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PRIVATE ENTERPRISE
AND
GOVERNMENTAL PLANNING
An Integration

by Theo Surányi-Unger
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SYRACUSE UNIVERSITY

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PRIVATE ENTERPRISE AND GOVERNMENTAL PLANNING

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PREFACE

THE THREE decades since the end of the First World War have brought into the foreground of public discussion basic policy issues concerning the structure and organization of the economic system. Schemes of economic organization departing widely from the forms of nineteenth-century industrial capitalism have emerged as working systems. The study of comparative economic systems has accordingly passed from the realm of purely theoretical analysis to the stage of practical evaluation.

The fact that alternative systems such as emerged in Russia, Italy, and Germany were rooted in a political and social philosophy alien to "Western" liberalism and that they challenged the position of large and influential groups in the economically powerful Western nations has understandably led to a concentration on the ideological differences involved. The same fact has also rendered more difficult the dispassionate consideration of the fundamental problems of change and adaptation in economic structures. Thus the discussion of questions of economic organization has tended to proceed in terms of the extreme contrasts between the polar or limiting cases of a theoretically complete system of privately organized enterprise on the one hand, and on the other, a completely directed or governmentally controlled system. Neither of these extremes has ever been fully achieved. Economic systems can actually be compared only in terms of a continuity classification reaching from one extreme to the other (as logical limits), with the particular economic structure placed near either end of the classification depending on the basis of the predominance of private organization or of governmental control.

Real progress in the formulation of public policies with respect to our economic organization can be achieved only if we avoid the emotionally motivated extremism of either the "right" or the "left." This argument is opposed to any one-sided intellectual radicalism which overemphasizes the contrast and the alleged incompatibility of the formalized limiting cases of purely private economic structure and collective economic organization. The party lines of neither the right

nor the left give an infallible guide to public policies aimed at the achievement of an economic structure best adapted to the needs and objectives of a nation's people. Neither provides a basis for determining what cooperation of private enterprise and governmental direction may be desirable at any given time or place or of gauging the lines along which, or the means by which, progressive change might best be sought.

This book seeks to provide a basis for such a study of the interrelationships of the private and public elements in a composite economy that is not itself static. The first part of the book, The Institutional Trend of Economic Integration, explores the content and rationale of the economic structure, and the means, private and public, of implementing individual and collective wants. Against this background, the conceptual structure of the composite economy is developed. The motives of planning are examined, the patterns of group organization are related to the structural changes in national economies under the successive impacts of the First World War, the Great Depression of the 1930's, and the Second World War. Consideration is given to the problems of social and fiscal accounting in the national economy and to the concept and measurement of national welfare. The notions of the responsiveness and elasticity of the economic structure are discussed in terms of tolerance limits to the ratio of change in economic structure and the degree of reversibility of structural adaptations. Three terminal chapters survey the connotations of freedom, planning, and economic policy and consider the interrelationships of planning and economic analysis.

The second part of the book, which deals with the Theoretical Perspectives of the Economic Structure, presents a generalization of the quantitative relationships underlying the processes of economic integration. The problem involved in measuring the magnitudes of the private, as contrasted with the collective or governmental, activities is investigated in abstract terms. Tools of modern economic theory are applied to the explanation of shifts toward an increasing emphasis on collective planning or on private-enterprise activities.

The mathematical analysis which is relevant to the argument of the text is attached in an Appendix to Part Two. Though this analysis is an integral part of the basic formulations, those readers who are not interested in mathematical economics will find that the essential

arguments and conclusions can be followed through in the verbal text independently of the mathematical presentation.

This volume is the outcome of an investigation of the structural and philosophical aspects of a mixed economy begun about three decades ago. Some of the pertinent viewpoints were presented in the author's *History of Business Cycles* (Budapest, 1920) and in the author's *Philosophy and Economics* (2 volumes, Jena, 1923–1926). Since then the author has examined various other related aspects with regard to practical and theoretical developments in the East and in the West.

I am indebted to John Maurice Clark, professor of economics at Columbia University, Frank H. Knight and Jacob Marschak, professors of economics at the University of Chicago, and Gerhard Colm, senior economist with the President's Council of Economic Advisers, Washington, D.C., for valuable comments and criticism. Among my colleagues at Syracuse University, my thanks are due to Carl R. Bye and Archibald M. McIsaac, professors of economics, and Charles Loewner, professor of mathematics, for helpful suggestions. I also express my appreciation to S. L. Booth, assistant professor of economics at Juniata College, T. Aulbach, assistant professor of economics at Triple Cities College, L. R. LaVallee, W. M. Young, S. M. Kolsan, and P. L. Meisel, former and present graduate students at Syracuse University, for their assistance. The preparation of this volume has been facilitated by the moral and financial support which I received from Syracuse University and the Social Science Research Council in New York. At an earlier stage, the Rockfeller Foundation has similarly supported the underlying research. I also wish to acknowledge the assistance of these institutions.

Substantial parts of the Introduction and of Chapter I have previously been published in an article, "Individual and Collective Wants," by *The Journal of Political Economy* (Vol. 56, 1948, pp. 1–22). Some of the verbal and mathematical formulations in other chapters and the Appendix have also previously been mentioned in articles published in other American and European periodicals. I thank the University of Chicago Press and these other periodicals for permissions to reproduce the parts and formulations concerned.

THEO SURÁNYI-UNGER

SYRACUSE, N.Y.
August, 1950

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HUMAN WANTS AND PLANNING

I

ARE THE economic problems of the decade after the Second World War essentially different from those of the 1930's? This question is justified with regard to the *disruption* which the war caused in the "peaceful" development of economic institutions and economic thinking.

It is probable that future historians of economic thought—when evaluating from a proper perspective the principal achievements of economic theory as a reflection of the development of economic life in the 1930's—will summarize these accomplishments in three groups. First, they will appraise the theories of imperfect and monopolistic competition as an elucidation of the strife between free competition and monopoly. Second, they will point out the manifold ramifications of the theory of business cycles, which will be considered as an echo of the Great Depression and correlated with the progress of econometric research. As the most important achievement, they will stress that third group of theories which arose in and about Keynesian economics and which is an image of the changing economic policies of the post-depression period. Their appraisal will show that these three major developments were deeply rooted in the economic thought of earlier decades and that other significant contributions to the traditional body of classical and neoclassical economics were also made. As compared with all other contributions, however, they will stress the advantage which Keynesian economics had in offering an appropriate theoretical foundation for various measures of economic intervention on which governments of many countries had to depend during the Second World War. Consequently, Keynesian economics became the most momentous part of the heritage which the 1940's received from the economic science of the 1930's.

The economics of the *postwar decade* will by no means be confined to the preservation, further development, and reconsideration of this heritage. Our science is still unfolding, and the central topic upon

which the economic thought of the postwar decade seems likely to be focused is the issue between private enterprise and collective planning. In economic thinking this issue is an old one, whose antecedents have played an important role in social, political, and economic speculations ever since the ancient Greek philosophers. Moreover, the issue in question is closely related to the economics of the 1930's. The discussion of possible remedies for the harmful effects of monopolies and periodical depressions could not ignore consideration of measures of collective intervention, and the Keynesian theory pointed clearly toward the necessity of public activities in economic life. Hence, the increasing interest of economists in questions of planning, especially since the end of the Second World War, is only one more step in the same direction. Nobody would contend that the controversy between perfect and monopolistic competition, the dangers of another depression, and the equilibriums of full and less-than-full employment are insignificant aspects of the postwar decade. Nevertheless, it seems that their importance is being overshadowed by the position which the problems of collective action are assuming in the economic development and the economic theory of this decade.

In the foreground, there are *two historical facts* which are chiefly responsible for this shifting emphasis: the unprecedented concentration of collective forces in the war economy and the rapidly rising prestige of the Soviet Union with its system of collective economic planning. It is the task of the postwar decade to determine the rate of private-enterprise reconversion and the amount of resistance which the forces of free competition may be able and willing to display against the encroachment of Soviet collectivist efforts. England and several countries in Continental Europe which are in the orbit of Soviet influence are deeply impressed by the potentialities of collective economic planning. With respect to many other countries—including America—the problems of this system represent a question mark whose almost hypnotic influence partially disturbs productive activities.

II

Current literature abounds with attempts to cast economic thought in forms appropriate to the conceptual and pragmatic issues posed by the spread of collectivization. Broadly speaking, there are three general lines along which economists seek to investigate the pertinent inter-

dependence of private enterprise and collective planning. The first and most popular trend is aimed at evaluating the merits and deficiencies of collective economy by including in the discussion some of its *ethical* and *sociological* aspects. This trend is represented by the well-known stream of books, pamphlets, and articles which have commented on the pros and cons of individual freedom and collective control in a manner not always aloof from the propagandist. Elements of propaganda also tinge much of the literature representing the second customary approach, which places primary emphasis on the *descriptive* examination of collective planning and its appropriate mechanisms. On the highest level, from a scientific viewpoint, is the type of research that endeavors to express the determinants, the expectations, and the results of collective economic planning by employing the tools of abstract theory—including the use of appropriate mathematical aids—and then to utilize this conceptual apparatus for an *analysis* of the various relations among price formation, the monetary and banking system, and the distribution of income.[1] Even this approach, however, prefers to look only at the objective quantities as they present themselves on the surface of economic planning and frequently refrains from digging into the "remote fundamentals" which are more deeply hidden behind the screen of scientific interest.

The combined efforts of the three trends of research in question have contributed toward clarifying the economic implications and consequences of collective planning. Yet, the prevailing uncertainty with regard to these consequences, both in practical development and in the scientific field, indicates that there is ample room for further clarification. Moreover, the practical and scientific importance of the subject not only justifies but even necessitates a more systematic and *fundamental* treatment. This topic requires that we reach down to the deepest roots and reconsider some of the very bases of economic thinking.

[1] Representative of this third branch of research are the achievements of F. A. von Hayek (*Collectivist Economic Planning,* London, 1935, and *The Road to Serfdom,* Chicago, 1944); Barbara Wootton (*Plan or No Plan,* New York, 1935, and *Freedom under Planning,* Chapel Hill, 1945); Lionel Robbins (*Economic Planning and International Order,* London, 1937); Joseph A. Schumpeter (*Capitalism, Socialism and Democracy,* New York, 1942); Carl Landauer (*Theory of a National Economic Planning,* Berkeley, 1947, 2d ed.); and Abba P. Lerner (*The Economics of Control,* New York, 1944).

A pertinent starting point for such an inquiry is to be found in the *theory of wants.* By initiating our investigation in this manner, we may be able also to avoid the obvious dangers that beset the attempt to solve fundamental economic problems on the level of an institutional discussion of public policies, without fully utilizing the relevant results of theoretical analysis. Such an attitude may indeed interfere with the sound development of economics by widening the gap between its theoretical and applied parts.

As far as the above-mentioned starting point is concerned, two of its rather striking features have to be stressed. On the one hand, there has long been general agreement among economists in *accepting* the fact of human wants as the basis of a systematic discussion of economics. On the other hand, it is surprising how easily and even carelessly any detailed discussion of this starting point is *slurred over* by the great majority of economists after they have rendered a traditional lip service to its fundamental importance.

As to the first point, a few words suffice for its explanation. Especially since the considerable success of the subjective approach as propagated by various branches of the neoclassical school, it has been rather obvious and simple to refer to unsatisfied desires and wants as providing the fundamental motivation of all economic activity. There is no other starting point from which the transition to the concepts of *utility,* value, and price formation would be as logical and convenient. Even in the era between the two wars when the whole traditional theory of subjective value became "moribund," the process of evaluation could not be eliminated from the logical range of economic considerations. Consequently, the phenomenon of human wants had likewise to be retained as the basis of all comprehensive and systematic discussion.

More involved and, on principle, of greater significance is the background of the second point mentioned above. The majority of economists try to justify the rather short and summary way in which they refer to human desires and wants on the grounds that it is the task of *psychology* to analyze their origin and to explain their nature. In this respect the argument is undoubtedly correct. The analysis and explanation concerned are highly controversial topics even for the professional psychologist because they have to deal with some of the very fundamental problems of human nature. Consequently, it is only just and right that economists choose to refer the psychological aspects

of human wants to the proper experts, who are better equipped for such discussion.

However, is it correct to assume that all essential aspects of human wants calling for scientific analysis are of a psychological nature? In the nineteenth century there were several authors who were courageous enough to answer this question in the negative. It was the era when ambitious economists tried to construct *schedules* and sequences of wants according to their urgency and importance. The result was not only a more or less hazy distinction between wants for necessities and for luxuries—with several intermediate cases strongly reminiscent of the classification according to the *impensae necessariae, utiles,* and *voluptuariae* in Roman law—but also attempts to construct a detailed enumeration and to set up a relative evaluation of the various wants within these classes of importance. Nevertheless, the futility of all such attempts soon became evident. It was easy for the critics to prove that no absolute validity could possibly be attributed to any of those schedules of wants. Ever since, it has been generally accepted that their relativity is not only a function of time and space but also of the differences among individuals in terms of subjective taste and social attitude. In consequence, economics was brought back to the threshold of highly psychic considerations where it seemed to be necessary to refer the whole subject, for further examination, to psychology and other branches of the social sciences. At this point, economists were apparently more than glad to be relieved of the subject in question, soon even stigmatizing as unscientific any attempts at a systematic discussion of the schedule of wants. This attitude resulted in another powerful motive favoring an easy slurring over of the problem of wants, especially by those economists who wished assurance that they would not be criticized as uninitiated laymen. Yet, it must be emphasized that part of the pertinent psychological issues has been implicitly absorbed by and incorporated in the wide scope of the modern theory of price. Price formation has accordingly been connected with the problem of want schedules. We must take these developments into account when investigating the fundamental questions of private enterprise and governmental planning.

Our first task is to examine, from a formal viewpoint, those socio-economic transformations which result in a gradual extension of collective wants at the expense of individual wants. The reverse process,

which represents a spread of individual wants, must also be considered. A synopsis of the two processes, which involve some of the most significant economic problems of the postwar period, will give us an appropriate perspective for the evaluation of what we shall regard as an optimal economic *integration*. Terminological issues concerning the "collective" and the "individual" quality of wants, the possibility of substituting these two kinds of wants for each other, the rate and direction of transformation, and the relative size of both the individual and the collective sector of the economy have to be clarified at this stage. As a separate step, it is clearly necessary to discuss the institutional content of the various kinds of wants, to explain their historical development, and to evaluate their differences in various locations.[2]

[2] The author's earlier attempts to elucidate these institutional and formal viewpoints are to be found in several articles and the following two books: *Fundamentals of Economic Policy,* in Hungarian, Budapest, 1927, and *Weltwirtschaftspolitik im Entstehen. Beiträge zur Lehre von den Gemeinbedürfnissen,* Jena, 1933.

PART ONE

THE INSTITUTIONAL TREND OF ECONOMIC INTEGRATION

CHAPTER I

INDIVIDUAL AND COLLECTIVE WANTS

Economic Features of Individual Wants

I

IT MIGHT be helpful if we insert a brief *glossary* of the technical terms around which this chapter clusters. By pure individual wants, we mean those human wants which have no societary relationships. Absolute social wants are entirely based on such relationships, while relative social wants are rooted in pure individual wants and in societary considerations. The subject of particular wants is only one individual. Common wants comprise two or more individuals. Universal wants are shared by all members of a community. Common wants are usually social wants, and universal wants are mostly common social wants. We regard those common wants which can be satisfied only for a group of individuals as absolute group wants. In the case of relative group wants, the gratification of common wants may or may not automatically benefit more than one individual. If group wants are gratified by the allocation of collective means, we term them collective wants. By collectivization we mean the spreading of collective wants, and by socialization the positive growth of social wants. The opposite processes we call reprivatization and individualization, respectively. Public wants are those collective wants which embrace collectivities regulated by the coercion of public law.

II

Our discussion of human wants will be based on a *restriction* and on an *assumption*. The basic restriction will limit our analysis to the purely economic aspects of human wants; the fundamental assumption will permit us to consider a continuous growth of wants as the general case. Both the restriction and the assumption are of a controversial nature.

As to the *solely economic aspects* of human wants, it is a well-known fact that for all wants the process of development between origination

(or formation) and termination (by satisfaction or by fading) can be divided into two distinct sectors. The first sector refers to the subjective phenomena within the human mind relating to the conscious perception of desires, and the recognition of the instrumental connections between desires and the external means appropriate to their satisfaction. The second sector comprises all relations between the emergence of wants as a result of this psychic process and efforts to achieve command over the suitable instrumental means. Within the second sector, a quality of importance is transferred from the ultimate desired end, or objective, to the means by which the end is expected to be attained. Consequently, the first phase contains only psychic considerations and has no direct bearing on the outside world, although it might be connected with it by manifold, rather indirect, interrelations. As an object of research, this sector belongs to the field of psychology, and it should be examined by the appropriate psychological methods before being discussed in the domain of economic theory. Here the economist is fully justified in waiving his competence in favor of the psychologist and in looking to the latter for a proper clarification of concepts which can be adapted to economic reasoning only in such a competently clarified form. The second sector deals with relations by which the individual is directly connected with the outside world; it comprises the interdependences of more or less definite wants as the end product of an intricate psychic process and the possible or given means for their satisfaction. In this second sector, the main emphasis is on those relations to the outside world which pertain to the objective possibilities of the gratification of wants. It is here that the individual concentrates on the possession and adaptation of economic goods; his ultimate aim is to gratify his wants in such a way. These wants appear here in a quasi-objective form because we stress only their correlation with the objective world of goods.

There is obviously a considerable amount of overlapping between the two sectors, since the subjective formation of wants and the objective possibility of their gratification permanently influence each other in many different ways. It would be futile to look for any clear-cut boundaries between the two fields. Nevertheless, for the purposes of economic reasoning, a workable distinction can be made between them by viewing the first as an aggregate of mainly *subjective,* or psychic, processes, and by relating the second one to the *objective*

aspects of goods and to their properties as means of satisfying human wants.

Our subsequent discussion of human wants will be limited to the second sector, *i.e.,* to the rather objective aspect, which looks at goods as the means of satisfaction. Since the suitable means to the satisfaction of many desires are scarce, relative to the wants dependent upon them, the efforts or sacrifices necessary for the procurement of such means are consistently linked in our investigation of economic motivation with the ultimate satisfactions of which they are the effective instruments. Thus our main interest will be directed toward a weighing and comparing of commensurable magnitudes in terms of sacrifices and satisfactions related to such instrumental objects, *i.e.,* economic goods and services. This is the initial restriction which it is appropriate to make when tackling the problems of collectivization and reprivatization from the standpoint of human wants.

III

As indicated above, our basic assumption is a direct corollary of this restriction. When we look at the quantitative discrepancy between the vast array of human wants and the means of their gratification, it is obvious that attempts to reconcile the disparity can seek either to cut down the range of wants or to increase the quantity of appropriate means of satisfaction. Working at the same time from both directions does not involve any essentially different method of solving the fundamental economic problem. As to the first approach, it cannot be denied that the ascetic suppression of wants and the endeavor to diminish their quantity and/or to simplify their quality has proved to be an efficient way of surmounting economic difficulties. It would be easy to cite many examples[1] from different historical epochs and from different places throughout the world to verify its empirical efficiency. Yet the same examples would necessarily indicate that the more emphasis one puts on a reduction of wants in order to solve the fundamental economic problem of scarcity of means relative to human ends, the nearer one gets to a *stationary* or even a *retrogressive* stage of mate-

[1] After the First World War, as well as after the Second World War, the peoples of the defeated countries had to undergo a process of reducing and simplifying their wants, which had to be brought into a new equilibrium with the decreased wealth of those countries.

rial development. In fact, the adoption of such an ascetic attitude has been largely responsible for the slowing down and the stopping of the progress, or even for the decadence, of the material prosperity of smaller or larger communities, whole nations, and vast areas of civilization. The prevailing attitude in the medieval era of our Western civilization and the typical mind which is still ruling over the major part of the Far East are cases in point.

It is precisely by the gradual shedding of this ascetic attitude that Westernization of the East has been taking place, it being a characteristic property of *Western* civilization to improve the quality and to increase the quantity of means—instead of reducing the wants—when striving against the basic discrepancy between wants and means. The great metamorphosis of the West was the essential achievement brought about by the Enlightenment of the seventeenth and the eighteenth centuries; it amounted to a final elimination of the aftermath of medieval culture and to the advent of the white man's material hegemony over the globe.

When examining the nature of human wants, we shall look at them from the prevailing Western standpoint of believing in and approving of their continuous qualitative and quantitative *growth*. In other words, we shall assume that human wants are continuously expanding. Accordingly, it is the dynamic aspect of time series analysis which has to be emphasized in this respect instead of the static method of frequency distribution analysis, which is more appropriate to a stationary structure of wants and satisfactions. We do not refer in our argument to questions of spiritual welfare or to any broader interpretation of human happiness.[2]

[2] Nor do we propose to make any strict distinction between wants and needs. In fact, these two terms are used interchangeably, not only by the man in the street and by businessmen, but also by the great majority of economists. Frequently, even desires are not distinguished from wants and needs. Typical of this usage is the following sentence of Alfred Marshall: "Human wants and desires are countless in number . . . but every step in his [the uncivilized man's] progress upwards increases the variety of his needs. . . . " (*Principles of Economics,* London, 1925, 8th ed., p. 86). Sometimes needs are meant to indicate a higher degree of urgency or stringency than wants, or they are assigned a more practical meaning. Cf. the statement: "The air we breathe satisfies an absolutely essential need, without a thought on our part. But a large range of human wants cannot be satisfied without effort. . . . Forces and

IV

It must be made clear that the *subject* of human wants is always the *individual.* Referring to our basic restriction, we pass over those rather complicated relations by which desires are originated and developed into wants within the psychic processes of the individual. We concede that our designation of the individual as the only subject of wants, in the strict sense of the word, may be questioned from some of the more subtle viewpoints of psychology. Even the assumption of individual subjectivization of wants is not beyond the range of meticulously skeptical criticism. But the latter does not pertain to our subsequent economic reasoning. In other words, however questionable may be the purely psychological aspect of the interdependence which results in an individual's becoming the "subject" of wants, the only rational starting point in the present context is the basic form of individual human wants. We must consider, nevertheless, how individual wants may be influenced in the course of their dynamic development by social and collective factors.

From the viewpoint of social development, the most primitive form is represented by *pure individual wants,* which the individual has only as a physical being and which he would still have even if he were entirely isolated from all other individuals. Such would be the wants[8] of a primitive *Homo naturalis* as contrasted to the *Homo socialis* to whom we implicitly refer whenever discussing human behavior in the economic field. Consequently, the pure individual wants are of slight importance for our present analysis.

In principle, the significance of pure individual wants may be viewed from three different angles. First, from a strictly *historical* standpoint, they may be considered the oldest human wants. But it would require a rather vivid imagination to conceive even of the most primitive

---

properties must be adapted to our needs before our wants can be satisfied." (F. B. Garver and A. H. Hansen, *Principles of Economics,* Boston, 1937, rev. ed., p. 23. In the 1948 edition of the same book, neither wants nor needs are mentioned.) As far as the urgency of satisfactions is concerned, the argument usually leads along the customary lines of neoclassical economics to an analysis of Gossen's two laws; in the present context we do not intend to follow the trend of this argument.

[8] *E.g.,* the most primitive wants for food, clothing, and shelter, as examined in detail by nineteenth-century economics.

individual as being entirely out of touch with and uninfluenced by other individuals. Even in the oldest history of savages or in prehistorical ages, it would be difficult to find any number of such cases which would be worth consideration. Many savages were or are, in fact, more socially minded than modern civilized men. From a second viewpoint, that of *abstract* analysis, however, it might be quite illuminating to examine such a hypothetical primitive stage of human wants and to refer it to the present economic behavior of any individual, if he were entirely cut off from all relations to other individuals. The resulting theory would undoubtedly be rather remote from reality. Third, in a more realistic or applied investigation pure individual wants represent a *limiting case,* such as is brought into prominence when we are interested in exploring the minimums of practically operative interdependence among individuals and among their wants or when we are trying to inquire into any tendency of the relevant interdependences to diminish. Yet it is obvious that this is not the usual trend of human development and that it would fit only exceptionally retrogressive intermezzos.

Social Wants and Socialization

I

Our assumption of a dynamic growth of human wants implies the progressive intensification of a mutual influence among the wants of individuals. In fact, all kinds of social relations originate only where there is such a mutual influence, and "social life" is virtually an expression of the aggregate and integrated effects of the mutual influences. In the course of "social" development, human wants gradually shed their purely individual form, or, more accurately, they become increasingly different from what hypothetically might once have been their solely individual origin: they become more and more infiltrated with social elements, which result from the progressive expansion of interindividual relations. The more numerous, the more manifold, and the more intensive the social ties become, the more decisive will be the weight and the significance of social considerations in the structure of human wants. In other words, the motive force of social development is the gradual growth of interindividual features in the composition of wants. These interindividual (*i.e.,* social) features

are evidently much more important for economics, as a branch of the social sciences, than the intraindividual psychic processes which mark the way from human desires toward the shaping of human wants. In psychology the emphasis is on the intraindividual aspects of human wants, while economics prefers to concentrate on the dynamics of their interindividual development. Just where to draw the border line of social infiltration, beyond which it seems justified to speak of *"social wants,"* is a matter of taste or of rather arbitrary choice. It is obvious that this indeterminacy of the border line refers only to one category of social wants, while, with regard to another category, the whole question of border lines is irrelevant. The difference here lies between relative and absolute social wants, and it is important to make this distinction.

Those social wants may be called *relative* wants which have a hypothetical root, and an actual limiting case, in corresponding pure individual wants, and concerning which it is justifiable to speak of a greater or lesser degree of social infiltration.[4] Relative social wants are manifestly the results of a gradually growing interindividual transformation of wants which, nevertheless, could even be conceived of as purely individual wants. Some relative social wants have actually grown out of at least quasi-pure individual wants. In other cases, wants are to be found which concurrently manifest not only purely individual forms but also social forms as well. Concerning the latter subgroup, we may say that there is no need to search the past in order to meet such wants in a "less social" form, because, even at present, they occur in forms which show various levels of social infiltration. In the limiting case, they might even currently appear in the shape of quasi-pure individual wants. It all depends on the extent to which their subjects are influenced by social considerations when attempting to satisfy them. In this respect, tradition, convention, prejudice, pride, ostentation, independence, generosity, extravagance, or avarice may play a more or less important role. The series of these and similar sociopsychic factors, by which the direction and the rate of social infiltration is determined, could easily be continued and discussed in detail. Such a discussion, however, is rather the task of psychology, anthropology, history, sociology, statistics, political science, law, and several other

[4] Using a fork or a spoon, wearing more or less "fashionable" clothes, or living in the "usual" or "customary" type of buildings are steps of social infiltration, and they result, accordingly, in relative social wants.

social sciences in the broader sense of the word. For economics the factors in question present themselves as parameters in the system of equations describing the network of roads leading from primitive isolation, through the medium of developing human wants, toward social integration.

The upper limiting case of social infiltration in the above-mentioned sense consists of those human wants which have no actual roots in, and no direct reminiscence of, pure individual wants. The wants of this upper limiting case could not occur, even in a more primitive form, with the isolated individual. They have only social elements, and, consequently, they may be termed *absolute* social wants.[5] Directly, they are the offspring of exclusively social considerations. Pure individual wants, nevertheless, may be among their second or higher degree antecedents, which play only a subordinate role in the more or less remote background of indirect reminiscences. Manifestly, absolute social wants are indicative of an advanced stage of social integration. The more progressive the positive social development is, the more important and the more numerous the absolute social wants will be. In the course of this development, a point may be reached beyond which they outweigh, in terms of aggregates, the significance of the relative social wants. They may assume a preponderant influence not only for any individual but also for social groups as entities or wholes. On a rather advanced level of this development, the major part of the marginal activities of the socially integrated group is probably allocated to the satisfaction of absolute social wants, while only a minor share of the pertinent marginal acts is usually absorbed within the scope of relative social wants.

In this sense two subsequent stages or, at least, two concurrent phases of social infiltration may be stated: the *primary* social infiltration mainly emphasizes and influences the development of relative social wants, while the brunt of the *secondary* social infiltration, or of social integration in the proper sense, is reflected in the creation, intensification, and accentuation of absolute social wants. Between the two spheres any amounts of overlapping may easily occur, and not only the primary but also the secondary social infiltration may show a polytonic curve. Yet the secular trend of the curve or of the system of curves is positively sloped in both cases because in the functional background of

[5] Wants for distinction, recognition, excellence, social security, or power are cases in point.

both of them the motive forces of Western civilization and of its various factors are evidently acting. An analysis of these constants, with regard to their more or less different magnitude and significance in the two spheres, would largely transgress the scope and the limits of economic research. For economics they are just treated as constants; *i.e.*, they are accepted as given results of research in other fields of social sciences.

II

At this point, it is appropriate to refer to the much abused term *"socialization"* which appears with appallingly diversified and confused meanings, not only in the vocabulary of the man in the street, but also in the allegedly refined technical language of economics and psychology. In the past few decades its most popular usage has identified socialization with the expropriation by the community of producers' goods, such as whole productive plants or branches of industry, etc. If the expropriating community happens to be a state or a "nation," then the term socialization, in this inaccurate sense, is frequently used interchangeably with "nationalization." It will be shown below that such a terminology is unwarranted and unacceptable. The only conceptually accurate choice of words is to designate by socialization the above-discussed process of social infiltration, or integration, which has its core in the social transformation of human wants and thence emanates over a wide range of social interdependence.[6] The virtual expansion of this process over the whole scope of economic institutions is a clear-cut effect of what we may call the primary and the secondary socialization of wants. Yet, when we mention the socialization of wants, of any other economic factors, of the whole economic system, or of human life in the broadest sense, this term, properly used, should always refer to the gradual shift from purely individual toward solely social forms, as defined above with reference to the dynamic development of human wants.

[6] Accordingly, it is inaccurate to speak of a socialization—instead of a collectivization or nationalization—of mines or railroads. An example of the correct usage of the term is given by J. M. Clark, "The Socializing of Theoretical Economics," in *The Trend of Economics,* edited by R. G. Tugwell (New York, 1924, pp. 73*ff.*). The terminology of J. M. Keynes when referring to a "socialization of investment" or to "socializing economic life" (*The General Theory of Employment, Interest and Money,* New York, 1936, pp. 378 and 379) is inaccurate.

The reciprocal of socialization is *individualization.* It means the process of reconversion, in the course of which certain elements of a social nature are eliminated. With regard to human wants, it indicates the process which leads to a renewed approximation of pure individual wants by eliminating some of the social features of relative social wants and by suppressing a greater or lesser part of absolute social wants.[7]

The development of economic life may be viewed as a function of the various factors whose time series are composed of processes of socialization and individualization with a prevailing secular emphasis on the former. Both of the *limiting* cases—the pure individual wants as well as the absolute social wants—may be considered as hypothetical extremes, especially if we endeavor to be meticulously accurate and to overstate the actual significance of the indirect relationship between absolute social and pure individual wants.[8] The hypothetical character of the two limiting cases implies that in economic reality their actual significance is indeed scant. All the more important is the long array of intermediate cases comprising innumerable shades of quasi-pure individual, relative social, and quasi-absolute social wants, as they present themselves to the observer in reality. With regard to these intermediate situations the question of their mutual shifts, their interchangeability, and their substitutability emerges and acquires considerable importance both in economic life and in economic research. But the backbone of the functional relations under discussion comprises those parametrical constants to which we have referred above and on which we have to depend when trying to make specific any system of general equations in this field.

[7] Although the individualization of wants—*e.g.,* eating better and more nourishing food than before but in a "lower class" restaurant or wearing clothes which better suit the climate but are less stylish—may be rather similar to the above-mentioned ascetic simplification of wants, there is still a marked difference between these two categories. Undoubtedly, in the great majority of pertinent cases, simplification also means individualization. It may happen, nevertheless, that while wants are simplified, they are socialized. The want for extravagant and expensive solitary traveling may be simplified and also socialized by transforming it into a want for short walks or rides with relatives and friends in the usual and customary way.

[8] Even such a clear-cut case as the absolute social want for power may be referred, though in a rather forced and indirect way, to the pure individual want for controlling the means which are needed in order to secure one's food, clothing, or shelter.

In order to avoid possible misunderstandings, it must be stressed that all types of wants thus far surveyed are individual wants in the strictest sense and irrespective of the extent to which they happen to be socialized (*i.e.*, infiltrated with social considerations). In other words, no matter whether we look at relative or even absolute social wants, their direct subjects are just as much individuals as in the case of pure individual wants. It would be illogical to make any hypothetical assumption referring social wants to "society" or to any social body, as their subject. Their sole meaning is that with respect to social wants the subject, the individual, considers social factors, to a greater or lesser extent, when evaluating the means which might lead to want satisfaction. From this standpoint, even the number of individuals who are the subjects of any social want is irrelevant. It might be illuminating to distinguish between *particular* (peculiar or special) social wants, on the one hand, and general or *universal* social wants, on the other, according to the empirically determined volume of their occurrence, and to point out the manifold transitional cases between the two extremes.[9] It has to be stressed that, even in the extreme case of universal social wants, only the individual is the direct and exclusive subject, no matter how great the number of such individuals happens to be. Nevertheless, for the present argument, the condition of universal occurrence is significant, because it provides a transition to another fundamental category of human wants.

It is essential for the entrepreneur, who has to estimate the present and the future market demand for his produce, to be able to survey and to evaluate the various types of individual wants. For him, of course, it will be a decisive question whether they are particular or rather universal, that is, how widely spread they are and where they fall between the two extreme cases. Moreover, he will also have to pay attention to the other phases and stages of the social penetration of individual wants before trying to estimate their relations to the available purchasing power, because these relations are pertinent factors underlying the market demand for his products. In the traditional structure of capitalistic economy, it is *private enterprise's* responsibility

[9] Nero's particular want for nightingales' tongues and the universal want for air and water represent the two extreme limits, while the wants for oranges in London, for theaters in New York, or for neckties in Rio de Janeiro are somewhere near the middle.

to provide most of the goods and services for the gratification of individual wants. Conventionally, there seems to be little doubt that it is the private entrepreneur who has to carry the burden of the risk and uncertainty of capitalistic production—in so far as it is aimed at satisfying individual wants—because the market demand which is based on them is supposed to be sufficiently dependable to promise a satisfactory compensation and profit to the private enterpriser. A similar assumption could hardly be made concerning the precapitalistic era or with regard to certain recent developments, which have brought about another way of looking at human wants and their gratification. With this shift in basic attitudes, the functions of private enterprise relative to want satisfaction have also largely changed.

Collective Wants and Collectivization

I

The fact that two or more individuals have the same kind of want may establish a societary connection between them. The character of such a connection will depend on the nature of the want or wants which they have in common, as well as on temporal and spatial factors[10] of the institutional circumstances. The relative weight[11] and the

[10] As far as the *time* factor is concerned, the most obvious case is the temporal coincidence of common wants. But such a coincidence is only a sufficient, not a necessary, condition for their common character. Societary connections between individuals likewise may be based on a similarity of wants which occur at different moments or periods of the past, present, and future. The reminiscence of past experiences, in terms of want satisfaction, and the expectation or anticipation of future wants, with regard to similar past, present, or future wants of other individuals, may constitute significant societary ties. Concerning the past, we may refer to the more or less heavy backlog of common reminiscences and traditions which usually follows the stream of international or intranational migrations and maintains, at least for a while, a societary link between immigrants and the people "at home." With respect to the future, occupational ambition, social aspiration, or mere snobbery may be factors as important as any other forward evaluation of future satisfactions, involving due allowance for the rate of time discount. Although technological improvements, especially in the field of transportation and communication, have greatly diminished the significance of the *spatial* factor, neighborhood and other geographical conditions may still considerably influence the formation of common wants.

