great depression of the nineteen thirties, partly as the result of encouragement from the federal government and partly through the enthusiasm of their own

leaders. Since they are not trying to make profits for anyone but their own members, whose only interest in them is in their capacity as consumers, they have every incentive to carry merchandise of good quality and to label it accurately and informatively. The coöperatives also carry on educational work to teach their members how to buy intelligently and to awaken them to their interests and to their power, when once organized, to compel industry to serve them better.

The measures so far suggested have to do primarily with removing the imperfections and obstacles of the retail market as it is at present organized. This work needs to be supplemented by a broad program of consumer education. This education should be directed along three lines: First, there is need for general economic education to instruct consumers concerning the role which they play in the economic system, to point out to them their interests as consumers, and to make them aware of the abuses to which they are liable at the hands of producers. They need to know that industry exists primarily to provide them with the goods they need, and that their demand schedules are the guiding mechanism for industry, but that this mechanism is distorted because of the deception practiced upon them by adulteration, misbranding, and misleading advertising. They should be made to realize that these abuses can be combated if consumers will organize to prevent them. Once made conscious of their own power as consumers, and intelligently informed as to how to use this power, consumer organizations might grow in strength until they were effective in forcing the economy to cater to consumers' interests.

There is also need for a more specific type of economic education to inform consumers about the details of wholesome living. Some of this type of education is now being offered in the home economics courses of public schools and colleges. It serves to impart to young people who will eventually become family heads scientific and practical knowledge concerning such matters as nutrition, personal hygiene, durability, convenience, and good taste in home furnishings, healthful and sensible habits and styles of clothing, and similar useful information. Adult education along the same line can be carried on

through magazines and government bulletins. More difficult than either of these, yet in the end more important for the wise guidance of the economy, is a more general type of education directed toward getting consumers to see the higher and more enduring values of life. This requires the development of individuality, good taste, artistic appreciation, wholesome habits, a social conscience, and the like. Too often these things are crowded out of our educational curricula to make room for the techniques of mathematics and languages and for professional studies. Only by continued emphasis in education on those intangible values that make for the highest development of individual contentment and group solidarity can the people be trained to make the kind of choices that will direct the economy toward genuine social welfare.

Our experience with federal propaganda agencies in World Wars I and II, and especially the examples furnished by the German nazis and the Russian communists, show that organized propaganda is a very potent instrument for directing popular thinking and behavior in desired directions. Here is a means that might be employed to improve consumption habits without coercion. In the federal Department of Consumers that has been proposed, let there be established a Commission on Consumer Education which would make use of every possible medium for informing and molding the buying public toward intelligent and socially constructive expenditures. It would work through schools, magazines and newspapers, radio and television, government bulletins, lectures, demonstrations, coöperatives, clubs, and other organizations. On its staff should be psychologists, public health specialists, engineers, artists, and representatives of various consumer groups, such as coöperative associations and women's clubs. There would need to be safeguards to ensure that this very influential body would not twist public opinion toward mistaken or dangerous objectives, as the nazi propaganda machine did, and as the Soviet propaganda is even now doing. To provide such safeguards, the membership of the commission would have to be broad, all its work must be done openly, with its minutes and files always open to public scrutiny, and it should be subject to democratic control by Congress. These things should be carefully set

forth in the law creating it. A body of this kind, so circumscribed, would be most effective in shaping the program for consumer education toward goals of social welfare.

It will be observed that the program here recommended does not interfere in any way with the mechanism of prices. It seeks rather to improve the setting in which the pricing process operates. The machinery of a normative price system is capable of guiding production toward the right ends, if the demands to which it responds can be brought into conformity with social needs. If consumers were ever to become generally wise and well-informed, with consumer goods standardized, accurately labeled and truthfully advertised, and with the social income fairly apportioned among the people, then the direction of production could safely be left to individual choices as expressed through schedules of consumers' demand, except for those collective goods which cannot be appropriated by the individual and whose benefits to particular individuals cannot be separately measured. In such a setting as this the demand aspect of the price system would be an entirely satisfactory mechanism of guidance.

CHAPTER FOUR

The Division of Income

THE FOUR PRINCIPLES OF INCOME SHARING

Closely related to the problem of want selection is the question of whose wants should have prior claim on the output of industry. In the first chapter four principles of social economy were set forth as constituting the most desirable solution of this problem. These were the principle of a guaranteed minimum, the principle of incentive, the principle of developing talent, and the principle of common surplus. In the present chapter I shall undertake to show what opportunities a normative price system offers for giving effect to these principles, and what obstacles it puts in their way; also, what social arrangements are possible inside or outside of its framework to bring the principles more fully into play where they are found to be obstructed.

INCOME SHARING ACCORDING TO MARGINAL PRODUCTIVITY

The principle of income sharing inherent in a normative price system is to set a price, not on individuals or family groups as such, but on the factors of production, whether they be human or non-human. For instance, an hour of labor or an acre of land each is worth a certain amount in the market. The prices of the factors are derived, on one side, from the values of the goods to whose production they contribute, and on the other side, from the conditions governing the scarcity of the factors themselves. The process is a somewhat complicated one which is generally explained by the marginal productivity theory.

This theory starts out with the premise that the requirements for production in most industries are sufficiently flexible to permit con-

siderable variation in the way in which the several factors are combined. Agriculture, for example, can be carried on either extensively, with the use of relatively much land and little labor, or intensively, by using relatively much labor and little land. Similar variation is possible in manufacturing, where there is a possible choice between manual processes that employ much labor with relatively little machinery, and highly mechanized processes in which a much greater amount of machinery is employed. The combination chosen in each case will be determined by the prices of the productive factors, enterprisers seeking to find the least-cost combination by substituting cheaper for dearer factors as far as it is economical to do so. This is Alfred Marshall's well known law of substitution. But this business of substituting cheaper for dearer factors has its limits, because of the law of diminishing productivity. For instance, if a farmer in a country where land is dear and labor is cheap tries to use as little land and as much labor as possible, he will find that the extra yield obtainable from successive increases of labor declines, until a point eventually is reached where the value of the extra yield (i.e., the marginal product) is no greater than the wage of the worker. Beyond this point extra labor would cost more than its yield would be worth; therefore the farmer would go no farther. The same principle is believed to apply to increasing inputs of any factor of production in any kind of industry.

The rule is, then, that an enterpriser tends to use just enough of each factor to bring the value of its marginal product to equality with the cost (price) of that factor. If the factor is dear, this point will come early; if it is cheap, it will come later. By this rule it is possible (in theory) to compute what the effective demand of an enterpriser for any given factor would be at every possible price of that factor. The sum of the effective demands, so computed, for all the enterprisers in the market constitutes the total schedule of demand. This operates, in conjunction with the schedule of supply, to establish an equilibrium price. The schedule of supply will depend on the scarcity of the factor in question, and the conditions under which the quantity of it can be increased. In the case of land, the supply is very inelastic. In the case of labor, it depends on population growth,

on the distribution of intelligence and other valuable attributes among the people, and on training for the various occupations. In the case of capital equipment, it depends mainly on the ability and willingness of investors to save and to take risks. The upshot of all this is that each factor tends to receive a price that just measures the value of its marginal product in industry.

In a pricing system based on these principles, those factors that are relatively scarce will command high prices, and those which are relatively abundant, low prices. This is due to the operation of two influences: The law of diminishing physical productivity which was just explained, and the law of demand for consumers' goods, according to which, the greater the quantity of any good offered in the market, the lower the price that can be obtained for it. That is to say, if the supply of any factor of production, such as unskilled labor, increases, its marginal productivity will decline because of the greater relative scarcity of other factors that must be used with it in production, and because the goods for whose production it is best adapted will become more plentiful, and hence can only be sold to consumers at lower prices. This conclusion accords with common sense, for it is, naturally, the scarcest factors that set the sharpest limits to production; hence enterprisers will be more eager to obtain them and will bid up their prices.

In an economy dominated by the mechanism of a normative price system, this principle of factor pricing tends to determine the division of the social income, except in special cases that will presently be explained. In such an economy, claims to the product of industry will go, in the first instance, only to those persons who are in a position to supply some factor that is valuable for production. This factor may be labor, land, or equipment, or money that can be used to buy or hire one or more of these. The amount that can be claimed by the supplier will depend on the relative scarcity of the factor which he controls. Those who have scarce factors will get high rewards, those who supply abundant factors, relatively low ones. For instance, since skilled workers are scarcer than unskilled, they will get higher wages; and the owner of a very scarce resource, such as a

diamond mine, may receive a very large income. Those persons who can contribute nothing of value to production will have no claim to income at all, so far as the price system is concerned. They may receive income by transfer from others who have a claim on the social product (as in the case of gifts, private or public charities, and collective goods provided gratis by the state), but these transfers lie outside of the price system and constitute a departure from its logic.

It does not follow that only one way of dividing the social income is possible within the framework of the price system. That system allocates payments to productive factors, not to people as such. Who gets these payments depends on who owns the factors. The division of income among the population will therefore differ according to the system of ownership that happens to prevail. Where there is slavery, the price attached to the labor of the slave will go, not to the slave, but to his master; hence the pattern of income distribution will differ from that which prevails in a society of free men. Likewise the pattern will vary with different arrangements concerning the ownership of land and equipment, and with different laws of bequest and inheritance.

Furthermore, the division of income will be affected by the degree to which prices do or do not conform to their normals. In a dynamic world, especially if the economy is not directed by a central planning body, deviations of market from normal prices will be great, and there will be correspondingly wide departures of market from normal incomes. The supplier of a particular factor will enjoy an abnormally high income for the time being if the demand for his factor has increased and the supply of it has not yet had time to become adjusted to the new demand, or if there has been a temporary reduction in the supply of the factor for one reason or another, demand remaining unchanged. In the opposite case, where demand for a factor has decreased or the factor has become more abundant, the incomes of its suppliers will in the beginning be abnormally low. A world of continuous, irregular change also offers plenty of opportunities for speculative anticipations, and these give rise to gains or losses that are very erratic and uncertain. The strategic position of enterprisers in a capitalistic economic system is such that business

profits are especially likely to feel the effects of the fluctuations and uncertainties of industry; for the proprietors of a business hire their factors in advance at fixed prices, and take their chances on being able to sell their product at prices that will yield a gain over these costs. According to the dynamic theory of profits (which is the most satisfactory explanation for competitive conditions), pure profits arise out of the deviations of market from normal prices. They would not exist in a perfectly normalized price economy.

Moreover, in the present world there are monopoly gains arising from the curtailment of supply by producers who control a sufficient portion of their products to force their prices up above competitive normals; or there are gains of monopsonistic buyers who force prices (especially of factors) downwards. Not only enterprisers, but also "closed" labor unions, which restrict their membership by various devices, may enjoy above-normal incomes of a monopolistic kind. Finally, there are some fortunate individuals whose qualities are so unique (such as movie stars) or who are placed in positions so protected (e.g., business executives) that competitive influences cannot be brought to bear in such a way as to establish normal prices for their services. Rewards in these cases, often very high, are largely a matter of luck or of strategy in manipulating the situation to the advantage of the recipient.¹

INCOME SHARING IN OUR SOCIETY

Our economy is dominated by a system of income distribution based on factor prices in an institutional setting of privately owned property. Human beings are free, so that income from work goes in the first instance to those who perform it, at whatever price the market sets upon their services. Wages and salaries (which last include in some cases considerable elements of chance gains that are analogous to profits) claim from two-thirds to three-fourths of the total social product. Most of the rest goes to the owners of capital in the form of rents and interest. The amount going to profits, on the average, is perhaps somewhere around ten per cent of the total. Only an insignificant portion is absorbed at the source by the state as proceeds

¹ See below, pp. 95-96.

derived from the exploitation of public lands or the operation of public works. The collective goods which the state provides are paid for mostly out of taxes levied against the other income shares.

These initial payments to the owners of productive factors do not altogether determine the final disposition of our social income. The ultimate distribution is considerably modified by certain institutional arrangements. Most of the first claimants to the products of industry are members of family groups, and their earnings (at least in part) are regarded as income for the whole family, even though some of its members play no part in industry as suppliers of productive factors. This is especially true of family heads, who are rightly regarded as responsible for the support of their wives and children, and sometimes of other dependent relatives. The division of incomes within the family is not determined by pricing principles, but by the decisions of the husband and wife. So the family is really a communal unit, whose internal affairs lie almost entirely outside of the mechanism of prices.

Another part of the social income is given away on non-price principles by private philanthropies of one sort or another. Food and clothing are distributed to the needy. Orphans, cripples, the aged, and the insane are often given free care in appropriate institutions. Hospitals, schools, colleges, museums, art galleries, research foundations, educational fellowships and scholarships, visiting nurses, and a great many other free services are made available through the generosity of persons who voluntarily give up a part of their claim to the social income for the sake of others. The total share of income thus disposed of without benefit of the distributive pricing process must be considerable.

The state reapportions much income by taking it away from the more well-to-do in taxes and using the proceeds for the support of schools, poorhouses, public hospitals, and for the payment of social security benefits, soldiers' pensions, farm subsidies, and the like. It also provides much free income in the form of collective goods, such as those described in the last chapter.

Some of this redistributive machinery has been developed because of conscious realization that the division of income arising out of pay-

ments to the factors of production under the rule of the price system is unsatisfactory. This is especially true of government transfers. The provision of free schools, old age benefits, farm subsidies, and the like is clearly based on the idea that the groups which are accorded these benefits do not get their just deserts in the pricing process. Where taxation is progressive and governmental services are extensive, a large amount of income is transferred from the rich to the poor in these ways.

Existing statistics concerning the division of income in the United States deal chiefly with the initial distribution to the owners of productive factors, before taxes or other transfers. They show individual or family receipts derived from wages, salaries, rents, interest, and profits. An effective device for representing the degree of inequality that results from this distribution is the Lorenz curve which is reproduced on the next page. This shows the percentage of the total income received by different percentages of the population. The dotted straight line across the center of the square shows how the curve would look if our income were equally distributed. That is, if each family received an equal share, 10 per cent of the people would get 10 per cent of the income, 20 per cent would receive 20 per cent of the income, and so on. The curved lines show the actual distribution for the years 1929² and 1943³. The extent to which these curves depart from the dotted straight line indicates the deviation of distribution from perfect equality. It is to be noted that this deviation was greater in 1929, a fact which probably indicates that inequality becomes more extreme in periods of rapidly increasing prosperity (1929 was a boom year). The 1929 curve shows that the richest 10 per cent of our people received about 45 per cent of the income in that year, while the poorest 60 per cent got barely 25 per cent of the total. Looking at the matter a little differently, if we divide the 1929 income into two equal parts, one-half of it was paid to about one-seventh of the population, while the remaining half had to suffice for

² Based on data from M. Leven, H. G. Moulton, and C. Warburton, *America's Capacity to Consume* (1934).

³ Based on data cited in the National Industrial Conference Board's *Economic Almanac* for 1945-46.

the other six-sevenths of the people. The figures for 1943 show the situation to have been only a little less extreme. The curve for these years indicates that the richest 10 per cent of the family groups received about 30 per cent of the total income, and the poorest 60 per cent

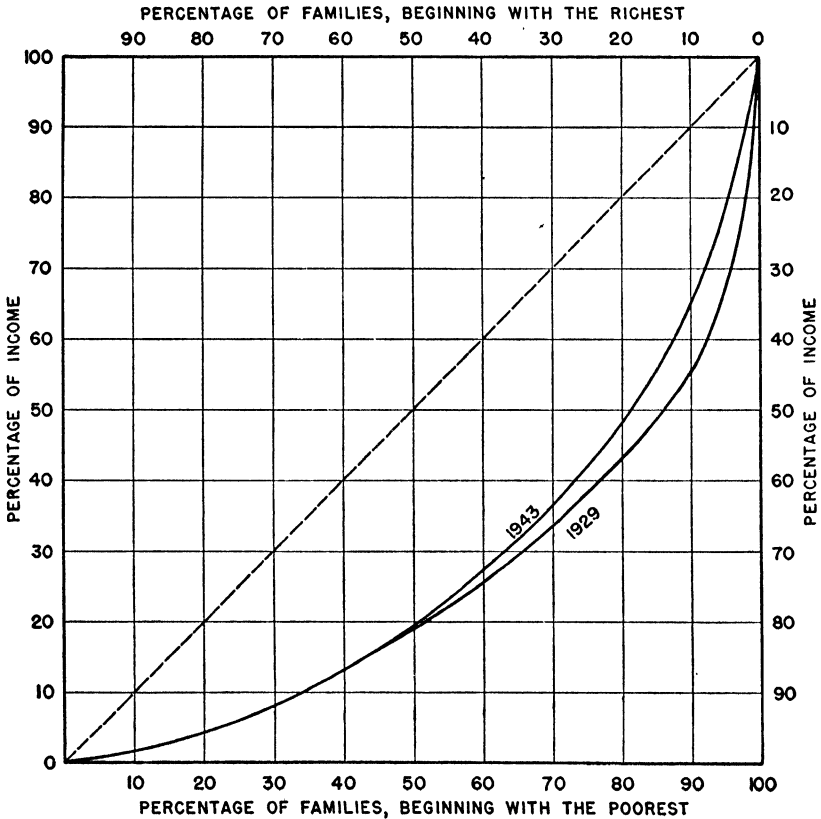


FIGURE 1. Percentage Division of Income Among Families in the United States

cent got but 28 per cent. One-half of the total income in these years was distributed to less than one-fifth of the population, leaving only the other half for the rest of the people. Available data for more recent years indicate that there has been no appreciable change in the pattern since 1943.

No data are available to show what the pattern of income division is like after the various transfers above described have taken place. These transfers must alter the picture in the direction of greater equality. Nevertheless the conclusion seems justified that, notwithstanding these correctives, the net inequality remaining is still too great. Practically all students who have made studies comparing family incomes in this country with the cost of maintaining a standard of living compatible with minimum decency agree that a surprisingly large proportion of our population is in want. It is estimated that during the great depression of the nineteen-thirties from twenty to twenty-five million persons were in poverty,⁴ and even in the more prosperous years prior thereto there were not far from fifteen millions.⁵

This poverty cannot be attributed to insufficient production. It is due to the fact that the division of the product is so unequal. During the Great Depression, to be sure, our total output fell below the level that would be required to sustain all of our people in comfort; but this was a depression of extraordinary severity. In ordinary years we produce enough. Even before World War II, when the cost of living at a comfort level was computed at around \$2000 per family, our national income averaged around \$3000. Since the war it has risen phenomenally, and seems destined to go still higher. There can now be no question that we are living in a comfort economy. Yet, notwithstanding this fact, a considerable proportion of our people is in poverty. On the other hand, a small number of the very rich are able to live in conspicuous luxury and extravagance. The newspapers are filled with descriptions of their palatial homes, their limousines, the expensive gowns and fabulous jewels of their women, and their vacations and gay parties at pretentious hotels and exclusive resorts.

This inequality is not a wholesome condition. It was shown in the last chapter that it causes production to be diverted from useful to wasteful goods, because the rich often spend their surplus incomes on

⁴ See the article on *Poverty* in the *Encyclopedia of the Social Sciences*.

⁵ See James H. S. Bossard, *Problems of Social Wellbeing* (1927), p. 8.

luxuries of the most trifling sort, while the poor are forced to go without some of the basic necessities for healthful living. Extreme inequality has the further disadvantage that it causes a tremendous waste of productive power on the part of both the poor and the rich. Those who are forced to live in poverty are undernourished and do not get adequate medical care, so that they make poor producers. Poverty also engenders shiftlessness, dissipation and crime, all of which interfere with the productivity of human beings. Among the rich, too, there is a great deal of idleness and dissipation because some of the wealthy do not find it necessary to be usefully employed. Inequality not only makes for waste, it threatens the stability of society; for the contrast between riches and poverty provokes discontent among the masses of the poor, which sometimes leads to revolution.

According to the law of diminishing utility, the greater one's stock of any economic good, the less is the importance of any unit of it. The same principle holds for one's income as a whole. That is to say, the greater the income of a man, the less the satisfaction derived from a marginal increment of it. Putting this in monetary terms, a dollar means less to a person, the greater the amount of his money income (provided prices are unchanged). From this the conclusion is sometimes drawn that the total satisfactions of all the members of society would be at their greatest if the social income were divided equally among them; for if a dollar means less to a rich man than to a poor one, the utility derived from spending that dollar would be greater if it went to someone in poverty instead of to a person of wealth. Putting it a little differently, money diverted from the rich to the poor would always add more utility to the latter than it would subtract from the former, up to the point where all incomes were equal.

This conclusion is disputed by the strictly scientific welfare economists. They argue that we have no valid means of comparing one man's satisfactions with another's; therefore, even though the law of diminishing utility may apply to the whole income of each individual, we cannot say that the marginal utility of a dollar to one person (even if rich) is less than it is to another (even though he be poor). This is the basis on which they contend that a science of economic

welfare cannot deal with the problem of inequality.⁶ But this rests on too narrow a conception of science. Science proceeds on the assumption that, since like causes produce like results, we can by a careful study of the results in a given case make reliable inferences about causes that cannot be directly observed. We cannot have direct knowledge about the chemical composition of the sun and other stars because we cannot get hold of their matter for laboratory analysis; but since their spectra resemble those of elements found on the earth, astronomers can make assertions about the elements in the heavenly bodies which are accepted as the true conclusions of science. Repeated confirmation, by independent evidence, of inferences made in this way convince us that the method is valid. From aberrations in the movement of the earth in its orbit, it was inferred that there must be an undiscovered planet. Subsequently this inference was proved to be correct by discovery of the planet Pluto. Similarly, the element helium was inferred to exist because of a certain spectrum at first found only in the light from the sun, long before it was found on the earth. There are so many instances of this kind in the history of science that it must be accepted as true that it is possible to make valid inferences about things of which direct knowledge is impossible. So, although one cannot penetrate directly into the consciousness of any other person than himself, we are justified in interpreting the common behavior traits of human beings as evidence that back of them are common feelings and mental states. Psychoanalysis and similar techniques for probing into the minds of men corroborate this conclusion.

Applying this method to the modes of expenditure to be observed among men of different income levels, it is a fair inference that marginal increments of money are of less importance to the rich than to the poor. A wealthy man will spend five, ten, or twenty dollars in a

⁶ See, for instance, Lionel Robbins, *The Nature and Significance of Economic Science* (Second Edition, 1935), pp. 136-143. Abba P. Lerner, however, while agreeing that interpersonal comparisons of utility are impossible, nevertheless offers a proof that modifying the distribution of incomes toward equality would be *more likely* to increase satisfactions than to decrease them. See Chapter III of his *The Economics of Control* (1944), in which he gives a careful analysis of the significance of the law of diminishing utility.

manner so careless as to reveal unmistakably that such a sum has little utility for him. A poor man, on the contrary (unless he is intoxicated or mentally defective), will use a like sum in a way that shows he esteems it highly. Again, a millionaire will scarcely miss the loss of twenty dollars, and certainly will not be greatly disturbed by it; but such a loss to a person on the margin of subsistence will likely cause him real privation and worry. I have observed among people of my intimate acquaintance that, as they have become more prosperous, they have grown much more careless in the spending of substantial sums; and in contrasting their mode of life with that of other friends who have been less fortunate financially, it has sometimes been impressed upon me how little some of the expenditure of the former has brought to them as compared with what it could bring the latter. All these things convince me that there is a basis in the law of diminishing utility, as applied to one's income as a whole, for holding that that total satisfactions of our society would be increased by a more even distribution of the social income.

Yet this argument must not be pushed to the point where it is held that satisfactions will be at their maximum when there is exact equality of incomes. There is this much to be said for the viewpoint of the strictly scientific welfare economists: while the satisfactions of different persons are similar in kind, they are not of exactly the same degree, and we have no means of measuring them with precision in any given case. It is surely not true that all persons have equal capacity for deriving benefit from goods, and it is common observation that some are wiser consumers than others. Of two individuals with the same money income, one may spend it for things of lasting benefit that make him a more useful member of the community, while the other may squander his in dissipation and extravagance that brings little benefit, either to him or the community. It would not be wise social policy to give both the same amount of income. In drawing a conclusion about income distribution from the law of diminishing utility we can go no farther than to say that, in general, a relatively even division of the social income is more conducive to welfare than is extreme inequality. This leaves the way open for applying other criteria by which the precise amount of income to be allotted

to each member of society may be determined. Such criteria can be found in the four principles of income sharing that were stated at the beginning of this chapter. It is now time to develop these principles more fully, and to inquire to what extent a normative price system offers a means for putting them into effect.

THE PRICE SYSTEM TESTED BY THE PRINCIPLES OF INCOME SHARING

The first criterion of income sharing was the principle of a guaranteed minimum, which states that the basic requirements for all should be met before luxuries are allowed to any. By basic requirements are meant those essentials which are commonly used in cost of living studies as constituting a minimum standard of decency.

A poverty economy may not be able to put this principle fully into effect because its total product may be inadequate; or, if barely adequate, because the guaranteed minimum would absorb the entire social income, leaving no surplus for the principles of incentive and developing talent. A very poor society may have to keep the bulk of its people at a very low standard to induce them to work harder, and in order to accumulate capital equipment for future growth. A comfort economy, on the other hand, can well afford to adopt the principle of a guaranteed minimum as a rule of social policy. The reasons why it should do so were explained in Chapter One, as follows: It would satisfy our humanitarian sympathies, which are aroused by the sufferings of the poor; it would make workers more efficient by keeping them in good health and vigor; it would protect the rest of the community from the disease and crime which so often grow out of poverty; and it would protect the community against the threat of upheaval that is latent in revolutionary discontent. I think it is not too much to say that the assurance of a decent living standard for everyone is the best protection that a social order could have against the threat of internal disruption.

A normative price system does not necessarily give effect to the principle of a guaranteed minimum. There are three reasons why it does not. In the first place, it awards a share of product only to those persons who supply some productive factor that can be used in industry, and only according to the value of the marginal product of

that factor. Those who own no valuable economic resource, and who, for one reason or another, are not worth much as workers, will not receive enough by this method of payment to command a living wage. This will be true of mental defectives, the physically infirm, unskilled labor in overpopulated countries, and even skilled workers who happen to be caught in declining industries. The product of such persons does not have a high enough value in the market to afford them the means for a comfortable living. Their market worth is low, and the price system pays them accordingly, being entirely blind to their needs. In the second place, the institutions of a capitalistic economy do not always introduce into enterprisers' costs all the real costs that are attendant upon the employment of labor in industry. For instance, the cost of industrial diseases and accidents will not appear in the accounts of business men (on which prices are based) unless special provisions, charging employers with responsibility for such misfortunes, are imposed by the state. In the absence of such provisions, the spontaneous working of the price system will not provide workers disabled by accidents and disease with a decent income. Thirdly, except in a centrally planned economy, the guidance given to industry by a normative price system is not well enough articulated to maintain production continuously at full employment. During the periodic depressions which afflict an un-planned economy, many persons find their incomes reduced below the level of minimum decency.

The second and third of these obstacles to a guaranteed minimum are best reserved for later discussion, since they are closely connected with the principles of surplus utility and of full employment, which will be dealt with in Chapters Six and Seven. My present concern is with the first problem. What is to be done with those persons whose contribution to industry is not worth a living wage?

To those not well versed in economic theory (and even to some economists who appear to be impervious to the logic of theoretical analysis) a minimum wage law, prohibiting the payment of wages below an amount sufficient to maintain a decent standard of living, may seem to be a sufficient solution to this problem. They would

substitute a manipulated price for the price of labor created by a free market, and they would enforce the maintenance of this price instead of attempting to deal directly with the underlying conditions of demand and supply that are the immediate cause of too-low wages. The effects of such a policy have been sufficiently analyzed by other writers to obviate the necessity for any extended discussion of it here.⁷ The conclusion of the analysis is that the possible benefits of such legislation are very limited. In certain situations a minimum wage law may have the desired effect. This is the case in industries where the demand for labor is inelastic; also in imperfect markets where, through ignorance and inertia of the workers and lack of competition among employers, groups of labor are being exploited so that they are not getting the full value of their marginal product; and, finally, in those circumstances where the increased wage, by bettering the living conditions of the workers, brings about a sufficient increase in their efficiency to make them worth the established minimum. Ordinarily, however, the major effect in the long run must be to throw into unemployment those workers who would not be worth the minimum figure; for to employ them at the new wage would be to incur a loss that can eventually be avoided by new industrial arrangements (such as more labor-saving machinery) in which less of this kind of labor is employed.

It may be that sub-standard workers who cannot earn the established minimum wage ought not to be employed. It can be argued that they are properly objects for charity; but it seems reasonable to let them at least contribute to their own support, by working (perhaps under carefully supervised conditions) for whatever they are worth on the market. Their earnings can then be supplemented by some form of publicly provided gratuity, to whatever extent may be necessary. At any rate, it seems reasonably clear that a minimum wage law does not solve the problem of what to do with people of very low earning power; and the same goes for any *general* wage

⁷ A convenient summary of the pros and cons on this question is to be found in Chapters V and VIII of Maurice Dobb's *Wages* (London, Revised Edition, 1938).

minimum that might be enforced by the bargaining power of labor organizations.

The fact should be frankly faced that persons who are incapable of commanding a sufficient wage to meet their basic requirements are a burden on society that weakens its strength. It would be better off without them, except in individual cases where the presence of a rare spirit in a frail body may, by its inspiring example and good influence, be worth many times the cost of the person's support. However, the economically unfit cannot be left to starve without damaging the humanitarian sentiments which are one of the greatest sources of solidarity and group strength.

Two lines of action are indicated, both of which are primarily sociological, rather than economic. The first is to check the reproduction of inferior biological stocks in the population by suitable measures of negative eugenics. So conservative are human beings in dealing with the biological aspects of marriage that this reform will not soon be realized; but it is one of the most urgently needed and most promising developments in the whole vista of human progress. The other line of action is to institute measures of vocational guidance and training, adult reëducation, and socialized medicine which will provide workers with remunerative skills and will rehabilitate the disabled, so that they will be able to command a living wage in industry.

When such a program has been put into effect, a normative price system will automatically provide at least a minimum standard income for nearly every worker. There will always be a few, however, who because of biological weakness or misfortune will not be economically efficient enough to earn a decent livelihood. In the many years that will certainly elapse before the program will become a reality, the number of such persons will be very large. They must be taken care of by an extension of relief provisions of the kind that already exist. These include poor relief, public hospitals and asylums, and social security benefits. Under the conditions stated, measures of this kind represent a necessary and desirable departure from the guidance of the economy provided by the price system.

Aids of the above kinds are gifts made by society, for the most part without expectation of any equivalent return. These benefactions, if too freely given, may be demoralizing, and might easily become an encouragement to laziness. For this reason they should be confined strictly to cases of proved incapacity, or to emergencies (such as cyclical unemployment) created by economic conditions over which the affected individuals have no control. For the rest, the principle of incentive should be applied. This principle, it will be remembered, states that rewards should vary with the socially useful productive accomplishment of the individual.

There is a tendency inherent in normative price systems that is capable of giving effect to this principle, provided the institutional setting is suitable. This is the tendency for productive services to be paid for according to their marginal productivity. If a person is paid the full value of what he contributes to production, he is given an incentive to find his most valuable position in industry and to exert himself in it to his fullest, knowing that he will be rewarded in proportion to his performance.

But this is far from being the principle that actually governs the receipt of incomes under the prevailing institutions of capitalism. For one thing, the valuations set upon goods under present conditions are not always in conformity with socially desirable objectives, as the last chapter has shown. As a result, people are now paid for producing goods that belong in the category of illth. This is not payment according to their *socially useful* contribution to production. Not until production is guided more nearly in conformity with the social welfare, by means of the reforms suggested in the last chapter, will the price system work in such a way as to couple rewards with socially useful accomplishments.

There is another difficulty. Thorstein Veblen showed (more strikingly than any other writer) that many of the business activities of the modern world are predatory, rather than beneficial to society. Business men are too often concerned more with pecuniary strategy than they are with the production of goods. So there are found in industry numerous kinds of antisocial behavior, among which may be

mentioned contriving monopolies that profit by making goods scarcer instead of more plentiful, rigging the market, manipulating corporate finances in such a way as to create profits by contrived fluctuations in security values or by getting control and usurping a share in corporate profits where there has been no commensurate investment, carrying on competition by such unfair methods as misrepresenting another's products, spying on his secrets, bribing his employees, persuasive but misleading advertising, adulterating goods, and many other sharp practices too numerous to mention. These nefarious activities are often very lucrative. Many a huge fortune has been built up by their means. In the absence of effective controls, a natural price system lends itself very readily to schemes of this kind. It rewards scarcity whether due to natural or artificial causes, and it pays for goods that are in demand whether the demand is based on correct appreciation of social values and accurate knowledge of merchandise or not. However, if a price system is sufficiently protected by external safeguards (for example, well-enforced antitrust laws and regulation of the securities market) it need not be characterized by abuses of these kinds.

There is a third factor that works to break the connection between reward and socially useful service in production. In a dynamic world there are many windfall gains and losses that arise from either general or specific economic fluctuations. It is a well-known fact that a rise in the price level benefits debtors at the expense of creditors, and brings profits to enterprisers at the expense of lower real wages for workers. A fall in the price level has converse effects. During the great swings of the price level that are characteristic of our economy, these gains and losses are widespread. They represent tremendous shifts in real incomes that bear no relation to social service. The farmer who loses his farm to a mortgagee when prices fall is producing no less than when prices rise; his loss and the mortgagee's gain are matters of pure chance, so far as these two individuals are concerned. Likewise it is not because the enterpriser is producing more or his workers less that profits go up while the real wages of the worker go down when prices advance. These occurrences, therefore,

defeat the principle of incentive by destroying the connection between productive service and reward. There is a similar violation of the principle in those lesser shifts of income which arise out of unforeseen changes in the conditions of demand or supply for particular goods.

The principle is not violated, however, where the changes are sufficiently regular in character to permit organized speculation in the commodities concerned. Seasonal fluctuations are an illustration of this. Where price changes can be forecast with a fair degree of accuracy, the activities of professional speculators help to reduce price fluctuations and to stabilize consumption, by carrying over surplus stocks from periods of abundance to periods of scarcity. Here the principle of incentive is not violated, for the profits resulting accord with a useful service rendered to society. However, where such malpractices as cornering and rigging the market occur, the principle is nullified.

In the fourth place, the price system makes payments to the owners of productive factors, not to individuals or family heads as such. Where the ownership of these factors does not arise out of the performance of some social service equivalent in value to the payments received, the principle of incentive is violated. This applies to the ownership of land where (as is often the case) its value exceeds the amount of savings invested in it by its owner. The same holds for all inherited wealth. And it holds for corporate securities acquired in the devious methods of corporation finance by which "insiders" secure shares of ownership without commensurate investment, at the expense of the "outside" stockholders who really provide the capital.

Finally, there are some people so unique, or situated in positions so strategic, that there can hardly be said to be a normal price for their services. The term normal price is most appropriately employed where there is a large number of cases sufficiently alike so that they can be standardized and grouped together in a single class, with competition effective on both sides of the market. These conditions are lacking in the case of individual geniuses, of whom there is only one of a kind. There are not enough Charlie Chaplins, or Marian Ander-

sons, or Joe Louis's to constitute a standardized good or to have a standard price. In this they differ from units of unskilled labor, or of such skilled workers as locomotive engineers, who are sufficiently alike to be interchangeable. There must be hundreds of engineers capable of driving the 20th Century Limited, but there is only one Marian Anderson. The wages of locomotive engineers are, therefore, fairly well standardized; but the earnings of movie stars, great sopranos, and the like are widely variant and unpredictable. The incomes of such geniuses are largely determined by chance or luck.

Similar considerations apply to top business executives. Here there are three factors that make for lack of standardization in their salaries. First is the unique character of the individuals who are found in these positions. Secondly, boards of directors differ considerably in their policies regarding big salaries. Some favor very high remuneration, while others are more moderate in their allowances. Finally, it is a fact that top business executives usually have connections with their boards that help them to fix their own salaries. The result of these three factors is that extremely wide variations in salaries prevail. The differences are so great and so erratic that they certainly cannot represent true measures of the differing abilities of the individuals concerned, nor any gauge of the amount of service that they render to society.

After considering these cases, the conclusion seems inescapable that incomes of these kinds do not accord with the principle of incentive. The high rewards obtained by geniuses and executives offer plenty of incentive, but it is not closely correlated with the amount of social service rendered by the recipients. In some cases it is associated with social injury, as, for instance, where the movies produced are of a salacious or unwholesome kind, and where business men are paid for predatory strategy rather than for useful production. Even where there is some useful contribution, the rewards are higher than is necessary to evoke the services in question; therefore they involve a social waste.

In other writings I have drawn a distinction between earned and unearned incomes, and have suggested that social arrangements

should be developed to suppress all incomes in the latter category.⁸ By earned income I mean income received in payment for some socially useful contribution to production, at a price not exceeding its normal value under conditions of fair competition.⁹ It follows from this definition that an income is unearned (1) if it is received without the making of a socially useful contribution to production, or (2) to the extent that it consists of a surplus above the normal price of a useful contribution.

By these tests the following incomes (and only these) would be classified as earned:

(1) Wages would usually be earned, except for labor that is employed in the production of socially harmful goods, or where unions create an artificial scarcity of labor that causes wages in the affected trades to be abnormally high, or where minimum wage laws keep wages above their normals. In a world of dynamic change there would also be chance departures from normal wages that might not cancel out over time, and that would therefore result in elements of undeserved gains or losses.

(2) Interest on capital would be earned if the capital resulted from

⁸ Raymond T. Bye and William W. Hewett, *Applied Economics* (Fourth Edition, 1947), Chaps. XXI-XXIII, inclusive. Also Raymond T. Bye and Ralph H. Blodgett, *Getting and Earning* (1937), especially Chap. II.

⁹ In the first three editions of *Applied Economics* I used competitive *market* value as the test, but in *Getting and Earning* (which appeared subsequent to the first edition of the former) I changed this to competitive *normal* value. There is a difficulty in drawing a line between earnings and not-earnings in disturbed conditions where factor prices depart widely from their normals. When demand for a certain good increases sharply (e.g., houses), certain factors (e.g., plasterers) whose supply has not yet become adjusted to the new demand are relatively scarce. They are then worth more in industry, and will command a higher price (in this case, wages). Is the extra income so obtained earned or unearned? It is socially desirable that the factor be priced higher, because this serves to draw more of it into the needed direction. Also the high cost of the factor induces users to employ it sparingly, thus mitigating its scarcity. On the other hand there is an element of luck in the increase that casts doubt upon its justice. Marshall calls the surplus quasi-rent, thus putting it in a similar category to the rent of land. In a dynamic, unplanned economy, it may be necessary to allow such gains for services rendered, but in a successfully planned (normalized) economy they would not be necessary, and they would not even exist in any great degree. For this reason I am inclined to class them as unearned. One of the goals of economic policy should be to approximate normalized conditions. See the argument of Chapters Ten and Eleven.

savings out of earned income on the part of its owner. Earned interest would include the rent of land purchased out of earned savings, in so far as the rent has not been subsequently increased by community growth or other social activity. This justification of interest rests in the fact that invested savings represent a contribution to production, and that the rate of interest is determined, in general, under conditions of open and fair competition; hence, both tests of earned income are fulfilled. Contrary to the views of Single Taxers and many other critics of the present institution of land ownership, savings invested in the purchase of land are just as much entitled to a return of interest (or rent) as any other; because it may be presumed that these savings, after being paid to the previous owners of the land, are usually invested by the latter and so become embodied in industrial equipment the same as any other savings. Interest on bank loans, where the money loaned has been created by the expansion of bank credit, and therefore is not derived from the voluntary savings of the bank's stockholders or depositors, does not represent a socially useful contribution to production on the part of the recipient, and hence is not earned. Although industrial equipment results from this method of financing, this effect is brought about by a strategical *tour de force* on the part of the banks. The people who really finance the investment in this case are the masses of consumers upon whom involuntary saving has been imposed, and who are virtually robbed of the interest on the investments that their savings have made possible.

(3) Business profits are also to be classed as earned when they are due to a superior quality of product or to lower production costs brought about by especially efficient management, but not otherwise. In a dynamic world some of the profits of professional speculators (when the speculation has not been accomplished by cornering or rigging the market and similar predatory activities) probably should be classed as earned income also.

By the same tests, the following kinds of income must be classed as unearned: (1) Wages received in the production of socially undesirable goods, the excess of wages above normal competitive rates which results from trade union restrictions that prevent free entrance into

particular occupations, above-normal wages (if any) caused by minimum wage laws, and windfall gains resulting from temporary shortages of labor. (2) Interest on usurious loans and loans of "created" bank credit. Also interest derived from investments in socially undesirable capital (e.g., gambling houses). (3) Income received from increases in land values where the increase is not directly attributable to qualities (such as improved fertility or better drainage) imparted to the land by the owner's labor or the investment of his savings. Also income from land put to socially injurious uses (e.g., as sites for bawdy houses). (4) Business profits which grow out of predatory financial manipulations, the production of injurious, adulterated or misrepresented goods, unfair methods of competition, monopolistic activities, or such chance happenings as rising price levels or wartime increases in demand. (5) The excessive wages, salaries, and royalties received by unique persons in non-competitive situations, including the surplus salaries and bonuses of top business executives. (6) All income from wealth acquired by inheritance or bequest.

If a program could be perfected that would make it impossible for people to receive unearned incomes, the principle of incentive would be brought forcefully into play. No able-bodied adult could then acquire income except by a useful contribution to production, and his reward would be directly proportioned to the value of his output. This would stimulate him to direct his energies to the production of those goods that the market deemed most useful, and to exert his maximum effort for the sake of greater remuneration. This would be accomplished within the framework of a protected normative price system, and would promote the social welfare to the extent that that system could be brought to reflect and effect correct valuations, as discussed elsewhere in this essay.

It would not be easy to suppress unearned incomes completely in a capitalistic system, but a good deal could be done toward the attainment of that objective. The measures to be taken would include: (1) Prohibition of undesirable industries, such as the opium traffic, gambling establishments, prostitution, and many of the patent medicines.

(2) Compulsory abolition of arbitrary restrictive membership regulations on the part of labor unions.¹⁰ (3) Strict regulation of interest rates and other practices on the part of pawnbrokers and of all those engaged in making consumers' loans. (4) Abolition of those features of our banking system that make possible the creation of monetary purchasing power by the banks.¹¹ (5) Public ownership of all land, to be leased to private users at its full rental value, or (what amounts to the same thing) gradual increase of taxes on bare land values until they reach the full annual rental value of the land. (6) Strict regulation (including price fixing) of all monopolistic industries, and the suppression of unfair methods of competition everywhere. (7) Strict regulation of corporate financial structures and operations. (8) Stabilization of business to eliminate cyclical fluctuations, as far as possible. (9) A maximum salary law setting an upper limit to salaries, motion picture royalties, and similar forms of payment for unique personal services. (10) Drastic limitations on the inheritance of wealth, presumably by means of steeply progressive inheritance taxes. (11) A selective income tax law levying especially high rates on windfall gains.

The fulfillment of this program is a pretty large order. Nevertheless considerable progress has already been made in many of the directions suggested. Prohibition of some of the most flagrantly anti-social industries (narcotics, gambling, prostitution) has long been nominally in force, although the suppression is notoriously ineffective. There has now been inaugurated considerable governmental regulation of the practices of labor organizations (e.g., the Taft-Hartley law), and it may be that further legislation along these lines will be enacted. Control of pawnbrokers' interest charges is already in force in a number of states. Through the Federal Reserve System, the expansion and contraction of bank credit has been brought under control of the federal government, and it is entirely possible that complete abolition of bank credit expansion may eventually develop out of these beginnings. Public ownership of land has not yet gone very

¹⁰ Bona fide tests to maintain reasonable qualifications of competence for skilled trades should be permitted, and even encouraged.

¹¹ See Chapter Five, pp. 137-138, and Chapter Nine, pp. 276ff.

far, but the public domain is growing, and in some communities (e.g. Pittsburgh, Pa.) the taxation of land is separate from that of the improvements erected thereon. This may be the opening wedge toward a program of land taxes that would eventually appropriate land rents to the public use. The federal government has long been engaged in the suppression of monopolistic activities under the Sherman Antitrust Act, and is endeavoring to maintain fair standards of competition through the activities of the Federal Trade Commission; but we are a long way from attaining full success in these matters. With the setting up of the Securities and Exchange Commission, a long step forward has been made toward correcting the abuses of corporation finance and the securities market that were formerly the source of many unearned predatory profits. The federal government is beginning to direct its financial controls toward the problem of smoothing out business fluctuations, but the results have so far been disappointing. Although the question of setting an upper limit to incomes has been agitated (recall President Roosevelt's suggestion for a \$25,000 ceiling on annual incomes), the only concrete step so far taken has been the imposition of very high taxes on incomes in the upper brackets. Some states have already limited inheritance by steeply progressive taxes, although the institution of inheritance is by no means seriously interfered with in most parts of the country. At one time the federal income tax law did draw a distinction between earned and unearned incomes, but it was not based on an adequate conception of earnings.

When these various measures of reform that are already in progress are considered, it will be seen that the program suggested for eliminating the unearned incomes is not as radical as it may have appeared on first reading. On the other hand, it is apparent that the problem is a difficult one to cope with within the institutions of capitalism. So many measures of control are necessary that the administration of the program becomes very complicated and difficult. And in spite of all the reforms that have already been put into effect, it must be admitted that the results attained are, on the whole, quite disappointing. A great deal of antisocial activity still goes on in industry, there are many unearned incomes, and extreme inequality still persists.

It would be much simpler to eliminate the unearned incomes in a

socialistic society. Here the only forms of private income, other than social security benefits and some free income from the state, would be wages, probably some interest on savings, and possibly some moderate profits (equivalent to wages of management and interest on owned capital) received by the proprietors of small farms and petty businesses. Since all these would be fully within the control of the state, they could easily be made to conform to the above definition of earned income. Since there would be no privately owned corporations or large business establishments, little or no private ownership of land, and no inheritance of large fortunes, all forms of personal income beyond those just enumerated would be non-existent, so that unearned incomes would be completely done away with (except, of course, for dependents, the aged, and the infirm, who would have to be given a sustenance, whether earned or not, on the principle of the guaranteed minimum). The simplicity of this arrangement, as compared with the intricate and difficult program that is necessary to eliminate unearned incomes under capitalism, is one of the several important advantages that a collectivist social order offers over the present economy.¹²

The apportionment of incomes according to the principle of incentive would result in some degree of inequality. Human nature being what it is, it is probably necessary to reward people unequally, as a means of getting them to exert themselves productively and of directing their exertions into socially useful channels. However, the amount of inequality required for these purposes need not be excessive. Certainly it would not have to be as great as the inequality that now exists. Most of the large fortunes of our times are derived chiefly from unearned sources, so that they bear little relation to socially useful endeavor. These fortunes are unnecessary; they serve no useful purpose in the economy. Probably a range of incomes reaching a maximum of \$25,000 would be sufficient to give effect to the principle of incentive, and this would scarcely involve any serious interference with the operation of the price system; for it is unlikely that salaries above \$25,000 would attach to any standardized class of persons under normalized conditions. If this moderate range of differences was ac-

¹² See Chapter Eleven.

accompanied by a minimum family income of somewhere around \$3000, guaranteed by the state, it is not likely that any serious discontent would be aroused. Most people would not object to a system in which rewards were made to vary in correspondence with the importance of one's contribution to the social welfare. It is the lack of connection between incomes and just deserts prevailing under present conditions that arouses a sense of injustice and causes radical discontent.

It is not enough for society to guarantee a minimum standard of living, and to provide an incentive for social endeavor by offering rewards above the minimum in proportion to socially productive achievement. The community should also be concerned with discovering the talent that is latent among its members, and seeing to it that the talent which is potentially useful to society is developed fully. A normative price system offers very imperfect machinery for attaining this end. To be sure, it rewards talent well when once it has been discovered and developed (provided the talent is of a kind for which there is a demand), and this gives each person some incentive to improve his capacities and make use of them. The trouble is that discovery by the individual often comes too late, and sometimes not at all. Sometimes, too, genius is not sufficiently recognized until after the death of its possessor. This has been true of many artists and composers. Talent should be detected as early as possible in childhood: hence it cannot be left to the individual himself. Under present arrangements we depend upon parents and teachers to observe the capacities and inclinations of their children. Unfortunately, parents are not always wise enough to make a fair appraisal of their children's possibilities (and their limitations). The schools are in a somewhat better position to make a trustworthy appraisal, but present teaching methods are not yet sufficiently directed to the problem of early diagnosis, and school curricula are still too stereotyped to allow sufficient individualization of training. Also, in many cases a lack of financial means constitutes a bar to the kind of education that is needed to develop potential talents—for instance, in the field of music. It is clear that a spontaneous price system, which operates on a basis of buying and selling, will not meet this problem; for, as

Marshall showed many years ago, the one who must finance the development of the child has no means of cashing in on his investment; therefore, he has no pecuniary interest in doing it. This being the case, society must make other arrangements to accomplish the desired result.

A program somewhat along the following lines seems to me to offer a means of giving effect to the principle of developing talent. The excellent beginnings already made toward working out aptitude tests which reveal the innate capacities and interests of young people need to be further developed and perfected; then they should be universally used throughout the school system, in order that latent talents may be discovered as early as possible. These tests should be supplemented by a comprehensive system of vocational guidance, to acquaint both parents and students with the possibilities and limitations that are inherent in each child, and to advise them concerning the careers which are likely to be most successful for each individual. There must be sufficient variety of school curricula at all levels of education to permit individualization of treatment and to provide vocational training, so that the capacities of each student may be given their fullest opportunity for development. Finally, there must be financial provisions to make it possible for everyone, regardless of family circumstances, to get as much education as is needed to develop his individual possibilities. This means that free public schooling should not stop at high school, but should be carried on through college (at both undergraduate and graduate levels) for all those who are qualified to profit by a higher education. However, the idea prevailing in this country that everyone should go on through high school, and if possible, through college, is a mistaken one. Not everybody has the potentialities to benefit by this type of training; but it is desirable to carry each individual through the kind of education that will be of most benefit to him, and to take him as far along the road as his particular abilities warrant. In order to carry out this last recommendation, we need many more fellowships and scholarships in collegiate institutions than are now available. Private philanthropy is too uncertain a means for accomplishing this; these fellowships and scholarships should be provided by the state. There is

probably no better investment for public funds than the upbuilding of character and capacity in its citizens. These are just as truly a part of the nation's capital as the mechanical equipment of industry, and the most important part at that.¹³

In a prosperous society there is likely to be a surplus of social income above what is needed to guarantee a minimum standard of living for each member of the community and to reward each worker in accordance with the principle of incentive. It should not be possible for a lucky few persons in strategic positions to appropriate this surplus to their own use; for any part of the social income so diverted into private pockets without the performance of any useful function on the part of the recipients is wasted. This surplus should be claimed by the state, and applied to purposes that will contribute to the common welfare. The mechanism of a normative price system will not automatically accomplish the desired result, because the price system distributes all the product of industry to factor owners without differentiating the surplus from that part which is necessary for the guaranteed minimum, for incentive, and for developing talent. Social appropriation of the surplus can nevertheless be accomplished without interfering with the price system by directing some of the factor payments into the public treasury, either at their source or after their receipt by individuals. The proceeds can then be used for projects of general benefit to all.

We are already carrying out this policy to some extent by means of progressive inheritance and income taxes. The high rates to which these taxes have been pushed in the upper brackets in some parts of the world divert into the public treasury a considerable slice of surplus income in the hands of the very rich, where it performs little useful function for society. There can hardly be any valid objection to the use of this method of appropriating the surplus in the case of inheritances, for inherited wealth is a pure windfall to the heirs, so that capturing a part of it at the time of its passage does not take anything away from them, and places no burden upon them. The device of progressive income taxation is likewise a possible

¹³ See what is said about human equipment in Chapter Five.

method of getting at the surplus; but it has the serious drawback that it is very irritating to the taxpayers. To take away income after it has been received is not only annoying, it arouses a feeling of frustration and resentment. One does not greatly miss that which he has never possessed, but to lose income after he has once gotten his hands on it is maddening. Even the taxing of income at its source has something of this effect, because, in reporting his income to the tax collector, the individual must record his claims to wages, dividends, etc., as though they were actually received, and then subtract the taxes due, in order to arrive at the net income which remains to him. He is paid nominally a certain wage or salary per week, and he thinks of his remuneration in those terms; yet the state takes it away from him before he gets it. It would be better if society could appropriate the surplus in such a way that no individual claims to it of even a nominal character could ever arise.

Here again, socialism scores a point over capitalism. In a collective social order the state, through its ownership of industry and as the sole employer of labor, need pay out, in wages and interest, only that part of the total income that is needed to give effect to the principles of a guaranteed minimum, incentive, and developing talent, withholding any surplus for projects of general benefit. Then no one is given income, or a claim to income, only to have it immediately taken away from him. Under capitalism, even with the best of arrangements, it is likely that there will always be some surplus in the hands of individuals that will need to be recaptured by taxation, if the principle of common surplus is to be made effective.

The question may occur to some readers whether the payments made under the principle of incentive to call forth his best effort on the part of each individual may not include some element of surplus. This is a matter of definition. If surplus income is defined as any income above what is needed for guaranteeing a minimum standard of living and developing the latent talent in the population, any incentive payments in excess of these needs would be a privately appropriated surplus; but if the surplus is defined as the excess of income above those needs, and above what is necessary for the principle of incentive, then obviously no surplus, as so defined, is

included in the incentive payments. This answer may seem to beg the real question, which is, whether the payments made under the incentive principle are likely to go so high in some cases as to create an undesirable degree of inequality. I have already indicated my belief that it need not. It seems to me that the degree of inequality necessary to give effect to the principle of incentive can be moderate. The highest incomes under this principle probably would not have to exceed \$25,000 yearly. If arrangements are perfected for preventing the receipt of private incomes above this figure, none of the common surplus will remain in the hands of individuals and no recapture by progressive taxation will be necessary. At the same time the normative price system can go on functioning in its normal way, without arbitrary interference.

It has been established by mathematical proof that the apportionment of income automatically worked out by a normative price system disposes of the entire social dividend. That is, the sum of all the marginal products is equal to the total product of industry.¹⁴ The four principles of guaranteed minimum, incentive, developing talent, and common surplus do not have this nicety. It has already been stated that in a poverty economy the total income might not be enough to put even the first principle into effect, not to mention the others. In a really prosperous society, however, there should be a sufficient output to permit all four criteria to be applied. There might then arise a problem of adjusting the several principles to each other. The requirements for incentive might conflict with the guaranteed minimum and the provisions for developing talent. Certainly the principles themselves offer no automatic solution to this problem. It is my thought that a surplus economy could afford to give first priority to the guaranteed minimum and the development of talent. The subsidies needed to give effect to these two principles could be calculated in advance, and the necessary appropriations for them could be made by the state out of its general revenues, derived partly from taxes, partly perhaps from the revenue of public lands and

¹⁴ For a statement of the proof of this proposition, see George J. Stigler's *Theory of Price* (1947), pp. 178-179.

enterprises. To the extent that they were derived from taxes, they would constitute deductions from the shares that would automatically go to the private owners of productive factors on pricing principles. As far as possible the taxes should be designed so as to fall on unearned incomes. There should be a minimum amount of interference with (or deduction from) normal payments of wages and interest on earned savings. These could be left to the determination of the market, with suitable safeguards to prevent abuses. Thus a protected price system would govern these two shares, and since these would then be fixed on the basis of marginal productivity, the principle of incentive would thereby be brought into play. Any excess accruing to the state from its taxes or public enterprises, over what it required to provide minimum subsistence and to develop talent, would constitute the common surplus to be applied to the general welfare.