[11] This relative weight depends on the absolute amount of means which must

degree of satisfaction of the *common* want necessarily have some bearing on the importance of the connection between its subjects. Generally speaking, the greater the relative weight of the common want and the greater the urgency of its satisfaction, the stronger will be the societary ties in question. Also significant for this connection is the number of the individuals linked to each other by the common wants. From the viewpoint of the individuals concerned, their bond might be the more intimate and even the more intensive, the smaller their number. From the viewpoint of the society as a whole, nevertheless, it is evident that the importance of any association which is based on common wants is the greater, the larger the number of individuals participating in it.

Consequently, in this respect the most ponderous wants are those which most nearly approach the extreme case of the above-mentioned universal wants.[12] Such wants, on the other hand, need not be of the highly socialized type. In principle, they might contain but few social elements, or they might even appear in a quasi-pure individual form. Yet in the great majority of practical cases, the widespread occurrence or (even more so) the universality of the same kind of human wants is the outgrowth of common habits, traditions, or conventions by which such a common attitude is stressed and which are important factors in the socialization of the wants concerned. Natural circumstances are undoubtedly significant in bringing human wants to a common denominator. However, this function is only likely to determine the common character of wants within rather broad limits and to leave a wide scope for the free play of individual tastes and

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be allocated to the gratification of the given want in order to reach a proportional satiation, or equilibrium, in the whole schedule of wants, according to the second law of Gossen. The importance of the given degree of satisfaction refers to the first law of Gossen.

[12] Nevertheless, there is a clear difference between universal wants and common wants. The former indicate a widespread condition of wants and a great number of their subjects, while the latter emphasize the connection between individuals, as a function of the similarity of their wants. Accordingly, common wants may mean more, or they may mean less, than universal wants: more, on account of the additional condition of community ties; less, with regard to the fact that common wants need not have many subjects. As a limiting case, even as few as two individuals may constitute a community, namely, a community of interests.

other preferences. The standardization of preferences within this scope, *i.e.,* the final elimination of individual differences, is even in such cases usually the achievement of social factors through the socialization of wants. It may therefore be stated that, in real economic life, *common social* wants are the predominant phenomena.

So far, we have concentrated on a classification of the various types of wants only with respect to their being more or less socialized, without regard to the means and ways of their gratification. At this point further distinctions must be made. The great majority of human wants can be satisfied individually, that is, exclusively for their subjects and independently of corresponding satisfactions for other individuals. In fact, this is the fundamental case which we usually have in mind whenever discussing the gratification of wants. Particular or special wants, in the strict sense, cannot be satisfied in any other way. Yet, when there are two or more subjects having the same kind of wants, the possibility emerges that more than one individual will necessarily profit by any act of want satisfaction, no matter how individually and how independently such acts might be carried through. In other words, gratifying the want of one individual might also automatically and *ipso facto* render satisfaction to the similar want of other individuals. It might even be more or less impossible to sever and dissociate such want satisfactions for a plurality of individuals. In such a case we may refer to *group wants*. The size of the group might grow in parallel with the increasingly universal character of the wants in question, although there need be no proportionality between them. Nevertheless, it is probable that not only common wants but also group wants are the more important, the more nearly universal they are.[13]

Generally speaking, even those common wants whose gratification necessarily involves a plurality of individuals (group wants) may be satisfied by the allocation of the means of any individual who is inside or outside the group, *i.e.,* by private means.[14] The allocation of

[13] On the other hand, there are group wants which are not universal wants, *e.g.,* when the group concerned is small. All group wants necessarily are common wants, because the group character establishes a sufficient communal connection between the subjects of such wants. In other words, group wants are a species of common wants but not of universal wants.

[14] A bridge within the limits of a town, which serves solely the intraurban traffic, may be donated or built and maintained either by a resident of the town or by any outsider.

such means to the want satisfaction may also be done by two or more individuals without any intentional cooperation or concerted planning, although necessarily to the benefit of all members of the group. But there are obvious cases in which it is not likely that group wants will be gratified in such a way, namely, by a voluntary, independent, or at least nonconcerted allocation of private means. The reason for the unlikelihood may be rooted in an actual or alleged discrepancy between the utility and disutility considerations in question. The meaning and the varieties of such possible discrepancies will be discussed below. Wherever the discrepancies occur, some kind of concerted action is needed for the relevant want satisfaction. Concerted or collective forces must be mobilized. The group must be organized along the lines of a planned coordination of utilities and disutilities, or sacrifices, in order to surmount the difficulties involved in the underlying discrepancies and to provide an appropriate want satisfaction for the whole group. Group wants which cannot be gratified without such collective action or which can best be satisfied by it may be termed *collective* wants. By *collectivization*[15] we fundamentally mean the positive growth and spreading of collective wants at the expense of individual wants.

Yet, with regard to the subject of wants, it must at once be stressed that this terminology has only a figurative, or, more accurately, hypostatical, meaning: we are only hypostatizing the "collectivity" as the subject of "collective" wants. Actually, also the subject of such wants is only the individual and not a collectivity of individuals. So we are adding only a further case to our personified, or hypostatized, terms. In reality and when viewed with conceptual accuracy, the subject of social wants is not any society; the subject of common, universal, or group wants is not any community, universe, or group; and likewise the subject of collective wants is not any collectivity but—as in all other cases—is only the individual. The various terms refer exclusively to the differences between the intrinsic structures or between the pre-

[15] We may indicate a collectivization of the want for the above-mentioned bridge and, accordingly, the formation of the collective want for a bridge as soon as it is recognized that the bridge can be built and maintained only by the allocation of municipal means. The expropriation of mines or railroads by the state is an act of collectivization. A collectivization of the whole economic system occurs when similar expropriations comprise all productive plants of a town, of a country, or of any other group of individuals.

vailing ways of gratification of the wants concerned. Nevertheless, in this respect, there is a distinct difference between social, common, and group wants, on the one hand, and collective wants, on the other. In the former case, the want satisfaction is only a result of individual efforts and of the allocation of individual or private means. In the latter, *collective action* and *collective means* are needed. It is only by this difference that the terminology by which we contrast collective wants with individual wants—which include also social, common, and group wants—can be justified.

We also have to make it clear that the difference between individual and collective wants refers, in a strict sense, to the way in which goods and services for the gratification of wants are provided. Many wants can be satisfied either by individual or by collective means. Accordingly, we base our terminology when discussing individual and collective wants on the *transference* of a relevant quality of methods—which provide goods and services—to the pertinent wants themselves.

II

At this point, we can draw the border lines between the various types of human wants more definitely. As already mentioned in our introductory glossary, individual wants may be pure individual, social, common, universal, or group wants. There are reasons which suggest the probability that most of the common, universal, and group wants are of the social type. Only those wants are likely to develop into collective wants which are not only of the common—possibly universal—and group type but with regard to which there is also a given sort of discrepancy between utility and disutility relative to the satisfaction and sacrifice involved. Consequently, there are *three conditions* which must be further examined in order to clarify the nature of collective wants: their common occurrence, their group quality, and their specifically discrepant structure.

As to the first condition, it is evident that every *community* is based on some kind of common interests or—in the language of economics—common wants. Only the existence of common wants can bring about and maintain communities. All communal ties and activities are only justified if and in so far as they arise from corresponding common wants. The communities grow with the growth of the underlying common wants, and they decay with the decadence of these wants, which

are virtually the motive force of the communal development. Also the size of communities, that is, the number of individuals which they comprise, is a function of those common wants: the more universal are the underlying wants, the larger is the community. Yet this universality is only one of the variables which determine the actual importance of the communities. Another variable is the above-discussed relative weight; and a third, the permanence of the basic common wants. In the long run, their permanence or their recurrence (which may have similar effects) might be a more important factor than their possibly low degree of gratification, which might change frequently and greatly. Each of these four factors may occur in almost any magnitude. Consequently, the resulting communities may assume a great variety of different sizes and structures showing a complicated network of overlapping and hierarchical combinations.[16] They range from any casual, ephemeral, quite unimportant, and hardly noticeable community of interests between two individuals to powerful communities which develop over many centuries and determine the prosperity of many millions of individuals.

Incidentally, it must be noted that the underlying common wants may lead to a keen *competition* for the scarce means of their gratification. In such a case, rather unfriendly relations may originate among their subjects. Nevertheless, even then, there will always be at least some remote possibilities for a community of interest.[17] Furthermore, members of communities on this level may or may not cooperate on a friendly basis. Instead of a positive sign, communities may well have a negative sign, which might give them a peculiar structure. But they would still be communities.

Manifestly, the most important communities are those whose coherence is based on the coercion of public law and which—in their most intensive and comprehensive forms—assume the structure of towns, cities, states, etc. In the general case, underlying every community,

[16] In the background, the previously mentioned temporal and spatial factors of the institutional circumstances may also have considerable weight.

[17] The common want for firewood and lumber may first lead to a keen and even hostile competition, with regard to the nearby forest, among several settlers. Still, later on, the same common wants may become the firm basis of a communal agreement and of peaceful cooperation resulting in a communal exploitation of the forest. Alternatively, the forest may even be collectivized; *i.e.*, its ownership may even be taken over by the community of settlers.

there are *primary* common wants, which are mainly responsible for the community's existence, and *secondary,* or subsidiary, common wants, which accrue in the course of its development.[18]

III

The second condition, the group quality of wants, is to be regarded in its strict sense as a limiting case. Evidently, there are not many common wants whose individual gratification is absolutely impossible, which can be satisfied, *eo ipso,* only for a group of individuals, and which consequently may be called *absolute group wants.*[19] With regard to their limiting quality, these wants are similar to the absolute social wants, which always contain—at least more or less indirectly—some reminiscences referring to pure individual wants. Likewise, the great majority of common wants can be gratified, discretely and separately, for the individual members of the community whose primary or secondary basis they are. As a rule, the only essential question is the difficulty or ease—and, on the basis of virtually the same consideration, the expensiveness or cheapness—of such an individual satisfaction. In other words, in the great majority of cases common wants also can be gratified for one member, or for another part of the community, if any required amounts of means are available for surmounting the difficulties involved in such a gratification. If we restrict the rigidity of our argument and are satisfied with terming as "absolute" those group wants which cannot "reasonably" be gratified for one or a few individuals, then the number of such wants may grow considerably. It largely depends on the meaning which, under these circumstances, we give to the word "reasonable," *i.e.,* on the amount of water which we are inclined to mix with the wine of absolute quality. Using a less strict but more practical terminology, we may contend that the more socialized and the more important or—which is a similar quality—the more definitely primary our common wants are, the more probable it is that they may develop into absolute group wants (or,

[18] In the above-mentioned example, there is a primary common want for firewood and lumber, which leads to the formation of a community of settlers. Within the same community, secondary common wants for certain agricultural tools, suitable pastures, good roads, etc. may soon arise.

[19] In this sense, the want for the maintenance of an adequate pavement on Fifth Avenue in New York and the want for protection against the atomic bomb are absolute group wants.

reverting again to the stricter terminology, the nearer they may approximate the extreme and limiting case of the absolute group wants).

In real economic life there is a great variety of wants, displaying differences in shadings and ranging more or less continuously from the pure individual wants, and from those common wants which can only be gratified individually, through the *relative group wants* and the limiting case of absolute group wants. We term relative those group wants whose satisfaction can be provided either individually, for the single individuals and by individual activities, or at once for the whole group.[20] When thus contrasting relative group wants to absolute group wants, it seems to be advisable to use the latter term in its less stringent but more practical sense. At the same time it is obvious that, for economic considerations, the relative group wants represent a more significant category, because it is only with regard to them that the question of choice between the individual way and the group method of gratification emerges. This choice has to be made by evaluating the utilities and disutilities connected with the want satisfaction and the allocation of means, which necessarily leads us to a discussion of the third condition.

IV

Undoubtedly, even absolute group wants can be gratified by individual action and by individual sacrifice, *viz.*, by the allocation of privately owned means. If the *acting individual* is a member of the group, then, in his comparative evaluation of disutilities and utilities, the latter are so preponderant that they induce him to carry the burden of sacrificing his own means irrespective of the group character of the wants to be gratified. Such an individual concentrates mostly on his own want satisfaction, and he may even be unaware of the direct or indirect gratification which other individuals necessarily derive from his sacrifice. Or else, if he happens to be group-conscious, in an altruistic sense, he may not even attempt to induce his fellow members to participate in some proportional share of the necessary disutility.[21] His motives for such an attitude may or may

[20] Of this kind are, with regard to the availability of adequate means for the want satisfaction, the want for electricity, the want for urban transportation, and the want for medical care.

[21] If he chooses to make such an attempt, he may subsequently drop it at any time and decide to carry the whole sacrifice. In both cases, whether the acting

not be similar to those which might cause him to act and carry the whole burden of sacrifice after unsuccessful attempts at prevailing upon his fellow members to share in the sacrifices. Some of the motives which are usually at work in both cases, with only minor differences of relative emphasis, may be briefly mentioned.

1. Among the *economic* motives, in the strict sense, the time element may play an important part. The urgency of want satisfaction for any member of the group may be so great as to compel him to act quickly and to allocate from his own stock all means which are necessary for the group gratification, without waiting for a possible distribution of at least part of them among other members or for any planning and negotiations which might be aimed at such a distribution. Previous negative experience or general pessimism relative to the willingness of other members to share in the sacrifice may also induce any member of the group to take the initiative for an individual action of the above kind. Manifestly, any subsequent participation of other members of the group in the sacrifice—if expected or anticipated by the acting member—would destroy the altruistic character of the action. But if the subsequent participation takes place without such a previous anticipation or expectation, then it cannot have any bearing on the motives in question. Generally speaking, any member of the group may compare, with regard to himself, the advantages of part of the sacrifice being shifted to other members with the disadvantages possibly arising from such a shift. If the disadvantages are greater, he may decide to take an

individual is or is not group-conscious, the whole group is benefited by his action. When an individual drains a swamp or establishes any device for flood control, he may or may not be aware of the utility which others derive from his action; he may or may not attempt to induce his neighbors to help him; if he asks them for help, later he may continue his action by himself. In all these variants, we obviously refer to the action of individuals who are not formally designated to act on behalf of the community. It is evident, also, that those individuals who are institutionally in charge of representing the community—such as public officials and employees—are accordingly supposed to act in a representative way. In this sense, all decisions with regard to any kinds of want satisfaction are ultimately individual actions. Since the latter aspect, with its numerous and complex ramifications, is largely a problem of public administration, its further discussion would transgress the limits of our present analysis. A few additional remarks will be made on this topic with regard to pertinent viewpoints of the new welfare economics (cf. Chapters XVI and XVII).

individual action and to incur the whole amount of disutility. The nature of the disadvantages, in this respect, is a matter of indifference; they may consist of any present or future liabilities, costs, or losses, including the direct or indirect forgoing of possible or probable assets, revenues, or profits.[22]

2. In a second category, which may be called *altruistic* motives, any member of the group may shoulder the whole burden of sacrifices or disutilities, even if he realizes that they outweigh the utility to be derived from his own share of the want satisfaction at which his action is aimed. However, he may add to his own direct share the indirect satisfaction which he derives from making a contribution toward the aggregate welfare of the whole group, and it may be the sum of both components which is great enough to induce him to sacrifice his own means also for the sake of his fellow members. The altruistic group consciousness of any member who is thus acting must be far above the average, because he feels responsible for the welfare of the whole group. It is not always the actual leaders, nor the ablest, nor the most well-to-do members of the group who are imbued with such a self-sacrificing spirit of altruism.

3. *Charity* motives may likewise be at work when any member of the group tries to help the other members by carrying also their share of the necessarily involved disutilities. Such an attitude virtually amounts to making a corresponding gift to one's fellow members. But we cannot indicate any pure charity as long as the benefactor is a member of the group, because his action is always based on a direct and more or less obvious element of self-interest.

Much purer types of benefactors may be found among those individuals who are outside the group and still feel inclined to shoulder the burden of the satisfaction of group wants. In fact, it happens

[22] In the majority of cases there will be indirect disadvantages: the personal vanity, the actual or alleged leadership, the excellence, or any other social objectives of the acting individual might be interfered with by a participation of other members of the group in the allocation of means. In this sense, we may even refer to a formal want for the allocation of private means to the gratification of group wants, which might induce any member of the group to act accordingly. So we may try to eliminate the whole, apparently clumsy, analysis of the motives for actions of this kind. Yet, such an apparent simplification of the argument would make no real contribution toward its clarification. On the contrary, some of its essential features would be obliterated by this attempt.

frequently that communities and groups receive grants-in-aid or outright gifts from outside, in which case the *outside benefactor* may be an individual giving away his private means. Apart from the charity motives, economic motives may also, *mutatis mutandis,* play a more or less essential role in inducing outsiders to provide means for the gratification of group wants. It is only in a rather indirect way that motives of altruistic group consciousness may be operating in this respect. In such cases, the outsider is usually impressed by the objectives of some wider and more comprehensive group—on the highest level, a nation or humanity as a whole—as a member of which he counts both himself and the beneficiary group.[23]

Irrespective of whether the individual, who acts by allocating his own means to the want satisfaction of the whole group, is or is not a member of the group, the economic, the altruistic motives, and the charity motives may appear in any merged or blended form and in any quantitative *combinations.* Moreover, it is possible that *two or more members* of the group or two or more outsiders act for the benefit of the whole group. The greater the number of the members of the group that act in such a way, the more their action loses its altruistic or charitable character and the nearer it approximates a concerted action of the whole group.

V

Charitable and heroically self-sacrificing altruistic actions may have been rather important in the economic life of the Middle Ages, and they may retain a considerable significance in those civilizations which do not particularly emphasize the competitive system, profit maximization, and, in general, materialistic viewpoints. In modern Western *capitalism,* however, as well as in those recent economic systems which have grown out of it, the charitable, altruistic, gratification of group wants does not occur very frequently.[24] Even when it does, it can seldom be relied upon as an all-comprehensive, primary device, and it can at most be considered a useful secondary or sub-

[23] International charity and relief schemes, such as the various activities of the Rockefeller Foundation, the Carnegie Endowment, the International Red Cross, the UNRRA, and the Marshall Plan, are cases in point. From the viewpoint of the beneficiary group, it is a matter of indifference whether the benefactor is an individual, an association, or any kind of corporation.

[24] Highly progressive income, property, death, and gift taxes as well as the pressure of public opinion are obvious incentives for such activities.

sidiary factor. In the great majority of cases, another primary mechanism has to be placed in the foreground, and it has to be operated in such a way as to provide an appropriate gratification of existing group wants, with regard to the probability that they will not be satisfied by individual action. Is collective action, *i.e.*, the creation and allocation of collective means and, consequently, the collectivization of wants, the only possible form of such a mechanism? Or can its achievements also be performed by an intermediate solution of the problem?

Such an intermediate solution, which is halfway between the two extremes, would be the *unorganized action* of all members of the group by a voluntary and proportional allocation of their own means to the gratification of group wants. It is obvious that the larger the group, the more problematic will be the feasibility and efficiency of any solution of this kind. Generally speaking, there will be a genuine reluctance on the part of the individual, in an unorganized action, to sacrifice more than his justifiably proportional share of means. Frequently he might even be inclined to sacrifice less or nothing at all. His attitude, in this respect, will be a function of the combined effects of economic motives, altruistic motives, and charity motives. With regard to the first two, which are usually the most important factors concerned, considerable attention is usually paid to the size of the group and, consequently, to the ratio of the appropriate individual sacrifice to the necessary aggregate sacrifice or means to be allocated. The smaller this ratio and the larger the group, the more likely the individual to exaggerate the "relative unimportance" of his own contribution toward the aggregate sacrifice and the more probable that he will refrain from carrying even his small appropriate share of disutilities, although he would like to participate in the utility to be derived from the gratification of the group wants in question. When doing so, he may be led by a niggardly or thoughtless and frivolous evaluation of utility and disutility, and by a correspondingly low degree, or a complete absence, of altruistic group consciousness.[25] If a substantial part of the members of the group act in such an irresponsible way, then it is evident that no gratification of group wants

[25] Furthermore, an element of gambling also may enter: irresponsible selfishness may induce any member of the group to take a chance on not being detected in his refusal to cooperate. He may or may not act as if he participated in the sacrifice of allocating his share of effort, that is, an appropriate amount of private means.

can be expected from any unconcerted action of all members, barring a rather improbable offsetting effect which might be brought about by other members' weighty economic considerations, altruistic motives, and charity motives of an opposite sign.

Furthermore, even the bona-fide members of the group may find it rather difficult to determine the size of their *appropriate shares* of necessary sacrifices. Should it depend on a "benefit" or on an "ability-to-pay" principle, should it be proportional, progressive, or regressive, or should it be aimed at "minimizing total sacrifice" in the well-known terms of marginal disutility computations? The scope of uncertainty and indeterminacy involved is wide as long as the expected individual actions of all members of the group are not brought to a common denominator by some sort of planning and coordination. Consequently, there are ponderous arguments which speak against the feasibility of the intermediate solution in question.

When no adequate gratification of group wants by individual action—combined with the allocation of private means—can be expected, then *collective action* by the allocation of collective means must usually take place. The ensuing effects for the members of the group, with regard to their various individual ratios of utilities to disutilities, will reveal a great variety of differences. Within the structure of collectivization, individual economic motives, altruistic motives, and charity motives may lead to a wide range of various individual net utilities and to corresponding *quasi rents.*[26] Accordingly, individual opinions as to the necessity and usefulness of collectivization may differ greatly from each other, although quantitative comparisons between the aggregate cost and the aggregate utility of the collectivized want satisfaction (with respect to the whole group) may help in bringing such divergent evaluations to a common denominator.

Closely connected with these questions is the problem of *substitutability* between individual and collective satisfactions, *i.e.,* between individual and collective wants, which determines the trends of collectivization and reprivatization. Such a substitutability manifestly refers only to the wide range of relative collective wants, which can also be gratified by individual action, and not to the limiting case of

[26] Such quasi rents are important factors not only in the redistribution of income, which is necessarily connected with every act of collectivization, but also in the wider scope of up-to-date economic and fiscal policy.

absolute collective wants, for which collective action is the only possible way of satisfaction.

The larger the size of the group and the greater the relative weight of its primary group wants under discussion, the more decisive for its economic life is the issue between collectivization and reprivatization. The most essential decisions of this kind will cluster around those collective wants whose underlying collectivity is based on public law and which, accordingly, may be called *public wants*.[27] The top rank, at present, is occupied by the public wants of the whole nation. Still, many signs point toward the future development of international groups, which eventually might comprise all of humanity in a gradually intensifying system of collective wants. The spreading of these wants necessarily means a proportional collectivization of the means of production. At the same time, the question mark of reprivatization emerges on the horizon.

[27] Thus also the fact can be explained that, so far, most of the discussion on collective wants has concentrated on and about the topics of public economy, with special regard to the motivation of public expenditures. In the nineteenth century and in the first decade of the twentieth, those earlier authors (F. B. W. von Hermann, A. Wagner, G. Cohn, E. Sax, Fr. Kleinwächter) who paid considerable attention to the theory of public expenditures frequently dealt with the concept of collective wants. But they were unaware of the proper relations between individual and collective wants. Consequently, they either assumed the validity of a priori determined objectives of public economy and tried to derive, from such an assumption, more or less strictly given collective wants; or, going even further, they regarded the state and other "collectivities" as actual subjects of the collective wants, which they distinctly but erroneously contrasted, on this rigid basis, with the category of individual wants. By constructing the highly doubtful theorem of "collective persons" (*Kollektivpersönlichkeiten*) and of the "state of collective welfare" (*Kollektivwohlbahrstzustand*), even the early neoclassical explanation of human wants (Fr. Čuhel) helped to shift the argument in a wrong direction. Since the second decade of the twentieth century, the whole theory of public expenditures has developed along other lines, and it has put relatively little or no emphasis on the viewpoint of collective wants. Also the elaborate discussion on social value—which developed in the first two decades of the century about the theories of J. B. Clark, E. R. A. Seligman and B. M. Anderson—contributed only scantly toward the clarification of the notion of collective wants, although it illuminated the social process by which the evaluations of many individuals mutually interact and mutually determine each other. On the literature of this discussion and of the closely related, though independent, Italian value theory of "economic convenience," cf. the author's *Economics in the Twentieth Century* (English translation edited by Edwin R. A. Seligman, New York, 1931, pp. 178 and 261–262).

CHAPTER II

QUALITATIVE AND QUANTITATIVE ASPECTS OF THE ECONOMIC STRUCTURE

Qualitative Forms and Operation

I

DECADES AGO, economists preferred to apply the question of "planning or no planning" to the whole economic system. They worked out theoretical patterns of comparative economic systems which were designed to contrast such "isms" as capitalism, socialism, communism, national socialism, and fascism. The antithetical nature of this treatment, however, frequently conveys a distorted picture of reality. It leads to the assumption that practical economic life develops according to the Marxian dialectic rules and in terms of mutually exclusive alternations among various clear-cut organizational structures. In addition, such types of comparisons often obscure the fact that in earlier as well as in recent economic history *composite* economic systems have always been more important than the scattered attempts at extreme solutions of the pertinent structural problems.

One of the most obvious results of the Second World War has been an increase in the practical importance of mixed economic structures which range somewhere between pure capitalism and ideal communism. To begin with, the two leading world powers display mixed structural features, although the man in the street considers them to be representatives of opposite poles. For all other countries, the question is whether they stand nearer to the type of private-enterprise economy exemplified by the U.S.A. or to the pattern of collective planning displayed by the U.S.S.R. None of them is purely capitalistic, thoroughly socialistic, or entirely communistic. All of them contain, to a greater or lesser extent, features of a private-enterprise economy and an inversely proportional amount of collective planning. The emphasis here is on the *"greater or lesser"* and on the accordingly composite nature of the prevailing economic systems. Thus, we have

sundry combinations offering a wide scope for the usage of such hybrid expressions as semisocialism, state socialism, state capitalism, regulated or planned capitalism, or quasi capitalism. These combinations reveal both private enterprise and collective planning in variously composed organizational forms. The essential problem is to analyze the composition of mixed organizational forms and to ascertain the principles according to which shifts in the relative importance of mixed components may be explained and rates of change determined. The task involved is by far more significant than the traditional comparison of entire economic systems as allegedly opposite.

The underlying problems of collectivization and reprivatization are closely related to ethical, sociophilosophical, psychological, political, organizational, administrative, and similar issues. With respect to such issues, the *qualitative* features in the explanation of composite economic systems are more important than quantitative aspects. This difference must be stressed when we attempt to evaluate the various forms and the practical operation of composite economic activities.

II

Composite economic systems involve *partial* collective planning. They may be viewed from the standpoint of either of the two conceptually clear-cut economic structures between which they stand. In other words, we may look at the composite nature of partial economic planning either from the viewpoint of a purely private-enterprise economy or from the angle of total collective planning. In both cases, qualitative features will predominate.

Economic systems fundamentally based on *private-enterprise* activities may partially admit the principle of collective want satisfaction in two different ways. First, they may embark on schemes of partial governmental planning in the field of production and distribution. By doing so, they stress the gratification of a correspondingly wide range of public wants. Second, they may tolerate or even foster want satisfactions within the scope of nongovernmental or semigovernmental collective economic planning. The subjects of such planning are nonpublic, *i.e.,* private or semipublic groups of individuals.

As to the first alternative, the methods of partial *governmental* planning are manifold. While still stressing the relevant qualitative

features, we may distinguish between the positive and negative measures customarily used by this pattern of economic planning. Positive measures include those types of governmental intervention which are designed to encourage certain activities in the field of production, distribution, and/or consumption. Conversely, negative measures indicate the kinds of governmental intervention which endeavor to discourage certain economic activities of a private character. But when we consider the depth or intensity of intervention, there is no essential difference between the positive and negative measures concerned.

On the lowest level of *intensity,* we encounter the numerous varieties of governmental information, education, and soft or vigorous persuasion, as well as the means of public advertisement and propaganda which may be aimed at encouragement or discouragement of certain types of activities in the field of production, distribution, or consumption. So long as the means employed are limited to those of oral or written appeal or persuasion, this level will customarily represent the mildest measure of public intervention. On the second level of intensity are the governmental measures designed to induce particular activities by rewards in terms of subsidies, bonuses, bounties, reductions, exemptions, priorities, preferences, and many well-known, similarly advantageous differential treatments. Other measures on the same level of intensity are meant to deter particular activities by difficulties or penalties. Quotas, licenses, fees, duties, taxes, and other additional burdens or exceptional restrictions are cases in point. Some of these encouraging and discouraging measures may be directly connected with the formation of money revenues or expenditures. All of them are aimed at influencing the costs and returns which ultimately determine the monetary incomes and real gratifications derived from the economic activities concerned. On the third and most intensive level, the usual negative measure is absolute governmental prohibition accentuated by fines and other penalties. The corresponding positive measures include complete elimination of private or corporate decisions and a parallel transference of productive or distributive activities into the domain of direct collective responsibilities. On this level, the community either absolutely prohibits or completely takes over and entirely replaces, by authoritative planning, the initiative of private enterprise.

There are numerous overlappings among, and multifarious combinations of, the three levels of intensity. Such combinations are exemplified by the nowadays popular pattern of Keynesian compensatory fiscal policy and by other types of anticyclical economic policies. In war and peace, on various levels of economic development, and in diverse international economic situations, more or less similar combinative practices will mark the path of partial public planning.

The subjects of *nongovernmental,* or private, collective planning usually are cooperatives, corporations, and sundry interest or pressure groups. Their common feature is that they operate on the basis of private law. Inasmuch as consumers' and producers' cooperatives are nonprofit organizations, they reveal substantial potentialities of bridging the gap between private enterprise and collective planning at large. In the last hundred years or so, they have displayed a spectacular progress along such lines, and it may well be that in coming decades they will even accelerate their rise. The economic planning of business corporations is likely to be the more significant the larger they are. With or without the help of cartel agreements, trusts, and other business combines, this type of planning may avail itself of the multifarious devices habitually used in perfect and imperfect competition, or in oligopolistic and monopolistic market formations. Among the relevant interest and pressure groups, labor unions, employers' or farmers' associations, chambers of commerce, and similar occupational or professional conglomerations may play an important role in the field of economic planning.

The government may tolerate, encourage, or even cooperate with and participate in these various kinds of private collective planning. Such a cooperation or participation may lead to the variform patterns of *semigovernmental,* or semiprivate, economic planning, which is under the partial coercion of public law. This planning, as well as the above-indicated types of nongovernmental collective planning, may also revert to several of those positive and negative measures which are traditionally practiced by governmental economic planning. However, there are a few essential differences in the techniques concerned. Such similarities and differences largely affect those types of partial collective planning by which private-enterprise activities are primarily emphasized.

III

When the main stress shifts to *collective* want satisfactions and the principles of private-enterprise economy are fundamentally denied, the structure of partial economic planning is likely to change. Looking at such a development from the standpoint of total collective planning, the question is how far the survival of private-enterprise activities will be tolerated or fostered. The difference between mild or radical communism or socialism will be determined by the multiform practical answers to this question.

The more rigorous a collectivistic system is, the more it will tend to bring the most intensive measures of *governmental* economic planning into prominence. Milder measures of this planning are likely to be correspondingly neglected. Among the *semigovernmental and nongovernmental* forms of collective economic planning, preference will be given to nonprofit institutions and activities. From such a viewpoint, producers' and consumers' cooperatives may strongly be favored. As a result, they may have a good chance to expand over a substantial part of the aggregate production and distribution. Farming seems to be a suitable field for such an expansion. While planning by employers' interest groups will probably have a limited significance, workers' pressure groups may considerably influence the trend of governmental economic planning. In a dictatorship of the proletariat or of a workers' party, this influence may become decisive. At the same time, it may grow into the most important link between individual and collective want satisfaction, or between private and public interest. As a further concession to the private sphere monetary incentives in production, nonwage incomes in distribution, and similarly typical institutions of the private-enterprise economy may be retained to a certain extent. This unavoidably means the maintenance of corresponding income and wealth differentials.

In spite of the differences between the standpoint of private enterprise and total planning, there are possibilities of a mutual *rapprochement* along the lines of partial collective planning. The *rapprochement* might evidently proceed the faster, the more collective planning is accepted by economic systems primarily based on private enterprise and the more private-enterprise activities are admitted in systems which mainly stress collective planning. A reconciliation along such

lines probably has better chances of eliminating the present imbalance in international economic relations than attempts at any one-sided solution of the underlying controversial problems. Our broad survey shows that the latter have a predominantly qualitative nature.

Potentialities of a Quantitative Approach

I

Any essentially *quantitative* treatment of the same problems must face substantial methodological difficulties. Moreover, such difficulties are by no means rooted only in the general penumbra which usually hamper econometric attempts at large. Additional particular obstacles and pitfalls render the path of quantitative evaluation in this instance exceptionally arduous. Consequently, careful concentration is required if we are to avoid the pitfalls concerned. In the second part of this book, we make an attempt at such a quantitative analysis. It seems to be necessary, however, to anticipate some of our analytical results in order to facilitate the understanding of those institutional problems, to which the first part is devoted. Therefore, on the next few pages we briefly introduce several concepts pertaining to the quantitative analysis of the relations between private-enterprise activities and collective planning. A substantiation and more detailed explanation of these concepts and relations—for the benefit of those readers who are interested in analytical details—will be given in the second part. In fact, such readers may profitably look at Chapters XVI to XX before tackling the following pages.

The first logical question in any relevant quantitative discussion seems to be whether the difference among the various degrees of private-enterprise freedom and collective economic intervention is or is not measurable. The assumption of any direct and simple *cardinal* measurability is evidently to be discarded. We therefore must concentrate our attention on the possibility of utilizing some form of indirect or transferred cardinal measurement. The objective is to achieve workable methods of *ordinal* measurement, which may be considered useful for an analytical and institutional examination of the economic problems at issue. In the study of the macroeconomic aspects of collective as contrasted with private activities, use has long been made of comprehensive and more or less clearly tangible quanti-

tative standards, or criteria, of measurement. A measure of the significance of collective activities may obviously be sought in the *dollar cost* involved in such activities by establishing some sort of a proportionality between the relative amount of collective expenditures and the degree of collective intervention. In terms of modern fiscal, and social or national, accounting, a statistical inquiry into the quantitative relations between aggregate private and public expenditures may provide an acceptable basis of comparison between the collective and the private activities of the community. The unit of indirect and transferred cardinal measurement is then one dollar of expenditures either by the collective sector of government activities or by the individual sector of private-enterprise economy. The underlying assumption is that the greater the relative public cost involved, the higher the degree of government intervention. This degree can conveniently be expressed by the ratio of aggregate government expenditures to the gross national product or by any similar numerical method. What we now term the national economic budget may be of considerable help.

However, cost coverage alone may not provide an appropriate criterion of the relative significance of the two sectors. The relative amount of collective expenditures is often evidently not proportional to the concomitant degree of collective intervention. In such instances, the introduction of corrective numerical indicators is required. For example, the personal coverage in terms of man-hours of employment provided by collective activities and by private enterprise, respectively, might be used as such an auxiliary corrective device. If so, why should we exclude similar *corrections* based upon other data indicating the temporal and/or spatial coverage of private, as contrasted to collective, activities with respect to the various factors of production and various phases of consumption? Manifestly, we here have a wide field for further necessary, or at least possible, corrective computations.

In considering the possibility of attaining any appreciable degree of accuracy in applying even an ordinal scale of measurement, certain substantial *methodological* obstacles are encountered. Let us here mention only five major groups of such obstacles.

First, our interest is by no means limited to a numerical evaluation of the two extreme cases displayed by exclusively collective activities

on the one hand and by entirely private-enterprise functions on the other hand. In fact, we are even more interested in the in-between cases of composite activities and in the corresponding intermediate degrees of collective intervention. For the expression of such degrees, the available statistical data with respect to the cost and personal coverage, as well as to other corrective computations, are usually far from adequate. *Second,* the systematization, classification, and coordination of the more or less pertinent macroeconomic data are themselves arduous tasks. *Third,* the attempt to develop workable statistical methods of combining such systematically classified and coordinated data to attain an indicator of the weighted average significance of the various collective, private-enterprise, and composite activities may involve difficulties. *Fourth,* the over-all indeterminacies of fiscal and national accounting are well known and cannot be neglected. *Fifth,* how we can coordinate and weight, from the standpoint of such macroeconomic considerations, the relative significance of collective, private-enterprise, and composite activities which are often multifariously spread over the various fields of production, distribution, and consumption is a formidable problem.