Under these arrangements, the marginal productivity principle would still determine the prices of productive factors, and would dispose of the whole product; but not all of that product could be appropriated by private owners. Some of it would accrue to the state as owner of certain factors. Another part of it would be captured by the state in taxes levied at various points in the process of exchange. Enough would be left to *producing* factor owners to provide the needed incentive. The rest would be taken by the state to put the other three principles of income sharing into effect.

CHAPTER FIVE

Present and Future

THE MECHANISM OF INTEREST

The making of present provision for future needs is one of the basic foundations of civilization and progress. To some extent this takes the form of storing up consumable goods, as the ancient Egyptians stored grain in the pyramids; but by far the most important way of providing for the future in modern society is the creation of industrial equipment from which consumable goods will flow at some later date. This requires a sacrifice of present income in the form of saving, and the investing of those savings in such things as materials and industrial plant. The question arises, how much of present income is it wise to use in this way? What constitutes a proper balance between present consumption and present provision for the future? It is with this problem that the present chapter is concerned.

In primitive economies where there is little exchange of goods (such as the early American frontier), this problem is a simple one. Each family constitutes a separate producing and consuming group. It devotes to laying up stores of grain, stacks of firewood, etc., to the building of houses and barns, and to the making of tools, whatever labor its energy and its foresight direct. Family groups may help each other in carrying out the more extensive equipment projects as, for example, in barn raising; but for the most part each acts alone. These simple methods of providing capital equipment may not always lead to the highest possible social welfare and group strength, but at least the process takes place smoothly, without any great difficulties of adjustment.

In the complex exchange economies of modern capitalism the pro-

cess is much more intricate because saving is largely separated from investment. By saving, I mean refraining from spending for immediate consumption—in other words, withholding present income (either money or real) for some future purpose. By investment, I mean using present income to acquire goods for future use. There is much direct investment by savers in our society. For example, some business firms are able to finance the construction of plant from their own resources, and some consumers have accumulated enough savings to pay for the construction of their own homes. However, in large part voluntary saving takes the form of money withheld from consumption by the recipients of money incomes and then turned over to bankers or other agents to be invested. The process of investment materializes in fact only when enterprisers take these money savings to finance the purchase of inventories or the production of industrial equipment.

Out of this business of saving and investment, a triangular problem arises. The problem is to establish the correct proportions between consumption and saving on the one hand, and to balance saving with investment on the other.¹ If it could be assumed that what is saved will always be invested, either in stores of consumable goods or in equipment, then the first part of this problem would be simply one of choice, constituting a special aspect of the problem of want selection. For the solution of this problem, the principles of capital maintenance, of invested surplus, and of time preference (which were stated in the opening chapter) are pertinent. The second part of the problem, which pertains to the balancing of saving with investment, is crucial for the smooth functioning of the economy. If money savings are hoarded or destroyed, instead of being invested, there is a stoppage in the flow of money income, and this precipitates a deflation of prices and a business depression. On the other hand, if more money is invested than is voluntarily saved by the recipients of money income (a thing that is made possible by bank credit inflation) an artificial stimulus is given to prices which, through its effect

¹ It is now generally recognized that savings must always be equal to investment, viewed *ex post* (as demonstrated by Keynes) but that they may differ when viewed *ex ante*. I am speaking here *ex ante*, because that is where the crux of the problem lies.

on business profits, stimulates a temporary wave of prosperity, but causes subsequent difficulties that likewise produce a depression. The problems that arise out of these difficulties are among the most serious that our economic system has to contend with, because the resulting disruption involves so much unemployment and general breakdown of the economic process as to threaten the whole capitalistic system with revolutionary overthrow. Therefore it is important to examine critically the mechanism on which the adjustment of the triangular relationship between consumption, saving and investment depends, and to seek, through such analysis, to find some means of keeping them in balance.

The mechanism of balance upon which our economy depends for the solution of these problems is to be found in the complex of interest rates. This is a part of the price system. Neoclassical economic theory explains interest rates as being determined by the demand and supply of monetary funds available for investment in the loan market. The demand comes mostly from enterprisers who expect to use the funds for the purchase or construction of industrial equipment. It is supposed to be based on the anticipated surplus over present costs that the use of such equipment is expected to yield in the future. Since the use of increasing amounts of equipment (which is equivalent to an extension of production into a more roundabout process) is subject to the law of diminishing productivity, the schedule of demand-prices is a falling one, the rate of interest which a given quantity of investible funds can command in a given type of investment being determined by the surplus yield over present costs obtainable at the intensive and extensive margins where the equipment is employed. There is also a demand from consumers who borrow for the purchase of costly durable consumers' goods, such as houses, automobiles, and electric refrigerators. These loans are usually paid back in installments. The demand from consumers is determined partly by psychological motives (impatience to possess the goods now rather than wait until the consumer has saved enough to pay for them entirely out of his own resources) and partly by objective factors (such as the size of the individual's present income and

its probable size in the future). Here again the schedule of demand-prices is falling, because the more the consumers borrow, the greater is the proportion of their future income that they must pledge to interest and amortization payments at the expense of new goods purchased for consumption, and the prospect of this progressive decline in consumption is increasingly unattractive; therefore, they are willing to borrow more now only if the future payments of interest are lower. Since liquid investible funds can be directed into one type of loan just as readily as into another, the demand-prices of both consumer and producer borrowers tend to be pushed to the same margin. Furthermore, since consumer loans absorb a relatively small (though growing) part of the total supply of investible funds, it is probably not far from correct to state that the demand for these funds is determined chiefly by the expected marginal productivity of industrial equipment.

There is considerable controversy over the conditions governing the supply side of the loan market. The traditional view has been that the schedule of supply is based upon the marginal rate of time-preference of savers. By this is meant that most people prefer goods in the present to a prospect of goods in the future; hence they will make a loan of immediately usable funds now in exchange for a promise of future payment only if that payment will be greater than the present loan by a sufficient inducement of interest. The interest is a premium needed to overcome their time-preference. The schedule of supply-prices is a rising one, because lenders will more readily part with a small proportion of their present funds than a larger proportion; increasing funds can be supplied only at the expense of greater sacrifices in the present, which must be offset by a relatively greater inducement.

Objectors to this view point out that people save to provide for such future contingencies as sickness and old age, and that a great deal of saving of this sort would take place even if no interest were paid. Indeed, it is probable that under conditions where there was some uncertainty about the possibility of holding one's own savings in safety, people would be willing to save, and lend their savings, at a negative rate of interest; that is, they would give up a certain sum

now in exchange for a well-secured guarantee of a lesser sum in the future. Furthermore, in the case of the poor, it is doubtful if their savings are motivated to any great extent by the prospect of earning a return on their capital. Their savings are directed rather to accumulating a sufficient sum to constitute a reserve in case of emergency, such as sickness or unemployment. It is the capital sum, rather than the interest on it, that is their chief concern. Also, it is said, many save for the sake of the power which comes from the possession of great wealth, rather than for the income to be derived from it. Finally, many of the moderately well-to-do save with the objective of providing a definite retirement income in old age; for instance, \$3000 yearly. If interest is low it will require more saving to yield such an income than if it is high. Sixty thousand dollars will suffice to bring in \$3000 annually if interest is 5 per cent, but \$100,000 will be required if interest is only 3 per cent. Therefore such persons will save larger sums at low rates of interest than at high rates. These arguments are probably valid as far as they go. They suffice to support the view that a considerable part of saving would take place at very low or zero rates of interest. But it seems probable that a high rate of interest will induce some saving that would not otherwise be forthcoming. If so, then the *marginal* rate of time preference is a factor entering into the supply curve of investible funds, particularly in its outer reaches.

Even though a considerable quantity of monetary savings would be accumulated without the payment of interest, most of this money would not be offered for investment in the loan market without that inducement; because there are certain other factors, in addition to time-preference, that enter into the supply-price of investible funds. One of these is the costs associated with the making of loans and collecting the payments thereon, such as brokerage charges, clerical expenses, collectors' commissions, and legal fees. There is also a risk of loss, arising out of the possibility that debtors may not be able to make good on their promises of future payment. Lenders must be compensated for both of these things. The interest paid must include a sufficient sum above the payment for time-preference to compensate the lender for the administrative costs, and to overcome his fear

of possible loss. According to the most widely accepted theory, then, three factors enter into the supply schedule for investible funds: time-preference, administrative costs, and risks. In some circumstances there is yet a fourth (liquidity preference) that will be considered after the next paragraph.

It used to be the fashion for economists to speak of "the" rate of interest, as though there were only one such rate. In fact, however, there are many rates of interest, just as there are many commodity prices or many different rates of wages. Some of the differences in interest are of a short-run character, due to the impossibility of attaining a perfect equilibrium in an ever changing economy. These constitute deviations from normal which tend to correct themselves, given time for the necessary readjustments. But differences of a more fundamental kind are to be expected for different types of loans. For instance, the rate of time-preference will vary with the length of time that a loan is to run. A man may be more willing to lend his surplus funds for a few months than for a period of many years. Also, some loans involve more administrative costs than others. For example, loans to consumers for instalment purchases are expensive to handle. Finally, there are differences in risks of loss. An investment in public utilities involves much less hazard than one in the drilling of oil wells. These several factors tend to bring about corresponding differences in interest, for the liquid money savings of the economy are always seeking the most profitable investments, after giving due weight to all the surrounding circumstances that must be taken into consideration, and they will flow from channels which on balance offer an expectation of low returns to those which offer better prospects, until the declining volume of investment raises marginal productivity, in the first case, while the opposite influences take effect, in the second. As a result, a complex of interest rates tends to prevail that just equalizes the net advantages of the different types of investment.

John Maynard Keynes, in his now famous *General Theory*, set forth a theory of interest which, at first glance, seems radically different from the foregoing. In Chapter 13 of his book he held that

interest is not a price that balances the demand for investible funds with the supply of monetary savings; it is rather a price that equates the willingness of people to hold money with the stock of money in the community. Savers have the option of holding their assets in the form of either capital investments or money. Since money is more liquid than securities or material capital, they will prefer to hold the former, unless some gain is to be derived from the latter. Interest is such a gain; it therefore acts as a premium to overcome the liquidity-preference of savers. A high rate of interest will induce savers to hold less of their assets in money form and more in the form of securities or tangible capital; a low rate will do the opposite. Since an equilibrium can be reached only when the community is willing to hold all the money there is, the rate of interest tends to the point that will bring this about. Therefore the immediate determinants of the interest rate are the schedule of liquidity-preference and the quantity of money. The schedule of liquidity-preference depends on three motives for which people desire to hold money. These are: the transactions motive (keeping money on hand to make everyday purchases), the precautionary motive (holding money as a reserve for contingencies), and the speculative motive (holding money in wait for favorable price opportunities).

Although the basic ideas of Keynes' book are fairly simple, they are presented in a style that is often obscure, and there are numerous inconsistencies. So, it develops in later chapters that he did not mean the foregoing explanation to be a substitute for the marginal productivity-time-preference theory of interest, but rather a supplement to it.² In the long run there is an interaction between five factors: the expected marginal productivity of equipment (which he called the marginal efficiency of capital), the marginal time-preference of savers (which he called their marginal propensity to consume), the level of incomes in the community, the quantity of money, and the schedule of liquidity-preference. He stressed the monetary and liquidity-preference factors especially, not because they are the primary deter-

² John Maynard Keynes, *The General Theory of Employment, Interest and Money* (1937), especially Chaps. 14 and 18. Notice the paragraph on p. 247 where he states that his choice of the determinants to be emphasized is somewhat arbitrary, being governed by short-run considerations and amenability to control.

minants of interest, but because he believed they could be used as a powerful instrument of control by the monetary authorities.

Concerning the quantity of money, the neoclassical theory is correct when it holds that this has nothing to do with the rate of interest in the long run. The particular level of prices that happens to prevail at a given time is a matter of complete indifference to the economic process, provided it has been long enough established. The economy would function just the same if prices were one hundred times as high as they are at present, given sufficient time for the increased monetary circulation to work out its full effects. Suppose an enterpriser seeks to borrow funds to construct a factory which, at present prices, would cost \$100,000, and that he can borrow this money on bonds at 5 per cent. Now, if the flow of money in the economy were twice as great, without any difference in the volume of production, all prices and incomes would be twice as high, so that the factory would cost \$200,000. But with the larger money incomes the volume of monetary savings would also be twice as great, so that there would now be \$200,000 available to loan to this man where there was only \$100,000 before. So, since both the demand for loan money and the supply of it would be twice as high throughout the economy, the relation between demand and supply would be unchanged, and the rate of interest would still be 5 per cent.

However, a *change* in the flow of money may have important temporary effects on the rate of interest during the period of transition. If the level of prices is rising, the future value of a money loan will be less than it is now; for when the loan is repaid the money will buy fewer goods than it does at present. The situation will be reversed if prices are falling. If these changes are foreseen by borrowers and lenders there is likely to be some effect on the rate of interest. The lenders will want a higher rate in the first case, to compensate them for the loss in the value of their principal. On the other hand, they will be satisfied with a lower rate if the prices are falling, since the principal will be worth more when it is returned. These effects are likely to be overbalanced by the factor of liquidity-preference, under the influence of the speculative motive. When prices are rising, and are expected to continue their upward course, people with sur-

plus funds want to turn them into goods at once, before the value of their money falls any further. Under these circumstances less interest is necessary to induce people to invest their money. Conversely, if prices are expected to fall, people tend to hold their money until they think the bottom has been reached; since its value in goods will continue to increase as long as the decline in prices continues. Under these circumstances the interest would have to be higher (perhaps much higher) to induce investment. This probably explains why interest goes down instead of up with rising prices, and up instead of down with falling prices, a fact that was puzzling to Irving Fisher and other neoclassical writers.

The influence of liquidity-preference on rates of interest is active only in the short run. Then it operates mainly because of the speculative motive just explained. That is, when prices are rising liquidity-preference is low, because people want to put their money into goods, and this tends to make interest rates fall; but when prices are falling liquidity-preference is high, because people wish to hold onto their money, and this tends to force interest rates upward. In the long run the speculative motive is a negligible influence because, after full adjustment to a changed price level has been made the opportunities for profitable speculation are gone.

The same argument would apply to an economy in which prices were normalized by an effective program of general economic planning; for if the plans were successful there would be few rapid changes of prices, and hence very little opportunity for speculation. The transactions motive and the precautionary motive would be constant in both of these cases, for people would need to hold about the same proportion of their revenues in cash for everyday transactions and possible contingencies at one price level as at another. Hence these motives would not operate to change the rate of liquidity-preference in the long run, and so would not disturb rates of interest.

Liquidity-preference nevertheless may operate as a passive factor even in the long run, by acting as a lower limit or brake to any downward movement of interest rates below a certain point. It does this in conjunction with the factors of risk and cost of lending. Holding one's money in cash has the advantage over investing it, that it can

always be kept in safety at very low cost by the simple device of storing it in a safety deposit box. If it is invested in industry, there is usually some cost of lending and always some risk of possible loss. Hence if rates of interest fall too low to compensate investors for these costs and risks, savers will prefer to hold their assets in cash. The supply of investible funds will then shrink until their scarcity forces interest rates to go higher. The operation of these factors keeps the supply curve somewhat higher than zero, even at its lowest point. It is probable that, on this account, the rate of interest on industrial investments cannot fall much lower than 3 per cent or thereabouts, as Keynes observed.

Keynes is undoubtedly correct in stating that the level of incomes is an important factor in determining interest rates, and this is an influence not confined to the short run. However, this is recognized in the neoclassical theory, which represents the income of an individual as among the things that affect the degree of his impatience. It follows that the schedule of time-preference for the investment market as a whole will be lower in a rich society than in a poor one, which is entirely in agreement with Keynes. What Keynes has added to neoclassical theory here is the assertion that when a society reaches a high enough level of prosperity, propensity to consume may be so weak that time-preference is no longer an effective element in the supply-price of investible funds. People will then save without the inducement of interest; but they will not lend their savings unless the rate of interest is at least high enough to compensate them for their risks and administrative costs. In these circumstances, he holds, it is entirely possible for the supply of savings to outrun the opportunities for profitable investment, causing grave difficulties for the economy. Fuller consideration of this part of Keynes' theory and its implications will be reserved for another place.³

CRITIQUE OF THE INTEREST MECHANISM

The problem posed at the beginning of this chapter was to find a means of determining what proportion of our economic resources should be consumed now, and what proportion saved and invested in

³ See below, pp. 130ff.; also Chapter Seven, pp. 212ff.

provision for the future. The complex of interest rates provides an automatic mechanism for solving this problem, by registering in the loan market the decisions of income receivers as to what they wish to save and offer for loan, and the decisions of enterprisers concerning opportunities for the productive investment of savings. The decisions of the savers are reflected in the schedules of supply for investible funds, and the judgments of enterprisers are reflected in corresponding schedules of demand.

It is the function of interest to balance these schedules. If, at prevailing rates, the effective supply exceeds the effective demand, the theory holds that interest rates will fall. This makes it possible for enterprisers to take advantage of investment opportunities that offer the prospect of lower returns, and so they can utilize the funds put at their disposal at the lower rates. At the same time, the fall of interest weakens the inducement to saving, and (in so far as savers are responsive to this influence) it thereby encourages an increase in consumptive expenditures. If the effective demand for investible funds exceeds the effective supply, interest rates will rise. This restricts investment to those opportunities that offer relatively high returns, thereby reducing the effective demand. At the same time it encourages the receivers of income to spend less and save more, thereby increasing the effective supply. By this mechanism an equilibrium is presumed to be established, in which the desires of individuals as to what proportions of income they wish to save are equalized with enterprisers' judgments concerning the economy's need for equipment, as measured by its expected marginal productivity.

The usefulness of this mechanism can be observed in times of world poverty such as follows the destruction of goods and industrial equipment in a great war. At such times there is an urgent need for present goods. A nation cannot then afford to put much of its resources in roundabout processes that will not yield their products until the distant future. The great scarcity of capital equipment has the effect of raising interest rates to high levels which exclude the more remote investments from the loan market; for the more roundabout processes offer too low a prospective return to be profitable at

high interest rates. Investment is thus directed toward more immediately useful purposes, which offer the prospect of higher returns because of the great demand for goods that can be brought to completion in the very near future. At the same time the high rates encourage people to save as much of their incomes as possible, and thereby replace the destroyed equipment.

Such is the theory that has hitherto prevailed concerning the function performed by the complex of interest rates. Recent studies have shown that there are obstacles which prevent the interest mechanism from doing its work as effectively as it had been supposed. These obstacles I shall presently discuss, but first there are other functions of interest to be described.

Another function performed by interest rates is to allocate investible funds to their most productive uses. The prospective yield of different investments varies, and therefore the offers of enterprisers in the process of competitive bidding for capital financing vary accordingly. The rates of interest in each part of the investment market come to equilibrium at the point which equalizes the marginal bids with the marginal supply-prices. Investments whose prospective yield is below the margin are excluded by this process of competitive bidding, so that the available savings are directed only to those uses which promise to be most productive. As one writer has put it, "[Interest] serves as a screen, by means of which capital projects are sifted, and through which only those are allowed to pass which will benefit the future to a high degree."⁴ This is a good principle of allocation in so far as the valuations of the market can be taken as a correct indication of future benefits; but these valuations will, of course, be distorted by the imperfections of demand that were described in Chapter One, and also by the fact that enterprisers' expectations are frequently erroneous.

There is also a tendency for interest rates to make a selection of investments according to the degree of risk involved. Since reward for risk is one factor entering into the supply-price of investible funds, enterprisers must pay higher interest rates for funds that are to be invested in projects which are considered to involve the most haz-

⁴ H. D. Henderson, *Supply and Demand* (1922), p. 130.

ard. Sometimes these hazards may be inherent in the very nature of certain branches of industry, as in prospecting for precious minerals or oil, in which case high rates of interest must be offered to attract investors into these kinds of production. In other cases, and even in industries which are fairly stabilized, there may be different risks according to the quality of management in particular businesses, so that some enterprisers may have to offer more for capital financing than others. These differences in interest, by making funds more costly where hazards are involved, confine the supply of savings in risky enterprises to those that offer commensurately high possibilities. Those opportunities for investment that involve great risks and which offer relatively low rewards are excluded. This again is a socially advantageous mechanism, in so far as the values of future products and the degree of risk involved in their production are correctly estimated. Unfortunately, there is a great deal of error in market forecasts of these matters, so that the mechanism works very imperfectly. This will be shown below.

Where saving and investment are made to depend on the decisions of individuals acting in their own interest, as is the case in an un-planned economy, society's provision for future needs is not likely to go very far beyond the span of one lifetime. Of course, thrifty people will usually accumulate some capital to leave to their children, but this at the most extends the period of foresight for about 25 years longer. The occasional instances of great fortunes that establish family dynasties over several generations are merely accidental exceptions to this rule. The piling up of these fortunes is more a matter of good luck than of thrift. The recipients made money faster than their expenditures could keep up with it, and they naturally left the surplus to their descendants.

This common-sense reasoning is reinforced by the observation that prevailing rates of interest appear to be closely related to human life expectancies. A short expectation of life makes for high rates of time-preference, for a person who does not expect to live long has less reason to make provision for the future than one who can look forward to a long existence. Long life expectancies, therefore, will be as-

sociated with lower rates of impatience, all other things being equal. Since these individual rates of time-preference enter into the supply-price of investible funds, they affect rates of interest in the loan market accordingly. This line of reasoning is reinforced by Cassell's demonstration that, for those who save to live on the interest from their capital, there is a definite relation between the rate of interest the investments are expected to yield, the life expectancy of the individual, and the amount that must be saved in order to yield the desired future income. The lower the rate of interest, the more difficult it is for a person to reach the desired position; for, as interest rates go lower, the amount that must be saved to provide a given income gets larger and larger. If the rate falls low enough, people will save in the expectation of consuming their capital (by the purchase of annuities) instead of living on the interest, because they cannot accumulate the large amount of capital that would be required to yield a sufficient income in the form of interest alone.

Cassell presents tables which show that, the lower the rate of interest and the older the person, the more attractive an annuity becomes in comparison with a simple yield of interest. For example, if interest is 6 per cent, for a person aged sixty the income obtainable from an annuity will be twice as great as the yield of interest. If interest is 4 per cent, an annuity will yield twice as much for a person of fifty; and the annuity will be twice as great for an age of forty at $2\frac{1}{2}$ per cent, for an age of thirty at 2 per cent, and for a child of ten if interest is $1\frac{1}{2}$ per cent.⁵ From these facts he concludes that there is a minimum rate below which interest cannot fall, because at any lower rate so much capital would be consumed that its scarcity would force the rate upward again. All these considerations suggest very strongly that prevailing rates of interest are closely related to the average age of adult persons in our society. If the average span of human life were prolonged to, say 150 years (instead of the present span of somewhere between 60 and 70), there would be a strong downward pressure on interest rates. Gross interest, however, might

⁵ Gustav Cassell, *Theory of Social Economy* (1924), pp. 231-238, and *The Nature and Necessity of Interest* (1903), pp. 145-152.

be prevented from falling much below present levels by the risk factor, as Keynes pointed out.

Irving Fisher reinforces these considerations by a mathematical proof which shows that the present value of income streams extending far into the future is less than that of shorter income streams when the rate of interest is high, but more when the rate of interest is low.⁶ In other words, the longer the life expectancy, the lower the rate of interest that is likely to be associated with it. He explains that additional factors which work in the same direction are the greater uncertainty of that part of one's income stream that lies in the distant future, and people's less vivid visualization of future needs. Here the impatience factor is again at work.

All this adds up to the fact that the mechanism of interest makes for relatively shortsighted decisions respecting the future. The shortsightedness may be wise for the individuals who make the decisions that determine interest rates, but it is not wise from the standpoint of society as a whole; for the life of society goes on indefinitely into the future, and society cannot afford to limit its provision for future needs to the life span of an individual. It is notorious that the exploitation of natural resources is wantonly wasteful when carried on by individuals acting in their own self-interest, so that society later finds itself without adequate resources of timber, coal, petroleum, natural gas, and the like. This is due to the fact that, at prevailing rates of interest and with relatively short life expectancies, it does not pay individuals to hold investments in resources of this kind for the distant future.

The inadequacy of the interest mechanism to make enough provision for future social needs is again revealed in those economies where the people are too poor, or too lacking in foresight and fortitude, to make the sacrifice of present income that would be necessary to equip the community with industrial plant. The Soviet Union found that by forcing the people to curtail their present consumption, so that a large proportion of the productive energies of the nation could be devoted to building railroads, power plants, and factories, it was possible to arrive in a few years at a stage of industrialization that

⁶ Irving Fisher, *The Theory of Interest* (1930), Chap. VI. §§ 2-4, incl.

might not have been accomplished by individual saving in less than several generations. Individual decisions, operating in the loan market through the mechanism of the interest rate, could not have brought about this result. Had World War II not forced the Soviets to turn their industrial power to the making of munitions, the plant accumulated by the forcible saving might by now have rewarded the Russian people with a stream of consumable products that would represent a very marked rise in their standard of living. These two examples show that social provision for the future on some other basis than that of the interest mechanism may produce results that are superior to those of a free loan market.

If the institution of interest is to perform well the functions that are ascribed to it, there must be an investment market that reflects accurately the future earning power of the various industrial enterprises into which savings may be put; for, in an economy guided by normative prices, these earnings (when and if they materialize) are the only measure that such an economy recognizes of the benefits that must be set off against the earlier sacrifices of saving that made them possible. If the price system is to function according to its inherent logic, the rates of interest prevailing today must be a reliable forecast of the returns that will accrue in the future. If they are not a reliable forecast, then the price system fails of fulfilling its function in this very important part of its domain.

The investment market is the market for securities—stocks and bonds. It is notorious that this market has hitherto been characterized by gross miscalculations and grave abuses. Since it deals with the future prospects of industrial corporations, and since these depend on a great many variable factors that in an unplanned economy can be but dimly foreseen, there develops in the market a heterogeneous mixture of good and bad judgment, guesswork, rumor, manipulation, and downright fraud. Many of those who participate in it are engaged in an endeavor, not so much to appraise the probable earning power of the enterprises in whose securities they deal as to guess what the rest of the operators in the market are going to guess about it. So it becomes a game of psychology instead of a study of industrial

prospects. It is not surprising that the forecasts reflected by such a market are widely at variance with the results that are eventually realized, and that the prices of securities are subject to mass gyrations that have no foundation in the long-run prospects of industry.⁷

If investment bankers and other "experts," who might be presumed to view the market broadly and without bias or emotion, are unable to gauge industrial prospects accurately, it is hardly to be expected that the enterprisers who come to the market for funds would do so; for they are interested parties, too often blinded by enthusiasm or by pressing need, whichever the case may be. Here and there is a business man of rare vision and insight, but the appalling number of failures, especially among new enterprises, bears witness to the poor judgment of the average. It might be supposed that consumer-borrowers, at least, would be able to judge wisely between their immediate and future needs, and that this part of the loan market would reflect a balanced situation; but this is not the case. The fact is that many people make installment purchases beyond their means, and are unable to keep up their payments. The result is a large number of repossessed durable consumer goods, and many building and loan mortgage foreclosures.

Graham believed⁸ that interest is a negligible factor in short-run business situations because it is so much overshadowed by the risk element. Business men cannot compare the results to be expected from different decisions of policy because prospective marginal productivity is, at least, a matter of crude guesswork. Under these circumstances interest becomes merged with profits, and cannot function as an independent guide to investment. The abuses of the investment market just described, and the monetary interferences to be explained below, contribute to this situation. Various factors combine to create

⁷ See John Maynard Keynes' excellent discussion of the weaknesses that characterize the forecasting of the investment market, in Chapter XII of his *General Theory of Employment, Interest and Money* (1937). See also the penetrating analysis, based on careful empirical studies, made by Frederick R. Macaulay in his *Some Theoretical Problems Suggested by the Movements of Interest Rates, Bond Yields and Stock Prices in the United States since 1856* (1938), especially Chapters II and III.

⁸ Frank D. Graham, *Social Goals and Economic Institutions* (1942), pages 190ff.

an institutional setting in which it is almost impossible for interest to perform the functions ascribed to it.

Important among the institutions which interfere with the natural mechanism of interest is our commercial banking process. In order for interest to function in the way the theory supposes it to do, investible funds must come from the voluntary savings of income recipients, accumulated by their deliberate abstention from consumption. The role of the banks should properly be merely to act as agencies for collecting these monetary savings and directing them into the most productive investments by lending them to enterprises that are in need of equipment. This may be described as the loan function of the banks. If their activities in the investment market were confined to this function, the demand and supply of investible funds would be directed toward an equilibrium through the influence of interest rates, and interest would then perform the function ascribed to it by the theory. Investment and savings banks do operate as agents and middlemen in exactly this way.

Under the system now prevailing, however, commercial banks perform a monetary function in addition to their loan function, and the two functions are hopelessly confused. These banks supply the community with the most important part of its money, in the form of demand deposits subject to check. It is well known that these deposits do not arise mainly out of money brought to the banks by the depositors, nor out of the investments of stockholders, but are created by the banking system itself in the very process of making loans. The banks merely credit the borrowers with certain sums on their books, and the borrowers can thenceforth draw checks against the deposits so created. By means of a clearing system, checks are offset against each other in such a way that the banks are not called upon to pay very many demands in cash; hence the total volume of deposits can be far in excess of the cash that they have on hand. The effect of this is that a large part of the investible funds in the loan market do not come out of voluntary savings at all, and so are not the result of previous abstinence from consumption on the part of income receivers. Instead, they come out of bank deposit expansion. This breaks the connection between interest rates and the supply of voluntary sav-

ings, and hinders the normative tendencies of the price system.

The power of commercial banks to create deposits enables them to exercise a considerable amount of control over interest rates, not only in the market for short-time loans, but in the long-time market as well; for some shifting of funds from one market to the other is always possible, and many nominally short-time loans are long-time loans in fact. The policy of the banks is dictated very largely by the state of their monetary reserves. If the reserves are large, they encourage expansion by reducing their charges for loans. When the reserves get too low, they initiate a process of contraction by raising their charges. So the bank rate of interest fluctuates, not in response to changes in the volume of consumption and voluntary saving by the members of the community, but in response to the movements of reserve cash into and out of the banks. These oscillations force the bank rate of interest now above and now below its equilibrium position, in complete disregard of the normal functioning of interest. When the rate is below the equilibrium figure, this encourages the creation of capital equipment in excess of what income receivers are trying to save, the banks supplying credit to finance the difference. Provision for the future is thus excessive (as judged by the criterion of the normative price system), and so out of balance with the intentions of the individual members of society. Sooner or later this is bound to cause trouble, for the relation between present and future goods in the community is distorted. Either the demand for productive equipment made possible by the created bank credit puts too great a strain on the resources of the community (as set forth in the overinvestment theory of business depressions), or a prospective excess of future goods eventually becomes apparent and is reflected in low actual or anticipated earnings.

Needless to say, a banking system so constituted frequently gets into difficulties, as a result of which the government has gradually subjected it to increasing regulation. Unfortunately, the regulation has not so far touched the basic cause of the trouble, which lies in the confusion of monetary and loan functions by which the banks are allowed to create the deposits which they lend.

The intervention of the government has introduced another fea-

ture into banking that further distorts interest away from its natural functioning. The fiscal officers of the state long ago discovered that the banks afford a convenient outlet for government bonds when the state is in need of borrowing. The banks act, not only as agents in selling the bonds to the public, but they buy bonds directly from the government by giving it deposit credit in exchange. As a result, governments (especially in the United States) have come to lean more and more heavily on the banks as a source of loan funds, and have tended to use their powers of regulation to promote this purpose. Our government accomplishes this by its control over the banks' rate of discount. With the functions of the state expanding rapidly (as they are doing in modern times) the government's need for credit increases, and it tends to manipulate its powers of control so as to borrow on easy terms—that is, at low rates of interest. This tendency is most evident in time of war; but it is an increasing influence in peacetime also. The government is in a strategic position where it can manipulate a large part of both the demand for and supply of investible funds; for the volume of its borrowing is so great as to constitute a great proportion of the total demand, and its powers to regulate, not only the discount rate, but the minimum reserve requirements of the banks, enable it to control the terms (that is, the supply-prices) on which loans will be supplied. In this way its influence can dominate even the private investment market to a considerable degree. So there is more and more state interference in the market for capital, and disturbance of the normal functioning of the interest mechanism.

There is a vast difference between a loan market in which the demand for funds from thousands of individual enterprisers is balanced against a supply of savings from individuals by a rate of interest established in a process of free bargaining, and a market where the demand is created in part by the government and the supply consists largely of funds manufactured by the banks out of their own promises, with interest rates determined partly by the state of the monetary banking reserves and partly by the exigencies of fiscal policy. Whatever merit may be inherent in normative interest as a mechanism

for directing investment and balancing the allocation of resources between present and future needs is almost totally nullified by such a set of institutions. So far as short-period movements of interest are concerned, the monetary influences injected into the market by the operations of the banks and the fiscal policies of the government so far overshadow the influence of the psychological and productivity factors described in the theory of interest developed above, that the movement of bond prices (which are determined by the rates of interest at which their semi-annual payments are capitalized) can be forecast from data on bank reserves and gold movements alone. In other words, the interest yielded by bonds appears to be completely determined by monetary, to the exclusion of other, factors.⁹

In order to perform the function of achieving the correct proportions between consumption and saving, and maintaining equality between saving and investment, interest rates must be free to move up and down—upward when funds are scarce, in order to limit demand and stimulate supply, downward when funds are superabundant, in order to stimulate demand and check supply. Although the upward movement of interest is retarded by the ability of the banks to create new credit when there is an increasing demand, rates nevertheless show considerable upward flexibility. There are laws against usurious rates, but these do not appear to interfere seriously with the mechanism of the loan market. Interest is ordinarily higher in regions where capital equipment is scarce, and it rises noticeably even in wealthy communities at times when capital resources become depleted, as for instance, by a war.

However, interest does not move downward quite so easily when there are forces tending to depress it. This is particularly true in the short run. In a dynamic economy (as Keynes observed), if interest rates fall slightly below those which investors have come to think of as "normal," these investors, believing that rates will presently rise again to their usual positions, will sell their securities (whose capitalized value is now higher because of the reduced interest) and hold the cash, in the expectation that they will be able to buy back the

⁹ See Norman J. Silberling, *The Dynamics of Business* (1943), Chap. XVI.

securities at lower prices when interest rises again. This is the liquidity-preference factor at work under the influence of the speculative motive. The holding of cash absorbs the excess funds in the market that were exercising a downward pressure on interest, and thereby prevents the rate from falling as far as it otherwise would. Only when investors are convinced that the downward tendency of interest is permanent will they abandon this behavior and allow the falling rate to take its course. Furthermore, the property, attributed to falling interest, of tending to increase the demand for investible funds, may be offset temporarily by the fact that if prices are also falling (which is quite likely to be the case in short periods) investors will have to face the prospect of selling their future product at lower prices. This reduces the prospective profitability of investment and tends to check the expansion of effective demand. These are all short-period influences.

In the long run interest will respond to a continued condition of oversupply of funds by falling to lower levels. However, there appears to be a minimum below which the rate cannot go. Several factors are responsible for the existence of this minimum. One of them is revealed by Cassell's demonstration that, with given life expectancies, if interest is very low it is more advantageous to consume capital by means of annuities than to keep one's principal intact and live on the interest therefrom. Two other influences that make for a minimum rate are the risks and costs of lending. Interest cannot fall below rates that will adequately compensate investors for these items; for if it did so, they would prefer to hold their assets in cash.

This difficulty, taken in conjunction with Keynes' reasoning concerning the effect of the level of incomes on the amount of saving, constitutes the basis for his famous theory of employment. The theory states that in wealthy economies the propensity to consume is so weak that savings tend to become excessive. This gluts the investment market with investible funds. The funds cannot be utilized profitably unless interest falls very low, but it is prevented from doing this by the above-mentioned minimum limit. As a result there is a surplus of idle funds which are not invested. Withdrawn from cir-

ulation, they reduce the money income of the community, leading to falling prices and a decline in production, with accompanying unemployment. Here, Keynes believes, is a potential cause of chronic depression, in which a failure of the interest mechanism to perform the functions attributed to it by the neoclassical theory is clearly involved.

There is no doubt that a temporary oversupply of loanable funds does occur in our economy from time to time. This is usually after a business recession, when a general state of pessimism on the part of business enterprisers, induced by previous reverses, has made them timid about undertaking investment projects, so that there is little demand for funds. As a result, some monetary savings are unutilized until a period of recovery sets in. There is a failure of the interest mechanism here that is most likely induced by the banking difficulties above explained, but the failure is only temporary.

However, Keynes and his school believe that in wealthy economies the condition of stagnation is likely to become chronic, for the reasons already explained. If they are right, the impossibility of interest falling below a certain minimum must be counted as a very serious flaw in the price system. The most suitable remedy, according to the Keynesians, is for the government to supplement the inadequate private demand for investible funds by a program of borrowing for public works projects. This would be a frank recognition that the spontaneous pricing process is unable to sustain a full level of activity in a prosperous society. Graham suggests,¹⁰ however, that the basic reason why interest cannot fall low enough to permit full utilization of all the community's monetary savings is because of the risks attendant on cyclical depressions. Get rid of depressions, he says, and the rate will fall low enough to perform its function of encouraging an expansion of investment, in the manner visualized by Cassel.¹¹ If Graham is right, then it is not interest as such, after all, that is at

¹⁰ Frank D. Graham, *Full Employment without Public Works, without Taxation, without Public Debt, and without Inflation*, in *International Postwar Problems* for October, 1945.

¹¹ Gustav Cassel, *The Nature and Necessity of Interest* (London, 1903), Chap. 3.

fault. The Keynesian theory of chronic depression, and the suggested remedies, will be more fully discussed in Chapter Seven, which deals with the problem of full employment.

The social function of interest is to provide for the right amount of saving and investment, and to guide investment in those directions which are most advantageous for the general welfare. Of the criteria of social economy that were set forth in Chapter One, there are four that pertain to this function. These are, the principle of capital maintenance, the principle of invested surplus, the principle of progressive-regressive investment, and the principle of selective investment. While these do not offer a precise answer to the question, how much should be saved and invested, they do provide a broad basis for testing the performance of the interest mechanism.

The principle of capital maintenance states that the fund of capital equipment should be kept intact by replacing it as fast as it wears out. In the original statement of this principle an exception was made for emergencies, such as war, in which it may be necessary to deplete capital temporarily; but in the long run a society that is to avoid progressive decline in its economic status must do no less than replace its worn-out equipment. John Bates Clark maintained that such replacement has become automatic in modern societies through the recognized business practice of making depreciation allowances. However, it must be emphasized that the making of such provision is a matter of choice and not of compulsion. The obtaining of a new machine or a new building to replace one that is worn out requires saving and investment just as truly as the creation of equipment for some entirely new venture. The fact that replacement requires a sacrifice of present consumption is evident when we consider that some business men occasionally yield to the temptation to increase their profits by not allowing enough for depreciation, thereby expressing a preference for larger gains now at the expense of depleted capital. The further fact that the replacement fund is usually a liquid one, which need not be used to replace the identical equipment that wears out or even a substitute for it, but may be, and often is, invested in some entirely different venture, is additional evidence that the process is essentially

the same as that involved in any other saving and investment. It is motivated by the same prospect of future earnings and is governed by the same mechanism of interest, for depreciation funds would not be accumulated and invested without the prospect of interest to be earned.

However, the fact that depreciation allowances have become an established part of good business practice and of conventional accounting does serve to make the principle of capital maintenance generally effective. The principle, on the whole, is well attained except in times of stress, when it is departed from only temporarily and for good reasons. There is always some loss of capital because of unwise decisions on the part of business enterprisers, but usually this is more than compensated by the volume of new savings from other sources. It is the volume and direction of this surplus of new savings (above what is needed for replacement) that constitutes the main problem.

The principle of invested surplus states that in a comfort economy the growth of capital equipment should come out of the social surplus, and should not be at the expense of those people who have not attained to a comfort level. In our society by far the greater part of saving and investing is done by the rich, and comes out of their surplus incomes. Because of this it has often been argued that there is no real abstinence or sacrifice involved in the accumulation of equipment. In modern capitalistic societies, the abstention of the rich, who do the saving, may indeed entail no privation on their part; yet this process of providing for capital growth may impose a real sacrifice upon the social group. We cannot be sure that the savings of the rich come out of the social surplus, for a fairer division of income would allocate a large part of the surplus that the rich now enjoy to provide for the comfort of those who are now poor. Hence it is possible that some of the savings of the rich that are now invested in providing for the future are really made at the expense of urgent present social needs. Also, we must not overlook the fact that some equipment (though a minor part) is financed by the savings of the poor and the moderately well-to-do. This may sometimes entail real privation, so that it does not come out of the social surplus.

The British economist Henderson argues that the extraordinary growth of capital that took place in the nineteenth century was largely due to the great inequality of incomes that prevailed in that period. The progress which resulted from this growth has often been used as a defense of that inequality. Undoubtedly the growth of wealth would have been less rapid had the division of income been more nearly equal. Henderson, however, does not find this argument convincing. He wonders whether it would not have been better to have had more equality and less saving. He says:

We may rather doubt, in view of the reactions of poverty on physical and mental efficiency, on social harmony, even possibly on population, whether we today would have been really injured as much [had there been more equality and less capital accumulation] as might appear. How, then, can we suppose that the sum of the amounts which it suits individuals to save will bear any close relation to the resources which the community can properly devote to future ends?¹²

I am inclined to share Henderson's doubts. It seems to me clear that the mechanism of interest cannot give full effect to the principle of invested surplus as long as the division of income remains as unequal as it now is. Adoption of the measures to reduce inequality that were proposed in the last chapter would go far to correct this condition.

Social security systems make it less necessary for the poor to deprive themselves of present needs in order to provide for such future contingencies as sickness, unemployment, and death, if the social security benefits are financed by taxes on those who are better able to pay, and not by levies on the poor. The present social security system of the United States, however, has the opposite effect, because it sets up security reserves which are paid for largely by taxes on wages, and also by taxes on employers who promptly add them to the price of goods sold to the general public, including the poor. These taxes are not being used to pay current social security benefits so much as to meet the other expenses of government, including the provision of some capital equipment. This contravenes the principle of invested surplus. A pay-as-you-go social security system does not involve sav-

¹² H. D. Henderson, *Supply and Demand* (1922), p. 131.

ing and investment at all. It is merely a means by which society provides, at public expense, for the present needs of those who would otherwise be in want; hence, it does not properly come within the scope of the present problem.

The major problem of providing for the future is to find out what is the most appropriate amount of saving and investment under given circumstances, and to put that amount into effect. In the first chapter I explained that I am unable to give a more precise solution to this problem than the broad principle of progressive-regressive investment. That principle is as follows: The proportion of the social income to be invested in capital equipment should first increase, then decrease, as the size of the social surplus grows.

Our present institutions do give some effect to the first part of this principle. A larger proportion of the social income is saved as we grow more prosperous. However, the conformity to the principle is rather accidental; for saving, under capitalism, is governed more by the incomes of the rich than by the social income as a whole, and it has just been shown that this may result in too great a sacrifice of important present needs. There is less reason to think that present institutions give effect to the second part of the principle. If the theories of Keynes and Hansen are correct, rich capitalistic societies tend toward a chronic excess of savings, and the mechanism of interest is powerless to check the excess because the rich are not sufficiently responsive to a low rate, and the rate cannot fall far enough to stimulate a sufficient increase in the volume of investment.

There is no reason to think that the interest mechanism achieves the *right* amount of saving and investment in any case. The right amount may be either the aggregate of individual decisions as to what they want to save, balanced against an accurate forecast of demand and cost schedules for the goods that the roundabout process will make possible in the future; or it may be the amount that a central planning body judges to be most desirable. The interest mechanism certainly does not now govern the amount of saving and investment in accordance with the decisions of a planning body; and it is equally certain that it does not even achieve a balance of individual decisions, because of the grossly inaccurate character of market forecasts and because

the decisions of individual savers are badly overbalanced and distorted by the expansion and contraction of bank credit, and by the fiscal policies of the government.

It has been argued that the existence of created bank credit has made possible a more rapid growth of equipment in the past century or more than would have been provided by voluntary individual savings. It is noteworthy that this argument is most often made by laissez-faire supporters and liberal economists who supposedly are believers in a system of guidance based on individual choices, operating through the competitive price system; yet it completely rejects the choices of individuals as the criterion concerning how much should be saved and invested. Anyway, the defense is a weak one, because the bank credit mechanism for financing the construction of equipment works by fits and starts that subject the economy to spasmodic convulsions of prosperity and depression, and the amount of equipment provided under its stimulus may have been excessive, as was shown above.

A final reason for the judgment that the interest mechanism does not achieve the right amount of investment lies in the inability of the rate to fall below a certain minimum, the disturbing effect of which has already been explained.

The fourth criterion concerning social provision for the future is the principle of selective investment, which states that savings should be invested in those forms of equipment that promise to be most productive of future social benefits. The mechanism of interest tends to guide investment in the direction of greatest expected marginal productivity. This is a good principle of guidance in so far as value productivity is a good measure of social benefits; but it is distorted by the imperfections in the mechanism of want selection that were developed in Chapter Three. Furthermore, the guidance is subject to all the inaccuracies of forecasting that were mentioned in an earlier paragraph.

POSSIBLE IMPROVEMENT OF THE INTEREST MECHANISM

The question now arises, can these several defects in the functioning of the machinery of saving and investment be remedied so that

the interest mechanism could come nearer to acting as a satisfactory guide for allocating resources between present and future?

The shortsightedness of calculations limited to one lifetime is a weakness inherent in interest rates determined by individual decisions, but it is not a fatal one. It can be met by farsighted state action to make provision for social needs in the more distant future. To some extent the state is already doing this, by the acquisition and careful development of public forest lands, by laws restricting the reckless despoliation of natural resources, and by undertaking costly construction projects (such as city subways) where the prospective return is not sufficient to attract private investors. More governmental activities of this kind should suffice to take care of this problem. It should be noted that this remedy involves a departure from the guidance of a normative price system, because the state projects envisaged will not yield the normal rate of interest, yet are justified on grounds of long-range public welfare.

A most hopeful approach toward betterment of the interest mechanism is through reform of the monetary system and improved organization of the securities market. In order for the monetary system to work more satisfactorily, the monetary function of commercial banks must be completely separated from the loan function. The monetary function should be handled by special banks of deposit, organized exclusively to provide their customers with the convenience of checking accounts and clearings. They would not be lending banks at all. Their funds would come from actual deposits of cash entrusted to them by their depositors, and they would be required to keep one hundred per cent reserves, so that no credit expansion would be possible. They would derive their income from fees paid by the depositors for the services rendered.

The loan function would be handled by separate lending banks, which would operate very much as savings banks now do. They would not be allowed to create the money they lend by merely extending credit to their customers. Instead, they would lend only such funds as were provided specifically for that purpose by their stockholders and by time deposits left with them for investment by

their depositors. In this way the loan banks would act merely as intermediary agents between savers (their depositors) and borrowers (individual enterprisers or corporations seeking capital financing). Since the money they loaned would thus come exclusively out of voluntary savings, this would permit interest to become an effective instrument for balancing saving and investment, without the interference of credit expansion and contraction. The unhealthy growth of equipment under the stimulus of credit expansion would no longer be possible. Banks could lend only such sums as they actually had on hand in cash, and when this volume of loans had once been made, new loans could be financed only as old ones were paid off. The total quantity of equipment in the community could be increased only as more voluntary saving took place, either in response to a greater demand for investible funds arising out of new investment opportunities (higher marginal productivity) or as the result of greater willingness to save (lower rates of time-preference). In such a system of banking, the interest mechanism would be given a chance for the first time to function in its natural way.¹³

It has been suggested that the investment market might be made more responsive to the interest mechanism if corporate surpluses were forced into the open investment market, instead of being re-invested by boards of directors in their own businesses, as is now so often done. This is one of the objectives aimed at by those who favor the taxation of corporate surpluses. It is thought that such taxes might induce boards of directors to distribute these surpluses in dividends to their stockholders, and that the stockholders would then either consume this extra income or reinvest it in the most attractive opportunities then available in the capital markets. In this way the distributed surpluses would enter into the general supply of investible funds, and would be subject to the same interest influences as any other savings. There is some merit in this idea, but reinvested surpluses are not the chief cause of lack of balance in the investment market. They probably would not constitute a serious problem if the

¹³ For a more detailed discussion of this proposed bank reform (which is known as the one hundred per cent reserve plan), read Irving Fisher's *One Hundred Per Cent Money* (Third Edition, 1945). It will also be somewhat further discussed in Chapter Nine.

other defects in that market could be corrected. Boards of directors presumably have some knowledge of the profit possibilities of their own businesses as compared with other investment opportunities and the general state of the capital market. They are probably not uninfluenced by these considerations, and would not reinvest their profits in their own enterprises if they believed the prospects to compare very unfavorably with alternative possible uses for the funds. These surpluses are perhaps more wisely invested by the directors (both from the individual and social point of view) than if they were distributed to the stockholders, for the latter are less well informed and more likely to make mistakes of judgment. Of course, there are abuses when a group of insiders are in such control that they can manipulate the financial resources of their corporations to their own profit, at the expense of the stockholders at large; but the remedy for this is not to force the directors to distribute the surpluses, but to institute regulations that will make corporate financial structures more equitable and will insure more democratic control.

It is not easy to correct the defects which come from the faulty anticipations of investors and from speculative abuses in the organized securities markets. A more stable monetary system that will reduce the wide swings of the price level that now disturb our economy will help to reduce the speculative element. Such governmental controls as are now being exercised by the Securities and Exchange Commission to prevent deliberate manipulation of the stock market are also good; and the detailed and accurate information now being made available to the public through the registration statements that corporations must file with this commission puts investors in a better position to make correct judgments concerning the prospective yield of different business enterprises. Altogether, very good progress is being made toward solving this part of the investment problem.

There remains the problem of governmental interference in the investment market arising out of the exigencies of fiscal policy. The abuses that are now practiced in this regard are made possible by the ease with which commercial banks can supply the government with funds created by deposit expansion. If it were no longer possible for

the banks to do this, the government would have to go into the open investment market for its loans, and would have to compete with private industry for the supply of voluntary savings in this market. The separation of loan from deposit banking that was suggested above would accomplish this result. The effects on public finance would probably be salutary, and this reform would permit interest to function without the arbitrary state interference that now distorts it; but it would hardly stand the strain of war finance.

The foregoing proposals will go far toward removing some of the obstacles to the satisfactory functioning of interest, but they will not meet the problem of employment posed by the Keynesian theory. If Keynes and his disciples are right in their belief that in wealthy societies the interest mechanism cannot perform the task of balancing saving with investment because the effective supply of investible funds will exceed the effective demand at the lowest rate to which interest can fall, additional measures, of a very different kind, will be necessary.

Graham offers a very simple solution to this problem that merits careful consideration.¹⁴ He reasons that the state could restore to circulation any uninvested surplus of idle savings by offering holders of government debt life annuities in exchange for their bonds. Since annuities are much more attractive than other investments when interest rates fall very low, many bondholders would avail themselves of this offer. A triple advantage would result: (1) A sizable proportion of government bonds would be replaced by annuity policies which would be definitely terminated on the death of the annuitants. This would provide for eventual reduction of the public debt. (2) Hoarders of money would purchase bonds for conversion into annuities, instead of keeping their funds idle. This would help to maintain the circuit flow. (3) The conversion of savings into annuities would lead to the consumption of capital, in this way wiping out the excess of saving. The last two results could be attained equally well by the government selling annuities directly to purchasers, instead of only to holders of its bonds. A possible obstacle to this

¹⁴ *Op. cit.*, in footnote 8.

plan is that savers might not be willing to dissipate their savings in annuities. Annuities are obtainable now from private insurance companies, but even at low rates of interest they are not very popular. However, this may be due to the fact that they have not been much advertised, and the public has not yet been long accustomed to very low interest. If it becomes apparent that interest rates will not return to higher levels, and if the annuities were sufficiently advertised by propaganda, the plan might work. If and when we are faced by the prospect of chronic mass unemployment, the experiment would be worth trying.

Keynes himself suggests a threefold attack upon the problem of unemployment arising out of uninvested savings. His three proposals are: (1) progressive taxation to reduce income inequality, (2) artificial depression of the interest rate, and (3) partial socialization of investment.¹⁵

As to the first of these suggestions, in the last chapter I tried to show the desirability of a more equitable division of the social income on broad grounds of wise social policy. If such a more equitable distribution would at the same time increase consumption by reducing the surplus incomes of the rich, and thereby reduce or remove any tendency toward excessive saving, so much the better. However, Keynes apparently sees no way of accomplishing a more even distribution except through progressive taxation. I gave reasons for objecting to this method in the same chapter, and outlined a more general program for accomplishing the desired result. However, since the full accomplishment of this program will be difficult to achieve within the framework of capitalism, it is not surprising that Keynes, who seeks to avoid any rough break with existing institutions, does not look to changes in the apportionment of income as a sufficient remedy for the defect which he sees in the mechanism of interest.

Keynes' second corrective proposal is to force down the rate of interest by regulative action, but he is rather vague as to just how he would go about doing this. Apparently, he would seek to accomplish it by means of monetary (credit) inflation, through the medium of

¹⁵ John Maynard Keynes, *op. cit.*, Chap. 24.

a central bank. He believes that it might be possible in this way to bring the rate of net, or pure (but not gross), interest down to zero within a single generation. This would do away with the rentier class, which lives on the interest from invested capital; but it would leave a sufficient premium for risk to give an adequate return to enterprisers, and a reward for "venture capital." He regards rentiers as performing no useful function in a society where saving is excessive; hence, he believes that their elimination would be desirable.

Current fiscal and banking practices demonstrate that interest can be artificially depressed; and it is undoubtedly possible for the state to force the rate down to any desired point by injecting fiat money into the loan market. This need not lead to general price inflation, provided the amount of new money so introduced is no more than enough to just counterbalance the monetary savings withdrawn from circulation by persons who prefer to hold their savings in money form rather than invest them at the low rate of yield obtainable. Neither would such a policy destroy the normative functioning of the price system, if (as Keynes prescribes) the rate of interest were depressed just enough to equal the "marginal efficiency of capital" in a state of full employment. Rather it would permit the institution of interest to function in its natural way; for it would restore the balance between the effective demand for investible funds, as determined by expected yields (marginal productivity) and the effective supply of voluntary savings. Nevertheless it is a makeshift proposal; for it does not get at the root of the trouble, which, according to Keynes' own diagnosis, is a low propensity to consume—i.e., too much saving. Instead of stopping this excess of saving at its source, Keynes proposes to force its absorption into investment by artificial action. There is no assurance that the amount of saving and investment under this program would be the right amount, according to the criteria of social economy. There may also be some doubt as to whether such a policy would prove effective, because of the psychological reactions of business men. Efforts to stimulate business expansion in times of depression by making easy credit available through the banking system have hitherto been rather disappointing; but I am of the opinion that this would not be so serious a problem in dealing with

secular stagnation as it is in meeting a situation of cyclical depression. It is primarily with the problem of secular underemployment that Keynes is here concerned.

Keynes is again vague as to what he means by the socialization of investment (which is his third suggested remedy) but presumably he has in mind a program of public works financed by government borrowing. He is not sure how far this may have to go. His intention is to preserve as much of the institutions of free enterprise as possible, but he does not overlook the fact that a gradual transition toward a considerable measure of collectivism may be necessary. Thus there is revealed a lurking doubt in his own mind as to the efficacy of his other two remedies, and a hesitant admission that perhaps a capitalism which cannot find investment opportunities sufficient to absorb its savings cannot long survive; but at least he hopes the measures he suggests may make it possible for the evolution toward collectivism to be gradual and orderly.