While anticipating the significance of these obstacles, we make an initial assumption, the correctness of which will be scrutinized later. We assume that the interdependence of private and public expenditures, subject to corrective computations, is a workable foundation for the quantitative examination of the relationship between private-enterprise activities and collective planning. In other words, we suppose that the underlying link between individual and collective want satisfactions can also be expressed, to an acceptable extent, by the interdependence of public and private expenditures. We anticipate that from this interdependence sufficiently measurable magnitudes can be derived for a quantitative investigation of the essential problems underlying composite economic systems. But we emphasize that before drawing any practical conclusions, corrective calculations must be taken into account.

II

From such viewpoints, we are interested in the *shifts* from private-enterprise activities toward collective planning, and vice versa, which today constitute a focal point of public and scientific discussion.

Therefore, our objective is to ascertain the optimum quantitative proportion between private enterprise and collective planning with regard to the aggregate welfare of individuals in the whole community. In doing so, we may consider a constant level of communal welfare, and examine the functional relationship between the two variables represented by the amounts of individual and collective gratifications, or of stress on private-enterprise activities and collective planning, as expressed by the ratio of private to public expenditures. Or else, we may also regard the level of communal welfare as a variable, seek to maximize it and to determine the ratio of individual to collective want satisfactions which will be most conducive toward securing such a maximum.

For the purpose of being more realistic, we may increase the number of our variables by inserting several or numerous shades of mixed, *i.e.,* partially individual, and partially collective, gratifications. These additional variables can be related to, and expressed by, the intermediate cases of mixed, *i.e.,* partially private, and partially public, expenditures. The result is a multidimensional *communal welfare function.* We may refer to the nation as a community. Then, the function may be regarded as a national welfare function. Its interpretation may readily admit that communal, or national, welfare also depends on factors other than those explicitly included by the functional relationship among individual, mixed, and collective gratifications.

It is obvious that every particular want satisfaction in the community is closely connected with corresponding *costs* which represent the sacrifice, or disutility, entailed in the procurement of the necessary means of gratification. All particular costs in question add up to the aggregate costs, disutilities, or sacrifices of the whole community, which can be referred to the aggregate amount of private and public expenditures, or to the gross national product. The underlying quantitative relationship between particular and aggregate costs of gratifications can be expressed by a corresponding *national budget equation.* Also this relationship is at least one of the decisive factors determining the maximum amount of aggregate communal welfare.

Looking at the same interdependence from another viewpoint, we are interested in the ratio of individual to collective want satisfactions for every given sum of aggregate communal costs and for every related

given, or constant, level of aggregate communal welfare. For every small increase or decrease in the sphere of private enterprise, there will be a commensurate change in the volume of collective planning, and vice versa, if we aim to keep on a constant level of communal welfare. Utilizing the idea underlying the marginal rates of substitution of the Pareto-Slutsky-Hicks-Allen pattern, we may express such changes in terms of *marginal rates of collectivization* and of *reprivatization*. They refer to corresponding shifts toward collective planning and toward private enterprise, respectively.

Further utilizing the modern theorem of the marginal elasticity of substitution, as derived from the marginal rates of substitution, we may examine the responsiveness and elasticity of structural economic changes. Our interpretation differs from the terminology traditionally used by the Marshallian theory of elasticity in economics. We imply that marginal rates of collectivization usually increase in the course of shifts toward collective planning. Concomitantly, the difficulty of substituting private-enterprise activities by collective planning also increases. By the *responsiveness* of collectivization, we mean the reciprocal of the rate of this increase. A great responsiveness of collectivization expresses a small relevant rate, while a small responsiveness of collectivization involves a high pertinent rate. The responsiveness of reprivatization refers, in a similar sense, to the rate at which difficulties in the substitution of collective planning by private-enterprise activities increase as we proceed toward reprivatization. It is understood that we consider both kinds of structural responsiveness with regard to a constant level of communal welfare. Both of them can only be interpreted in a rigorously static sense, and, consequently, they are closely related to the above-mentioned elasticity of substitution.

By the *elasticity* of collectivization, we indicate a dynamic relation. We refer it to the propensity of the economic system to restore, or to restitute, its previous structure when a primary shift of collectivization is followed by a successively occurring and contrarily directed shift of reprivatization. The greater the propensity in question the greater the economic system's elasticity of collectivization. This elasticity can therefore be expressed by the ratio of the responsiveness of reprivatization concerned to the corresponding responsiveness of collectivization. The former responsiveness may be smaller than or equal

to the latter. We accordingly have an imperfect or a perfect elasticity of collectivization, respectively. In a similar sense, the elasticity of reprivatization is the ratio of a responsiveness of collectivization to the corresponding responsiveness of reprivatization. While the antithesis of structural economic responsiveness is rigidity, the opposite of elasticity is structural inelasticity. By structure, or structural relations, of an economic system, we here consistently mean the functional relationship between communal welfare and aggregate individual, mixed, and collective gratifications. The smaller the elasticity or the greater the inelasticity of collectivization in an economic system, the less this relationship will be restored to its previous shape when shifts of reprivatization occur after primary shifts of collectivization.

The meaning of the marginal rates, responsiveness, and elasticity of collectivization and reprivatization will be clarified and more fully explained in Chapters XVI to XX. There, we shall also introduce a broad generalization of the underlying analytical interdependence. The pertinent variables, constants, and functional relations will be examined in some detail. We may anticipate that the practical significance of the latter is rooted in the empirical fact that the periods of *transition* toward collective planning or toward private-enterprise reconversion are usually marked by substantial socioeconomic difficulties and sacrifices. In Chapters IV to XIV, the emphasis will be on the institutional forces and factors acting in the background of such processes of transition. The particular link among individual want satisfactions, private-enterprise activities, and private expenditures, on the one hand, and among collective gratifications, collective planning, and public expenditures, on the other hand, will also be stressed. In Chapters III and XV, we shall deal with those issues which represent the connection between our analytical and applied discussion.

CHAPTER III

ECONOMIC AND SOCIAL INTEGRATION

The Significance of Economic Integration

I

As already mentioned in our introductory arguments, collectivization and reprivatization may be viewed as particular forms of economic integration and disintegration. We may regard any shifts from individual want satisfactions toward collective gratifications as steps of collective integration. Accordingly, we may evaluate the underlying structural transformation which brings into prominence the collective provision of goods and services at the expense of the related private-enterprise activities, as a process leading toward a particular form of *integrating* economic forces and efforts.

In this chapter, we propose to examine several aspects of economic integration and disintegration with regard to relations among the maxima, minima, and optima of the marginal rates, the responsiveness, and the elasticity of collectivization and reprivatization. The cost factor will be evaluated with respect to the link between the economic and noneconomic motive forces of structural shifts. Concomitantly, we must touch upon such general topics as the interdependence of rational and irrational features in the issue between individual and collective want satisfactions. We shall thus be led to the recognition of certain wavelike *fluctuations* in the development of the economic structure. By concentrating on such fluctuations, we can better understand any cooperative relationships between private-enterprise activities and collective planning.

From a quantitative viewpoint, it is possible that a large private firm comprises the productive activities of more individuals or combines and unites, generally speaking, a greater amount of productive agents than a small entity of collective planning. It may also well be that private firms establish a qualitatively more intensive tie among entrepreneurs, workers, and other employees than collective planning does among members of the relevant communities. Yet, with regard

to the integration concerned, we refer only to the *particular* processes of reciprocal accommodation in the economic structure. We consider processes leading to the assemblage of those peculiar collective efforts which are displayed within the framework of collective planning. Such an assemblage merges and integrates former private-enterprise activities into the single identity and particular unity of collective planning. The concurrent congregation of societary forces may even create new activities, on a collective basis, for the provision of goods and services. We have already mentioned the primary and secondary relationships bringing about corresponding corporate bodies, which originate, develop, and act by virtue of the precepts of either private or public law. In this particular sense, it is instructive to relate processes of collectivization to economic integration.

In a similar sense, the reverse process of changing functions of collective planning into private-enterprise activities may be considered a particular form of economic differentiation or *disintegration*. Such changes may be linked to the formation of small private firms. Concomitant processes of private-enterprise concentration and unification may or may not take place. For example, it may or may not happen that while private-enterprise activities are gaining ground at the expense of collective planning, privately owned capital accumulates. At the same time, a conglomeration of other privately owned productive agents and a corresponding concentration of private firms or plants in the field of agriculture, manufacturing, transportation, communication, domestic or foreign trade, and banking may make slow or rapid headway. Such aspects of the concentration of economic forces may or may not be connected with similar processes of consolidation in the domain of legal institutions, political organizations, religious activities, or in any other social, but not strictly economic, relations.

Yet, practical experience shows that the particular integrating and disintegrating effects of collectivization and reprivatization, respectively, usually represent important events. They frequently are the *most significant* economic categories of societary transformation. Moreover, they often act as over-all stimuli for parallel movements toward integration or disintegration in the other fields of economic and related social development. It seldom happens that economic collectivization and reprivatization are restricted to a minor role in

the course of social integration and disintegration, respectively. Our present interpretation of the two latter processes and our relative terminology are accordingly justified.

It is essential to stress that this interpretation consistently regards economic integration and disintegration as equally significant, mutually reversible processes and that it refrains from attaching to either of them any sort of ethical evaluation. Nor does it imply any explicit or implicit political or other social value judgment. It only emphasizes the necessity of objectively inquiring in the *reversibility* concerned and into the intermittent structural changes pertaining to the issue between private enterprise and collective planning. From such a viewpoint, major stress must be placed in the long-term perspective of economic development.

II

On a constant level of communal welfare, we may regard the *marginal* rates also as the optimum rates of collectivization and reprivatization. But we may do so only within the limits of definite qualifications and restrictions. If we assume that the rigorous maintenance of a given level of aggregate communal welfare is the only generally accepted objective of the community, then all we have to do in order to attain this objective is to make structural adjustments conforming to the marginal rates of collectivization and reprivatization. Or else, we have only to assure that, whenever structural shifts occur in the economy, their magnitude be such as indicated by the functions expressing the relevant marginal rates. The result will be that the given level of communal welfare will duly be conserved and perpetuated. In other words, the marginal rates will then actually be synonymous with the optimum rates of collectivization and reprivatization.

It is easy to see that the restrictive qualifications in question pertain to a strictly *static* interpretation of economic interdependences. Such an interpretation may be useful for the conventional static type of economic analysis. In a *dynamic* sense, however, we must again realize that human society has a vigorous inherent propensity to raise the level of communal welfare. So it has at least in our modern Western civilization. In the medieval Occidental world or in the not yet Westernized sectors of Eastern civilization, the prevalent attitude might have been and may still be, respectively, an unchallenged ac-

ceptance of fewer and simpler wants, and even an accordingly ascetic acquiescence in falling levels of material welfare. But as soon as the relevant level is not considered a constant, our whole analytical argumentation breaks down, and it would no longer be justified to suppose any identity between marginal and optimal rates of collectivization and reprivatization. Let us stress that our analytical approach dealing with such marginal rates evidently cannot be referred to variable levels of welfare.

The modern Western quest for an ever-rising level of material welfare may be consistently inclined to predicate optimal rates which are *greater* than the corresponding marginal rates would be if we assumed a constant level of communal welfare. By how much greater will largely depend on a series of institutional factors displaying a substantial variety in time and space.

It may happen even in our modern Occidental civilization that a victor feels justified in lowering, for a while and/or in certain respects, the material welfare of the conquered communities. The victors then will consider and dictate to their vanquished adversaries "*optimal*" rates which are correspondingly *smaller* from the viewpoint of the defeated communities than the marginal rates of collectivization or reprivatization would be with respect to a constant level of communal welfare. By how much smaller will also in this case be determined by a puzzling diversity of institutional circumstances. The differences and varieties concerned cannot reasonably be discussed in an abstract and purely analytical way. It should be repeated that our relevant marginal rates are always based on a constancy in the level of communal welfare. But in the present context such a constancy is not necessarily assumed when we discuss optimal rates of collectivization and of reprivatization.

Even more conspicuous and imperative is the necessity of applying institutional methods of investigation to an inquiry into desirable or optimal degrees of structural *responsiveness* and *elasticity*. In the real world of dynamic development, it would obviously be childish to assume that structural rigidity and/or inelasticity are always undesirable, that maximum degrees of structural responsiveness and/or elasticity are synonymous with optimal degrees, or that any reverse relations consistently prevail. Generally speaking, it all depends whether we are or are not in favor of the structural changes involved.

The emphasis here is evidently on our agreement or disagreement with the direction of such changes.

In an era of *collectivization,* emotional devotees and other enthusiastic adherents of collective planning will desire a highly responsive economic structure, because, then, further collectivization will be easy. They will also approve of a great structural inelasticity because the expansion of collective planning will not be jeopardized by any inherent propensity of the economic structure to restitute a growing importance of private enterprise. At the same time, however, intransigent believers in a private-enterprise economy will be inclined to identify a minimum responsiveness and a maximum elasticity of the economic structure as optimal. They will do so because they will be anxious to have further collectivization impeded by rapidly increasing difficulties and endangered by a great intrinsic propensity of the economic structure to resume its emphasis on private enterprise.

In a period of *reprivatization,* similarly motivated considerations, but displaying an opposite sign or reverse sense, are liable to be brought into prominence. In such periods, it will be the protagonists of collective planning who regard minimum degrees of responsiveness and maximum grades of elasticity as optimal features of the economic structure. At the same time those who believe in private-enterprise activities will contend that very responsive and inelastic structural changes are desirable. Individualists will expect from such changes an easy further progress and a probable permanence of the stress on private enterprise. But collectivists will look confidently at exactly the opposite structural properties, hoping that they will help in reverting the trend of economic development toward collective planning.

As a result, we see that *preconceived* disposition for, or opposition to, collective planning or private-enterprise activities may *ex ante* determine our judgment on the desirability of high or low degrees in the responsiveness and elasticity of the economic structure. In the causal background, various factors of our general socio-philosophical and politico-economic creed may more or less directly, consciously, and actively be at work. Yet, it is obvious that on the level of an objective analysis we must shun all sorts of such preconceived attitudes and one-sided opinions.

Viewing the rhythm of long-term development, we recognize, as a factual feature of economic life, periodical ups and downs in the stress on private enterprise and collective planning. From such a viewpoint, we may be willing or even anxious to admit the *merits* as well as the *demerits* of both trends of development and to ascertain a positive relationship between their periodicity and the long-term progress of communal welfare. We may accept the wavelike changes in the supremacy of private enterprise and of collective planning as a significant factor in our economic development, which advantageously utilizes both of them with respect to their creative propensities and productive capacities. Both of them are subject to periodic growth, maturity, aging, gradual decadence, and exhaustion. Mutual overlappings among these various stages of development may frequently occur. We may therefore advocate a smooth working of the pertinent periodical changes involving as painless processes of transition as possible.

At the beginning of a *wave* marked by a certain emphasis on collective planning, we may accordingly see the optimum in a great responsiveness and small elasticity of collectivization, which will ease the transition and facilitate the utilization of the productive contributions offered by the new wave. In the course of its growing maturity, aging, and exhaustion, we may assume that a small responsiveness and a great elasticity of collectivization gradually become more desirable from the perspective of a long-range economic progress. We may do so, because then we may be more and more prepared to look for a smooth and painless transition toward a revival of the creative forces of private enterprise. In the subsequent new and reverse wave of structural development, we may at first be inclined to regard a great responsiveness and a small elasticity of reprivatization as desirable in order to give private enterprise a fair chance to create or to contribute toward more satisfactory economic progress. As the productive activities of private enterprise mature, age, and bend toward declension, we may favor a gradually less responsive and more elastic quality of the economic structure with respect to any further shifts toward reprivatization. We may then be ready to smooth the way for a renewed stress on collective planning and for an increasing utilization of its creative achievements. The wave of periodicity accordingly repeats.

Yet, it is easy to see that even on the level of such an objective consideration, which honestly endeavors to avoid any one-sided preference given either to private enterprise or to collective planning, abstract analysis has to face a certain amount of *indeterminacy*. It cannot be determined with any substantial degree of assurance whether a given relationship between private enterprise and collective planning displays the beginning, the climax, or the decline of a process of collectivization or reprivatization. In other words, it would be rather futile to try to ascertain, on the basis of generally valid criteria, whether at any given stage of economic development it would be more in the interest of further progress to move toward collective planning or private enterprise. Nor could we determine at which point of development any change of direction towards the former or the latter should take place. In order to decide these and similar questions, we have to examine the long array of relevant institutional factors at work. We must combine our analysis with an appropriate institutional approach. Abstract theorizing breaks down at this point, and applied investigation has to take over.

When Are Structural Changes Justified?

I

An examination of the equilibrium and stability conditions of the economic structure, as it will be carried through in Chapter XIX, may give an answer to the question of what adjustments should be made in the economy in order to keep it on a given level of aggregate communal welfare *when* structural changes occur. Such an answer can be based, for example, on the analytical proposition that the ratio of the marginal utilities derived from individual and collective gratifications should always be equal to the ratio of the related costs in order to equilibrate the economic structure.

But it is another question *whether* structural changes in the economic system should be made at all. Here we do not mean adjustments reacting to previously performed changes. We mean "initial" changes which are more or less independent of any previous structural displacements. It is obvious that, when inserting the restrictive "more or less," we knowingly weaken the clarity of the argument concerned and pour a corresponding amount of water into the wine of our discussion.

The issue between private enterprise and collective economic planning is about as old as any other fundamental features of our Western civilization. It will be shown later that frequent oscillations have been recurring in this issue ever since the beginning of its development. Strictly speaking, every stage in the process has been preceded by some series of structural events which have represented a correspondingly decisive causal background. Actually, no structural change in the economic system can be absolutely "initial" in the sense of being entirely independent of previous structural shifts. Practical experience shows, on the other hand, that the intensity of the pertinent dependence greatly varies in the course of socioeconomic developments. Concomitant activities and effects of external forces, which are not rooted in and depending on the economic structure, may therefore be assumed. They strengthen or weaken the impact of changes in the economic structure. We relate the causation of our above-mentioned more or less "initial" structural displacement to such external forces. This is the proper meaning of our distinction between more or less *initial,* or independent, and purely reactive, or adjustive, structural economic changes.

The question then is whether, when, and to what extent *initial* and *independent* changes in the economic structure are justified and should accordingly be made. The answer points toward a complex interrelation of economic and external, *i.e.,* noneconomic, forces on which this justification hinges.

Among the noneconomic forces concerned, sociopsychic, political, religious, technological, and other factors systematically considered by modern anthropology and sociology should primarily be mentioned. They will be dealt with in Chapters IV and V. The pertinent economic factors evidently depend on the relationship between amounts of various gratifications and their cost. This relationship is subject to changes in time with regard to the various individual, mixed, and collective types of want satisfaction. It will be useful to examine a few relevant details.

II

If structural changes could take place on the basis of *constant* cost, or "constant returns to scale," there would be no economic difficulty in pushing any single-track structural shift up to the level of a com-

prehensive application. Such a level could afterwards be retained and perpetuated. Either collectivization or reprivatization could thus be carried through in an absolute sense leading to a total collective planning or to a complete and exclusive private-enterprise economy, respectively.

Yet, only narrow-minded and one-sided enthusiasts are likely to regard the prevalence of such constant costs as the general case. They might even overstate their argument and go as far as to assume an over-all *decreasing* tendency of the cost involved. This assumption would amount to maintaining that a process of either collectivization or reprivatization once started could not only be continued, from a purely economic viewpoint, with a constant ease, but that it would even display an intrinsic propensity to increase the facility of its completion. It is doubtful whether we could find any substantial number of proponents for such an assumption even among the most radical but erudite adherents of bolshevism, on the one hand, or *laissez-faire* individualism, on the other hand. If constant or decreasing cost prevailed in the course of single-track structural economic shifts, then all national economies would long have developed into systems of either total collective planning, or exclusively private-enterprise activities.

We know that reality shows a different picture, and we have accordingly stressed the actual predominance of composite economic systems. In the causal background of such a predominance, we may point out the "normalcy" of the case in which structural economic changes are connected with *increasing* cost. This case requires clarification.

It may well be that any *beginning* steps toward collectivization or reprivatization are favored, for a while, by the great advantage of decreasing cost. This may be so because the economic structure might previously have been bent too much the other way. Another reason may be that the prevalent new trend encounters first substantial, but later gradually diminishing, difficulties in reversing the former direction of structural development. The difficulties may be rooted in any sort of technological rigidity as well as in any societary—economic or noneconomic—impediments. While gradually overcoming such rigidities and impediments, the new trend of structural shifts may enjoy the amenity of diminishing cost per unit of additional aggregate

gratifications of the new and gradually expanding type. For example, at the beginning of a drive toward collective planning, as long as only a few industrial plants or agricultural estates are collectivized, the cost per unit of additionally provided collective products may decrease. This may be brought about by a gradual elimination of the initial resistance of powerful private-enterprise activities, by a diminution in animosity of any other vested interest, by a gradually increasing familiarity of those concerned with the efficient methods of collective production, or/and by the mutual support collective plants may render to each other. Essentially similar factors, but revealing opposite signs, may also cause diminishing costs at the initial stages of any relatively new trend toward reprivatization.

At the same time, however, the consequences of the law of *marginal productivity* are also active. From this standpoint, let us consider private-enterprise activities and collective planning two distinct, but quantitatively interrelated, forms of the factor of production which is conventionally termed organization. The more of either of the two forms we apply to production, at the absolute or relative expense of its counterpart, the smaller will the marginal productivity of its additional units tend to be. Keeping all other factors of production constant is an obviously necessary condition of the argument. Or else, concomitant changes in such other factors should not be so directed as to counterbalance, and they should not be so significant as to obviate, the effect under discussion.

Those who think that private entrepreneurial skill and collective planning should not be treated as quantitatively definable magnitudes, may arrive at essentially the same result from another viewpoint. They may realize that first those productive activities will be transformed by the prevalent new trend of structural changes which are evidently most suitable for such a transformation. Later, progressively less suitable activities may be similarly changed. Passing from higher toward lower degrees of *suitability* involves a corresponding rise in the cost per unit of the successively transformed productive activities.

Similar may be the effect of a growing *saturation* of the economic structure with the spreading particular form of organization. We may also refer to the probability that with the rising power of the prevalent structural trend various discrepancies, shortcomings and imbalances in its operation will encroach. They might cause an accordingly increasing

reluctance in substantial sectors of the community to acquiesce in any further expansion of the predominant trend. Dictatorial devices may be successful, at least for a while, in suppressing such a reluctance below the level of admittedly noticeable efficiency. Yet, underground discontent may even then grow all the more rapidly. One way or another, these factors of saturation and reluctance may eventually lead to substantially increasing costs if the structural trend is continued. The history of collectivization and reprivatization is teeming with congenial examples. In every case, the issue is the same: the resulting tendency toward increasing cost sooner or later offsets any initial advantage of diminishing cost.

Accordingly, a *turning point* must sooner or later be reached which marks a stage of constant over-all costs per unit of further structural shifts in the given direction. Beyond the turning point, the cost per unit of additional shifting will unavoidably increase. Our above-discussed arguments definitely suggest an augmenting rate of this increase. The acceleration involved may be slow or rapid, and it may be overt or hidden. Yet, it will invariably lead to a gradual decadence and exhaustion of the prevalent structural trend. This is the "relevant range" of normalcy marked by a prevalence of increasing cost. At such a stage of development we usually experience increasing marginal rates, a decreasing responsiveness, and a growing elasticity of collectivization or reprivatization. The economic structure will then sooner or later be mature for another change in the main direction of shifts. We may then indicate the completion of a whole wave, or cycle, in the process of structural fluctuations.

III

We may briefly touch upon yet another aspect of the whole development concerned. The so-called profit motivation underlying private-enterprise activities displays a fairly simple causal background as long as we strictly relate it to to the acting individuals. But as soon as we look at its societary consequences in terms of its aggregate bearing on communal welfare not only complex but also definitely *irrational* features are brought into prominence. Its opponents may accordingly stress the irrationality of the alleged social chaos revealed by any system of production which is based on profit motivation. Its proponents may indulge in blessing its allegedly over-all socioeconomic efficiency. But at

least one of their strongest conventional arguments in doing so will point toward some sort of natural order, or provisional guidance, inherent in the *laissez-faire* economy. The roots of such an order or guidance cannot be entirely explored and comprehensively explained by purely rational powers of the human mind. So they must be at least partially irrational.

On the other hand, collective planning traditionally stresses its concentration on a *rational* solution of economic problems. We usually dare to proceed along the lines of collective planning only as far as we believe in the possibility and justifiability of such rational solutions. It is obviously another question whether and to what extent the practical measures of planning are actually successful.

In the present context, our significant issue is the apparent contrast between the at least partial irrationality of the stress on private enterprise and the strongly emphasized rationality of collective planning. It is evident that this issue is a corollary of the well-known and much broader problem represented by the contradistinction between rational and irrational economic behavior at large. Somewhere in the background, we may also refer to the relationship between *natural* development and *artificial* interference. Both of them have their place in the sun and in human societies, particularly so in our economic development.

We may be not far from the truth when supposing that while there is a certain wavelike fluctuation in the alternate emphasis on "natural but irrational" private-enterprise activities and on "artificial but rational" collective planning, they also disclose an intrinsic propensity to supplement each other. In such a sense, various short-term and long-term oscillatory movements, or *cyclical waves,* may be superimposed upon each other. They may show a more or less vague resemblance to the simultaneous plurality of closely interwoven and overlapping, but differently long, waves of business cycles.

We are familiar with the secular trend which indicates the progress of rational collective planning at the expense of certain irrational vagaries allegedly inherent in private-enterprise activities. At the same time, however, we are puzzled by a variety of concurrent oscillatory waves of different lengths superimposed upon this long-term movement and upon each other. The result is a maze of seemingly random structural fluctuations. With respect to them, it is frequently difficult

to distinguish among the effects of the various waves under discussion, let alone the intricate relationships among the institutional factors acting in the casual background. Let us refer to the alternation of long eras boasting of "consistent" peacetime economic progress and of wars devastating the fruits of laborious efforts in the previous economic development. Also periods displaying the jittery, nervous, and "inconsistent" aftermath of such wars in terms of painful economic disequilibria may sufficiently exemplify our general proposition. Its links to several irrational features of the traditional business cycles obviously contribute to the *complexity* of the whole picture. The ambitious scholar who attempts to disentangle the labyrinth of interdependences concerned is certainly not in an enviable situation.

In spite of such intricate cyclical movements, we cannot reasonably deny the existence of a certain *dynamic balance* in the relations between rational and irrational economic activities connected with collective planning and private enterprise, respectively. Whenever the former are overemphasized, there is a growing pressure caused by the disproportionate neglect of the latter, and vice versa. In other words, phenomena involving increasing cost and decreasing returns of one-sided attitudes may also in this respect play an important role.

We consequently have another item in favor of our assumption that increasing costs pertain to a more general, and for our present argument more relevant, phase of collectivization and reprivatization than decreasing or constant costs. We may therefore primarily refer to the normalcy of increasing costs in answering the question when structural economic changes are justified. Their *justification* is largely rooted in the gradual aging, decline, and exhaustion of single-track structural shifts involving the heavy burden of decreasing returns. A change in the direction of such shifts might then secure a considerably more favorable relation between costs and returns, *i.e.*, between aggregate communal efforts and welfare.

The Optimal Extent of Collective Planning

I

The relevant fundamental controversy clusters around the difference between any one-sided, exclusive, and permanent stress on either private enterprise or collective planning and a reconciliatory attitude em-

phasizing a long-range harmony based on their bilateral cooperation. Those who take the former standpoint accept only a *single-track* and straightforward progress toward either collectivization or reprivatization. They believe in the absolute and over-all superiority of one of them and maintain that such a superiority is not limited to time or space. Adherents to the latter attitude concentrate on the empirically proved possibility of *reconciliation* between the two extreme patterns of structural economic organization. They accordingly emphasize those interdependences to which the marginal rates, the responsiveness, and the elasticity of collectivization and reprivatization refer. They refrain from overrating the significance of any competitive relationships between private enterprise and collective planning. Instead, they depend as much as possible on the underlying supplementary and complementary interrelations, which point toward the necessity of a long-range mutual understanding.

To be sure, the basic undertone of the relations between those general trends of structural development which hinge on collective planning and those which cluster around private-enterprise activities is *competitive*. For we here contrast two different forms of productive organization with one another, each of which may be regarded as capable of covering, more or less comprehensively and exclusively, the whole scope of the economy. But in several respects, the contrast is conceptual rather than actual, and theoretical rather than practical. We realize, of course, even while stressing the conceptual contradistinction, that there are not only substantial overlappings but also intrinsic and essential similarities at work. These overlappings and similarities must be stressed from the standpoint of a conciliatory attitude.

It has been indicated that there are many possibilities for advantageously including private-enterprise activities in extensive schemes of collective planning and that elements of collective planning can well be utilized within the structure of private-enterprise activities. In both senses, mutual relations of *complementarity* or *supplementarity* may be exploited for the benefit of communal welfare. It might frequently be difficult to decide whether the activities concerned primarily complement or rather supplement each other. Another difficulty might arise about the comparative strength of these superimposed complementary or/and supplementary properties and the underlying over-all competitive issue. For example, the question mark of such a comparative

evaluation may be brought into prominence when the income of managers, other employees, or workers in a collective plant is partially or entirely based on some sort of a revenue-sharing—or "profit-sharing"—system. Essentially similar situations may be given when private firms partially or entirely base their activities on trading collectively produced commodities or on producing commodities to be traded collectively. Private firms may also utilize, with similar effects, any other possibilities offered by collective transportation and communication or connected with the administration of public revenues. Regardless of the inherent difficulties in comparative evaluation, however, the scope of such complementary and supplementary relations is greater than usually assumed. The future perspectives of a pertinent cooperation between private enterprise and collective planning therefore are more promising than customarily anticipated.

The substantial possibilities for reconciliation involved are unknown to the fools who rush in with extreme and radically exclusive programs of collectivization or reprivatization. To be sure, not everybody is an angel who fears to tread on the treacherous ground of compromise. A serious analysis of the marginal rates, the responsiveness, and the elasticity of structural changes may help somewhat. But the decisive step can be made only by persevering and consistent efforts to foster all *connecting links* rather than to emphasize the separating issues between private enterprise and collective planning.

II

Abrupt changes in the prevalent direction of structural shifts, especially when representing a complete turn of 180 degrees from collectivization to reprivatization or vice versa, are usually expensive and disadvantageous. They mostly amount to a sudden disruption of more or less well-established methods and processes of production and to a corresponding direct loss of invested capital and other productive agents. Looking at such disruptive changes from an *ex post* viewpoint, we conventionally indicate that the previous methods of production, distribution, and consumption involved a malinvestment of capital and/or a similar maldirection of other factors of production. It is then easy to put the whole blame for the losses in question on such malinvestments and other maldirections, as well as on the entrepreneurs or planners who are allegedly responsible for them.

Yet, an *ex ante* consideration of the same interdependence shows an essentially different setup. Capital has been invested and other productive agents have been accordingly directed during the previous period on the basis of an expected longer duration of the then predominant trend of structural development. The economic efficiency of the investments stood and fell with the correctness of the expectation concerned. If the latter prove to be wrong, then the causal background probably reveals a lack of foresight owing either to an emotionally predetermined and purposely one-sided program of structural shifts or to an ignorance of the fundamental forces which are active in the economic structure. Such an ignorance is synonymous with missing the point with regard to the marginal rates, the responsiveness, and the elasticity of collectivization and reprivatization. It is very possible, however, that the relevant mistakes can be more justifiably charged against the account of the responsible intellectual and political leaders of the previous system than against the account of the entrepreneurs or economic planners directly involved.

It may so happen that large amounts of *capital* invested in productive, distributive, and consumptive activities, exclusively characteristic of the former prevalent trend of structural shifts and by no means applicable—maybe not even easily adaptable—to the suddenly introduced new trend, have to be scrapped. The possibly substantial cost of a previous adaptation or transformation of *land* and other natural resources for peculiar productive purposes may similarly prove to have been wasted. Considerable additional costs may have to be incurred on account of the necessity of reshaping and training human *labor* according to the precepts of the new direction in structural shifts and the requirements of the new organizational types in production, distribution, and consumption. A possible lack of experience in the whole economic administration of the new trend may add to the related cost and wastage. It is obvious that from all relevant viewpoints we must distinguish between factors of production which are and which are not specialized for private or collective use.

The first few years in the history of the *Soviet* economy offer many examples of the high social cost of an inadequately prepared and abrupt transition from a private-enterprise system to collective economic planning. Similar events in several countries of the Russian orbit after the Second World War may be regarded as further examples

of the same general pattern. Also the process of sudden and radical reprivatization which took place between the two wars in *Bavaria, Hungary,* and *Spain,* after the liquidation of their short-lived collectivistic efforts, involved extremely heavy burdens in terms of social cost. In both types of cases, at least a substantial part of such costs and wastage could probably have been avoided if the transitions had been better prepared and less abrupt. It could also be shown by other examples that the cost of structural shifts is frequently a function of the suddenness with which such shifts are carried through.

III

With respect to the cost aspect of structural transformation and progress, it is not difficult to castigate the short-visioned and one-sided exaggerations of emotional devotees, ignorants, or semieducated economists. It may safely be said that the exorbitantly high social costs of jerky changes in the general direction of structural development represent the most harmful sources of modern economic wastage. The *negative* side of the picture is accordingly clear-cut.

From the *positive* standpoint, the first step toward a more satisfactory solution of the problem involved is an analytical perception of the basic features by which the structural development of our modern Western economy is earmarked. We have already mentioned that such a perception may be gained by concentrating on the marginal rates, responsiveness, and elasticity of collectivization and reprivatization as displayed by the economic systems under discussion.

Second, it seems to be necessary to recognize the existence of a *secular trend* toward the progress of collective planning. This trend must be diagnosed and apprehended as the fundamental undertone in the modern strife of humanity for a higher level of communal welfare. In the light of historical facts, it would amount not only to a futile, but in many cases also to a destructive, reactionary attitude to deny the prevalence and to resist the precepts of such a trend. The task is rather to smooth the path of its evolution.

Third, such a smooth structural evolution can be assured only if we properly understand the meaning of the *cyclical* alterations in the predominant stress on private enterprise and on collective planning. It would be rash to deny the possibility that, after the present secular trend toward collectivization, another secular trend toward reprivatiza-

tion may set in. Further, similarly rhythmical alternations may characterize the more remote future in our rise toward still higher levels of material welfare. At the same time, it would also be just as much of a mistake not to perceive the fact that even within the present secular trend toward collectivization there are short-term fluctuations of various wave lengths. In the course of such fluctuations, a substantial emphasis on private-enterprise activities and on the utilization of their productive potentialities may periodically be disclosed.

As an obvious corollary, the vital forces of private-enterprise activities as well as of collective planning must be carefully *conserved,* not only when they happen to run the show of structural progress, but also when they have to keep in the background and play the role of secondary, and temporarily even somewhat neglected, actors. Moreover, even while they are temporarily overshadowed by their rival, their productive abilities should consistently be considered in terms of complementary and supplementary contributions. Their productive capacity should consequently be *utilized,* as much as possible, for securing a suitable harmony in the composition of the economic structure. This is a better choice than any attempt at their thorough suppression or ruthless destruction in those periods during which their rival takes the wheel.

In the meanwhile, the economic analyst must concentrate on the instrument board of structural changes. As soon as his *analytical instruments* indicate great marginal rates, small degrees of responsiveness, and great elasticities in the changes concerned, he must give the proper warning signal. Preparations must then be made for a prospective new direction in the trend of structural progress. The better the preparations are, the more smoothly the well-conserved motive forces of the organizational form which was temporarily kept in a secondary role may step into the foreground and take the lead. In addition, the smaller will be the social cost of the concurrent transition and the over-all wastage possibly connected with it. In the following chapters, hints will be given concerning the operational aspect of the analytical instruments to which we here refer. Some of the methods will also be discussed with the help of which the indications of such instruments can be controlled.

We may adequately derive from a consistent observation of the above-discussed viewpoints first the formal conditions for an optimal

extent of collective planning. Second, we may analytically ascertain the optimal rates, responsiveness, and elasticity of collectivization and reprivatization at large. Third, we may recognize the satisfactory methods of coordinating private-enterprise activities and collective planning on the level of an *optimal progress* toward economic integration.

Although the relevant analytical results may be expected to have a general meaning and comprehensive validity, they are liable to be restricted to a *formal* significance. When proposing to apply them to any *material* and particular relations and to give them a practical backbone, we have to investigate the institutional aspect of the economic structure.

CHAPTER IV

MOTIVES OF PLANNING

Historical Perspectives of the Economic Structure

I

IN OUR *institutional* investigation of the problems of private enterprise and collective planning, we may appropriately proceed by first looking at them from a historical viewpoint. Philosophical, sociological, statistical, and prognostical aspects will subsequently be brought into prominence.

The *historical* development of the motive forces acting behind the cyclical waves of collectivization and reprivatization reveals a complex interdependence of economic and noneconomic elements. While the former show a certain tendency toward permanence and stability, the latter seem to be more subject to periodic changes. The outcome is that the interdependence in question has to be viewed in a longitudinal section if we endeavor to stress the standpoint of historical evaluation. The corresponding cross section will later be examined with respect to its present stage and in relation to the other above-mentioned institutional aspects.

It is easy to refer such a historical discussion to the interaction of economic and noneconomic forces at large. But it is difficult to draw anything resembling a *border line* between these two groups of forces.

We mean by forces such manifested energies as are expressed in some relation to external or internal movement. In the present context, we do not deal with mechanically or vitalistically operating physical forces. Instead, we restrict our considerations to unreflective or reflective psychic forces which do not act in a compulsive manner, as physical forces act, but only in an impulsive way. Accordingly, our psychic forces do not represent effective powers but rather provocative or stimulative motivations.[1] Such motive forces may be individual.

[1] In the background, we may refer to the motive aspect of mental powers which represent the Kantian category of conations. As desires or volitions, they may be contrasted to the simpler categories of cognition or feeling, which in-

When they become related to societary life, they develop into *social forces* or *motives.*

Economic forces are those which are aimed at the gratification of material wants. It may be helpful to go as far as identifying economic forces with such wants and to contrast them to all other wants which act as nonmaterial psychic or social forces. This interpretation is somewhat akin to the one stressed by Albin W. Small and George E. Vincent.[2] Alternatively, useful reference could be made to the fundamental prepotent drives as elaborately analyzed by Floyd Henry Allport.[3] As a next step, however, we need not depend on such customary but forced attempts as Ward's sixfold classification of wants or interests relating to health, wealth, knowledge, beauty, sociability, and rightness. Nor is it necessary to go into a relevant analysis of Vilfredo Pareto's residues[4] or of such further sociological, psychological, and ethical categories as instincts (William McDougall[5]), impulses (John Dewey[6]), drives of the organism (Clark Wissler[7]), original tendencies (Edward Lee Thorndike[8]), predispositions (Edward Cary Hayes[9]), desires, wishes, etc. It is sufficient to point out certain groups of largely ethical, aesthetic, intellectual, and similar interests as noneconomic social forces and to emphasize their manifold overlappings and other interdependences with the domain of economic forces. Let us assume that we can reasonably well *distinguish* between economic and

volve only perception and the capacity to differentiate between pleasure and pain, respectively. It is in this sense that Lester Frank Ward distinguishes between intellectually sought, or direct, and indirect ends of conation, to which he relates all efforts of organism in seeking the satisfaction of desires (cf. *Pure Sociology,* New York, 1909, pp. 247–255; *Psychic Factors of Civilisation,* Boston, 1893, pp. 54, 138–140, 190, 235, 302; *Dynamic Sociology,* New York, 1902, Vol. 2, pp. 111–157).

[2] Cf. Small and Vincent, *Introduction to the Study of Society,* New York, 1894, pp. 173–182, and Small, *General Sociology,* Chicago, 1905, pp. 450–457.

[3] *Social Psychology,* New York, 1924, pp. 293–294, 341.

[4] *The Mind and Society* (Trattato di sociologia generale), edited by Arthur Livingston, New York, 1935, Vol. 2, pp. 647–726.

[5] *An Introduction to Social Psychology,* Boston, 1923, pp. 20–93.

[6] *Human Nature and Conduct,* New York, 1922, pp. 89–171.

[7] *Social Anthropology,* New York, 1929, pp. 49–56, 366–367.

[8] "The Original Nature of Man," *Vol. 1 of Educational Psychology,* New York, 1923, pp. 5–15, 81*ff.*, 123*ff.*

[9] *Introduction to the Study of Sociology,* New York, 1916, pp. 215–230.

such noneconomic forces in spite of these overlappings and other closely knit interrelations.

On the basis of this assumption, we may attempt to *correlate* the two domains with regard to the causation of the cyclical changes which can be observed in the historical development of collective planning and private enterprise.

II

As has already been mentioned, the fundamental economic forces at work do not display substantial transformations in the course of historical development. The prevalent sets, or schedules, of material wants, which act in the background and whose institutional significance will be discussed in Chapter VI, are subject only to moderate and gradual changes. Here it is more important to stress the structural and instrumental aspects of material gratifications. From the earliest epochs of social life, the two *basic methods* of individual and collective want satisfaction have been in the foreground. The in-between cases of composite gratifications have been—also in the light of historical experience—obvious results of the endeavor to compromise. With regard to the underlying processes of production, distribution, and consumption, the alleged freedom of private-enterprise activities, the so-called serfdom of collective planning, and the well-known sundry variants of more or less compromising systems—of "third ways"—have been advocated with cyclically alternating emphasis. Concomitantly fluctuating practical solutions of the pertinent structural problems have appeared at the surface.

Let us refer only to the three relevant historical facts: the growth of population, the progress of technological knowledge, and the quest for a rising level of material welfare. In the long run, their interaction has led to an increase in the *size* of the economic problems to be solved and in the *dimensions* of the methods to be mastered in the field of productive and distributive activities. In a given area, it is usually easier to feed and to provide shelter for one thousand than for one million people. It is correspondingly simpler to do so on a level of development marked by the usage of primitive tools than within the complex productive organization based on the utilization of electricity and atomic energy. It is also easier to satisfy material wants as long as they are few and primitive than on a stage of development

where material welfare depends on many and qualitatively refined gratifications. The growing size of the productive and distributive tasks involved impels the *Homo oeconomicus* to search for increasingly efficient structural patterns as frameworks of his economic activities. He consequently feels induced to try out various shifts in, and combinations of, such patterns.

Mankind might have started out believing in economic systems which largely depended on primitive devices of *collective planning*. As the size of the pertinent tasks grew, a certain tension in the application of collective planning originated and went on increasing. Internal and external discrepancies, gradually worsening symptoms of intrinsic imbalances, and a relatively decreasing over-all efficiency of primitively planned economic structures might have given impetus to shifts toward a supplementary reliance on individual initiative. At such stages of development, there might have been a tendency toward releasing the power of individual motivation from the guidance of collective planning. From its former subordinate role, individual efforts might have then been permitted to move to the rank of primacy and to assume the shape of profit maximization conventionally assumed as underlying private-enterprise activities. The emulation to maximize all other branches of income is a usually concomitant, but not always parallel and congenial, tendency.

History also shows many examples of the gradual growing, maturity, and aging of the stress on *private-enterprise* activities. Particular shortcomings and peculiar diseases of such activities may disturb their efficiency to an increasing extent. In the great majority of empirical cases, a lack of adequate incentives for productive efforts and difficulties in selecting the best responsible planners—possibly connected with a leaning of such inappropriately chosen economic leaders toward harmful tyranny—may have acted as shortcomings of the preceding era of collective planning. Yet, the subsequent wave of private-enterprise economy is also likely to develop, in due time, its own illnesses. Historical experience speaks for the probability that the two most detrimental relevant illnesses might be a certain intrinsic propensity to accentuate monopolistic privileges at the expense of perfect competition, and concurrently growing inequalities in the distribution of income and wealth. Sooner or later also these unfavorable items interfere with any smooth working of the system. Private enterprise then

passes to the stage of decline and exhaustion. This is the above-discussed stage which marks the completion of a whole wave in the cyclical movement of structural economic changes.

As far as the purely economic motive forces of such cyclical changes are concerned, the tendency to cope with the increasing size and dimensions of economic tasks by the help of the relatively most efficient methods of private enterprise, mixed activities, and/or collective planning discloses a remarkable historical permanence. Also remarkable is the fact that this economic tendency does not usually appear in an independent shape. It is customarily attached to some *noneconomic forces* which are apparently assigned the role of primary significance in the course of social development. The economic forces traditionally appear to be attached to such noneconomic forces in order to be towed along by the latter's propelling energy. Nevertheless, it may also happen that noneconomic forces are created, buttressed, and directed, to a greater or lesser extent, by the related economic tendencies, which may continue their seemingly modest role of an appendage. It is evident that what we are here facing is a particular aspect of the weighty issue between historical materialism and idealism. The cyclical process of collectivization suitably lends itself as an example of this relationship.

As soon as the economic forces acting along the lines of private-enterprise activities begin to decay and as soon as there is a shift toward collective planning, the societary entities have to be chosen within the framework of which this planning is to be performed. They might be families, clans, religious or occupational groups, social classes, political parties, states, nations, etc. For example, we may develop a national system of collective economic planning. But we can obviously do so only by linking our economic planning to some other superimposed aims, and to some other coordinated activities, of the nation. To what extent are nations created, fostered, and ruled by any economic forces acting in the background of collective planning? This is the question which pertains to the strife between the *materialistic* and the *idealistic* interpretation of historical development. In the present context, however, it is enough to point out differences among those prevalent social entities to whose progress the destiny of collective economic planning might be attached.

The empirical setup reveals a great variety of such *social entities* and of the corresponding noneconomic forces which act in their fore-

ground. When indicating here the "foreground," we again implicitly allude to the possibility or probability of other forces, which may or may not include economic ones, acting somewhere in the "background."

III

Any attempt at a taxonomic enumeration, and comprehensive evaluation, of the noneconomic forces concerned would transgress the scope of the present discussion. It is more useful if we only pick out a few typical, empirically significant cases and *exemplify* by their consideration the historical relations to economic forces at work.

From such a viewpoint, it may be of some heuristic value to schematize, and to distinguish among, the following *six fundamental* noneconomic forces:

1. The want for reproduction
2. The want for religious belief
3. The want for political conglomeration
4. The want for national concentration
5. The want for class organization
6. The want for occupational grouping

It is obvious that the essential meaning of these six categories would not change if we did not relate them to wants as motive forces but to the corresponding instincts, interests, drives, desires, predispositions, impulses, wishes, residues, tendencies etc. More important than the largely terminological issues involved is a brief clarification of the *scope* of social forces indicated by our six categories.

The *first* category is meant to include all motives which refer to mating, to the Paretean residues pertaining to sex, to parental and similar tender emotions, as well as to the related clan, kinship, and race interest. The various hues of transcendental interest may be classified with the *second* category, which is accordingly composed of magical, mythical, denominational, sectarian, or any purely ethical elements. The *third* category stresses the primacy of smaller or larger political units, such as the village, town, city, county, state, federation, or any other more comprehensive interstate political unions. With regard to the *fourth* category, the peculiar societary composite of the nation, as it has been developing in the last two centuries or so, is brought into

prominence. The *fifth* category emphasizes some of those criteria of societary stratification which pertain to the distribution of income and wealth. In the *sixth* category the technologically motivated Veblenian instinct of workmanship as well as scientific, artistic, aesthetic, or other intellectual features of professional orientation may play a decisive role. Any of the six categories may display a propensity to cut across the border lines marked by other categories, to expand accordingly, and to produce manifold varieties of overlappings.

We may undertake a further step toward systematization by relating the first two categories to the typically Eastern patterns of collectivization, as well as to prevalent forces of collective planning in the *Antiquity* and *Middle Ages* of the Western civilization. We may assume that the third category ruled over approximately the first two or three centuries of *Modern Times* in the West. We may add that the fourth, fifth, and sixth categories seem to have taken charge in our more recent Western development. At the same time, they direct also the recent Westernization of the East. A few words aimed at a substantiation of these sweeping generalizations are here in order.

Reproduction and Religion

I

The formation, growth, and general significance of the above-mentioned six categories with respect to their noneconomic roots and implications present a long series of meaningful problems. Since they clearly belong to the field of sociology and to related particular branches of the social sciences other than economics, we do not propose to discuss them at large in the present context. The two specific aspects on which we here concentrate refer to the actual *participation* of economic forces in the development of the six categories concerned, and to the reverse relationship, *i.e.*, to the *guidance* which the processes of collectivization and reprivatization obtain from any of these categories.

The manifold ramifications of modern anthropology successfully inquire into minute details of prehistorical *parental* relations, as well as of primitive forms of family life, kinship, and races.[10] Similar investiga-

[10] Cf. Herbert Adolphus Miller, *Races, Nations, and Classes,* New York, 1924, pp. 14–19; Ellsworth Huntington, *The Character of Races,* New York, 1924, pp. 1–32, 332–345; Gustave Le Bon, *The Psychology of Peoples,* New York, 1912, pp. 6–16, 39*ff;* Charles Bird, *Social Psychology,* New York, 1940,

tions have uncovered the earliest roots of magical, mythical, and *religious* beliefs.[11] As a result, we now recognize a maze of interdependences connecting these first two categories with respect to their bearing on ancient and primitive phases of socioeconomic development. We realize their predominant importance in those earlier phases as well as the fact that their pertinent deep roots are still alive and active. Such deep roots may be concealed and covered for a while by the more recent, younger, and superficial roots of modern trends in social integration. Yet, whenever any serious disturbances emerge about the latter, the former may take over, even nowadays, for shorter or longer periods. Parental relations and religious considerations thus lend themselves as actual bases or at least as a framework for collective economic planning. From such a viewpoint, the actual significance of the first two categories is not much less ponderous than their historical importance.

We have good reasons to assume that material wants played an important role in the formation of the primitive *family,* although other elements of the sexual and parental instinct might have been predominant. Abnormal or other exceptional cases may have been numerous. But our interest does not here focus on them. As soon as parental groups as societary entities began to arise, possibilities for a collective gratification of material wants were given. For example, members of the family could now choose between individual and collective methods of providing the goods and services needed for material satisfactions. In the background of the corresponding primitive forms of production, distribution, and consumption, the earliest and similarly primitive legal issue between private and collective property was already active.

It is probable that in the great majority of cases *collective ownership* and collective gratifications proved to be preponderant features of any primitive parental communities. Acts of rudimentary collective economic planning must obviously have been performed. The scope of

pp. 191–208; Pitirim A. Sorokin, *Man and Society in Calamity,* New York, 1943, pp. 111–121; Robert M. MacIver, *Social Causation,* Boston, 1942, pp. 300–313.

[11] Cf. Carl Kelsey, *The Physical Basis of Society,* New York, 1925, pp. 353–366; Herbert Spencer, *The Principles of Sociology,* New York, 1897, Vol. 1, pp. 171–225, and Vol. 2, Part 2, pp. 671–704; Max Weber, *The Theory of Social and Economic Organization,* translated by A. M. Henderson and Talcott Parsons, New York, 1947, pp. 154–157.

such acts might have gradually increased with the expansion of clan, kinship, tribal, and racial relations. At the same time, however, the intensity of such planning activities might have decreased. Horizontal spread and vertical depth of collective economic planning might thus have revealed partially or wholly inverse quantitative interdependences.

The primitive collective features of parental links involving more or less exclusively collective ownership and a corresponding scope of collective economic planning can clearly be traced back in the early history of several peoples. The hypothesis that similar conditions extensively prevailed already in prehistorical ages can well be justified. The elaborate legal institutions buttressing the comprehensive rights of the *paterfamilias* and specifying even the minute details of his privilege of guiding activities and his predominant economic functions in the collectivity of the ancient Roman family are cases in point.

Yet, increasingly potent individualistic tendencies set in as soon as the growth of societary dimensions began to widen, and eventually to burst, the narrower framework of the family as a prevalent social entity. Such processes were expedited, in several respects, by a concomitantly broader interpretation of the term "family." Correspondingly growing emphasis was then put on the provision of goods and services by individual members of the family. Separate *private-property* rights originated. Concurrent and elaborately coordinated steps in the legal and economic emancipation of the individuals were thus closely interwoven. At the same time, the strength of collective planning on a family or broader parental basis was giving way to the active significance of particular economic motives brought into prominence by individual members of the family. The rising importance of similarly motivated private-enterprise activities sooner or later followed.

The essential features and periodic changes of these evolutionary processes have frequently been repeated, according to a recurrent, and sometimes even cyclical, pattern, during the growth and decline of primitive patriarchal and more developed feudal ties. From an economic viewpoint, such ties involved, at the climax of their power, more or less substantial activities of *collective planning*. They often entailed intricate hierarchies in the economic structure, which were based on a corresponding subordination and coordination of productive and distributive functions. It is well-known that agriculture then was the backbone of economic organization. Patriarchal—and in some particu-

lar cases or respects matriarchal—economic relations may have directly been rooted in the kinship or racial interests. Elements of the feudal agricultural constitution may have indirectly represented a further step in the development of such interests.

In due time, however, the increasing size of economic tasks to be solved gradually loosened the intensity of patriarchal and feudal economic planning. Its decay was later speeded up by revolutionary movements. The age of Antiquity shows several such cases, in which *private-enterprise* activities on an early capitalistic—or rather quasi-capitalistic—basis managed to take over for shorter or longer periods. Corresponding shifts in the structure of private and collective ownership ensued. It is easy to point out concomitant cyclical changes in the stress on collectivization and reprivatization.

We may add that in those early epochs of economic history the purely economic forces acting in the background of such changes not only participated as constituent factors in the development of parental, patriarchal, and feudal societary entities but also greatly depended, as far as their own growth and decline were concerned, on this development. In other words, the above-discussed *reciprocity* of economic and noneconomic forces accordingly hinged on the first category of family, kinship, and racial relations. Collective planning rose and decayed within the societary framework established by this category. The fluctuating over-all strength of parental links concurrently determined the related ups and downs in collective, mixed, and individual want satisfactions. As long as these links prevailed in the field of societary conglomeration, they also acted as the strongest noneconomic motive of planning. Whenever they passed through shorter or longer periods of decadence, private-enterprise activities could make a corresponding headway.

II

Modern anthropological and psychological research has fairly well established that the oldest and most primitive forms of the second category, which pertains to *transcendental interest,* largely depended on some sort of a magical belief in supernatural beings and their secret powers. It is not essential here to say what roles conjuration, enchantment, necromancy, or sorcery played in such a belief. Nor is it relevant how prehistorical magical creeds gradually developed into the various

religious faiths of the historical era and how intricately primitive elements of the former may be interwoven even with advanced stages of the latter.

Significant in the present context is again the fact that purely *economic* forces concentrating on the gratification of material wants have more or less substantially contributed to the formation—and evidently also to the cyclical maturity and decline—of the transcendental category under discussion. Whenever and wherever this second category became sufficiently strong to act as the guiding force of societary conglomeration, correspondingly constructed communities arose. Then, collective economic planning began to be used for the purpose of their further strengthening. Any increasingly difficult problems of economic growth tended to be solved with respect to the over-all ends of such communities. To this effect, propaganda, persuasion, and coercion have always been applied abundantly.[12]

Yet, transcendental motivation has not been referred exclusively to collective planning. Private-enterprise activities have also frequently been related to magical, mythical, or religious objectives. Incidentally, similar connections have often been established also between the above-discussed first category and private enterprise. Economic collaboration among members of a family or kinship on a private-enterprise basis has become just as well known as various private-enterprise activities more or less directly subordinated to the pursuance of Protestant, Catholic, or Jewish communal objectives. In this sense, *positively* stimulative effects of the first two categories of noneconomic forces may be indicated, not only with regard to collective planning, but also to private-enterprise activities.

More important with respect to the latter is, however, the *negative* relationship which points toward reprivatization when the vigor of communities based on the transcendental interest declines and no other forces of social conglomeration promptly take over. It is evident from the great majority of the relevant viewpoints, that all sorts of religious denominations and sects, as well as purely ethical communities without any particular religious affiliation, have developed similar positive and negative relations to economic collectivization and reprivatization.

[12] Recently, Frank H. Knight has thrown into relief, by the help of rigorous examination, some of the salient discrepancies involved (cf. Frank H. Knight and Thornton W. Merriam, *The Economic Order and Religion,* New York, 1945, p. 107 *et passim*).

Another link between the first two categories of noneconomic forces may be indicated concerning their remarkable *perseverance* and resistance against any influence of the more recently spreading four other categories. To be sure, it was only in the course of prehistorical development as well as in Antiquity and the Middle Ages—at least with regard to the West—that reproduction and religion were the most powerful instincts of social conglomeration. They accordingly dominated only then the cyclical shifts in economic collectivization and reprivatization. Yet, the same two basic instincts are liable to take over the guidance of planning, and partially also of private-enterprise activities, even in the most recent era whenever there are radical socioeconomic upheavals. The latter must evidently reveal an impact with which none of the precepts derived from the other four categories can cope. Exceptionally great natural or social catastrophies, such as floods or droughts, earthquakes, epidemics or wars, are cases in point. Parental and/or transcendental interests may then suddenly be brought into prominence. At the same time, they may take charge of the issue between private enterprise and collective planning. Even at present, they thus retain their function of acting—at least virtually or potentially—as the most significant noneconomic motives of planning.

III

With respect to the difference between such a virtual or potential, and the actual, significance of our first two categories, we may justifiably distinguish between the prevalent economic structure of the West and of the East. Until about the end of what is conventionally termed the Middle Ages, no pertinent distinction of any fundamental significance could have been made. Collective economic planning and processes of reprivatization up to then were largely governed by the noneconomic instincts of reproduction and religion in the West as well as in the East. In what may still be considered the typical *East,* these two basic noneconomic forces have gone on ruling over the structural shifts of economic development. The same forces are actually doing so even at present.

The *West,* however, deviated and changed its attitude with the transition to the modern era. Or rather, the advent and rise of Modern Times were caused and characterized by such a change of attitude in the West. The change meant that the actual leadership in the structural development of our Western economy was then gradually seized

by noneconomic societary forces other than the instincts of reproduction and religion. But we have already mentioned that these two fundamental factors managed to retain their virtual or potential significance also in the West.

We are here evidently indulging in generalizations. In order to make our distinction more realistic, we have to weaken the argument involved by restricting and qualifying it in various respects. There are *no clear-cut border lines* between East and West nor between the Middle Ages and Modern Times. Instead of indicating border lines, we could more justifiably refer to vast borderlands in the former spatial sense and to an extended period of transition in the latter temporal relation. In both respects, multifarious indeterminacies obviate any possibility of clear-cut differentiation. The same indeterminacies frustrate any attempt at rigid, distinctive classifications. Only modestly tempered, moderate, and flexible relevant attempts may be expected to have any heuristic value.

The process of *Westernization* in the East can thus be expressed by the rate of reception, and measured by the strengthening, of transplanted noneconomic societary forces other than the reproduction instinct and the religious interest. Such a reception and strengthening are obviously carried through at the expense of the latter two forces. Also, Eastern trends in paternal relations and transcendental beliefs consequently cease to act as largely determining noneconomic motives of collective economic planning and of private-enterprise activities. It cannot here be our task to point out the well-known details of encroachment of modern Western societary forces in the East. Nor do we need to be reminded of the fact that at the beginning of Modern Times the East partially succeeded in resisting this encroachment for several centuries. Yet, the latter four of our fundamental six noneconomic forces have eventually developed such a great expansive pressure in the West that substantial sectors of the Eastern economic structure also had to give way. This was the era of explorations, discoveries, expeditions, colonization, and of the gradual division of the "rest of the world" among the Western powers. Imperialistic expansion appeared in the foreground. In the background, however, the rest of the world was forced to surrender. The East accordingly had to subordinate large segments in the structural development of its economy to the modern societary forces of the West.

The outcome is marked by two prevalent economic trends of the East. First, a remarkable degree of genuine *resistance* still survives. It is spectacularly displayed by the partially still vigorous predominance of parental and transcendental interests in some of the more remote Eastern areas. There, the ancient and "real" features of the Eastern economic stucture still prevail. We mean those features which are somewhat comparable to the prehistoric, antique, and medieval structure of the Western economy.

Second, the more accessible areas of the East have reacted in a rather unexpected way to the infiltration of Western ideas. After having become permeated—even if not always sincerely imbued—with the Western "spirit," these areas more or less readily reorganized their own production, distribution, and consumption along the lines dictated by the precepts of the modern Western societary forces. As a result, the Western masters soon had to realize the Eastern growth of economic activities similar and partially equivalent to their own. The next step necessarily pointed toward a gradual weakening of the logical and moral justifiability of Western domination and toward a concomitant *disintegration of colonial imperialism.* It still has to be seen how far the recent collapse of colonial empires will proceed. It also has to be seen to what extent Westernization of the recently liberated Eastern peoples is "definite" or "sincere." But the most important practical question is whether a certain revival of the Eastern parental and transcendental interests as guiding forces of collective planning and private-enterprise activities will not ensue.

As another viewpoint aimed at reducing the rigor of the argument involved, we may admit that there are areas and people in the West which are evidently more "Eastern" than some areas and people in the East, and vice versa. It is well-known that in the structural economic shifts of some more or less remote parts of America, England, France, etc. the instincts of reproduction and religion still play a role which is not only virtually or potentially but also actually greater than in some easily accessible parts of Japan, China, India, etc. Here we have further items corroborating the significance of the relevant spatial and temporal *overlappings.*

CHAPTER V

MOTIVES OF PLANNING (*CONTINUED*)

Political Concentration

I

As FAR as the aspects of *public law* are concerned, parental interests have brought about a long series of societary entities. The latter range from kinship, clan, and tribal communities to the conglomeration of races on the basis of more or less expansive and imperialistic political programs. The formation and growth of the antique Greek πόλις, of the medieval Italian and German city communities, as well as of the Roman, the Byzantine, and the German-Roman empires largely exemplified this line of development. Xerxes, Alexander the Great, and Genghis Khan were leaders of similarly constructed communities. Concomitantly, more or less elaborate systems of public law were drawn up.

Wars, public works, and various other governmental activities necessitated public expenditures and the budgeting of public revenues. Another requirement obviously pointed toward directly or indirectly connected acts of planning for the production, distribution, and consumption in the collectivities concerned. We have already seen that in many cases various elements of the religious instinct were closely linked to this development. It is frequently not easy to decide whether the parental or the transcendental interest was more powerful in such a *cooperation* between the two fundamental societary forces. The latter certainly prevailed in the ancient Hebrew community, in the Empire of the Caliphs, or in the medieval rise of the Christian Church. In spite of the pertinent collaboration, conflicts arose. The event of Canossa is a case in point. All in all, however, the first two categories of noneconomic societary forces succeeded up to the end of the Middle Ages in offering a harmoniously satisfactory framework for economic planning.

This approximately harmonious collaboration was burst when the third category appeared on the horizon. It brought the idea of *territorial state sovereignty* into prominence. As a peculiarly Western idea,

it gradually divorced the West from the East. At the same time, it substantially contributed toward creating the new era of the early Modern Times. Niccolò Machiavelli's *Il Principe* became the predominant pattern of sovereign rulers. Somewhere in the remote background, a reminiscence of Oriental luxury, absolute rulership, tyranny and despotism, as seen and experienced by the Crusaders, was obviously active. We could also refer to a strife between the thesis of the spiritual power displayed by the Church and the antithesis of the material expansion represented by the adventurous undertaking of the Crusaders. By doing so, we could stress the close alliance of material luxury and political power with which the Crusaders familiarized themselves while contacting Venice, Byzantium, and the Arab civilization.

The postulate of territorial sovereignty thus became closely linked to the quest of the sovereign ruler for *material wealth*. Kings and other absolute monarchs in the first two or three centuries of Modern Times endeavored to lead their countries along such paths of socioeconomic development. The new principles soon proved to be stronger than the partially opposed medieval forces on which the power of the Church and the Holy German-Roman Empire were based.

Within the territorial collectivity represented by the new sovereign state,[1] the institutions of classical Roman public law were vigorously revived and clearly segregated from the principles of the medieval canon law. Rudimentary elements of collective economic planning in the new territorial state could thus be given a more clear-cut public framework. Collective wants could more easily develop into *public wants*. It then became a primary responsibility of the sovereign monarch and of his absolute government to provide the goods and services required for the gratification of such wants. Yet to be able to do so, he first needed to be strong and wealthy.

II

Any *pauvre roi* became highly undesirable. The new sovereign state needed a wealthy, absolute king. Yet, any *pauvre royaume* would

[1] Cf. John R. Commons, *Institutional Economics,* New York, 1934, pp. 677*ff.*; Pitirim Sorokin, *Contemporary Sociological Theories,* New York, 1928, pp. 700–705; H. E. Barnes, *Sociology and Political Theory,* New York, 1924, pp. 185–188; David Snedden, *Educational Sociology,* New York, 1922, pp. 103–112, 213*ff*; Floyd H. Allport, *Institutional Behavior,* Chapel Hill, 1933, pp. 197–301; John S. Gambs, *Beyond Supply and Demand,* New York, 1946.

necessarily impoverish also its king. In the long run, only wealthy kingdoms could secure the desirable level of wealth and power for their kings. But any kingdom would be poor as long as it had *pauvre paysans*. Therefore, first the peasant had to be made prosperous. This was a necessary condition for the elimination of the discrepancies implied by the then popular slogan: "Pauvres paysans, pauvre royaume; pauvre royaume, pauvre roi." Closely connected with agriculture, crafts and trading also had to thrive for the purpose of raising the level of general welfare in the country and making the king sufficiently wealthy. Only thus could he be enabled and expected to cope with the complex economic tasks of the state community.

It is easy to see that the familiar record we here play was the program of *mercantilistic* economists. There were, of course, many differences and sundry disputes among the mercantilists with respect to particular details in the field of economic thinking and economic policies. Yet, practically all of them agreed with what may be termed a common denominator of all mercantilistic doctrines. Such a denominator was given by the postulate that the absolute and sovereign state had to stipulate a series of more or less rigorous rules aimed at directing production, distribution, and consumption toward the unquestionable goal of fostering communal welfare. From the viewpoint of our present argument, it is unessential how far the directing state activities concentrated on a regulation of foreign or domestic trade. Similarly insignificant is how far they emphasized the desirability of a so-called favorable balance of trade with respect to bullionistic objectives or to what extent they advocated industrialization. It is more important that the pertinent measures of economic planning were meant to be consistently subordinate and subservient to the general political goals of the new absolute and sovereign state. In other words, this state became the relevant economic collectivity.

To be sure, mercantilistic collective planning was by no means extensive if compared with the modern comprehensive schemes of collectivization. The typical economic policy of the early European sovereign state took considerable pains to facilitate and promote private-enterprise activities. To this effect, all available devices of governmental support were carefully mobilized. Yet, even profit maximization was consistently designed to fit into the general scheme of state economic policy. Of course, the freedom of private enterprise was

readily curtailed wherever and whenever it came into conflict with the mercantilistic principles of state economic planning. In this sense, however, mercantilism succeeded in securing a relatively satisfactory *harmony* among individual, mixed, and collective want satisfaction.

III

It is well-known to economists that the *laissez-faire* program of the *physiocratic* school and of the subsequent *classical* doctrines originated and developed in opposition to the mercantilistic interferences with economic life. Physiocrats and classical economists demanded a substantially wider scope for the freedom of private-enterprise activities than the mercantilists. Such activities were based on profit maximization, competition, and unhampered price formation in the free market for goods and commodities. But at the same time, the physiocratic and the classical doctrines also emphasized the welfare interests of the community primarily represented by the sovereign state.

We must not forget that the economic meaning of the physiocratic and classical *laissez-faire* theory and the political ideas of the French Revolution had much in common. Both of them were deeply rooted in the philosophy of the Enlightenment. Both of them accordingly emphasized the exigencies of rationality, progress, and freedom. For both of them, however, *natural freedom* meant unhampered economic and political activities of all individuals within the social framework of the sovereign state, whose main stronghold and support was the early capitalistic bourgeoisie. Both of them added or implied that a similar freedom and fraternal understanding should prevail among the various sovereign states in the great family of humanity at large. Therefore, the sovereign territorial state was for both of them the backbone of the whole societary structure. They accepted the existence of this state, explicitly or implicitly, as a self-evident and thoroughly justified fact. Generally speaking, it did not even occur to them to question the justification involved. Nor did they propose another structure of society conglomeration.

State interference was the only form of restriction, imposed upon the freedom of individual economic activities, which the classical economists were willing to tolerate when necessary. They even regarded a certain limited amount of this interference as a matter of course. It will be shown later that Adam Smith admitted the necessity of several

groups of state activities which obviously interfered with individual economic freedom. To a certain extent, he even considered them self-evident. So did the great majority of his followers. The essential point for the present discussion is that the scope of such readily acknowledged and accepted state activities included planning for the solution of those economic problems with which the state community unavoidably had to cope but which involved tasks of production, distribution, or consumption either too big or not sufficiently profitable to be taken care of by private enterprise. In fact, this argument involves a flawlessly logical program of partial collective planning. With its essential principles, even many of the modern adherents of moderate planning in a well-balanced composite economic structure could agree.

At the same time, physiocrats and classical economists intransigently *objected* to all restrictive regulations coming from societary entities or political agencies other than the sovereign territorial state. From such a standpoint, domestic impediments established by societary bodies other than the state were as much fought and rejected as any interstate —or international—hindrances to the free interchange of goods and services. The first victims of this drive were the still surviving remainders of guild organization and feudal privileges. Many church, municipal, and other local prerogatives, based on public law and hampering the freedom of production and distribution, were subsequently eliminated.

In this sense, economic policies dictated by the classical *laissez-faire* doctrine partially continued the practice which had been inaugurated in earlier centuries of Modern Times. We have already pointed out that the relevant practice was consistently aimed at fostering and strengthening the significance of the *state collectivity* at the expense of all other—smaller or larger—collectivities. Yet, the program of *laissez-faire* clearly differed from mercantilistic policies inasmuch as the former tolerated only a substantially smaller amount of domestic state interferences than the latter advocated. Another difference is that the former believed in a suppression of all obstacles to foreign trade. Incidentally, the former also regarded it as a self-evident necessity that commercial treaties aimed at a liberation of foreign trade should be negotiated among the sovereign states and most certainly not among any other societary entities or agencies of collective economic planning.

As early trade capitalism gradually grew into industrial capitalism

and later into expansive finance capitalism fostering various patterns of monopolistic concentrations and combinations, the fundamental *state structure of capitalistic organization* was retained. At the same time, it was still the capitalistic firms, combines, or groups organized within the different sovereign territorial states that tended to expand also beyond the state limits. Such an expansion could then be accomplished by a quasi-imperialistic subordination of foreign economies. Alternatively, it could also be achieved by the negotiation of commercial agreements with similar capitalistic combines or groups in other states, on the basis of a coordinated collaboration. But also in this respect, the basic framework of the socioeconomic structure was consistently the sovereign territorial state. The latter's underlying creative forces acted as predominant motives for all sorts of economic planning.

National Conglomeration

I

During the nineteenth and at the beginning of the twentieth century, a meaningful *realignment* and readjustment took place about the prevalent motives of economic planning. The first two categories of economic forces went on retreating into the realm of virtual or potential motives. The third category gradually weakened. It began to fight a losing battle against the rapidly rising power of the fourth and fifth categories. Eventually, the sixth category also appeared on the horizon. It disclosed favorable potentialities for a spectacular future progress toward hegemony.