Deficit spending and public works as a possible remedy for unemployment will be dealt with in another place (Chapter Seven). Further discussion of this part of Keynes' proposals can therefore be dropped temporarily. Consideration of the possibilities of a more drastic program of "socialized investment" for remedying the various defects in the institution of interest that have been revealed above will also be postponed to a later chapter (Chapter Eleven).

From time to time the institution of interest has been attacked as an unnecessary detriment to the economy. One source of such attacks is the Marxians, who hold that, since all wealth is produced by labor, the workers should get it all; hence the taking of interest by the capitalists robs the workers of part of the fruit of their toil. These socialists look forward to a collective state in which there will be no interest. This line of attack overlooks two relevant facts. In the first place, saving, except that of the extremely rich, involves a sacrifice of consumption which is comparable to the pains of labor in production. In the second place, when saving is accompanied by investment in industrial equipment, it makes a contribution to production that is just as real as the contribution made by the workers; for the roundabout process is

more productive than simple, direct processes, and it is invested savings that make the roundabout process possible. There is no reason to think interest undesirable, provided the savings for the use of which it is paid have come out of earned income. It is only when capital is accumulated out of fortunes derived from anti-social activities, or when it is inherited, that interest can be validly condemned as unjust. In a society where savings from these sources were not permitted, the institution of interest would not be open to this objection. It was shown in the last chapter that interest conforms to the tests of earned income, and it will be shown in Chapter Eleven that it would be needed as an accounting device in a collectivistic society. Therefore, although a collective state could conceivably get along without the making of any interest payments to individuals, it would probably be wiser to allow such payments on savings accumulated out of earned incomes.

A second line of attack against interest comes from those who, like Silvio Gesell, regard it as a drag or brake upon industry.¹⁶ Keynes expresses some sympathy with this point of view. It fits in with his idea that the interest rate in prosperous societies is too high to permit industry to utilize all of the available monetary savings. Writers of this school would like to remove the brake by making capital "free"—that is, by forcing the rate of net interest down to zero. Gesell would accomplish this by a stamp tax on money that would make it too costly for hoarders, and Keynes would do it by inflation of credit that would make investible funds more abundant.

The subject of interest is one of the most elusive in the whole field of economic theory, and certainly interest as it now functions is a very unsatisfactory part of the normative price system. However, the diagnosis of this chapter indicates that the trouble is probably to be found, not so much in interest itself, as in the institutional setting within which it operates. In an economy characterized by an equitable division of income, drastic limitations on inheritance, a sound monetary and banking system, and reasonably good forecasting, in-

¹⁶ There is a good summary and critical appraisal of Gesell's ideas in Chapter II of Margaret G. Myers' *Monetary Proposals for Social Reform* (1940). See also the publications of the Free Economy Publishing Company, San Antonio, Texas, and Gesell's book, *The Natural Economic Order* (Berlin, 1929).

terest could play a useful, if not a necessary role. Whether such an institutional setting is attainable within the framework of capitalism is problematical, but it could be achieved in a system of collectivism; and anyway, it would be better to direct reforms in those directions than to play with monetary panaceas of dubious merit.

THE PROMOTION OF INDUSTRIAL SKILL AND TECHNICAL PROGRESS

There are forms of investment, not commonly so classified in economic treatises, which nevertheless constitute an important part of society's provision for the future. One of these is investment in the education and training of human beings. The acquired skill of an electrician, the technical knowledge of a chemist, the understanding of disease and its treatment possessed by a physician—these are just as much a part of the equipment with which the social income is produced as are mechanical devices, stocks of materials, and industrial plant. In the acquisition of education and training, the students must be fed, clothed, and housed, and money must be spent for teachers, books, and the use of classrooms and laboratories. These expenditures constitute invested savings, for they yield no present return, but, like investments in material equipment, they are expected to be productive of income in the future. Human beings are like material equipment, too, in that they wear out, and so must be replaced by other persons in whom special techniques and skills must be implanted by fresh acts of saving and investment. Furthermore, the supply of productive human qualities, like the supply of useful machines, can be increased (within limits) by investing more savings in education and training. And these qualities, like the productivity of material things, is subject to the law of diminishing returns; for if we wish to increase the quantity of work done by persons of a given kind of skill, we must either force them to work harder—which is sure to lessen their accomplishment at the margin, or we must train more people to do that kind of work—which will certainly be less fruitful of results when the point is reached where all those who have the most aptitude for that kind of work have been utilized, and persons not quite so well suited to it must be enlisted. In view of all these likenesses to material equipment, it is entirely justifiable to

speak of the knowledge and skill imparted to human beings by education and training as human equipment.

A normative price system does not offer a satisfactory mechanism for the fullest provision of human equipment because, although it offers high rewards for those skills that are scarcest in relation to the demand, these rewards cannot usually be appropriated by the persons who have the means to provide the necessary training. The investor in material equipment owns it, so that he can claim a part of its earnings for himself. Except where slavery prevails, human beings cannot be owned; hence it is not usually profitable (in a pecuniary sense) for anyone else to invest much in them. Employers sometimes find it worth while to give a limited amount of training to their employees, but most of the means for the rearing and education of workers must come from other sources. Since the average person usually does not have an income of his own in his early years, when most of his training must be acquired, he is forced to rely on parents, relatives, and friends, or on private philanthropies and public educational facilities. The amounts forthcoming from these sources depend not on pecuniary motives, but on the means, the altruism, and the wisdom of the providers. So it appears that we cannot rely on the price system to furnish us with human equipment. We must make adequate social provision for it, along the lines suggested in Chapter Four in the discussion of developing talent.

Effort devoted to discovery and invention is likewise a kind of provision for the future that requires both saving and investment. Time spent in research, or in the perfecting of a mechanical device, involves present costs that must be paid for out of saving; and since the costs are incurred in the expectation of a future yield, the expenditures must be classed as investment. The problem of promoting this kind of investment has something in common with the problem of providing human equipment, in that the inventor or researcher does not always have the means to finance his own investigations. The inventor who works persistently in his garret shop in spite of poverty is a well-known figure. There must be many others with potential inventive talent whose genius bears no fruit because it is never given the opportunity.

However, there is an important difference between the two types of cases. Discoveries often take the form of a material contrivance or product. These can be owned, and, by means of the patent system, the idea embodied in them can be owned too. This provides an incentive for those who have surplus incomes to finance inventors and scientific investigators, under an arrangement by which the latter are supported and provided with laboratory or shop facilities by the financial backer, in return for giving partial or complete ownership of the patent rights to the latter. Widespread organized research is now being carried on by large corporations in this way. This is saving and investment pure and simple, and is governed by the prospect of future earnings the same as investment in industrial buildings or machinery. The mechanism of interest functions here, with special emphasis on the element of premium for risk, because the outcome of the research is often very uncertain. A laboratory may be operated for years at great expense in the hope that an occasional happy discovery will justify the expenditure—and it generally does.

In Chapter XVI of his *Theory of Interest* (1930), Irving Fisher reasons that inventions have an influence on interest rates, tending first to raise and then to lower them. In its early stages, before it has been exploited, an invention offers the prospect of a high return over present costs because of its superiority and novelty. This prospect creates a demand for investible funds which tends to raise interest rates. The elevating effect continues until the invention is fully developed. By that time the facilities which the invention supplies have become so plentiful that their price is reduced to the cost of producing them, so that investments in the new device now yield no more than normal returns. Interest rates then return to their former level, and may even fall lower if the new discovery has raised the general level of incomes sufficiently to increase the supply of savings. In this sequence of developments, interest is performing its proper function of allocating investment in the directions of greatest productivity. The high return offered by the new invention in its early stages attracts funds into the new productive field until it has been developed to its proper relation with other fields.

Schumpeter, Hansen, and others have erected a theory of cyclical and secular business fluctuations on this idea of the expansion and later maturing of industries under the influence of new discoveries. They hold that from time to time there are important groups of inventions and innovations that require tremendous investment for their exploitation. Railroad building in the nineteenth century, and the rise of the automobile industry in the twentieth, are offered as illustrations. These innovations at first offer the prospects of high returns that are sufficient to encourage the enormous investment that is necessary. During the period when the affected industries are developing, interest rates are high, the volume of investment is large, business is very active, and full employment prevails. As the development reaches maturity, the increasing supply of the new products reduces the prospective yield from the new investments. There is no longer need for as much investment as in the early stages, but only for enough to maintain the established plant. As a result there may not be sufficient investment opportunities in the economy to absorb all the savings which are being offered in the loan market. In this way there occurs the disparity between saving and investment which was described in an earlier paragraph, and which the interest mechanism may fail to correct. Business stagnation and unemployment ensue. In so far as this theory can be accepted, it offers further reason for believing that the interest mechanism is not performing well the function assigned to it of balancing consumption, saving, and investment.

A CONCLUDING COMMENT

The various considerations that have been discussed in this chapter show that the allocation of resources between present and future constitutes a crucial phase of the economic process. The analysis indicates that the complex of interest rates on which a capitalistic society depends for this allocation is working in a very unsatisfactory manner. Recent theories suggest that this failure may be an important—perhaps even the chief—cause of unemployment, and so a threat to the very foundations of capitalism itself. In the end it may prove to be the weakest spot in the whole price system, and one of the strongest forces pressing in the direction of collectivism.

CHAPTER SIX

Surplus Utility, or Costs and Sacrifices

THE PRINCIPLE OF SURPLUS UTILITY

According to the principle of surplus utility, the production of every good should be carried to (but not beyond) the point that maximizes the surplus of its utility in consumption over the disutility occasioned by its production. This chapter will deal with this principle in some detail and pursue an inquiry concerning the suitability of a normative price system for putting it into effect.

In the production of any good there is first a stage where the amount of utility derived from it greatly exceeds the disutility of the efforts and sacrifices required to produce it. This excess of utility over disutility is what I mean by surplus utility. It is closely related to, but not identical with, Marshall's concept of consumers' surplus.¹ The difference consists mainly in the fact that Marshall measured the surplus partly in pecuniary terms, defining it as the excess of consumers' satisfactions *over what they pay for*, whereas my concept of surplus utility refers entirely to a comparison of psychic benefits and sacrifice costs, without any reference to price. This difference can be illustrated by the drawings on the next page. Figure 2A shows Marshall's concept. Here DD' is a demand curve, which is supposed to reflect marginal utility (as measured in money) to consumers, while the curve SS' indicates the supply-prices asked by sellers. The equilibrium price is OP . At this price buyers take the quantity OQ , the total utility of which (as measured in money) is $ODRQ$. But since the amount they pay ($OPRQ$) is less than this, they get a surplus of utility over cost, represented by the shaded area PDR . This is what he means

¹ Alfred Marshall, *Principles of Economics* (Eighth Edition, 1920), Book III, Chap. VI, §§ 1-3.

by consumers' surplus. My idea is pictured by Figure 2B. Here UU' represents the diminishing utilities or benefits derived from successive increments of a good, while the curve SS' represents the increasing sacrifices or disutilities involved in producing it. If the quantity OT were produced, the total utility derived from it would be measured by the area $OUVT$, and the total disutility by $OSWT$, leaving a surplus of utility over disutility amounting to $SUVW$. This is what I mean by surplus utility. It is this magnitude that should be maximized.

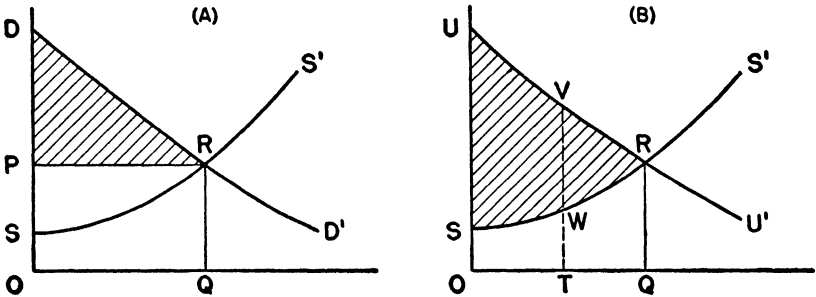


FIGURE 2. Consumers' Surplus and Surplus Utility

It will be maximized at the output where marginal utility and marginal disutility are equal (OQ), because up to that point each increment of product adds something (though a diminishing amount) to the surplus, but beyond that point each further unit entails more disutility than utility, thereby causing a net loss. It is clear from the diagram that the surplus utility is greatest (the shaded area SUR) at the point where the two curves cross. This is the output which will contribute most to the social welfare.

In economics of the Marshallian type, utilities are represented as the ultimate factor lying back of demand, and disutilities as the ultimate factor underlying costs and (in the long run) supply. Both terms, however, are employed in a hedonistic sense, utility denoting subjective feelings of pleasure enjoyed by consumers, and disutility denoting feelings of pain experienced by producers. Here I prefer the broader ("human") meanings suggested by Hobson, who identifies utility with all beneficial effects that are associated with economic goods, and disutilities (or "human costs") with harmful

effects.² He found elements of utility even in production, in so far as the work of producing is healthful and pleasant, and he found disutilities in consumption, where the goods consumed have deleterious effects upon the consumers. For the study of economic welfare, the broadening of these terms beyond their earlier hedonistic connotation is necessary and helpful. The idea that consumption and production alike include both utilities and costs is also valid; but if these terms are to be used for comparison with the functioning of the price system (which runs in terms of demand and supply) it is more convenient to identify utility with consumption and disutility with production. It is possible to do this, while retaining Hobson's idea, by computing both concepts as net. The term utility will then refer to the net beneficial effects on social welfare arising from consumption, after subtracting any deleterious effects. For example, the human suffering and degradation arising out of the opium traffic must be weighed against the helpful uses that are made of opium in the practice of medicine, and the demoralizing influences of some motion pictures must be set off against the wholesome entertainment that is provided by others. By such a calculation, the net utility of consumption will in some cases be negative. The term disutilities will refer to sacrifices of two different kinds: Those arising out of the efforts and pains sustained in production, and the opportunity costs of giving up one good for the sake of another. From here on I shall employ the terms utility and disutility in these senses, computing both as net. A few further words in elaboration of the two kinds of disutilities just mentioned will be in order.

The sacrifices arising out of the efforts and pains of production include such things as the fatigue and ennui of working, loss of health occasioned by the conditions of work, the giving up of leisure, and the postponement of consumption involved in saving and investment. These are sometimes called "real," as distinguished from monetary costs; but I do not like this usage because it suggests that monetary costs do not have reality. It would be better, I think, to call them production-pain costs, or simply production pains, and I shall do so in the subsequent discussion. The term production pains must in-

² John A. Hobson, *Work and Wealth* (1914), Chap. III.

clude, not only sacrifices currently made, but also postponed effects that will eventually ensue from today's production, such as future breakdown of health or premature old age from present overwork; and it must not be restricted to effects upon people directly engaged in production, but must be extended to include any indirect harm that may occur to the community at large, as for example, from stream pollution or smoke nuisance created by a manufacturing enterprise. The computation of these pains must be net, to allow for the offsetting benefits that are often associated with production, such as the pleasure of creative work, healthful exercise, personal satisfaction derived from the prestige and power that comes from a leading position in industry, and any other benefits that success in productive achievement may bring.

The other sort of sacrifice (opportunity cost) arises out of the fact that, in a world of scarcity, the producing of one good necessitates the foregoing of some other that might have been produced in its stead. We cannot have both the cake and the penny. Some persons may be disposed to argue that this is not a real sacrifice in the sense that labor fatigue and abstention from consumption are sacrifices, because for the good given up there is a good of equivalent or greater usefulness received, so that there is no net deprivation. But this is equally true of fatigue, loss of leisure, and so on; for here too something is received (the good that is produced), which compensates in utility for the disutility suffered, so that, if the two are properly balanced, the individual or the community suffers no net loss. All economic activity involves a choice of alternatives, such as between effort and a good to be obtained, or between one good and another. Hence, in the last analysis, all costs can be resolved into opportunity costs—that is, alternatives foregone. The significance of this for the principle of surplus utility is, that if the production of any good is carried to the point where the marginal utility it yields is less than that which might be obtained from some other good or goods that the same resources could produce, the total surplus of utility is thereby reduced. The inclusion of alternatives sacrificed in the calculation of surplus utility is therefore important for the correct allocation of resources.

Precise application of the principle of surplus utility is made difficult by the intangible character of the concepts involved. Notwithstanding their elusiveness, these concepts are the basic ones of economics. The economic process is essentially one of trying to maximize satisfactions by balancing benefits against sacrifices. Yet without units of measurement with which to weigh these things quantitatively, how can we achieve this goal or test the performance of our economic system with reference to it?

The economist may seem to be at a disadvantage here as compared with workers in the natural sciences, but this may be too hasty a judgment. The basic units of physics and chemistry, once believed to be the molecule and the atom, respectively, have now been broken down into protons, electrons and neutrons, and these in turn, are fading off into a mysterious something called a charge of electricity, or some kind of energy, whatever that may be. Likewise, the cell of the biologist, tangible enough in itself, is broken down into chromosomes, and the chromosomes into genes which are quite as elusive as the notion of a util, or unit of utility. In view of these intangibles which baffle the natural scientists, economists can perhaps be forgiven for the vagueness of their basic concepts.

Yet it is desirable to give as much precision as possible to these economic concepts. Although we cannot now formulate a quantitative unit of utility or disutility, we may be able to classify benefits and sacrifices according to relative degrees of intensity. In Chapter Three I pointed out some of the possibilities along this line in the field of consumption—the setting up of a hierarchy of wants in the order of their importance, on the basis partly of scientific standards and partly of subjective judgments. It is not necessary to repeat that discussion here.

I believe that it is possible to make at least a beginning toward doing the same thing in the field of production, that is, toward measuring the amount of sacrifice involved in different industrial operations. For example, the different effects of working days of varying lengths on output, fatigue, and health can be measured in physical terms, and even the effects on morale can be appraised to some degree. The relative merits of more output as compared with more leisure could prob-

ably be worked out by experiment. Although there is controversy over the possibility of measuring the average length of the production period, I nevertheless believe that the amount of waiting involved in different branches of industry could be estimated. This would afford a basis for comparing the sacrifice of present goods with future gains involved in the roundabout process. The indirect effects of steam and smoke pollution can be measured in terms of fish mortality, the incidence of respiratory diseases, and similar objective results. The physical aspect of opportunity costs is easily dealt with. The possible yield of different crops obtainable from an acre of land of a given kind, the number of hours of skilled and unskilled labor required to produce this good or that, the time required to turn out one tool on a lathe as compared with another—such things as these can be known with a fair degree of accuracy. In this way it is possible to say that a bushel of wheat costs, say two bushels of oats, or that a certain kind of house costs ten automobiles. But what is the sacrifice of giving up one of these things for the other cannot be known unless we have a means of comparing the relative merits of wheat and oats, of houses and automobiles. In the last analysis, therefore, we are thrown back on what was said in Chapter Three about the relative importance of different wants.

Various writers have tried to formulate a basic unit of costs, such as the number of hours of labor required to produce a bushel of wheat, or simply an hour of work by an unskilled laborer, or the work of one man for one hour on an acre of land. These suggestions may not be entirely without merit. It is possible that a weighted man-acre-day could be worked out, and that this could be set against a list of goods weighted according to the degrees of benefit they yield, so as to make possible a quantitative balancing of utilities against disutilities. The weights for labor-time would ascend with the length of the working day, with the risks and disagreeableness of different occupations, and with opportunity costs (rising according to the types that are scarcest in relation to need), and benefits would descend with the amount of waiting involved, by discounting each according to the date of the final consumption of the product. The weights for land would vary according to the scarcity of the prod-

ucts for which the soil was adapted, and according to remoteness in time. Forests, for instance (being much more remote than potatoes), would be given a lower weight in relation to the benefits yielded. In appraising goods according to their benefits, the weights would vary with the importance of each separate class of goods, and also with the quantity, descending with increasing output in recognition of the principle of diminishing utility. Although such a system of weighted utilities and disutilities would be somewhat arbitrary, it could be made to correspond with the general judgment of enlightened and well-informed investigators.

Something of this sort may some day be worked out by a central planning commission charged with the task of directing and balancing the economic process as a whole. Indeed, rough gropings toward it are perhaps represented in the work of the Russian Gosplan, and in the decisions of the War Production Board in the United States during World War II. However, it will probably be some decades before a carefully worked out procedure along these lines can be brought into being. Meanwhile, all that I can do here is to discuss the problem of this chapter in qualitative terms. I believe that this suffices for a critical appraisal of the possibilities and limitations of the price system as a mechanism for giving effect to the principle of surplus utility.

THE PRICE MECHANISM FOR BALANCING UTILITY AGAINST DISUTILITY

The mechanism offered by the price system for effecting a balance between utility and disutility is the apparatus of demand and supply. On the one hand are consumers' demand-prices, reflecting the strength of consumers' desires and means, and therefore having a basis in the buyers' estimation of the utility of goods to them. On the other hand are producers' supply-prices, which are made up of the prices attached to the various factors of production. These are based partly on production pains (to the extent that suppliers take into consideration such sacrifices as fatigue, ennui, impairment of health and fear of loss in deciding the terms on which they are willing to offer their persons or their properties for hire) and partly on the opportunity costs of alternative goods sacrificed. Demand curves slope down-

wards, supply curves upwards—at least in the short run. Equilibrium is established where marginal demand-price and marginal costs coincide.

On the surface this looks very much like the balancing of marginal utilities against marginal disutilities that is called for by the principle of surplus utility. So it would be if demand schedules were a true measure of social benefits and supply (cost) schedules a true measure of social sacrifices. Some of the more rash adherents of neoclassical theory have so represented them. However, the price system is not as perfect as this. I have already dealt with demand in Chapter Three, where I pointed out that there are serious discrepancies between consumers' demand and social benefits or needs, and I showed that important reforms would have to be effected if the price system is to work better in this respect. The remaining problem, then, so far as the principle of surplus utility is concerned, is to make a similar analysis of supply in the present chapter. Such an analysis resolves itself into a discussion of the relation between costs and sacrifices.

In the form given to it by Marshall and his disciples, neoclassical economic theory held that all costs are ultimately resolvable into two basic elements, the pain of labor and the pain of abstinence (waiting). Wages were represented as being a measure of the efforts involved in rearing, training, and performing labor of different degrees of skill, with some allowance for differing advantages and disadvantages of the several occupations³; while interest was regarded as just sufficient to compensate for the marginal impatience (time-preference) of savers, plus a sufficient inducement to overcome their fear of possible loss. All the expenses of running a business (in the absence of monopoly somewhere along the line) were believed to be resolvable into these two elements of wages and interest. Raw materials, for example, could be broken down into wages for the labor and interest on the

³ Marshall realized that there were peculiarities about the conditions of supply for labor that prevented this from working out in the short run, but it was apparently his view that it did hold for the very long run, although he admitted that the high earnings of some rare types of ability resembled the rent of land in certain respects. See Alfred Marshall, *Principles of Economics* (Fifth and later editions), Book VI, Chaps. IV and V.

invested savings that it took to produce them. Construction costs, advertising, freight charges, and the like could similarly be broken down into the same two factors. The rent of the land, which could not be traced to wages or interest, was disposed of by the argument that it did not play any part in the determination of prices. Prices were determined (on the supply side) by marginal costs, by which they meant the costs on marginal land, which, being too poor to yield a surplus over the wages and interest of the labor and equipment employed there, could command no rent. The high labor and saving costs of cultivating the marginal land made the prices of products high enough to yield a differential surplus to the owners of the better lands, on which costs of production were lower. Prices were not high because land rents were high; it was the other way around.

There are four serious errors in this theory of costs that make it untenable:

1. The theory completely ignores the disutilities involved in giving up alternatives. That is, it fails to take account of the opportunity costs which are essential to an understanding of the price system, and recognition of which is important for the attainment of social economy.

2. Wages, which are the largest single element of monetary costs, do not correspond, either in the short or the long run, to the efforts and sacrifices that are made in the rearing, training, and performing of labor. The plain fact is that labor is stratified into non-competing groups which are separated by barriers of heredity and environment that make it difficult for workers to move from the lower levels into the higher ones. The number of workers in the upper groups is relatively small, so that they are scarce, and hence can command wages that are disproportionately high—higher by more than enough to compensate for the extra education, training, or effort that the occupations in the upper groups require. Within each group there is competition, so that the wage differences prevailing therein do have a tendency to be proportional to the net advantages of the different occupations, but no such tendency is effective between occupations in different groups. For instance, pick and shovel labor that works under difficult and dangerous conditions (such as the sand-hogs who

work in air compression chambers in underwater construction) will get higher wages than common labor working under ordinary conditions, because there is competition between the two sorts of work. Laborers would not accept the more hazardous and onerous work unless the extra inducement were offered; hence the additional wage is a pecuniary measurement of the amount of disutility that the workers attach to this kind of employment. But a watchmaker, highly skilled, will get a higher wage than an ordinary day laborer, even though the work of the former may be more pleasant and generally desirable, because the unskilled worker is in no position to compete with the skilled one. The watchmaker, in turn, will not have as high a wage as a factory superintendent, for the latter is in a higher group, to which the watchmaker cannot attain. In these last two cases, the higher wages are due, not to differences in the disutilities of the employment concerned, but to the greater scarcity of men in the upper non-competing groups. The most striking disparities of wages are of this kind. It follows that the supply-prices of labor do not rest solely on disutilities. Since these supply-prices are one of the important elements of costs upon which the equilibrium prices of commodities depend, the latter prices cannot be a measure of the disutilities involved in production. The connection between prices and social sacrifices is thereby destroyed.

3. The effort of classical and neoclassical theories to exclude land-rent from supply-prices is not successful. Not every commodity is produced on marginal land, hence land-rents must enter into the marginal costs of at least some commodities. No-rent land is doubtless employed in the raising of many staple crops, so that in these cases the rent of the better lands can be calculated as a surplus over the yield of labor and equipment on the poorest land; but this is hardly possible for crops that can be grown only on special soils, and for urban sites used, for example, for office buildings and department stores. The classical theory that land-rent is a differential surplus measured from the extensive margin of cultivation rests on the idea that such rent arises only because of differences in the economic qualities of land; but it has been demonstrated that land-rent could arise without such differences. If all land were alike, and yet scarce in

relation to the demand for it, it would all yield a rent, and this rent would be an element entering into the supply-price of every commodity. This suggests that it is the scarcity of land of any given kind, rather than its difference from marginal land, that is the basic cause of its commanding a rent. One cannot escape from this conclusion by reasoning (as some have tried to do) that there is an intensive no-rent margin on every piece of land, where the only costs are wages and interest; for there is likewise an intensive no-wage margin in the use of labor, and a no-interest margin in the use of equipment, where there are no wages and no interest. Hence, if we are able to exclude rent from the category of costs because of the existence of such a margin, we must in logic exclude wages and interest also, which would lead to the absurd conclusion that there are no price-determining costs at all! This *reductio ad absurdum* forces us to the conclusion that the relation between the price of land and the price of commodities is no different from that between the price of any other productive factor and commodity prices. They all depend on the scarcity of the factor in relation to the demand for the products, and all costs are ultimately resolvable into scarcities.

4. The neoclassical theory of costs does not pay sufficient attention to the elements of monopoly that are scattered throughout our economic system. Where a monopoly controls the supply of a commodity, the price is usually above the antecedent costs of producing it, so that the price is out of proportion to the production pains that have been incurred. If the good monopolized is one that is used at subsequent stages of production, the monopolist's profit will appear as a cost at those stages, and will enter into the supply-price there. For instance, if a manufacturer of lenses must pay a monopoly price for the optical glass that he uses as a raw material, he must charge for his lenses accordingly, and the cost of the lenses to camera manufacturers will be correspondingly high, so that monopoly profits in the making of glass become a cost of production in the making of cameras. In this way monopoly gains anywhere along the line in a series of productive processes are passed on as costs that enter into the price of the final commodity. The monopolists can exact this gain only by restricting the supply of their products—that is by making

the products more scarce. Thus it appears that monopoly gains, like the extra wages of highly skilled labor and the surplus rents of superior land, have their roots in scarcity, either natural or contrived, and not in any disutilities that are associated with production.

These four errors in the neoclassical position are so serious that the disutility theory of costs must be rejected. A clue to the correct approach is to be found in the observation that each of the above four objections deals with some kind of cost (alternatives sacrificed, premium wages, land-rents, and monopoly gains) that does not arise out of disutility but is rooted in scarcity. This has led to a new theory of costs with this idea as its basis. Wherever there is a cause operating to make things scarce, if there is demand for that thing it will command a price, and that price will be reflected back to the scarce factors along the course of its production. These factors will then likewise command prices, derived from the values of their products. It is the factor-prices so arising that constitute the pecuniary production costs of which supply-prices are made up. Supply-prices are not independent of demand-prices, but are determined simultaneously with them in a process of competitive bidding by consumers (and derived bidding by enterprisers) for scarce goods whose scarcity reflects the prior scarcity of factors needed to produce them. In this process of bidding, the factors are drawn to the goods for which the bids are highest in proportion to the factors which their production requires. So, the factors go into the channels of greatest demand.

The principle, or law, of opportunity costs plays a significant role in this process. According to this law, the use of any factor in production involves a cost which is determined by the prices offered for that factor in its possible alternative uses. If consumers' demand for tomatoes justifies the offering of one dollar per hour for agricultural workers by tomato growers, then potato growers will have to meet that price or they can't get the labor. Dollar per hour wages thus become a cost of production for potatoes. It is equally true that the bids of potato growers for labor help to determine the labor costs for tomatoes, since (within the limits set by the demand for tomatoes) producers of the latter commodity will offer as much as, and no more than, they are compelled to do by the bids of their competitors in

the labor market. The equilibrium wage for labor is set at that point where the number of workers hired for all the uses to which it is put in that market just equals the effective supply of labor at that wage. The scarcity of labor, set off against the schedules of demand for it in all of its possible employments, determines both the allocation of the labor and its wage.

Figure 3, with the following explanation, will make the matter clearer⁴: Suppose that 30,000 workers all told are available in a certain region for the production of tomatoes and potatoes. In the

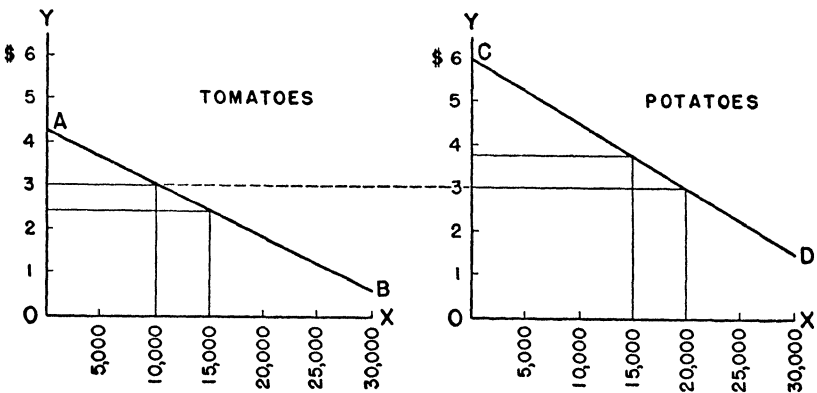


FIGURE 3. Opportunity Costs

drawing, let AB represent the value of these workers to the tomato growers, and CD their value to the potato growers. In other words, AB and CD are the demand curves for tomato labor and potato labor, respectively. The figures on OY indicate the prices (wages) per day which employers are able to pay for various quantities of labor, taking into consideration the demands for their products. As more workers are employed, their wages decline; because as more potatoes or tomatoes are grown by using the extra workers, the prices thereof will fall, in accordance with the law of demand.⁵ Now suppose that

⁴ Adapted from my *Principles of Economics: a Restatement* (1941), pp. 336-337.

⁵ The law of diminishing productivity is not a crucial factor here, because it is not a case of merely adding more labor to a fixed amount of land, but more likely of shifting both labor and land from one crop to the other.

the laborers are evenly divided, 15,000 being employed in each industry. According to the drawings, those employed in the tomato industry will be worth only about \$2.35 per day, while those in the potato fields will be worth \$3.75. Since the tomato growers cannot afford to pay more than \$2.35, potato planters can make a profit by offering somewhat better pay, say \$2.50, to attract labor away from the tomato fields. More men will then be employed in potatoes, and more potatoes will be grown, as a consequence of which they will no longer be worth quite so much; while less will be employed in tomatoes, as a consequence of which less of them will be grown, and they will be worth somewhat more. Tomato growers can then bid against the potato growers to hold their men.

As the value of labor rises in the tomato industry and falls in the potato industry, there will come a point where it will be equal in both. In our illustration this occurs when 10,000 men are employed at tomato growing and 20,000 in the potato fields. Labor is then worth \$3 in each employment, and wages will tend to be at that figure, for competition between the two sets of employers to hire all the men it is worth their while to have will prevent them from falling any lower. It will not pay the potato growers to attract any more workers away from the tomato industry, for if more than 20,000 are employed at potatoes they will be worth less than \$3; but they are worth \$3 to the tomato employers, who would not let them go for less. By a similar line of reasoning, it can be shown that tomato growers will not employ more than the 10,000 they now have. Therefore, a position of equilibrium has been reached in which each group is paying the same wage, set in competition with the other.

These examples are typical. Practically every factor of production has many possible uses. Since it is scarce, it is impossible to employ it fully in all of them. To use it for any one purpose means to forego the opportunity of applying it to other purposes. Its use therefore *costs* whatever it might have been worth if it had been put to its possible alternative uses. An enterpriser in one industry must consequently pay for his factors of production as much as his competitors in other industries (or, for that matter, in his own industry) are willing to pay. The combined bidding of all the competitors for the limited

supply of the factors of production thus establishes prices for them which, as we now know, constitute the costs of production.

The law of opportunity costs goes to the very heart of the price system; hence it is one of the most significant principles in the whole of economics. Consider, for instance, what is the inner meaning of the statement, so often heard, that the price of a commodity tends to equal its cost of production. It means that the price tends to the point where the factors of production required to make that commodity are worth just as much as, and no more than, they would be worth if they were devoted to the production of any other good for which they are suitable. If a commodity is selling at a price above its cost, it means that the factors employed in its production are worth more than in their alternative uses. This is the signal for more of that commodity to be produced; for when a price is above costs, the industry is enjoying profits above the normal returns to capital and enterprise, hence it tends to expand. By this means factors are drawn away from those uses where the product is worth less to those where it is worth more. This goes on until the price of the first product falls to equality with costs, which means that the value of the factors in that industry is now no greater than elsewhere. When the price of a commodity is less than its costs, on the other hand, it means that the factors employed in that industry are worth less than in other industries, because too much of the product has been produced, so that consumers do not value it as highly, in proportion to the factors employed, as they do other goods for which those factors might be used. As a result, enterprisers in the industry will suffer losses, and production will be reduced until equilibrium with other industries is restored (that is, until price rises to equality with costs). So, through the operation of the law of opportunity costs, productive resources are allocated in such a way as to maximize the satisfaction of consumers' demand. If that demand were an accurate reflection of social needs, this principle of allocation would be perfect; but it has been shown in Chapter Three that this condition is not fulfilled.

The scarcity-opportunity theory does not leave production-pains out of the cost picture. They enter into it so far (and only so far) as

they give rise to scarcity. If workers are sufficiently conscious of the fatigue, monotony, and hazards of employment to refuse jobs that do not offer a wage sufficient to compensate for these sacrifices, then the withholding of their services from the market will make them scarce enough to command such a wage. Likewise, if income receivers will not save, or will not lend their savings, unless they receive a rate of interest high enough to offset their impatience and fear of possible embarrassment or loss, then the resulting scarcity of investible funds will make interest high enough (given an adequate demand) to meet this condition. It is the same with any other factor of production which can be supplied only at the cost of production-pains. There appear to be three such factors: effort, saving-investing, and risk-bearing. In these three cases, a pecuniary estimate of the pains involved may be presumed to be present, more or less consciously, in the minds of those who supply the factor, and this estimate determines its supply-price. Since this supply-price varies with the amount of the factor to be furnished, usually going up with increasing amounts, there arises a schedule of supply which is set off against the schedule of demand, the latter based on competing bids of employers in all the possible uses of the factor. An equilibrium price tends to be reached at which the effective demand and effective supply are equal. Production-pains thus operate on the supply (scarcity) side, and alternatives given up (opportunity costs) on the demand side.

There are other causes of scarcity that do not arise out of production-pains. In this category must be included: aptitude, land space, natural materials, monopolistic withholding, and non-reproducible man-made goods used in production. By aptitude is meant innate capacity or inborn talent, which is distributed by biological and environmental influences in such a way as to divide the population into non-competing labor groups. The scarcity of certain very useful aptitudes enables the workers who have it to command wages that are disproportionately high in relation to their production-pains. Land space refers to building, farm, and other sites; natural materials to mineral and other fixed deposits. Land fertility is excluded from these categories because (unlike them) it can be produced by man, and therefore its supply is dependent on the pain-costs of effort, saving,

and risk-bearing. Monopolistic withholding occurs when a monopoly creates an artificial scarcity of some productive resource, such as a raw material, by curtailing the output so as to raise the price above its own costs. The price here is set by competitive bidding for the scarce resource, on the principle of opportunity costs, the same as for any scarce factor of production; and the extra price enters into the costs of production of all enterprises that use the monopolized product at subsequent stages in the succession of production processes. This is just as truly a cost of production as any other, and enters into the price of the final product in exactly the same way. The case of non-reproducible products arises when some unique thing made by man enters into an industrial product and so involves a cost. For instance, the specifications for constructing a building might call for the use of genuine antique chandeliers as lighting fixtures. Instances of this kind are not numerous enough to be important, but they should be mentioned for the sake of completeness.

It is to be noted that these five kinds of costs that do not arise out of production-pains can be attributed to the fact that the supply is not readily increasable by human effort, at least not increasable enough for price to fall to the point where it just suffices to compensate for production-pains. In the case of monopolistic withholding it could fall, but is artificially prevented from doing so. In other words, the supply is relatively fixed, or quite inelastic. This suggests that these five categories can appropriately be designated by the term *fixed supply costs*, or (more accurately) *inelastic supply costs*. The term "pure rents," which has been used in this connection by some writers, is substantially equivalent.

Although the main causes of scarcity in these inelastic supply costs are not to be found in production-pains, they are not entirely dissociated from them. The number of persons that is present in a given non-competing group is determined by biological and sociological influences that set limits to the quantity of aptitude of each kind that the market can draw upon. This aptitude must be paid for in proportion to its scarcity, relative to demand. But even very able persons must perform exertions in production, and these exertions (effort) involve pain costs. There may also be risks, and even waiting, associ-

ated with their employment. So they may have to be paid wages that include elements of all three basic kinds of pain costs, in addition to inelastic supply costs. The case of natural materials is similar. The quantity of minerals that exists in the ground is an unalterable fact of geology. Those which nature has given but sparingly will command higher prices ("rents") than those with which she has been more generous. But more mineral deposits can sometimes be discovered by hunting for them, and this hunting is associated with production-pains. Hence the price of natural materials will be composed

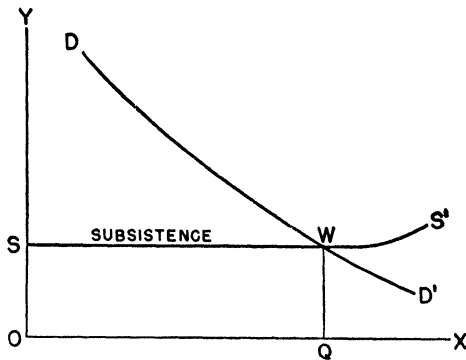


FIGURE 4. Production Pain Costs in the Supply of Unskilled Labor

partly of inelastic supply costs and partly (for the marginal increments of supply) of production-pain costs. Land-space is no different. A certain amount of it is supplied gratis by nature, but modest additions can be made to this amount by such measures as drainage and irrigation. The price that the free land can command is a pure scarcity rent; that of the extra land is at least partly a compensation for production-pains. The goods produced by monopolies incur production-pain costs which must be covered by the price, but the price is "loaded" with an extra premium made possible by curtailment of production, so that both kinds of cost are present in this case also. Finally, both are present in the price of non-reproducible man-made goods used in production, for even the number of antiques, or the paintings of great masters, can (and does) grow as more dealers scour the countryside and elsewhere for hidden treasures.

The relation between production-pain costs and inelastic supply costs can be clarified by the accompanying three diagrams (Figures 4, 5, and 6). In these drawings quantities of the productive factors are measured along the base line OX and prices of the factors along the vertical line OY , according to the usual convention. Figure 4 represents the case of unskilled labor in a country where there is overpopulation. Here the wage in the long run will come to OS , which is barely enough to provide subsistence. In this case, since wages just suffice for the maintenance of labor, including the rearing of suffi-

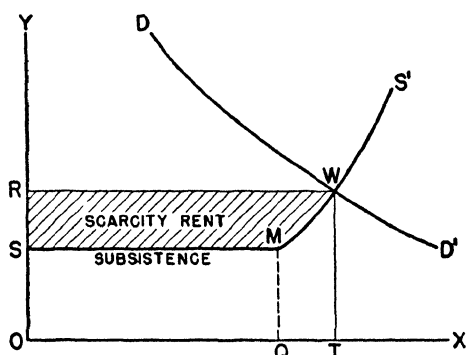


FIGURE 5. Mixed Costs in the Supply of Skilled Labor

ent children to replace the workers that die off, they provide merely a compensation for production-pains and involve no element of inelastic supply costs. Figure 5 represents the case of skilled labor, which is supposed to be sufficiently scarce to command a wage higher than subsistence. This labor would do a certain amount of work (OQ) for a subsistence wage if no higher remuneration was obtainable in the market, hence the supply curve is SM for the quantity of work OQ . Beyond this, the workers will put forth more effort if a sufficient inducement is offered; hence the supply curve slopes upward from M to S' , reaching an equilibrium with the schedule of demand at W , so that the wage tends to settle at TW . In this case the wage is just sufficient to compensate for production-pains for the marginal increments of work, but contains a fixed-supply return (measured by the area $SMWR$) for all other increments of labor.

Figure 6 represents the case of land-space. Here the quantity of land-space of a given kind provided gratis by nature is OQ . Since this amount would be available at any price which the market might offer, the supply curve for it slopes vertically upward to infinity. However, if the price gets above QM , it will pay to provide additional land by the drainage of swamps or the irrigation of deserts, so that from here on there is an elastic supply-price represented by the curve MS . This curve comes into equilibrium with demand at R' , the corresponding quantity of land being OT . The rent per unit is OR . Nearly all of the

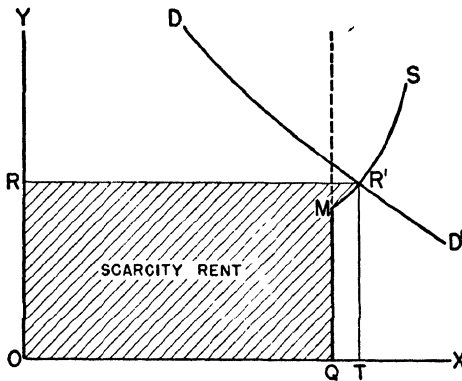


FIGURE 6. Inelastic Supply Costs for Land

return to landowners is scarcity rent, $ORR'MQ$, but a small portion, $QMR'T$, is merely compensation for the production-pains of reclaiming waste land and making it fit for use. Observe that in each case production-pain costs give to the supply schedules whatever element of elasticity they may possess. The fixed scarcity costs tend to make the supply schedules inelastic.

To sum up: the pecuniary costs of production can be resolved ultimately into eight basic elements, which are as follows: (1) effort, (2) saving-and-investing, (3) risking, (4) aptitude, (5) land-space, (6) natural materials, (7) monopolistic withholding, (8) non-reproducible man-made goods. The neoclassical theory recognized only the first three of these. The superiority of the scarcity-opportunity theory is that it includes all eight.

The reader may be inclined to wonder whether simultaneous operation of production-pain costs and inelastic supply costs may not involve a confusion that interferes with the fulfillment of the surplus utility principle. However, this is not so, for the two kinds of cost do not conflict with each other. The principle of surplus utility requires that both kinds of disutility (pain costs and opportunity costs) be balanced against social needs. The production of every good should be carried to the point where marginal utility just equals the two marginal disutilities. Let us apply this to the case of highly skilled labor. We may assume that the corrective measures suggested in Chapter Three have been put into effect, so that we can take demand schedules as an accurate register of social needs. The presence of a scarcity surplus in the relatively high wage of this kind of labor is a means of giving expression to the alternative goods sacrificed in producing the commodity on which this labor is employed; for in the competitive bidding by enterprisers for this labor, the wage will come to equilibrium at the point where the value of the marginal worker employed on product A is just equal to the value of the marginal worker employed on product B. That is to say, the last unit of A has just the same utility (in proportion to the factors used) as the final unit of B. Thus the sacrifice involved in giving up further production of B is reflected in the costs of producing A because of the scarcity surplus in the wage. This does not in the least interfere with the other principle that this skilled labor should be used in each of its employments up to, but not beyond, the point where the production pains balance the marginal utility of the goods produced; because each worker is free to work up to (and to stop at) the point where he feels that the wage his labor commands in the market will no longer compensate him for the additional effort, loss of leisure, or other felt production pains that he would have to undergo if he worked any further. So both margins of cost are equated simultaneously with marginal demand-price. This is seen clearly in Figure 5, where the high wage created by labor scarcity is shown to be exactly equal to the marginal pain-cost WT .

We need to bear in mind here Marshall's dictum that it is not the

marginal supply-price that determines the wage. We go to the margin to see where the forces come into equilibrium, but it is the total supply and total demand that determine the price.⁶ The total quantity of labor in the market (taken in conjunction with the demand) is what determines the wage, and this quantity is limited by the two facts, that the number of such skilled workers is few (the inelastic supply element) and their willingness to work has a somewhat elastic limit (the pain element).

A similar line of reasoning can be applied to land-space. The scarcity rent balances the opportunity cost of using the land against the demand for its products. At the same time the scarcity price affords an opportunity for reclaiming land up to the margin where it would not be worth while to go farther. Of course the existence of a scarcity land-rent does not interfere with the employment of labor and invested savings on the land up to the point where their marginal costs just balance the marginal demand.

The same argument holds for all the other inelastic supply factors except monopolistic withholding. In this one case the output of goods is stopped short of the point where marginal costs equal the price of the product. As a result, the principle of opportunity costs is distorted; for although the monopolist must pay as much for his factors as they would be worth in other employments, he does not carry his own production down to the place where his goods are worth just as much as, and no more than, the alternatives sacrificed. By restricting his output he keeps the price of his goods above that point, which means that factors are being employed elsewhere that would be worth more if used in his industry to produce additional goods. This is a social waste. This criticism is not only applicable to industrial monopolies, but also to labor monopolies. When an exclusive union restricts its membership by racial discrimination, high initiation fees, or other devices, it forces the excluded labor into the production of goods that are worth less than the goods that would be produced by the union if its membership was open to all com-

⁶ Alfred Marshall, *op. cit.*, Book V, Chap. VIII, § 5; also Book VI, Chap. I, § 8.

petent workers in its trade. The principle of opportunity costs is thus defeated.

PRIVATE COSTS AND SOCIAL COSTS

The analysis of the preceding section shows that a normative price system offers good possibilities for giving effect to the principle of surplus utility so far as its cost side is concerned. There are, however, some obstacles that cause the system to fall short of fully realizing these possibilities. One of these obstacles, monopoly, has just been explained. There are others that must now be developed.

Production-pains are reflected in pecuniary costs only if they enter into supply-prices, and they will so enter only if the pains are consciously felt by those who supply the factors. For example, suppose that the owner of a machine expects it to last for twenty years, and accordingly allows for depreciation at the rate of five per cent per annum. Suppose further that his expectations prove to be incorrect, the machine wearing out in ten years instead of twenty. In this case half of its original cost will never be charged up to the prices of the products which it makes. These prices then do not include the full pain costs of labor and saving that went into the machine.

This incomplete recording of pain costs is especially important in the case of labor. A great many workers are somewhat shortsighted and overoptimistic, so that they do not take fully into consideration the future pains that are likely to grow out of their present employment. They are likely to overlook such things as the effects of long hours and bad working conditions on their health, the possibility of heavy medical expenses and loss of earning power caused by industrial accidents, the coming on of old age prematurely because of earlier overwork, and the deleterious effects of employment on children. Because they do not feel these things keenly enough, workers offer themselves for hire at wages which are lower than they would accept if they realized all the pains that are involved, and gave sufficient weight to them. As a result, the supply-price of labor in some occupations is lower than it should be, and employers in these trades get their labor for less than its full pain cost. This causes a

social waste, for the principle of surplus utility is violated. The social benefits of some of the goods produced are not sufficient to compensate for the pains their production requires. If the full pain costs were reflected in the wages of the labor, the prices of the commodities would be higher, so that only as much of them would be purchased (and hence only as much produced) as would be socially worth the human costs involved. Then labor would be less likely to be overworked, and its wages would be high enough to provide for the contingencies of impaired health, accidents, or premature old age, and children would be withheld from employment, with the result that labor would be better preserved and production would be correspondingly increased in the long run.

Another case of production pains that are unfelt, and hence unrecorded in prices, is to be found in the bearing of property risks. Some risks are well enough known and calculable to be provided for by insurance. Here the costs of property losses are felt and charged up to production, so that they enter into prices. But non-insurable risks (uncertainties) enter into prices only to the extent that the risk-takers are aware of them, and are deterred from producing because of them. In the loan market the hazard of possible loss is felt, at least to some degree, and it finds expression in the premium for risk that enters into the supply-price of investible funds. Elsewhere in the business world, however, there are many uncertainties that are not sufficiently represented in prices. It is a well-known fact that many people will submit themselves to risk of loss for the chance of a reward that is not worth the risk involved. For instance, a rural fire company may raise funds for the purchase of new equipment by selling 4000 lottery tickets at \$1.00 each for an automobile, worth \$2000, that is to be awarded as a prize to the lucky winner. Since the cost to the ticket buyers in this case is \$4000 and the prize worth \$2000, it is obvious that the loss of the chance-takers greatly exceeds the gain. Yet this sort of thing is done all the time. Apparently, the lure of a great prize dazzles the minds of the risk-takers, so that they are blind to the fact that as a group they must lose. Something of this same principle is probably at work in industry, where business

men will often be drawn into enterprises where there is the possible chance of large profits for some, but a high probability of losses for the group. This is particularly true of the exploitation of mineral resources, such as gold and oil, where thousands will flock to the place where a rich strike has been found, and invest their labor and savings in fruitless search for a fortune. The enormous number of business failures that occur every year in this country in many branches of industry shows that business men are prone to underestimate the chances of loss. The extra number of suppliers in such cases as these tends to reduce the supply-prices of the products below what they should be, with the result that prices do not cover all the costs of producing goods, and the price system fails to guide production wisely.

There are certain so-called overhead costs associated with the durable plant of a business enterprise that run on pretty much the same whether the plant is operating at full capacity, part capacity, or not at all. These are sometimes called fixed costs, and this is a better term because it is descriptive of their unchanging character; but this term must not be confused with the fixed-supply costs (scarcity rents) that were described in an earlier paragraph. When demand is slack, the price of a product may fall to the point where not all the costs can be covered. Nevertheless it pays to go on producing so long as the price will yield any surplus over the operating (or variable) costs, because this surplus will pay a part of the fixed costs that would otherwise be a dead loss. The principle that it is wise economy to go on producing under such circumstances is a good one for society, as well as for a private business; for if the community has resources that under existing market conditions cannot bring in a sufficient return to cover all the costs associated with them, it is better to employ them for what they will bring. For instance, if coal mines and miners are idle because of a temporary slump in the demand for coal, it would be better to go on producing, even if the price does not cover all the costs, because the miners must be supported somehow, and the cost of this support will be a net social

loss if they are not producing a commodity of any value. Even if the coal they mine will not bring a price sufficient to pay their wages and yield a return on the investment in the mine equipment, it will at least meet part of the expense of supporting the workers and their families, and thereby reduce the loss to the community.

J. M. Clark has shown that the separation of the vertical stages of industry into many independent enterprises has the effect of converting the fixed costs of one business into variable costs for the next higher enterprise in the succession of processes.⁷ For example, the making of woolen cloth involves certain fixed costs for the manufacturer, and these will normally be reflected in the price of the product. However, the entire cost of the cloth is variable to the manufacturer of woolen garments, for the amount of cloth he buys will be in direct proportion to the number of garments he sells, and if demand for the garments declines he will buy less of the cloth, thereby reducing his expenses correspondingly. This situation is typical of industry generally, so that whenever there is a slump in demand for final products, the manufacturers at the later stages of production reduce their orders, and even cancel their contracts, with suppliers at earlier stages. Such a reduction of orders often forces the suppliers to shut down their plants, in whole or in part.

On the principle that it is better to operate so long as the price will bring any surplus over the fixed costs, it would be good economy for the community to keep all these plants going, but the fact that the cost of materials and supplies appears as variable to the users thereof obscures their fixed character. Since the cost of maintaining the idle plants at early stages is not a burden to enterprisers at later stages, the latter have nothing to gain by keeping the antecedent plants going. So these plants are allowed to lie idle in slack times, leading not only to waste of capital resources, but also to waste of labor, for a considerable number of workers will be thrown into unemployment by the idleness of the factories. This is a factor in our recurrent business depressions. It reveals a defect in our system of accounting, by which the important social cost of idle resources

⁷ J. M. Clark, *The Economics of Overhead Cost* (1923), Chap. XVIII.

is left out of private accounts at the final stages of industry, so that producers at these stages can impose idleness on the rest of the community. If the fixed costs of maintaining the plant and labor at early stages were carried on through to the end, it would then be good business to keep the whole chain of processes in operation for whatever returns they would bring, and much business depression and unemployment would be avoided.

The subsistence of labor is a fixed cost that must be met, whether the labor is employed or not, in any community that does not allow its people to starve to death; yet wages, except for an indispensable nucleus of workers, also appear in business accounts as variable costs. Because of this it is always possible for an employer to reduce his costs by laying off a part of his force when demand is slack, and this is one of his first acts in such a situation. This makes it necessary for the displaced workers to support themselves out of their own savings, and when those fail the burden is passed to the community, which must take care of them by means of private or public philanthropy. If the fixed character of these labor costs was recognized, the workers would be kept employed; but so long as the burden of supporting the workers when idle is not placed upon industry, the practice of laying off workers whenever demand is slack will continue.

The cost of maintaining labor in periods of cyclical or chronic unemployment is a general one that is properly chargeable to industry as a whole. There are more restricted cases of unemployment in which the cost is properly chargeable to the particular industries concerned. This is true of unemployment occurring in seasonal or irregular trades, and of idleness resulting from occupational disease and industrial accidents. All this unemployment is a kind of pain cost that should be charged up to the products and entered into the prices thereof. Correct social accounting would see to it that this is done; but it has not generally been done under existing practices, except in the case of accidents, where workmen's compensation laws have placed the burden on the employers, so that it has become a production cost.

Industrial operations frequently have injurious effects upon the community at large for which business men have often not been held responsible.⁸ For example, pigpens generate disagreeable smells that may be very offensive in an urban community; smoke from a manufacturing district may shut off the light and pollute the air of a whole city; drilling an oil well on one man's land may reduce the flow of oil from his neighbors' wells; factory noises may disturb the peace and quiet of residential districts when the factories are not sufficiently isolated by zoning laws; and the building of skyscrapers in cities that are already overcongested leads to a host of traffic problems and various other social difficulties. There are other deleterious effects of business operations that may be even more widely diffused and more serious for society. Among these are the impairment of home life and child rearing caused by the employment of women and children, the dissipation, poverty, and crime that are incidental to the liquor business, prostitution, and gambling, and, finally, the international frictions (sometimes resulting in war) that arise out of foreign investments. These are social costs that do not usually find their way into private cost accounts, and hence are not reflected in the prices of commodities. The price system thus fails to record some important disutilities that are involved in production.

Another obstacle to the fulfillment of the principle of surplus utility is the presence in private accounts of costs that are not balanced by commensurate social benefits. For instance, a large part of the enormous sums spent for advertising in this country serve no useful purpose, their effect being merely to draw customers toward this or that brand where there are no important differences in quality, so that it is a matter of indifference to society which brand is preferred. Worse than this, advertising often promotes the sale of socially useless, or even injurious products. All this advertising is nevertheless a cost that has to be recovered from the price of the products. Much business activity is devoted to pecuniary strategy, such as manipulating corporation finance so as to enrich insiders at the expense of other stockholders, rigging or cornering the markets,

⁸ This point has been developed by A. C. Pigou in *The Economics of Welfare* (Third Edition, London, 1929), Part II, Chap. IX.

and so on. This activity is costly and must be paid for by adding the costs to the prices of the products concerned. The resources that are drawn into all these various kinds of activity involve opportunity costs that are not offset by any social gain, for these resources could be made to yield much greater benefits if diverted to more worthwhile purposes.

However, the difficulty here is not so much the fault of the cost mechanism as it is of demand. It is because consumers are misled by advertising, and stockholders are not sufficiently informed about the securities they purchase, that resources can be profitably misused in these ways. Since these matters have already been sufficiently dealt with in earlier chapters, they need not be developed further here.

Pigou⁹ erroneously argues that in a certain class of cases there are increasing production costs attendant upon increasing output that are not offset by social benefits. He divides increasing costs into two classes: Those that arise because of the tendency toward diminishing physical returns, and those that arise because the price of factors goes up as more of them are demanded for the expansion of output. He believes that increasing costs of the first type do correspond to social costs, but that those of the second type do not. His reason for this view is that, in the first case a greater quantity of productive factors must be employed per unit of product as output increases, but in the second case there is no increase in the factors, but only in their prices. His error lies in the fact that his theory of real costs recognizes only production pains, to the exclusion of opportunity costs. He fails to see that the rising price attached to a factor of production when more of it is demanded is a reflection of the curtailment of other goods that must take place as factors are drawn away from other industries, and that this is just as real a social cost as any other. When correctly viewed, then, the price system must be exonerated from blame in this particular instance. It is functioning here in full harmony with the principle of surplus utility.

My analysis of the price mechanism for recording costs has revealed the following types of imperfections in it: the inclusion in

⁹ *Ibid.*, Chap. XI.

costs of scarcity rents created by monopolistic withholding; the failure of costs to record unfelt production pains; the exclusion of social fixed costs because of the shifting and conversion of overhead costs to operating costs in private accounts; the omission from private cost accounts of general injuries to the community at large. There are various measures that might be taken to improve the working of the price system in these matters.

The abuse of monopolistic withholding can be dealt with most effectively in two ways. Where the optimum size of the business unit is sufficiently small to permit a considerable number of separate enterprises to exist without loss of efficiency, business practices should be so regulated as to enforce fair methods of competition. Where the optimum unit is so large that efficiency requires an industry to be dominated by only one, or a very few, enterprises (as, for instance, in the case of public utilities), monopoly or oligopoly should be permitted to exist, under strict governmental supervision, with price fixing, or else the industry should be owned and operated by the state.¹⁰

The problem of unfelt production pains can be dealt with partly by prevention, and partly by devices for injecting a pecuniary measurement of these pains into production costs. The pains associated with the employment of women and children in industry, and with dangerous and unsanitary working conditions, can be very much reduced by appropriate legislation affecting women and child labor, and by health regulations, sickness and accident prevention work, accompanied by adequate factory inspection. Where the unfelt production pains cannot be prevented, then private costs should be made to include them. The best way to accomplish this is by means of social insurance, providing compensation to employees in case of industrial accidents, occupational disease, unemployment, and old age. If the cost of this insurance is levied against employers (as it is in this country in the case of accident compensation), it enters directly into their costs of production. If the costs are levied on employees, in whole or in part, it tends to make the production pains consciously felt by the workers, and this may be presumed to have

¹⁰ Cf. the discussion of the optimum size of business units in Chapter Eight.

some effect on the supply-price of labor, so that it will lead to higher wage costs and thus be reflected in the prices of the products. However, since the effect on employers is much more direct and certain than that on employees, there is much to be said in favor of placing the greater part, if not the whole, of the costs of social insurance on the former group. The burden does not rest upon the employer in the end, for he merely adds it to the price of the product, and so recovers it from consumers. But this method has the advantage that the costs go right into his accounts; and it has also this in its favor, that it stimulates him to introduce preventive measures that will reduce these costs to a minimum.

To meet the problem of the shifting and conversion of fixed costs, unemployment insurance is again indicated, particularly if the burden is placed on employers, for the latter are then forced to pay for the maintenance of labor whether it is employed or not, and this places some incentive upon them to stabilize their operations in such a way as to keep labor on their payrolls in order to reduce the burden of unemployment costs. There are also various preventive measures that will help to reduce the social burden of industrial idleness, although the problem of business cycle stabilization is not easy to deal with and may never be completely solved in a capitalistic economy. Vertical integration of industry, by reducing the number of separate enterprises in the successive stages of production, is the most direct method of combining accounts all the way along the line, so that what is fixed cost at earlier stages will not appear as variable cost later on. Such integration should be encouraged, but it needs to be accompanied by governmental regulation so that monopolistic abuses may be prevented. All measures that tend to general stabilization of business activity and better forecasting of demand will help to prevent "idle overhead" in the earlier stages of industry, by tending to achieve better articulated adjustment between suppliers and users of materials and equipment.

For dealing with those general community injuries that are now omitted from private cost accounts, prohibition of clearly undesirable types of business activity, such as gambling, prostitution, and the opium traffic, is indicated. Some factory nuisances can be ren-

dered innocuous by zoning laws which will isolate manufacturing from residential districts. Others can be reduced by levying special taxes on firms which do not take adequate measures to reduce their annoyances to a minimum. For example, a fairly heavy tax could be placed on factories that do not install smoke preventive devices. This injects a monetary measure of the injury into production costs, and thus puts an incentive on the producer to eliminate it. Finally, urban congestion and the host of social problems growing out of it can be dealt with by wise measures of city planning.

Many of these measures are already partly in effect, and they are sure to be extended as time goes on. Here, as elsewhere, it is evident that satisfactory functioning of the price system is dependent on changes of the institutional setting in which it operates.

CHAPTER SEVEN

Full Employment¹

FULL EMPLOYMENT, OVEREMPLOYMENT, AND UNDEREMPLOYMENT

This chapter will deal with the principle of full employment, which can be regarded as a corollary to the principle of surplus utility. The principle was stated in Chapter One as follows: Every productive resource that is capable of yielding a surplus of utility over disutility should be kept fully employed, except when needed as a reserve for future contingencies. It will be recalled that this applies to all the factors of production. However, in this chapter it will be discussed primarily in its application to labor, because it is in that connection that it presents a most acute problem for our times.

The term full employment requires some explanation. A precise definition can be derived from the principle of surplus utility, with which it is closely connected. A factor of production is fully employed when it is used up to the point where the marginal utility of its product equals the marginal disutility occasioned by its use. It is clear, from the discussion of the previous chapter, that the terms utility and disutility here must not be interpreted in terms of pecuniary demand-prices and costs, but in terms of social benefits and sacrifices.

If any economic resource is used beyond the point of full employment as just defined, it may be said to be overemployed. Overemployment occurs when labor is overworked by excessively long

¹ Parts of this chapter (although written for the present essay) have already been published in Chapter X of the Fourth Edition of *Applied Economics*, by Raymond T. Bye and William W. Hewett; copyright 1947, by F. S. Crofts & Company. They are here reproduced by permission of the present publishers, Appleton-Century-Crofts, Inc.

hours, or when it is speeded up to a pace that is inconsistent with the maintenance of physical and mental health. Women are overemployed if their work interferes with the performance of their functions as mothers and home-makers, and children are overemployed if their work hinders their education or retards their physical and mental growth. To some extent, existing customs and laws which set standards for the length of the working week, for the employment of women and children, and so on, may be taken as reflecting the community's judgment concerning the balance between utility and disutility in the case of labor; but this judgment may fall short of enlightened standards. On the other hand, the prevalence of make-work and lump of labor notions may cause prevailing ideas concerning the most appropriate amount of labor to fall short of full employment. The price system is entirely neutral with respect to the standards that happen to prevail at a given time and place. It merely records the value of labor as employed in the market, deriving that value from the pecuniary schedules of demand and supply.

There is sometimes overemployment of natural resources other than labor. When land is worked to the point where its fertility is exhausted more rapidly than it is replaced, or cultivated in such a way that erosion takes place, it is overemployed. The existence of the dust bowl area in this country is evidence that such a condition of overemployment has been widespread in recent years. In the exploitation of mineral resources, gradual exhaustion of deposits cannot be avoided, hence such exhaustion cannot be regarded as overemployment in this instance. However, in striking a balance between utility and disutility here, due weight should be given to the needs of the future. That is the reason for the proviso, in the statement of the principle of full employment, concerning a reserve for future contingencies. The profligate waste that has characterized the exploitation of natural resources on the American continent is a notorious illustration of the need for this proviso. Here again the price system records prevailing practices uncritically; it is incapable of taking into account those elements of disutility that are not determining factors in the behavior of the persons who exploit the land.

Underemployment occurs whenever a useful resource is not used

up to the point of equilibrium between marginal utility and marginal disutility, or if it is not used at all. In the latter case it is called unemployment. Unemployment has frequently been classified into voluntary and involuntary, and these terms can equally well be applied to underemployment.

In the case of labor, voluntary unemployment occurs when a person is in such circumstances that he does not have to work for a living, and prefers not to do so at prevailing wages. A considerable proportion of the rich make that choice, and spend their lives very largely in leisure and enjoyment. From the social point of view this is a waste. These persons could, and should, contribute to the production of useful goods. Useful labor would do them rather more good than harm, and therefore would not involve more disutility than the utility of their products. The rich sometimes waste not only their own labor power, but their property as well. For example, much land is held in idleness in vast estates for scarcely any useful purpose except to display an excessively large lawn, or perhaps to serve as game preserves. However, this is not so much a problem of employment as it is of want selection. It arises primarily out of the unequal division of income, so that if this were corrected by making people earn what they get, as suggested in Chapter Four, this particular sort of unemployment would disappear. There is also underemployment of capital when property is kept out of use, as in the case of real estate held for speculative purposes and industrial plant kept idle by monopolies to curtail output, so that prices can be forced above production costs. Very frequently there is voluntary underemployment on the part of wage-earners. One form of this is the "slow-down." Where the slow-down is a defense against excessive speeding up by employers, it does not amount to underemployment, but is rather a means of preventing overemployment, and is fully in harmony with the social welfare. When it goes beyond this, so that it becomes curtailment of output for the purpose of making labor scarcer or protecting inefficient workers, or for postponing a feared lay-off at the end of a present job, it is underemployment, and violates the principle of surplus utility. Labor unions are frequently guilty of these practices. Another type of voluntary under-

employment (in this case amounting to unemployment) is the strike. Here the underemployment is a coercive measure to gain ends that may or may not be conducive to the social welfare. It is a sad commentary on our civilization that we have not yet found a better way of achieving justice in the relations between employers and their employees.

It has just been explained that for purposes of welfare economics full employment, overemployment, and underemployment should be conceived in terms of social utilities and disutilities. However, for dealing with the practical problem of employment in the contempo-

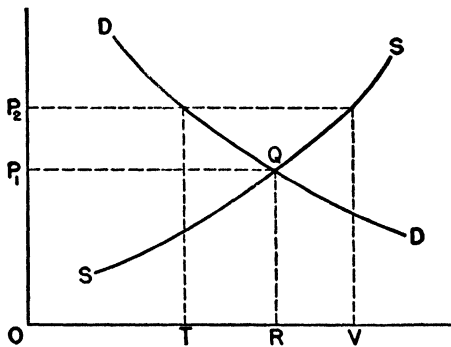


FIGURE 7. Disequilibrium Unemployment

rary world, it is best to make the analysis in terms of market demand and supply schedules as they are actually found, with all their imperfections. Taking this approach, involuntary underemployment or unemployment may be defined as that state of the market for a factor of production in which, at the price prevailing, the effective supply exceeds the effective demand, so that some of the factor is employed only on part time (underemployment) or is not employed at all (unemployment). It will usually take the form of Figure 7. Here the schedule of demand (*DD*) intersects the schedule of supply (*SS*) at *Q*, so that the equilibrium price is OP_1 . If this price prevails, the effective demand and effective supply will both be the same (*OR*), so that there is full employment. That is, all of the factor that seeks employment at that price can find it. However, if

for any reason a higher price prevails (such as OP_2), there will be unemployment, for at this price the effective supply is OV , whereas the effective demand is only OT , so that there is a residue (TV) that remains unemployed. Unemployment of this type may be called *disequilibrium unemployment*. It is likely to be self-corrective, and therefore temporary; for the excess of supply over demand tends to bring the price down until equilibrium (and full employment) are established.

Another type of unemployment is conceivable, which may be called *quasi-equilibrium unemployment*. It is illustrated in Figure 8. Here there is a minimum price (OP) below which, for one reason

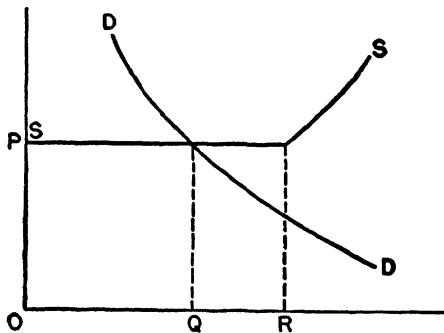


FIGURE 8. Quasi-Equilibrium Unemployment

or another, the factor cannot be supplied at all, yet at this price a very considerable amount (OR) of the factor will be supplied. The schedule of demand (DD) is so weak that even at this minimum price the effective demand is only OQ , so that the quantity QR of the factor is unemployed. I have called this quasi-equilibrium unemployment because the situation is an equilibrium one in the sense that the long-run marginal demand-price is equal to the long-run marginal supply-price; but there is not an equality between the effective demand and the effective supply, which there would be if there was a stable equilibrium of the kind usually conceived in economic theory. There is reason to believe that this type of unemployment may occur in the market for investible funds under certain circumstances, and it is the belief of the Keynesian economists that it may be a chronic

condition in wealthy economies.² In a market where a lower limit is set upon wages by minimum wage laws or labor union policy, it may also occur in the case of labor.³ This type of unemployment may be permanent if it is not possible for the price to fall low enough for the effective demand to increase to the place where it would be equal to the effective supply.

Although unemployment of capital is not a negligible problem, unemployment of labor is very much more serious—so serious, in fact, that it is perhaps the most critical one that modern capitalism has to deal with. The widespread unemployment of labor that has prevailed in recent decades is a source of discontent so great that it threatens the internal cohesion, and hence the stability, of our society. It is not too much to say that if relatively full employment of labor cannot be maintained in a capitalistic system, then that system is doomed. I shall therefore make it the primary task of this chapter to delve into the causes of this phenomenon, particularly to inquire whether it reveals a fundamental incompetence of the price system to guide the economy to full employment, or whether it is the result of other faulty institutions that block the normative price tendencies which would lead to full employment if those institutions were corrected. Although the discussion will thus be confined primarily to the labor market, much of it will be applicable to the market for capital as well.

THE NEOCLASSICAL THEORY OF EMPLOYMENT

The problem can conveniently be approached by using the neo-classical theory of employment as a starting point. This does not mean that I regard the theory as offering a complete and final exposition of the subject; but it does shed much light upon it (more, in fact, than the Keynesian thesis), and it constitutes a useful introduction. According to the theory, full employment of all the factors of production tends to prevail automatically in a normative price economy, so that unemployment can occur only as the result of frictions or interferences that prevent the reaching or maintaining

² See Chap. Five, pp. 129ff, and below, pp. 212ff.

³ See below, pp. 208ff.

of normal equilibria between the demands and supplies of the various goods that are offered in the market. That is to say, unemployment is not the result of any logical inconsistency or inherent defect of the normative price system, but only of obstacles in our economic institutions that prevent it from working perfectly. In particular, it is not the result of an excessive aggregate supply of labor, for the aggregate demand for goods must always be great enough to employ all the labor that offers itself for hire. These conclusions are derived mainly from two basic propositions which constitute the foundation of the theory. These are Say's law of markets (commonly known simply as Say's law) and Marshall's principle (or law) of substitution.

The law of markets was first worked out by J. B. Say in terms of barter. He showed that each person engaged in industry produces goods, not for his own use, but in the expectation of exchanging them for the goods produced by others. For instance, the shoemaker expects to offer his shoes in the market in exchange for food, clothing, and shelter for himself. In this way each person's product constitutes his demand for other goods. It follows that the sum of all the products goes to make up the total demand. Aggregate demand must therefore be not only equal to aggregate supply, it is *identical* with it. This is the essence of Say's law, that total demand and total supply are one and the same things. It follows that there cannot be a deficiency of total demand for goods in relation to the total supply of them, nor can there be an excess of total supply in relation to total demand.

This is all very well for a barter economy, in which goods are exchanged directly for other goods; but in the modern economy goods are sold for money, and the prices at which they are sold must be adequate to reimburse the enterprisers for money costs previously paid out in the course of their production. Otherwise the enterprisers will suffer losses, and production cannot then be continued. What assurance is there that the aggregate of money demands will be sufficient to cover the aggregate of money production costs? An adaptation of Say's law to the modern economy answers this question by asserting another identity, the identity between money incomes and money costs.

This can best be demonstrated by means of Figure 9, which shows the flow of money from enterprisers to the owners of the factors, by whom it is spent for goods, thus flowing back to enterprisers. This cycle is commonly known as the circuit flow of money. It is easy to see that, so long as the owners of the productive factors (i.e., consumers) keep spending their revenues in the purchase of goods, the money received by enterprisers must always be sufficient to recompense them for the costs they have paid out in producing these goods; for under the conditions stated, the receipts and costs will be

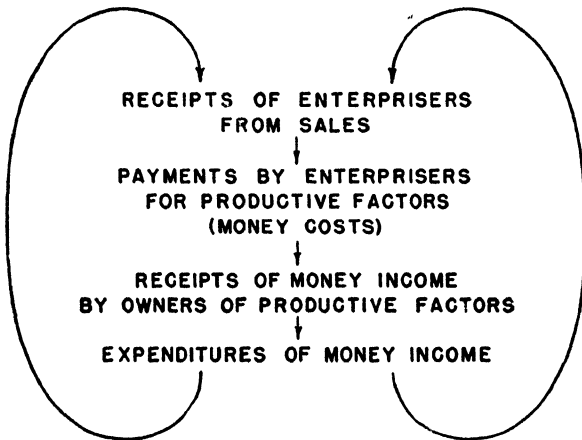


FIGURE 9. The Circuit Flow of Money

the same identical stream of money appearing at different points in the circuit.

The goods transactions envisaged by Say's law have now been replaced by the money values of those goods. Instead of goods demanded being identical with goods supplied, the money measure of goods demanded (money incomes received and spent) is identical with the money measure (pecuniary costs) of goods produced.

The case is not altered substantially if money savings are introduced into the picture, provided these savings are invested. This is illustrated in Figure 10. Here part of the money paid to the factors of production is represented as going into consumptive expenditures,

while another part is saved and invested. Two streams of monetary demand are thereby created, one for goods to be currently consumed, the other for more or less durable equipment (investment goods). The theory holds that so long as producers supply these two kinds of goods in the proportions in which they are thus demanded, the circuit flow of money will be continuous, and the identity of money expenditures and money costs will be maintained.

Say's law (in its monetary form) is only the first step in the neo-classical theory of employment. It is presumed to establish the

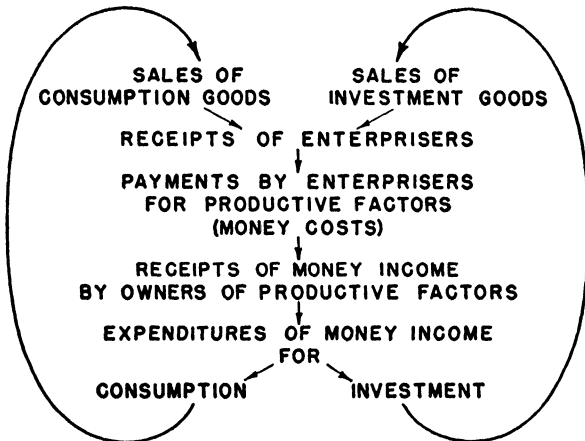


FIGURE 10. Consumption and Investment in the Circuit Flow

proposition that the aggregate demand for *goods* tends to equal the aggregate supply of them. The next step is to show that, from a sufficient aggregate demand for goods there tends to be derived a sufficient aggregate demand for *labor* to employ all the workers who offer themselves for hire. This proposition rests upon the law of substitution stated by Alfred Marshall.

This law was briefly explained in Chapter Four.⁴ It asserts that, since the technique of production in most industries is not rigidly fixed by the prevailing state of the arts, enterprisers have a choice of alternatives involving different proportions of the factors of

⁴ Chapter Four, pp. 77-78.

production, and they will seek the lowest-cost combination by substituting cheaper for dearer factors wherever possible. If interest is high and wages are low, materials will be moved by men with wheelbarrows; but if wages are high and interest is low, power-driven chain conveyors may be used. If land is dear and labor is cheap, farming will be intensive; while if labor is costly and land can be had for very little, farming will be extensive; and so on.

This gives a considerable measure of elasticity to the demands for the several factors of production. If labor grows relatively more plentiful, its wages will presumably fall, and it will become cheaper in comparison to other factors of production. This will cause employers to substitute manual for mechanical processes, so that the effective demand for labor will increase. There is no limit to this substitution of labor for other factors short of the point where all goods are made by hand, instead of by machine; and since, according to Say's law, the demand for all goods is always sufficient to purchase the total supply of them, there must therefore be an effective demand for labor sufficient to employ the whole of it, provided the wages are low enough. The law of substitution thus constitutes an apparatus of the price system that tends to make the demand for labor sufficiently elastic to secure its full employment.

There is another apparatus that contributes to this elasticity. Some goods require relatively much labor and little capital for their production; others require much capital and little labor. When wages fall, goods of the first kind become relatively cheaper than those of the second because wages are a larger proportion in the costs of producing the former. This fall in the price of those goods stimulates an increase in the effective demand for them. In response to this larger demand, more of the goods will be produced, so that the effective demand for labor is likewise increased. In this way a fall of wages tends to stimulate increased employment.

While the price system thus offers a mechanism for bringing the effective demand for labor to the point where the entire effective supply will be hired, there is no guarantee that the equilibrium wage

at which this occurs will be one that is satisfactory to labor. All that the theory asserts is that there is *some* wage at which all the labor can be employed, and that the dominant tendency of a free labor market is to maintain full employment at that figure. If the supply of a particular kind of labor is very large in relation to the other factors of production, its wage may be very low. It may even go below the subsistence level for a time. However, if the falling of the wage below this point is not deliberately interfered with, this will not result in unemployment; it is merely a condition of overpopulation in the particular stratum of labor concerned. In a *laissez-faire* economy the classical "iron law" would operate to correct this condition eventually, by raising the death rate for that class of labor until its numbers were reduced to the point where the workers could command a living wage; but in a social system where poverty is relieved by private charities and public doles, the wages of the lowest labor groups may remain below the level of subsistence indefinitely.

The current popularity of Keynesian thinking has made it the fashion to reject (or at least to ignore) much of the foregoing theory. Say's law, in particular, is held in disrepute because the Keynesians believe that it is not applicable to wealthy economies (such as ours) where abundance of goods has assertedly weakened the propensity to consume. Yet I find the theory of value, partly because it contains much truth, and partly because it illuminates the problem of unemployment. It illuminates the problem both by showing us the conditions under which full employment might prevail, and by setting us on a search for the obstacles which prevent the tendencies toward it from working. This can be made clearer by a critical consideration of the assumptions which are implicit, rather than explicit, in its reasoning. These assumptions are as follows:

1. That human desires are capable of indefinite expansion. This underlies the argument that a deficiency of demand cannot arise from lack of desire for more goods. If the assumption is false, then unemployment can be caused by an inadequacy of aggregate de-

mand. The assertion that there is such an inadequacy is a cardinal point in Keynes' theory.

2. That the various kinds of goods will be produced in the proportions in which they are demanded; that is, production will not be misdirected. Failure of this assumption will lead to lack of equality between specific demands and supplies, and hence to (temporary) unemployment in specific parts of the economy.

3. That the circuit flow of money will be continuous. If the flow of money is interrupted by hoarding or the liquidation of credit, the money demand for goods can fall short of money costs, and so cause unemployment. Accessions to the flow, by distorting the balance of industry, can likewise prevent the attainment of equilibrium, on which full employment depends.

4. That wages will be flexible, so that they can move upward or downward in response to changing conditions of demand or supply. This condition is essential to the operation of Marshall's law. If it is not fulfilled, then wages may not fall low enough to cause employers to substitute labor for other factors, and consequently some labor may remain unemployed.

5. That movements in the rate of interest will effect a balanced relationship between consumption, saving, and investment. This is essential to that general equilibrium among all the parts of the economy upon which full employment depends. If this assumption does not hold true, there may be too much saving in relation to consumption (causing a deficiency in the demand for consumable goods), or too much *ex ante* saving in relation to investment (causing an interruption in the circuit flow). Either of these two conditions could lead to unemployment.

It should now be evident how the foregoing helps to reveal the causes of unemployment. In the actual world there are various frictions and obstacles that prevent the assumptions implicit in the theory from being fulfilled. Various kinds of unemployment result. A more detailed consideration of these will make it possible to decide how far unemployment is inherent in the mechanism of normative prices, and how far it is attributable to institutional factors of a different sort. In

this way we come again to grips with the central problem of this essay.

POSSIBLE KINDS OF UNEMPLOYMENT

A convenient classification of the several types of unemployment that can (or conceivably might) arise in a capitalistic economy of the modern type is the following:

Frictional (in which is included technological) unemployment.

Cyclical unemployment.

Minimum wage unemployment.

Chronic unemployment from secular stagnation.

The first two of these types arise out of conditions of economic disequilibrium. They can be represented by diagrams similar to that of Figure 7 above. The third and fourth types fall in the category that was designated above as quasi-equilibrium. These can be represented by diagrams similar to Figure 8.

Say's law denies the possibility of a *general* overproduction (that is, a total production of goods exceeding what the people can pay for at cost prices); but it does not deny that production can be misdirected. Aggregate demand is a myriad of specific demands, and aggregate supply is a myriad of specific supplies. In order for full employment to prevail, there must be equilibrium between the specific demand and specific supply of every good. That is to say, the second assumption of Say's law, that the various goods will be produced in accordance with the numerous specific demands for them, must be exactly fulfilled.

Now the guiding influence of a normative price system does *tend* toward such a fulfillment. It works both by prevention and correction. It will prevent disequilibrium in the market for particular goods in so far as enterprisers are successful in anticipating its guidance (i.e., in forecasting the conditions of demand and supply) with accuracy; and it will tend to correct their errors by bringing offsetting influences into play if their anticipations prove faulty. For the influence of prices is to work toward, not only a temporary equilibrium be-

tween the effective demand and effective supply of every good from day to day, but toward a stable equilibrium between the *rate* of production and the *rate* of consumption of every good over longer periods of time. If the production of any good runs ahead of its consumption at the price prevailing, the effective supply will presently exceed the effective demand, so that the price will fall below costs, causing losses to producers and thereby inducing them to curtail their production. This throws some labor and capital out of employment in the previously overexpanded industry. But, since (by the reasoning of Say's law) the deficiency of demand in this industry is not due to an insufficiency of total demand for all the goods the economy is capable of producing, there must exist coincidentally with this condition of specific overproduction some other product, the output of which is insufficient, so that consumption here is running ahead of production. Dealers' stocks of the underproduced good will presently be depleted to the point where the shortage becomes apparent. The price will then rise above costs, and producers will increase their output to take full advantage of the resulting profits (thereby increasing their employment of labor and capital) until production catches up with consumption. In this way unemployed labor and capital are continually being drawn away from those spots in the economy where they are unemployed to places where there is an opportunity for their employment, and the whole economy tends toward a general equilibrium in which (if perfectly attained) full employment would prevail.

The very description of this process, however, implies that specific demands and supplies will often be out of balance, and that the corrective mechanism is one of trial and error in which production fluctuates about the point of equilibrium, without, in fact, maintaining it. In other words, the second assumption is not perfectly realized. Misdirection of production, and with it temporary unemployment, may occur at any point in the economic system where the effective supply of any good, or the facilities (including labor) for producing it, are for the time being excessive; and it will persist until the corrective process has had time to work out its effects. This will depend on the nature of the particular circumstances. In an industry that uses a

great deal of fixed capital, the production of which takes place long before the finished goods that eventually emerge from it, and which is so durable that it takes years for it to wear out, unemployment (or at least underemployment) of capital may last for a considerable number of years. And in an industry (such as coal mining) which is the principal support of whole communities, whose people have acquired a special skill that is adapted to it alone, and who do not readily move elsewhere, unemployment arising out of a permanent decline in the demand for the products of the industry may persist for a generation, or even longer. In other industries, on the other hand, there may be greater flexibility of adjustment, so that unemployment resulting from an excess of productive capacity will last only a short time.

Unemployment of this type, which is due to the frictions that prevent the maintenance of perfect equilibrium in an ever changing world, and to the inevitable lag that retards the processes of readjustment, is often called *frictional unemployment*.

There are many things that may occur in production to cause a temporary condition of specific oversupply (or underdemand) that is accompanied by this kind of unemployment. Among such things the following may be cited as typical examples: failure of a particular business enterprise because of faulty management or bad luck; errors of optimism on the part of enterprisers or groups of enterprisers by which they overestimate the prospective demand for their products and are caught with excess capacity or unsold stocks; bumper crops caused by unusually favorable weather conditions; downward fluctuations in demand or interruptions to production, caused by seasonal changes; falling off in the demand for particular kinds of goods due to changing tastes of consumers or to the abandonment of old products for the sake of newly developed ones (e.g., carriages for automobiles); temporary interruptions to production in particular plants or localities as a result of natural catastrophes, fires, strikes, civil commotion, or warfare; labor-saving inventions or improvements in industrial methods (including methods of management) that make it possible to produce a given output with less labor than formerly.

Neoclassical theory has followed Say and McCullough in holding that in all such circumstances as these the unemployment resulting

must be only temporary, because when workers are laid off in these cases the money which was previously flowing to them in wages is not destroyed; it is merely shifted into other channels where it must again give employment to labor.

In order to visualize this reasoning more clearly, it will be well to apply it to a particular case, and subject it to critical examination. Such an examination will disclose that, while the theory is generally valid, it should not be stated without some qualifications. A good case for this purpose is that of technological unemployment, where workers are thrown out of their jobs by the introduction of labor-saving machinery or new processes. The reasoning on this case can be readily adapted by the reader to other instances of frictional unemployment.

The logic of Say's law in its original (barter) form, establishes a presumption in favor of the view that, if labor is no longer needed in the place where it was formerly employed, it can now be used to produce some other goods for which there is a desire, and these goods can command a market, because they add to the aggregate demand precisely as much as they add to the aggregate supply. Put in terms of a money economy, whatever is spent in hiring displaced workers will be again spent by them for goods, so that they will repay the sums invested in their wages. The reemployment of labor temporarily thrown out of employment should therefore be economically possible, provided there is money available with which to pay their wages in the first place. There is such money available, because it is released by the stoppage in wage payments that occurs when the labor first becomes unemployed.

Consider the case of labor-saving machinery introduced into an industry where it effects a net displacement of one hundred men who were formerly receiving weekly wages of \$40 each. By net displacement is meant the excess of laborers thrown out of work in the industry where the machine is used over the number employed in making and maintaining the machine itself. There must be such a net displacement; otherwise the machine would not be truly labor-saving. In this case, then, there will be a net reduction in wages of \$4000 per

week in the industry concerned, and the cost of manufacturing a week's output of its product (which may be called good A) will have been reduced by that amount.⁵ In a normative price system (where competitive conditions are assumed to prevail), the price of the good will be reduced sooner or later to the new level of costs, and consumers will save \$4000 weekly in their purchases of this commodity. They will presumably use the money so released, either to buy more of the good A, or to purchase more of other goods, B; or possibly they may invest a part of it, which in normal circumstances means that it will be used to purchase equipment, C. No matter how the money may be divided among these three possibilities, it will go to create a \$4000 increase in demand for goods (A, B, or C), and hence for labor with which to produce them. In this way the hundred laborers who were thrown out of work by the machine are reabsorbed into employment, though not necessarily at the same wages as before. The effect on wages will depend on circumstances that will be analyzed in a moment; but first there is an objection⁶ to the above reasoning that must be answered.

Hansen argues that, although consumers have gained \$4000, the displaced laborers have lost a like amount in wages, so that there has merely been a shift in demand from the goods (D) formerly bought by the workers to the new goods (A, B, or C) now purchased by the lucky consumers of A. Here is no increase in the aggregate of goods demanded, hence no new demand to absorb the unemployed workers. However, this objection is not valid if the industry producing A is a competitive one. For if the flow of money in the economy was sufficient to pay \$4000 of wages to the now displaced laborers before the machinery was introduced, and to pay for the goods (D) they then bought, in addition to the \$4000 spent by consumers for good A, there is still enough money to pay these wages and buy the goods

⁵ But see what is said below about the cost of interest on the savings invested in the machine.

⁶ By Alvin H. Hansen, in Chap. X of his *Economic Stabilization in an Unbalanced World* (1932). The objection is answered (along with a rejoinder by Hansen) in a brief article by Gottfried Haberler, entitled *Some Remarks on Professor Hansen's View on Technological Unemployment*, in *The Quarterly Journal of Economics*, Vol. 46, pp. 558-562 (May 1932).

D, in addition to what is released by the reduction in the price of A for the purchase of new goods. There is no reason to suppose that the introduction of new machinery will destroy money, or cause it to be idle; hence if it has been released at one point in the circuit (by making unnecessary the employment of one hundred men), it is available for use somewhere else. Looking at the matter from a slightly different angle, before the machine was introduced there were three turnovers of \$4000 each in the transactions with which this problem deals. These turnovers were: \$4000 spent by consumers in buying good A at the old price, \$4000 paid in wages by the manufacturers of A to the workers then employed in producing it, and \$4000 spent by these workers in their purchases of goods D. The introduction of the machine releases \$4000 at both the first and second of these transactions, and makes possible the following sequence, involving the same number of turnovers as before: expenditures of \$4000 by consumers for new goods B and C (or more of A); wage payments of \$4000 to the the workers reabsorbed in producing B and C (or more of A), and \$4000 spent by the workers (as before) for goods D.

Formerly the theory was stated by its expositors in such a way as to imply that displaced workers would be reemployed at the same money wages as before; but this is too optimistic a view. For one thing, the production of good A may be controlled by a monopoly, and the monopolist may find it expedient to pocket part or all of the saving in labor costs made possible by the machine, instead of passing all of it on to consumers of the product by a price reduction. In that case the objection just considered will have some validity, for there will not then be released sufficient purchasing power to reemploy the displaced laborers at their old wages. To accomplish this there would have to be available four turnovers of the money (instead of three), as follows: Assuming the extreme case where the price of A is not reduced at all, consumers would have to spend \$4000 for this commodity, as they previously did; the monopolist would no longer pay out \$4000 in wages, but would spend this sum for new goods (B or C) for himself; \$4000 would have to be spent for wages to employ labor in making these new goods; and the laborers would spend \$4000

(as before) in buying goods D. Here are total payments of \$16,000, in place of \$12,000. This is not possible without an increase in the flow of money, and this cannot be expected to result from the introduction of the machinery. It follows that the laborers cannot in this case be reemployed without a fall in wages (or in the prices of goods other than A). It will still be true, however, that the labor can be reabsorbed at some wage, because of the elasticity of demand for labor; and the presence of the unemployed workers in the market (an effective supply of labor greater than the effective demand) should bring a sufficient decline in wages to restore full employment. What has happened in this case is that the new machine has been utilized in a way to increase monopoly profits at the expense of labor. This is certainly a possibility, and, in view of the monopoly privileges accorded to inventors by our patent laws, it may not be unusual.

Even in competitive industries it cannot be taken for granted that labor displaced by technological improvements will be reabsorbed without any decline in money wages. For one thing, when a labor-saving device is adopted, the cost of making the product may not be reduced by quite all of the saving in wages, for if the machine represents a net increase in the capital invested in the industry,⁷ there will be an increase in interest costs which must be subtracted from the wages of the labor displaced, to calculate the net reduction in costs. The money released for the purchase of new goods will then be slightly less than the wages of the displaced labor, and there will be a tendency for money wages to decline.

A more important qualification is made necessary by the fact that, when money is released from wage costs by a new device, and is spent by consumers or enterprisers for new goods, it may not all go back into wages, for the new goods cannot be produced by labor alone, but only by labor working with capital.⁸ Sometimes an inven-

⁷ Often the new machine will only involve a change in the kind of equipment used, without any increase in the amount of the investment. In that case, there is no increase in interest charges, and costs *are* reduced by the full amount of the saving in wages.

⁸ See the discussion of this point in Hans P. Neisser's article, "Permanent" *Technological Unemployment*, in *American Economic Review*, Vol. XXXII, pp. 50-71 (March 1942).

tion may effect a saving in both labor and capital costs. If it does so, the saving on labor might all be used to reemploy labor and that on capital to reemploy capital; but this is very unlikely, for the proportions of labor and capital employed differ considerably from industry to industry, and it would be a rare coincidence if the new goods, purchased with the released money, required for their production exactly the same quantities of labor and capital as the goods in whose manufacture the new machinery was introduced. The usual case must surely be one in which the relative proportions of labor and capital displaced will differ from those in which these factors will be needed for producing the new goods for which there will now be a new demand.

There will result a change in the relations between the demand schedules for the several factors of production, and a consequent change in the pattern of income distribution. In some cases this may redound to the advantage of labor. It is possible that the technological improvement may displace more capital than labor, and that the new goods demanded may require as great a proportion of labor as in the industry where the unemployment occurs, or even more. If so, the supply of capital will be larger, in proportion to the demand for it, than it formerly was, while labor will benefit by a greater relative demand, so that full employment will be restored at higher money wages than before. More often, perhaps, a new invention will be more labor-saving than capital-saving. In that case not all of the money saved by lower wage costs can go to labor in the industries to which the released purchasing power is shifted. Some of it must be used to employ capital. If capital was fully employed before the change, it will now have to be drawn away from other industries, at rising opportunity costs, so that it will command a higher price than before. This will put labor in a relatively disadvantageous position, and money wages will fall. Through the operation of the law of substitution, there will tend to be in all these cases a readjustment of factor prices, until the factors are recombined in industry generally in such a way as to secure full employment in all of them. That is the crux of the theory.

Even in the case where labor is put at a relative disadvantage by

these readjustments, it does not follow that real wages will necessarily be lower than before. The general effect of technological progress is to increase the real income of society. It may well be, therefore, that labor will be better off with a slightly smaller proportion of this larger national dividend than it would otherwise have been. It is not possible, on the basis of existing data, to say whether the remarkable technological changes of the past two centuries have bettered or worsened the relative position of labor as compared to the factor investment (or waiting), especially inasmuch as the problem is further complicated by a great increase in the accumulation of savings and a decline in the rate of population growth; but certain it is that labor has benefited sufficiently from the net interaction of all these influences to enjoy a marked rise in its standard of living. This is no doubt partly due to the fortunate circumstance that the supply of investible savings has grown at a faster rate than the supply of labor, but it is entirely consistent with the theory to suppose that real wages could have risen as a result of technological progress, even if the growth of capital had not outstripped the increase in population. The fact must not be overlooked, also, that the effect of technical progress is to provide a larger surplus of income from which savings can be made, no matter who derives the most immediate benefit from the changes; so that the supply of capital is almost sure to be increased, with resultant improvement in the relative position of labor.

The above analysis confirms the neoclassical theory which holds that technological unemployment tends to be corrected through the operation of the principles set forth in Say's law and the law of substitution, and that, therefore, such unemployment is essentially frictional and temporary in character. On the whole, it tends also to the conclusion that the net effect of technological progress is beneficial to real wages, and sometimes (though not necessarily always) beneficial to the relative position of labor in respect to the division of income. However, it does not follow from the theory that the problem of technological unemployment is one of negligible importance. If machinery is being generally introduced that is on the whole more labor-saving than capital-saving, reabsorption of the displaced labor can be accomplished only by changes of a fundamental kind. There must

either be a shift in demand from machine-made to hand-made goods, or methods of manufacturing must be changed from those which require a large proportion of mechanical equipment to those which make more use of labor. In some cases the advantages of the new mechanical processes may be so great that it would not pay to make such a change without a drastic drop in wages. Even if it would pay, the process of transition might take a rather long time in a complicated industrial system, where there is much fixed, specialized equipment that will not wear out for a considerable number of years. Under these circumstances, in a period of rapid and fairly general technical advance, the pace of displacement might easily exceed the pace of reabsorption, and technological unemployment might become a serious problem persisting over a period of decades. Certainly there is nothing in the theory to preclude such an outcome.

There is also a possible condition in which technological progress might contribute to permanent unemployment. According to Keynes, an economy may become so wealthy that its *ex ante* savings outrun the opportunities for profitable investment. This leads to a reduction in productive activity until income is reduced to the point where the excess of saving no longer occurs. But the maintenance of this level of income does not require full employment of all the productive factors; therefore, some unemployment will prevail. Now the principal thing that makes an economy wealthy is the progress of science and invention. So, if we have reached that degree of prosperity where the conditions visualized by Keynes come into operation, technological progress can result in permanent unemployment. In this case technological unemployment becomes indistinguishable from chronic unemployment, to be considered below.

Fortunately for labor, the facts seem to indicate that, under the guidance of prices, our economic system has hitherto shown sufficient flexibility to reabsorb the workers as fast as they were displaced. Despite the phenomenal progress of science and invention in the later nineteenth and early twentieth centuries, the average percentage of unemployment, both in England and the United States, has been fairly constant, and the number of unemployed workers (except in periods of cyclical depression that must be explained on other

grounds) has been moderate enough to be entirely consistent with the view that it is caused by frictions of a short-run character.

The amount of frictional unemployment existing at any given time is usually a small proportion of the working force, probably not often more than two or three per cent. Its small amount, coupled with its temporary character, makes it a relatively minor problem; and the remedies needed to cope with it do not have to be very drastic. One helpful development, easily attainable, would be extension and improvement of the already existing system of government employment agencies, in order to facilitate the transfer of labor from regions or occupations where the supply is excessive to those elsewhere in the economy where there are suitable opportunities for employment. There should be legislation requiring employers to consult with these employment agencies before introducing labor-saving machines or processes, and restrictions to retard the pace of such innovations, when necessary, so that displacements will not outrun the finding of new jobs. Further, there is needed a program of adult training, coördinated with the employment agencies, to teach workers new skills when the demand for old skills is being reduced by new methods of production. Beyond these measures, but constituting a more radical change from existing institutions, I believe it would be desirable to develop machinery for centralized planning and guidance of the economy as a whole, to achieve better coördination of specific demands and supplies. None of these things need involve a departure from the principles of normative pricing; rather they would help the price system to function more smoothly and perfectly.

More serious than frictional unemployment is the mass laying off of workers that accompanies cyclical or secular depression. In every depression unemployment is more or less severe, and in the great depression of the early nineteen thirties it is estimated that the number unemployed in the United States rose to fourteen or fifteen millions. At the peak of prosperity the amount of enforced idleness is generally low, although there is always some unemployment of the frictional kind, and even at the crest there may be a fairly large number without jobs if the upswing is merely a phase of a prolonged eco-

conomic stagnation. Some authorities believe that there is a very long cycle extending over some thirty to sixty years, within which the shorter cycles operate, so that the prosperity phases of the short cycles are relatively low when operating in the low phase of the long cycle. This may have been the situation in the late nineteen thirties, when there was still a large volume of unemployment even after production had reached a high level.

The basic cause of business fluctuations is one of the unsolved riddles of economics. Following the suggestion of Keynes, there is now a tendency for economists to regard the cycle as a fluctuation of investment. This accords with the observed fact that the ups and downs are more marked in the industries that produce investment goods (e.g., industrial equipment) than in those which produce immediately consumable products. However, there is not yet any general agreement as to what causes investment to fluctuate. Fortunately, for the purposes of this essay it is not necessary to solve the riddle, but only to inquire whether or not the cycle is inherent in the nature of a normative price system. To answer this query it will suffice to consider the two theories of cycle fluctuations that are most widely supported by contemporary economists. These are the monetary overinvestment theory and the underconsumption theory.

The monetary overinvestment theory lays the blame for cyclical fluctuations on the characteristic of our banking system (discussed in Chapter Five) by which commercial banks are able to lend money (credit) to business men that does not come out of the voluntary savings of income recipients, but is created in the process of discounting. Because of this creation of money, investment does not have to be preceded by voluntary saving, but is governed by the dictates of banking policy. This interferes with the guiding function of interest in balancing consumption, saving, and investment, for the bank rate of interest (and the willingness of the banks to lend) is not governed by the relations between these three variables, but by the size of the banks' reserves. According to the theory, the upswing of the cycle is caused by an easy lending policy (accompanied by a rate of interest that is too low) when bank reserves are large. In the ensuing process of credit expansion, investment runs ahead of volun-

tary saving and draws so much of the available productive factors into the making of capital equipment as to create a shortage of immediately consumable goods. This condition of unbalance in the structure of production leads presently to a series of difficulties which include shrinking bank reserves, a consequent scarcity of credit with which to continue the process of investment, a rising bank rate of interest, a competitive scramble for the productive factors between producers of consumable goods and producers of investment goods, a resultant rise of factor prices and hence of production costs, and a consequent turning of anticipated profits into prospective losses in the investment goods industries. This precipitates a crisis and a period of liquidation that ushers in a depression, with its accompanying unemployment. If this theory is correct, it is clear that cyclical unemployment is not to be attributed to any weakness inherent in a normative price system; for the basic cause of the breakdown is the interference with that system that is occasioned by faulty banking institutions. The injection of newly created bank credit into the stream of money destroys the balance between the two sides of the circuit flow (in Figure 10) by swelling the investment side of it. This makes it impossible for the rate of interest to perform the guiding function commonly ascribed to it, and so violates the fifth assumption upon which the theory of employment rests for its fulfillment. If this is all that is wrong it can be remedied by the measures already suggested in Chapter Five and to be described further in Chapter Nine.⁹

According to the underconsumption theory, business depressions are due to the excessive amount of voluntary saving that is alleged to characterize contemporary capitalistic societies; and this excess of saving, in turn, is attributed to extreme inequality of incomes. The theory holds that the rich have so much that they do not care to consume it all; consequently they save a large part of it, even in spite of low rates of interest. The purchasing power of the masses, on the other hand, is so limited by their low incomes that there is not a sufficient demand for goods to provide opportunities for profitable investment of all the monetary savings of the rich. If, through errors

⁹ Chapter Five, pp. 137-138, and Chapter Nine, pp. 276ff.

of optimism on the part of enterprisers, the money is invested anyway, the investments eventually prove unprofitable, businesses fail, and a depression is precipitated. Here the fifth assumption of the theory of employment is ineffective—interest fails to balance consumption, saving, and investment. Or, if enterprisers are aware of the lack of opportunities for profitable investment, the surplus savings, instead of being invested, will simply be hoarded, or destroyed by contraction of bank deposits in a process of liquidating debts. In this case, both the fifth and third assumptions are nullified. Not only does interest fail to balance consumption, saving, and investment, but the circuit flow of money is also interrupted. Income recipients do not pour back into the circuit all the incomes they receive in the form of factor payments; hence aggregate monetary demand is less than aggregate money costs. Business losses and failures follow, leading to depression. If this theory is correct, the basic cause of the trouble is in the institutions that make for extreme inequality of incomes. It was shown in Chapter Four that it is possible to work out a program for reducing this inequality within the framework of a normative price system. It must be concluded, therefore, that unemployment from this cause is not an inevitable feature of an economy guided by normative prices.

It is helpful to distinguish between initiatory or generating causes of business cycles and those which are cumulative or aggravating. Whatever the generating causes may be (whether those set forth in either of the two foregoing theories or in some other), it is clear that the cumulative causes are chiefly monetary. Once an upward movement of business activity is started from some initial impulse, the process of credit inflation carries it along on a wave of rising prices which, by bringing temporary business profits to enterprisers, aggravate the underlying faulty developments that may be taking place in the basic relationships of the economy. The circuit flow of money is being arbitrarily swollen by this inflation, and distorted in the swelling. Then, when the fundamental unsoundness of the business situation is revealed and failures occur, a wave of liquidation is started that gathers momentum as it plunges downward. The failures destroy

a part of the flimsy structure of credit that has been built up by the banks, and since each business is dependent to a very large extent on fulfillment of their obligations by those who are indebted to it, failures spread from firm to firm until they become general. In the process of liquidation the flow of money is not only halted, but much money is actually destroyed, for if a firm is unable to pay its debts to a bank, the credit which the bank has previously extended to it is wiped out. Even if it does pay, unless the bank uses the payment as the basis for a new loan (which is unlikely in this phase of the cycle), the volume of deposits shrinks. These deposit credits constitute the bulk of the monetary circulation; hence if they are reduced, a corresponding part of the circulating medium ceases to exist. In this way the circuit flow of money is cut down. In view of these considerations, the conclusion is inescapable that weakness of our monetary institutions is responsible for a very large part of cyclical unemployment. The normative price system is not at all to blame for this weakness, because, as I have said above, the creation of credit by the banking system is not an essential, nor even a natural, part of normative prices; and it can be remedied along the lines proposed in Chapters Five and Nine. Likewise, unemployment from this cause cannot be held to reveal a flaw in the neoclassical theory that the normative price system tends to full employment.

Cyclical unemployment is usually self-correcting. In the readjustments that are forced on the business world by a period of recession or severe depression, the basic errors that were the original cause of the breakdown are rectified, and a recovery takes place in which the unemployment is greatly reduced, even though full employment may not be reached. Since this is the case, the enforced idleness of the slump should perhaps be classed as frictional. However, it arises out of a maladjustment that permeates the whole economy, and thus differs from the scattered specific errors of misdirected production that give rise to frictional unemployment of the ordinary kind. Because the underlying mistake is so serious, the amount of unemployment is greater and more prolonged. The difference seems to me sufficient to justify putting cyclical unemployment in a class by itself.

The law of substitution, which is an essential part of the price mechanism for maintaining full employment, depends on a downward movement of wages to correct any oversupply of labor. This is in accordance with the fourth assumption underlying the neoclassical theory of employment. The law presupposes that if the effective supply of workers at existing wages exceeds the effective demand, wages will fall until labor becomes cheap enough to induce enterprisers to substitute it for capital, and until all wage-earners that are willing to work for the reduced wage will be able to find jobs. If there is in the economy any effective obstacle to a decline in wages, this mechanism cannot operate, and the substitution of labor for capital will not take place. Unemployment may then persist indefinitely, or until relieved by some fortuitous event, such as a war, increased accumulation of capital, or the development of new industries that require larger proportions of labor than those which they supplant. Unemployment from this cause cannot be attributed to any defect inherent in the mechanism of normative prices, but must be ascribed to rigid institutions which prevent that mechanism from operating in its natural way. There are just such obstacles in the contemporary world. In particular, labor unions resist tenaciously any downward pressure upon wages. They not only do this by direct action, such as strikes and the threat of strikes, but indirectly, by pressing for governmental policies to prevent low wages. The United States Wages and Hours Law of 1938, which was enacted partly in response to the pressure of organized labor, set a minimum to wages starting at twenty-five cents at the time of its passage and to reach forty cents by 1945. By 1950 pressure had boosted the minimum to seventy-five cents. Although the law contained a provision to allow some wages below the minimum in special cases approved by the Wage-and-Hour Administrator, its intent was to prohibit any general level or decline of wages below the established minimum. Furthermore, it was the announced policy of the New Deal to hold money wages at the rates then generally prevailing, or to force them higher, and to use the various resources at its command to that end. Among the measures relied upon to accomplish this goal were monetary policies calculated to prevent any general deflation of prices, the National Labor Relations Act

which compelled employers to bargain collectively with their employees, and support of the unemployed by means of out-of-work insurance and government employment on public works projects. All these policies are still being followed. Similar forces have been operative in Great Britain and other countries. Even private charities have some tendency to resist downward pressure on wages by increasing the power of labor to resist.

Such policies as these tend to create unemployment whenever changes in the economy move in a direction unfavorable to labor—as sometimes they must. There is good reason for believing that the extraordinary unemployment of the period between the two world wars was partly attributable to such causes. At this time the world's economy was so badly disrupted that a general and prolonged depression, with a huge amount of unemployment, was almost inevitable. Neoclassical theorists believe that a fall in wages in these circumstances would have helped, not only to provide more jobs, but, by reducing production costs, to hasten general recovery. Instead of this, the combined pressure of organized labor and the government prevented wages from declining, with the result that the depression was prolonged. Not until World War II came along, with its monetary inflation and its enormous governmental demand for war goods, was the situation relieved.

Some economists classify unemployment in such circumstances as voluntary, because it arises out of the unwillingness of labor to work at wages that would provide it with jobs. While there is some ground for taking this position, I am inclined to regard this unemployment as involuntary, because it is the result of social or group policies imposed on the individual worker rather than a matter of his personal choice. When there is downward pressure on wages there are probably many laborers who would accept the lower wages necessary to increase employment if such a wage were allowed to become established. The situation is somewhat like that presented in the diagram of Figure 11. Here the curve SS represents the schedule of supply as it would be if it were based on the decisions of individual workers. Taken in conjunction with the demand, this would lead to the establishment of the wage OW_1 , and at this wage the number of persons

employed would be OR , which constitutes full employment since it would give a job to every worker who was willing to work at that wage. But the wage is not allowed to fall below OW_2 ; hence the number employed is only OT , and there is a residue of unemployed represented by TV . The unemployment is TV rather than TR because at the higher wage the number of workers seeking employment is greater. The part of the supply curve that is dotted is rendered ineffective by the arbitrarily established minimum wage. This figure is an adaptation of Figures 7 and 8, containing elements of both.

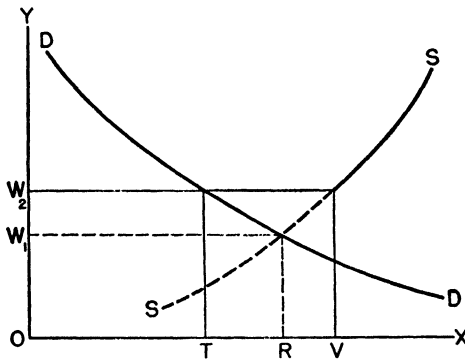


FIGURE 11. Minimum Wage Unemployment

What should be the social policy with respect to this problem? The logic of the price system seems to require both upward and downward flexibility of wages for its satisfactory operation. If we follow this logic, we will seek to develop institutions that will allow wages to be fixed by the market. If, when so determined, some wages are insufficient to provide a decent standard of living, this can be corrected by constructive measures of the kind that were outlined in Chapter Four. Under such a policy there would be no minimum wage unemployment. But it does not seem likely that organized labor will permit wages to be flexible in this way. The practice of the unions is to press for higher wages whenever the situation seems propitious for an increase, then to resist tenaciously any downward pressure when conditions are adverse. This practice, if successful, would give labor an ever larger share of total product (at the expense of

other shares); and, by making labor a dearer and dearer factor of production, would progressively aggravate the problem of minimum wage unemployment.