While the third category prevailed, the sovereign territorial rulers kept on trying to buttress their position by leaning simultaneously, as far as possible, also on the first two categories. They were aware of the fact that they could not well consider themselves *tribal or racial kings* without assuming a then already obsolete, or at least rapidly obsolescent, attitude. Nevertheless, even such attempts have been made. For example, the Czar of Russia liked to be called and to regard himself as the father of all Russians. Partially more successful was the attempt of sovereign absolute rulers to declare themselves supreme heads of leading "state" religions, denominations, or churches. Thus they could rule over their subjects also with respect to the latter's transcendental instincts. Yet, also such attitudes were widely considered rather "Ori-

ental" or "medieval," *i.e.*, outmoded as far as the Modern Times of the West were concerned. For a while, the pertinent endeavor of absolute monarchs was a significant factor in Turkey, Russia, and in some other Eastern countries of Europe. But it has never been able to make any substantial headway in the European West.

The gradual fading of the purely political force acting in the background of the early sovereign territorial states was undoubtedly rooted in the decline of the whole underlying idea of absolute rulership. But this political metamorphosis represented only one of the causal factors at work. Another factor was the growing intrinsic discrepancies of the capitalistic economy which supplanted the earlier mercantilistic system. The sovereign state was closely linked, in the latter phases of its development, to the rising capitalism. On principle, the absolute—although "enlightened"—territorial ruler would have gladly accepted the whole program of *liberté, égalité, et fraternité* for the relationships among his subjects but not of course for the relationships between the latter and himself. But capitalistic progress proved to be definitely opposed to equality. At least concerning the distribution of income and wealth, it led to increasingly disturbing *inequalities*. The latter in turn shattered the whole socioeconomic structure of the sovereign state. It soon became evident that this structure could not be saved even by the above-mentioned attempts at compromising with the ancient parental and transcendental interests.

As a last refuge, many sovereign rulers tried to tie the sinking ship of their territorial state to the rapidly strengthening pillar of the new, youthful, and vigorous societary force termed *national conglomeration*.

What was the essence of this new force? It is clearly the task of sociological research to give a systematical answer.[2] In the present context, it might be enough to refer to certain multifarious aspects of a factual alliance among historical, religious, cultural, racial, linguistic, geographical, political, and economic ties. We mean the alliance

[2] Cf. I. Zangwill, *The Principle of Nationalities,* New York, 1917, pp. 32–57; C. A. Beard, *The Idea of National Interest,* New York, 1934, pp. 50–88; C. J. H. Hayes, *Essays on Nationalism,* New York, 1926, pp. 44–52; Franz Boas, *Anthropology and Modern Life,* New York, 1928, pp. 78–101; Henry Pratt Fairchild, *General Sociology,* New York, 1934, pp. 242*ff*. Cf. also the literature specified in the author's *Philosophie in der Volkswirtschaftslehre,* Vol. 2, Jena, 1926, pp. 171*ff*. and 191*ff*.

which actually resulted in bringing about whatever we may term *nations* in the modern sense of the word. It is obvious that none of these ties or factors could be qualified as generally prevalent or as having had any consistently initiative role in the formation of modern nations. None of the factors can be said to have proved indispensable, necessary, or even essential. None of them can be considered exclusive or able to establish clear-cut border lines among various nations. Yet, all of them may develop into such connecting links as customarily contribute to what we may call nationalistic spirit or unity. The more of them that cooperate in this sense, the more closely knit and the stronger the national community that may develop.

In particular, we have to stress that our first three categories covering the parental, religious, and political interests more or less efficiently participated in bringing about the fourth category of national concentration. So did, of course, the purely economic forces of social development. But they had to be supplemented and completed by common historical reminiscences, common cultural traditions and ambitions, by the fact of neighborhood or similar geographical ties, by the powerful link of a common language, and by similar connecting bonds. Although none of these additional common features were indispensable, the *cooperation* of all of them proved to be of great potency.

The tendency toward national concentration rapidly rose about the end of the eighteenth and the beginning of the nineteenth century. The spirit of *gloire et prestige* stressed by the Napoleonic expansion, and in due time taken over, utilized, and turned against Napoleon by his enemies, made an obvious and substantial contribution. No wonder that the decadent force of the sovereign territorial state made a last and desperate attempt to ally with its young rival, to whose formation and growth it had rendered assistance.

But such alliances were in advance doomed to failure. To be sure, some of them made a superficially promising start. They were able to stretch over several decades or even over a century or so. But in all cases, the youthful rival eventually proved to be stronger. Wherever it did not prevail by gradually overshadowing its aging ally, it took the lead as victor in an open clash. The *transition* from the hegemony of the third to the predominance of the fourth category was correspondingly smooth and gradual or abrupt and involving painful disruptions.

II

As an over-all result, the fact that the sovereign territorial state could not harness the spread of the national movement became sooner or later evident. Particularly so, when the latter began to cut across state borders. In such cases, the factor of a common *language* usually played an important role. The great significance of this factor could not be denied, at least in the area where the German language was spoken. To be sure, the German idealistic and romantic philosophy made considerable efforts to point out deeper roots of the national community.

It was easy to refer to some of the Kantian doctrines which offered a suitable bridge leading from the then prevalent basic theorems of the Enlightenment to the rising *idealistic thought*. Thinkers of the type of Fichte, Humboldt, Schelling, the two Schlegels, Schleiermacher, and Hegel collaborated in working out the required details. In England and France, the influence of Edmund Burke, Chateaubriand, and Madame de Staël, respectively, pointed toward partially related viewpoints. Friedrich List, Richard Jones, as well as Wilhelm Roscher and other members of the Historical School, took charge of transplanting the national motive into economics.

Economic policies in the German-speaking countries readily echoed. The *Zollverein* in the 1830's, the formation of the Second *Reich* in the 1870's, and the *Anschluss* of Austria in the 1930's were some of the major steps along the lines of this development. The first *Marcia su Roma* led by Garibaldi, the successful *Irredenta* of D'Annunzio, and the *Italianità* of Mussolini were at least partially akin phenomena or parallel events. Many European countries embarked on similar schemes. A strong national movement made spectacular headway in the United States of America. Nationalism soon found fertile soil in practically all other parts of the world.

Concomitantly, the state framework of economic planning began to make place for *national economic planning*. There was obviously no conflict between the two structural concepts as long as national movements did not cut across state borders. Yet, wherever they did and whenever corresponding controversies arose, the postulates of national productivity, as first formulated in the National System of List, soon proved to be more efficacious.

National economic planning was able to utilize the previous experience of mercantilistic and neomercantilistic state policies. This type of planning eventually presented itself as a mature fruit of the long strife between governmental intervention and *laissez-faire* economy. With respect to the national framework of economic activities, a clear-cut dichotomy developed between *intranational,* or domestic, and *international,* or foreign, economic relations. Private enterprise and collective planning became largely dependent on the multifarious aspects of this dichotomy. The latter's closely knit network spread extensively over the whole field of production, distribution, and consumption. Within such networks, however, both the domestic and the foreign economic relations increasingly depended on the economic goals of the nation. The same goals also assumed an initiative role about the dynamic interdependence of state and nation. This interdependence sooner or later resulted in various forms of merger. Such mergers even took place where the forces of national concentration displayed their above-mentioned tendency toward cutting across the former state borders.

The outcome was the modern *national state* or federation of states. To its economic planning all similar activities of the subordinated political and administrative communities, such as counties, districts, cities, towns, and villages, had to conform. So had virtually all such recent hypernational organizations as the League of Nations or the United Nations. Nevertheless, in certain respects the latter might be inclined to restrict the scope of national economic planning and to interfere with some of its activities. A corresponding scheme of international, or hypernational, economic planning might be the trend of future developments. Until the middle of the twentieth century, however, such a trend could not become actual reality.

When speaking nowadays of collective economic planning, we primarily think of national planning. In the last quarter of a century or so, the various elaborate economic plans comprising several years, begun with the first Soviet Russian *Piatiletka* of 1927, have also been worked out within national frameworks. National planning similarly had to bear the major part of the burden represented by the weighty economic problems of the *Great Depression* in the 1930's, of the two *World Wars,* and of the subsequent reconversion period. Looking at

this whole development from the standpoint of private-enterprise activities, we may accordingly state that national economic planning has grown into a modern and almost omnipotent leviathan.

Class Organization and Occupational Grouping

I

As far as shifts in the economic structure are concerned, there is a clearly discernible connection between the *French* Revolution of the late eighteenth, and the *Russian* Revolution of the early twentieth century. The former, which also must be mentioned here as a signal event, gave rein to the capitalistic bourgeoisie. The latter established the hegemony of the communistic proletariat. The former instigated the force of national concentration. The latter launched the drive for class organization.[3] What the former created in terms of national economic structures has been thus dialectically opposed by the latter. It is sufficiently well-known that both of them were the results of farfetched and protracted intellectual disputes clustering around the questions of enlightenment and of socialism, respectively. On the one hand national concentration, as an aftermath of the French Revolution, partially compromised with and partially cut across the borders of the previously prevalent sovereign absolute states. On the other hand class organization, as emphasized by the Russian Revolution, shows a tendency toward partially compromising with and partially cutting across the borders of national concentration.

Ever since the publication of the *Communist Manifesto* of Marx and Engels in 1848, the program of a world-wide political and economic organization of the proletariat, as a *social class,* has been active in the background of structural economic shifts. In the course of its gradual strengthening, this program has developed a powerful propelling force. The three Internationals, the Comintern, and the Cominform are major high lights on the path of the relevant progress. Multifarious variants of trade unions and employers' associations represent the battle lines of the class struggle as visualized by Marx, stressed by the

[3] Cf. Charles Horton Cooley, *Social Organization,* New York, 1913, pp. 301–312, 402–410; E. A. Ross, *The Principles of Sociology,* New York, 1921, pp. 517–524, 580, 684; Franklin Henry Giddings, *Elements of Sociology,* New York, 1925, pp. 201–215; Florian Zaniecki, *Social Actions,* New York, 1936, pp. 35–110.

Marxists, and brought to a victory of the proletariat by Lenin. Stalin succeeded in applying the force of proletarian class organization to the creation of one of the two leading world powers. The opposite leading power has been compelled by these events to emphasize its capitalistic class organization basically rooted in the traditions of the French Revolution. Whether it is already aged, decadent, and accordingly fighting a losing battle will have to be seen. The answer will probably be given by the early second half of the twentieth century.

In this strife, national economic planning has been placed in an increasingly precarious position. It is true that for the time being both halves of the world, the capitalistic as well as the communistic, are still retaining, to a greater or lesser extent, the traditionally national shells. When we knock on them, however, they sound more and more like partially hollow or entirely empty shells. Toward the middle of the twentieth century, only the nearsighted and narrow-minded economists plan in strictly national terms. To be sure, the necessity of such an economic planning is clearly given by the superficially still prevailing institutional pattern of national states or federations of states. But the actual forces at work are those represented by *capitalists* and *proletarians* as social classes. The middle class between the two is deplorably wavering. It is thereby further digging its own grave. Whoever prefers to search the wider horizon must clearly recognize that the perspectives of private enterprise and collective economic planning are also being determined to an increasing extent by the pertinent issue of class organization.

II

As far as its role in structural economic changes is concerned, the sixth category of fundamental forces acting behind the screen of social development represents only a future potentiality. *Occupational and professional interests* as poles of societary grouping have undoubtedly a time-honored and partially glorious past.[4] The long centuries of medieval guild organization and the extensive societary significance of the pertinent elaborate ramifications are cases in point. The local, na-

[4] Cf. Cecil Clare North, *Social Differentiation,* Chapel Hill, 1926, pp. 8–15; Nels Anderson and Eduard Lindemann, *Urban Sociology,* New York, 1928, pp. 261–270; Arthur J. Todd, *Industry and Society,* New York, 1933, pp. 55–67; Paul H. Landis, *Social Control,* New York, 1939, pp. 273–285; Pitirim A. Sorokin, *Society, Culture, and Personality,* New York, 1947, pp. 211–218.

tional, and international gatherings and associations of individuals belonging to various agricultural and industrial occupations, participating in commerce and banking, etc., have a well-established significance. Also organizations drawn up by members of various professions, such as artists, scientists, physicians, lawyers, professors and other educators, engineers, etc., congresses of clergymen, and many similar congregations have long attained a certain over-all social importance. After the low tide marked by the downfall of the medieval guilds, this importance has again disclosed, more recently and in certain respects, features of gaining momentum. For the time being, however, no such interest groupings are strong enough to exert a decisive influence upon collective economic planning or upon private-enterprise activities. Two salient items may be pointed out in the causal background of the relevant deficiency.

In the previous epochs of social development paternal, religious, political, and national forces consistently overshadowed the importance of occupational and professional interests. The guild organization managed to find a peculiarly complex relationship of subordination and coordination on the basis of which it could more or less successfully cooperate with the medieval Church. But it rapidly succumbed under the pressure of the subsequent political and national trends, with which it could not efficiently compromise. Nevertheless, other occupational and professional groupings were able to survive mainly by emphasizing the underlying instincts of workmanship. Thorstein Veblen was right in pointing out this factor. More recently, the groupings in question have also begun to stress the purely economic aspect of their activities pertaining to their functional contribution to production, and to their functional shares in the distribution of income and wealth. Offhand, such a stress might have been expected to add considerable weight to occupational and professional groupings in the competitive turmoil of the capitalistic strife for bread and for the survival of the fittest. Actually, it was not so. A new variable entered and stole the show. We have already seen that in the course of the strife concerned dialectic motives of *class organization* emerged. They soon gobbled the major part of the purely economic interests linked to occupational and professional activities. As a result, participants in the latter were either anxious or forced to get into line with some of the prevalent classes and to forget about their own, more particular economic interests. Occupational and professional groupings have thus largely been relegated

to concentrating on their noneconomic pursuits relative to the merely technical aspects of workmanship.

The second item in question refers to the outcome of the Second World War. It is well known that occupational and professional groupings played a paramount role in the corporative organization of the Italian *fascist,* and of the German *national socialist,* economy. In both economies, sound and unsound elements were strangely intermingled. It would not have been easy to disentangle their puzzling Gordian knots. When the latter were cut by the sword of the victors in the Second World War, the sound elements of occupational and professional grouping were also thrown into the large wastebasket of vanquished and accordingly discredited societary principles. There they are hidden by the rubble, and buried under the ruins, of a conquered and sunken world.

Yet, it is probable that the victorious part of the world will not be prejudiced for any length of time by the relevant disappointing experience. We are likely to ask, sooner or later, whether the over-all demerits of occupational and professional groupings actually outweigh their merits. Then we shall probably recognize that the connection of the underlying motive forces with fascist and national socialist economic ambitions was only incidental, superficial, and but a *short intermezzo* in the long history of these forces.

A stage of social development may sooner or later be reached where we decide that the pertinent sixth category is more efficient in securing and maintaining *peaceful understanding* than any of the preceding five categories. In other words, we may then ascertain that human beings are able to understand each other with more benevolence and to cooperate more peacefully on the basis of their occupational and professional interests than by emphasizing their racial, religious, political, national, or class aspirations. We may find that in the former interests connecting bonds of complementarity or supplementarity prevail, while the latter aspirations are marked by the predominance of a not necessarily friendly emulation or competitive animosity. Or else, we may at least be willing to admit the sixth category as a more or less equal member participating in a better balanced future cooperation with the other five categories.

In the present context, it is a secondary question which *institutional hierarchy* in the customary horizontal and/or vertical organization of occupational and professional interests proves to be more efficient

from any relevant viewpoints of the economic structure. In fact, collective economic planning as well as private-enterprise activities can be guided favorably by various empirical forms of the pertinent hierarchy. Constructive suggestions can certainly be derived even from recent experience with the industrial or craft principle, as opposed to the social class standpoint in the development of trade unions and employers' associations.

III

A few more words on the conventional contradistinction between West and East may be added. We have already seen that the process of so-called *Westernization* began when the East gradually absorbed the political interest and imitated the national ambitions of the West. Yet, the political absorption in this sense was not so efficient as the nationalistic imitation. The expansive power of the Western sovereign and absolute states in the early Modern Times was able not only to colonize the rest of the world but also proved strong enough to keep down, to a certain extent, any significant duplication and rise of similar powers in the overseas colonies. The whole setup considerably changed as soon as these colonies began to imitate the Western nationalistic trend. The sweeping progress and rapidly acquired political momentum of young nationalistic movements in the Americas or later in South Africa are frequently quoted examples. Somewhat slower, but eventually not less vigorous, was the spread of nationalistic tendencies in those Asiatic and African countries in which peoples of the Eastern stock prevailed. Japanese, Chinese, Indian, Burmese, Siamese, Philippine, Indonesian, Egyptian, Ethiopian, and related national movements have more or less succeeded in the last few decades in eliminating, or at least in substantially weakening, the ties of Western domination.

Even more conspicuous and comprehensive has been the Eastern reception of the fifth and sixth categories of societary forces. The ancient caste organization and similar structures may display, in certain respects, a remarkable degree of persistence and resistance against Western infiltration. Yet, the more readily some Eastern countries have accepted in previous decades the methods of capitalistic production, the more rapidly they are being subjected nowadays to the increasingly significant strife between capitalists and

proletarians. Far from objecting to or hampering this development, some leaders of Western *class* organization are even anxious to secure the support of congenial groups and strengthening auxiliary troops in the East.

The general perspectives are similar for a future spreading of our sixth category over the East. Convinced proponents of the above-discussed *occupational* and professional grouping will probably regard it as a foregone conclusion that it is necessary to include not only the West but also the East. Such a development will probably be justified. The infiltration of the East by the stride of Western class organization will sooner or later advance sufficiently to smooth the path for a similar encroachment by the societary force of up-to-date occupational and professional groupings.

The scanty remainders of any discernible border line between Western and Eastern types of economic structure will concomitantly be weakened or deleted. It is probable that also the remaining differences between West and East with respect to the guiding societary motives of private enterprise, composite activities, and collective planning will accordingly vanish. Important further steps toward a *world-wide coordination* and cooperation in the field of structural economic development will then likely be made.

When referring to West and East, we here obviously depend on the traditionally accepted and used meaning of these terms. We consistently relate them to the result of a time-honored racial and cultural issue, which has been developing for many centuries. In the center stands the question mark of the white man. Consequently, we do not allude to that more superficial juxtaposition of West and East which became fashionable after the Second World War. This terminology attempts to distinguish between the *capitalistic* countries led by the United States of America and the *communistic* orbit of influence headed by Soviet Russia. But such an interpretation of any differences between West and East is likely to be as ephemeral as many similarly particular applications and analogical or metaphorical usages of the terminology concerned. Incidentally, the now popular contradistinction between capitalistic and communistic spheres will probably be dissolved by a more consistent future progress of composite economic structures.

CHAPTER VI

STRUCTURAL MORPHOLOGY

Material and Spiritual Wants

I

AFTER THE foregoing sketch of a longitudinal section referring to the historical development of the motive forces which act in the causal background of collectivization and reprivatization, our next step is to visualize a corresponding *cross section*. The latter may best be related to the present stage of development which typically prevails in the countries of Western civilization. We may also include the more or less Westernized sectors of the East. When doing so, we interpret the contradistinction between West and East in its traditional and more general meaning.

As far as the interdependence of *economic* and *noneconomic* motive forces is concerned, there is little to be added to our comments on the pertinent aspects of the longitudinal section. The present institutional setup affords a relatively clear picture of the interdependence in question. In periods of over-all commotion and vigorous shifts the significance of this interdependence is usually brought into sharper relief than in eras of smoothly balanced socioeconomic tranquility. Purely economic motives of conglomeration, on the one hand, and the six different categories of noneconomic societary forces, on the other hand, show more or less clear-cut contours of partially competitive and partially complementary relationships in the turmoil of postwar reconversion. All six noneconomic categories undoubtedly are reflected in this turmoil. Their active participation results in the empirically given multifarious hierarchies of societary forces. The mutual relations of comparative strength among such forces necessarily entail a great variety of spatially conditioned differences among the hierarchies concerned. At the same time, each of the noneconomic forces is influenced and directed, to a greater or lesser extent, by its own mutual links to the economic motives of structural evolution. Such links, in turn, may produce manifold cross

connections with other noneconomic forces and with the latter's relevant economic motivations.

The obvious outcome is a complex maze of institutional patterns adopted—or of different garments donned—by the present interrelations of private-enterprise activities and collective economic planning. On the following pages, we attempt to survey and to explain the puzzling manifoldness of these patterns from the schematic viewpoints of a *morphological systematization*. In doing so, we endeavor to contribute to an adequate appreciation of the structural differences among the various economic systems in terms of conventional "isms," which range from capitalism through communism.

II

We have tried to express the motive forces of societary integration as wants. We have accordingly juxtaposed economic wants to six various categories of noneconomic wants and stressed their mutual interrelations, which determine the fundamental structural shifts in our economic development. Is it justifiable to regard the economic wants concerned as *material* wants and to consider their noneconomic counterparts nonmaterial, or *spiritual,* wants? The formal exploration of this question clearly points toward some of the basic issues acting in the background of the old controversy between materialistic trends and idealistic tendencies in economic life and in economics. In the latter field, it has long been a fairly generally accepted standpoint that economic thinking should concentrate on, and accordingly restrict its scope to, material wants and gratifications. At the same time, it is customary to allow for the great importance of any nonmaterial wants and satisfactions, which are referred to other branches of social science. In view of the prevalence of this standpoint, we may assume an approximately synonymous meaning of the terms "economic" and "material," as well as of the adjectives "noneconomic" and "nonmaterial." It is evident that such a synonymity is not general but must be strictly limited to the given application of the adjectives concerned. We may also suppose that "nonmaterial" in this sense is equivalent to "spiritual," ideal, or intellectual.

Much more problematic is the justifiability of the next logical step. This step involves the further assumption that material wants and

gratifications can approximately be distinguished from spiritual ones. That they often cannot clearly be distinguished is a psychologically, physiologically, and biologically well-established fact. In the background stands the fundamental question concerning the haziness of the border line between material and spiritual categories at large, or between the "matter" and the "spirit." The latter may be also termed, in such a sense, the "idea." As soon as we touch upon these two general categories and on the problem of their distinguishability, we are unavoidably facing issues which have a basic significance in the domain of *metaphysics*. Therefore, when making the assumptions concerned, we may derive the distinction between matter and idea from widely accepted arguments in metaphysics. We may accordingly refer the substantiation of such assumptions to the domain of metaphysical research.[1]

A similar reference must obviously be made with regard to the question whether material wants are or are not more important than spiritual wants. The question goes back to religious beliefs concerning the first acts of creation or to metaphysical hypotheses relative to the first processes in the formation of the universe. In the present context, it might be sufficient to mention the fundamental significance of the underlying controversy between metaphysical materialism and idealism. The corresponding contrasts between ethical or *historical materialism* and *idealism* are self-evident corollaries.[2] The essential viewpoints trace back not only to the works of such men as LaMettrie, Helvétius, Holbach, Kant, Hegel, Feuerbach, and

[1] Pertinent aspects of the multifarious discussion between the adherents of metaphysical materialism and idealism are explained, and critical comments on the wide scope of the relevant literature are to be found in the author's *Philosophie in der Volkswirtschaftslehre,* 2 vols., Jena, 1923–1926; cf. in particular Vol. 2, pp. 75*ff.* and 469*ff.* Cf. also the author's "Geschichte der Wirtschaftsphilosophie," in *Geschichte der Philosophie in Längsschnitten,* edited by W. Moog, Berlin, 1931, Vol. 1, pp, 44*ff.* and 51*ff.* Good summaries of the more recent development of these metaphysical thoughts, with special emphasis on American theorems, are presented by Everett W. Hall, "Metaphysics," in *Twentieth Century Philosophy, Living Schools of Thought,* edited by Dagobert D. Runes, New York, 1943, pp. 145*ff.*; Bertrand Russell, *A History of Western Philosophy,* New York, 1945, pp. 730*ff.* and 782*ff.*; B. A. G. Fuller, *A History of Philosophy,* New York, 1945, pp. 451*ff.*

[2] The philosophical perspective, the economic application, and the literature of these debates are discussed in the author's *Philosophie in der Volkswirtschaftslehre,* Vol. 2, pp. 501*ff.* and 524*ff.*

Marx but also to the ancient Greek and Oriental philosophers, and indeed to the founding of the predominant religions.

Consequently, there is no use in arguing within the domain of economics whether material wants can or cannot be distinguished from spiritual wants and whether the former should or should not be considered more important than the latter. Instead, our reflective procedure in economics will be more appropriate if we simply assume, for the purpose of economic reasoning and in the above-indicated sense, the relevant *distinguishability*. We may similarly refer any decisions on the importance concerned to metaphysics as well as to related fields. Only after having reached our pertinent evaluations in those other fields or after having taken over such conclusions from them, can we adequately approach the institutional problems at issue. We refer primarily to the problems pertaining to the relative significance of purely economic motives and of the six non-economic societary forces for collectivization and reprivatization.

To be sure, a more or less definite answer to such problematic issues is indispensable for the economist whenever he distinguishes between material and spiritual wants and evaluates corresponding gratifications. But it is important for him to recognize his limitations as an economist. He must also realize his relevant *dependence* on domains of thinking other than economics.[3] Before examining the purport of this inference for the various prevalent forms of economic structure, we may advantageously point out two further similarly meaningful hierarchical relations.

Ethical and Sociophilosophical Bases

I

In addition to placing in perspective the fundamental metaphysical problem pertaining to the essence of the whole universe, we also must face similarly *basic issues* in the realm of ethical and of sociophilo-

[3] This is the essential outcome of the significant philosophical, sociological, and economic dispute about the possibility of scientific value judgments. With regard to several pertinent details and to the literature concerned, cf. the author's *Economics in the Twentieth Century,* English translation edited by Edwin R. A. Seligman, New York, 1931, pp. 19*ff*., 49*ff*., 132*ff*., 226*ff*., and his *Geschichte der Wirtschaftsphilosophie,* pp. 60*ff*. A more recent evaluation of the related gnosiological and criteriological problems has been presented by Lionel Robbins, *An Essay on the Nature and Significance of Economic Science,* London, 1935, pp. 90*ff*., and 147*ff*.

sophical considerations. The former hinge on the difference between distributive and equalitarian justice. The latter cluster around the appropriate interpretation of the link between the individual and society.

In the ethical field, there seems to be little doubt that the goal of human life, as far as its societary aspects are concerned, is the realization or at least the possibly best approximation of what we may term *social justice.*[4] For this goal may be considered the societary expression of the good as an absolute ethical ideal, or value. The relevance of the relations involved for our structural morphology is pointed up by the question of the extent to which social justice is or can be attained by private-enterprise activities, mixed economic systems, or collective planning. The basic issues here presented are clearly manifest in the problems connected with the distribution of wealth and income.

Yet, it has well been known ever since the pertinent dichotomy was disclosed in Aristotelian ethics that the practical meaning of social justice can be interpreted in at least two fundamentally different ways. We have to differentiate between distributive (*διανεμητική*) and equalitarian (*διορθωτική*) social justice.

As classically expressed by Auguste Comte, *distributive* justice obeys the rule, "A chaqu'un selon ses capacités, et à chaque capacité selons ses oeuvres." This standpoint readily accepts the fact of inequalities in nature; it does not attempt to eliminate their economic consequences; and it is accordingly liable to lead to increasing differences in the distribution of income and wealth. So it does by not opposing distributive processes which are aimed at fostering the strength of efficient individuals and at further diminishing the productive efficiency of their weaker competitors. The underlying attitude amounts to a rigorously logical but merciless interpretation of social justice, which clearly approves of a survival of the fittest in the struggle for life.

The standpoint of *equalitarian* social justice adds a certain amount

[4] Cf. the author's *Philosophie in der Volkswirtschaftslehre,* Vol. 1, pp. 87*ff.* and Vol. 2, pp. 437*ff.* Shorter, adequate, but only indirect, explanations are given by Russell, *op. cit.,* pp. 172*ff.*, and by J. H. Tufts, "Ethics," in *Twentieth Century Philosophy,* pp. 9*ff.*

of human kindness to the fundamental significance of the distributive principle. While accepting the latter as a starting point, this standpoint stresses general benevolence based on an explicit belief in some sort of a divinely ordered fundamental equality of all human beings. The implicit assumption is that equality should prevail and accordingly be fostered. The equal weights derived from such a belief, or assumption, might then be added to the different weights of productive achievements on both sides of the scales. The greater the equal weights as compared with the different ones, the more decisive the corresponding equalitarian effects. The outcome is only a matter of arithmetical computation. For example, the basic value or weight of two productive achievements may be 1 and 10, respectively. Their proportional shares in the distribution of income and wealth will be different if we add to both figures the equal weight of 0.1, of 1, of 10, or of 100. An extreme adherent of equality might add even 10,000 or 1,000,000 on both sides of the scales. Then all differences in the domain of distribution would practically be wiped out.

The economic significance of equalitarian social justice may accordingly be expressed in terms of relative size of the additional equal weights in question. The greater these weights, the more conspicuous the difference between distributive and equalitarian justice and the nearer to perfection the *equality* secured by the latter. It is easy to see that in practical life the equal weights concerned are not likely to be chosen as zero or infinite. Real and economically significant choices will always range somewhere between these two extreme values. Such choices will then determine the actual locus of the prevalent economic systems with respect to the postulates of socioeconomic equality.

It is important to realize that here also the ultimate decision has to be made in the domain of ethics, *i.e.*, in a field which is beyond the scope of economics. Economic standpoints concerning equality in the distribution of income and wealth will therefore be corollaries of underlying *ethical* attitudes. So will be our advocacy of lower or higher degrees of socioeconomic equality secured by the multifarious structural patterns which range from an exclusively private-enterprise economy through systems of consistently collective planning.

It is obvious that the institutional significance which we attribute to the various material and spiritual gratifications also will be influenced, at least partially, by similar considerations.

II

As far as the above-stated sociophilosophical problem is concerned, we may relate its economic significance to a dispute on priority and primacy. The core of the dispute is the following question. From the essential viewpoints of economic relationships, which originated first, and which is accordingly still more important: individuals or the societary entity?[5] The time-honored and conventional answer of all *individualistic* doctrines stresses the former. Such an answer is logically clear-cut. It is backed by a great simplicity of the underlying arguments. Their gist has been for thousands of years the assumption that in any system of societary relations we must first have the individuals agreeing on objectives and participating in the relevant processes. The individuals will accordingly always retain their ultimate supremacy over any societary wholes, frameworks, or ties within which the processes are carried on.

The opposite standpoint is maintained by all exponents of *non-individualistic* schools of thought. Yet, this is only a negative definition. It is not easy to find a positive term, or designation, expressing the pertinent viewpoint of such schools. Such customary terms as socialism, communism, collectivism, universalism, totalitarianism, etc., could on principle be employed to describe the schools of thought in question. But these terms have long been expropriated—and also somewhat discredited—by their application to specific trends, groups, or systems, which have developed partially different practical interpretations of the terms concerned. For similar reasons, we could not gain much by turning, for descriptive terms, to other more or less related "isms," such as syndicalism, communalism, nationalism, holism, *étatisme,* or statism. It would be even worse if we tried to identify this view with some of the relevant features of fascism or national socialism. Therefore, it may be better to retain a somewhat

[5] Various aspects of this sociophilosophical problem and of its literature are evaluated in the author's *Philosophie in der Volkswirtschaftslehre*, Vol. 1, pp. 360*ff.*, and Vol. 2, pp. 67*ff.*

clumsy, but less misleading, term by relating our discussion to "non-individualistic" schools of thought.

According to these schools, economic reasoning cannot primarily be interested in the *Homo sapiens or Homo naturalis.* As soon as we focus our attention on the *Homo oeconomicus,* as a species of the *Homo socialis,* we implicitly and necessarily presuppose the dependence of such an individual on some kind of societary bonds, or entities, subject to some sort of economic relationships. These bonds, relationships, or entities must have existed before the types of individuals in which economics is primarily interested. In fact, such individuals can obviously be produced only by the societary bonds in question. Previously active sexual bonds, parental relations, kinship, tribal or racial entities, religious or other transcendental ties, political or national concentrations, class or occupational conglomerations may be regarded as cases in point. These and similar societary entities will always retain not only their temporal priority but also their hierarchical supremacy over their individual members. This is the *esto* in which the *salus rei publicae* as a *suprema lex* is said to be rooted. The *salus individualis* can play only a subordinate role. But the pertinent theorems usually add that individual and social, or communal, welfare can satisfactorily be harmonized only within the societary scope of such a subordination.

Thus the fundamental issue between private-enterprise activities and collective planning is directly given. Individual gratifications will obviously be emphasized by individualistic standpoints in the domain of social philosophy. Collective satisfactions will be brought into prominence by any opposed, nonindividualistic schools of thought. But in this sense, our ultimate choice between the two will again not be determined within the border lines of economic reasoning. It will be decided in the field of *sociophilosophical* considerations, and it will have to be transplanted from there into the sphere of economic thought and life.

Organized Freedom, Anarchy, and Chaos

I

We now may summarize some of our intermediate and preliminary conclusions. We have seen in what sense our attitude concerning fundamental metaphysical, socioethical, and sociophilosophical problems

predetermines our standpoint with regard to private enterprise and collective planning. In those fields of reflective thinking other than economics, we have to shape our opinion on the controversy between material and spiritual wants, between distributive and equalitarian justice, as well as between individualistic and nonindividualistic interpretations of societary relations. Our decisions will then clearly influence our inclination to choose one or the other particular structural pattern within the given institutional scope ranging from purely private-enterprise economy through all-inclusive systems of collective planning. Such choices will evidently be *over-all resultants* reflecting the aggregate, and correspondingly composite, effects of all three groups of metaeconomic considerations in question.

There may be good reasons for maintaining the probability of a certain *link* between emphasis on spiritual wants in the metaphysical realm and stress on nonindividualistic interpretations in the sociophilosophical domain. Similarly, materialistic viewpoints are likely to be connected with individualistic tendencies. On the other hand, the socioethical acceptance of distributive as well as of equalitarian justice may easily be allied either with an individualistic attitude or with a nonindividualistic standpoint. The reasons for assuming a probable connection between distributive justice and individualism, as well as between equalitarian justice and a predilection for nonindividualistic methods only slightly outweigh the practical likelihood of the two contrary combinations.

Yet, it does not seem to be necessary in the present context to examine minor details of such implications, or further to substantiate our pertinent assumptions. It is more essential to realize that the relevant institutional patterns of economic structure, with regard to the relative emphasis placed on private enterprise or collective planning, are greatly influenced by the above-discussed fundamental noneconomic decisions. Moreover, such patterns determine also the more general differences between the economic aspects of whole *civilizations*. For example, Eastern and Western types of civilization can adequately be contrasted with each other from this viewpoint. With respect to either of them, attempts have been made to express over-all aims of civilization, or cultural objectives[6] (Kulturziele), from the underlying metaphysical,

[6] This theorem has appropriately been exploited by H. Rickert and some of his adherents among the younger members of the Baden School of Neo-

socioethical, and sociophilosophical standpoints. Such aims or objectives can then be related to individual or to collective wants and to the corresponding institutional forms of economic life.

The prevalent patterns and *schedules of individual wants* have long been a topic of economic research. Yet, we have already seen in the course of our introductory remarks that all relevant attempts at any generally valid systematization, which were largely characteristic of nineteenth-century economics, have proved to be more or less futile. The manifoldness of the institutional schedules concerned has defeated all such attempts at generalization. But if we content ourselves with the examination of particular schedules of individual wants, rather narrowly restricted in space and time, then the over-all cultural objectives can distinctly be traced out in terms of predominant patterns of individual behavior. We shall later exemplify such patterns by referring them to recent American schedules of individual wants and by examining their statistical relations.

Only utopian anarchistic theorists, such as Pierre Joseph Proudhon or Max Stirner, could suppose that any perfect freedom in the domain of individual want satisfactions would not result in some sort of chaotic conditions. Severe periodical depressions in the sector of capitalistic freedom have frequently been interpreted as the outgrowth of such conditions. Anticyclical governmental economic policies and similar devices of collective intervention are primarily designed to prevent the deterioration of individualistic freedom into chaotic anarchy. In this sense, collective interference may assume a supplementary role aimed at appropriately organizing individual freedom. It is obvious, however, that in order to do so, such variants of collective interference must be based on corresponding *schedules of collective wants.* Therefore, it is in order here to inquire into the institutional properties of the schedules concerned.