This problem has both a short- and a long-run aspect. The short-run aspect concerns the adjustment of wages to cyclical fluctuations. I think the way to deal with this is to take suitable measures for minimizing or eliminating the fluctuations, along the lines recommended in various parts of this essay. There will then be no need for frequent upward and downward movements of wages to keep the labor market in balance with general economic conditions. This will also help to mitigate the long-run problem; for with the smoothing out of cyclical fluctuations there will come a more stable price level, and labor will not have to press for higher money wages to meet a rising cost of living. It will also be more difficult for organized labor to succeed in its demands for higher money wages when such increases can no longer be nullified by a price inflation. The connection between wage rates and the demand for labor will then be more direct and obvious, and this may cause labor to be more temperate in its demands. It is not inconceivable that the time may come when both labor leaders and legislators may come to realize the desirability of wage policies that will permit of full employment, and will act accordingly.

Underconsumption theorists will not be in sympathy with the above line of reasoning. They believe that high wages are essential to the maintenance of mass purchasing power, and that such wages will contribute to a high level of employment by increasing the aggregate demand for consumable goods. I reply that it does no good to raise wages if this leads employers to substitute cheaper factors and lay off workers. The way to higher wages is by measures to increase the productivity of labor, not by minimum wage supports. Then the higher wage will not lead to substitution. Keynes, although a kind of underconsumptionist, realizes the significance of the law of substitution, and admits that in conditions of unemployment it might be helpful to reduce wages if they could be lowered to the bottom all at once; but he believes that such a reduction would be so resisted by labor that it would lead to a revolution; therefore the only feasible

way to accomplish it is by a monetary inflation that reduces real wages while leaving money wages unchanged. He also argues that there are certain repercussions from falling wages that have a depressing effect on demand, production, and employment. I get the impression that in much of this analysis he is preoccupied with short-run effects. We can grant that falling wage rates may have undesirable repercussions, but this is not to deny that there is presumably a structure of wages that is compatible with a balanced economy of full employment, and that if wages are forced higher than this, they will reduce the effective demand for labor. If so, then the theory of minimum wage unemployment is sound, and wage policy should be shaped in accordance with it.

In every long severe depression there have been prophets of doom to assert that the economy was running down. It is not surprising that such prophets appeared in the great depression that occurred between the two world wars. In this case the two leading pessimists were Keynes in Great Britain and Hansen in the United States. Their theories are reminiscent of the classical theory of the tendency of the economy toward a stationary state, in that they lay stress on the declining rate of profit that is said to be consequent upon the increased accumulation of capital in an economy characterized by the law of diminishing returns. They also build on the underconsumption theory of business cycles that was sketched above, and on the fact (explained in Chapter Five) that there is a lower limit to the rate of interest. On these bases they erect an argument to the effect that the wealthy, "mature" economies of the western world must now look forward to a condition of chronic unemployment which can only be relieved, they think, by a program of partially socialized investment in the form of public works projects financed by government borrowing.

Briefly, their theory is as follows: In wealthy societies the people are so rich that their "propensity to consume" is low; that is, they save an increasingly large proportion of their incomes. In the "mature" economies where this condition prevails, the opportunities for profitable investment of these savings are restricted by the fact that the frontier has disappeared, and the rate of population growth has

slowed up. Hansen stresses, as an additional cause of restriction, the alleged lack of new inventions, an extraordinary wave of which sustained the economic expansion which took place in the nineteenth century and the early part of the twentieth. The result of these conditions is a saturated investment market in which, because of the tendency toward the diminishing productivity of capital equipment, the prospective yield from additional investments is very low. Hence, the large accumulation of monetary savings could not be utilized profitably in industry unless they could be borrowed at very low rates of interest, presumably at less than two per cent. The costs and risks of lending, together with the influence of liquidity preference, prevent interest rates from falling to so low a figure. Hence the savings are not invested. Presumably they go into hoards of cash, or they are used to liquidate debt, with consequent destruction of circulating credit (bank deposits.) Either of these will cause a shrinkage in the circuit flow. The money paid out by enterprisers to the owners of productive factors does not all flow back in the purchase of goods, with the result that the total demand falls short of total costs. The reduced flow of money causes money incomes to shrink and prices to fall, which precipitates a depression of business and a reduction in the employment of both labor and capital. This must go on until the volume of production has shrunk to the point where, because of reduced real incomes, people no longer save a surplus over what can be invested profitably. When this point has been reached, money savings will all be used for the purchase of investment goods, and the continuity of the circuit flow will be restored. The economy will now be in equilibrium, but it will be at a relatively low level, in which not all the labor that is willing to work at prevailing wages will be employed. There will be a permanent residue of idle workers.

It will be observed that this argument denies the validity of the first, third, fourth, and fifth premises of the neoclassical theory of employment. It asserts that the desire for goods (Keynes' propensity to consume) is not unlimited. At least consumption expands at a decreasing rate as incomes increase, so that larger and larger proportions of income are saved, in spite of low interest. The circuit flow of money is not continuous. It is interrupted by hoarding or liquidation

when there are not suitable opportunities for investment. Neither money wages nor rates of interest are flexible in a downward direction; hence the mechanism relied upon to give effect to the law of substitution fails. Finally, the rate of interest does not achieve a balance between consumption, saving, and investment, partly because it cannot fall low enough and partly because a low rate does not check saving sufficiently in an economy where incomes are very large.

The *possibility* of the situation pictured in this theory cannot be denied. There is no flaw in the logic of the argument; hence it is conceivable that the condition might occur. If it does occur, the mechanism of the price system (more particularly, the mechanism of interest) will not provide a sufficient corrective. Some supplement to it will have to be found. However, the opinion that such a situation actually did prevail in the period between the two world wars, or that it is an imminent postwar prospect, seems to me to be too pessimistic. The question is one of empirical fact, and the fact has yet to be established. It is significant that the findings of the National Bureau of Economic Research do not appear to support the view that the condition described by Keynes is actually upon us.¹⁰ Looking at the matter as a general observer, there are grounds for a more optimistic feeling. There must still be extensive opportunities for profitable investment in new industries in the domestic American market. Science and invention are always at work opening up new vistas of progress, and it has not been proved that the scope of their achievements in this direction is now declining. Too much stress is laid on the fact that certain spectacular developments of the preceding century, such as the mushroom growth of the railroad and the automobile industries, have run their course. Who can say that equally spectacular industrial developments (perhaps in the field of atomic energy) are not just around the corner? The fact that we do not at this moment know what they are is no reason for assuming that they will not appear. Even if they do not, we must not overlook the steady march of less conspicuous improvements that are always going

¹⁰ Arthur F. Burns, *Economic Research and the Keynesian Thinking of Our Times* (1946).

on, the importance of which is much greater than is commonly supposed.¹¹ And if the domestic market be saturated, the possibilities of the foreign market have hardly been scratched. In various parts of the Orient, as well as in Africa and South America, there are millions of people whose incomes are now low, but whose consuming and purchasing power will be enormous when the exploitation of the great resources of those areas is once well under way. Keynes and Hansen have taken too myopic a view of the conspicuous unemployment of the interwar years, and have been made unduly pessimistic thereby. There is a sufficient explanation of this unemployment on other grounds to make it unnecessary to accept their gloomy prophecies.

The modern economy is to a considerable extent a world-wide one, that depends for full-scale, continuous operation upon uninterrupted international trade. If this trade is seriously interfered with by such obstacles as prohibitive tariffs, embargoes, import quotas, exchange controls, currency depreciations, and other barriers, considerable sections of industry may be put into difficulties and much unemployment may result. In the period following World War I, obstacles of this kind were widespread, especially in Europe. In a continent already impoverished by the destruction of capital and the interruption of industry occasioned by the war, there was an upsurge of nationalism which caused each country to seek trade advantages for itself, while attempting to block imports from other countries. The result was a general breakdown in the world's commerce, which caused it to fall to a fraction of its prewar level. This was aggravated by an epidemic of currency depreciation in which monetary values were so unstable that it was impossible for business men to enter into foreign contracts without great risks of loss. Added to all this was the problem of finding work for millions of soldiers discharged from the armies. These conditions suffice to account for the extraordinary unemployment of those years, without jumping to the melancholy conclusion that the world's economy is running down.

¹¹ The following footnote from A. C. Pigou's *Employment and Equilibrium* (London 1941), p. 132, is relevant: "The great importance and frequency of minor changes in technique are well illustrated in Chapter III of the third volume of Dr. Clapham's *Economic History of England*."

THE PROSPECT FOR FULL EMPLOYMENT

It is obvious that the problem of mass unemployment, whether cyclical or secular, has become a serious one. The débâcle of the nineteen thirties, and the sober fact that the high level of activity that prevailed in this country in the nineteen forties was largely sustained by huge expenditures of the government (first for war and then for European recovery), raises doubts concerning the ability of modern capitalism, under the guidance of spontaneous reactions to price movements, to support itself. Remedies more or less drastic appear to be needed.

The Keynes-Hansen school proposes to meet the situation by a program of public spending, paid for out of deficit financing. Their policy would be for the state to intervene whenever a decline in the volume of business activity and employment indicates that there is a surplus of uninvested savings. Let the government borrow the savings and invest them in public projects that will employ the otherwise idle workers and sustain a high level of production. In other words, the government must see to it that the circuit flow is not interrupted, and in this way it is to prevent a deflationary depression—either cyclical or secular. This view appears to dominate the thinking of the President's Council of Economic Advisers, and it is actually reflected in the policies of our federal government.

There is no doubt that if the state will spend without stint, full employment can be achieved. That is fully demonstrated by the events of the nineteen forties. Also, I will grant that when mass unemployment is clearly imminent or actually upon us, it is the duty of the state to find work for those who would otherwise be forced into idleness; and it should borrow or create the funds to do this if they are not available elsewhere. Yet I do not think that we should look upon deficit spending as the final answer to the problem of mass unemployment. I cannot regard it as a constructive solution. It is only a stop-gap that does not get at the fundamental causes. Besides, it has some positive disadvantages.

For one thing, in the capitalistic system there is a strong prejudice against the government's using idle labor to produce the things that

are really needed in a period of industrial breakdown. It is a failure in some sector of private enterprise that precipitates the breakdown; but the government is not allowed to start up production in this sector because that would be an intrusion upon the system of private enterprise, and a state incursion into these fields, by raising doubts concerning its future policy, would retard resumption of activity by private business. So, in a depression our economy is plunged into the anomalous situation where millions of unemployed workers need food and clothing that they have not the means to buy, where the state has the financial resources to employ them at producing these things and so set the economy going, but where it dares not do so. Instead of setting the idle men at work upon the things for which there is the most obvious need, government is forced to concentrate on a few types of projects, such as road and building construction and hastily improvised "make work" activities of the boondoggling type. While some of these are useful, many are wasteful, and they do not always provide employment suited to the capacities of the workers who have been displaced from private industry. Some of these weaknesses could be reduced by careful planning of the public works in advance; but such planning is tantamount to a confession that genuinely preventive measures against unemployment either are not going to be taken, or that if taken, they are not expected to work.

Concerning the deficit aspects of the proposed program, I regard it as unnecessary, illogical, and unwise. It is unnecessary because there is no convincing evidence that the chronic stagnation visualized by the Keynes-Hansen theory is upon us. It is illogical, because if, as the theory asserts, the capitalistic system is incapable of maintaining full employment under individual initiative, we had better abandon it in favor of collectivism, instead of trying to help it limp along with the aid of so poor a crutch. It is unwise, first, because it would lead to an ever increasing public debt which, even if internally held, would be sure to cause serious trouble sooner or later; for the general public would be taxed increasingly to provide payments for the bondholders, causing an inequitable transfer of incomes that would create serious discontent. It is unwise, finally, because it would divert attention away from the various causes of unemployment that have

been revealed in this chapter, and so would cause the needed remedies to be overlooked. It would be like a quack panacea that promises quick relief, and so deters the patient from calling the physician who alone could diagnose and prescribe for his illness.

It has been suggested that a threatened depression could be avoided if the government would guarantee the sale of industry's output at prices which would cover production costs. Several proposals along this line have been developed.¹² These proposals are based on the valid principle, inherent in Say's law, that if industry is kept going the money paid out in production costs will suffice to buy the products, so that the government can guarantee the sale of output without loss to itself. There is no reason in theory why such a scheme should not be feasible, provided it were accompanied by a program of general economic planning to keep industry in balance. However, if such a balance were actually achieved through planning, no guarantee of output would be necessary to keep industry going. The guarantee would have its greatest usefulness in the formative years of the plan. These suggestions impress me as offering a more promising approach than the deficit spending idea.

In my judgment, a constructive, comprehensive program for the abolition of mass unemployment must contain four elements. It requires, first of all, the development of a monetary system that does not permit the expansion and contraction of credit by the banks. This will do away with the monetary disturbances that aggravate the cyclical fluctuations of business, and it will forestall the vertical distortion of industry that is believed by the monetary overinvestment theory to bring on economic depression. Secondly, it must be accompanied by measures to reduce greatly the prevailing extreme inequality of incomes. This will reduce (and probably eliminate) the oversaving that is represented by both the underconsumption and Keynesian theories as the cause of cyclical or secular stagnation.

¹² For instance, see John H. G. Pierson's *Full Employment* (1941). There is a more concise statement of Pierson's proposals in his article, *The Underwriting of Aggregate Consumer Spending as a Pillar of Full Employment Policy*, in *American Economic Review*, Vol. XXXIV, pp. 21-55 (March 1944). See also Mordecai Ezekiel, *Jobs for All Through Industrial Expansion* (1939).

Ways of obtaining these two objectives have been set forth elsewhere in this essay. Thirdly, some way must be found to preserve peace in the world. It is hopeless to expect domestic stability if our country is to be repeatedly subject to the chaotic upheavals of major wars and their aftermath. We cannot maintain a balanced economy except under conditions of peaceful trade, and this requires, not only the cessation of shooting wars, but the perfecting of international machinery for orderly conduct of the world's commerce. Finally (and most important) the program must have as its basis a system of general economic planning under the egis of the state. The planning should be in accord with democratic principles, and it should be carried out in conformity with the guiding principles of normative pricing.¹³ This kind of planning, by keeping specific supplies in balance with specific demands, and saving in balance with investment, should reduce all kinds of unemployment to an inconsequential minimum.

I believe that the possibilities for full employment without deficit spending in a well-ordered system of substantially free enterprise are much greater than the prophets of doom assume; but there is no denying that the maintenance of full employment would be much easier to accomplish under collectivism. In a system of free enterprise each separate business must cover its own costs. It is no consolation to an employer to know that, if he hires workers, the money he pays out in wages will flow back into the economy somewhere, so that overall demand must be equal to overall supply. He must be assured that the demand for *his* goods will suffice to buy *his* supply at remunerative prices. A collectivist state needs no such assurance for particular establishments. If necessary, it can balance a loss at one point against a gain somewhere else, knowing full well that the total returns are bound to equal the total outlay. Hence, it need not close down any establishment because it is not paying its way. Furthermore, a collective state is not restricted by any prejudice against its entering into new fields of industry that will provide employment for workers. If any laborers are out of work, it can set

¹³ See the proposals for such a system in Carl Landauer's *National Economic Planning* (Revised Edition, 1947). See also Chapter Eleven of this essay.

their need for goods over against their capacity to produce, and put them to producing whatever products the economy can best use, without fear of upsetting the industrial process. A collectivist state is also in a perfect position to guide the economic process by a system of central overall planning. Since all industry is in its hands, it can require reports from each establishment that will provide it with accurate information concerning productive capacities, outputs, and demands; and, because it controls all the important industries, it can direct production accordingly. Thus there is a better chance of avoiding any serious misdirection of production; and if errors occur, they can be easily and promptly corrected by merely issuing the appropriate orders. Because of these advantages, one is on safe ground in saying that there need be no serious unemployment in a collective economy. The truth of this observation is borne out by the experience of the Soviet Union, where the extensive unemployment that characterizes capitalistic societies is unknown.

CHAPTER EIGHT

Least Costs

THE PROBLEM AND ITS SETTING

In the last analysis, all economic problems arise out of the fact that productive resources are scarce in relation to the need for them. This scarcity makes it desirable to get as much out of those resources as we can within the limit set by the principle of surplus utility. There are both qualitative and quantitative problems here. We have already encountered the qualitative problems in the discussion of want selection and the division of income, which were concerned with how the benefits which flow from economic activity could be increased by giving priority to those goods which are most important, and distributing them to the right people. The discussion of surplus utility involved both kinds of problem, for although it was concerned primarily with the amount that should be produced, it used as its criterion a comparison of benefits with sacrifices, both of which are qualitative, as well as quantitative, concepts. Primarily quantitative was the analysis of the problems of providing future equipment and maintaining full employment. Yet another way of increasing output in the quantitative sense is to raise the efficiency of industry by adopting the most productive techniques, and by avoiding the losses which come from waste and incompetence. It is with this problem that the present chapter is concerned.

The goal here is to give effect to the principle of least costs, which was stated in Chapter One as follows: Each good should be produced in the manner that requires the least sacrifice. From the price angle this is the problem of reducing the costs of production to a minimum. The price system will serve as a calculus for this purpose to the extent that we succeed in making pecuniary costs a true measure of

the disutilities involved in production, along the lines suggested in Chapter Six. For the present analysis we may assume that this will be done, so that identity between monetary and real costs can be taken as given. The problem then becomes one of keeping pecuniary costs at the lowest attainable point in the production of every good.

Success in attaining this objective depends on the technical efficiency that prevails in the organization and conduct of industry. For efficiency to be at its highest, a number of conditions must be met. Business enterprises must be organized in the manner most appropriate to the type of production that they carry on, and industrial plants must be organized on the scale that permits the most economical operation. It is particularly important for the relations between the different producing establishments to be so organized as to achieve the best possible coördination in the succession of processes. In the internal economy of each producing unit there are a number of additional requirements for efficiency. Since unit costs vary with output, each plant should be operated as nearly as possible at the output that will keep these costs at their minimum. Also, in most branches of production there is a choice of ways in which the various factors can be combined. In each case that combination should be sought which will make most use of the abundant (cheap) factors, and least use of the scarce (dear) factors. The management should see to it that the most approved methods are followed in such matters as the layout of the plant, the scheduling and supervision of work, the selection, placement, training and promotion of employees, and the use of incentive methods of wage payment. There should be provision for the promotion and adoption of new techniques and new products from time to time, in order that the efficiency of industry may be progressively improved. Finally, if all these desiderata are to be attained, the administration of each industrial enterprise must be in the hands of the most competent managers that can be found.

Lionel Robbins holds that the subject of industrial technology lies outside the scope of economic science—that it is one of the things which the economist takes as given data for his investigations. It appears in the productivity functions of mathematical economics,

but is a known, a determinate in the system—not an unknown, to be determined by economic analysis.¹ According to his view, “the problem of technique arises when there is one end and a multiplicity of means, the problem of economy when both the ends and the means are multiple.” This follows from his definition of economics as “the science which studies human behavior as a relationship between ends and scarce means which have alternative uses.”² This seems at first glance to separate technology from economics very neatly; but does it? Is there ever a technical problem in which there is only one end to be considered? Perhaps so, for purposes of laboratory experimentation, but hardly for practical applications. The scientist or engineer in his laboratory may be interested in finding out how many different sources of power he can use to propel an automobile—gasoline, alcohol, steam, electricity, or what not. Here is a multiplicity of means with a single end. But when it comes to deciding which of the possible means to adopt, it becomes an economic problem of costs, which depend upon the alternative uses (multiple ends) to which the gasoline, alcohol, etc., might be put. So, what at first looks like a purely technical problem becomes an economic one before we get into it very far. Most of the technical problems of industry similarly merge into economics.

Consider the technical details of management within a given industrial establishment, say the manufacture of hand tools. It is an economic problem to determine whether the workers are to be allowed to follow rules of thumb in operating their machines, or whether they are to be directed in accordance with the principles of scientific management enunciated by Frederick W. Taylor; for we cannot overlook the fact that the greater the quantity of labor required to make hand tools, the less will be available for other products, so that a multiplicity of ends is involved in the decision. If the workers follow rules of thumb, they will accomplish less work. If they follow Taylor’s principles they will accomplish more, so that less labor will be employed in tool manufacturing and more can be released for

¹ Lionel Robbins, *The Nature and Significance of Economic Science*, (London, 1932), Chap. II, § 4.

² *Ibid.*, Chap. I, § 3.

other goods. This is surely economics even in Robbins' sense of that term. If it is so, then the matter of choice between techniques is always a problem of economics, and economics will then extend far into the intricacies, not only of industrial organization and management, but also of mechanical, civil, and electrical engineering, and into all forms of applied physics, applied chemistry, and applied biology.

I see no logical objection to this broad conception of the scope of economics,³ but it has some practical disadvantages. The field is too wide to be encompassed in all its details within one branch of knowledge. The advantages of division of labor require a subdivision of this vast subject-matter and a corresponding division of work among separate specialists. I believe that the dividing line between economics and technology can be drawn by including in the former those general aspects of industrial techniques which are common to all industry, while reserving for specialized fields those details of productive techniques and applied science that pertain only to particular industries or products. Then the economist would properly be concerned with such matters as the general principles which govern the scale of operations in industry, and the broad methods of employing labor that contribute most to efficiency; but he would not be concerned with the layout of a locomotive factory, nor with the particular job specifications to be given a worker engaged in cutting automobile gears. It is these broad general considerations pertaining to all industry that have a bearing on the problem of least costs, and it is these that I have attempted to embody in the subordinate principles of least costs stated in Chapter One and further developed below.

A normative price system relies on competition and profits to give effect to the principle of least costs.⁴ It assumes that consumers will compete among themselves for goods, and that producers will compete with each other for the patronage of consumers and for the

³ See my article entitled *The Scope and Definition of Economics*, in *The Journal of Political Economy*, Vol. XLVII, pp. 623-647 (October 1939).

⁴ We think of this as characteristic only of capitalism, but even a collective economy would depend on the same mechanism to the extent that it accepted normal prices as its guide. See Chapter Eleven.

factors of production, their immediate objective being to maximize their profits. Since consumers are supposed to buy where they can get goods for the least money (quality and service being taken into consideration), those sellers will get the most trade who can give the highest quality or the best service for a given price, or (what amounts to the same thing) who can offer a given quality or service at the lowest price. This gives producers an incentive to keep their prices down by trying to minimize the costs of production in their establishments. According to the law of one price, each seller of identical goods in a competitive market gets the same price no matter what his costs may be. Hence if he can keep his cost below the prevailing price, the difference will accrue to him as a pure profit—something above the normal returns to capital and management. So he is under an inducement to strive for superior efficiency, and to discover and introduce cost-saving innovations wherever possible.

In the competitive process there is thus a tendency to weed out inefficient, high-cost producers. The latter cannot get higher prices than their more efficient competitors. They must sell at equally low prices or else consumers will not buy their wares. So, if their costs are high they may be compelled to sell at a loss, and this will soon drive them out of business. Of course there are times of brisk demand when the market price rises high enough to cover the costs of even those producers who are least efficient; but this is a temporary condition.

Because the patronage drifts toward those sellers who can offer goods at the lowest prices, prices in the long run tend toward an equality with the lowest costs that can be consistently maintained. This puts pressure upon every producer to develop in his establishment the most economical methods that the existing state of the arts affords. Not only that, it also puts those enterprisers who have fertile imaginations and bold ambitions on their mettle to make new innovations that will bring further reductions in costs. For the tendency toward normal prices has a leveling influence on returns to capital and management that pushes them toward ordinary interest and wages, without any surplus for pure profits. The enterprising business man can escape this tendency and secure a surplus for him-

self by pioneering in methods that will reduce his costs below those that are generally prevailing. This influence works toward a steadily increasing efficiency on the part of business leaders that presently spreads, by imitation, to the rank and file of producers. So there are influences in the competitive pricing mechanism that work toward a progressive reduction in costs.

Needless to say, the mechanism does not work perfectly. Unfortunately, cost reduction is not the only path to business profits. Various predatory business practices were described in Chapter Four, by means of which profits can be obtained that do not rest in productive efficiency. These practices make it possible for some businesses to prosper even though their costs are high. Also, the machinery of competitive cost reduction operates irregularly and haltingly, with much waste and misdirection. The net result is that, although progressive reduction in costs does take place with the passing of the years, the average level of costs at any given time is not nearly as low as the most improved technology of the period would permit. It is conceivable that a better system of economic organization might be devised that would make the principle of least costs more effective.

The above shows in very broad terms the present arrangements of capitalistic societies for giving effect to the principle of least costs. The subsequent discussion will deal with these arrangements in greater detail, taking up those general principles of industrial organization and management that fall properly within the purview of economics, but avoiding the details of technique that are of concern only to particular industries. Its purpose will be, not so much to describe the forms and methods of industrial organization (concerning which I can do no more than summarize very briefly what has been elaborated by experts in that field), but rather to raise questions of how the economic system, and especially the normative price system, operates through these forms and methods to promote industrial efficiency therein.

THE REQUISITES FOR LEAST COSTS

Reduction of costs to their lowest possible point depends, among other things, on the adoption in each industry of the form of business

organization that will be most appropriate to the particular operations that must be carried on in the branch of production concerned. This most suitable form of organization can be called the optimum form.

The forms now existing in industry can be classified as the single enterpriser, the partnership, the private corporation, the coöperative, and the government enterprise—of which a special type is the government corporation. Each of these has its advantages and disadvantages. The single enterpriser has the merits of simplicity, directness, and personal interest, which make it well adapted for small business establishments that do not require much capital and that have few employees; but one person usually can command only a limited amount of capital resources, and he is likely to lack versatility, so that this form of organization is not well suited to the more complex operations of large-scale industry. A partnership of several persons has the possibility of commanding more capital, but it is hampered by the legal requirements of unlimited liability and the necessity for reorganization with each change of partners; hence it is best suited to businesses in which human, rather than material, equipment is the chief asset, and where the association of several specialists in closely related fields is of advantage—as in law, accountancy, and medical practice. The corporation, because of the ease with which it can accumulate a large amount of capital by the selling of shares of stock, and because of the flexibility of organization made possible by the appointment of specialized executives under the general supervision of a board of directors, is preëminently suited for productive operations calling for expensive plant and a large number of employees. It has, however, the disadvantage that it is easily controlled by a group of “insiders” who can manipulate its finances to their own advantage at the expense of the majority stockholders, so that much of the activities of the management are sometimes devoted to antisocial financial strategy rather than to promoting efficiency in production. Coöperative enterprises are still in an experimental stage; therefore it is not yet possible to pass a final judgment upon them. Since they are owned and directed by their customers (in the case of consumers’ coöperatives), their employees

(in the case of producers' coöperatives), or their suppliers (in the case of marketing coöperatives), they have the advantage of a close community of interests and coördination with their sources of demand or supply; and their access to capital resources, because of their multiple membership, is fairly good. Marketing coöperatives seem to function efficiently in many cases, but producers' coöperatives have not generally shown a capacity for efficient management, and it is not yet clear whether consumers' coöperatives will prove as efficient as other forms of business organization in this respect. The growth of such coöperatives in recent years, however, indicates that this form of organization may prove to be superior for some kinds of industry. Government enterprises have the advantages of access to unlimited supplies of capital at low rates of interest, greater industrial unity (because the government can monopolize a whole industry if it so desires), and freedom from the temptation to waste money in blatant advertising; but they may be hampered by incompetent employees forced on them by political pressure, and by the timidity and lack of initiative which are sometimes associated with bureaucratic administration. The government corporation is a new experiment that combines some of the advantages of private corporations with those of government enterprise. It may prove to be a very effective device wherever the entrance of government into industry seems advisable.

The price system does not offer any mechanism which indicates directly the form of industrial organization that is best suited to a given case. It does, however, supply a means of testing the efficiency attained in each instance, by registering in the unit costs of the enterprise the opportunities sacrificed in its operations. Society could, if it chose, conduct systematic, controlled experiments with different types of organization in various kinds of industry, to see which leads to the lowest costs. For the most part, however, the contemporary world relies mostly on individual trial and error, in a competitive process of natural selection, to determine the type of organization that is best adapted to given circumstances. As a result of such experience, a body of knowledge has been built up concerning which forms are to be preferred for this or that type of business. This knowledge is known to students of business organization, and their

advice is available to those business men who have the wisdom to make use of it. Also, the process of trial and error has been at work long enough to cause certain forms of organization to become characteristic of the several branches of industry, according to their appropriateness. As a result of this, the corporate form is now dominant in large-scale manufacturing, transportation, public utilities, mining, and finance; partnerships prevail very largely in the professions; while single enterprisers are widespread in retail trade, handicraft shops, and small manufactures. The recent growth of coöperatives and government enterprises suggests that the process of experimentation is still going on, so that changes in the above pattern of organization may eventually prove to be required for the attainment of maximum efficiency.

Another factor of importance in determining unit costs is the scale of operations. This is closely related to the form of organization, for the latter must be adapted to the size of the establishment. The British economist Robinson has classified the factors that make for efficiency or inefficiency in relation to the size of the business firm as technical, managerial, financial, marketing, and those having to do with the assumption of risks.⁵ Technical factors are those which arise from such matters as division of labor, the use of machinery, and coördination of the successive steps in production. Managerial factors have to do with the kind of managerial ability required to handle the problems of the industry, and the opportunities for specialization and introduction of efficiency methods in management. The factors controlling access to the capital market, the ability to borrow needed funds and to market new security issues, are grouped as financial. The marketing category covers all those factors which make for economy or waste in the buying of materials and the selling of goods. The fifth group of factors is concerned with all the forces of risk and business uncertainty that affect the chances for a firm to survive, such as shifts in demand or changes in supply.

All these are matters that are closely related to the size of the

⁵ E. A. G. Robinson, *The Structure of Competitive Industry* (1932).

establishment. Existing technology may require the use of very heavy plant and complicated, expensive machinery in one industry, or small plants, with relatively light and inexpensive equipment, in another. The managerial problems may be complex, calling for a large supervisory staff and an extensive organization; or they may be simple, so that they can easily be supervised by one or two executives. The labor operations may be of such a character that they must be carried on by a few very skilled men, working mainly on their own initiative; or they may call for large numbers of unskilled men, working at routine tasks under organized supervision. The market may be national or international, so that it is readily served by a few strategically located large producing establishments; or it may be local and restricted, calling for scattered small concerns in close contact with consumers.

Here again the price system offers a measure of efficiency by determining the unit costs in each type of establishment. In the course of the competitive struggle, those firms that have the lowest costs are able to undersell their rivals, and so get the bulk of the business. The others must then organize on a similar scale to attain the same level of efficiency, or they will be forced out of the industry. Even monopolies, which are more or less free from this competitive pressure, can increase their profits by reducing their costs; hence they have an incentive to find and adopt the most economical scale of operations. In this way there has taken place over the years an evolution toward a typical scale of organization in each branch of production. This typical scale is presumably the one which has been found by experience to yield the lowest costs.

In general, the optimum size appears to be large in the following types of industry: (1) Those handling a very heavy, large product (e.g., locomotives, railway cars, ships); (2) those requiring elaborate, complex plant, extended over a large geographical area (e.g., railroads, electric power, telephones, and telegraphs); (3) those where the homogeneity of raw material lends itself readily to continuous, uniform handling (e.g., milling, oil refining); (4) those where the product consists of a complex assembly of many parts (e.g., automobiles, typewriters); (5) those where the raw material is restricted

to a few localized natural deposits (e.g., lead, zinc); (6) those where there are marked economies of overhead costs in buying and selling (e.g., department stores, chain stores, mail order houses); (7) those where economy can be attained by wide distribution of risks (e.g., insurance). The optimum size appears to be small: (1) where the product lacks homogeneity because it must be individualized to meet individual specifications or personal tastes (e.g., made-to-measure clothing and certain types of building construction); (2) where routine is made difficult or impossible by erratic weather conditions (e.g., agriculture); (3) where the product depends primarily on individual skill (e.g., the fine arts, handicrafts); (4) where the market for the product is small (e.g., surgical instruments, country newspapers).

When the optimum size of industrial plant has been reached, there may be opportunities for further economy by combining several plants under one ownership or management. The combination may be horizontal (where a number of establishments, all operating at the same stage or level of production, are combined, as in the case of chain stores), vertical (where several successive stages of production are combined in one organization, as in the case of steel companies, which control every operation from the mining of iron and coal to the making of steel products), or lateral (as in the case of chemical companies, which manufacture a wide variety of chemical products). There are various economies that can be effected by means of horizontal integration. For one thing, the wastes of competition can be avoided; duplication of plant and of advertising and selling can be eliminated. The variety of products can be reduced because competing brands are unnecessary. Greater standardization of products is possible. Cross freights can be avoided. It is possible to stabilize the market for the finished product by offsetting local fluctuations in demand and supply against each other. This reduces the costly irregularities of production. Buying and selling can be more efficiently handled. New inventions and processes can be adopted throughout an industry without restriction, thus making possible complete utilization of new developments at an early date,

whereas when there is competition among a large number of firms, some would lag behind others in the adoption of such innovations. Vertical integration adds to these economies the further advantages of reduced costs of middlemen, and better coördination of the successive stages of production. Where the products combined in a lateral integration have a fairly close relationship with each other, all the advantages of both horizontal and vertical combination are derived, and in addition there is better coördination throughout the associated industries, as well as more economical and complete utilization of by-products.

It does not follow that the extensive movement toward integration that has taken place in the United States in recent decades has been motivated entirely, or even mainly, by the desire to effect economies of production, nor that such economies have in fact always been attained by such combinations. Combination, by reducing, and in some cases eliminating, competition, gives a measure of monopoly power to the resulting organization, and this power can be exploited to yield excessive profits by exacting high prices from consumers. The hope of obtaining such profits has been an important motive leading to combination in this country. Another motive has been to secure the profits of promotion. There are many opportunities for the manipulation of corporate securities, to the enrichment of promoters and at the expense of the mass of stockholders, in the process of absorbing independent companies into a large combination. Much scandalous financial jugglery has characterized the development of the great supercorporations that have appeared upon the American scene. The result has been that the possible economies of unified management have frequently been overlooked, and many of the combinations effected have turned out to be financial failures. Nevertheless the possibilities are there, and could be realized under wise, honest, and socially minded management.

All this raises important questions of social policy. The possibilities of improved efficiency from unified industry suggest that the movement toward integration should be encouraged, and even stimulated; but since such integration tends to give monopolistic power to the integrated organization, there is need for adequate social controls to

prevent abuses. The answer is undoubtedly to be found in the growth of government regulation over large businesses, and probably in the gradual extension of public ownership and operation.

The price system is adaptable to any of these types of industrial structure. Where an industry is split into a number of successive stages, each of which is controlled by separate enterprises, a separate price will emerge for each of the series of products as they change their form from raw material to semi-finished and finished goods. There will be a supply of raw materials from field, forest, and farm which tends to be kept in equilibrium with the demand of users of each raw material by the mechanism of price. The same will be true at every succeeding stage. On the other hand, if the several stages are intergrated into one, the price system will record costs all along the line, but there will only be one price—that of the product emerging at the final stage. Coördination of the supply with the need for it at preceding stages will be effected by managerial direction rather than by price adjustments. If monopoly results from any of the integrations, the monopolist can manipulate the price system to his advantage, forcing the price above his costs by the simple device of curtailing his output. Only in so far as competition is effective will the price system work in the direction of efficiency, by tending to force prices down to the level of optimum costs. In every case, however, the price system affords a test of efficiency by making possible a comparison of output with costs, and society can use the criterion of unit costs as the measuring rod of efficiency and the guide to correct economic policy if it so desires.

It is an interesting question, and one of significance for social welfare, whether there is a process of natural selection which, operating through the competitive workings of a natural price system, tends to organize each industry in the optimum way. Given a suitable institutional setting, the normative influences of prices should work in that direction; because the optimum forms of business would have the lowest costs, and should be able to undersell their less efficiently organized rivals in the struggle for consumers' patronage. The fact that certain forms of organization have come to be characteristic of certain kinds of business (partnerships in law, corporations in manu-

factures, small scale in farming, large scale in heavy manufactures, horizontal integration in retailing, vertical integration in steel products, etc.) suggests that such a process is at work, in fact. Presumably these characteristic forms have come to dominate their respective industries because they were better adapted than others. Nevertheless the process is a clumsy and wasteful one of trial and error. Moreover it is interfered with by the ambitions of men seeking to acquire power and profits by organizing monopolies where there is no sound economic basis therefor. The selective influence would perhaps work better in a protected price system where these monopolistic efforts were effectively suppressed. Also it could be helped by a deliberate program of social experimentation and collectively planned industrial organization.

The above forms of integration have to do with the possibilities for economy by achieving closer union of producing establishments within a single branch of industry. Beyond this there are still further possibilities for increasing efficiency by working out a system of centralized planning for a group of related industries or the industries in a certain geographical region, or even for the national economy as a whole. The Tennessee Valley Authority, which combines flood control, navigation, irrigation, and the manufacture of fertilizers and electric power over a large area centered along the Tennessee River and spreading into several states, is a striking illustration of the possibilities in this direction. This project has not only raised the average level of incomes throughout the region served by it, but is also having far-reaching cultural effects as well. The rise in incomes means that the output of goods per unit of economic resources has been increased. This is equivalent to a reduction in unit costs for the products of the area. We do not have to stop with regional planning, but can look forward to a more comprehensive program of general economic planning for the nation as a whole. The pros and cons of such planning involve questions that go beyond the scope of the present chapter.

Although integration can effect economies, it can also lead to monopolistic abuses; and this raises problems of policy.

American policy toward monopolies has heretofore distinguished rather sharply between public utilities and so-called industrial monopolies. In the case of the former, it has been clearly recognized that monopoly control is both desirable and necessary. The principal reasons for this are that concentration of the industry in a single concern reduces unit costs of operation and is more convenient for the consuming public. Unit costs are reduced because in the public utilities industries a large proportion of the costs are fixed. The plant required in such industries is complicated and expensive; hence the carrying charges represented by such items as interest, insurance, depreciation, and taxes are great. Once the plant has been constructed, it can be operated at relatively little expense for materials and labor. If it has been constructed with an eye to future growth, its output can be increased to take on additional business (up to the limit of its capacity) with very little addition to its operating costs. The fixed costs will become smaller per unit of production as the output expands. As a result of this cost behavior, the unit cost of the service provided by the plant declines as the business of the company grows. This means that the public can be more cheaply served by a single company than by several competing concerns. Monopoly is almost inevitable under these circumstances, for when a large company is once established in the field, new competitors cannot hope to get a foothold because they cannot start out with a large enough volume of business to achieve an economical distribution of their heavy fixed costs. Convenience to the public is also greater where there is only one producer, because it is an intolerable nuisance to have the streets cluttered up with too many sets of telephone poles or street-car tracks, or to have pavements torn up repeatedly for the laying and repairing of several water or gas pipe lines; and consumers can be served better if they are all on the same telephone line, or if there is a uniform street railway system in a city, with free transfers at the principal points of intersection.

In recognition of these advantages, monopoly in the public utilities industries has been legalized in United States law. To prevent abuse by these monopolies of their exclusive control, public utilities commissions have been set up to regulate their prices and services. Some

of the price problems which arise out of this regulation will be discussed briefly in Chapter Ten.

With respect to monopolistic business organizations outside of the public utilities, however, American policy has been uncertain and vacillating (shifting back and forth between outbursts of "trust busting" and lulls of leniency), because it has lacked any definite criterion of judgment. The concept of an optimum scale of operations, taken in conjunction with the principle of least costs, offers such a criterion. It needs but to be applied. If, in a given industry, the plant of optimum size is so large in relation to the market for its product that there is room for only one (or very few) optimum business units, the necessity of monopoly (or oligopoly) in that industry should be frankly recognized. Monopoly should then be permitted, and even encouraged, but subjected to public control, or perhaps publicly owned and operated. But where there is room in the market for a large number of optimum units, monopolies should not be permitted.

There is a difficulty in coördinating the successive vertical stages of production that arises from the mathematical fact that the demand for equipment necessarily fluctuates much more violently than the demand for finished goods on which it depends.⁶ The reason for this can be explained by a simple illustration.

Suppose that a small garment factory is equipped with ten sewing machines which have a working life of ten years each. If the purchase of the machines has been evenly distributed in time, so that one machine wears out each year, there will be a derived demand from this factory for one new machine annually so long as it is operating at its normal capacity. If, however, the demand for garments increases ten per cent, the factory will have to buy an additional machine, which doubles its demand for new sewing machines in the year when the increase takes effect. On the other hand, if the demand for garments falls off ten per cent, the manufacturer can get

⁶ One of the first to call attention to this relationship was John M. Clark, in his *The Economics of Overhead Costs* (1923), pp. 389 ff.

along with nine machines instead of ten, so that he will not have to replace the one that wears out in that year. His demand for machines has fallen to zero for the time being. So a ten per cent fluctuation up or down in the demand for garments brings about a fluctuation either way of one hundred per cent in the derived demand for machines. If this illustration is multiplied to cover the whole garment industry, it can be seen that the sewing machine industry will be very seriously affected by fluctuations in the demand for garments. So long as sales of garments continue at a fairly even rate, there will be a reasonably steady demand for machines to replace wornout equipment; but if there is only a moderate shift in the demand for garments, the demand for sewing machines will fluctuate violently. This is typical of what happens to the equipment-producing industries generally when a demand for finished goods changes.

This mathematical relationship between demand for finished goods and demand for derived equipment has been miscalled the *principle of acceleration*. The term is a misnomer because the word acceleration denotes an increase in speed, whereas the relation here is one of magnitude, not speed, and it works in both directions, not only in the direction of increase. A better term to express this relationship would be the principle of exaggerated fluctuations in demand, or simply the *principle of exaggeration*.

The operation of this principle tends to increase the social costs of production because the equipment-producing industries are likely to be built up to meet peak demand, with the result that they must be partly or wholly idle in slack periods. If demand for equipment could be regularized, less plant would suffice to produce all that was needed. The guidance offered by the price system is inadequate to accomplish this under present institutions. The system can only record fluctuations of consumers' demand as they occur and transmit them in the form of derived demands to the industries supplying the equipment. Smoothing out of these fluctuations could only be accomplished, probably, by a program of long-range planning for whole industries. Vertical integration would be helpful in working toward this result.

In operating an industrial plant, the cost of producing a unit of product varies with the output. Each plant has a certain maximum capacity. The output of the plant can be varied anywhere from zero up to the limit set by this maximum. According to the prevailing theory, the behavior of average unit costs in relation to such variations of output will take the form of a U-shaped curve. For a small quantity of output, average costs are high because the fixed costs associated with the maintenance of the plant must be spread over a small number of units. As output is increased these costs can be spread over more units, which tends to pull average costs down. However, when output has been pushed beyond a certain point, the variable costs of wages, materials, etc., tend to rise, because diminishing returns are encountered as increasing pressure is put on the physical facilities of the fixed plant. When this tendency toward increasing variable costs is strong enough to overcome the downward pull of the more widely spreading fixed costs, the curve of average costs will begin to rise. From here on unit costs continue to rise until the maximum output of the plant is reached. The exact shape of the curve will vary from plant to plant, but it is believed that it will usually exhibit the general characteristics described.

The point of lowest (optimum) average costs at the bottom of the curve is the one that fulfills the principle of least costs. Provided that pecuniary costs are made to conform with social costs along the lines indicated in Chapter Six, this is the point of plant operation that is most conducive to the promotion of social economy. In an economic world of continual change, it will not be possible to keep every plant operating at its optimum all the time. When demands increase sharply, so that a rapid increase of output becomes desirable, it may be necessary to push production beyond the optimum point in the period intervening before new plants can be constructed. Conversely, when industries decline because of shrinking demand, the output of some plants may have to drop below the optimum. In a well-planned economy, however, the operation of each establishment would be kept as close to the optimum as was practicable.

The tendencies of a normative price system work toward the main-

tenance of optimum outputs. Under conditions of pure competition, if the price of the product is above optimum costs, profits are abnormally high (that is, there is pure profit in addition to wages of management and interest on owned capital). This encourages the construction of more plants until the resulting increase in the output of finished goods brings their price down to the optimum costs of optimum firms. If the price falls below optimum costs, the industry cannot pay the normal returns to capital and management, and if this condition is prolonged these low returns will discourage new investment in the industry, and will encourage the conversion of plants to other uses, if that is possible. As such conversion takes place and existing equipment wears out, no new replacements being made, the output of finished goods will decline until their price rises to optimum costs again. So, whichever way the price fluctuates, forces are set in motion which tend to force them back until they reach equality with optimum costs. These costs determine the long-run normal price. At this price optimum firms can just break even by operating their plants at optimum capacity. They will receive the normal returns to capital and management, but no more. Under these conditions there is no force making either for expansion or contraction. Production is in equilibrium with demand, and the industry has reached a position of stability.

This analysis does not apply to those industries which are characterized by monopoly or monopolistic competition. It is to the advantage of a monopoly to curtail its output to a point where price is above average costs, and if free entry into the industry is blocked by the power of the monopolist, this condition may persist indefinitely. Both in oligopoly and product differentiation, likewise, there is likely to be some restriction of output, with prices somewhat above optimum costs.⁷ In these cases the operation of the principle of least costs is de-

⁷ Chamberlin shows that, in product differentiation, even though competition may be sufficient to bring a price down to average costs, it must be slightly (perhaps insignificantly) above optimum costs, because the demand curve for the individual firm, having a slightly negative inclination, will lie tangent to the average cost curve a little above the lowest point of the latter. See Edward Chamberlin, *Theory of Monopolistic Competition* (1933), p. 88.

feated; but in the case of product differentiation the departure from it need not always be serious.

An important factor in determining the unit costs of an enterprise is the quality of management that prevails in it. This depends on the ability of the managing officials and on the methods which they adopt for supervising the operations of their plants. The conduct of a business enterprise calls for qualities of a peculiar and unusual sort. A good business executive must be a keen judge of men, and he should have a natural capacity for leadership and organization. He must understand the technical details of his industry. He should also have a broad knowledge of industrial conditions which are likely to affect the business. He must be willing to assume responsibility, and must be able to make important decisions. In addition to these qualities, the business proprietor in a system of free enterprise must be shrewd in bargaining, ready to take risks, and quick to take advantage of changes in market conditions which afford an opportunity for profits.

If industrial managers were a stereotyped variety of human beings whose qualities could be standardized and readily appraised, there would be an established market for their services and the price system would set a normal price for them according to their worth. Something of this sort is the case with most kinds of labor; but the qualities for success in business are so variable and unique that no such standardization is possible, and there is neither an organized market nor an established price. This point has already been developed in Chapter Four.

Likewise, no systematic social machinery exists for the selection and appointment of leaders in industry. In the case of corporations we rely upon the judgment of boards of directors. Beyond that the social process is one of natural selection. Anyone is free to try his luck at running a business of his own. Many do, but unfortunately most of them fail. It might be supposed that in this struggle for survival there would be an effective weeding out process that would bring the fittest to the top. However, it has already been shown that

fitness in business is not necessarily fitness in productive efficiency. Profits can be obtained, not only by producing goods of high quality at low costs, but also by various predatory practices. Too often success in the business world is attained by methods of the latter kind, so that the process of selection tends to bring persons of an antisocial type into positions of leadership. It must be concluded that present methods of selecting industrial managers are wasteful, and depart widely from standards of social service.

The problem of selecting industrial managers is closely related to the principle of developing talent. A wise social system would provide a means of detecting capacity for leadership at an early age, and a method of training and guidance to put those who possess this capacity into positions of responsibility. It would also weed out the predatory type and inculcate into the minds of all ideals of social service. The collegiate schools of business which are now numerous in the United States are making a beginning in this direction, but they are still far from achieving that which is needed, especially in the matter of promoting ideals of social service. A so-called business type of personality too often gravitates into the faculties of such institutions, with resultant stress on making money rather than on performing service to the community; and such institutions are likely to attract a preponderance of students who have this same point of view.

In times past a business enterpriser usually relied chiefly on his own common sense, ingenuity, and experience to guide him in managing his business. This is still the rule in many small establishments; but in the more up-to-date enterprises management has become a specialized, systematic technique, based on careful study, planning, and expert supervision. Beginning with the work of Frederick W. Taylor, there has grown up an applied science or art of management that has reduced costs remarkably in the enterprises that have adopted it, and that is capable of still further cost reductions in the future.

It is not necessary to describe these methods of management in de-

tail here, but a very brief outline of their general features may be in order. In the first place, the location of an industrial plant is selected with the greatest care so as to offer the most satisfactory combination of such factors as access to raw materials and power, availability of labor supplies, climatic advantages, transportation facilities, and nearness to the market. Then the plant is designed so as to permit the greatest efficiency in its operation. For instance, the layout will permit materials to pass through their successive stages in the simplest and most direct way, without criss-cross movement. Light materials will start at the top of a vertical building, passing thence downward through successive levels; heavy materials will be handled horizontally, over a broad area; complicated mechanisms will pass along an assembly belt; and so on. When the plant is put into production, its work is carefully planned so that its operations will proceed steadily, without interruption. Priority of manufacturing orders, preparation of materials, the setting up of machines and tools, and the progressive stages of the work are scheduled in advance; then the operations are carefully checked at each step to see that these schedules are maintained. Selection of workers is put in the hands of specialized personnel men, who choose and place them with care. The work of each shop employee is supervised in detail, under the Taylor system of so-called scientific management or some modification of it. Incentives are provided by adequate financial rewards which are related to the amount of work accomplished, and by promotions for those who are qualified for advancement. *Esprit de corps* is promoted by means of recreational facilities, clubs, athletic teams, etc. All these are technical matters which call for special training. Hence much of the work of management is delegated to salaried experts who are employees, rather than owners of the business. The enterprisers confine themselves to determining the broader questions of policy and selecting the higher managing officials.

Full attainment of the principle of least costs requires the adoption of such methods as these in all producing establishments. It calls also for continuous research in managerial problems, in order that progressive improvement in efficiency may be promoted. When it is considered that, so far, only a few of the more progressive firms

have put into effect the knowledge that is now available about efficient managerial methods, it can be seen that the possibilities for further achievement by the extension of such methods are very great.

In earlier chapters of this essay the reader's attention was drawn to the fact that industrial techniques are variable enough to permit of considerable flexibility in the proportions in which the several factors may be combined in production. Among the examples cited to illustrate this variability were extensive *vs.* intensive agriculture and manual *vs.* mechanical methods of moving materials. Further illustration is provided by railroads, which can be constructed up hill, down dale, and along the winding rivers, or level and straight, by filling in the low places, tunneling through the hills, and bridging the streams. The first type of construction requires relatively less, the latter type relatively much more, saving and investment in proportion to the labor and land employed.

Reduction of production costs to their minimum requires that the choice between alternatives of this kind should be made in such a way as to use more freely those factors of production that require the least sacrifice of production pains or opportunities given up, and to use sparingly those that are most painful or that, because of their scarcity, involve the greatest loss of desirable alternatives. To the extent that costs can be made to reflect the real sacrifices involved in production (a matter that has already been considered in Chapter Six), a normative price system offers a mechanism for doing this, through the law of substitution. According to this law, an enterpriser will of his own accord seek to maximize his profits by substituting a cheaper factor for a dearer one wherever it is possible. This principle would be carefully carried out in the efficient methods of management outlined above. However, we must not forget that the law of substitution is based on enterprisers' calculations of pecuniary costs, whereas the principle of combination here discussed is concerned with social costs. Some changes will have to be made in the institutions surrounding the price system before these two kinds of costs will be in harmony.

No matter how low a level of costs may have been attained by an industry in a given state of the arts, it should always be possible to effect further reductions progressively as future scientific developments and new inventions occur. Hence the promotion of technical progress, which was treated previously as a problem of present and future, is also relevant to the problem of least costs. The impulse to science and invention may have its roots in the curiosity of human beings and the urge of creative originality in the make-up of certain gifted persons, but it is the prospect of profiting by lower costs that is often the lure which induces business men to make use of new discoveries. In his interesting study of *Inventors and Money Makers*, Taussig showed that profits are an important motivating factor here.⁸ He pointed out that inventors themselves are not actuated so much by pecuniary motives as by the sheer play of their ingenuity. They often waste their time on the perfecting of silly gadgets that have no commercial possibilities. Promoters and enterprisers, however, are guided by the prospect of profits, so that they select from the many inventions the ones that are most likely to have useful applications in industry. The same motive leads many large corporations to sponsor widespread organized research, directed toward the discovery of new devices or procedures that will improve the efficiency of production. In these cases the pecuniary calculus of the price system is helpful in working in the direction of social well-being.

It is said that this calculus also tends to encourage types of activity that interfere with the fullest promotion and use of new inventions. It is sometimes profitable for business concerns to buy up and suppress useful inventions that might otherwise give some competitor advantages over them, or make their existing plants obsolete. Critics have made much ado over this business of suppressing inventions. Schumpeter, however, argues persuasively that the practice is not as bad as it has been represented, for it would be a social waste to scrap expensive existing equipment as soon as a better device has been discovered. Even a socialistic society would find it wise to hold many improvements in abeyance until existing equipment had worn out. The fact that the largest corporations are the ones that

⁸ F. W. Taussig, *Inventors and Money Makers* (1915).

have the most extensive laboratories is evidence that they are on the whole more interested in promoting technical progress than in suppressing it.⁹

The patent system, which gives to an inventor (or to his financial backer) the exclusive right to control the use of an invention for a fairly long period of years, undoubtedly encourages technical progress by assuring to the exploiter of the invention the potential profits which may come from its use. At the same time it encourages monopolistic exploitation of the invention at the expense of the consuming public. The power of many monopolies rests very largely on the exclusive control of basic patents that is made possible by our patent system. Here the price system is being manipulated to bring unearned incomes to the monopolists, at the expense of the general welfare. Some reform of our patent laws is needed to make this abuse impossible.

SUMMARY OF LEAST COST PRINCIPLES

From the foregoing account of the various conditions on which the attainment of efficiency in industry depends, a large number of detailed criteria of social economy might be derived. One criterion could be formulated concerning the form of organization that is most appropriate, another concerning the size of organization, and still another concerning the combination of separate establishments in some form of integration. Likewise there might be separate criteria concerning each phase of industrial management, such as the selection of executives, the laying out of plants, the scheduling of operations, the prescribing of standard tasks, the supervision of workers, and the selection, training, remuneration, and promotion of employees. A long list of such criteria would be more appropriate for a treatise on industrial organization and management than for the broad economic study with which this book is concerned. Therefore, I have thought it advisable to condense the findings of the above discussion into five general principles, which are to be regarded as subdivisions of the broad principle of least costs. These principles, which

⁹ Joseph Schumpeter, *Capitalism, Socialism and Democracy* (1942), Chap. VIII.

were already stated in Chapter One, are repeated here by way of summary. They are as follows:

The *principle of optimum industrial organization* is intended to sum up what was said above about the form that industrial establishments should take, the scale on which they should be organized, and the relationships of independence and combination that should exist among them. It states that each industry should be organized in the form, on the scale, and with the degree of integration that promotes the greatest efficiency of production.

The *principle of optimum output* concerns the quantity of goods that should be produced in each separate plant. It states that the output of each plant should be kept as close as possible to the point of lowest average costs.

The *principle of efficient management* is intended to embody the various considerations on which the internal efficiency of a producing establishment depends. It states that industrial establishments should be directed by the most competent executives, and should use the most efficient methods of management.

The *principle of factorial combination* states that the factors of production should be combined in such a way as to minimize the use of those which require the most sacrifice, and to maximize the use of those which require the least sacrifice.

Finally, there is the *principle of technical progress*, which states that there should be social institutions for the promotion of progressive improvement in industrial products and techniques.

LEAST COSTS IN CAPITALISM AND COLLECTIVISM

It should be clear from the foregoing analysis that the institutions of capitalism lend themselves in various ways to the reduction of production costs to a minimum. The influence of competition, which tends to force prices toward an equality with the optimum costs of an optimum firm, imposes certain standards of efficiency on business enterprises and penalizes inefficiency. At the same time the institution of business profits gives each business an incentive to seek progressive reductions in costs in order to obtain a margin of gain between costs and the prices prevailing in the market.

On the other hand, there are certain weaknesses in a capitalistic social order that make for inefficiency, with the result that costs in industry generally are probably higher than they need to be. The selection of industrial leaders and the attainment of efficient forms of industrial organization by a process of trial and error involve much waste because of the high percentage of business failures that results from the errors. The average level of managerial ability in contemporary industry is not very high, and the methods of management that prevail are far from coming up to the standards of efficiency that have been made available by expert study of managerial problems. Costs to producers at later stages and to consumers are made higher than they ought to be by monopolistic prices exacted at some stage or other of production. The exclusive possession of patents and trade secrets prevents the most widespread possible use of the most efficient methods in some lines of industry. To this must be added the restrictions practiced by labor organizations, which make labor costs higher than they should be. Competition encourages a multiplicity of business enterprises which often works against the principle of optimum industrial organization and causes wasteful duplication of plant facilities. To these imperfections must be added the waste of predatory activities in many phases of business that add to costs because they are activities which have to be paid for, even though they do not add anything to output.

Notwithstanding these serious faults, the capitalistic system has accomplished marvels in reducing production costs. This could be illustrated by thousands of different examples. One of the most conspicuous of these is the modern automobile, which is a far better product than its predecessor of even ten years ago, and yet which is sold at a relatively much lower price. The same is true to a greater or less degree in almost every category of goods—clothing, home furnishings, transportation, radios, motion pictures, and to some extent even foodstuffs. The net result of it all is a progressive increase in national real income over the last century that is truly phenomenal. This is by all odds the greatest achievement of capitalism. The capitalistic order meets the test of least costs better than it does any of the other criteria of social economy.

The most serious economic question that can be raised concerning the possibilities for success of a collective social order concerns the criterion of least costs.¹⁰ Critics of socialism doubt whether it can offer any incentives to efficiency that will prove as effective as the institutions of competition and private profits. They fear that bureaucratic red tape, politically appointed managers, unwillingness to assume responsibility, the impossibility of getting rich by conspicuous industrial achievement, and the loss of initiative that comes with assured employment at comfortable wages, will reduce production to a low level. These objections cannot be lightly disregarded.

It is entirely possible that some of these difficulties will constitute serious problems for a collective order, but it should be possible to mitigate them under wise leadership. It must not be overlooked that people who have capacity for leadership are bound to be born in a collective as well as a capitalistic order, and are pretty sure to make their way to the top. Therefore, there is no reason to think that able management will not be available to direct the collective enterprises. It is doubtful whether the problem of bureaucratic red tape will be any more serious than it is today in some of our giant industrial corporations. This problem will be less serious as the applied sciences of government administration and industrial management develop approved techniques for efficient direction of large political and economic organizations. The stimulating influence of competition need not be entirely absent from a collective order. Socialized enterprises can be encouraged to compete with each other in the improvement of products and the reduction of costs. If administrators are paid on the basis of their performance in respect to these two matters, there will be plenty of incentive for efficiency, without the extreme inequality that now prevails.

A collective order offers certain possibilities for efficiency that do not exist in the capitalistic system. The greatest of these is centralized planning of the economic process as a whole. Some measure of such planning is possible of achievement without a complete departure

¹⁰ The political question of civil liberties is possibly even more serious, but it lies outside the scope of this study. It is well posed in F. A. Hayek's *The Road to Serfdom* (1944), Herman Finer's *The Road to Reaction* (an answer to Hayek, 1945), and Barbara Wootton's *Freedom Under Planning* (1945).

from capitalistic institutions, but it would certainly be much easier of accomplishment in collectivism. By means of such planning, industrial establishments could be organized in the optimum way without the extravagantly wasteful process of trial and error that now prevails. Trial-and-error experimentation would only need to be carried on in small sample establishments, and when the most efficient organization had been ascertained by this means it could be applied generally to industry, so that all establishments would be efficiently organized. The same would apply to the details of management, so that the level of managerial efficiency throughout industry could be kept fairly well abreast of the most approved methods. There would be no curtailment of supplies and artificial boosting of costs by monopolies. Patents and trade information would be the property of the community and would be made available to all producers as soon as their advantages were proved. Predatory activities that now engage the energies of a great number of persons in the business world would be abolished, because there would be no further opportunities for the manipulation of corporate finances, the adulteration of goods, high pressure selling, flamboyant advertising, unfair methods of competition, and so on. There would be no further occasion for the wasteful duplication of plant and for the expenditure of huge sums in competitive advertising. Finally, there is reason to believe that the promotion of technical progress would be as great as it is in the present order, if not greater. Research and invention are no longer the products of individual geniuses, working on their own resources, but are largely a matter of organized laboratories financed by large corporations. The state could carry on research in the same way on a much larger scale, and introduce its findings throughout industry as soon as their advantages were demonstrated.

On the other hand, collectivism, by itself, offers no assurance that individuals of aggressive and antisocial tendencies will not be born. Since such people will be present, they will endeavor to find some outlet for their selfish impulses. If the economic environment does not offer a suitable outlet, they may find it in political activity. A political career may provide an abundance of opportunities to promote their own interests at the expense of the masses. So a collectivist

society may find, in its political leaders, the same predatory exploiters that now plague our economic institutions.

It is impossible to weigh these relative advantages and disadvantages of capitalism and collectivism in this matter of least costs quantitatively. Therefore it must remain a matter of judgment as to which way the balance between the two systems would be tipped in respect to this criterion. I am inclined to the view that collectivism offers a superior method of organizing production, and therefore would prove even more efficient than capitalism in achieving abundance of output. Many persons regard collectivism as primarily a proposal for reform of income distribution. It does offer distinct advantages in that respect, but it also merits serious consideration as a proposed means of achieving a better system of production, and in the end this may prove to be a decisive factor in determining its success or failure.

CHAPTER NINE

Market and Normal Prices

THE CORRECTIVE ACTION OF PRICES

The central problem of this study is to explore the possibilities and limitations of the price system as a guide to social economy. Heretofore the discussion has been concerned mostly with the normative tendencies of that system without taking account of the fact that prices do not actually conform to their normals. They are in a state of continual fluctuation, in the course of which they sometimes depart very widely from their positions of normal equilibrium. This chapter will deal with these fluctuations and attempt to appraise their significance.

In an unplanned economy the price system works partly by anticipation and partly by correction after the event to promote an equilibrium between the demand and supply of each product, and thus to establish a general equilibrium in the economy as a whole. It depends upon enterprisers to anticipate the prospective state of the demand for each good and the probable conditions of the supply. In doing this, the enterprisers are governed by their past experience, and by the visible evidences of likely change in the future that they are able to discern. In so far as they are successful in their forecasts, the prices of the products will conform to their normals, and a general equilibrium will prevail throughout economy. In view of the uncertainties that are bound to affect the situation, and the lack of coördination among the many competing firms, full success is not to be expected, and it is seldom (if ever) achieved in the case of any single good, not to mention the whole complex of economic processes. As a result of the various errors that are bound to occur, there will be a greater or less amount of unbalance in the conditions of demand and

supply. When such unbalance occurs, the price system sets certain corrective forces in motion. This works as follows: If the effective demand exceeds the effective supply in a given case, the price of the good concerned will rise, and this tends to curtail the demand and to stimulate the supply, thus restoring a balance between them. If the effective supply exceeds the effective demand a reverse reaction occurs. Price falls, production is discouraged, and consumption is encouraged, until balance is restored. As a result of these corrective actions, the movement of any price over a period of time could be plotted as a zigzag curve, fluctuating about a straight line representing the position of normal equilibrium.

To the extent that normal prices are (or can be made to be) an indication of optimum economic arrangements, any deviation of prices from their normals is a departure from the conditions of maximum social economy. If the deviations are slight, and quickly corrected, this departure is not serious; but if they are great, or long sustained, or both, it is serious. An economic process that fluctuates violently in spasmodic flops of error and overcorrection will suffer from much waste, unemployment, and general instability. It will not conform to the criteria of social economy, and it will not make for a strong social group. Therefore, the relations between market and normal prices constitute an important economic problem.

Some of the critics of neoclassical economics argue that in the actual world there are so many interferences working against the normative tendencies of the price system that the latter are almost completely nullified. Hence they believe that the whole theory of normal price has no pertinence for the world of reality; it is a mere intellectual plaything for academic theorists.

If this criticism were sound there would be no order whatever in the price system. Prices would be a perfect chaos, and it would be impossible to make any generalizations about them. Fortunately it is not sound. There is a pattern in the arrangement of prices, and a consistency in their movements (as in all the phenomena of the universe) which permits of scientific analysis and the forming of generaliza-

tions. There are three evidences of this orderliness in the price system.

In the first place, although the prices of many goods appear at first glance to fluctuate erratically, it can be observed that each has its characteristic range of movement. This is shown by the following table, which gives the highest and lowest prices that were quoted in New York for a number of staple commodities during a certain six months period:

<i>Commodity</i>	<i>Highest Price</i>	<i>Lowest Price</i>
Cotton (per pound)	\$.1525	\$.1236
Wheat (per bushel)	1.61	1.34
Cocoa (per pound)	.1320	.0695
Pork (per 200 lb. bbl.)	32.37	27.00
Beef (per 200 lb. bbl.)	24.00	17.00
Iron (per ton)	25.76	22.76
Copper (per pound)	.17	.12
Standard tin (per pound)	.6575	.4955
Rubber (per pound)	.2694	.1848

Observe that cotton prices moved within a range of 12 to 16 cents, wheat between \$1.34 and \$1.61, tin between 49 and 66 cents, and so on. This behavior suggests that there is a predominating force operating upon each commodity that pulls it toward a central position, from which the lesser forces that cause it to fluctuate up and down are unable to move it by more than a moderate amount. This supports the theory that each price tends toward a certain normal position.

In the second place, if the movements of a particular price over a period of years are recorded as a time series and plotted as a curve, at least three types of change can be clearly observed; namely, certain small day-to-day fluctuations, somewhat longer waves moving upward or downward over periods of a few months or years, and long secular trends which may move upward or downward, or both, in the course of a decade or more. The very fact that such movements can be observed in a vast number of cases is proof that there is order in the system of prices. The problem of the theorist is to reveal the nature of this order, by untangling the several forces which are responsible for these different types of movement. This is what the

theory of market, short, and long period value tries to do. The lines of secular trend presumably represent changing normal prices; the lesser waves are short-period adjustments to changes in the conditions of demand or supply; and the jagged, irregular saw-teeth are the day-to-day fluctuations of market prices.

In the third place, if there were no order in the price system, a composite chart showing the movements of many prices would be a chaotic conglomeration of lines in which no pattern could be observed. The fact is, however, that such a chart does show a distinct pattern of change. In Frederick C. Mills' voluminous study of hundreds of wholesale commodity prices, covering the years 1896 to 1913, he found that if the prices were converted to relatives with a common base year as the starting point, their subsequent movements diverged in such a way that their trend lines could be plotted in the form of a fan, as seen in Figure 12.¹ Various other statistical manipulations in Mills' study, as well as in those of other writers, give further evidence of order and consistency in price behavior.

These proofs constitute convincing evidence that prices are not just a meaningless conglomeration, but a system whose characteristics can be described in terms of scientific generalizations. Whether the neoclassical theory is a correct explanation of price behavior may be debatable, but there can be no doubt that valid generalizations can be made. For my own part, I am convinced that the neoclassical explanation is substantially correct as far as it goes, and I feel supported in this belief by the fact that no other theory which is at all consistent with the observed phenomena has yet been offered. Mills' careful and exhaustive empirical study has not revealed any different explanation, and neither have the investigations of any other inductive workers.

However, it is a fair criticism to say that neoclassical theorists are often so preoccupied with the normative tendencies of the price system that they do not pay enough attention to the market and short-period fluctuations. Granted that the normative tendencies dominate price movements, the departures from normal are nevertheless facts which play a significant part in the functioning of the economy.

¹ Frederick C. Mills, *The Behavior of Prices* (1927), p. 68.

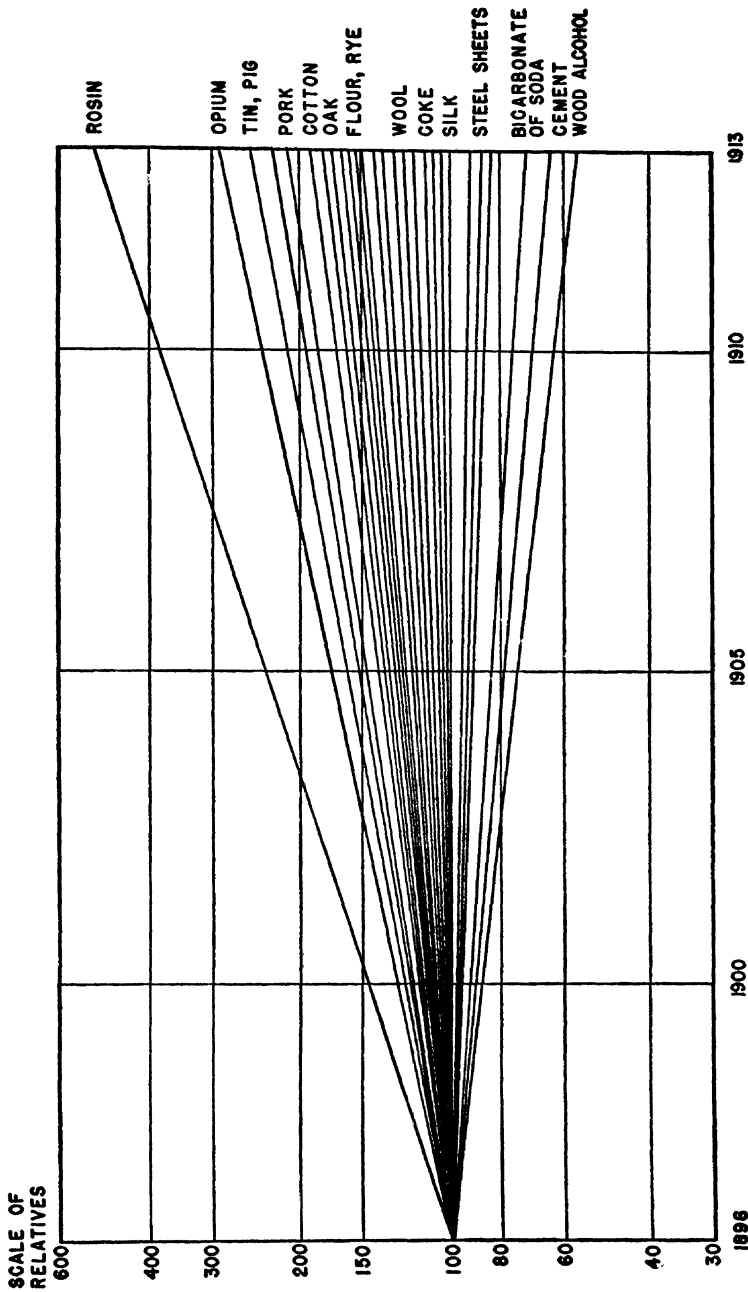


FIGURE 12. The Fan-like Movement of Price Trends

They must not be ignored or slighted. They are of particular importance for the problem of this essay because the price system as a guide to social economy must be judged not by its normative tendencies alone, but by its actual performance. Even if the normative tendencies represented the optimum arrangements for the economy (which they do not, as the discussion of the preceding chapters has shown), if the system in fact is continually deviating appreciably from its norms the optimum would not be attained.

There are two types of price movements that must be clearly distinguished if confusion of thought is to be avoided.

One is a general and simultaneous movement of all prices in response to some tidal force that affects the whole economy profoundly. Sometimes the force is of a violent character that causes a drastic upheaval—for instance, a war, a political revolution, or a runaway money inflation. At other times it may be more gradual and orderly—for instance, the steady expansion of money and credit that has occurred in the twentieth century as a result of increased production of gold and the increase of banking facilities. In either case, the result will be a movement of the general level of prices upward or downward. This movement is not the result of changes in the relative conditions of demand and supply of particular goods, but of some influence affecting the value of the money unit in terms of which prices are expressed.

The second type of price movement is that which results from changes in the conditions of demand or supply for particular goods, the general state of the economy as a whole, and of the price level, being otherwise unchanged. For example, a change in fashions or the invention of new products will alter consumers' demands for certain goods; or, the discovery of a new oil deposit or the invention of a new manufacturing process will change the conditions of supply for certain commodities.

Price movements arising out of cyclical business fluctuations are intermediate between these two types. They result partly from monetary inflations and deflations which change the level of prices, but they are also characterized by shifts in the demand for, and changes

in the supply of, particular commodities. Furthermore, the two types of price movement are not separate in time; they are always at work and are therefore intermingled. Nevertheless they must be separated for purposes of analysis, if the phenomena are to be understood.

These two types of price movement present problems of a different kind for the applied economist. It is relatively easy for an economy to adjust itself to changes in the demand or supply of particular commodities, since usually only a few commodities are affected at one time, so that the general balance of the system is not seriously disturbed by them. Changes of the more general sort are less easily dealt with, because they affect the entire economy, and frequently they upset it seriously. It is fairly obvious that different measures may be needed for dealing with these two different types of problem. The spontaneous adjustments of the price system are capable of handling isolated particular changes in the economy fairly well. They can also make the needed adjustments to general changes if the latter are gradual and moderate; but the price mechanism is entirely inadequate for dealing with drastic general changes, such as those caused by war and marked cyclical fluctuations.

The mechanism by which prices effect a readjustment of production and consumption when there is a change in the conditions of demand or supply for particular goods is well described by the neo-classical theory, and can be shown clearly by demand and supply diagrams of the familiar type. Consider, for instance, the drawings in Figure 13. Here we suppose that consumers are changing their dietary habits as a result of the modern emphasis on vitamins, so that they eat less of the starchy vegetables and more of the green variety. Accordingly there is a decline in the schedule of demand for wheat flour and an increase in that for lettuce. The original schedules of demand are shown by the curves DD in the two drawings, and the new schedules by the curves $D'D'$. It is assumed that the prices of both commodities are in their positions of normal equilibrium before the change in consumption takes place. This is shown at P , where marginal demand-price, marginal cost (represented by the curve S_m), and optimum cost (represented by the curve S_o) all coincide. In the

case of wheat flour: when the schedule of demand falls to the position $D'D'$, since the production is temporarily geared to the output OA , the market price will fall temporarily to Q , because this is all that can be got for the current output under the new conditions of demand. Since this is far below the costs of production, this price will not long prevail. Output will soon be reduced to OB , and price will move up to R , where marginal demand-price coincides with marginal costs. This is the short-period price that will prevail until such time as existing equipment in the industry is worn out or converted to

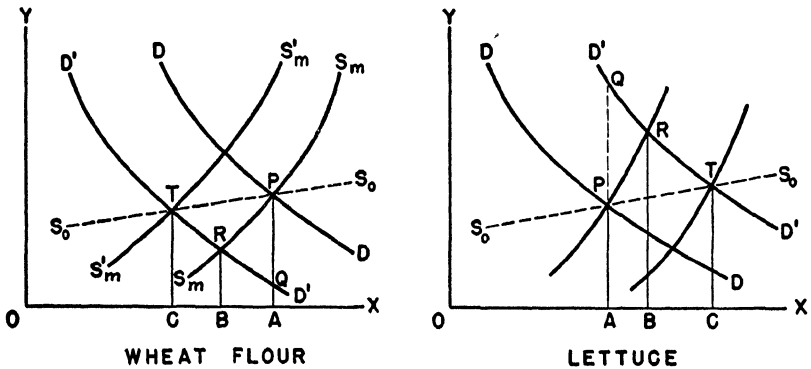


FIGURE 13. Adjustment of Supply to Changing Schedules of Demand

other uses. This equilibrium is only temporary, because the price does not cover the average unit cost of production. Hence there will be withdrawals of labor and capital from the industry until, the output having shrunk to OC , price rises to T , where marginal demand-price, marginal cost, and optimum cost all coincide. This is a new position of normal equilibrium in which production has been fully adjusted to the decline in consumption, and balance has been restored. In the case of lettuce a similar sequence of changes takes place, but in the opposite direction. The original normal price is at P . When the schedule of demand increases from DD to $D'D'$, market price tends upward toward Q , then drops to R as output expands from A to B . Since this price is above average costs, producers are making profits, which induce an increase in capacity sufficient to in-

crease the output to *OC*. At this point price falls to *T*, and equilibrium is again restored.²

The mechanism of adjustment to a change in conditions of supply is very similar, except that here the schedules of marginal and optimum costs will shift downward or upward, as the case may be, while the schedules of demand remain unchanged. Prices will move through a sequence of market, short-period and long-run changes in much the same way as in the preceding examples.

If we could assume that demand was a fair indication of social needs, and costs a correct measure of social sacrifices, then all the changes involved in the above processes of adjustment would be conducive to social economy. When the demand shifts from flour to lettuce, the immediate changes in the market prices of these commodities reveal that production is no longer in balance with consumption. The ensuing changes in short-period and long-run prices tend to turn both consumption and production in needed directions, and at each stage the equilibrium reached is the best position for the economy under the existing circumstances. In the first reaction, the shift of demand has caused an excess of flour and a shortage of lettuce; hence the consumption of flour should be encouraged temporarily in order that it will not be wasted, and too much use of lettuce should be discouraged while there is a deficiency. At the same time, production of flour should be curtailed, and that of lettuce increased. The low market price of flour and the high price of lettuce help to accomplish all these things.

It is desirable to pass from this temporary situation of maladjustment to one of complete rebalance as quickly as possible; but wheat farms and flour mills cannot be converted directly into truck farms, refrigerator cars, and other facilities for getting lettuce to market in fresh condition. Therefore it is wise to make such use of existing facilities as is economical during the period of transition. The short-period equilibrium helps to accomplish this, by bringing production

² If there are any readers who are not familiar with this mechanism of adjustment and the diagrams used to illustrate it, they are more fully explained in my *Principles of Economics; a Restatement* (1941), pp. 363-370.

in each case to the place where marginal demand-prices equal marginal costs. The available resources are thus used up to the point where the final increment of utility just compensates for the sacrifice involved. This fulfills the principle of surplus utility. It is the best adjustment that is possible so long as there are productive facilities for producing wheat and flour that are not yet worn out, and so long as the facilities needed for producing lettuce in sufficient quantities are not yet fully developed; but the fact that the price of flour is still below optimum average costs, and that of lettuce above such costs, shows that there is still a misallocation of resources.

The price mechanism works to bring about a correct reallocation eventually. Since the price of flour is below optimum average costs, it does not suffice to pay the ordinary returns to investors in that industry; hence there will be a gradual withdrawal of investment from it. Profits in the lettuce industry will be more than normal; hence there will be further expansion there. This goes on until price equals optimum costs in both industries. Here utility is maximized, for the factors of production are now yielding the same return in both industries. The principle of opportunity costs has now worked out its full effects, and the conditions for maximizing social economy are attained.

This analysis leads to the conclusion that, provided demand and cost schedules can be made to reflect social utilities and social sacrifices along the lines suggested elsewhere in this essay, the mechanism of price fluctuations tends to correct errors in the allocation of resources by setting in motion forces that bring production into balance with demands.

However, we must not overlook the fact that this mechanism works by the correction of errors after they occur. It will prevent them only so far as producers, having suffered from previous mistakes, learn by experience to avoid similar blunders in the future. They can do this only to the extent that it is possible for individual enterprisers, acting independently, to anticipate correctly the probable conditions of consumption and production in their industries far enough ahead to provide the right amount of plant, and to train and employ the right amounts of labor. In a roundabout process

where production is spread over a fairly long period of time, and in an economy of substantially free enterprise where there is no centralized direction of production or control over enterprisers' decisions, this is a pretty large order. Therefore the question still arises, whether it would not be better to have a system in which the need for readjustments in production cannot be seen far enough in advance so that maladjustments will not have to be corrected after the event. This is the general problem of economic planning that will be considered in Chapter Eleven.

SOME OBSTACLES TO ADJUSTMENT

Whenever there occurs a change in the conditions of demand and supply that requires a reallocation of resources, if it has not been foreseen far enough ahead to prevent maladjustment, it is desirable that readjustment be accomplished as speedily as possible, in order that error may not be unduly prolonged. However, the mechanism of price correction described above shows that the process of correction must go through several stages. In the complex economies of the modern world, with their elongated vertical structure of production and their durable specialized equipment, a shift from one product to another cannot be accomplished all at once. It took the Ford Motor Company several months to convert from the old Model T to the gearshift type of automobile. If it takes so long to change from one design of product to another within an industry, how much longer it must take to shift labor and capital into an entirely different industry! Yet this is what must happen when new products supplant old ones, as the automobile replaced the horse and carriage and plastics are to some extent replacing other materials. Where a long succession of vertical processes is involved, so that mines must be developed, ships provided, or new factories constructed several stages prior to the making of the final product, a considerable time may have to elapse before production of the latter can be appreciably increased.

The reduction of plant capacity in a declining industry may be equally slow of accomplishment. The equipment used to produce the old product may be very durable, and it may be so specialized that it

cannot be converted to other uses. Rather than waste this resource by scrapping it, it is better to use this resource for what it will bring, and the short-period adjustment of the price system tends to accomplish this by yielding the out-of-pocket costs of continuing to operate; but complete readjustment requires that plant capacity in the industry be reduced. This must wait until the old equipment wears out. As this happens the equipment will not be replaced (because the low prices prevailing for its products will not justify the investment) until capacity has been reduced to the point where there is no longer an oversupply. Then the prices will rise enough to yield the normal rate of return on investments in the industry, so that enough new equipment can be provided to meet such demand for the products as may still exist. If the demand fades out entirely, prices will fall gradually to zero, and the industry will slowly disappear, because no new investments in it will be made. The very description of this process of readjustment shows that it may require a fairly long period of years. So, both in the creating of new equipment and the scrapping of old, there is a lag in the adjustment of plant capacity to changes in the demand for finished goods.

The redirection of labor also takes time. For instance, if a machine is invented for doing the work formerly performed by skilled workers, there will be for some time a surplus of these men. Trained for a particular task, they do not readily find employment at good wages in other occupations; consequently they may hang on in the old market, creating a situation of oversupply that depresses their earnings to low levels. Here is durable human equipment of a specialized character that cannot quickly be reduced in quantity. The price system works to reduce the excess by discouraging young persons from entering the declining trade, but it works in a coldly mechanical way that ignores the human problems involved. The guidance of prices should therefore be supplemented in cases of this kind by a program of retraining and relocation under the egis of the government.

Another cause of delay in the accommodation of production to changing conditions is the difference in the ingenuity and alertness of different enterprisers. Some business men sense impending changes

and make adaptations thereto much more quickly than others. Those who are slower retard the process of adjustment. Likewise new methods or devices in industry are first introduced by some enterprising firm, after which they spread slowly, by imitation, to the others. If the device is protected by a patent, this spreading to other firms may be long delayed. In any case there is a considerable lag of adjustment for the industry as a whole.

In the interest of social economy all these lags should be shortened as much as possible. So long as any maladjustment remains there is some social waste. It is therefore desirable to develop institutions that will foresee the need for changes long enough ahead to prevent any maladjustment from occurring, and, where this is not possible, to make corrections with a minimum of delay. The normative price system in the setting of existing institutions falls far short of perfection in this regard.

The correct adjustment of supply to demand is difficult in a system where the decisions about production are made by many different enterprisers acting independently of each other. It would be a miracle if the total output of any good was just right, when each firm acts with only vague ideas of what the plans of other firms are. If each industry remained stable, so that production was fairly regular from year to year, there probably would not be much error from this cause, because each producer would soon learn by experience what part of the market he could depend upon, and would govern his behavior accordingly; but where demands are rising and falling, and new devices and methods are being introduced into first this establishment and then that, the lack of central guidance becomes more serious. If the demand for a certain product is increasing, each enterpriser seeks to take advantage of it by expanding his operations. Errors of optimism are likely to be made, whereupon it is presently discovered that the industry is overdeveloped. Then when the oversupply causes the market price of the products to drop below normal, so that many or all firms will suffer losses, there may be errors of pessimism which will lead each to contract his operations to the point where total production will fall short of the demand. A de-

clining demand is likely to lead to a similar series of mistakes, in reverse order. The greater the number of producers in an industry, the greater is the likelihood that serious mistakes will be made in this way. Agriculture, before the days of governmentally sponsored crop control, when thousands of small farmers planted their crops in almost complete ignorance of what their competitors elsewhere were doing, offers a flagrant illustration of this kind of thing. As a result of this kind of situation, the price system in a competitive economy works by fits and starts. Its process is one of trial and error, with emphasis on the error.

This difficulty, as well as the problem of time lag, could be met to some extent by measures of two sorts. For one thing, a means could be found for the gathering and dissemination of full information concerning consumption, productive capacity, current operations, and projected programs in each industry. Secondly, coöperation could be promoted among the different firms to achieve centralized planning in the various branches of production. This would probably require a general planning body for each industry to allocate production quotas to the several plants, in accordance with the available market for the products. Much could be done along these lines by trade associations, cartels, and similar organizations of business men. Something, in fact, is already being done. Needless to say, however, if such organizations are to be permitted to plan and control production, they will abuse the privilege by restricting output so as to promote exorbitant prices, unless restrained. Hence the coördination of industry should be directed by, or at least closely supervised by, the government. In all this the question of general economic planning by the state on a national scale again emerges.

Another cause of the deviation of market from normal prices is monopolistic curtailment of supply. In the absence of restraint, monopolies may be expected to limit their outputs in order to raise prices. This will stop production short of the point that equalizes marginal benefits and marginal sacrifices. Productive factors will thereby be forced to seek employment in other industries, where their social utility is less than it would be if they were employed in the

monopolized industries from which they are excluded. This waste was explained in Chapter Six, therefore it need not be elaborated here. Where there are conditions of imperfect competition (such as oligopoly or product differentiation) that fall short of pure monopoly, something of the same sort occurs (although perhaps to a less degree), for in these cases production is not carried quite to the point where the price equals optimum average costs.

Here again we are confronted by the dilemma between the advantages of increased industrial efficiency made possible by centralized control, on the one hand, and the disadvantage of the anti-social uses of monopolistic power, on the other. In continental Europe (especially in prewar Germany) this issue has been met by the frank encouragement of cartels. In the United States (except for the public utilities), the general policy in this matter has been to break up monopolies and to enforce the maintenance of competition, although this enforcement has sometimes been only half-hearted, and the results have been, on the whole, disappointing. Perhaps the reason for the unsatisfactory results is that the policy is a bad one. Is it not time to turn to the more constructive attitude of recognizing the advantages of centralized planning and control in each industry, and endeavoring to achieve them, while taking adequate measures to prevent the abuses that concentrated power would otherwise bring? This would no doubt require a greater measure of governmental supervising of industry, and in the end, perhaps a general process of socialization for at least a considerable part of production. The trend of evolution is certainly in that direction, and for the very good reason that it is the only way to arrive at the optimum organization of industry without the intolerable exploitation of monopolistic power. Here once more a collective economic organization offers advantages over a system of free enterprise.

As government intervention in industry grows, there is an increasing number of regulations that affect prices directly or indirectly. Among the more or less direct controls are public utility rate regulation, agricultural crop restriction, price maintenance laws, fair trade practice regulations, and wartime price ceilings. Other governmental

measures that affect prices less directly are import duties, excise taxes, and patents. These various measures are so numerous in contemporary society, and their effects are so far-reaching, that they warrant a fuller discussion that will be given to them in the next chapter. It will therefore suffice here to mention them without fuller description, and to remark that they have not been the result of any consistent philosophy, nor have they been directed toward any such logical objective as the attainment of normal prices. The result has been that the prices affected by these measures have deviated frequently (if not usually) from normal.

Governmental price regulation has a tendency to aggravate the problem of lag in adjusting production to changing conditions. The machinery of governmental regulation is usually cumbersome and slow. This is well illustrated by the public utilities. A change in railroad rates, for instance, can be accomplished only after protracted investigations and hearings by the Interstate Commerce Commission, with sometimes appeal to the courts. The same applies to electric, gas, and other rates subject to the jurisdiction of state public utilities commissions. As a result, such rates ordinarily remain fixed for long periods, during which they may get far out of line from normal prices.

A number of observers have called attention to the fact that there are marked differences in the ease with which different parts of our economy adjust themselves to changing conditions. There are also differences in the manner of their adjustment. This has its price aspect. Some prices are flexible enough so that they move up and down freely as conditions of demand and supply change. Other prices are inflexible or, "sticky," so that they change infrequently, and usually by small amounts. The most flexible prices are those of commodities in the wholesale markets, especially those that are traded in the organized commodity exchanges. These exchanges provide elaborate machinery for the gathering and dissemination of daily information concerning current and prospective consumption and production, and they also offer facilities for competitive spot and futures transactions, the details of which are immediately made

public to all the traders on the market. The result is that the prices in these markets are constantly in flux, changing from day to day, and even from hour to hour. Where such facilities do not exist, changing conditions of demand and supply are not revealed so quickly, so that more time is required for them to take effect, and the changes have to be more pronounced before prices will be influenced appreciably. In such cases customary prices are likely to prevail until the forces of change become powerful enough to compel their revision. Other factors that make for more or less rigidity of prices are labor unions, industrial monopolies, and the governmental regulations that were mentioned above. Among the prices characterized by relative inflexibility are real estate sales and rentals, retail commodities, some wholesale commodities, and public utility rates.

Considerable discussion of the significance of price inflexibility has been aroused by Gardiner C. Means, who is impressed by the marked contrast between the two types of price behavior. He adduces statistics to show that when wholesale commodity prices are grouped according to the frequency and amount of their changes, they form a U-shaped curve, with a large group of freely moving prices at one end, and another large group of relatively rigid prices at the other.⁴ He attributes the rigidity of the second group to monopolistic control of the commodities concerned. Monopolies, he says, are able to "administer" their prices, and prefer to maintain them even in the face of declining demand, rather than to reduce them for the sake of larger sales. He feels that this policy is likely to aggravate business depressions because, if prices are held rigid in a period of generally falling demand, sales will decrease and production will have to be reduced, thus causing more unemployment. The implication is that business depressions could be made less severe if all prices were made flexible, so that under the guidance of the price system the economy could adjust itself quickly to cyclical change.

Subsequent investigations by other economists have confirmed the fact that wholesale commodity prices do group themselves in the

³ Gardiner C. Means, *Industrial Prices and Their Relative Inflexibility*, Senate Document 13, 74th Congress, First Session, 1935. See also Caroline F. Ware and Gardiner C. Means, *The Modern Economy in Action*, (1936).

way stated by Means, but the findings of these researches demonstrate that there is no apparent connection between price inflexibility and the degree of concentration in industry.⁵

The phenomenon of price rigidity is not new. It can be observed far back in time, before the period of rapid growth of industrial combinations in this country. It even existed in the American colonies. Hence Means is probably wrong in attributing it to monopolistic influences. He probably would have recognized this if he had not been preoccupied with wholesale prices; for the tendency is quite pronounced in the real estate, labor (not only union labor), and rental markets, where a great deal of competition prevails. The true explanation of it is probably to be found in the market conditions that were described briefly above, and which need not be further elaborated.

The question remains, what is the significance of price inflexibility? Is it a good thing for the economy to have two sets of prices, one of which moves freely, while the other does not? If it is not good, which kind of prices is to be preferred? In attempting to answer these questions, it is important to observe the distinction emphasized above between general and specific price changes. Means advocates price flexibility as a way of lessening the severity of cyclical fluctuations. He feels that if prices must move up or down because of the impact of general disturbances in the economy, it would be better for them all to move together, instead of only some of them. This suggestion assumes that business cycles will continue to occur and will continue to be accompanied by monetary inflation and deflation. On the basis of this assumption, it might be that it would be better for all prices to move together, instead of only some of them, in order that the effects of the cycle will not be concentrated on a few commodities. However, it has been argued by some writers that this would only aggravate the inflationary and deflationary tendencies. These writers believe that the presence of some rigid prices helps to mitigate the general price fluctuations. Whether or not this argu-

⁵ A summary of the evidence on these matters is given by Alfred C. Neal in his *Industrial Concentration and Price Inflexibility* (1942), especially Chapter

ment is sound, I am inclined to think that the correct approach to the business cycle problem is to discover its causes and eliminate them, rather than to promote a price system that will lend itself more readily to their movements. Certainly the presence of rigid prices in the economy is not the cause of business depressions, nor will complete price flexibility in itself avoid them. Suppose that the basic cause of cyclical fluctuations can be removed, and the general level of prices can be approximately stabilized. Will it then be a serious matter for the economy if one set of prices is somewhat rigid while another set is flexible? We may continue to suppose that the various measures suggested in previous chapters have been put into effect, so that normal prices will be in conformity with the criteria of social economy. Then, clearly, the general welfare will demand that market prices be kept in as close conformity with normal prices as possible. Any deviation from normals will be a symptom of uneconomic use of resources. The most desirable situation would be one in which the underlying conditions of demand and supply were so well foreseen that productive capacity and output would be nicely adjusted to consumption at all times. Market prices would then conform fairly closely to normal prices, and would be fairly stable, because the normal equilibrium of demand and supply is a slowly changing thing—a secular trend over a period of years, not an irregular movement of frequent and wide fluctuations. In such an economy relative stability of prices would be a symptom of wise and balanced economic planning—not one of lack of adaptability to change. The price system would be relatively stable because it was normalized.

Does this mean that the prices in our present economy that show the least changes are those that represent the best balance between demand and supply? It may be so in some cases—the very cases that have been most sharply criticized. It may well be that where industries are dominated by a few large producers, the relative inflexibility of prices is the result of a deliberate attempt to adjust prices to long-run considerations of demand and supply, instead of allowing them to fluctuate widely with the temporary vicissitudes of the market. If this is the case, we should direct our efforts toward achieving a similar degree of stability in the rest of the economy, instead of try-

ing to force spasmodic price movements on the industries that have already achieved a certain measure of stability. In this argument, of course, there is no intention to defend monopolistic prices that are too high. My position on this has been made sufficiently clear in other parts of this study. But it is reasonable to suppose that industrial concentration makes possible a better adjustment of supply to demand than is attainable where there is a great number of competing enterprisers.

Stable prices, however, are not the same as rigid prices. Prices should be flexible enough to move readily when changing conditions of demand or supply require it; but widely varying, erratic price movements should not be necessary. It was explained above that the movement of a market price away from its normal is a means of correcting error and restoring normal conditions again. If a price is not free to move when an error occurs, the mistake will be prolonged. This is undesirable. Some (perhaps much) of the inflexibility of prices now prevailing is of this kind—an obstacle to balanced adjustment in the economy. What we should strive for is ready flexibility of prices, but with such an accurate balance between supply and demand that wide deviations will not occur. We will then have a resilient system that never departs very far from optimum normality, but that adjusts itself smoothly to changes in consuming habits, productive techniques, and other economic developments.

Given equilibrium at full employment, an increase in the flow of money must distort the economy away from general equilibrium to some extent, because new money does not enter into all parts of the circuit flow simultaneously. It appears first at one point, and is then gradually diffused throughout the circuit by successive transfers. So it increases the purchasing power of those groups who first receive it, giving them an initial advantage over other groups which enables the former to increase their demand for goods. The mechanism of market and short-period price changes will induce producers to respond to this increased demand. But the initial increase of demand will not be permanent; because, as the money is passed on to other groups, their demands will expand in like manner, and so on for each

successive recipient. The series of increases will grow smaller as the flow of new money becomes more generally diffused, until it is eventually swallowed up in an increase in the level of prices throughout the system. The net result will be that, after the full effect of the monetary increase has had time to work itself out, everyone will have slightly more money income than before, and both prices and pecuniary costs will be slightly higher, but the general relations of demand and supply throughout the economy will be the same as before. From this it appears that an increase in the monetary circulation tends to twist the economy away from a position of general equilibrium temporarily. It is a disturbing factor that works against the maintenance of social economy.

A decrease in the money flow will disturb the balance of economic relationships similarly, but in the opposite direction. There will be a decrease of demand in the industries from which the money is first withdrawn, and these industries will be abnormally depressed until the shrinkage in monetary circulation has been compensated by a general fall in prices.

Any change in the flow of money is likely to bring about some disturbances of this kind; and if the changes are large, there is likely to ensue the more serious sequence of events that is commonly associated with general inflation or deflation. Many of these effects arise directly out of the fact that the incidence of the change is concentrated, so that it is felt at specific points in the system before it is generally diffused. In an inflationary boom, newly created credit nearly always contributes to the overexpansion of certain industries—such as railroads, automobiles, or office buildings, to mention three that have figured conspicuously in American business depressions. The impact of deflation is similarly localized in its beginnings. Time lag and differing price flexibilities are also factors here. Monetary expansion or contraction affects wholesale prices sooner than retail, and profits sooner than wages. All this strains and twists the economy and prevents the maintenance of that general equilibrium which it is the function of the price system to promote and preserve.

Even in periods of unemployment, the pumping of new money into the circuit flow for the purpose of creating new demand to

absorb the unemployed can be expected to cause some of these difficulties. I cannot accept the Keynesian idea that such pump priming is not inflationary, because the effects on output are almost certain to lag behind the increase in money, so that there will be some rise in prices (and that, in my terminology, is inflation). Moreover, the incidence of this injection of currency is sure to be uneven, leading to some distortion. These considerations reinforce the doubts, expressed in Chapter Seven, concerning the wisdom of deficit spending as a remedy for unemployment.

THE PRICE SYSTEM IN DRASTIC GENERAL ECONOMIC CHANGES

It has already been stated that the apparatus of market, short- and long-period price adjustments is fairly adequate to deal with changes at specific points in the economic process, though not without some lag. If a particular demand schedule shifts, the ensuing price changes will bring about the needed expansion or contraction of production in the affected industry or industries. If costs are reduced by improvements in the technique of production, or raised by the growing scarcity of a certain factor of production, a fall or rise in the price of the commodity concerned will bring about reactions on the part of both consumers and producers that will effect a new balance between them. And if a particular error has been made by enterprisers in anticipating demand and adjusting their production to it, the resulting deviation of price away from its normal will sooner or later correct the mistake. So long as the need for such adjustments arises only at scattered points in the economy, so that each change is independent of the others,⁵ the necessary corrections will take place without serious disaster, even in an unplanned, competitive economy. Accommodation can be made in this manner to even basic evolutionary changes in the economy as a whole, provided they are gradual enough.

⁵ According to the theory of general equilibrium, each price is dependent in greater or less degree on the others. A change at one point in the economic process must, therefore, have repercussions throughout the economy. However, the effects of a change that is specific, and local in its origin, will be felt seriously only in those parts of the economy that are close to the point of impact. As we get farther away from that point, the effects will be so diffused as to become negligible, just as the ripples caused by throwing a stone into a lake become smaller and smaller as they spread in ever widening circles.

It is quite the opposite, however, with changes of a more drastic character. The price system is not adequate to accomplish even an approximate general equilibrium when sweeping, rapidly moving forces are set loose which affect much or all of the economy simultaneously. Wars, revolutions, and severe inflations or deflations put in motion forces of this kind. Consider, for example, the case of war.

Modern war is fought with equipment quite as much as with men, and its outcome depends even more on the quantity and quality of the ships, airplanes, tanks, and artillery employed than on the number of soldiers in the opposing armies. Hence the conduct of a war requires the transfer of a large part of the productive power of a nation from peace goods to war goods, and where there has not been adequate preparation in advance, this transfer may have to be accomplished very rapidly. At least half of the total production may have to be so converted within a few months.

If this conversion were left for the spontaneous price system to work out, the sequence of causation would be as follows: The government would enter the market in competition with consumers for the output of the nation's industry. By taxation, borrowing, and probably more or less inflation of the currency, it would secure the funds that it needed to make enormous purchases of war goods. The market prices of such goods would rise far above their normals, and this would stimulate production in the war industries. A considerable transfer from peace to war goods would take place. However, the shifting would be checked to some extent by two circumstances. In the first place, producers would hesitate to construct and equip new plants for making war goods because of the fear that the demand for the output of these plants would be only temporary. It would not pay them to make the huge investment in durable equipment that would be needed unless there was some special guarantee, in addition to the inducement of present high prices. Besides, they would not wish to sacrifice their established markets by cutting down drastically their output of goods for civilian consumption. These influences would retard the process of conversion. In the second place, the price system would not necessarily bring about a sufficient restriction of con-

sumers' demand. If the war were paid for entirely by the taxation of consumers and by investment of voluntary savings in war bonds on their part, there would be a reduction in consumers' expenditures by precisely the amount of the government's purchases of war goods. There would then be a drastic shift in the direction of demand which would cause a terrific drop in the prices of consumers' goods, and a corresponding rise in the prices of war goods, both of which would stimulate the process of conversion. But to the extent that the war was paid for by inflation (some of which seems to be inevitable in modern war financing), consumers' money incomes would rise as the newly created currency was paid out to war workers, so that the consumers would be in a position to bid more and more for the goods which they customarily used. As a consequence the prices of such goods would rise above their normals, along with the prices of war goods. Consumers would thus be competing against the government for the available resources, so that production would be pulled simultaneously in both directions. Consumers would get many non-essential goods, and the diversion into war goods would be considerably hindered. In this scramble for resources, money costs would rise; but as there would be fresh acts of inflation on the government's part as long as the war continued, market prices would keep on going up, and prices would never arrive at a normal equilibrium until the conflict came to an end. This inflation would be accompanied by all the disturbances arising from the uneven incidence of the newly created money. Profits would soar at the expense of wages, debtors would prosper while creditors were ruined, and chaos would prevail in many markets. The prices of many necessities would become prohibitive for the poorer people. The process of adjustment involved in the response of individual consumers and producers to price changes is too slow and tortuous to guide an economy through so drastic an upheaval. A natural price system would fail signally to do the work required of it. Hence governments in such circumstances have found it necessary to supplement the price mechanism by extensive systems of price control and rationing. These controls will be discussed rather briefly in the next chapter. The problem of wartime guidance is only men-

tioned here as an illustration of the inability of a spontaneous price system to cope with rapid and sweeping economic changes.

The reconversion of industry to peace goods after a war presents a very similar problem. Here there is a sudden let-down in the demand for war goods that is not necessarily compensated by a corresponding increase in the demand for peace goods, because civilians may find their sources of income cut off by dismissal from war factories and from the armed services. As a result, the economy may find itself bogged down by a general reduction of demand, which precipitates a business depression. The spontaneous reactions of prices may be able to correct this condition in time. As the level of prices falls because of the shrinkage in the circuit flow of money associated with reduced employment, the prices of war goods (for which the demand will now have dropped almost to zero) will go down most, so that the production of such goods will be stopped almost completely. Some demand for civilian goods is bound to continue, so that their market prices will not drop quite so far. Meanwhile the idleness of labor and capital will eventually bring wages and interest down to the point where pecuniary costs will fall below the prices of those goods for which the demand has been somewhat sustained. This will encourage expansion in those industries until a point of equilibrium between production and consumption is reached. Meanwhile the increased employment in those industries will enable wage-earners to buy more of other goods, so that prosperity will gradually return to other industries. In this way the economy will work slowly back toward a new position of general equilibrium and full employment. But in the meantime it will have suffered from a more or less prolonged and severe depression. A method of correction that works so slowly and painfully is not a satisfactory one. The conversion from war to peace should not be left to the free choices of enterprisers with no other control than their spontaneous reactions to the movements of prices.

It is significant that part of the difficulty of converting a nation's industry from the production of peace goods to war goods and back again is caused by the monetary inflation and deflation which

accompany the process. In financing a war the government inflates the currency, and this arbitrary introduction of new money into the circuit flow creates an erratic, distorting pull on production as the money passes from point to point in the system. In the reverse movement from war to peace, the sudden stoppage of this inflationary hypodermic, with the ensuing shrinkage of the circuit flow that is brought about by liquidation, depresses demand unevenly as it runs its ruinous course.

FREING THE PRICE SYSTEM FROM MONETARY INTERFERENCE

It can hardly have escaped the reader that monetary inflation and deflation have been found repeatedly in this study to be a disturbing influence that interferes with the functioning of the price system in guiding the economy towards equilibrium. In Chapter Five the inflation of investment by the pumping of newly created bank credit into the circuit flow was shown to interfere with the balance between consumption, saving, and investment. In Chapter Seven it was shown that monetary inflation and deflation constitute an obstacle to full employment because of their effects upon the general level of business activity. Earlier in the present chapter it was found that monetary changes, because of their uneven incidence, distort the economic process away from balanced adjustment. Now it appears that the same cause operates to increase the difficulties of converting a nation's industry from peace to war production and back again. A spontaneous price system is unable to cope with situations of this kind because inflation and deflation pull market prices far away from normal prices over so large a part of the economy simultaneously that the apparatus of specific price adjustments is unable to function. It is unable to function because both new money and disappearing money jump from place to place, affecting now this part of the economy and now that, so that there is no stability of relationships within the system, making general equilibrium unattainable. Prices cannot be expected to preserve any semblance of balance in the complex of economic relations under such unfavorable circumstances; but the fault in this matter is not with the price system as

such. It lies in the bad monetary institutions through which prices are forced to operate.

Probably it is not possible to perfect a monetary system that will be proof against the inflationary exigencies of war finance and the deflationary vacuum that follows the cessation of war production. If the world is to be plunged into a cataclysmic struggle every twenty years or so, its various economies are bound to be convulsed by spasms of drastic shifts in production, compressed into periods too short for the changes to be effected in a smooth and orderly way. It is conceivable that the effects of a great war may disturb price relationships for a quarter of a century or longer. This may be an important factor in the recurrent cycles of prosperity and depression that afflict modern economies. Some writers believe that a war, or some other disturbance of great force, sets up a series of actions and reactions of gradually decreasing intensity over a period of several decades. Presumably these fluctuations would smooth themselves out, under the guidance of price adjustments, if a new gigantic disturbance did not come along before a position of equilibrium was reached. But with wars recurring once in a generation a general equilibrium is never attained, and the economic process takes on the form of a series of undulations, beginning with a very large wave at the onset of a war, then tapering off into a series of lesser waves as the effects gradually diminish, until the next upheaval occurs again.

Whether or not this theory is correct, it is certain that we cannot expect to work out any kind of general equilibrium in the economy, and certainly not one that is in harmony with the social welfare, as long as wars continue. It is entirely possible, however, to achieve a monetary system that will not interfere with the normative functioning of prices in times of peace.

Many economists believe that the best way to solve this problem would be to adopt a monetary system that would keep the price level constant. They propose a kind of managed currency in which the quantity of money would be increased or decreased at regular intervals (e.g., monthly) in such a way as to offset variations in the velocity of circulation and the volume of trade. These proposals cer-

tainly offer advantages over our present haphazard monetary system, but they are open to two objections. For one thing, frequent injections into and withdrawals from the stock of money would be a disturbing factor because of their uneven incidence. Then, too, an absolutely stable price level would interfere with the natural tendency of prices to fall as physical costs are reduced by technical progress. This artificial bar to falling prices would actually constitute a moderate inflation, with unbalancing effects upon the economy.

There is a school of monetary theorists who advocate an alternative policy which would prevent changes in prices arising from monetary causes, but would permit those which result from changes in the so-called real, or physical, costs of production. They would do this by making money neutral—that is, a merely passive medium of exchange that does not interfere in any way with the natural relationships of the economic process. The concept of neutral money offers theoretical difficulties, and some hold that it would be quite impossible to achieve it perfectly; but a working approximation to it could be attained by stabilizing, not the average of commodity prices, but the average of money incomes. This would require that the per capita flow of money be kept constant. Probably this could be accomplished with enough accuracy for practical purposes by keeping the stock of money (including bank deposits) substantially unchanged in quantity, except for gradual additions in direct proportion to the growth of population. Theoretical perfection would require that there be some compensation for fluctuations in the velocity of circulation, but this is not likely to be necessary if bank credit expansion and contraction are prevented, for significant changes in velocity are usually merely aggravating factors that accompany inflations or deflations, primarily of credit. There should also be some deduction from the stock of money to offset any decrease in the number of transactions that might result if there is a growth of vertical integration in industry; for this integration, by lessening the number of exchanges between the successive stages of production, lessens the need for money. Unless money were cor-

respondingly reduced, it would tend to inflate prices. But this, again, is a minor factor whose effects would be very gradual. It should not prove to be a source of serious disturbance. All in all, the problem of controlling the money stream in such a way as to stabilize the average of money incomes does not appear to offer insuperable difficulties.

The effect of such a program would be to liberate the pricing process from interferences having a monetary origin. Prices would be free to move in response to changes in the conditions of demand or supply for particular goods, and to seek their positions of normal equilibrium, without being distorted by a monetary unit of erratically fluctuating value. But the general level of prices would not be rigidly fixed, because there would be no increase in the monetary circulation to offset the growth of production occasioned by technical progress; therefore the average of commodity prices would decline gradually as physical costs were reduced.

At first thought it might seem that this decline in prices would bring losses to debtors and enterprisers. However, this is not the case; for when the price level decreases in response to falling physical costs of production (and not because of a contraction of money), the money incomes of these groups are not reduced. Under the neutral money plan, the total flow of money passing into enterprisers' hands at the top of the circuit flow⁶ remains constant; but as the result of technical progress the flow of goods exchanged for this money is increased. The goods are sold at lower unit prices, but this is offset by their greater quantity, so that money incomes are unchanged. Hence it is just as easy as ever for debtors to pay their fixed money debts and for enterprisers to pay their fixed charges and wages. The average level of money incomes is the same as it was, but since the money will buy more than before, all share in the generally lower costs that are made possible by improved industrial methods.

On the whole, this proposal impresses me as superior to that of a perfectly stable price level. It would make money practically neutral, and would thereby permit the normative price system to

⁶ In Figure 9, p. 188.

exercise its function of economic guidance without interference from the vagaries of the bad monetary system that now impairs its working.

The neutral money principle, in combination with the one hundred per cent reserve plan described in Chapter Five, supplies the elements of a simple and promising monetary program. Let the banks be separated into two different types—loan banks and checking banks. The loan banks will function in much the same way that investment and savings banks now do. They will accept time deposits, and they will invest the sums so collected (together with the funds made available by their stockholders) in bonds, mortgages, or commercial loans. The deposits will not be subject to check. They can be withdrawn by the depositors only after notice has been given a considerable period in advance. By this arrangement loans can come only from voluntary savings. They cannot be supplied out of credit created in the act of lending. These banks will pay interest on their deposits derived from the earnings on their investments.

The checking banks will deal in deposits subject to withdrawal on demand (checking accounts.) Customers of these banks can obtain such deposits only by placing funds there for that purpose. No deposits will be created out of loans. The banks will be required to hold one hundred per cent reserves of cash or Federal Reserve credit against these deposits. The function of the banks will be to supply their depositors with a safe place for keeping their surplus cash, and to provide them with the convenience of being able to make payments by means of checks. The earnings of the banks will be derived from charges made to the depositors for this service. The same system of clearing checks that now prevails can continue to function.