II

From the viewpoint of our cross section pertaining to the nowadays prevalent economic structure in the countries of Western civilization, there is a well-established framework within which the institutional

Kantian philosophy. Cf. Rickert, *Kulturwissenschaft und Naturwissenschaft,* Freiburg im Breisgau, 1899; E. Becher, *Geisteswissenschaften und Naturwissenschaften,* Munich, 1921.

mechanism of collective wants is being utilized for the organization of private-enterprise activities. As far as the public groundwork of such wants is concerned, we may still best depend on the system of state functions as systematized and analyzed by Montesquieu. *Legislation, jurisdiction,* and *public administration* still represent the most plausible trio. They cover the desirable scope of regulatory and organizational performances in all fields of social life including the societary relations based on private-enterprise production, distribution, and consumption. The scope in question may be wider or narrower according to the intensity of regulatory organization which is deemed to be institutionally required for the purpose of preventing chaotic anarchy in private-enterprise freedom as well as in other domains of social life.

As long as we relentlessly uphold the ideals of individual freedom, we must logically assume that welfare will best be provided by unhampered individual efforts. Concomitantly, we must admit that such efforts should not be anarchic but adequately organized. This amounts to admitting the need for a certain amount of regulatory collective activities in terms of legislation, jurisdiction, and public administration. By doing so, we explicitly or implicitly attribute to such activities only a supplementary, or *secondary,* significance subordinated to a primary importance of individual wants.[7] Yet, the more intensive and comprehensive the scope of regulatory collective activities becomes, the more inclined we may be to forget about their auxiliary and secondary character. At the same time, the more we may shift toward an assumption that the underlying collective wants are of a primary importance, which is at least coordinated to the significance of individual wants. Exponents of extremely nonindividualistic standpoints will be anxious to supplant even such a coordination by a definite subordination of private-enterprise activities to the goals of legislation, jurisdiction, and public administration. In the course of further emphasizing the subordination concerned, adherents to this view may not be satisfied with reducing private-enterprise activities to a secondary importance. The scope of these activities may gradually be

[7] Concerning further details of the relationship between economic policies and other governmental activities, cf. the author's "Facts and Ends in Economics," in *The Economic Journal,* Vol. 59, March, 1939, pp. 7*ff.*, and "Über die Ausgangspunkte der Volkswirtschaftspolitik," in *Schmollers Jahrbuch,* Munich, 1928, Vol. 52, pp. 823*ff.*

further restricted. They may eventually be completely replaced by collective action. The institutional implementation of such a comprehensive, or total, collective planning in the economic field will be discussed later.

Looking at the present stage of the relevant institutional development, we may add another explanatory remark. In the course of collectivization, the countries of Western civilization have reached various stages of progress. Such stages may be exemplified by reference to the current interpretation of welfare policy in its relation to the scope of collective planning. On lower stages, collective planning for material and/or spiritual welfare may be a practically negligible item, or it may play only a more or less insignificant role. On higher stages, this kind of planning has a greater importance. On lower stages, collective activities aimed at maintaining and fostering governmental *power* usually have a primary, and collective *welfare* activities only a secondary, significance. On higher stages, we customarily encounter a reverse relationship. With regard to state collectivities, we may accordingly distinguish among the institutional forms of the power state, the power and welfare state, and the welfare state. A corresponding distinction between the concurrent activities of power policies and welfare policies will be logically justified. Both spheres evidently include activities pertaining to legislation, jurisdiction, and public administration.

Welfare policies may be subdivided into those aiming at spiritual and at material welfare. The latter may be considered synonymous with *economic policies*. They may further be subdivided with regard to various collective activities in the field of production, distribution, and consumption. The underlying collective wants obviously show some sort of institutional schedules.

It will be shown later to what extent the relative magnitude of private and public *expenditures* expresses institutional interdependences of individual and collective want schedules. Statistical inquiries into the various branches of individual expenditures and family budgets on the one hand and into the subdivisions and hierarchical composition of public budgets, on the other hand, may provide an illuminating basis for conclusions with regard to the schedules concerned. In particular, such inquiries may be helpful in leading to a more or less adequate morphological picture of the relations between the individual and collective sectors, between the private and public domains, as well as

between the power and welfare spheres of governmental activities. Within the welfare sphere, the manifold interdependences and overlappings of spiritual and material welfare are of signal importance. Concerning material welfare, the field then is open for detailed institutional investigations of the intricate network involving economic activities which are aimed at the gratification of individual and collective wants in the domain of production, distribution, and consumption.

Present Types of Capitalism, Socialism, and Communism

I

Let us connect our morphological viewpoints with the current study of comparative economic systems. In doing so, we may be justified in depending on a trichotomy among *capitalistic,* socialistic or *communistic,* and *composite* or mixed economic systems. Such a division is well rooted in empirical observation pertaining to the present structural economic organization in the countries of Western civilization. We may here again refer to the United States of America as representative of the first group of economic structures concerned; to the Union of Soviet Socialist Republics as typical of the second group; and to the great majority of all other countries as illustrating numerous varieties of the third group.

From a morphological standpoint, we shall base our comparative evaluation on another, partially parallel and partially superimposed, trichotomy. First, we shall examine the dependence of each of our three groups on the fundamental *metaphysical, ethical,* and *sociophilosophical* issues underlying economic reasoning at large. We shall accordingly inquire into the answers given by each group to the questions presented by the pertinent issues. Second, we propose to comment on the attitude of each group toward the above-discussed six categories of noneconomic *motive forces* determining the present stage of societary development. The relevant economic category, too, will correspondingly be taken into account. Third, we shall point out the relative emphasis put by each group on the *collective regulation* and regimentation of individual freedom by institutional measures in the field of power and welfare policies. In particular, we shall mention the scope and intensity of collective planning applied in the various do-

mains of production, distribution, and consumption and aimed at raising the level of communal welfare. The institutional picture thus to be obtained will display the high lights in our present interpretation of structural morphology.

II

Capitalism is the system which stresses the functions of the productive agent conventionally termed private capital. By doing so, capitalism differs from medieval feudalism, whose productive and distributive structure was essentially based on the predominant significance of land as a factor of production. Likewise, capitalism is to be distinguished from any economic structure in which labor or entrepreneurial activity assumes a definite over-all superiority among the productive agents. To be sure, such structures have more or less been approximated by several empirical variants which are still usually classified with capitalism. Corresponding "isms" have yet to be coined by those believing in the importance of economic terminology. For example, "laborism" might not be bad.

Capitalism, as conventionally interpreted, brings *material* gratifications into prominence. It upholds the principles of *distributive* social justice. It is marked by an over-all *individualistic* attitude.

On account of its individualistic penchant, capitalism does not give explicit recognition to any of the noneconomic motive forces of societary conglomeration. We must accordingly point out the traditional capitalistic concentration on the purely economic aspects of material welfare and on the underlying purely *economic forces* of societary development. Yet, having been obliged to accept a certain compromising *modus vivendi,* capitalism has been more or less allied with one or two noneconomic societary forces. Among our six categories, it could never really be assimilated with the parental, religious, class, or occupational motives of societary integration. In the first three centuries of Modern Times, adolescent commercial capitalism thus rather reluctantly accepted the courtship of political forces of concentration. After having attained a more adult and successively a mature age, industrial, and later financial, capitalism associated with the rising force of nationalistic conglomeration. Such an association has been characteristic for the last one and a half centuries. It has eventually consolidated into a conventionally respectable marriage of modern capitalism and nationalism. About the middle of the twentieth century, however, the

sound of the wedding bells appears as an obsolescent tune of the remote past. This is definitely not the tune of today.

The individualistic tendency of capitalism is closely linked with its predilection for the freedom of *private-enterprise* activities. In its extremely intransigent form, capitalism accordingly rejects almost every method of collectivistic regimentation. It is only by virtue of another compromising concession that a gradually growing scope of nationalistic power and welfare policy has been tolerated by modern capitalism. The latter has concomitantly absorbed also such devices of moderate collectivistic regulation as pertain to agriculture, manufacturing, commerce, transportation, communication, monetary relations, and banking. Modern variants of capitalism likewise tolerate moderate interference with the formation of wages, rent, interest, prices at large, public revenues and expenditures. Similarly tolerated are protective tariffs, other foreign trade barriers and measures aimed at directing consumption. But it has always been an essential feature of what we may term pure capitalism that it has tended at least to minimize the scope of such collectivistic interferences. It has done so on account of its determination to restrict collective planning to a secondary role definitely subordinated to the primary significance of private-enterprise activities.

So far, so good. Yet, pure capitalism seems to obsolesce rapidly. How about its younger and less intransigent relatives, such as *semicapitalism* or quasicapitalism in terms of monopolistic capitalism, cooperative capitalism, state capitalism, directed capitalism, planned capitalism, etc.? As the respective terms indicate, such hybrid "isms" more or less reluctantly proceed along the lines of a multifarious compromise with noncapitalistic features. Corresponding deviations from the above-stated purely capitalistic standpoint have to be noted in all respects concerned. The deviations amount to a partial acceptance of the pertinent opposite standpoints. The relevant mergers and blends may or may not efficiently work. In the present context, it does not seem to be worth while to trace out major or minor details of such blends with respect to the fundamental metaphysical, ethical, and sociophilosophical problems, or concerning the economic and the noneconomic categories of societary motive forces. Nor does it seem to be necessary to discuss from such a viewpoint the related power and welfare policies or the various domains of governmental economic policies.

III

Attempts to make any clear-cut distinction between *socialism* and communism are liable to be forced, illogical, and accordingly inadequate. This statement refers to all such attempts in the theoretical as well as to many in the practical field.

Theoretically, it is not justifiable to base the distinction concerned on the alleged socialistic restriction of collective property to means of production. Such a restriction usually is contrasted to the communistic advocacy of a more comprehensive scope of collective property also including means or goods of consumption. The relevant lack of justifiability is at least partially rooted in the precarious quality of any strict border lines between means of production and of consumption. Similarly precarious is any distinction between socialism and communism with respect to the allegedly more moderate, and more readily compromising, attitude of the former in economic relations other than those derived from the difference between private and collective property. Various allegedly socialistic concessions to private enterprise are cases in point. So are similar concessions to the capitalistic forces of price formation in the competitive and monopolistic markets, as well as to a series of other traditionally capitalistic institutions.

From a *practical* viewpoint, there are many examples, old and recent, which tellingly prove that socialism is usually not relentless in defending its moderate attitude. Nor is it adamant in maintaining its above-mentioned compromises. Such empirical examples show that when the necessary practical conditions are satisfied, socialism is frequently willing to merge its economic program with that of communism. Yet, we must refrain from exaggerations and unwarranted generalizations. Also practical examples to the contrary effect are known. Moreover, no political argument against socialistic groups, parties, or governments could reasonably be forged from our entirely nonpolitically aimed statement. All we attempt to substantiate is that for our present reasoning it does not seem to be necessary or adequate to discuss socialism as a system displaying morphological features essentially different from those of communism. It seems to be sufficient to examine the latter and to subsume that our relevant morphological diagnosis also fits most of the characteristic traits and qualities of the former.

IV

Communism, as one of the prevalent economic systems in the twentieth century, is essentially based on structural features antithetical to capitalism. Such is the result of the dialectical socioeconomic struggle which stretched over the major part of the nineteenth century. In its strife for a rising level of communal welfare, communism does not accept the leading role of privately owned capital among the factors of production. Together with private ownership, it also drops other economic institutions based on the supremacy of the individual and fostered—if not glorified—by capitalism. The foremost communistic step in this direction is the weakening or elimination of private enterprise and of the underlying motive of profit maximization. Concomitantly, the more general category of economic motivation is also reduced to a secondary role. We could continue at length the enumeration of similar antithetical features. It seems to be more appropriate, however, to concentrate on the positive morphological marks of communism instead of overstating the significance of its negatively distinctive qualities.

From such a positive standpoint, communism like capitalism puts a considerable amount of emphasis on *material* gratifications. Yet, it connects this emphasis with a definite advocacy of *equalitarian* principles in the distribution of income and wealth, as well as with a *non-individualistic* attitude in the field of societary relations. It is noteworthy that in the latter field communistic doctrines and practical institutions have undergone a gradual change. A few decades ago, they accentuated individual welfare as their ultimate goal. Consequently, they regarded all measures designed to suppress individual freedom only as unavoidable intermediate steps. More recently, the stress laid on the intermediate character of these steps seems to have been fading. An increasing accent on the supremacy of the community, or collectivity, as a societary entity seems to be concurrently brought into prominence. The earlier, partially individualistic marks of communism have accordingly been superseded by collectivistic features.

As to the motive forces of societary development, communism depends on the achievements of *class concentration.* To be sure, it visualizes as an ultimate objective some sort of a classless economic structure. Yet, the remoteness of such an objective is more or less frankly

admitted. For the time being, the hegemony of the proletariat, as a large socioeconomic class, is a predominant fact. Closely connected with it are the dictatorship of a more or less exclusive political party and the well-known communistic conviction that this dictatorship, which is designed to result eventually in a classless society, is the more efficient societary framework for economic planning on a collective basis aimed at a rising level of material welfare. This conviction involves a certain communistic reconciliation of fundamental economic and noneconomic societary forces.

Advocacy of the modern *welfare state* based on collective economic planning is about the most conspicuous earmark of communism. Collective activities in the economic domain play an accordingly primary, if not exclusive, role. On the other hand, private-enterprise activities are doomed to be liquidated and eliminated. Collective planning in the communistic economy tends to assume an intransigently comprehensive scope embracing all phases of production, distribution, and consumption. Such is at least the program of ideal or absolute communism.

Compromise and Reconciliation

I

We have already repeatedly stated that neither pure capitalism nor absolute communism should be regarded as practical cases actually significant for real economic life. Substantially greater is the morphological importance of the various compromising and accordingly composite economic structures ranging between the two ideal extreme cases. The institutional setup of such *compromises* reveals a great variety of sundry and complex traits. Their roots empirically reach into three different depths of those fundamental considerations which are decisive for our morphological classifications. Such depths may also here be referred to the above-discussed three different layers, or levels, of basic philosophical, societary, and organizational issues. Practical standpoints concerning the three levels may multifariously be interwoven, and manifold overlappings may further complicate the institutional picture. A systematical survey of this complexity is certainly not easy.

When tackling such a task, we may first attempt to point out a few *general trends* of structural compromise. Second, we may briefly comment on one or two particularly significant cases pertaining to the

recent past. Third, we may touch upon several institutional peculiarities which direct the *present development* of compromise.

II

The *golden mean* has always been one of the most enticing paths in the bewildering strife for the solution of fundamental human problems. The adherents of emotionally motivated "heroic" attitudes have always endeavored to belittle and to discredit this path as the way to mediocrity chosen by those big masses which believe in eclectic decisions. In the light of rational and realistic considerations, however, there are many and good reasons for such an attitude. Also the prevalent composite forms of economic structure explicitly or implicitly depend on this sort of compromising societary confessions.

If we accept such compromises, we may believe that *both* spiritual and material gratifications are about equally important. We may add that a well-balanced reconciliation between distributive and equalitarian social justice leads to the best results. Likewise, we may be convinced that the truth lies somewhere in the middle between individualistic and nonindividualistic socioeconomic systems.

A further step in the same direction may induce us to advocate a smooth merger among any mathematically possible combinations of our six basic categories in the field of noneconomic societary motive forces. The pertinent economic forces may appropriately be included in such a merger. Giving a fair chance to *every* motive force concerned may easily become the relevant popular slogan. The outcome may exhibit most of the advantageous and disadvantageous properties of a lukewarm bath.

From this standpoint, the logical conclusion would be that private-enterprise activities as well as collective economic planning should *about equally* participate in primary and secondary roles within the economic structure. We may thus endeavor to avoid as much as possible the respective deficiencies of both groups of activities and to maximize the exploitation of their merits.[8] Of course, there is always

[8] One of the recent, outstanding achievements in this field is John Maurice Clark's book, *Alternative to Serfdom,* New York, 1948. Derived from a series of lectures, delivered in 1947 at the University of Michigan, the book presents a most mature, elaborate integration of a balanced structure, in which the economic advantages of competition are smoothly harmonized with the

the chance of an obviously unfortunate, but by no means improbable or impossible, alternative outcome, which may lead to reverse effects in all respects concerned. But such is the nature of the risk necessarily confronting every compromising attempt. On the surface, we are likely to encounter a more or less harmonious cooperation between profit motive and collective planning in various fields of production, distribution, and consumption.

We have in this case a maze of combinative institutional varieties disclosing partial and total compromises with regard to the whole array of our above-mentioned conciliatory possibilities. It is a matter of little consequence whether we refer the issue to various "*third ways*"[9] or choose any other particular term to indicate the main purport of such compromises. Here we have another wide scope for the application of newfangled, or old and only temporarily revived, "isms." It is a well-known fact that practically every socioeconomic reformer is anxious to create some such sort of "ism."

III

Between the two World Wars, Italian *fascism* and German *national socialism* showed exceptionally great activity in developing a compromising socioeconomic structure. Both of them managed to find a certain middle way between capitalism and communism aimed at harmonizing, amidst greater or lesser discrepancies, distributive and equalitarian social justice, as well as private-enterprise activities and collective economic planning. Their relative temporary success was obviously due to the historical fact that both of them originated as outright attempts at escaping capitalistic as well as communistic de-

precepts of social security. Also the gap between Keynesian interventionism and the various shades of relentless enthusiasm for economic freedom is efficiently bridged by Clark's emphasis on the humanitarian and societary significance of responsible individual and group behavior in economic relations.

[9] Probably the most typical theorem along such lines has recently been developed by W. Röpke. He advocates the elimination of the quest for bigness and other monopolistic abuses from capitalism but rejects the collectivistic methods of communism. In a positive way, he praises the merits of small-scale farming, handicraft, retail trade, and decentralized industry. Cf. *Die Gesellschatskrisis der Gegenwart*, Zurich, 1942, pp. 278*ff*. Characteristic of similar efforts is also the title of the second book of Barbara Wootton on collectivistic attempts: *Freedom under Planning*, Chapel Hill, 1945.

ficiencies. They hoped to do so by depending only on those features of capitalism and communism which they deemed to be correct and desirable.

At the same time, however, both fascism and national socialism displayed structural traits of their own which differed from capitalistic as well as from communistic standpoints. With regard to the fundamental metaphysical problems, both of them created and surrounded themselves with peculiarly idealistic *myths,* which clearly restricted material gratifications to a secondary significance. This attitude was more or less a corollary of the fascist and national-socialist doctrines pertaining to the motive forces of societary conglomeration. Such doctrines not only stressed certain racial, national, and occupational tendencies of societary integration but also tried to glorify them. Hence the link to the metaphysical sphere. Yet, the practical outcome tellingly proved the insurmountable difficulties of reconciling such attempts with the purely economic societary forces and with some of the fundamental political and racial precepts generally obeyed by the other countries of modern Western civilization.

IV

As to the relevant *present* schemes of compromising, they seem to be directed to a substantial extent by the political factor of growing tension between the capitalistic and the communistic orbits of influence. As an aftermath of the Second World War and on account of the spreading fear of a third world war, current shifts toward an eclectic reconciliation of capitalism and communism largely depend on various opportunistic considerations. As compared with considerations of this kind, changes in fundamental convictions or mental attitudes pertaining to the economic structure usually play a minor role. It is only in the more or less remote background of the present structural transformations that such changes are still active. There they are invariably determined by the above-discussed controversies about basic philosophical, sociological, and organizational issues.

In the foreground, however, the consistent backing of communism by the rising power and prestige of the *Soviet Union* appears as the most vigorous drive toward the changes concerned. On the one hand, the Soviet Union itself is making headway in further transforming its domestic economic structure into a more comprehensive system of total

collective planning. We shall later mention minor ups and downs in this development.[10] The Soviet program is being carried through in the spirit of the doctrines which we indicated as characteristic of absolute communism.

On the other hand, those European and Asiatic countries which are more or less in the orbit of *direct* Soviet Russian influence are at present undergoing a fairly rapid process of economic collectivization. Up to 1944 or 1945, the economic structure of countries such as Poland, Finland, Czechoslovakia, Hungary, Rumania, Bulgaria, Yugoslavia, Albania, Eastern Germany, Manchuria and Northern Korea was largely based on capitalistic principles. Under the present Soviet Russian pressure, these countries have gone, on an average, at least half way between capitalism and communism, and some of them have even further proceeded toward the latter. Very significant is the similar change which took place at the middle of this century in China.

Also other countries, such as England, France, Italy, and Sweden, have recently shifted in a similar direction, although they are not dominated by the Soviet Union. Yet, the *indirect* impression made on them by the significance of Soviet political and economic expansion seems to be deep enough to push them toward structural reforms amounting to gradual collectivization. As an outcome, this group of countries is also assuming the compromising pattern under discussion. It will have to be seen how far they choose to go along such lines and at what rate their number will grow.

By far the most important counteracting force is the international economic influence of the *United States of America.* The preponderant weight of American exports and imports in the Western Hemisphere, and even in a few Eastern countries, during and after the Second World War, is a significant item. Also the outstanding American participation in the activities of the United Nations Relief and Rehabilitation Administration, as well as the signal achievements of the Economic Cooperation Administration in 1948 and 1949 designed to carry through the Marshall Plan, proved to be important factors. They have so far succeeded in slackening further collectivization in the majority of sovereign countries, which comprise the majority of world population. Such a development includes parts of the British

[10] Cf. pp. 224*ff.*

Empire, France, and other European countries in which socialism became somewhat weaker at the middle of this century.

This result is especially remarkable with respect to the well-known fact that even the economic structure of the United States itself has recently absorbed several institutions bearing the earmark of partial collective planning. Such are, for example, some of the still-surviving activities of governmental *intervention* first introduced by the New Deal during the Great Depression of the 1930's, and later by the emergency measures during the Second World War. In spite of the satisfactory progress made by postwar reconversion, these guiding and directing activities of the government are still playing a significant role in American production, distribution, and consumption. Moreover, they are being currently supplemented by more or less important new parallel governmental functions necessitated by the country's international economic relations and by several peculiar features of its domestic economic development. Concerning the latter, we may refer, for example, to the pertinent consequences of recent labor movements or of rapidly increasing production in the field of atomic power. Further details of the whole relevant development will be evaluated in Chapter XIV.

Such and similar consequences might sooner or later result in substantially weakening the capitalistic backbone of the American economic structure, while introducing into it additional elements of partial collective planning. An unavoidable corollary might be renewed, concurrent, and possibly even accelerated, shifts toward *balanced compromising* between capitalism and communism in the economic structure of those countries which are at present being influenced and partly guided by the United States of America.

CHAPTER VII

INSTITUTIONAL METHODS OF MEASURING STRUCTURAL SHIFTS

Can We Depend on Family and National Budgeting?

I

THE FUNDAMENTAL *motive forces* which act in the background of our societary development and of the concurrent shifts changing the economic structure are more or less clearly reflected by most of our workaday economic decisions. The strife of individuals in production, distribution, and consumption, as well as all corresponding private-enterprise activities, is ultimately determined by societary motive forces and by the related formation of the economic structure. So are those shifts which pertain to the gratification of collective wants. Essentially the same factors influence the multifarious interdependence of private-enterprise efforts, mixed economic activities, and collective planning. In such a sense, we may safely say that even the slightest change in this interdependence is the effect of morphological shifts in the economic structure and, ultimately, of underlying transformations in the domain of societary motive forces.

With respect to a *qualitative* evaluation of the changes in question, the institutional perspective shows an extremely wide scope, and manifold, different features. We may indulge in describing, classifying, and examining, with regard to general contours or minute details, a great variety of relevant factual items. Every daily newspaper, every reflective observation of economic life, and every report on the practical development of economic facts is usually teeming with such items. It will depend on the efficiency of our qualitative evaluation whether we can utilize the pertinent, puzzling multitude of particular items for any comprehensive mosaic work. The latter must obviously be aimed at expressing the development of those structural relationships between private enterprise and collective planning in which we are interested.

From a *quantitative* viewpoint, the task is to find numerical indicators which suitably characterize the structural interdependences and shifts concerned. As to the latter, our quantitative approach may refer to two different aspects. First, we may examine and draw conclusions from the relative size of the private-enterprise sector, as well as of the mixed and collective sectors of economic life. The pertinent magnitudes and border lines are continuously changing. Relevant changes determine the place of given economic systems with respect to the main sectors of our above-discussed morphological map. Second, concomitant shifts within each of the individual, mixed, and collective sectors in question also are of substantial significance for the formation of this map. The second aspect refers to the internal structural composition of each sector. But this aspect is evidently important also for the over-all intersectoral changes, which cannot avoid being at least indirectly influenced by current intrasectoral shifts. In other words, shifts within individual or within collective want schedules at least indirectly and partially predetermine any changes in the relationship between these two kinds of schedules. The quantitative expression for which we are looking should adequately comprise both the intersectoral viewpoint and the intrasectoral aspect.

II

We have already stated that *budgets* are usually satisfactory for the relevant purposes of a quantitative investigation. Of course, the issue between "rational" and "irrational" budgets, as well as the societary, psychic, and economic questions necessarily arising in the background of all budgetary decisions, open wide perspectives of controversial indeterminacies. Sundry variants of the latter refer not only to individual and family budgets but also to the frequently discussed practices of semicollective and collective budgeting. The budgetary planning of cooperative enterprises represents a meaningful in-between case. Partially similar features characterize the budgets of those corporations, business combinations, nonprofit societies, and other noneconomic conglomerations which are more or less influenced or guided by governmental economic policies. Of course, the budgets of various local, intermediate, and national governments play a significant role.

In all particular cases concerned, the basic problem is how reliably and accurately budgetary allocations of disposable funds or means reflect the underlying individual, mixed and collective want schedules. Generally speaking, we must not be optimistic with regard to the possible, and probable, degree of the pertinent *accuracy*. Here, there are many slips between the cup and the lip. An inquiry into such slips and corresponding pitfalls could easily make the subject of a separate study. It would display an abundance of significant theoretical and practical issues. This seems to be sufficiently illustrated by the prolific literature of the last two or three decades clustering around the multifarious topics of family budgets,[1] as well as of fiscal and national accounting.[2] It will be shown later that recent inquiries into the former topics have lead to attempts at cardinally measuring marginal utility.[3] It will be pointed out that investigations into the latter subject have brought forward several viewpoints which are useful for an analysis of the economic structure.[4] It will also be indicated how some of the pertinent statistical data can be utilized for an application of our analytical findings.[5]

At the same time, however, it must be repeated that the *primary purpose* of current research in the field of family budgets and of public or national accounting is by no means the one for which we here apply the data concerned. There, the elucidation of demand schedules, of changing tastes and consumption habits, of shifts in prices and

[1] Representative viewpoints of this literature have been elaborated by H. Staehle, "Family Budgets," *Econometrica,* Vol. 3, 1935, pp. 106*ff.*, and "The Reaction of Consumers to Changes in Prices and Income: A Quantitative Study of Immigrants' Behavior," *Ibid.* Vol. 2, 1934, pp. 59*ff.*; by W. Leontief, "Composite Commodities and the Problem of Index Numbers," *ibid.,* Vol. 4, 1936, pp. 36*ff.*; and by A. Wald, "The Approximate Determination of Indifference Surfaces by Means of Engel Curves," *ibid.,* Vol. 8, 1940, pp. 144*ff.*

[2] The recent theoretical achievements and practical applications in this field have best been explained by S. S. Kuznets (*National Product since 1869*, New York, 1947; *National Income: A Summary of Findings,* New York, 1946; and *National Income and Its Composition,* New York, 1941), C. S. Shoup, (*Principles of National Income Analysis,* Boston, 1947), and by J. R. Hicks and A. G. Hart, (*The Social Framework of the American Economy,* New York, 1945).

[3] Cf. pp. 171*ff.*, 258*ff.*, and 274*ff.*

[4] Cf. pp. 145*ff.*

[5] Cf. pp. 172*ff.*

in the purchasing power of money, of the relationship between public expenditures and revenues, or of the business cycle customarily stands in the foreground. Here, we are mainly interested in the evaluation of structural shifts with regard to private-enterprise activities and collective economic planning. Any discrepancies arising from this difference in primary objectives must duly and consistently be allowed for as we proceed along the above-indicated lines of our institutional discussion.

III

On the highest level of the germane budgetary computations, there is one recent method which especially deserves our attention. This method deals with a new and expansive interpretation of what is termed the *national economic budget*. Utilizing the results of former research in the field of government budgets and national income, which has developed for several decades, the method systematically comprises a wider scope of economic activities. It typically refers to the four domains of consumer, business, international, and government expenditures and receipts and adds a few items in terms of adjustments. The latter are necessitated, for example, by the fact of government receipts from abroad, government transfers abroad, government domestic transfers, or by statistical discrepancies. Such are the budget categories on which the economic reports of the President of the United States, submitted to the Congress and prepared with the aid and assistance of the Council of Economic Advisers, are based. These formulations have been developed with the objectives of the United States Employment Act of 1946 in mind. Similar general objectives but somewhat different formal methods of computation are reflected in the national economic budgets recently published in other countries. Great Britain, France, Sweden, the Netherlands, and Norway may be mentioned. From the viewpoint of a pertinent international budgeting, the Paris Report of the Committee of European Economic Cooperation, of September, 1947, is a document of substantial significance.

According to the current *American system* of computation, the expenditures in the above-mentioned four domains of economic activities represent consumers' expenditures, gross domestic investment, net imports of goods and services, and government payments to the public, respectively. The corresponding receipts consist of consumers'

income after taxes, undistributed business profits and additions to reserves, net exports of goods and services, and government receipts from the public. These items, corrected by the aforesaid adjustments, add up on both sides, in the columns of expenditures as well as of receipts, to the total gross national product.

Gerhard Colm has recently clearly formulated the meaning and purpose of such comprehensive computations.[6] For the United States, he relates the development of the national economic budget to the program of the *Employment Act*. The latter requires statements by the President on: (1) needed levels of production, employment, and purchasing power; (2) current and foreseeable trends in the levels of employment; and (3) a recommended program of economic policies and legislation necessary for accomplishing the objective.

At the same time, however, Colm also indicates that an earlier version of the *Full Employment Bill* gave more explicit directives for the calculation of the national economic budget.[7] This version provided that the President should transmit to the Congress, at the beginning of each of its regular sessions (1) an estimate of a national economic budget objective under conditions of full employment for the ensuing year; (2) a national economic budget forecast estimated under the assumption that the then-existing legislation and policies would be continued; and (3) in case there were a gap between the objective and what would be likely to happen under existing legislation and policies, a recommendation for legislation and policies, particularly government expenditure policies, needed to achieve the objective.

Both versions definitely indicate that the American national economic budget is primarily aimed at providing *perspective* for public and private decisions. It is only a secondary purpose of the budget to provide also *yardsticks* by which to measure success or failure of public and private performance.[8]

The corresponding economic budgets of several European countries differ inasmuch as they are based, to a larger extent, on *imperative* items. But they also contain items aimed at *orientation*. The

[6] "The Government Budget and the Nation's Economic Budget," *Openbare Financiën* (Public Finance), Alphen aan den Rijn, Overdruk uit Nr. 1, 1948.

[7] Colm, *op. cit.*, p. 4.

[8] *Ibid.*, p. 8.

distinction between these two classes of items, or the differences in the character of the various national budgets, has been stressed by André Marchal.[9] Various European national budgets put different weights on the two classes concerned.

It is obvious that in the present context the orientation aspect of the national economic budgets is more significant than their imperative character. Largely with the help of the orientation items, we obtain those quantitative data which help us in ascertaining the relative sizes and shifts of the private, or individual, and the public, or collective, sectors of economic activities. When utilizing such items for a quantitative evaluation of structural economic transformations, we must pay attention also to those *partial* budgets from which the comprehensive national economic budgets are derived. In this sense, significant inferences may be obtained from a study of the current data on net national product, national income, aggregate personal income, governmental expenditures and receipts, and on family budgets.

We must not here overemphasize the difference between budgets and *accounts*. Although the planning aspects are more clearly expressed by the former, the latter are more directly important for our present evaluation. In fact, even what are nowadays termed national economic budgets could more adequately be called national economic accounts. While being more directly interested in their "account" aspects, we need not go further into the terminological issue concerned.

Instead, we shall concentrate in Chapters IX to XII on the practical *application* of modern national economic budget data to an institutional explanation of composite economic systems. In this explanation we shall mainly stress the intersectoral changes, *i.e.*, relevant shifts between the two economic sectors of individual, or private-enterprise, activities and of collective planning.

Pitfalls and Penumbras of Fiscal Accounting

I

As to the other class of intrasectoral structural shifts, which pertain to the changing significance of gratifications within each of the two sectors of private-enterprise activities and collective planning, there

[9] "Le Plan Français," *Kyklos* Vol. 1, Fasc. 2, 1947, pp. 151*ff*.

are many *pitfalls* jeopardizing the path of their investigation. It might be sufficient to point out, in a schematic way, some of the methodological considerations by whose observance such pitfalls can more or less be avoided.[10] As three of the most significant such considerations, we may refer to political and sociopsychological complications which make it difficult to measure collective gratifications by the relevant public expenditures; to the international differences in the relative importance of local, regional, and national public, as well as semipublic, expenditures; and to the technical indeterminacy of certain groups of public expenditures with respect to their allocation and attribution to various categories of collective gratifications.

First, we have to realize that only *efficacious* collective wants can obtain such satisfactions as are expressed by the budgetary distribution of public funds among various groups or branches of expenditures. In the causal background of every structural economic shift, there is an extremely complex network of individual ambitions and group pressures partially influencing and partially even directing streams of public opinion. The outcome is the concomitant budgetary strife between political minorities and majorities.

With regard to the difference between democratic and dictatorial political systems, such *majorities* may be based on a more or less perfect freedom of polls. Alternatively, they depend on the preponderant political power of a dictator or dictatorial group. Under systems of modern dictatorship, the numerical majority vote is usually enforced by well-known devices of suppression and coercion. Only the collective want satisfactions approved and accepted by democratic, semidictatorial, or dictatorial political majorities are expressed by the budgetary distribution of governmental expenditures. Yet, the latter may inadequately or not at all reflect those collective wants of minorities which partially or entirely differ from the collective wants of majorities. Corresponding changes occur and similar relations originate whenever political minorities develop into efficient majorities. There may be multifarious relevant differences between smaller and larger minorities, as well as between smaller and larger majorities. Concomitant cross relationships may also be significant. So may

[10] A detailed explanation of these and several related methodological considerations may be found in the author's above-mentioned, (p. 6) *Weltwirtschaftspolitik*, pp. 62*ff*. and 90*ff*.

be gradually changing attitudes of political majority or minority representatives, who may partially or totally dissent and develop into *bona fide* or *mala fide* dissidents.

Such complications clearly pertain to the *political* and *sociopsychological* background. However, we must duly allow for their economic effects whenever establishing an institutional link between the distribution of public expenditures and the concurrent shifts among collective gratifications.

Second, we must take into account the fact that international comparisons of public expenditures and receipts are substantially hampered by obstacles rooted in differences of governmental *organization* and financial *administration*. We refer to the differences to be found among the various national systems of coordinating local, regional, district, county, state, federal, and similarly defined governmental activities. Reference should also be made to the concurrent differences among the various national systems and methods of allocating public expenditures and levying public revenues, on higher or lower hierarchical levels of governmental organization. Let us further mention the great international variety in the cooperation among private-enterprise, semipublic, and public economic activities with respect to the related manifold organizational combinations. We must add the consideration that from the viewpoint of financial accounting the administrative categories and classification of practically all semipublic and public expenditures may frequently vary and accordingly differ even within the same country.

For example, essentially similar collective gratifications may be provided by expenditures which are differently *classified*. In one country or in certain parts of it, they may be treated as federal expenditures for the promotion of commerce and transportation. In other countries or in other parts of the same country, they may appear as local governmental expenditures on waterways or as some sort of semipublic expenditures on river regulation and flood control. Because of sundry deficiencies in financial statistics, it is frequently difficult to coordinate, to summarize, and to compare such differently termed and classified items of expenditure.