The neutral money principle could be incorporated into the system of checking banks in this way: A national monetary commission would be created to control the quantity of money in the country. This commission would be empowered to provide the cash necessary for initiating the one hundred per cent reserve plan at its beginning by printing enough paper money or creating enough Federal Reserve credit to make one hundred per cent reserves for the deposits outstanding in the banks of the country on the date when

the program goes into effect. This would give the nation a sufficient stock of money to carry on the transactions of its everyday business activities. Thereafter the commission would have authority to make such additions to or subtractions from the monetary stock as were needed to give effect to the neutral money principle, and it would be bound by definite instructions to conduct its operations in accordance with that objective. It would be directed to increase the monetary stock only in proportion to the growth of population, with such deductions as might be required to offset decreases in the number of exchanges arising out of vertical integration. As a result, the total amount of money would remain almost constant, except for very slight, gradual increases. When it became necessary to make such increases, the incidence could be widely diffused by a simultaneous increase in all the deposits existing on a given date. For instance, the commission might declare on a given date (of which no advance announcement had been made) that all deposits of record ten days prior thereto would be increased by one per cent. This would avoid the disturbance caused by the uneven incidence of monetary changes that was explained above. It would not matter for the operation of this plan whether the "cash" in the bank reserves consisted of paper money or Federal Reserve credit. The essential thing is that neither the paper nor the credit should be issued against loans, and that its quantity should be strictly controlled in harmony with the neutral money principle.

There is no doubt that our present monetary and banking institutions constitute one of the most serious weaknesses of our economic system. If not the cause of business cycles, they are at least a seriously aggravating factor therein. They are partly responsible for upsetting the balance between consumption, saving, and investment; they distort the guidance of industry by the price system; and they lend themselves too easily to manipulation by cheap money quacks and politicians. Yet the measures necessary for the elimination of these evils are very clear and easy of application. The program here advocated is so simple and so promising that it should be actively pushed by economists, in order that its adoption may not be long delayed.

CHAPTER TEN

Some Problems of Price Regulation

GENERAL PRINCIPLES

Even in a world of perfectly normalized prices, some people would be dissatisfied. For instance, producers in declining industries would have to be shifted into other kinds of production in order to prevent prices from falling below optimum costs because of reduced demand, and these producers might object to such a change. Likewise, those laborers whose services were priced lower than others' because of their greater abundance might object to their position of wage inferiority. In the actual world of fluctuating market prices there is even more cause for complaint. Changes in demand are repeatedly occurring which force prices for some producers to the point where they must suffer losses. Large sectors of industry may be overdeveloped in relation to their markets, so that they are characterized by chronically low earnings; and various groups in the population may be so situated that their earnings are less than those of others who are more fortunate. On the other side of the picture, some prices may be so high, because of monopolistic extortion or temporary scarcity, that consumers feel abused. In all cases, the groups whose fortunes are adversely affected are likely to agitate for measures of relief. As a result of group pressures of this kind, federal and state governments from time to time have responded with measures of price intervention designed to correct real or supposed abuses.

These measures are of three general types: (1) measures to protect consumers against prices believed to be exorbitant or unreasonably discriminatory; (2) measures to protect producers from prices believed to be ruinously low; (3) measures to maintain stability and

order in the price system as a whole at times of general economic upheaval, especially during or immediately following war. These three kinds of price intervention by the government will be discussed under the following headings: (1) price control in the interest of consumers; (2) price control in the interest of producers; (3) wartime control of prices.

In the ensuing discussion, it will be well to keep in mind the distinction drawn in an earlier chapter between normalized and manipulated prices. In a dynamic world, prices cannot be expected to conform to their normals, even under conditions of active competition. Industry cannot adjust itself to changes rapidly enough for this to be accomplished; and lack of complete knowledge, plus errors of judgment on the part of producers, prevent a perfect equilibrium between supply and demand. So long as the departures from normal are moderate and self-correcting, they need not give rise to measures of governmental interference. However, in some circumstances prices are likely to deviate so far from normal that efforts to control them may seem to be needed. Three cases of this kind are conspicuous in the history of American policy. These are: the regulation of public utility rates, the efforts to force agricultural prices up to "parity" levels, and the setting of price ceilings in the World Wars I and II. In these cases, the object of regulation is presumably to normalize the prices—that is, to bring the prices of the regulated goods to somewhere near their normal positions.

In other cases, the objective of regulation may be to prevent prices from reaching their normals. For instance, railway companies may be required to transport school children at especially low rates, for reasons of the general welfare. The setting of a maximum rate of interest to prevent usury is another illustration. In such cases the prices established are manipulated, in the sense that they depart from the normal tendencies of the price system.

This distinction between two types of price regulation raises a fundamental question of policy. Should we accept the normative price system as the guide for governmental intervention in prices, or should we work toward a manipulated system in which prices are set

above or below their normals in order to achieve certain objectives which are deemed desirable? For instance, shall we provide housing for the poor at less than cost in order to alleviate the distressing results of poverty? Or, should we force the prices of agricultural products up above their normals because we believe the farmers are entitled to a larger slice of the national income? Many specific injustices might be corrected by manipulations of this kind. However, there is always a danger that, in dealing with numerous special cases in this way, we may lose sight of the unbalancing of the economic process as a whole that results from these many distortions, and we may not achieve as economical a use of our resources as we might attain by adhering more closely to the normative tendencies of the price system.

The preceding chapters have revealed many faults in the guidance given to our economy by the present operation of the price system. My general position has been, however, that the system would function satisfactorily if the institutional setting in which it operates could be improved. So, except for a limited group of communal goods which cannot be guided by individual demands, and certain long-range investments for which individual rates of time preference are too short-sighted, the measures of reform suggested have been mostly along the lines of giving prices a chance to work under more favorable conditions, rather than to manipulate them arbitrarily. For instance, I would favor the education of consumers and the standardization of consumer goods to achieve a wiser direction of production through demand, rather than to reduce prices below cost for those commodities whose consumption we desire to encourage, and rather than to raise prices to high figures for those goods which we consider harmful to the general welfare. On the same principle, I have proposed that we meet the problem of low wages by measures of eugenics, education, and vocational training, rather than by minimum wage laws.

Of course, so long as the basic reforms which are necessary to harmonize price guidance with the social welfare are not in effect, it may sometimes be justifiable to manipulate prices. In view of the existing housing situation, it is probably wise to provide subsidized low-price housing for substandard wage-earners. But such cases

should be regarded as exceptional. They should be considered carefully and adopted only where there is clear and urgent need.

In what follows, this general point of view will prevail. I shall assume that the purpose of price regulation should ordinarily be to make the normative tendencies of the price system effective, rather than to obstruct them. In other words, my view is that price regulation is something to be resorted to when, for some reason, prices depart markedly and persistently from their normals, and the function of regulation will then be to restore these diverging prices as closely to their normals as possible. I will consider further this whole question of deliberate control of the economy through the machinery of prices in the final chapter in this study.

The immediate problem that faces the lawmakers or the regulating authorities is to determine what constitutes a fair price in a given case. On the basis of the above reasoning, the general answer suggested is that those prices are fair which will most closely approximate competitive normals. From this broad principle two specific rules can be derived. The first is that the price of a good should be fixed as close to the optimum cost of producing it as is practicable. The second is that the price should be the same to all purchasers who buy on the same quantity basis in the same market.

The first rule is in accordance with the long-run tendency of competitive markets to make prices equal to optimum costs of production. When a price is at this point, the commodity is being produced as efficiently as existing technology permits, while, at the same time, labor and capital are being paid according to the values of their marginal products, which (subject to the reforms suggested in Chapter Four) is the most satisfactory method of evaluating them. However, it will be noted that I have qualified the rule with the words "as close to optimum costs as is practicable." I propose this qualification because it will not always be reasonable to force an enterprise to accept a price which is equal to the lowest average costs in the industry. A high degree of perfection is not to be attained in a system of relatively free enterprise where there exist plants of different size and equipment, with managements of unequal effi-

ciency. Where there are numerous firms in the regulated industry, it will probably be wisest to set prices at modal average costs. This would approximate Marshall's dictum that normal prices tend toward the costs of the representative firm. It will permit the majority of the producers to meet their expenses, and it will thus assure the continued production of the bulk of the commodity, while penalizing those producers near or beyond the margin who are least efficient. At the same time, it will allow the plants of highest efficiency to earn a profit that will encourage other firms to emulate their methods. This interpretation of the first rule approximates the principle of fixing prices at bulk-line costs that was practiced in American price fixing policy during World War I.

In special cases, existing plants may be inadequate to meet the community's need for their products when they are operating at their optimum outputs. Here it would be expedient to permit prices somewhat above the modal costs of production, in order to make allowance for the higher marginal costs that are necessarily associated with increased output, until such time as it may be feasible to increase the plant capacity of the industry. On the other hand, where there is excess capacity in existence, the regulated price could reasonably be forced below modal costs, thereby squeezing out the marginal producers whose high cost output is not needed by the community. The application of these principles would conform to the tendency of competitive prices to equal marginal costs in the short period.

The second rule of fair price accords with the law of one price that tends to prevail in competitive markets. Its effect is to prevent arbitrary and unfair discrimination between different purchasers. It conduces to social economy because, if prices differ from one buyer to another, some are paying more or less than the opportunity cost of producing the commodity concerned. If we can assume that demand will be made to reflect social needs, and costs to reflect social sacrifices, by the measures of reform suggested in Chapters Three and Six, then we want prices to conform to opportunity costs; for this will assure fulfillment of the condition that no factor of production will be used at one point if it could contribute something of

greater utility at another. If some are allowed to purchase a commodity for less than its cost, this rule is violated; factors are being used to produce something for these buyers that has not as much social utility as some other product. On the other hand, if some buyers are being made to pay a price above cost, production of that commodity will be stopped short of the point that realizes the fullest utility of which the factors employed are capable, and some of the factors will be forced into other employments of less social value.

However, since under existing circumstances demand is not now a true measure of social needs, and costs are not an accurate index of social sacrifices, it may be justifiable in the present world to permit some deviations from the rule of one price in order to compensate for these imperfections. For instance, liquor establishments might be encouraged to sell beverages of high alcoholic content well above their costs in order to counteract to some extent the anti-social demand for strong drink. In this case, the government could recapture the resulting excess profit by means of a suitable tax. An example of the opposite sort would be to continue the present policy of requiring railroads to sell tickets to school children at especially low rates in order to compensate to some extent for the inadequate incomes of the poor who might otherwise have difficulty in sending their children to school. However, these departures from the one price principle are to be defended only so long as the basic weaknesses in the present mechanism of demand and costs, which prevent them from reflecting social needs and sacrifices, remain uncorrected.

The rule of one price must not be so rigorously applied as to prevent reasonable discrimination. For example, it is reasonable to sell commodities more cheaply to wholesale buyers than to those who purchase at retail, and to supply certain goods (such as electricity) to off-peak users at lower rates than to other users whose demand comes at times of peak load. Just what constitutes reasonable and unreasonable discrimination will be more fully discussed in a later paragraph.

PRICE CONTROL IN THE INTEREST OF CONSUMERS:
RATE REGULATION AND PRICE DISCRIMINATION

Where the attainment of lowest production costs or the convenience of the public requires the existence of monopoly in an industry, some public action is needed to protect consumers against exorbitant charges. Without such action, the monopoly would usually take advantage of its customers. The most obvious case of this kind is the public utilities industries, where monopolies have been legally recognized in this country for the reasons explained in Chapter Eight. For the most part, public policy in this country has been to allow the utilities to remain in private hands, but subject to regulation by public service commissions. These commissions have been given the power to fix rates (prices) which the regulated corporations charge for their services. A number of problems arise in connection with this rate regulation. These problems have been so exhaustively dealt with in an extensive body of literature that I cannot say much that is new. Nevertheless there are some points on which the pricing principles that have been developed in this essay can shed light.

According to those principles, public utility rates should ordinarily be kept as close as is practicable to the optimum costs of providing the services in question. In some circumstances it might be expedient to make an addition or subtraction to stimulate an increase or bring about a decrease in the capacity of the industry, in accordance with expanding or contracting community needs; however, if rate regulation is accompanied by supervised long-range planning for the industries in question (as it is now beginning to be) this planning should seek as far as possible to maintain so nice an adjustment of productive capacity to consumption that wide departures of rates from their normals will not often be necessary. The policy of the regulating commissions in these matters has been governed by the rulings of the courts that the rates fixed must yield to the companies a "fair return" on the "fair value" of the property used and useful for the public service. This has meant in practice that rates have usually been determined by the cost of production for the service concerned, including in costs a reasonable allowance to investors and management for their

savings, risks, and supervision. Rates so established do not necessarily correspond to optimum costs, because the costs that are taken into consideration in a given case are those of the particular company supplying the service, not those of an optimum firm. However, there has been some recognition of the optimum idea in that the commissions have often taken into consideration the quality of the management in a given case. That is, where costs have been believed to be unduly high because of poor management or an inadequate plant, the commissions have occasionally penalized this inefficiency by paring the rate of return allowed to the barest minimum that they thought the courts would sustain; and they have sometimes rewarded superior management and plant facilities by somewhat more liberal allowances. This is a rough way of making a correction in the rates to bring them more nearly in line with optimum costs; but the concept of optimum costs is not clearly apparent in the rulings of the commissions, and any approximation to it that has been attained in practice has certainly been very inexact.

In ascertaining the costs, it is easy enough to find what are the outlays which a company makes for raw materials, wages, repairs, maintenance, taxes, insurance, advertising, and other items which involve actual payments to other parties. However, in order that the rates may yield the legally required fair return, there must be included in the economic analysis of costs an allowance to the company for its investment in the plant. Since the return to management and stockholders does not constitute an outlay, the amount of which is fixed by market prices, what return is fair becomes a matter of judgment which presents difficult questions of equity and expediency. Ordinarily the return is computed as a percentage of the value which the plant is presumed to have. It is here that the important question of valuing the property arises.

Correct valuation of the property is important because, if it is overvalued, the rate of return, computed as a percentage of it, will be too high, yielding excessive profits to the monopoly at the expense of consumers, who must pay higher prices for the service in order that this profit may be obtained. If the property is undervalued, the rate of return will not compensate the company adequately, and

prices to consumers will be too low. These considerations are especially significant in the case of public utilities because these industries usually require a very expensive plant and use a relatively small amount of labor and materials, so that the return to investors for the plant constitutes a large percentage of the costs.

The trend of commission and court rulings over a long period of years has been moving gradually toward original cost of the plant (in the sense of prudent investment) as the basis for fair value. This finally has received the definite approval of the United States Supreme Court,¹ so that it seems to be well established as the basis on which valuations will mostly be made henceforth. Original cost for this purpose is confined to expenditures honestly and prudently made by the company in constructing or acquiring property that is really used and useful as a source of service to its customers. The reason for the increasing reliance on this basis of valuation is that, firstly, it is thought to be fair to consumers, because they are required to pay a return to investors only enough to compensate the latter for what they actually have put into the plant without dishonesty or reckless extravagance; and, secondly, it is thought to be just to the companies, because by this method they get a reasonable return on what their stockholders have actually invested, in so far as the management has been honest and prudent. A further reason for its adoption is that when prudent investment has once been ascertained, it establishes a definite rate base once and for all, thereby putting an end to frequent revaluations, with their attendant controversies and litigation. Nevertheless this method will not yield rates that conform to normal prices; because the plant constructed by any particular company in the past will not necessarily be an optimum one today. If it is outmoded, or if it was built at a time when construction costs were higher than they are now, rates based on such a valuation will be too high. On the other hand, if the plant is of extraordinary efficiency, or if was built at a time when construction costs were lower than they now are, rates fixed on the basis of the actual investment may be too low.

If we take normal value as the criterion for rate making, then the basis for valuation should be the cost of reproducing an efficient sub-

¹ In *The Hope Natural Gas case*, 320 US 1943.

stitute plant at the present time. The price-making process of the competitive market is forward, not backward, in its outlook. Its basis is present and prospective, not past, costs. Past costs are significant only to the extent that they shed light on what costs are likely to be in the calculable future. In a competitive situation, the worth of a particular plant may differ greatly from the original cost of building it. Its value depends on how its yield compares with that obtained from newly constructed, optimum plants in the present. The cost of today's optimum plants, are, therefore, the basis on which normal prices are computed. The normal price is one that will yield just enough to return the principal and pay the normal rate of interest on such plants. Economic theory, therefore, supports the view that the correct basis for plant valuation in rate cases is the present cost of constructing, not the identical plant of the company under consideration, but an efficient modern plant capable of producing the same output.

There is no denying, however, that it is difficult to apply this principle in a particular case; because the cost of constructing an efficient substitute plant today cannot be stated precisely. It is a matter of estimate, on which even expert opinion often differs widely. Besides, the estimates must be revised repeatedly as cost conditions change, and as technology develops more efficient equipment; and each revaluation opens the door to endless contention and delay. It is this difficulty that has led the regulating authorities to rely more and more on prudent investment. The latter may be a sufficiently good working basis, if the valuations so reached are adjusted for price level changes by an index of construction costs at the time when they are applied. On the other hand, if the reproduction cost method was once definitely established in law as the correct one, a feasible and fair technique for estimating costs on this principle could perhaps be worked out by experience. Both the original and the reproduction cost methods would yield much more satisfactory results if the price level were given approximate stability by appropriate measures of monetary control.

In valuing utility plants for rate-making purposes, it has been customary to make a deduction for depreciation, on the theory that the

company is entitled to a return only on that part of its investment that is now intact. Analysis of what happens in competitive markets suggests that such a deduction will not always be justifiable. In such markets the producer with an outmoded or deteriorated plant will get just as high a price as his better equipped rivals, provided his product is as good as theirs. Only if his poor plant is impairing the quality of his product will he have to accept a lower price. By the same token, it would seem that regulated utilities should not be penalized by reduced rates because of plant depreciation, unless the bad condition of the plant is making the service inadequate. Just as in competitive markets, failure to maintain an up-to-date and efficient plant will bring to the company a penalty sooner or later in other ways. It will reduce profits by making costs high in relation to the price; or it will lead to a situation where major repairs, requiring heavy capital expenditures, can no longer be delayed if the company is to continue in business at all.

So far I have proceeded on the assumption that, since a valuation of the property appears to be required by law, it should be made to approximate as closely as possible the value attaching in the long run to durable capital in the normative pricing process. But there is a more direct method of arriving at fair utility rates that is attractive in theory, although it, too, offers difficulties of practical application. I refer to the so-called yardstick method, which has been publicized in the discussions concerning the Tennessee Valley Authority. The idea is for the government to construct an efficient, modern plant (in this case for electric power), and to use its costs of producing a given utility service as the criterion of reasonable rates for regulated private companies. The plants of the latter would then not need to be valued at all, and the whole difficult problem of valuation, with its controversies, litigation, expense, and delays, would be neatly bypassed. The theoretical basis for this proposal is in the proposition that normal prices equal optimum costs; therefore if the plant chosen as a yardstick is an optimum one, its costs should fix the prices to which regulated rates should conform. The idea certainly has merit; but it would need to be worked out very carefully, if injustice is to be avoided. The costs of operating a government plant are not neces-

sarily applicable to private plants. Public authorities can float their securities at lower rates of interest than private companies. On the other hand, the former sometimes pay higher wages, and they are alleged to have a less efficient personnel. It is impossible to say where the balance of costs resulting from these influences lies. More important, in the case of power dams that are used for several purposes, how can the costs properly chargeable to the generation of electric power be separately computed? The TVA dams are used not only to generate electricity, but also for navigation, flood control, and other purposes. Certainly a comparison of its costs with those of private companies whose plants are used solely for electricity might be very unfair. These considerations constitute serious obstacles to the yardstick method, in spite of its theoretical advantages.

A second problem in rate regulation on which the pricing principles of this essay can shed light concerns the amount of discrimination to be allowed in setting up specific schedules of rates for different classes of service. Many public service corporations supply more than one kind of service, or serve more than one group of customers. Railroads carry both passengers and freight. Water is furnished for both fire hydrants and household uses. Gas is used as industrial fuel and for domestic cooking and heating. Should the rates charged in such cases be the same to the different classes of users, or is some difference reasonable and proper? In open competitive markets, consumers are protected to some extent against unreasonable discrimination by the law of one price. If one seller discriminates unreasonably against a particular group of consumers, they can have recourse to other sellers, who offer their goods on better terms; but where a product is controlled by a monopoly, there is no such recourse. All buyers must come to the monopolist, who can (if he chooses) exact a high price from those who can pay the most, reaping a good profit from such sales, while taking on additional business at less profit by selling to marginal buyers at lower prices. It is to prevent this abuse of their monopoly position by public utilities corporations that their specific rate schedules are subjected to detailed regulation.

A careful analysis of normative pricing principles suggests a basis

for distinguishing between reasonable and unreasonable price discrimination. For this problem all costs can be divided into two classes: those which are separately incurred for particular groups of customers, and those which are incurred for all customers in common. The first can be definitely allocated to the particular customers concerned, but the latter cannot. Let us consider these two categories of costs in turn.

An illustration of costs that are separately incurred for particular kinds of customers is offered by passenger and freight cars. The investments of a railroad company in these two sorts of equipment are quite distinct, so that the cost of interest and depreciation thereon is definitely allocable to passenger and freight traffic, respectively. The same is true of the wages of passenger and freight train crews. Other illustrations are the reading of electric meters and the rendering of bills (which are clearly chargeable to specific customers), the wages of telephone operators employed in the daytime, as distinguished from those employed in night service, the maintenance of refrigerator cars for handling perishable foods, and the making of a telephone connection to a new customer. In cases of this kind, each group of customers should pay the costs clearly caused by it; for if any good is sold for less than the cost of producing it, the economy inherent in the principle of opportunity costs is lost. This rule of allocation justifies a schedule of rates differing among the several classes of customers by precisely the amount of the differences in the separately determinable costs.

But in addition to these costs, each group should ordinarily bear a share of the general costs that are common to them all. It is in the allocation of these common costs that the real problem of discrimination is found; for if they are divided unequally among the several groups there may be injustice or exploitation. The case of joint supply in the theory of value can be helpful here. Joint supply is defined as that relation where two or more products are obtained at the same time in one process of production. It is essential to the concept that the products emerge unavoidably together, so that in the getting of the one, the other (or others) are necessarily obtained also; and in the pure case of joint costs, the proportions in which the different

products are obtained cannot be varied. Up to the point at which they are separated, there is no way of distinguishing the cost of one from that of the others, because it is common to them all; but from that point on there will usually be additional costs in the further processing and handling of each. For instance, in the often cited case of cotton, the costs of cultivating, picking, and ginning are joint for both the fiber and the seed; but in the ginning the two products are separated, and thenceforth the cost of pressing the oil from the seed and refining it is quite distinct from that of spinning and weaving the fiber.

There appear to be cases in public utilities where the costs are truly joint in the sense of the definition given. An illustration is that of a telephone company which possesses a plant with sufficient capacity to meet the maximum demand for its facilities that comes in the business hours of the day. As a result of this capacity, there is inevitably a supply of telephone facilities available for use in the slack hours of the evening and night. Likewise a motor truck line whose principal business is to carry freight from city A to city B, necessarily must make the return trip, and therefore cannot avoid having an equal capacity for hauling goods from B to A.

According to the theory of value, the normal disposition of the joint costs in such cases will be to divide them between the different products in proportion to the strength of the several demands, those products for which the demand is greater bearing the larger share. In addition to its share of the joint costs, each of the products will be priced high enough to cover the costs separately incurred for it. The sum of the prices so calculated tend to equal the optimum total cost of producing all of the joint commodities. Following this principle, a telephone company should charge for night calls a rate high enough to pay the wages of the night operators, plus some share of the joint costs of maintaining its plant; but that share would not be as great for night users as for those who telephone in the daytime. Likewise the motor truck line, if its major demand is for hauling goods from A to B, might reasonably offer lower rates for the return trip. But the total revenues received from all the services combined in these cases should not exceed the costs of operation (including a fair return

upon the investment) for a well-equipped and efficiently managed (i.e., an optimum) concern.

This kind of discrimination is not unfair to those customers who pay the higher rates. On the contrary, it benefits them; because if a company, by offering lower rates to off-peak users, can attract some business that it would not otherwise get, this business can be made to bear a part of the burden of the joint costs that would otherwise have to fall entirely on the peak customers. Or, if the policy succeeds in diverting some business away from peak to off-peak hours, it can enable the company to meet its maximum demand with a smaller plant than it would otherwise need, thereby reducing the fixed joint charges for all. So, in either case, the peak-load users get the benefit of rates that are lower than they would have to be if no discrimination were practiced.

Where the case is not a true one of joint supply (that is, if the one product is not a *necessary* result of producing the other), there appears to be no reasonable basis for allocating the common costs unequally between different groups of customers. The only fair principle here is to divide them equally. This would apply, for instance, as between domestic and industrial users of gas or electricity, if their peak demands come at the same time. It applies to railroad rates for different classes of freight (except where there are clear differences in the separable costs), because the hauling of one kind of freight does not *necessarily* require the hauling of other kinds in fixed proportions. To discriminate in dividing the burden of the common costs in such cases would seem to be an abuse of monopolistic power.²

This analysis does not exhaust the subject, but it does suggest some principles that have a bearing upon prevailing practices and legislation, both federal and state. There are numerous laws that have been enacted from time to time in an effort to protect the public from unreasonable price discrimination. Among them may be mentioned the Interstate Commerce Act of 1887, which forbade railroad rebating, the Clayton Act of 1914, which prohibited price discrimination be-

²I have discussed all the above aspects of the problem of rate discrimination more fully in an article, entitled *Composite Demand and Joint Supply in Relation to Public Utility Rates*, which was published in *The Quarterly Journal of Economics*, Volume XLIV, pp. 40-62 (November 1929).

tween different purchasers in domestic trade where their effect is to restrain competition or to create monopoly, and the Robinson-Patman Act of 1936, which forbids discounts on quantity purchases where they are not based on actual differences in the cost of supplying the commodities. These are all federal statutes. There are many state laws of similar purport. In so far as these laws are designed merely to restrain the arbitrary use of monopoly power in rate discrimination, their intent is good; but the general trend of the legislation seems to be in the direction of prohibiting inequalities in rates that cannot be proved to rest on differences in costs. This is inadequate for those cases where joint costs are found. There is needed a set of legal principles showing a greater appreciation of the difference between separable and common costs, and providing intelligent rules of guidance for the treatment of both. The suggestions here offered provide a logical and fair basis for doing this.

PRICE CONTROL IN THE INTEREST OF PRODUCERS:
AGRICULTURAL PRICE SUPPORTS

Whereas the abuses of monopoly lead to pressures upon the government to bring high prices down, conditions of keen competition frequently bring pressure from the competing enterprises for governmental policies to keep prices up. Such pressures are especially likely to be felt in times of general depression, when business firms are suffering severe losses. At such times, the general effort on the part of enterprisers to get themselves into a more liquid position leads to drastic cutting of prices. This price cutting is then interpreted as an evidence of excessive competition; therefore, efforts are launched to get away from competitive pricing by some kind of governmental intervention to set a "floor" under prices. Such policies, adopted to meet an emergency, are likely to become permanent thereafter, because business men, in spite of their professed belief in the competitive system, are usually reluctant to give up any means for escaping the restraints imposed upon them by competitive pricing. The pressure upon the government for relief from price competition is not confined to direct manipulation of prices. It may take the form of protective tariffs to close the market to foreign competitors, measures

to restrict output or to withdraw from the market surpluses that have already been produced, or direct subsidies to supplement the incomes of those who feel that they are suffering from too low prices. The principles involved in measures of this kind, as they affect the social economy, can readily be brought out by considering the efforts made by our federal government in recent years to improve the position of American farmers.

There is no doubt that the farmers of this country, on the average, have experienced several periods of real distress during the present century. Various statistical studies show that farm incomes are quite unstable, and that the average level of farmer incomes in the past few decades has generally been low in comparison with that of other groups in our population. In appraising the measures that have been taken in an attempt to correct this condition, it is necessary to understand clearly the basic cause of the trouble. That cause is the existence of overcapacity in American agriculture. The overcapacity is to be attributed to a number of factors. For one thing, the policy of our federal government has been to encourage the settlement and cultivation of public lands. Under the liberal terms of this policy, which make it very easy for would-be farmers to become landowners, there has been a gradual extension of crop acreage over a long period of years. At the same time, there has been going on in agriculture a veritable revolution in methods comparable to the industrial revolution that took place in manufacturing a century and a half earlier. Growing out of research and experimentation, there have been developed new kinds of seeds which are better adapted to our soils and more able to withstand climatic changes, insect pests, and other difficulties. New methods of working the soil, more and better fertilizers, and similar improvements have greatly increased the amount of farm products that can be grown on an acre of ground. In addition to this, new machinery has been invented to augment the labor of the farmer and increase his output. The new methods have been widely disseminated by the extensive program of education which is going on in agricultural schools and colleges throughout the country. Added to all this, there have been two world wars in which the curtailment of farm production in other parts of the world caused foreign nations

to turn to this country to make up the deficiency in their own crops. Under the stimulus of this increased demand, American farmers put to the plow vast quantities of land that had formerly been devoted to other purposes. The result was that after the wars were over and foreign agricultural areas resumed their normal production, the farmers found themselves with expanded facilities in the face of declining demand. So it happens, as the combined result of all these influences, that the capacity of American agriculture today is so great in relation to the demand that, if it is fully utilized, the prices obtainable for farm products will not yield an adequate return to the farmers. The prices would be below the normal prices which are represented in this essay as desirable.

If the price system were left to its own spontaneous working, it would probably correct this condition of overcapacity in time. The low prices of farm products would bring distress to the farmers. Those whose farms were mortgaged would face foreclosures and failure. Those who owned their farms free of debt would perhaps be able to meet their variable costs, but would have very little left over, so that their incomes would be uncomfortably low. These discouragements would put pressure on them to look for other means of livelihood. Many would be driven out of farming, probably to become wage-earners in urban industries. Marginal farms would be abandoned, and sub-marginal lands on the better farms would be withdrawn from staple crops to be devoted to other uses, such as pastures or forests, if not allowed to go to waste. As a matter of fact, these forces have actually been operating for a long time. The plight of the farmers which has led to agitation for relief is nothing but the symptom of these conditions. This agitation is, however, a natural reaction. The corrective process inherent in the price system works slowly and painfully—more so in farming than in other industries, perhaps; because farmers are by nature more conservative, less mobile, and more likely to hang on tenaciously in the hope of better times. Nevertheless there has been a long, slow exodus from the farms toward the cities on the part of young people brought up in rural districts. But the number of farmers has not been reduced to a point where their scarcity would bring enough improvement in economic

conditions; therefore the distress has persisted, until the farmers, under able leadership, finally organized themselves into active groups sufficiently strong to compel the federal government to take measures for their relief. The farm lobby is today one of the most powerful in Washington.

Under the influence of this lobby, a number of experiments affecting farm prices are being tried, which constitute a comprehensive program of federal agricultural control. These measures offer an interesting opportunity for critical appraisal in the light of the pricing principles developed in this essay. For this purpose, it is necessary to summarize first the existing features of the program.

Underlying the program is the concept of parity prices. This concept proposes, as a criterion for fair farm prices, the relationship between the prices of farm and non-farm products that prevailed in the five-year period, 1909-1914. This assumes that the average price relationships of that period were normal, and that therefore a similar ratio between the two groups of prices would be normal today. The purpose of the program, then, is to keep the prices of farm products at the same ratio with other prices at the present time, and, if this is not attained, to supplement the farmers' incomes by federal subsidies of one kind or another to make up the difference. In order to accomplish this purpose, farmers are encouraged to withdraw some of their land from basic crops and put it to soil-conserving uses, such as the planting of trees or the growing of legumes. Farmers who do this are given "parity payments" of a certain number of dollars for each acre so diverted from staple crops. These payments are made by the federal treasury out of its general tax revenues. They thus constitute a subsidy paid to the farmers by the public at large. Another part of the program consists in the direct limitation of certain specified crops by the fixing of marketing quotas for individual farmers. Whenever the Secretary of Agriculture believes that the production of a certain crop is likely to be so large as to drive the price down below parity, he is empowered to propose quota limitations for the production of that crop. The proposal is presented to the farmers concerned for their vote, and if the majority vote in favor, it is then put into effect. In this way, the procedure is made democratic. Farmers who exceed

their quotas are fined for their excess. Besides these two features, the present program embodies the principle of an "ever normal granary." The idea here is that, since agricultural crop yields fluctuate greatly from year to year because of weather and other conditions, the surplus of bountiful years should be withdrawn from the market temporarily and held in storage, to be added to the supply later in years when crops are smaller. In this way the fluctuations are supposed to be averaged out over the long run. Ostensibly to help the farmers finance the storage, the federal government makes loans to them, under very favorable terms, up to a certain percentage of the parity price (85 per cent under the 1941 Act). If the price falls below parity, the farmers are permitted to abandon the stored crops to the government, which must then bear the loss. In effect then, the so-called loans become a guarantee on the part of the government to buy the crops if their price drops below the specified amount. Finally, the Department of Agriculture is given 30 per cent of the gross revenues derived from the United States import duties for the purpose of buying up and disposing of farm crop surpluses. The products so purchased are disposed of in various ways. Some are given to state welfare agencies for distribution to the needy poor. Some are donated to school authorities to be used for free lunches for the school children. Some are available for foreign relief. Some were for a time disposed of through the Food Stamp Plan, which will be described in a later paragraph.

There is no denying that this program has helped the farmers. Statistics show clearly that between World Wars I and II, the percentage of our national income going to the farmers was definitely increased as a result of higher agricultural prices and government subsidies. Farm prosperity was further improved by the great domestic and foreign demand for agricultural raw materials and foodstuffs during World War II. Granted that such an improvement was needed, it may nevertheless be asked whether it has been accomplished in the most desirable way, and whether the end result is consistent with the attainment of social economy in its broader sense. If the measures described are examined in the light of experience, on the

basis of their desirability as a means of promoting sound economy, and taking into consideration the findings of this essay concerning the functioning of prices, certain observations and principles may be made³:

1. Undoubtedly there are situations in which measures of intervention to protect producers from disaster resulting from low prices may be desirable. The existence of overcapacity in such an industry as agriculture, where the process of adjustment is likely to be slow and painful, is one such situation. The corrective action of uncontrolled prices in such cases is unnecessarily cruel. Intelligent governmental intervention to ease the process of readjustment is in line with the modern trend toward replacing the spontaneous forces of free enterprise by centralized planning and guidance. Also, in times of unusual business depression there is something to be said for a policy of temporary relief for those industries that are not in a position of permanent overcapacity. If the normal output of the industry is no more than sufficient to meet the demand in ordinary years, it would be unfortunate to have some producers driven out of business by a temporary depression.

What is wanted here is to enable whole bodies of existing producers to weather the storm, so that there may be no destruction of capacity which will be required when the demand recovers to its previous level, as it may be expected to do in due course. Under *laissez-faire* the trouble is that perfectly efficient producers may be sunk by the temporary violence of the storm, and when the storm is over, other similar ships will have to take their place.⁴

Here, of course, only temporary control is justified. The difficulty is that controls once started in times of emergency are likely to be

³ The following numbered paragraphs (except 2), and the discussion of the Food Stamp Plan below, (although originally written for the present essay) have already been published, substantially as they appear here, in Chapter XX of the Fourth Edition of *Applied Economics*, by Raymond T. Bye and William W. Hewett; copyright 1947, by F. S. Crofts and Company. They are here reproduced by permission of the present publishers, Appleton-Century-Crofts, Inc.

⁴ J.W.F. Rowe, *Artificial Control Schemes and the World's Staples*, an article in *Index*, (a publication of Svenka Handelsbanken, Stockholm, Sweden), for April 1935.

continued indefinitely, if they succeed; and the prices aimed at are likely to be considerably above the optimum costs of production.

2. Intelligent control of crop acreage and production, under governmental direction, is to be recommended, provided it is not used as a means of forcing up prices to uneconomical figures. This is in line with the trend of evolution toward a policy of general economic planning. It can be constructively employed to prevent over- or undercapacity in agriculture, and to preserve a balance between the demand and supply of farm products.

3. In all these cases, the ultimate objective of intervention should be the restoration of prices to their normals. In other words, the prices aimed at should be as close to the optimum costs as possible. For practical purposes the costs of modal producers should probably be taken as the criterion. Prices should not be fixed high enough to protect inefficient producers. The fact that optimum or modal costs in farming are difficult to ascertain is no excuse for abandoning the effort. No parity formula can be accepted as a substitute method of pricing. The idea that the price relationships prevailing in some base period can be taken as a norm toward which to aim is not tenable. In the actual world it would be practically impossible to find a time when all price relationships are in close conformity to their normals; and even if they were, these relationships would not be valid for a subsequent period, because normal prices vary through the years. There is no reason to think that the relation between agricultural and non-agricultural prices from 1909 to 1914 was a normal one; and even if it was, it might not be normal for today. In an industry where technological improvement is as rapid as it has been in agriculture in recent decades, prices ought logically to be falling in relation to other industries where new methods have been less revolutionary.

4. Generally speaking, each industry should stand on its own feet. Except for temporary relief in times of unusual stress, it should not be subsidized by largess from the public treasury. Parity payments, and the losses which the government takes on its crop loans, are just that. When the prices of an industry have been brought to equality with optimum costs, the factors used in the industry are being paid what

they are worth to the social economy, by the test of opportunity costs. Only if some persons, when so remunerated, fail to receive enough to fulfill the principle of a guaranteed minimum, is there justification for special gratuities at the public expense; and even here the most constructive approach is by a program that will enable them to earn more, rather than to give charity. A temporary subsidy to meet special emergencies may sometimes be justified, but this remedy should be used with great caution; because it is likely to create a pressure for continuance of the subsidy long after the emergency has passed, and it is likely to retard the readjustment of supply to demand, by making the subsidized industry prosper in spite of its overcapacity.

5. Where there is basic overcapacity in an industry, attempts to force up the prices of its products by withholding part of the output from the market after the goods have been produced are likely to fail, because they do not get at the source of the trouble, which is overproduction. By making a farm crop profitable in spite of its excessive supply, such measures encourage a further increase in the output, thereby aggravating the problem. There is plenty of evidence that our present farm-aid program is having this effect. Already the government is being embarrassed by an increasing accumulation of surpluses that it does not dare to dump on the market, and which it has not found a satisfactory way to dispose of. The "ever normal granary" in practice becomes an ever present excess. This has been a common experience with similar devices everywhere. Furthermore, such measures are uneconomical, because goods once produced are wealth if they are worth anything at all above the cost of harvesting and processing them. Society is, therefore, poorer if they are destroyed or wasted. It is better for the community to sell them at whatever price they will bring, so that they will be put to some use, even if the price does not cover all the costs of their production.

6. The only effective remedy for overcapacity is to withdraw some labor and capital from the industry concerned. Temporary relief must not be used in such a way as to prevent or unduly prolong such withdrawal. The government can ease the process of curtailment by helping to find opportunities elsewhere for the productive

factors that are being displaced. The reasoning of Say's law supports the view that these factors can be utilized in the economy to produce goods that will repay their costs, except in the condition of restricted opportunities visualized by Keynes, and even then there are always possibilities for public investment, by means of which all our socially useful resources can be employed. In the case of agriculture, the use of extra-marginal lands for forests, flood control, soil-conserving crops, public parks, and the like, is all right, provided the need for these things can be demonstrated, and provided also that the policy is not used as a screen for holding in idleness land whose cultivation for ordinary crops would be socially desirable.

7. Even where overcapacity has been eliminated by spontaneous adjustments or careful planning, such industries as agriculture are bound to have occasional temporary surpluses due to unpredictable weather. In such cases, it is good economy to store the excess for later release in years of short crops. Professional speculators do a certain amount of this as a matter of good business; but it can be argued that it can be done better by the government, because it can take a longer view of the future, and so balance good and bad years over a greater stretch of time. The argument is valid, but there is always a danger that the storage of surpluses will be used to protect agriculture from the penalties of overcapacity, thus perpetuating a condition of overproduction that increases the size of the crops in storage to an amount far exceeding the needs of lean years. Pressure will be brought by the industry to prevent the surplus from ever being thrown back on the market, with the result that it must be disposed of wastefully, at great loss to the taxpayers who paid for its original withdrawal. Since this has always been the outcome of such schemes in the past, their use is of doubtful wisdom.

In 1949 a somewhat different program for dealing with agricultural prices and farm incomes, known as the Brannan Plan, was proposed. The then Secretary of Agriculture, Charles F. Brannan, recognized some of the difficulties inherent in the former conception of price parity. His plan proposed to replace that concept with a new idea of parity farm income. The objective was to assure farmers as a group

an average level of income in each year which would give them the same purchasing power relative to non-farm products that they had, on the average, in the first ten of the preceding twelve years. This means that if the plan were inaugurated in 1950, it would assure to farmers a level of income giving them purchasing power equivalent to what they had in the years 1939 to 1948, inclusive; and in future years it would never fall below that average, although it might gradually rise above it. To maintain this average income, two devices were to be employed—one for storable commodities, such as corn, wheat, other grains, tobacco, wool, cotton, and peanuts; the other for non-storable commodities, such as eggs, milk, and meat, whose perishable nature does not permit their storage for long periods. The prices of the storable commodities were to be supported by operations similar to those previously in effect, *viz.*, commodity loans, marketing quotas, and direct government buying. For the non-storable commodities a new principle was proposed: The prices of these commodities would be allowed to move up and down freely in the market, in accordance with fluctuations of demand and supply; but if they fell below figures necessary to maintain farm incomes at the parity level, the difference would be made up by a direct subsidy paid from the federal treasury to the farmers. These constitute the salient features of the plan.

The significant differences from the preceding program are two: (1) the 1909-1914 concept of parity prices is replaced by a new concept of parity incomes based on a moving average, beginning with the period 1939-1948; and (2) price supports for non-storable commodities are replaced by direct subsidy payments to the farmers. Since about three-fourths of farm incomes are from non-storable products, this last represents an important departure of principle. The program would also extend agricultural control operations to a wider group of commodities than heretofore, because this could be more readily done by the subsidy method.

So far as the new parity formula is concerned, it is open to much the same criticisms as the old one. There is no valid reason for supposing that any particular ten-year period necessarily represents the normal relationship between farm and non-farm prices; and, even if

it were, that it would constitute a normal relationship for the future. In this particular case, the period chosen was one in which farmers were unusually prosperous, because it includes the years of World War II. Granted that increased farm prosperity is a desirable goal to work toward, it is doubtful whether the arbitrary adoption of this parity formula represents the relationship that should be maintained hereafter. Particularly, this formula would protect farmers from a decline in their incomes in a period of depression, and this protection would take the form of subsidies paid out of taxes collected from the rest of the population at a time when their own incomes would be seriously reduced. As to the subsidy feature of the program, I have already indicated my adherence to the principle that each industry should stand on its own feet. Farming is no exception. Any program that proposes to maintain the farmers indefinitely at a high level of income by direct subsidies tends to perpetuate distortions in production that should be corrected by measures of production planning; and it is unfair to the rest of the people.

Another method of disposing of surplus crops that has attracted considerable attention is the Food Stamp Plan, which was used by the United States Department of Agriculture for some time prior to World War II. Since this plan constitutes a novel departure from the usual workings of the price system, it is pertinent to the present study.

The plan had two objectives: (1) To remove price-depressing food-crop surpluses from their regular markets, thus raising the prices of the affected crops and so increasing the incomes of farmers; and (2) to use these surpluses for improving the nutrition of the poor by selling the excess foods at low prices to needy persons. Two prices were thus established for the same commodity, one for the bulk of the production, to be sold in the market at large, and another, lower one for the surplus, to be sold to a restricted group of buyers. This was accomplished as follows: Families on poor relief were permitted to buy certain orange stamps, to the value of a dollar or a dollar and a half per person, these stamps being good for the purchase of staple groceries at regular prices. With every dollar's worth of

orange stamps were given free fifty cents' worth of blue stamps, which were good for the purchase of certain foods that were currently declared to be surplus by the Secretary of Agriculture. The government redeemed both the orange and the blue stamps from the grocers at their face value. Funds for the redemption of the orange stamps came from the needy consumers to whom these stamps were sold. Funds for redeeming the blue stamps came out of United States customs receipts, thirty per cent of which were allocated to the Department of Agriculture to be used for surplus crop disposal.

The purchase of orange stamps was required as a condition for receiving the blue ones to insure that surplus foods would not be substituted for foods the consumers would have bought anyway, but would be an addition to their ordinary expenditures, thus improving the nutrition of the poor and increasing the demand for farm products, and thereby benefiting the farmers. It was recognized that the poor would reduce their food expenditures somewhat as a result of the addition of the blue stamp foods to their diets, but it was believed that the net result would be to increase consumers' demand. This belief was based on the following reasoning: The plan would raise food prices to consumers in high and medium income groups by withdrawing surpluses from the markets where these consumers would buy; but it would be equivalent to a lowering of food prices to low income groups because, by means of the blue stamps, they were able to get a dollar and a half's worth of food for one dollar. Since the demand for foodstuffs by the well-to-do is less elastic than that of the poor, these price changes would increase the consumption of the latter group by more than it would reduce the consumption of the former; hence there would be a net increase in food expenditures. In this way, both the farmers and the underfed poor were supposed to be benefited.⁵

Such a plan interferes with the usual operation of the price system in two ways: it maintains certain prices above the figures at which they would naturally be, and the allocation of production among dif-

⁵ Norman L. Gold, A. C. Hoffman, and Frederick V. Waugh, *Economic Analysis of the Food Stamp Plan*, United States Department of Agriculture, Bureau of Agricultural Economics and Surplus Marketing Administration, Washington, 1940.

ferent goods is on a basis different from that of competing consumers' demands. Instead of allowing the price of superabundant crops to fall to whatever point is determined by the market, and permitting the foods to be used in whatever way consumers would then decide, the price is artificially kept up; and the excess over what consumers will buy of their own accord at that price is virtually bought at the inflated price by the government, and distributed, at a loss, to the poor.

As a device for maintaining agricultural prices by withdrawing surplus crops from their regular markets, the plan is subject to the general comments that were made above. It might be defended as a temporary measure for disposing of occasional surpluses in years of unusually plentiful harvests. But it was advocated as a permanent and continuing policy, presumably on the assumption that there would always be surpluses. Its proponents went so far as to say that in the long run it should provide an outlet for increased production with higher prices.⁶ This makes it a very dubious policy.

Its subsidizing of the farmers, however, was thought to be mitigated by its benefits to the needy, and on this ground it received some support from non-agricultural sources. Can it be so defended? So long as poverty has not been eliminated by the constructive measures suggested in Chapter Four, some supplement to the diets of the poor by the free distribution of foods is justified. Furthermore, it is good economy to use for this purpose those foods which are more abundant, in so far as they are of the kinds that will contribute to well-balanced diets on the part of the persons needing assistance. But there is a danger in the Food Stamp Plan that this proviso will be overlooked, because the food grants are made secondary to a program of price control. Moreover, the government could get food for the poor more cheaply if prices were allowed to be fixed freely by the market, and if the foods to be distributed were purchased at wholesale instead of at retail. In view of these considerations, it is difficult to avoid the conclusion that the Food Stamp Plan was a rider, uneconomically attached to a dubious price-raising program, for the purpose of making the latter seem less unsavory.

⁶ *Ibid.*, p. 17.

WARTIME CONTROL OF PRICES

It was explained in the last chapter that a major war puts a terrific strain on the mechanism of pricing that is too great for it to meet. The shifting of a very large part of production from civilian to military needs, if left to the spontaneous play of demand and supply, would cause extreme distortions of prices without achieving the desired effect. The price system is capable of directing fundamental changes in economic life (even the rise and fall of whole industries and groups of industries) if given time to work it out over a considerable period of years; but it cannot perform such a task in a few weeks or months. Besides the time element, the fact that, during a war, monetary inflation is going on, further interferes with the machinery of pricing and greatly aggravates an already complicated situation. Therefore, in modern wars, governments have generally found it necessary to interfere with the free movement of prices, and to control production and consumption directly (more or less), instead of depending on the spontaneous guidance provided by the price system. No attempt will be made to describe these controls completely in this chapter, but it will be instructive to pick out certain phases of price interference as practiced by the American government in World War II, to show some of the basic principles involved.

Our experience during World War I showed that the needs of the situation could not be met effectively by controlling the prices of only a few strategic commodities. The inflation of that period was swelling the pocketbooks of consumers with money that they wanted to spend. This was bound either to raise prices, or to increase the effective demand for goods if prices were not permitted to rise. When maximum prices were fixed for certain selected commodities, the effective demand for these soon exceeded the effective supply of them. Then the excess money not absorbed in the purchase of these commodities overflowed into the uncontrolled markets, forcing prices upward there. These high prices, by raising profits, stimulated producers to attempt to increase the supply of the uncontrolled com-

modities, and this led to a strong derived demand for raw materials and basic factors of production. The prices of the materials and factors rose as a result of this derived demand, and the high price of materials and factors raised the cost of producing the commodities whose prices were controlled. These rising costs then compelled the authorities to make an upward revision of the maximum prices. In an attempt to escape from this chain of causation, our government found it necessary to extend the controls successively to more and more commodities, in an ever widening circle, until, had the war continued long enough, the whole system of prices might eventually have been controlled.

This experience was remembered when World War II came along. In an attempt to profit by it, it was decided this time to control, not a few prices only, but to set a "ceiling" on prices generally. The lobbying of the powerful farm bloc prevented the imposition of any ceiling on agricultural prices until they had reached 110 per cent of the 1909 to 1914 parity; but the sellers of all other commodities were prohibited from raising their prices above the figures they had been asking in March 1942. The wages of labor were at first uncontrolled, but later were "frozen" (under the Little Steel Formula) at a level 15 per cent above the rates prevailing on January 1, 1941; although certain adjustments were permitted to eliminate gross inequities. Rents were likewise fixed at prevailing figures in most of the regions where there was an acute housing shortage. So, the general policy was to freeze the price structure in its existing pattern, with very little opportunity for change, for the duration of the conflict. Here was a striking departure from the ordinary operation of the price system.

What can be said concerning the results to be expected in theory, and those which actually were experienced in practice, from this situation? It is obvious that such a frozen price structure is lacking in the flexibility which prices need to adapt the economy to changing circumstances. This lack of flexibility, in the long run, would not only interfere with adaptation, but would actually prevent the expansion of many industries where increased production was most needed. Even during the war (which must be construed as a short-run period) it tended to have this effect. To increase the output of

war goods in a hurry necessarily would raise the cost of production. The speeding up of industry in the course of increasing output requires the hiring of additional labor, much of which must be less experienced and less efficient than labor already employed in the affected industries. Raw materials must be gotten from more distant places, and in some instances less satisfactory materials must be used. In the speeding up, machinery and plant are worked more intensively, and there is rapid depreciation, with less attention to maintenance and repairs. In the overcrowded conditions that prevail in industrial establishments, operations are not carried out as smoothly and business organization becomes less efficient. All these things make costs rise above the price ceilings that have been established. Our government met this situation by granting subsidies out of its treasury to make up the losses of producers where this was necessary to maintain output in essential industries. In this way, when prices were interfered with, measures to supplement their action were brought into play.

The exemption of agricultural prices from the rigid application of the ceiling permitted them to rise out of proportion to other prices, thereby introducing distortions into the price structure. This had some curious effects upon production. For instance, in the postwar period (while the ceilings were still in effect), the price of butter was frozen, but the prices of heavy cream and ice cream were left to the play of the market. It naturally followed that the latter two prices rose. Under these circumstances, very little cream went into butter manufacture, and a serious shortage of butter occurred.

The disparities in prices were especially troublesome in the case of labor. Wages were held down strictly in the industries manufacturing goods for civilian consumption, but in the war goods industries, although basic wage rates were frozen, take-home pay was not. In order to induce laborers to produce more of the latter goods, liberal extra wages were allowed for overtime, Sundays, and holidays, so that earnings in these industries were greatly increased. There resulted an exodus of labor from civilian to war goods industries, which threatened to paralyze the former. Here again it was found necessary to supplement the machinery of pricing with

measures of direct control. A War Manpower Commission was created, which had sufficient authority to control the shifting of labor.

Reference has already been made to the problem created by inflation of the currency at a time when the government was attempting to prevent prices from rising. This inflation created a terrific pressure against the price ceiling, as consumers, coming into the possession of more money, sought to spend it. It was in this period that the expression "the inflationary gap" came into use as a term to describe the difference between the value of monetary purchasing power in the hands of the public and the money value of the goods that were available to them at the controlled prices. The inflation was like a flood threatening to wash away the dam of price controls. It was the source of much evasion and black marketeering. Evasions (apart from sub rosa selling at high prices in direct violation of the law) took various forms. Goods were permitted to deteriorate in quality, but sold at the same prices that previously prevailed for superior goods. New products were offered on the market differing from old ones just enough so that no previously existing price could be used for a ceiling; a case could then be made out for charging a much higher price, based on current costs.

The abandonment of the free pricing process as a device for guiding the economy during the war required the creation of governmental agencies to direct resources to those uses which were deemed most important. Strategic raw materials were allocated among the several industries by a War Production Board, instead of being drawn toward the strongest demands by competitive bidding. Labor, instead of being left to find its best market among the different occupations and industries on the basis of greater and lesser rewards, was to some degree conscripted by the controls administered by the War Manpower Commission. Since goods were no longer rationed to consumers by prices reached through the play of demand and supply in an open market, ration boards were set up to apportion the scarcer things on the basis of greatest needs.

The sweep of these controls, and the kind of difficulties encountered, reveal vividly how remarkable are the functions that the

pricing process performs of its own accord when it is left free to do so. But it does not follow that the wartime regulations were unnecessary or unwise. They were most necessary; and, notwithstanding the difficulties, they accomplished their purpose reasonably well—much better, in fact, than economists had generally anticipated. The task of increasing tremendously the output of military goods, without encroaching too seriously on the daily needs of consumers, was achieved with success. This raises an interesting question. Could we perhaps in peacetime direct the economy more satisfactorily by a program of direct governmental control, than by depending on the guidance of prices? This raises the whole issue of general economic planning, and the method of its operation. The pricing aspects of this problem will be the subject of the next (and final) chapter of this essay.

Before turning to this problem, however, there is one other feature of American wartime policy that it will be worth while to consider, for the light it can shed on the way the price system operates. This has to do with the principles followed by the federal government in purchasing goods for its own use (including the use of the armed forces). In these purchases, a distinction was made between non-standard goods, such as ships, airplanes and tanks, that were built to specifications, and standard goods, such as flour or sugar, that would ordinarily be found for sale in open markets. Goods of the first category could hardly have been bought on any other basis than the specific cost of manufacturing them, with some allowance for investment and management. There is no important question of pricing principles that need detain us here. It was in buying standardized goods for the use of the government that a novel principle was adopted which is of much interest to the economist. In competitive markets, the like products of different producers all have the same price; and it might have been supposed that the government, in buying from different suppliers, would have followed this principle in wartime. Instead of doing this, it paid each producer according to his own particular costs. This meant that several different prices might be paid for identical goods, depending on whether they came from

high or low cost producers. The reason for this was that if the same price was paid to all, it would have to be high enough to compensate the highest cost producers of the commodity, and this would make the good needlessly expensive to the government, while rewarding the low cost producers with excessive profits. The average cost of purchase would be lower if each producer was paid according to his own costs.