Even greater are the obstacles to the derivation of pertinent inferences from any real or alleged parallel *shifts* in the structure of col-

lective gratifications and planning. Here we have another abundant source of indeterminacies, inaccuracies, or outright mistakes in our quantitative evaluations concerned.

Third, we must carefully examine especially those semipublic and public expenditures which may be grouped, concerning their actual meaning and purport, with almost any particular branch of expenditures and which are usually classified by financial statistics as *special groups*. Public expenditures on pensions of governmental employees on the retired list or the payment of interest and principal of governmental debts are cases in point. Such expenditures may appear in the various public budgets and accounts as separate comprehensive items. Alternatively, they may be distributed among, and classified with, the expenditures for those governmental activities to which they more or less particularly and directly pertain. For example, pensions paid to retired employees of a state school or the service of state debts incurred for the purpose of the construction of such schools may be classified in the state budgets and accounts as items belonging to the more general group of educational expenditures. As an alternative method, these items may be classified with separate, all-inclusive groups of expenditures on state pensions and on the repayment of state loans, respectively.

This leads us to the closely related national and international differences in classifying expenditures from administratively separate public funds or in distinguishing between ordinary and extraordinary, recurrent and nonrecurrent expenditures, etc. In the same category of pitfalls, we also have to consider another disturbing fact. No matter how we materially define our groups of public expenditures, we are liable to find them *formally scattered* in a great number of various budgetary divisions and subdivisions or included and hidden in variously termed sundry particular items. Corresponding attempts at an appropriate breakdown of public budgets or accounts are difficult and time consuming. Moreover, the results of such attempts are usually not very satisfactory and encouraging from the viewpoints of accurate accounting. All we can do, in order to reduce the relevant, unavoidable discrepancies, is to utilize, as carefully and conscientiously as possible, both the statistical sources and tools and the working hours at our disposal.

II

Duly allowing for such methodological difficulties, we may still undertake to examine the structural shifts in question on a comparative international basis. For this purpose, collective gratifications may advantageously be divided according to a *trichotomy* distinguishing among collective wants in the fields of power policy, welfare policy, and production policy, or economic policy in the narrower sense.

By the latter, we mean all governmental activities aimed at the promotion of agricultural and industrial *production,* including relevant public functions in the domains of domestic and foreign commerce, transportation and communication, as well as monetary measures and banking. We also classify with this group all activities of governmentally or semigovernmentally owned public utilities and other productive plants.

By *welfare* policy, we indicate those government activities which are designed to foster the spiritual and material welfare of the population and which are beyond the above-defined scope of production policy. It is obvious that the main emphasis of such activities is on welfare improvements to be attained by means of a better distribution of income and wealth within the national community. On the other hand, production policy is more immediately directed toward increasing the aggregate amount of national income and wealth. It is obvious that there are essential functional links between the related distribution and production aspects.

When making this distinction between production and welfare policy, we must realize that the latter primarily stresses government activities aimed at raising the standards of living in the lower income brackets. When such standards are improved by the proper allocation of government funds, the latter must directly or indirectly be provided by public revenues. The underlying fiscal policies of the government may or may not be based on the principles of progressive taxation. In an economic system displaying substantial inequalities in the distribution of income and wealth, there are evidently strong reasons supporting progressive taxation. There are similarly good arguments for other public revenue policies which require greater sacrifices from the rich than from the poor. In such a sense, we may contend that the various devices of welfare policy are aimed at

diminishing inequalities in the distribution of income and wealth. Particular devices provide collective gratifications primarily to the poorer classes, at the direct or indirect expense of the more well-to-do layers of the population.

Equalitarian objectives and effects of this kind are manifest in a *capitalistic* economy whose public sector is based on progressive taxation. We may add, however, that more or less similarly equalitarian features also characterize whatever may be termed welfare policy in systems of collective economic planning. Also under *socialism, communism,* and related systems the institutional support provided by the various means of public-welfare activities primarily appeals to the lower income brackets, by directly or indirectly raising the level of their real income and wealth. In a great majority of the pertinent practical cases, the upper brackets ultimately participate in the burdens of taxation to a greater extent than in the direct benefits of governmental welfare policy.

More difficult than to define the general meaning of welfare policy and to substantiate its connection with an equalitarian distribution of income and wealth, is any clear-cut distinction between its material and immaterial, or spiritual, sectors. These two sectors overlap in a multifarious way, and they are closely interwoven. It is only with due allowance for the corresponding haziness of the border lines and borderlands between them that we may attempt to distinguish between what may be called *material* and *spiritual* welfare policy. We may refer the latter to government activities in the field of general education, as well as to the promotion of science, art, and religion. By the former, we may indicate those functions of welfare policy which are directed toward supporting unprivileged layers of population by raising the level of their material want satisfactions. Most of the government activities planned for by social security and other public relief schemes belong to the domain of material welfare policy.

All government activities other than those classified with production and welfare policies may be regarded as the field of governmental *power* policy. We have already pointed out its historical background, its societary purport, and its significance for economic life. We may add that even at present it is by no means a small remainder or residue. All governmental activities designed to safeguard and to

maintain the power of the state, federation, or any other political community belong to this field. Power policies accordingly encompass all pertinent domestic and foreign governmental activities in the domain of diplomatic and military relations, as well as of legislation, jurisdiction, and public administration. If we observe the approximate basis of this classification, then it does not seem to be necessary to go into any detailed enumeration of the governmental activities concerned.[11]

It is more appropriate to add that we also regard as expenditures on power policy *pensions* paid to retired public employees and the service of public *debts*. But we do so only if these expenditures cannot be allocated, by practicable and clear-cut methods of financial statistics, to the expenditures on production or welfare policies. With respect to the institutional structure of many public budgets and accounts, we frequently encounter almost or entirely insurmountable difficulties in making any such allocations.

But there is also another consideration inducing us to classify the particular groups of expenditures in question with those on power policy. We may project the actual meaning and significance of these groups to the *present* and *future* working of the government mechanism. We may prefer such a projection to an investigation of the past setup of government activities as a basis for the proper classification of the relevant expenditures with any specific functions of production, welfare, or power policy. In other words, we may refrain from inquiring into a corresponding classification of the retired governmental employees who now obtain pensions or of the former expenditures for whose coverage the present public debts had to be increased. Instead, we may ask what would happen if the government now refused to pay pensions and to continue the service of public debts. The direct effect would undoubtedly be to impair, at present and for the future, the morale and administrative efficiency of public employees and to create serious difficulties in obtaining new public loans. To be sure, both effects might indirectly interfere with various production and welfare policies. Yet, the prestige and power of the

[11] A survey of these activities may be found in the author's two articles, "Die theoretischen Ausgangspunkte der Volkswirtschaftspolitik," *Schmollers Jahrbuch*, 1928, Vol. 52, pp. 823*ff*. and "Der Gemeinwert," *Jahrbücher für Nationalökonomie und Statistik*, 1935, Vol. 141, pp. 1*ff*. Cf. also *Weltwirtschaftspolitik*, pp. 98*ff*., 134*ff*., and 158*ff*.

whole public organization or of the whole community would directly and primarily suffer. From such a viewpoint, the payment of pensions and the service of public debts may justifiably be considered essential requirements of any governmental power policy. The usually substantial public expenditures under discussion may therefore be classified accordingly.

There are, of course, many similar and more or less complex questions of fiscal accounting arising when we attempt to classify public expenditures with various branches of production, welfare, and power policy. These questions vary from period to period as well as from country to country. In the present context, they cannot be discussed in detail. Their complexity is well-known to everybody who has tried to grapple with the classification concerned. Regardless of the amount of time, effort, and conscientiousness devoted to the pertinent investigations, the result can be *only approximately exact* and accurate. This limitation must be emphasized when we tackle the task of computing comparative international and national trends in the development of expenditures on production, welfare, and power policies.

CHAPTER VIII

STRUCTURAL EFFECTS OF THE FIRST WORLD WAR

War Conversion, Postwar Reconversion, and Recovery

FROM THE viewpoint of the above-mentioned intrasectoral trends, the dramatic development of the *1910's and 1920's* may be regarded as an exceptionally suitable object of examination. This suitability is rooted in the fact that the two decades in question involve not only the fundamental structural displacements brought about by the First World War and the closely attached subsequent phenomena of economic depression. The two decades also embrace the process of postwar reconversion and the prosperous years of unprecedented economic recovery toward the end of the 1920's. Consequently, both the economic ups and downs caused by a world-wide war and the waves of the capitalistic business cycle are plastically expressed by the structural economic changes of the period concerned.

In those two decades, most of the available computations in the field of national economic accounting still were rudimentary or at least very incomplete. So we had only a correspondingly hazy knowledge of the *intersectoral* relationship between private enterprise and collective planning with respect to their comparative sizes and shifts. However, we were able to establish approximately in quantitative terms that collective economic planning was substantially further advanced in the countries of Western civilization than in the East. In the West, a high degree of industrialization favored a more rapid collectivization. The relatively great intensity of Western agricultural production pointed toward the same effect. In the East, the process of gradual Westernization already then had weakened essential private-enterprise elements of the economic structure and shifted the latter toward an increasing emphasis on collective planning. Only these and similarly general trends of development, with some of the concomitant particular features, can be traced adequately by the help of an inquiry into the relative weight of public and private expenditures.[1]

[1] A few quantitative results of such an investigation have been outlined in the

More instructive are the inferences to be derived from an examination of those *intrasectoral* shifts which took place among the various collective wants in the 1910's and 1920's. Such an examination has been carried through with regard to 30 different countries.[2]

Let us refer the germane computations to *three typical periods*. First, we may consider the prewar period (I) represented by 1913, the last year of peace before the outbreak of the First World War. Second, we may examine the postwar reconversion period (II), which can best be illustrated by the economic development in the first one or two years of the 1920's. Third, we may evaluate the recovery and prosperity period (III), as reflected by the last one or two years of the same decade. It is obvious that by concentrating on these three periods we stress the long-term aspect of structural economic shifts and purposely neglect the corresponding short-term fluctuations. For example, the exceptionally strong structural oscillations during the war years will not appear in such a treatment of the topic. But the long-term structural effects of the war as a whole will most certainly be ascertainable.

Let us further restrict our comparative evaluation to the expendi-

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author's *Weltwirtschaftspolitik im Entstehen. Beiträge zur Lehre von den Gemeinbedürfnissen*, Jena, 1933, pp. 81*ff*.

[2] The methods and conclusions of this examination have been summarized in *Weltwirtschaftspolitik*, pp. 98–220. Six countries in each of the five parts of the world—America, Europe, Asia, Africa, and Oceania—have been selected for the underlying international comparisons. With respect to the selection, a carefully planned attempt has been made to consider small as well as large, from an economic viewpoint primitive as well as highly developed, and sovereign as well as politically dependent countries. Such a diversity of the countries concerned was largely emphasized in order to provide an approximately verified basis and comprehensive framework for the comparative evaluation of structural economic changes. The required institutional research has been facilitated by a series of on-the-spot studies and direct personal observations by the author in each of the 30 countries, which are enumerated on p. 133. These studies could not have been carried through without the substantial moral support of numerous authorities, scientific institutions, and economic agencies of the countries in question. Relevant statistical data and other informative materials were collected during a year's research work in the library of the League of Nations at Geneva. The author appreciates the privilege of having had access in that library not only to published materials but also to unpublished financial statistics pertaining to several countries.

tures of the largest, or hierarchically highest, *political entities* in the countries concerned and disregard the expenditures of any local or hierarchically intermediate public bodies. Concerning federations, we accordingly consider only federal expenditures and disregard state and local expenditures. With regard to nonfederal countries, we evaluate only expenditures of the state, territorial, colonial and other governments at the highest constitutional and administrative level. This step amounts not only to a substantial simplification of the argument involved but causes, unfortunately, also a certain distortion of the results to be expected. An inclusion of expenditures on the local and intermediate levels would undoubtedly in many respects show a different development. Yet, the concomitant statistical difficulties would be practically insuperable. Many of the countries concerned have never computed, let alone published, correspondingly classified statistical data.

Average International Shifts of Public Expenditures

I

With regard to public expenditures on *production* policy, it may be instructive to break them down at least into two groups. We may do so by distinguishing between expenditures on governmentally owned public utilities as well as other productive government enterprises, and all other public expenditures on production policy. Let us term the latter domain pure production policy and the former field government enterprises.

For both of them, it seems to be appropriate to consider, as far as possible, *gross* expenditures. A consideration of *net* expenditures would unavoidably obscure our main argument by bringing in complex issues which cluster around public revenue policies. This statement also applies to expenditures on government enterprises, for which our choice of gross items is especially important. Unfortunately, there are numerous relevant cases in which various governments publish only net expenditures. Corresponding inaccuracies necessarily disturb our computations. Similar difficulties beset the international comparison of other public expenditures. But we refer also in such other cases as consistently as possible to gross expenditures.

The development of public expenditures in both branches of production policy in the West differs substantially from the concurrent

development in the East. Therefore, it is appropriate to distinguish between two corresponding groups of countries. With the *Western* group we may classify the United States of America, Canada, Mexico, Brazil, Uruguay, Argentina, Great Britain, France, Spain, Italy, Germany, Hungary, the Australian Commonwealth, the three Australian states of Queensland, New South Wales, and Victoria, New Zealand, and Hawaii. With the *Eastern* group we classify the rest of our 30 representative countries.[3]

When computing average shifts of the related expenditures, we must face the delicate question of choosing an adequate method of *weighting* our averages with respect to their different international significance. For example, shifts in the percentual distribution of public expenditures in the United States of America should obviously be given a greater weight than corresponding shifts in Uruguay. In order to obtain a plastic picture which is in perspective it will be useful to employ two different methods of weighting our averages. First, we may weight the significance of their percentual shifts on the basis of the different total amount of the national public expenditures concerned. This method will evidently increase the significance of those countries in which public expenditures are relatively high. Wealthy and/or strongly collectivized countries will thus be given a relatively great weight. Second, we may weight the international importance of the relevant percentual shifts with regard to the different size of national populations. From such an aspect, the significance

[3] The 30 countries concerning which the statistical investigation in question has been carried through included, in addition to the enumerated 18 Western countries in America, Europe and Oceania, the following 12 Eastern countries in Asia and Africa: Japan, China, British India, Iran, Turkey, the Soviet Union, Egypt, Tunisia, Morocco, South-West Africa, Mozambique, and the Union of South Africa. It should be noted that we classify Turkey and Soviet Russia, in spite of their being located partly in the geographical area of Europe, with the East. We do so because by far the major part of the area of these two countries belongs to Asia. Also their economic and cultural development partially gravitated toward Asia during the years of observation. Mozambique had to be omitted from our diagrams, because no statistical data are available on her prewar public expenditures. But the relevant postwar data corroborate our general conclusions also with respect to this Eastern country. Our present geographical distinction between Eastern and Western countries is not meant to be strictly identical with the cultural distinction between East and West which has been mentioned in Chapters IV and V.

of China, India, and other countries, which are less important from the first viewpoint of weighting, will manifestly be brought into prominence. A synopsis of both methods of weighting may be helpful in eliminating or at least reducing one-sided and correspondingly misleading impressions. Our synoptical evaluation could be completed advantageously by the addition of further more or less relevant methods of weighting. Such methods could be related to international differences in national income and wealth, in military power and economic war potentials, in areas, in natural resources, etc.

Since we are obviously more interested in the relative than in the absolute size of the structural shifts concerned, we refer our computations consistently to the *percentual participation* of particular groups of expenditures in the aggregate national amounts of public expenditures. Moreover, when comparing the shifts of such percentual shares, we base our pertinent diagrammatical illustrations on a *semilogarithmic* scale.

We must also realize that no continuity assumption could justifiably be made concerning the formation of our various expenditure groups between the above-defined periods I and II, or II and III. The actual formation during the war years and, to a minor extent, during the moderate depression wave of 1922–1924 showed disturbances which would most certainly weaken any such assumption of a smooth transition. Consequently, it would be more appropriate to employ scattergrams displaying only points of intersection between coordinates on which we mark the three time periods and the magnitude of the expenditures in question. The alternative is to plot *expenditure curves* composed of straight lines beginning at I, revealing more or less sharp turning points at II, and ending at III. We must emphasize that in choosing the latter alternative we sacrifice viewpoints of mathematical accuracy for the sake of diagrammatical simplicity and expressiveness.

On the basis of such restrictions and qualifications, we may plot simplified curves illustrating averages shifts in expenditures on *production* policy (K). The meaning of the time periods I, II, and III has already been explained. Let k_1, k_2, and k_3 stand for expenditures on the whole of production policy, on pure production policy, and on government enterprises, respectively. By A we designate Western countries, and by B we denote Eastern countries. International aver-

ages weighted with regard to the size of total national public expenditures we mark by W_1, and averages weighted on the basis of the size of national populations by W_2. We then obtain the set of curves shown in Figure 1.

The over-all long-term trend of K in A clearly shows the *unfavorable effects* of the war. However, period III in A led to a relative recovery,

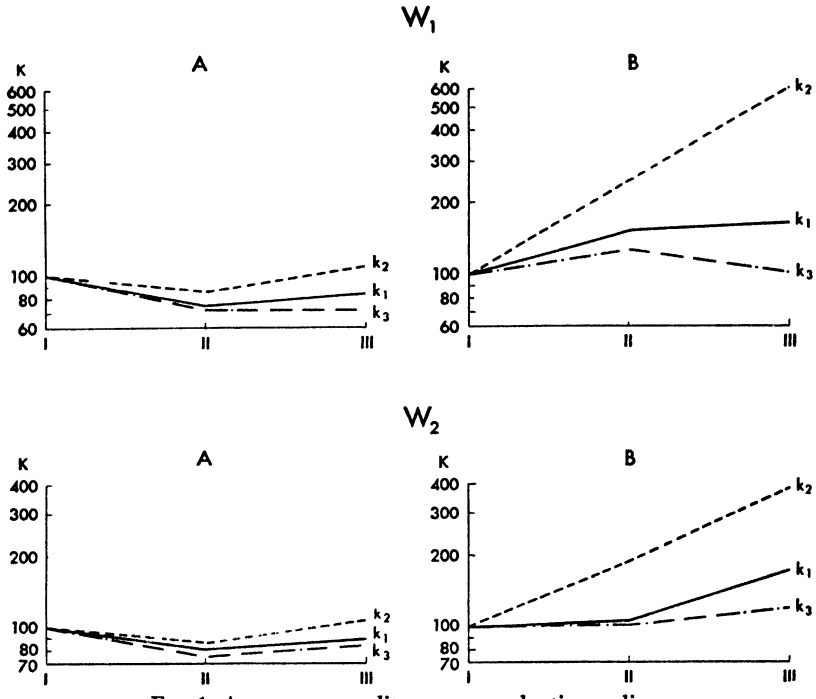

FIG. 1. Average expenditures on production policy.

which was faster from the viewpoint of W_1, than of W_2. The decline caused by the war and disclosed by the low pertinent level in period II was mainly due to the fact that the items k_3 had to be somewhat neglected during the war on account of the then-expanding armament race, which directly involved only a part of these items. Substantially greater was the armament participation of the k_2, whose decline in period II was accordingly smaller, and which could also recover more rapidly in period III. The rate of this recovery was greater with respect to W_1 than concerning W_2. A considerable part of B managed to keep out of the war. Increasing export activities here even resulted

in a long-term relative growth of the k_1 which was largely due to a spectacular rise of the k_2. The decline of the k_3 with regard to W_1 in period III caused a corresponding small decrease in the growth of the k_1. The concomitant trends of national developments, which were evidently responsible for these distinctive features in the formation of international averages, will be discussed later.

II

In the meanwhile, we may proceed to a similar diagrammatical illustration of the international average shifts expressed by the development of expenditures on *welfare* (L) and *power* (M) policy. We may designate total welfare expenditures by l_1, their part stressing spiritual welfare by l_2, and their other part directed toward material welfare by l_3. Expenditures on the whole of power policy, including those on the payment of pensions and the service of public debts, we mark by m_1. If we deduct the pension and debt payments from m_1, we obtain m_2. This symbol designates expenditures on what we may term pure power policy. Those parts of the latter which were spent on national defense and war, we denote by m_3. Omitting here a distinction between A and B, we may compute and plot the diagrams as shown in Figure 2.

An appropriate interpretation of the long-term trends in this figure may complete the impression obtained from Figure 1. A synoptical evaluation of the shifts in K with respect to both A and B indicates that the great majority of the relative levels in periods I and III do not substantially differ. But a similar comparison with regard to L shows a noticeable rise, and with respect to M a corresponding decline. In other words, the modern long-term *transformation* of the former power states into the modern welfare states continued in the over-all perspective of the two decades under discussion. To be sure, the war caused in the 1910's a sudden and great deviation from this trend. Yet, the deviation subsequently was more than offset by a vigorous reconversion in the 1920's. The conspicuous difference between W_1 and W_2, with regard to the shifts in l_1 is largely due to the above-mentioned fact that some of the densely populated Eastern countries were able to concentrate during the war on more or less peaceful production policies, instead of pushing forward their emphasis on welfare policy. Only between periods II and III did their domestic

social structure begin to face the pressure of a newfangled equalitarian movement. Then they accordingly speeded up their governmental welfare activities.

The general *societary tension* entailed by the war was responsible for the increase of l_3 between I and II, as well as between II and III. Correspondingly, the trend of l_2 declined between I and II. But this

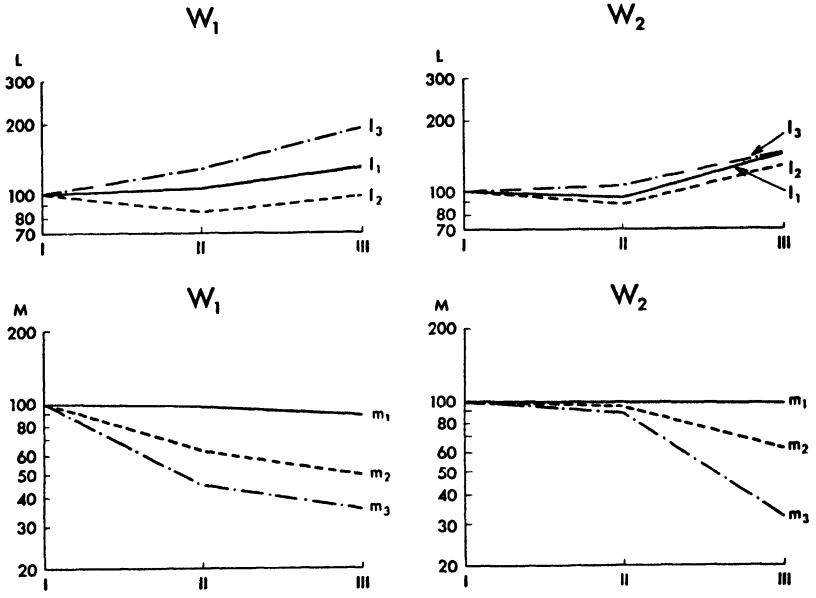

FIG. 2. Average expenditures on welfare and power policy.

decline was partially offset by the relative rise between II and III. The corresponding difference in the formation of l_2 and l_3 clearly shows that whenever the societary development is menaced by a serious emergency, such as war, the exigencies of material welfare have a tendency to become more urgent and potent than those of spiritual welfare.

The more rapid over-all decline in m_3 than in m_2 between I and III can easily be explained by the expectation of war and by accordingly heavy armaments in I, as well as by the great stress on *disarmament* in the reconversion period. Since this stress was evidently more stringent immediately after the war in the war-stricken countries of the wealthier and more collectivized West, the related decline of m_3 between I and II was more rapid there than in the large and densely

populated Eastern countries. The latter, in turn, speeded up their disarmament between II and III. Hence the difference between W_1 and W_2 concerning the shifts of m_2 and m_3. It has to be remembered that our m_1 contains also the weighty and inflexible public expenditures on the payment of pensions and on the service of debts, while neither m_2 nor m_3 do. This is the reason why both of the latter two magnitudes remained consistently below m_1 during the whole development from I through III. The relevant additional and inflexible items in m_1 did not diminish. On the contrary, they substantially increased owing to the exceptionally heavy backlog of public pensions and debts in II and III. It should be noted that we have computed the m_3 only for those 16 countries on our list which in I, II, and III were politically independent and accordingly sovereign from the viewpoint of national defense and war efforts.

Changes in the National Structure of Public Expenditures

I

For the purpose of further explaining the average international shifts discussed above, we must inquire into the concurrent development of those *national* expenditures with respect to which our averages have been calculated. Figure 3 presents the results of such an inquiry. An examination of our curves in this figure may give at least an approximate answer to those numerous questions which necessarily arise with reference to Figure 1. More than two-thirds of the countries concerned show a development of national expenditures on production policy adequately substantiating our conclusion about the long-term trend of the international averages. In Figure 3, the great majority of curves approximately clusters around a *horizontal* axis. Consequently the relevant magnitudes did not substantially change in the whole perspective of the two decades under consideration.

Among the four curves which here display a more or less conspicuous relative *rise* of the k_1 between I and III, three refer to Eastern countries in which the development of modern governmental production policy reached its adolescent, and accordingly rapid, growth only during the years of observation. The fourth curve, which pertains to the United States of America, also reveals a tinge of adolescence but in a different sense. In this case, the rapid increase of k_1 did not reflect

the sudden transformation of an old economic system but the spectacular economic progress of a young country. The four other curves which show a significant *decline* of the k_1 refer to Western countries which had previously gone through periods of a more or less vigorous

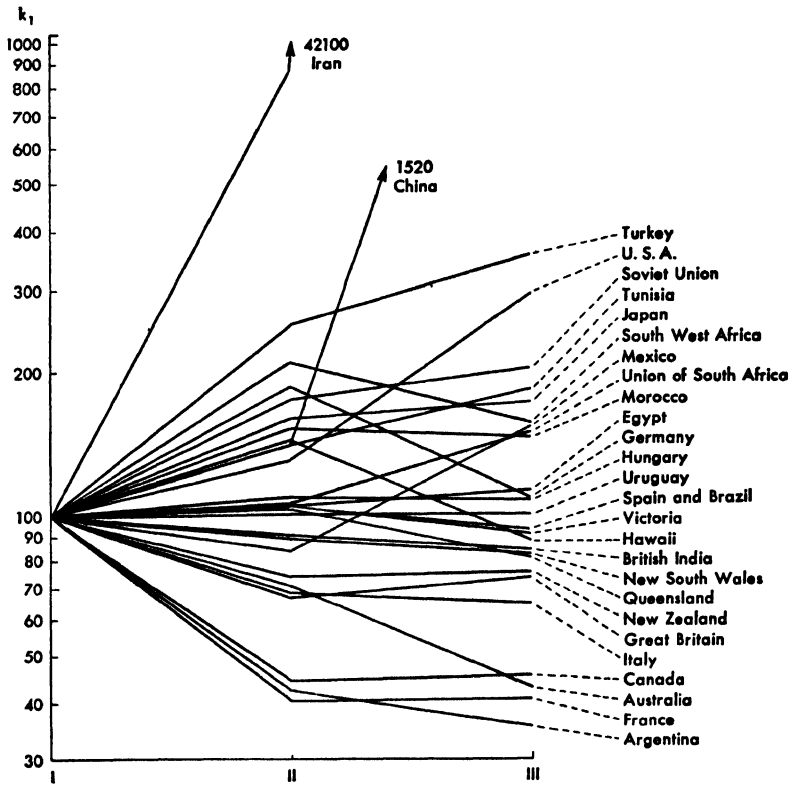

FIG. 3. National expenditures on production policy.

development of production policy. They slowed down in this respect during the years of observation for the purpose of temporarily allocating more means to their welfare or/and power policy. Incidentally, France was the only one among these four countries which had substantial international weight.

II

If we use similar diagrammatical methods for a juxtaposition and synopsis of the national l_1, we obtain an essentially different over-all picture, as shown in Figure 4. We realize at first sight the proper com-

position of the related *upward* shift in the international average level of the l_1, since the great bulk of the corresponding national items clearly display an upward trend. Two of the three countries in which the trend was directed downward had only a relatively small international significance. From the viewpoint of W_2, this could certainly not be said of British India, which is the third country with such an

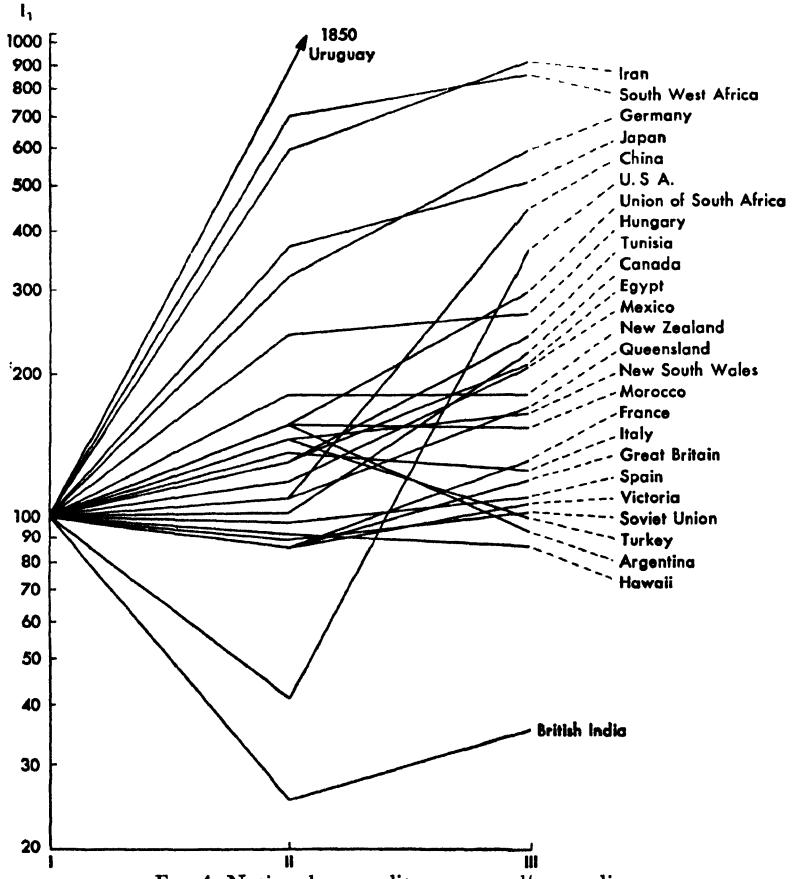

FIG. 4. National expenditures on welfare policy.

exceptional trend. Yet, we must add that the direction of the pertinent curve in our graph is somewhat deceiving. What actually happened in British India between I and II was by no means a rapid shrinkage of public welfare activities but their large-scale transference to the intermediate hierarchial and administrative level of the provincial govern-

ments. The expenditures of the latter, however, do not show up in our diagrams.

Similarly misleading impressions may result from the fact that expenditures on welfare policy played a relatively insignificant role on the highest level of governmental hierarchy also in several other countries. The comparatively small welfare expenditures of the federal governments in the United States of America, in Brazil, or in Australia during the years of observation are cases in point. The relevant items of the latter two federal governments were so insignificant that it is appropriate to omit them in Figure 4. Concomitantly, substantial corresponding expenditures could be registered on the intermediate or/and lowest administrative levels of state and local governments. The recognition of such *administrative shifts* is especially important with regard to both the great relative decline of the l_1 in the United States of America between I and II and to their steep rise between II and III.

III

The formation of the m_2 shows a process which is, to a certain extent, the reciprocal of the development of the l_1 (see Figure 5). The *downward* sloping main trend of the m_2 curves confirms our general expectation based on Figure 2. The opposite trend is exhibited only in a few instances to which it is impossible to attach major significance. An upward trend is found only for three relatively small Western countries which were only slightly and indirectly affected by the war. These countries carried through, during the years of observation, a series of reforms in their public administration necessitating a temporary increase of the m_2.

Our next step toward substantiation and verification ought to lead to a more detailed investigation of the institutional economic structure of all the countries in question during the development from I through III.[4] In the present context, however, we may content ourselves with the general conclusion that the war *did by no means fundamentally change* the main long-term trends in the shifting

[4] The applied material and discussion represented in *Weltwirtschaftspolitik*, pp. 98–220, may be regarded as the result of such an institutional investigation in detail. Numerous references may there be found to the statistical data and computations on which our Figures 1 to 4 are based, as well as to the primary and secondary sources from which these data have been taken.

structure of collective gratifications. In spite of considerable temporary deviations from these trends, the transformation of the old power states into the modern welfare states made further progress. At the same time, the assimilation between East and West also made headway. The underlying essential process was a further Westerniza-

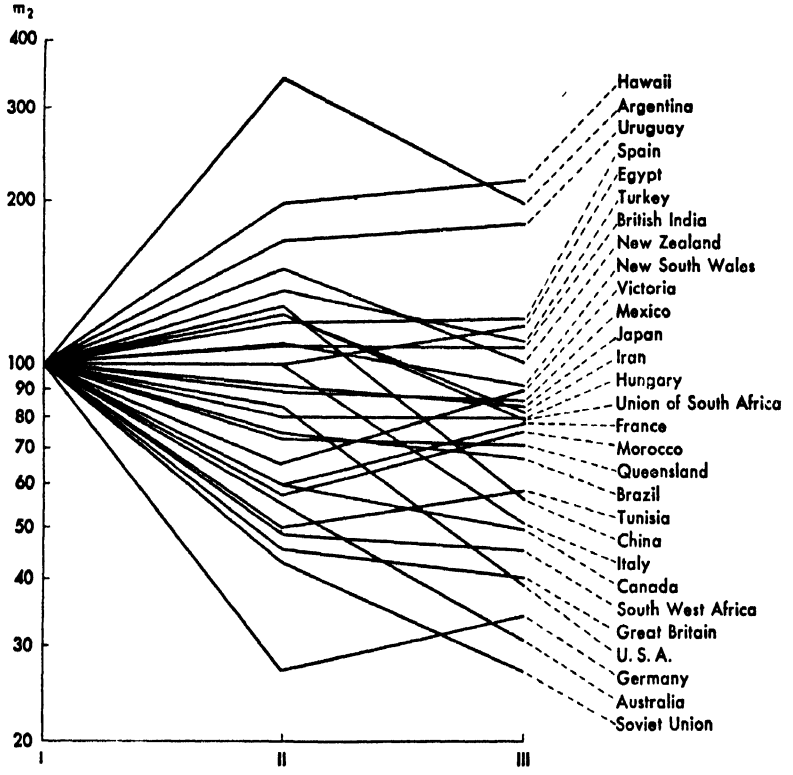

FIG. 5. National expenditures on power policy.

tion of the East with regard to the composition of collective want satisfactions. We may in this sense conclude that by the end of the 1920's at least a substantial part of the economic dislocations caused by the First World War had been eliminated. Yet, the root of subsequent disturbances reached down into the more basic layer representing the complex intersectoral relationships between individual and collective gratifications.

CHAPTER IX

DEPRESSION, THE SECOND WORLD WAR, AND ECONOMIC INTEGRATION

The United States and World Dichotomy

I

AFTER HAVING surveyed the development characterized by the First World War and the ensuing economic oscillations which resulted in the prosperity of the late 1920's, we may now examine the ups and downs of collectivization during the *last two decades.* As an object of quantitative analysis, this period has not only the benefit of its recency and of its providing suitable basis for prognostications and forecasts. There are additional advantages, which pertain to the causal background of the processes of collectivization and reprivatization. From this viewpoint, we may note a resemblance to the 1910's and 1920's. The last two decades also reflect at least two of the traditionally most important causes of structural economic changes and of the concurrent effects on the relations between private enterprise and collective planning. We here refer to the periodic business cycle of the Juglar type and to major wars as such causes.

On the one hand, the years 1929–1937 displayed a whole *business cycle* from peak to peak, with a trough between them which proved to be the greatest capitalistic depression in history. On the other hand, the decade between 1938 and 1948 was largely determined by the greatest *war* in history, including this war's immediate prelude and aftermath. Both events, the Great Depression and the Second World War, had a profound influence on the shaping of the economic structure of all countries concerned. In both periods collective forces had to be mobilized in order to cope with serious emergencies. But the concurrent effects on the march of collective planning showed divergent economic relationships. The task of our subsequent analysis will be to examine the relevant differences between the Great Depression and the Second World War.