The theoretical question that arises out of this case concerns the function of differential surpluses in the pricing process. In analyzing this, we must distinguish between permanent, or long-period, and temporary, or short-period, differentials. Permanent differential surpluses arise where some valuable production good is fixed in supply. The typical case of this is the rent of land. Here the function of the surplus is to allocate the scarce resource among its various possible uses in accordance with the principle of opportunity costs. This allocation works to promote social economy in the way that was described in an earlier chapter. Temporary surpluses are the values attaching to scarce resources in the short period, during which their supply is more or less fixed. They represent that share of the price of the product which remains after the variable costs are met. They may be either greater or less than the normal return which this resource can earn in the long run. If demand for the product is great enough in relation to existing productive capacity to bring the price for the time being above optimum costs, the surplus for the temporarily fixed resource will be greater than normal; but if demand for the product is low in relation to capacity, the surplus will be less than normal. In either case Marshall would call it a quasi-rent.⁷ It is closely akin to profits. Its function is a dual one. As in the case of land, it serves to allocate the resource in the most economical manner among the available opportunities for its use, demand being taken as the measure of social need. But it has the additional function of inducing a readjustment of capacity to the existing demand. Such

⁷ It is a mistake to think of quasi-rent as a surplus in excess of the normal return. It is *the whole* of the return in the short period to a factor with temporarily inelastic supply; and this can be less than the normal return which this factor can obtain in the long run. It depends on whether demand is increased or decreased, in relation to the supply.

a readjustment is not possible in the case of a fixed resource like land, but it is possible in the case of industrial equipment, such as factory buildings and machinery. The high surplus yielded on such equipment in a period of temporary shortage has the effect of stimulating producers to construct more equipment, in order that the supply may expand to meet the demand; or, if the surplus is below the normal return, this will induce a contraction of capacity. These reactions make for economy.

During a war, however, the excessive profits that would result if prices throughout the market were allowed to rise to marginal costs cannot perform either of these functions. They cannot allocate the scarce productive resources to the channels of greatest social need, because the exigencies of war finance do not permit consumer incomes to shrink enough to subordinate their demand for consumer goods to the urgent needs of the government for prosecuting the war; and the period of time during which the war emergency exists is too short for the price stimulus to effectuate a significant increase in plant capacity. In such a time, shortages of capacity in war industries are very acute, so acute that differential profits might rise to enormous figures without resulting in a corresponding increase in productive facilities. Left to themselves, enterprisers would not be likely to expand their plant facilities, because they would reason that the excessive demand was only temporary—it might disappear by the time the new plant was constructed. Therefore, it would be better for them to pocket the profits, while allowing the shortage to continue. Under these circumstances, the surplus has very little useful effect. It represents a great waste of expenditure, at the taxpayers' expense. These considerations appear to justify the policy followed by the government, of making its purchases at different prices, according to the costs of the individual producers; but it would not be a good policy to follow in normal times.

CHAPTER ELEVEN

Pricing in Collectivism

THE ECONOMIC PROBLEM OF A COLLECTIVE SOCIETY

The apparent trend toward general economic planning raises the question of what system of pricing would prevail in a fully planned economy. In the spontaneous price mechanism of capitalism the guidance of the economic process depends upon myriads of individual decisions by consumers, enterprisers, and all those who participate in production; but in a planned economy the basic decisions would be made by a central body. This suggests the possibility that the mechanism of pricing in such a world might be very different from that of a normative price system.

Our economy may evolve into one in which some form of general economic planning is grafted onto the institutions of a modified capitalism; but the essential characteristics of planning appear most clearly in a régime of collectivism where the material means of production are socially owned and operated. Therefore it will be most illuminating to look at planning as it would (or might) be carried on in a socialized economy.

Until quite recently socialistic writers paid very little attention to this problem. They were preoccupied with exposing the defects of capitalism and with propaganda for its overthrow. They took the position that the details of running the collectivized industries could not be prescribed in advance, but would have to be worked out by experience and evolution. More recently, however, with the advent of collective governments in various countries of Europe, expositors of socialist theory have come to realize that the basic problem which any economy has to face is that of determining how resources are to be allocated among the various consumer goods to which they might

be devoted, and how the resulting goods are to be shared among the people. It is presumably through some kind of pricing that these questions are to be answered in a collective world. Therefore, economists who are interested in the problems of a collective economy are now actively discussing the pricing problems which such a society must face.

The basic problem of social economy is the same in any society, but in individualistic capitalism it is worked out spontaneously through the market mechanism of demand and supply, which brings about a more or less harmonious balance between conflicting individual choices. In a collective régime the central planning body would face this problem consciously, and would decide how resources were to be allocated and the social product apportioned by deliberate authoritative decision. Presumably this body would act with definite concern for the welfare of the people as a whole. It may be supposed that it would attempt to attain objectives similar to those embodied in the criteria of social economy which have been set forth in this essay. Let us consider what alternative procedures might be open to the central planning authorities for putting such criteria into effect.

ALTERNATIVE METHODS OF SOLVING THE ECONOMIC PROBLEM

It is conceivable that the collective economy might be planned without benefit of prices at all. Although they are very vague about it, communist theorists look forward to the eventual attainment of a moneyless world where goods will be so abundant that prices will not be necessary. The implication back of this ideal is that production will become so prolific that scarcity will be completely banished and the problem of economy will no longer exist. This hoped-for Elysium is a mirage of optimistic dreaming. As far as we can see into the visible future, our wants will exceed the potential capacity of productive means. This condition makes it necessary to restrict the satisfaction of wants, and all the problems of economy with which this essay has been concerned will have to be faced.

In a world of scarcity, would it be possible to achieve economy in the use of resources without a price system? Perhaps so, in a poverty economy where production is barely enough to satisfy the

most primitive human needs. Here a planning body could, by a consensus of judgment, allocate resources to the most obvious necessities and ration the product among the people on some rough basis of justice. The number of decisions to be made would not be so great as to confuse the planners with a chaotic multitude of choices. It would simply be a matter of deciding the broad proportions in which resources were to be devoted to a few simple categories of food, clothing, and housing. In a comfort economy, however, the range of choice becomes so wide as to present a bewildering mass of alternatives. How are the choices among this infinity of possibilities to be decided? The planning body might still allocate productive resources into a few of the major broad categories of food, clothing, housing, and medical care by common sense; but this would be only the beginning of the problem. Within each category there would be a vast number of details concerning the kinds of food, the styles of dress, the architectural design of houses, and the scope of health provisions, to be determined. Beyond these would be a host of possible luxuries—theatrical plays, sports, home furnishings, automobiles, television, jewelery, cosmetics, and what not. All these would have to be worked out in detail, and the precise quantity of each good to produce would have to be determined. To make these decisions without some unit of account comparable to money would be almost impossible. There are two difficulties which point to the need for a system of prices to solve these problems.

The first difficulty is a political one. It involves the question of human liberty. Is the collective society to be one in which human beings are to be regimented by a supreme authority which dictates what food they shall eat, what clothes they shall wear, what kind of houses they shall live in, and what recreations they shall be permitted to enjoy; or are they to have wide freedom of choice in such matters? Undoubtedly, if the people are to be contented and to give their whole-hearted support to the régime, there must be a wide range of individual free choice; although this may be restricted within reasonable limits where choices involve action that is inimical to the social interest. In collectivism the number of goods supplied communally can be considerably widened, but this has its limits.

The possibilities in this direction were dealt with in Chapter Three, and the discussion need not be repeated here. It is enough to say that in a world of scarcity not all goods can be supplied by the community gratis; and the state of boundless abundance to which the communists look forward is unattainable.

Some writers have suggested that a planning body could keep production in line with consumers' desires by some other mechanism than prices. For instance, questionnaires might prove useful in helping to determine broad questions of policy in much the same way that manufacturers sometimes use consumer polls or distribute free samples in order to obtain consumer reactions to their products. But if consumers are to have a wide degré of freedom in choosing the products they prefer, the simplest and most satisfactory means of doing it is to give them money incomes which they are permitted to spend as they please. Production must then be directed accordingly. This requires the use of a price system.

Graham went so far as to say that a pecuniary price system, in which consumers' demand determines the direction of production, is essential to the very existence of freedom. He said:

It was, for instance, the commutation of services into money payments, and the evolution of a pecuniary economy in the free cities, which broke the bonds of Medieval serfdom. . . . Where social relationships are not based on the "cash-nexus," as, for instance, in such a non-pecuniary civilization as that of the Aztecs, freedom is practically impossible. Such societies are, in fact, marked by the most ruthless tyranny.¹

The second obstacle to guiding a complex economy without benefit of prices rests in the heterogeneity of the goods whose values must be compared. In deciding how much resources to use in producing television sets as compared with, say, citrus fruits or permanent waves, there must be a common denominator which permits a precise quantitative calculation of their relative importance. It is hard to conceive of anything other than a monetary unit that could possibly serve this purpose. Prices expressed in terms of such a unit seem to be the only feasible way of making such comparisons with any nicety. At the beginning the communists in the Soviet Union

¹ Frank D. Graham, *Social Goals and Economic Institutions* (1942) p. 52.

tried to get along without money (they even went so far as to try to wreck the monetary system deliberately), but they did not succeed in this endeavor. In the end they had to return to a system of money pricing. Most collectivists now recognize that some kind of pecuniary price system must be employed.

Some, however, argue that pricing in collectivism need not follow the same principles as the normative price system that has been described in earlier chapters of this study. A number of them, under the spell of Marxian economics, have tried to show that prices could be based on a labor theory of value. They visualize the collectivistic economy as providing a somewhat wider range of communal goods than a capitalistic society furnishes, but beyond that the goods produced would be sold to consumers at prices proportional (though not necessarily equal) to their labor costs of production. Cole, for instance, reasons that prices will have to be higher than labor costs in order that the state may have a margin of profit out of which to provide for capital accumulation, communal goods, and a broad program of welfare activities.² Dobb believes that in the beginning of the collective régime prices will have to be above "labor values" for goods requiring roundabout production, but he looks forward to a time when capital accumulation will have reached a saturation point where the marginal productivity of waiting (investment) will be zero, so that no charge for capital equipment need be made. Then "all industries will attain equilibrium when their receipts cover their wage costs."³ Both writers think of labor costs in terms of wages, and they recognize that wages will differ in various employments; hence, values will be based on wage costs, not just on labor time, but no charges for land rents or for interest are to be included in cost calculations. Prices will thus be in proportion to labor cost of production, with some loading to provide a surplus out of which the state can finance capital construction, collective goods, and welfare activities.

Marx derived his labor theory of value from the teachings of

² G. D. H. Cole, *Economic Planning* (1935), Chap. 12.

³ Maurice Dobb, *Political Economy and Capitalism* (International Publishers, New York, no date).

David Ricardo, whose *Principles of Political Economy* was published in 1817. In the more than a century which has elapsed since that time, economists have learned many things about the pricing process which were not even dreamed of by Ricardo and his contemporaries; and the idea that quantity of labor is the ultimate factor in the determination of values has been completely overthrown. To advocate labor cost as the basis for pricing in a collective society today is to ignore the developments of the last hundred and thirty-odd years in value theory.

The proposals of Dobb, Cole, and their school rest on an erroneous conception of real costs. Real costs consist not alone in labor performed, but in various sacrifices, of which labor-pain is only one. To base the prices of commodities solely on the labor cost of producing them would lead us astray. For example, the growing of potatoes requires more labor, in proportion to the land employed, than does the raising of steers. If the two commodities were priced on the basis of their labor cost, the price of potatoes at wholesale would be relatively higher than that of beef on the hoof. But suppose the country concerned is one with a relatively large labor supply and a scarcity of land. With beef priced low, the great expanse of land necessary for grazing would be used wastefully, at the expense of other products which would have to be sacrificed because of its scarcity. Economy here would require that beef be dear (in spite of its low labor cost), and potatoes be cheaper. This would insure that the scarce land would be confined to its most important uses, on the principle of opportunity costs. The Marxian theorists fail to see that prices should be used as a device for allocating resources according to their scarcity in relation to social needs. Prices cannot perform this function unless *all* the factors of production are included in the calculation of costs. Once the principle is grasped that costs measure alternatives sacrificed, and not only production pains, the labor theory of value must be abandoned, not only as an explanation of how prices are determined in the present world, but also as a principle for their determination in a collectivist world.

Why, then, do Marxian writers, even those who show some familiarity with modern economic theory, stubbornly cling to the

obsolete labor cost idea? No doubt it is partly because their loyalty to Marx, the master, prejudices them against the findings of non-Marxian theory; but even more it is because they do not seem to be able to separate costs *as a tool of accounting* from costs *as income shares*. They are obsessed with the idea that if other factors than labor are admitted to be sources of cost, this will justify the receipt of incomes from property. Believing that only labor should be paid for its contribution to production, they jump to the conclusion that only labor is productive. But if labor on one piece of land is more productive than on another, the land (not the landowner) must be credited with the extra production, and this makes it a valuable resource whose importance for production must not be lost sight of in the keeping of accounts. Likewise, if labor employed in a roundabout process is more productive than that which is employed in a direct process, the investment without which roundabout production could not be carried on must be recognized in the accounting as a factor which contributes to the product. This can be done in the calculation of costs without the necessity of paying people for owning land or (if we wish) for investing savings. To admit that land, investment, risk-bearing, and the like are productive resources, the use of which costs something in alternatives sacrificed, does not necessarily justify the private ownership of land or equipment, and it does not necessitate the payment of incomes to landowners or investors. If we are to think clearly on this problem, we must separate the two issues of what is cost and what is a justifiable source of income.

The above reasoning leads to the conclusion that the labor-cost principle of pricing would not be a satisfactory means of guidance for the allocation of resources in a collective economy. An alternative possibility would be to set up a system of manipulated prices on the basis of expediency. This has been the policy adopted by the economic planners in the Soviet Union. The hostility of the communist leaders to "bourgeois" economic teachings has made it necessary for them to feel their way in a process of trial and error. Although it might have been expected that they would base prices on

labor costs, in accordance with Marxian theory, there appears to have been no effort to establish normal prices on any consistent basis. Instead, prices have been controlled in accordance with a policy of expediency for attaining certain objectives. The primitive nature of Russian industry, the fact that when the communist régime began its economy was mainly an agricultural one in a general state of poverty, plus the bias of communist theory, led to the adoption of certain broad aims. The first of these was that basic necessities should be provided for all. Secondly, realizing that only through the development of manufactures could higher standards of living be attained, it was necessary to provide power and capital equipment as rapidly as possible. Another aim growing out of communist philosophy was to favor the industrial proletariat over other classes in the nation. Finally, there were some broad cultural ends which were allowed to influence prices. For example, household soaps and books were priced low in order to encourage their use, while luxury toilet articles were priced very high. In an effort to promote these several objectives there was developed a complicated system of controlled prices and rationing.

It will be instructive to consider some aspects of this system as it existed in the early nineteen thirties.⁴ Instead of establishing a single market, with one price for a given commodity throughout the whole of it, the Russian communists set up a number of different kinds of shops, catering to somewhat different classes of buyers, with different schedules of prices. In order to bring basic necessities within the reach of everyone, a large number of staple goods were sold at very low prices in "closed coöperatives" and factory canteens. Since at the prices so fixed the effective demand greatly exceeded the effective supply, it was necessary to ration these goods. Rations were not the same for all classes, preference being given to workers in the most important industries, to those engaged in heavy or unhealthy employment, and to certain employees in the administrative organization. Agricultural workers were excluded from the rationing

⁴ My account is based mainly on two sources: Maurice Dobb, *Soviet Economic Development since 1917* (London, 1948), pp. 368ff.; and Alexander Baykov, *The Development of the Soviet Economic System* (1947) pp. 236ff.

system, presumably because they could provide themselves with basic necessities from the products of their farms. Even in the shops stated there were two different sets of prices; for if surplus quantities of some goods became available above what was required to meet the rations, these goods could be purchased "off the ration" at substantially higher prices. In addition to the shops described, there were various state and municipal "commercial stores" in which a wide variety of goods was obtainable, but at still higher prices. Special supplies were allotted to "Torgsin" stores for sale to foreign residents and tourists, at the highest prices of all. Finally, there were private rural "Kolkhoz" shops where the agricultural coöperatives could sell any surpluses they might have above what they were required to deliver to the authorities for urban distribution, and where individual farm workers could dispose of the products grown on the individual plots of land which they were permitted to cultivate. Through this machinery prices were made the instruments for carrying out economic decisions made by the state, instead of being made the primary guide for such decisions.

The effect of this multiple price system was to separate consumption from individual money incomes to a considerable degree. A skilled worker might get a higher money wage than an unskilled laborer, but his ration might not be any greater, so that there was not much he could do with his extra earnings; or, one person might be able to buy more than another with the same money wage because preferred workers were allowed to purchase in the factory canteens, where prices were lower, and others had to buy elsewhere at higher prices. This was inconsistent. If different money incomes are permitted, they should reflect corresponding differences in standards of living; otherwise they are meaningless. If extra wages cannot buy extra goods they perform no function. Experience has since taught the communists that the categories of privileged workers which they had established contradicted the incentives which the wage differentials they permitted had been designed to provide. This difficulty, together with the unwieldiness of the multiple price system, and other problems, led to the abandonment of rationing in 1935 and a return to the principle of one price in all the stores of a given market,

especially the Kolkhoz shops. Rationing had to be resumed during World War II, but was later abolished again.

At the present time Soviet prices do not appear to be based on any clearly defined set of principles. Although producing establishments keep records of their costs and are expected to show a profit, no effort is made to make retail prices correspond to costs of production. Consider the problem which confronts the planning authorities: Firstly, production quotas are determined in advance by the planning commission (Gosplan), not on the basis solely of demand but largely on the judgment of the planners. In the course of production, wages, salaries, and bonuses are paid to workers, technicians, and managers. These constitute practically the sole monetary incomes of the people, there being no private receipts of rents and no interest on industrial loans.⁵ This entire flow of payments is available for expenditure on consumption goods. At the same time it constitutes virtually the whole of production costs, because producing establishments do not have to pay rents for the land they use nor interest on their fixed capital. So everything that is paid out in production could be spent by the masses in consumption if goods were priced at costs. However, only a part of production consists of consumable goods. Great efforts are being made to industrialize the country, so that a large proportion of production is devoted to capital equipment; and a not inconsiderable proportion is devoted to communal goods which are available to all, without prices. Since the total of expendable incomes would greatly exceed the aggregate prices of the consumable goods offered for sale, if the latter were sold at cost, they must be sold at prices high enough above costs to absorb the excess; otherwise, the economy would not be in balance. There would be an inflationary gap which would lead to black market activities and other problems to plague the authorities. In practice, balance has not been attained, and there has been some inflation; but an approximation to balance has been achieved by means of a turnover tax levied on commodities. This is practically a sales tax imposed at the point where products pass from the factory to wholesale or retail markets.

⁵ A little interest is paid on savings deposits and government loans.

The turnover tax is not uniform, but varies according to certain objectives which the authorities seek to achieve. For example, in view of the scarcity of certain raw materials and mechanical equipment, it may be desired to discourage the consumption of goods whose production requires much of these things. In such cases the turnover tax is raised. It thus constitutes a sort of substitute for the rent (or quasi-rent) which attaches to scarce factors in a normative price system, although the Soviet economists do not appear to be aware of this similarity. Again, it may be considered wise to encourage the production of bicycles because they enable people to live further from their work, thereby relieving urban congestion and promoting the wholesome environment of suburban residence. In this kind of case the tax is kept low. The consumption of socially undesirable products (e.g., vodka) may be discouraged by a high tax, in much the same way that we use high license fees or excises for similar purposes. There are more than 2500 separate turnover tax rates, ranging from ten to eighty-two per cent of the retail price. In this way a considerable part of personal money incomes is recaptured to finance the provision by the state of communal goods, capital accumulation, and cultural activities.

All prices are fixed in advance by the plans. They are made up of the following elements: average (not marginal) costs of production (including the cost of transportation and marketing), the planned profit of the producing establishments, and (in the case of commodities sold after they have left the factory or farm) the turnover tax. Part of the profit is retained by the establishment for its own capital needs and for bonuses paid to management for superior efficiency; the remainder goes to the state. Although Soviet writers do not quite admit it, it appears that an effort is made to adjust these various components of prices in such a way that in the end the effective demand of consumers for goods will equal the planned output. To the extent that these various adjustments are successfully worked out, a balance of the entire budget of the economy is achieved.

The calculation of costs does not follow the principles of a normative price system. In so far as costs are used as a basis for pricing, it is average, not marginal, costs that are employed. This would accord

with normative pricing principles for the long run, but it departs from the price mechanism of a competitive economy in the short run. However, the cost accounts are distorted because they are dominated by the labor concept of costs which was criticized above. Although interest is charged industrial establishments for short term loans, they do not pay interest on loans of longer duration. This means that they pay for the use of working capital but not for fixed capital. No charge is made for the use of land. The allocation of capital (including land) is made on the basis of judgment or guess, without any specific calculus for comparing and weighing alternatives. In view of the principles of social economy developed in earlier chapters, it would appear that welfare would be more effectively promoted if charges for all the factors were entered into the costs on which prices are based.

The authorities appear to be moving slowly toward the principles of a normative price system. One evidence of this is the abolition of rationing and multiple pricing in favor of distributing goods to consumers on the basis of voluntary purchases at uniform prices. There is also a trend away from arbitrary wages and the drafting of labor to increasingly widening wage differentials as a device for allocating labor and stimulating worker efficiency. Wage differences in the Soviet Union are now as great as those which prevail in the United States. Furthermore, (as above remarked) there is a rough equivalence to differential rents in the high turnover taxes levied on goods whose production requires materials or primary factors that are especially scarce. The Soviet economists may in time discover that interest and rents openly charged are a useful accounting device that should appear in cost calculations. There is also evidence that the teaching of value theory in Soviet academic institutions is beginning to deviate somewhat from Marxian labor principles.⁶

All this suggests that perhaps the best basis for pricing in a collective economy may be the mechanism of a normative price system.

⁶ See Raya Dunayevskaya, *The Teaching of Economics in the Soviet Union*, in *American Economic Review*, Vol. XXXIV, pp. 340-343, 501-537, and 862-871 (June, September, and December 1944).

The argument of this study taken as a whole shows that a normative price system embodies certain principles that make for social economy. It needs a favorable institutional setting to prevent abuses, such as those of monopoly and the deception of consumers. It needs also to be supplemented by collective action to give effect to certain principles which the spontaneous mechanism of prices ignores. For instance, the state must provide for the distant future, which is underestimated in individual rates of time preference; and it must perfect arrangements for developing latent talents in the population. But with these supplements and correctives, such a price mechanism probably offers the best means of calculus that can be found for setting scarcity against needs and guiding the economic process toward the ends of social welfare. A régime of collectivism could easily provide the necessary correctives and supplements. Why, then, should not the normative pricing system be used as the basis for guidance in a collective economy? A number of economists who have been interested in the theory of collectivism⁷ have recently come to the conclusion that it should, and in this judgment I concur. An analysis of how the normative price mechanism could function under collectivism will show the possibilities.

NORMATIVE PRICING IN COLLECTIVISM

There is fairly general agreement among both the critics and advocates of collectivism that consumers' goods in a collective society can be allocated on the basis of free choices as expressed in schedules of consumers' demand. There is no technical obstacle to such a method of allocation. Consumers presumably would be given a money wage or other money income which they would be free to spend as they pleased for such goods as the collective market provided. Many, if not most, of the goods produced by the economy would be offered for sale in this market at prices established on the basis of costs of production calculated in a manner presently to be explained. The quantities of the various goods produced would then be planned

⁷ Oscar Lange and F. M. Taylor, *On the Economic Theory of Socialism* (1938); H. D. Dickinson, *Economics of Socialism* (1939); and R. I. Hall, *The Economic System in a Socialist State* (1937).

so as to equal the effective demands for them, thus freely expressed. However, this principle of pricing need not be carried to the point of complete consumers' sovereignty. No doubt the collective planners would want to extend more or less the list of communal goods to be made available without price. There would be more public schools, and free college education for those qualified to benefit by it. There would be a broad program of free medical and hospital care, possibly rent-free housing for the poorer members of the community, and perhaps some broader amenities, such as free concerts, movies and plays, and possibly even free railroad transportation for commuters, vacationers, and certain others. In these matters the judgment of the planners, instead of consumers' demand, would guide production. Even in the case of goods offered for sale, some might be priced above costs to discourage their consumption, while others could be offered at less than costs (a subsidy being paid to the industry concerned to make up the deficit), in order to encourage the use of things which were believed by the planners to be uplifting or important for the general welfare.

Dobb reasons⁸ that in a planned economy deviations from consumer choices are justified for a number of reasons. "It may well be the case that the majority of the choices registered on the market are in fact second-best preferences as compared with the choices consumers would have made if the requisite alternatives had been available." Obviously consumers can only choose among the goods already offered for sale on the market. They cannot consider other non-available alternatives. Especially when new goods are introduced, it is necessary for the planners to make decisions, at least until such time as the market reaction can be tested. This is, of course, done by enterprisers in capitalistic production. There is the further difficulty that personal choices are often shortsighted in time or near-sighted in space. The collective judgment of social planners would often be able to make choices which the affected individuals would subsequently admit to be superior to the choices they would have made voluntarily. Likewise, in cases where individual consumption

⁸ Maurice Dobb, *Political Economy and Capitalism*, pp. 311ff.

conflicts with or diverges from the interest of consumers in general, some restriction on free choice will have to be made. We do this, too, in capitalism. People are compelled to be vaccinated and to send their children to school, often against their wills; and they may have to put mufflers on their autos when they would prefer to go dashing down the street at full blast with cut-outs open. In a collectivistic world, where more attention would be paid to the general welfare, there would likely be more restrictions of these kinds. Dobb believes that it might also be wise to curb the individual desire for variety for the sake of the greater abundance for all which standardization of goods might make possible. He argues that an individualistic consumers' market has a bias in favor of both greater variation and greater variety than the collective interest. He believes that, so long as adequate quantities of such staple products as meat, vegetables, cereals, housing, furniture and recreation are provided, consumers will not suffer a major hurt if the varieties inside these general categories are not supplied in precisely the quantities consumers would prefer. Where demands are inelastic, failure to meet them in the desired proportions is serious, but where they are elastic (as they are in the case of luxuries) some departure from consumer preferences need not cause much concern.

Very likely this problem would have to be worked out on a basis of experiment and the testing of public reactions to the decisions of the planners. At any rate, there is no reason why a collective economy could not be guided entirely by consumers' free choices if that policy were to be decided upon; and there are some features of collectivism that would presumably make individual choices accord more closely with the general welfare than they do in capitalism. There would be little, if any, distortion of demand by misleading advertising. There would be plenty of advertising, but it would be of the informative and educational, rather than of the high pressure, kind. Goods would be accurately described and labeled, since there would be no motive for deception. There would be consciously promoted education to guide consumers toward wise spending of their money incomes and the seeking of cultural goals. Finally, the reduc-

tion of inequality in income distribution would correct, to a considerable degree, the discrepancy between consumers' demands and needs which is caused by the extreme inequality of capitalism.

If the number of goods produced communally were extended, some machinery for guiding the allocation of resources for such goods would be needed. It is the expectation of collectivists that a socialistic economy will be directed by a general planning commission somewhat resembling the Russian Gosplan. It is to be presumed that some members of this body or its staff would be specifically charged with the duty of representing consumers' interests. Perhaps a special consumers' advisory counsel, selected in such a way as to reflect the interests of various consumer groups, could be created. However, it is my opinion, already expressed in Chapter Three, that it is not wise to increase the proportion of communal goods very far. It is better to allow consumers a wide freedom of choice, while endeavoring to influence them toward wise decisions, and providing full and accurate information about the goods they buy, through general measures of education and propaganda. A democratic collectivism will not encroach on individual liberties where it is not imperative to do so. It is better to make progress toward welfare more slowly, rather than to coerce people to accept what the planners think is good for them. There is a further reason for preferring wide freedom of choice. It is to obtain schedules of demand from which opportunity costs can be computed. The planning body might have difficulty calculating alternatives in monetary terms without a widespread market where consumer choices are recorded in effective demands. It would be almost impossible to formulate demand schedules for a great multitude of goods merely on the basis of planned calculations as to their relative importance for economy. The merit of the market pricing mechanism is that it gives the answer in a manner that makes effective guidance possible.

The crux of the problem of allocating resources in a collective economy centers in the pricing of the factors of production. The principle of surplus utility requires that these factors be priced on the basis of opportunity costs. This is as necessary for the attainment of

economy in collectivism as it is in any other system. It means that factor prices must be derived from the values imputed to them in their possible alternative uses. In a normative price system this is worked out by competitive bidding for the scarce means of production. The bids are presumed to reflect the values of the marginal products of the factors. These are set over against supplies of the several factors, which supplies may be more or less elastic in responding to price offers. The result is that each factor price is brought to equality with the value of its marginal product. We must now inquire whether a collectivist economy can utilize this principle of pricing, or some equivalent.

To this question, von Mises replies with an emphatic no.⁹ He holds that collectivism might be able to work out a satisfactory means of pricing consumers' goods, but it could not evaluate producers' goods because there would be no market to register the forces of demand and supply for them. All the producing establishments would be in the hands of the state, which would allocate factors to them in accordance with plan, rather than by market bidding on the part of enterprisers. Economic calculation would therefore be impossible and economy could not be achieved. "Because no production good will ever become the object of exchange, it will be impossible to determine its monetary value."¹⁰ Indeed, von Mises is so completely convinced of the correctness of this reasoning, that he says "It has been demonstrated in an irrefutable way that a socialist commonwealth would not be in a position to apply economic calculation."¹¹ Notwithstanding this bold assertion, von Mises is surely wrong.

Let us look broadly at the pricing problem which would confront a collective economy, taking into view the relations between its various parts, in order that we may see how the problem could be worked out. A socialist régime would have, as a starting point, a structure of prices already in existence, inherited from the capital-

⁹ Ludwig von Mises, *Socialism: an Economic and Sociological Analysis* (English translation from the Second German Edition, 1932, by J. Kahane).

¹⁰ Quoted from von Mises by R. I. Hall, in *The Economic System in a Socialist State* (London, 1937), p. 60.

¹¹ Ludwig von Mises, *Planned Chaos*, a pamphlet published by The Foundation for Economic Education, Inc., New York, 1947.

istic (or other) economy that preceded it. It would be simple and logical for it to accept these prices for the time being, then to modify them gradually as the various parts of its program were put into effect. But this kind of a start is not absolutely necessary. It would be entirely possible to begin with a set of prices established by guess, and then to work toward a general equilibrium of normal prices by a process of trial and error. If some of the prices so fixed were too high, the effective demand in these cases would fall short of the effective supply, indicating that a downward adjustment was needed. If some prices were too low, the effective demand would exceed the effective supply, and these prices could then be raised until equilibrium was restored. The rule that prices should be set in such a way as to equate demands and supplies must be applied to the productive factors as well as to finished goods. In the state of equilibrium which should be the goal of policy, there must be just enough factors employed in each industry to produce enough goods to satisfy the demands for them. The prices of the factors would thus be crucial, not only for the maintenance of equilibrium, but also for the attainment of that social economy or welfare which normal equilibrium can be made to represent. This condition of economy will be achieved if the laws of substitution and of opportunity costs are brought into play. The real problem is how to make these principles effective in a collective economy where there is no free market in which the factors of production are bought and sold, or rented and hired. This is the problem posed by von Mises.

There is reason to think that something equivalent to a market can exist in a régime of collectivism. Even though producing establishments are owned and operated by state agencies, a system of accounting within each of the collective enterprises will be necessary as a check on its efficiency and to provide the planning commission with the necessary data for its guidance. Into these accounts the prices of materials, productive factors and similar items will be entered as costs. Indeed, each enterprise could conceivably be made to pay for its factors by being debited for them in its account with the state bank. Likewise, each establishment supplying goods to another (e.g., manufacturers supplying wholesalers, wholesalers supplying

retailers) would be credited in the bank with the value of the goods thus delivered. In this way, there would be something equivalent to a sale and a payment. In essence this would not differ much from what goes on in a capitalistic economy, for payments now are made mostly by checks which cause debits and credits to be transferred on the books of private banks. In the collective economy, however, accounting methods would be standardized as they are not in a capitalistic world, and special attention would be given to marginal, as well as to average costs. Furthermore, costs would be made to measure social disutilities by charging each establishment for accidents, seasonal irregularity, and other social disadvantages which its operation might entail.

Thus a collective economy may start out with a going structure of prices for consumption goods, producers' goods, and productive factors; and it can have a system of internal accounts as well as one of external, social, accounting which would show the pecuniary relationships between each establishment and its outlets, suppliers, and employees. The management of each establishment must then be instructed to follow two rules: It must minimize costs by substituting cheaper for dearer factors wherever possible, thereby giving effect to the law of substitution; and it must employ as many units of each factor as will bring the value of its marginal product into equality with its price. This last need offer no difficulty. It is always possible by experiment to find the short-run marginal product of a variable factor in a factory or farm; and the state could, if it chose, have experimental establishments to discover the long-run marginal products of all the factors. So, on the basis of known physical marginal productivities and given prices, it should be possible to make the value of the marginal product approximately equal to the price in every case.

The planners will then find that the managers, in following the above two rules, will demand more of some factors than the supply of them that is available, and will demand less than the supply of others. The price of the factors must then be raised to check demand, in the first case, or lowered to stimulate demand, in the second; and to the extent that factor supplies can be varied, the planning body must try to increase the scarce ones and decrease those which are

overabundant. This course of action in response to the price situation should be pursued until equilibrium is reached. By this approach, regardless of the initial price structure, a set of prices would ultimately eventuate that would bring each price close to its normal equilibrium. If the other policies of the régime, in regard to education, social security, public health, accurate branding, and the like, were such as to provide a suitable institutional setting in which the pricing process could operate, these prices would be conducive to the social welfare, as argued in other parts of this essay.

INCOME SHARING AND FACTOR ALLOCATION

The pricing of productive factors on the basis of marginal productivity and opportunity costs does not necessitate that income will be divided among factor owners on the same basis as in capitalism. In a collective society most (conceivably all) of the material means of production will be owned by the people collectively, either through some agency of the state, or perhaps in part through coöperatives, the latter especially in agriculture, retail, and wholesale trade. Most (or all) of the income shares now going to property owners in the form of interest, rent, and profits will, therefore, presumably accrue to the state or to the coöperative organizations. Except for a few individual enterprises (little specialty shops, handicraft shops, and the like), where earnings will not be much (if any) above wages, the great mass of the population will be employees in collective establishments, working for wages.

How should these wages be determined? Common sense (which is confirmed by the experience of the Soviet Union) shows that considerable wage differences will be necessary. The principle of incentive reinforces this suggestion. The social economy can be best promoted if wages are based on the normative principle of marginal productivity. Each industry will then be compelled to pay its workers a wage that measures the marginal value of labor, not only to it, but in all the alternative uses to which it can be put. Since, in a collective society, demand will have been brought into conformity with social needs by the reforms outlined in Chapter Three, this will fulfill the principle of surplus utility, so far as labor is concerned. Labor will

be drawn by wage inducements to those points in industry where it will contribute most to the social welfare. The proposed policy will also fulfill the principle of least costs, in so far as this is dependent upon giving effect to the law of substitution.

This principle of wage setting does not mean that workers' incomes in collectivism will be no higher than they are in the capitalistic world, because in the former wages need not be the sole source of income for the masses. Their incomes may be supplemented by a wider list of communally provided goods than now, and additional grants from the general revenues of the state can be made available, if needed, under the principle of a guaranteed minimum. Moreover, the selective procedure and educational facilities adopted to bring into play the principle of developing talent, and the extensive other social welfare work which may be expected, will bring the earning capacity of each person to somewhere near its maximum potential. In addition to these things, there should be less interruption of earnings, because of the greater attention which will be given to the promotion of public health, and because a collective economy offers an effective solution to mass unemployment (as elsewhere explained).¹² Finally, goods of the kinds that the workers most use will be more abundant and cheaper in price, because there will be less demand for luxury goods, thus releasing productive facilities for the production of ordinary necessities and comforts; and there will be less product differentiation, which should lead to economies of standardization.

The collective enterprises will presumably yield a surplus above wage payments, arising from two sources: interest and rents on the capital (including land) owned by the state, and profits from the collectively operated enterprises. This surplus will be at the disposal of the state, which can use it to defray the expenses of government, to make investments in industrial equipment, and to provide free income for the people in addition to their wages.

In a collective society there need be no direct taxes, but indirect taxes of a sort may be necessary. If the income from interest and rents is not enough to cover the last named types of expenditures, then the prices of produced goods should be set high enough to yield a profit

¹² At the close of Chapter Seven, pp. 219-220.

that could be used for these purposes. Something roughly equivalent to this is provided by the turnover tax in the Soviet Union, which is a device for raising prices above production costs in order to yield a revenue to the state for its general purposes. Whether it be called a profit or a tax makes little difference. The point is that prices are sufficiently higher than costs to leave a surplus which is made available to the state. There is no tax deducted from individual incomes. All the money income which any person receives is available to him for expenditure on goods in the market. It is true, however, that individual real incomes will be reduced by the state's revenues to the extent needed to accumulate capital for further production and to defray the expenses of the government. There is a psychological advantage in the fact that these are taken out of the production process before they become personal incomes to anyone. Hence, there is no sense of having received something, only to see it taken away again.

That part of the social surplus which is not needed for investment and governmental expenses can constitute a sort of social dividend to be used for the general welfare. One use for this dividend would be to put into effect the principle of the guaranteed minimum. This might take the form of free, or low rent, housing, cheap meals, and the like, for those who are unable to earn enough to maintain a decent standard of living. Another use for it would be for developing the potential talents of the people. For this, suitable tests would need to be devised and used in the public schools, while free education in specialized institutions should be made available to cultivate the special aptitudes of the various members of the population. Finally, if the economy is a prosperous one, the dividend should be large enough to provide an extensive program of public health and cultural development. A great deal of research could be done on the cause and cure of disease, and on making the most effective techniques available to all the population. Also, attention should be given to psychotic and nervous difficulties, in order to develop a society composed of emotionally balanced and contented people. Music, art, and literature could be fostered. There could be extensive programs of experimentation and research in all fields of human endeavor. Last, but not least, there

would be a tremendous opportunity to teach the masses the higher values of life and the wise use of leisure.

Marxian collectivists advocate the abolition of interest as a source of personal income, and some even go so far as to suggest doing away with its calculation as a cost in pecuniary accounting. Their reasoning on this question involves considerable confusion and faulty analysis. To clear up the confusion we need to break the problem into two parts, separating interest as a form of income from interest as an accounting cost. The former will be considered first.

The Marxian objection to interest as a source of personal income is based on the erroneous notions that interest is always unearned by its recipients, and that it is responsible for the existence in society of a parasitic leisure class. My earlier discussion of interest in Chapter Five endeavored to explode both of these fallacies. I there tried to show that interest is not unearned if it is received for an investment made possible by voluntary saving by the recipient out of previously earned income. Such an investor makes a real contribution to production in that the use of his savings facilitates the construction of industrial equipment which greatly increases the output of industry. I further showed that interest is not the source of the leisure class in capitalism, and that it is not a significant cause of inequality. It is predatory profits, and rents on socially created land values, that are the real culprits in this matter. If these sources of unearned incomes could be prevented, and the inheritance of large fortunes checked, there would be no leisure class. To be sure, even in these circumstances a thrifty person could, by saving and investment, accumulate in time a sufficient fund of capital to retire earlier or live more comfortably than his spendthrift contemporaries; but he would have made a contribution to production in so doing, from which even those spendthrifts would benefit. Since his interest would in this case be earned by any fair test of earnings, I cannot see any injustice in it. By the same token, I see no reason why interest should not be paid to individual investors in a collective society. There is nothing unfair about interest when the accumulation from which it was derived was made out of earned income in the first place.

However, it would be entirely possible to do away with interest as a source of personal income in a collective society. In that case, it would be necessary to provide for capital accumulation entirely out of the social dividend, instead of relying on individual savings for this purpose. Nevertheless, since I can see no objection to interest payments on grounds of justice, it would seem to me entirely appropriate for the state enterprises in collectivism to be financed partly by individual savings on which interest was paid.

In any case the collective economy would need the device of interest as an aid in making certain important decisions and as a means of calculating costs. Interest would be useful to help in deciding how much production to devote to future needs. It would be most necessary in figuring costs, in order that each product could be charged with the amount of present sacrifice (in the form of waiting) that its production entailed. And it would be important for helping to determine the channels in which investment should be directed. These functions which interest performs have been sufficiently elaborated in Chapter Five, so that they need not be repeated here.

If the collective policy was not opposed to allowing individuals to receive interest on invested savings, the planners could, if they chose, allow the volume of savings and investment to be dictated by individual decisions, in which case they would fix interest at the rate or rates that would preserve equilibrium in the investment phase of the economy. Schedules of demand would be based on the bids for loans made by the managers of the various state enterprises, with additional bids from consumer borrowers (e.g., for the purchase of durable consumption goods). Supply schedules would depend on the rates of time preference of the many individual savers. All that the state would do would be to maintain interest at the rates which would keep these two schedules in balance. This would permit the interest mechanism to function as it has hitherto been supposed to do in a competitive capitalistic economy, with the obstacles which prevent its proper functioning in such an economy removed. Calculations on the demand side of the investment market would be less dominated by individual life expectancies, because the managers of the collective enterprises would be working for an owner (the state) with a long-

range point of view. The errors of incorrect anticipation that now dominate the investment market would be reduced, because there would be no speculation in securities; and forecasting would be more accurate because it would be based on definite state plans for the future. The monetary system would presumably be stabilized along the lines suggested in Chapter Nine. Since the state would be in command of industry and could derive from its operation the revenues it needed, it would not have to resort to manipulation of bank credit for its funds; so there would be no occasion for credit inflation and deflation, nor for fiscal interference. The rate of interest could fall to a lower minimum because the state could guarantee its payment, thus eliminating the necessity for any premium for risks. Also, the cost of collecting interest and principal would be less. However, if all investment had to be financed out of voluntary savings, the pure rate of time preference might be above (rather than below) the percentages which now prevail. There would be less danger of an excess of savings in relation to investment opportunities, for there would be no very rich with incomes far in excess of their consumptive needs. Under these circumstances, a greater inducement might be required to get people to save the amounts needed by industry. In short, in such an economy the normative tendencies of interest would be given the fullest possible freedom to operate, and interest rates would be actually normalized. Thereby interest would be permitted for the first time to perform its true functions without distortion and interference.

However, this method of determining the amount of investment would be subject to the weakness that savers' rates of time preference would be based on life expectancies, and would therefore not take into sufficient consideration the more distant future needs of society. An alternative that would avoid this weakness would be for the central planning body to decide, on a basis of thoughtful judgment, what portion of the social income should be saved and invested. Funds for this investment could be provided partly by individual savings deposited in savings banks, and partly out of the planned profits of the collective enterprises. By such an arrangement, the volume of investment would be centrally determined and would not depend

upon individual savings. Interest would then cease to be a guide for deciding the amount of present income to be devoted to provision for the future, but it could be continued as an accounting device to calculate costs and to determine the directions which investment should take. For this purpose the rate should be fixed at the value of the expected marginal product of the equipment, and each enterprise would be required to enter this rate in its cost accounts. Managers of the enterprises would then be permitted to make any investment that showed a prospective yield over other costs sufficient to pay this interest.

This procedure would secure an economical allocation of the collective savings. Adoption of the second alternative need not preclude the accumulation of individual savings. The state could permit such savings to be deposited in a government bank which could pay interest on them at or below the rate fixed by the above procedure. However, the total amount of investment would not be determined by the volume of these savings. In the unlikely event of too much saving, this could be checked by lowering the rate of interest, or by reducing the incomes paid out to the members of the community. If there was too little individual saving to supply the needed equipment, it could be supplemented by reinvesting the earnings of collective enterprises in the manner above explained. It would also be possible to allow consumers and small individual producers to borrow for special consumptive needs or to provide themselves with a modest amount of productive equipment; but provisions would be needed to prevent individuals from acquiring too much wealth and power by the control of large funds of capital.

Some writers on the theory of collectivism propose that the method of financing short-term investments differ from that for long term. They would have long-term needs financed by one of the two procedures just described, but for the short-term financing of working capital in the collective enterprises they would set up a system of state banks to create credit, very much as commercial banks create credit for short-time loans in the capitalistic economy. This is in fact the method followed for such loans in the Soviet Union. I cannot see anything to recommend it. The creation of credit is inflationary, and

would cause distortions in the price system, leading to difficulties similar to those which arise out of our present banking system. There is no essential difference in the nature of short- and long-term investment. Both require saving and waiting. Both should yield a return sufficient to compensate for the sacrifice of present goods involved; otherwise they are not economical. In a fluid market, funds can readily be transferred from the one type of investment to the other. There seems, therefore, to be no good reason why both should not be financed in the same way and from the same sources. To do otherwise is only to invite trouble.

A few collective theorists look forward to a time when there will be such an abundance of capital equipment that its marginal productivity will fall to zero and interest will disappear. They refer to this as saturation of the capital market. This implies that there will exist such a general abundance of goods that the future can be supplied without present sacrifice. It is doubtful whether such a condition will ever be reached. Certainly it would not be possible until the supply of immediately consumable goods was so great that human desires were completely satiated; but this is scarcely conceivable because, so far as we can foresee, the production of goods will always require human effort and will involve the sacrifice of leisure. Therefore there will always be a possible choice between more leisure, more present goods, and more future goods. Since future goods will thus involve a sacrifice of either present goods or leisure, they can hardly be provided without some real cost equivalent to interest. Besides this, the lack of any interest rates would give the economy no criterion for choosing between the different degrees of roundaboutness in production. This wistful anticipation of a zero interest rate is probably the result, partly, of the erroneous idea (from which many collectivists seem unable to escape) that interest is necessarily unearned and therefore should be done away with. The error in this reasoning has already been exposed. It is also partly due, no doubt, to the tendency of interest rates to decline which has been observed in recent years. If this tendency were to continue, interest might indeed become a negligible factor in the pricing system; but it is probable that this decline is quite as much the result of artificial in-

terference in the loan market, caused by created bank credit and governmental fiscal policies, as it is to the falling marginal productivity of investment. In the absence of these arbitrary interferences, interest rates would likely be higher; hence it is entirely possible that interest in collectivism will be higher, not lower, than it now is; and this cannot be objected to on grounds of social justice.

We must not overlook the function which interest performs in directing investment into its most productive uses. The different bids of the collective enterprises for investible funds (like their different bids for labor) will draw productive resources into the branches of industry for which there is the greatest demand; and if demand has been made consonant with social needs, this will make for economy. Interest is thus needed for inter-industry comparisons. The rule by which the collective enterprises should be guided, that the marginal productivity of the factors must be made equal to their costs, requires the inclusion of interest in the cost accounts. Capital funds must then be allocated to each enterprise in such a way as to yield equal marginal products in all their different uses, thus fulfilling the principle of opportunity costs.

When the idea is once fully grasped that costs have the function in the price system of allocating scarce resources between alternative uses, it becomes obvious that a rent should be attached to land. Like all other costs, it should be determined on the basis of competitive bidding for the land by the various collective enterprises. This will give a much more reliable and precise guide for the assignment of land to the many producing establishments than any rule of thumb or common sense judgment. This does not mean that land rents will have to be paid to private owners. The land will presumably be owned collectively by the state, which will lease it (probably for long terms) to the different factories, farms, etc., at rentals which (if based on competitive bidding) will measure the value of its marginal product in each use. Only if the land is allocated on this principle is wasteful use of it likely to be ferreted out and removed. The rents received from urban lands in congested areas will be a source of large revenues to the state, and even agricultural land may

bring in a substantial income, especially in densely populated countries. It is possible that in some collective economies farming may be carried on by private individuals, instead of in state or coöperative farms. Even so, it would be wisest not to permit the farmers to own their land. It should be leased to them at a rental which measures the value of its use.

It has been suggested above that the collective enterprises should price their goods high enough above their costs of production to yield a surplus to the state. This surplus will be a kind of monopoly profit derived from the exploitation of the collectively owned enterprises; or it can be thought of as an excise tax levied on production. The profits actually realized will differ from those anticipated by the plans because of various uncontrollable happenings which may affect outputs. Among these will be such natural phenomena as hurricanes, floods, earthquakes, and droughts, also differences in managerial efficiency in the various producing establishments, as well as fluctuations of demand and errors in planning. It is events of this kind that give rise to profits and losses in a system of private business, and they are bound to cause fluctuations in the earnings of the collective enterprises. However, in collectivism the gains will be sure to exceed the losses because of the deliberate policy of setting prices high enough above costs to provide the state with revenue. Profits will also be derived from the extra high prices that will probably be set on some commodities to discourage their consumption.

Where the profits exceed the expected revenues, it will probably be wise to share them with the management of the successful enterprises in so far as they can be traced to economies of production brought about by superior efficiency. This will give managers an incentive to promote economy within their plants and keep costs at a minimum. The rest of these profits will be absorbed by the state, a part being used to offset losses that occur elsewhere.

The deviation of realized profits from those which were planned in advance will be helpful as a guide to the planners. Where profits fall below expectations because of unsold surpluses of merchandise, this will be an indication that the planned production was too large in relation to consumers' demand, and appropriate measures of correc-

tion will need to be made in the plans for the ensuing period. Where the planned production is insufficient to meet consumers' demands, the planners may decide to check the demand by permitting prices to rise above anticipated figures, and there will then be a profit from this source. This situation will call for expansion of production in the affected lines during the next period. In this way the fluctuations of earnings will serve as a check on the plans, very much as profits and losses serve to correct the mistakes of individual enterprisers in the capitalistic system; but the fluctuations in a planned economy should be much less than those of an unplanned one, because supplies will be kept in closer equilibrium with demands if the planning is well done.

It should be emphasized once more that the pricing system in a collective economy will be used mainly as a mechanism for allocating resources economically, rather than as a means of determining personal incomes. The only individual incomes that will be fixed on pricing principles will be wages, and possibly interest. These will not be the only sources of income to the members of society because a much greater amount of free income will be provided collectively than is now the case. Some of this will be dispensed in fulfilling the principles of a guaranteed minimum and developing talent. Another substantial part will take the form of communal goods. There will be no private appropriation of land rents or profits. Since these are the principal sources of great wealth in our society, a very marked reduction of inequality should result.

ECONOMIC AND POLITICAL CONSIDERATIONS

It may be asked if the kind of collectivism described above will not merely duplicate, in a slightly different form, the mechanism of the competitive pricing process. If so, what becomes of the supposed advantages of the social ownership and operation of industry, and of comprehensive economic planning? There are several advantages of considerable weight.

In an unplanned economy, the knowledge of individual enterprisers is seriously limited by incomplete statistics and by a lack of information concerning the plans of their competitors. The result is

that the supplies of the various products are seldom well coördinated with the demands for them. An economic planning commission will have at its disposal adequate statistical information from all parts of the economy. Because it prescribes the output for each establishment, it can control the supply to accord fairly precisely with the expected demand, as projected from its statistical studies. The existence of free consumers' choice will introduce some element of uncertainty, but the commission will have such a good factual basis for its estimates that it should be able to predict demands quite closely in most cases. There will be deviations from the planned production, of course; but accumulated experience should make it possible to make reasonably close allowance for these. As a result of planning and control, it should be possible to keep market prices much more closely in accord with normal prices than they are in a free enterprise system. Frictional and cyclical unemployment should thus be reduced to a very small minimum.

A second advantage is that a collective economy can much more easily and completely provide the institutional setting that is needed to bring the normative pricing process into harmony with the social welfare. The principle of want selection can be much more satisfactorily achieved, because there will be no acquisitive advertising to mislead consumers, and there will be no pressure groups opposed to the standardization, grading, and accurate labeling of consumers' goods; also, the plans can provide a comprehensive program of consumer education to improve the wisdom of consumers' choices. The collective economy can improve on individual choices in the matter of allocating resources between present and future needs, because of its long-range view and its power to control the amount of investment, regardless of individual savings, if it so chooses. The problem of monopoly, so difficult to deal with where private enterprise prevails, would cease to be a problem in collectivism. All industries would be social monopolies, but there would be no temptation to exploit these at consumers' expense, because no private profit would be derived from them. A collective system can deal more effectively with the problem of unemployment (and that without deficit financing) because it can always direct surplus re-

sources to supplying unfilled needs without any fear of hurting private business. It can go ahead to employ everybody, with confidence that aggregate receipts will equal aggregate costs, where a private business cannot; because the state does not have to make each business pay its own way so long as its total receipts equal its total payments. If these do not balance in the short run, it has complete control over the money supply with which to maintain a constant flow of money. This monetary control arises out of its ownership of the banks. With all monetary institutions subject to the plans, inflationary and deflationary expansion and contraction of bank credit can be prevented, and the principle of neutral money can be effectively realized. With reasonably good planning and effective monetary control, the business cycle should no longer exist. Thus, many of the problems of capitalism which are most perplexing and difficult to handle appear possible of a fairly easy solution in a collective economy.

Finally, collectivism offers the greatest opportunity for putting into effect the principles of income division advocated in Chapter Four. Many people look upon the reform of income division as the primary objective of collectivism. The injustice of extreme inequality is indeed the goad that has driven many social reformers to examine critically the structure of capitalism; and the vision of a more just system has been the source of many of the idealistic aims of collectivism. Its possibilities in that direction are very great and very important; but it is a mistake to think of collectivism as directed solely toward the reduction of inequality. It is quite as much a program to reform production, by getting rid of competitive wastes, periodic depressions, and unemployment. In short, collectivism offers a program for the systematic reorganization of the whole economic process.

The economic problems of collectivism appear possible of fairly satisfactory solution. Viewed solely from the economic point of view, such a system offers the prospect of an economic order in important respects superior to capitalism. But the outlook for collectivism cannot be judged on economic grounds alone; for such a system must depend to a much greater extent than capital-

ism upon the efficiency, wisdom and social ideals of its government. Collective organization is of necessity political organization. Its success or failure must depend, therefore, on the quality of its politics. We are confronted here with a condition of cultural lag. Our economic evolution is outrunning our political institutions, with the result that the latter are inadequate to cope with the problems that are being thrust upon them. The real questions that cloud the outlook for collectivism, therefore, are political, rather than economic. There are two of these questions. The first one is: Can we devise efficient political machinery for administering so vast an organization, or will it bog down in a clumsy (and perhaps corrupt) bureaucracy? Secondly, must a collective system eventually degenerate into a totalitarian state? Will the controls essential to the collective direction of the economy encroach more and more on the liberties of the people, until in the end they find themselves puppets in the hands of a dictatorship? In other words, do we have here a situation in which there is a grave danger that, in the blind pursuit of economic values, we may sacrifice other values of even greater importance?

Many contemporary writers, basing their judgments on the course of fascism, nazism, and communism in Europe, have reached pessimistic answers to these questions. They are convinced that we cannot have collectivism without bungling, bureaucratic inefficiency and the surrender of civil liberties to a tyrannical state. This judgment is premature, because we cannot hope to know the answers until we have had experience with collectivism in a more favorable setting. Nazism and fascism were not (and, where like movements still exist, are not) collectivist systems. They were manifestations of mass hysteria arising out of economic chaos under the leadership of mad adventurers. They had no consistent economic program and were frankly contemptuous of democracy. These things make them worthless as an example of what might be expected from collectivism. The Soviet Union is hardly any better as a test, because the collectivist experiment in that country had no prior development of industrialism to build upon (the Industrial Revolution was only in its beginnings there when the communists came into power), and because there was

no spirit of democracy in its traditions. Furthermore, its leaders have been extremists, habituated to methods of violence by generations of czaristic oppression and revolutionary intrigue against it, handicapped by the irrational dogmas of Marxian economics, and obsessed by the philosophy of class conflict. These things make it impossible in this case to separate that which is purely Russian from that which is an inherent part of collectivism. Great Britain, with its faculty for wise leadership and its long tradition of democracy and human rights, will provide a better test; but not until (and unless) collectivism has been established there for half a century (or even longer) can we know the answer.

These are political questions that go far beyond the analysis of the price system which is the subject of this essay. It would, therefore, be inappropriate to pursue them further here. But it must be recognized that, along with the even greater problem of war or peace, they are the really crucial issues of the decades immediately ahead of us. Because they are so crucial, it behooves us to proceed by evolution, rather than by revolution, entrusting increasing powers of economic control to our government only as fast as it proves competent to wield them wisely, efficiently, and democratically.

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