II

The *spatial* aspect of such an analysis of the last two decades is not so clear-cut and advantageous as the above-mentioned temporal picture. Our *first* choice here also would be to deal with the structural changes of at least one or two scores of countries divided among the various parts of the globe. Only such a wide spatial coverage could lead to a direct explanation and appreciation of the manifold peculiar features presented by the different national processes of collectivization and reprivatization. Unfortunately, the statistical sources which would be necessary for a comparative discussion of this kind are not yet available, or at least they cannot yet be sufficiently concentrated and coordinated. After the disruption caused by the Second World War, international cooperation in the field of economic research has not yet regained, in the first years after the war, a level on which even the minimum requirements with regard to the pertinent statistical evidence could possibly be met. It is to be hoped, however, that in the 1950's this evidence will be available.

As a *second* choice, we could think of analyzing, on a comparative basis, the structural shifts of at least those two leading countries which we have already mentioned as representatives of the private-enterprise system and of collective economic planning, respectively. With respect to the ideological strife which has marked the fundamental dichotomy of international relations in the first few years since the Second World War, it would be justified to compare the gradual process of collectivization in the U.S.A. with the corresponding structural changes in the U.S.S.R. Such a comparison would also reflect significant aspects of the economic development of two or three scores of other countries which are being influenced, to a greater or lesser extent, by the economic leadership of the two predominant powers. It would be accordingly easy to draw relevant conclusions for a considerable majority of all countries even without going into any detailed examination of the pertinent statistical data with regard to the whole area characterized by the surviving remainders of capitalistic activities and by communistic tendencies, respectively. Yet, we could not avoid facing the essential difficulty involved in dealing with Soviet statistics, especially since dealing with them on the basis of the information available outside the orbit of Soviet influence would entail so many pitfalls that the

reliability of all relative quantitative conclusions would be jeopardized.

Consequently, we have to depend on a *third* choice and limit the institutional application of our theoretical viewpoints to the U.S.A. By doing so, we can utilize the well-developed statistical computations clustering around the quantitative analysis of the American national product and national income. In the last two decades, these computations have reached the highest international scientific level. Another facility is offered by the fact that since the Great Depression of the 1930's, the U.S.A. economy has gone through a gradual structural transformation which embraces many different hues of emphasis on private enterprise and of more or less extensive collective planning. Within the wide scope of this transformation, we easily find most of those composite or mixed forms to which our analytical investigation refers and which prevail in the recent economic development of all countries struggling with the problem of individual versus collective want satisfactions. We have already stated that there are many such countries. About the middle of the twentieth century, they cover by far the major part of the globe. Let us also consider the great ideological influence recently exercised by the U.S.A. on a substantial number of foreign countries. We may mention the American initiative in some outstanding international schemes of the years after the Second World War, such as the UNRRA or the ERP. The conclusion to be drawn from a quantitative examination of American structural economic shifts in the last two decades are—more or less indirectly—representative also of the relevant development of many foreign countries.

Private and Public Expenditures

I

Even with regard to the U.S.A., we have to stress the discrepancy between the exigencies of our research interest in the quantitative aspects of structural economic shifts and the practical possibilities offered by the availability of institutional evidence and statistical material. We must consequently adapt our institutional analysis as much as possible to the technical framework of the available statistical data. This operation can best be carried through by simplifying the quantitative expression of our fundamental variables, constants, and equations to the extent that they match the meaning and the structure of

the statistical series at our disposal. The further we go along the lines of such a *simplification* and adaptation, the more tangible will be the quantitative aspect of our institutional application. Yet, the further shall we be driven, at the same time, not only from the actual purpose of our whole analysis but also from the reality of economic life. This reality is composed of manifold quantitative and nonmeasurable qualitative elements. When approaching it, we cannot avoid the introduction of numerically more or less "intangible" factors. All we can do in such a situation—which incidentally reveals the traditional and typical dilemma of quantitative analysis in economics—is to aim at a reasonable balance between the scientific concreteness and the practical usability of our arguments.

To begin with, we may express the elements of our national budget equation (cf. p. 42) by the actual dollar *expenditure* incurred in providing goods and services for gratifications which we classify with various degrees of collectivization. So we have to survey, group, and classify all dollar expenditures in the U.S.A., since we may reasonably assume that all of them are incurred for the purpose of satisfying various types of individual, mixed, and collective wants. The aggregate dollar cost of all such satisfactions can conveniently be equated to the gross national product of the U.S.A. When looking at the relevant time series from the viewpoint of the changing amount of aggregate individual efforts in the whole community for the purpose of securing the desired amount of individual, mixed, and collective gratifications, it is appropriate to consider the per capita real gross national product. More difficult statistical problems arise when we tackle the task of breaking down the gross national product into various groups of private, mixed, and public expenditures corresponding to the various individual, mixed, and collective want satisfactions.

II

It is evident that on principle almost any number of pertinent groups can be formed and computed. The number in question largely depends on the degree of detail in which we are interested and on the amount of disposable statistical facilities. The more limited these facilities are, the more strictly we have to adhere to the relevant classifications and subdivisions offered by the conventionally computed statistics of national product. As an extreme step we may consider only *two* different

types of gratification. Afterward, we may gradually insert additional types. We may correspondingly amplify the dimensional scope of the relevant functions and equations.

With reference to the meaning of the difference between "relatively individual" and "relatively collective" want satisfactions, we may assume that the latter are provided by the allocation of "public" expenditures and that the former are covered by "private" expenditures. By *public* we here mean all government expenditures on Federal, state, and local purchases of goods and services, on transfer payments, on net interest payments, on subsidies less current surplus of government enterprises, and on federal grants-in-aid to state and local governments. We include shared receipts as well as such grants-in-aid as highway grants, education grants, public assistance grants, and grants for the administration of various public-health, employment, public-works, and miscellaneous similar schemes. All other expenditures in the U.S.A. we consider *private*. We compute their aggregate amount by subtracting the above-defined total public expenditures from the gross national product.

To be sure, this bipartition involves several conceptual discrepancies and technical shortcomings. In practical life, there are *overlappings* between our thus defined public and private expenditures. Both groups are considerably *heterogeneous* with regard to the public nature or to the private quality of the particular elements which they contain. Yet, such is the only comprehensive division of gross national product into two groups of expenditures covering the "more" individual and the "more" collective types of gratification which can be carried through on the basis of U.S.A. statistical data. Any major deviation from the established structure of these data would entail undue complications.

Assuming that private expenditures in the above-discussed sense express the cost of individual gratifications and that public expenditures indicate the cost of collective want satisfactions, we have to repeat that neither the individual nor the collective group can possibly be interpreted as pure or absolute extreme cases. We must regard the two large and comprehensive groups as those two sectors which contain the *relatively* more individual and the relatively more collective gratifications, respectively. We thus allow for the lack of homogeneity in the composition of both groups. At the same time, we indicate that the two groups implicitly absorb also those mixed in-between patterns

Table 1. Nominal and Real Gross National Product

Year	*Gross national product,*[a] *billions of dollars* (I)	*Consumers' price index*[b] (1935–1939 = 100) (II)	*Real gross national product, billions of 1935–1939 dollars* (III)	*Population*[c] *of the U.S.A., millions* (IV)
1929	103.8	122.5	84.8	121.8
1930	90.9	119.4	76.1	123.1
1931	75 9	108.7	69.9	124.0
1932	58.3	97.6	59 8	124.8
1933	55.8	92.4	60.3	125.6
1934	64.9	95.7	67.8	126.4
1935	72.2	98.1	73.6	127.3
1936	84.7	99.1	85.5	128.1
1937	90.2	102.7	87.8	128.8
1938	84.7	100.8	84 0	129.8
1939	90.4	99.4	91.0	130.9
1940	100.5	100 2	100.3	132.0
1941	125.3	100 8	124.3	133 2
1942	159.6	116 5	137.0	134.7
1943	192.6	123 6	155.8	136.5
1944	210 6	125.6	167.6	138.1
1945	213.1	128.4	166.0	139.6
1946	203 7	139.3	146.2	141.2
1947	231.6[d]	159.2[e]	145.4	144.0
1948[p]	254 9[d]	171.2[e]	148 9	146 5[f]

[a] *National Income Supplement to Survey of Current Business*, U. S. Dept. of Commerce, Bureau of Foreign and Domestic Commerce, Washington, July, 1947, p. 19. The July, 1949, issue of the same periodical was published after this manuscript had been written. Therefore, it was not feasible to utilize the revised and completed figures for our computation of the relationships among national product, national income, public and private expenditures, and other national aggregates.

[b] For years 1929–1940: *Bulletin* 699, U. S. Dept. of Labor, Bureau of Labor Statistics, Washington, 1941, p. 44. For years 1941–1946: *Monthly Labor Review*, U. S. Dept. of Labor, Bureau of Labor Statistics, December, 1947, p. 730.

[c] *Statistical Abstract of the United States*, U. S. Dept. of Commerce, Bureau of the Census, Washington, 1948, p. 9.

[d] *Survey of Current Business*, February, 1949, p. 10.

[e] *Ibid.*, back cover.

[f] *Current Population Reports*, U. S. Dept. of Commerce, Bureau of the Census, Series P-25, No. 13, August, 1948.

[p] Preliminary.

of want satisfaction which are of signal importance in practical life and which we shall later explicitly insert and analyze.

Keeping in mind the whole array of these qualifications and reservations, we find that our relevant computation of the public and private

Table 2. The Distribution of Private and Public Expenditures

Year	*Per capita real private expenditures** (I)	*Per capita real public expenditures*† (II)	*Per capita real gross national product* (III)	*Index numbers of* (I) (1929 = 100) (IV)	*Index numbers of* (II) (1929 = 100) (V)	*Index numbers of* (III) (1929 = 100) (VI)	(I) *in percentage of* (III) (VII)	(II) *in percentage of* (III) (VIII)
	Average 1935–1939, *dollars*							
1929	627.8	68.2	696	100.0	100.0	100.0	90.2	9.8
1930	543.2	74.8	618	86.5	109 7	88 8	87.9	12.1
1931	471.8	91.2	563	75.2	133 7	80 9	83.8	16.2
1932	392.3	86.7	479	62 5	127 1	68.8	81.9	18.1
1933	388.8	91.2	480	61.9	133.7	69 0	81.0	19.0
1934	429.9	106.1	536	68.5	155.6	77 0	80.2	19.8
1935	472.2	105.8	578	75 2	155.1	83.0	81.7	18.3
1936	542.3	124.7	667	86.4	182.8	95.8	81.3	18.7
1937	570.8	111.2	682	90.9	163.0	98.0	83.7	16.3
1938	520.8	126.2	647	83.0	185.0	93.0	80.5	19.5
1939	562.3	132.7	695	89.6	194.6	99.9	80 9	19.1
1940	621.7	138.3	760	99.0	202.8	109.2	81.8	18.2
1941	719.3	213.7	933	114.6	313.3	134 1	77.1	22.9
1942	609.2	407.8	1,017	97.0	597.9	146.1	59.9	40.1
1943	587.6	553.4	1,141	93.6	811.4	163.9	51.5	48.5
1944	619.1	594.9	1,214	98.6	872.3	174.4	51.0	49.0
1945	669.4	519.6	1,189	106.6	761.9	170.8	56.3	43.7
1946	797.7	238.3	1,036	127.1	349.4	148.9	77.0	23.0
1947	821.1	188.9	1,010	130.8	277.0	145.1	81.3	18.7
1948[p]	812.8	203.2	1,016	129.5	297.9	146.0	80.0	20.0

* Private expenditures are the residual obtained by subtracting public expenditures from gross national product.

† Public expenditures in current dollars: *National Income Supplement to Survey of Current Business*, July, 1947, p. 23; for 1947, *Survey of Current Business*, July, 1948, p. 16; for 1948, *Survey of Current Business*, February, 1949, p. 10. Cf. columns II and IV of Table 1.

[p] Preliminary.

expenditures can best be based on the fundamental series shown in Table 1. Our *simplified* national budget equation, in which we have only two different degrees of collectivization, accordingly assumes the numerical shape shown in Table 2.

III

Let us first examine the structure and the development of columns III and VI of Table 2. The application of several different series of index numbers for the purpose of *deflating* the various parts of gross national product to stable dollar values is a widely accepted method of such computations. But we content ourselves with depending only on one series of index numbers in order to eliminate the effect of fluctuating price levels. We choose to do so because the refinement and additional accuracy of calculation which could possibly be attained by using several series of index numbers would, in the present application, by no means offset the disturbing role which the plurality of such index numbers would unavoidably play. Moreover, it is largely from the viewpoint of want satisfactions that we are interested in private and public expenditures as well as in the corresponding aggregate national efforts. Since all such satisfactions ultimately refer to individuals as their subjects, it seems to be appropriate to rely on the current consumers' price index series as a single deflating tool. Since the choice of a base period for this series has little purport for our present argument, we simply apply the usual base period of the years 1935–1939. This is by no means incompatible with the use of the first year of our time series, *i.e.*, 1929 as the base year for the computation of other index numbers in our statistical tables.

As to the oscillations and trend displayed by the development in column III, we may limit our comments to the statement that this development fully conforms to the general conclusions with regard to the business cycle, to war economy, and to the long-term intensification of economic efforts which may be found in almost every elementary textbook of economics. The two *cyclical* peaks of 1929 and 1937, as well as the corresponding cyclical troughs of 1932 and 1938, are clearly reflected by our series. So is also the peak of the war effort in 1944 with its gradual growth before and its decline after that year. The domination by the Great Depression and by the Second World War of the whole two decades concerned is accordingly demonstrated. The long-term *trend* line in column III shows the positive slope which is to be expected with respect to the prevalent typically Western methods of tackling the quantitative discrepancy between wants and goods, that is by increasing the amount of the latter. The production of

more goods and services necessitates a growing aggregate amount of private and public expenditures and a correspondingly rising trend of gross national product.

IV

Considerably more important for our present train of thought is the relationship between columns I and II, between IV and V, as well as between VII and VIII in Table 2. To begin with, we may mention that for deflating and reducing the variates in columns I and II of Table 2 to *per capita real expenditures,* we used similar methods as for the computation of column III; *i.e.,* we also here depend on columns II and IV of Table 1.

Both significant events, the Great Depression and the Second World War, had economic and noneconomic causes, although the former group of causes evidently had a greater relative weight for the Great Depression. *Both events* brought about economic difficulties which were met by a mobilization of collective forces and by corresponding shifts in the economic structure toward an increasing emphasis on collective planning and collective gratifications. These shifts were expected to eliminate or at least to mitigate the economic difficulties concerned and to avert imminent dangers which were then jeopardizing the level of aggregate national welfare. Whether and to what extent the shifts were successful in doing so will be seen later when we analyze the concurrent development of this level.

When confining our inspection to columns V and VI of Table 2, we may express the actual meaning of the pertinent shifts also in another way. We may stress the long-term tendency toward a growth of the per capita real gross national product and then observe that during the Great Depression as well as during the Second World War this growth largely concentrated on collective gratifications. We may indicate corresponding cyclical processes of *collectivization.* The percentual distribution in columns VII and VIII of Table 2 shows that the impact of collectivization in such a sense reached a maximum strength which was about two and a half times greater in the war than in the Depression. This relation fairly well reflects the difference between the relative pressure of the two events on the structure of the national economy.

It may be added that in the Great Depression the maximum impact

of collectivization was reached only in 1934, *i.e.*, two years after the trough of the Depression. This clear-cut *lag* of two years can easily be explained by the frictional resistance of the economic structure and by the corresponding relative slowness of the American democratic economic policy when introducing measures of collective planning and collective interference. Once the surprise caused by the sweeping and partially bewildering reforms of the New Deal was overcome, the frictional resistance in terms of a structural rigidity of the economic system diminished. This is distinctly shown by the fact that in the milder recession which followed the cyclical peak of 1937 there was no similar lag, at least as far as our annual series are concerned. The year 1938 marked not only a new cyclical decline but also a prompt and simultaneous reaction by a fairly vigorous new impact of collectivization. In this case, the methods and experiences of the New Deal were conveniently at hand, and an increasing stress on collective planning could be reinstalled with relative ease. More or less similar was the corresponding development during the Second World War. After a slight hesitation and even relative decline in the prewar period of 1939–1940, the economic reaction of a new wave of collectivization ensued promptly when the U.S.A. entered the war. This reaction made an unprecedented advance in 1942, and it reached its peak in the annual figures of 1944, simultaneously with the highest annual value of the per capita real gross national product. The apparently smooth working of the mechanism of wartime collectivization was obviously facilitated by rigorous measures of the then prevailing national economic policy.

A similar lag effect is apparent with regard to the periods and processes of economic *reprivatization* in the last two decades. A lag of two years was also at work in the Great Depression. Increasing stress on private expenditures and on correspondingly individual gratifications did not set in before 1935, although a slow recovery of the per capita gross national product had already begun in 1933. Yet, the relative peak of the reprivatization period was reached in 1937, simultaneously with the cyclical business peak. Although the second movement toward reprivatization in 1939–1940 was rather timidly hesitant, it still involved a relative decline of public expenditures. The latter fact proves that the national economic recovery in those two years was at most only moderately influenced by anticipated

measures of a domestic war economy. It is only logical that the third period of private-enterprise reconversion began in 1945 when the war was over and when a new increasing emphasis on individual gratifications was again reflected by the accelerated growth of private expenditures. As to their casual background, our ups and downs of reprivatization need no explicit explanation. They may be considered also, in such a sense, reciprocals of the related efforts of collectivization.

It is conspicuous that the aggregate length of the above-mentioned three intermezzos of reprivatization in the last two decades was shorter than the length of the corresponding three periods of collectivization. Moreover, the relevant three processes of collectivization displayed a considerably greater aggregate vigor than the three processes of reprivatization, although the private-enterprise reconversion after the Second World War made rapid progress in 1946 and 1947. The explanation of the difference is given by the *long-term trend of collectivization* which can be derived from the development of the relationship between private and public expenditures in the whole stretch of time under discussion. This phenomenon seems to be the most important effect of the Great Depression and of the Second World War in the structure of the American economy. The size of the relative effect of the Depression can clearly be seen when we compare the two magnitudes of 9.8 and 16.3 which mark the years 1929 and 1937, respectively, *i.e.*, our two cyclical business peaks in column VIII of Table 2. On the pertinent effects of the Second World War, with regard to the obviously significant figure 18.7 marking the year 1947 in the same column, no definite judgment, in a numerical sense, can yet be passed.

CHAPTER X

NATIONAL BUDGET EQUATIONS

The Intermediate Group of Mixed Expenditures

I

AFTER HAVING discussed the numerical relationship between two different types of expenditures, we may now proceed to a similar statistical analysis of our national budget equation with *more* than two types. It would be logical to consider corresponding three-dimensional relationships. But the practical possibilities of a statistical examination of such relations are not encouraging.

When surveying from such a viewpoint the statistical series at our disposal, it would not be easy to select and to compose, on a numerically concrete basis and with clear-cut border lines, an *intermediate* type of gratifications. We might, for example, attempt to classify with them the want satisfactions covered by the Federal, state, and local transfer payments. We might classify with the same type the collective gratifications secured by individual actions of allocating and sacrificing private means in the form of gifts and donations—which could possibly be computed on the basis of corresponding gift and estate taxes—and a few similar items. But it would be a rather weary and problematic procedure to select, in this way, a relatively large enough group of expenditures with regard to the "mixed" type of gratifications. Not much more promising would be the reverse method of first selecting the more or less evident cases of private and public expenditures respectively and then referring the large bulk of the remaining expenditures to the intermediate group.

Such attempts manifestly require the solution of *complex problems* clustering around the classification of particular gratifications with the various degrees of collectivization. Here a certain degree of incorrectness and faultiness cannot possibly be avoided. From this viewpoint, there is not much difference between tackling the delicate task of classification with respect to three or slightly more groups of expenditures. Yet, in the latter case we have the great advantage of dealing

with a relatively more realistic set of structural economic interdependences. We may here accordingly omit analyzing three-dimensional relationships, and proceed to the consideration of a greater number of different types of gratification.

II

Depending on *more than three* relevant groups of expenditures must involve an obviously arbitrary choice. Whether we choose to examine structural economic changes with regard to 5, 50, or 500 different groups, could hardly be determined on the basis of any theoretical considerations, since in practical reality we may easily distinguish a number of groups even many times greater. We also know that the amount of statistical work necessarily involved grows about proportionally with the number of groups discussed. Consequently, the scope and subdivisions of the available pertinent statistical material may largely determine the number and composition of the types of gratification on which we base our analysis. With respect to the conventional structure of available statistical figures on American gross national product, we may thus decide to consider 18 groups of expenditures and to arrange their time series in the sequence shown in Tables 3 and 4.

It is essential to emphasize that our 18 groups of expenditures in these tables are entirely based on and strictly conform to the scope, structure, and composition of the *government statistics* mentioned as sources in the footnotes. To be sure, the general purpose of these statistics differs from the objective of our present analysis. Therefore, corresponding inaccuracies, overlappings, and other structural discrepancies must necessarily result from our method of simply taking over the framework, with its divisions and subdivisions, as presented by the government publications concerned. Yet, the justification of our simple method is again rooted in the fact that the additional accuracy and refinement possibly to be expected from a rearrangement and readjustment of the particular items of which the above-mentioned 18 groups are composed would not harmonize with other unavoidable but considerable shortcomings of the whole classification concerned. With regard to these shortcomings, which are frankly admitted, it will be easy for critics to shoot at Tables 3 and 4. As an anticipated answer, we may emphasize that with the help of an adequate statistical apparatus a sizable part of the discrepancies and shortcomings in question

could probably be eliminated. Nevertheless, it might contribute toward preventing at least some of the possible misunderstandings if we briefly substantiate the classification of our 18 groups in Tables 3 and 4.

Table 3. Expenditures on Relatively Individual Gratifications
(In billions of dollars)

Year	Recreation[a] (I)	Personal care[b] (II)	Personal business[c] (III)	Foreign travel and remittance[d] (IV)	Clothing[b] (V)	Net change in business inventories[e] (VI)	Housing[b] (VII)	(A) Household operation[f] (VIII)	Food and tobacco[g] (IX)
1929	4.3	1.1	5.2	0.8	11.0	1.6	11.4	5.3	21.4
1930	4.0	1.0	4.1	0.8	9.6	−0.3	11.0	4.7	19.5
1931	3.3	1.0	3.6	0.6	8.1	−1.4	10.2	4.2	16.3
1932	2.4	0.8	3.1	0.5	6.0	−2.6	9.0	3.4	12.7
1933	2.2	0.7	3.1	0.4	5.4	−1.6	7.8	3.2	12.8
1934	2.4	0 8	3.1	0.3	6.5	−1.1	7 5	3.6	15 6
1935	2.6	0 8	3.3	0.4	6.9	0.9	7.6	3.8	17.7
1936	3.0	0.9	3.6	0.4	7.6	3.2	7.9	4.4	20.0
1937	3.4	1.0	3.9	0 5	8.0	2 3	8.4	4.7	21.6
1938	3.2	1.0	3.6	0.4	7.9	−1.0	8.7	4.4	20.7
1939	3.4	1.0	3.7	0.3	8.3	0.4	8.9	4 8	21.1
1940	3.7	1.1	3.8	0.2	8.8	2 3	9 2	5 7	22.6
1941	4 2	1.2	4.1	0 3	10.5	3.9	9 9	5 9	26.5
1942	4.6	1.4	4 1	0 3	13.2	1 4	10 6	6.1	32 8
1943	4.7	1.7	4.2	0.6	16.3	−1.2	11 1	6 3	38.1
1944	5.1	1.9	4.5	1.0	18.0	−2.0	11.7	6 7	41.6
1945	5.8	2.1	4.9	1.1	20.1	−1.2	12.1	7.3	46.7
1946	7.9	2.3	5.2	0.4	22.2	3.7	12.7	9.0	55.1
1947[h]	9.4	2.3	6.0	0.7	22.6	0.6	14.4	11.0	61.8

[a] *National Income Supplement to Survey of Current Business*, July, 1947, p. 43.
[b] *Ibid.*, p. 42.
[c] *Ibid.*, p. 43.
[d] *Ibid.*, p. 44.
[e] *Ibid.*, p. 45.
[f] *Ibid.*, p. 42 (one-half of the item "household operation").
[g] *Ibid.*, p. 41.
[h] *Survey of Current Business*, July, 1948, pp. 24–25.

The numerical sequence of the columns I to IX in both tables is meant to indicate a correspondingly increasing order and weight of collective factors at work. The *bipartition* of the 18 items into two large groups of expenditures on relatively more individual and relatively more collective gratifications, respectively, as represented by

the two tables, has no strict significance. The border line between the two large groups could have been drawn almost anywhere else, since in the background of the bipartition we actually have a gradual transi-

Table 4. Expenditures on Relatively Collective Gratifications
(In billions of dollars)

Years	Producers' durable equipment[a]	(B) Household operation[b]	New private construction activity[c]	Net foreign investment[d]	Religious and welfare activity[c]	Private education and research[c]	Medical care and death expense[e]	Transportation[f]	Government purchases of goods and services[g]
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
1929	6.4	5.3	7.5	0.8	1.2	0.7	3.6	7.5	8.5
1930	4.9	4 7	5.3	0.7	1.2	0.7	3.4	6.1	9.2
1931	3.2	4.2	3.4	0.2	1.1	0.7	3.1	4.9	9.2
1932	1.8	3.4	1.5	0.2	1.0	0.6	2.6	3.9	8.1
1933	1.8	3.2	1.0	0.2	0.9	0.5	2.4	3.9	8.0
1934	2.5	3.6	1.2	0.4	0.9	0.5	2.6	4.5	9.8
1935	3.4	3.8	1.6	−0.1	0.9	0.5	2.8	5.2	9.9
1936	4.5	4.4	2.5	−0.1	0.9	0.5	3.0	6.0	11.7
1937	5.4	4.7	3.3	0.1	0.9	0.6	3.2	6.4	11.6
1938	4.0	4.4	2.9	1.1	0.9	0.6	3.2	5.5	12.8
1939	4.6	4.8	3.6	0.9	0.9	0.6	3.4	6.3	13.1
1940	6.1	5.7	4 2	1.5	1.0	0.6	3.6	7.0	13.9
1941	7.7	5.9	5.2	1.1	1.0	0.7	4.0	8.2	24.7
1942	4.7	6.1	2.9	−0.2	1.2	0.8	4.5	5.2	59.7
1943	3.8	6.3	1.7	−2.2	1.3	1 0	5.0	5.2	88.6
1944	5.3	6.7	1.7	−2.1	1.5	0.9	5.4	5.5	96.6
1945	7.1	7.3	2.5	−0.8	1.5	0.9	5.8	6.3	83.1
1946	12.4	9.0	7.9	4.8	1.5	1.0	6.4	10.9	30.7
1947[h]	17.8	11.0	10.9	8.9	1.6	1.1	7.4	15.5	27.9

[a] *National Income Supplement to Survey of Current Business*, July, 1947, p. 45.
[b] *Ibid.*, p. 42 (one-half of the item "household operation").
[c] *Ibid.*, p. 44.
[d] *Ibid.*, p. 19.
[e] *Ibid.*, p. 42.
[f] *Ibid.*, p. 43.
[g] *Ibid.*, p. 19.
[h] *Survey of Current Business*, July, 1948, pp. 16, 18, 24–25.

tion. Along the whole range of this transition, all groups of expenditures contain a greater or lesser amount of individual as well as of collective elements. But a few words may be added for the purpose of explaining the location of the particular groups in our tables.

III

Recreation and personal care are typical fields for the *individual* satisfaction of wants in America, where no *dopolavoro, Kraft durch Freude,* or corresponding Soviet methods have been accepted. So is by far the major part of those items which are customarily summarized as personal business, while only a few of them—such as brokerage charges, legal services, interest on personal debt—are subject to some kind of direct governmental regulations. Such regulations have a somewhat greater significance for several aspects of foreign travel and remittances, which are at least partially directed by governmental monetary and credit policies as well as by official plans for the foreign travel of United States government military and civilian personnel. The production of the raw materials, semifinished, and finished products on which the gratification of the want for clothing depends is to a certain extent regulated by our labor and social-security legislation as well as by other measures of collective planning for manufacturing and farming industries. Partially similar considerations refer to the rather indirect gratifications which are at work in the background of the item representing net change in business inventories. But here the general price and business-cycle policy of the government also plays an increasingly important role. Although housing in the U.S.A. is directly dominated by the initiative and activities of private enterprise, the recent importance of relevant governmental schemes—such as rent control, collective housing projects, and similar supporting or regulatory devices—have induced us to rank the pertinent expenditures toward the end of Table 3.

The expenditures on household operation are peculiarly composed. Some of their rather important items—such as those referring to furniture, floor coverings, refrigerators, washing and sewing machines, electrical appliances, cooking and portable heating equipment, china, glassware, tableware, utensils, other durable and semidurable house furnishings, and domestic service— obviously belong to the sphere of private initiative and individual gratifications. Yet, another subgroup of the related expenditures are spent on the services of public utilities and are accordingly subject to intensive governmental regulation. This subgroup comprises the rather substantial expenditures on electricity, gas, water, telephone, telegraph, postage, etc. With regard to

this diversified structure of the expenditures on household operation, we have decided to divide them into two equal parts, (A) and (B), and to locate them near the *middle* of our whole range of expenditures but at some distance from each other. We find that expenditures on food and tobacco are best placed somewhere between the two halves of the expenditures on household operation. We do so with regard to the significant role which governmental planning has been playing in the production of food and tobacco especially since the inauguration of the AAA and of subsequent similar schemes.

As a next item in the sequence, we rank the expenditures on producers' durable equipment because *collective* planning, especially with respect to the business cycle and to war economy, has a fairly great influence with them. Quite obvious is the corresponding influence with the profit calculation and administrative regulations on which all kinds of new construction activity depend, even if they happen to be—as is the case concerning column III in Table 4—a private activity. Net foreign investment may undoubtedly be regarded, to a great extent, as a corollary of government policies in the field of international economic relations. A considerable part of the expenditures on religious and welfare activities, on private education and research, on medical care and death expenses, and on transportation is more or less directly ruled by governmental planning. In fact, many items of these expenditures refer to gratifications which seem to be developing toward even more advanced degrees of collectivization, although the structures of the particular items concerned are greatly diverse. All in all, however, many of these items partially approximate the nature of expenditures on government purchases of goods and services, which we classified in Table 4 with the relatively most collectivized gratifications.

The Case of Five Expenditure Groups

I

As a next step, it might help and simplify our discussion if we consolidate the 18 items of Tables 3 and 4 into a smaller number of more comprehensive and larger groups. For example, we may choose 5 as a suitable number. We may express the corresponding *five larger groups* by *a, b, c, d,* and *e*. But we must stress that even the first larger group necessarily displays, in practical life, at least a few col-

lective features and that it cannot be equated to any hypothetically limiting case which stands for "purely" individual gratifications. On the other hand, we have to stress that even *e* is influenced by at least a few factors of private enterprise and that it cannot be related to any hypothetically limiting case of "absolute" collective satisfactions.

Table 5. National Budget Equations with Five Groups of Expenditures

(Per capita real expenditures in average 1935–1939 dollars)

Year	I	+	II	+	III	+	IV	+	V	=	VI[1]
	a		*b*		*c*		*d*		*e*		
1929	76.6		197.0		222.0		143.4		57.1		696
1930	67.4		170.6		198.4		118.7		63.0		618
1931	63.1		156.5		175.7		99.7		68.1		563
1932	55.6		129.8		147.1		80.5		66.6		479
1933	54.7		127.2		152.6		76.3		68.6		480
1934	54.7		136.7		179.6		83.6		80.9		536
1935	57.2		154.3		200.0		87.3		79.2		578*
1936	62.7		182.8		228.1		101.4		92.7		667
1937	67.5		177.3		240.1		109.8		88.0		682
1938	62.8		154.6		223.9		107.4		98.3		647*
1939	65.3		174.4		237.7		116.1		102.2		695
1940	66.1		195.3		259.2		134.5		104.9		760*
1941	72.8		225.8		299.5		150.2		183.8		933
1942	66.1		199.3		278.7		91.5		381.4		1017*
1943	66.2		192.8		285.3		70.7		524.9		1141
1944	72.8		199.1		309.6		74.1		558.4		1214*
1945	77.3		214.0		341.2		90.4		464.9		1189
1946	80.8		242.4		390.6		165.8		156.4		1036*
1947	80.8		212.0		395.8		198.9		122.2		1010*

[1] The summation of *a*, *b*, *c*, *d*, and *e* differs from the corresponding figures in column VI by $\frac{1}{10}$ of 1 per cent, or less, in all cases except those figures having an asterisk beside them. The differences are due to rounding with the result that the sum of the percentages is not exactly 100.

We may now decide to classify the smaller groups I to IV in Table 3 with our new larger group *a*, groups V to VIII in Table 3 with *b*, group IX in Table 3 and groups I to II in Table 4 with *c*, groups III to VIII in Table 4 with *d*, and group IX in Table 4 with *e*. When doing so, we are partially influenced by our endeavor to give the whole distribution—as it will be shown later—an approximately

normal shape. But we may add that any other similar grouping—provided that it is not unjustifiably arbitrary—could not essentially interfere with the main purport of our present argument.

The time series expressing the relevant *distribution* will accordingly be as shown in Tables 5 and 6.

Table 6. Relative Values of the National Budget Equations with Five Groups of Expenditures

Year	*Index numbers* (1929 = 100) *of*					*a*	*b*	*c*	*d*	*e*
	a	*b*	*c*	*d*	*e*	*in per cent of the per capita real gross national product*				
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)	(X)
1929	100.0	100.0	100.0	100.0	100.0	11.0	28.3	31.9	20.6	8.2
1930	88.0	86.6	89.4	82.8	110.3	10.9	27.6	32.1	19.2	10.2
1931	82.4	79.4	79.1	69.5	119.3	11.2	27.8	31.2	17.7	12.1
1932	72.6	65.9	66.3	56.1	116.6	11.6	27.1	30.7	16.8	13.9
1933	71.4	64.6	68.7	53.2	120.1	11.4	26.5	31.8	15.9	14.3
1934	71.4	69.4	80.9	58.3	141.7	10.2	25.5	33.5	15.6	15.1
1935	74.7	78.3	90.1	60.9	138.7	9.9	26.7	34.6	15.1	13.7
1936	81.9	92.8	102.7	70.7	162.3	9.4	27.4	34.2	15.2	13.9
1937	88.1	90.0	108.2	76.6	154.1	9.9	26.0	35.2	16.1	12 9
1938	82.0	78.5	100.9	74.9	172.2	9.7	23.9	34.6	16.6	15.2
1939	85.2	88.5	107.1	81.0	179.0	9.4	25.1	34.2	16.7	14.7
1940	86.3	99.1	116.8	93.8	183.7	8.7	25.7	34.1	17.7	13.8
1941	95.0	114.6	134.9	104.7	321.9	7.8	24.2	32.1	16.1	19.7
1942	86.3	101.2	125.5	63.8	668.0	6.5	19.6	27.4	9.0	37.5
1943	86.4	97.9	128.5	49.3	919.3	5.8	16.9	25.0	6.2	46.0
1944	95.0	101.1	139.5	51.7	977.9	6.0	16.4	25.5	6.1	46.0
1945	100.9	108.6	153.7	63.2	814.2	6.5	18.0	28.7	7.6	39.1
1946	105.1	123.0	175.9	115.6	273.9	7.8	23.4	37.7	16.0	15.1
1947	105.5	107.6	178.3	138.7	214.0	8.0	21.0	39.2	19.7	12.1

The computation of per capita real budget items in Table 5 has been carried through with the help of the same method and indexes as in Table 2. It may be expected a priori that these two tables show not only in such a formal but also in a material sense *similarities* and certain parallel features, which pertain to the long-term trend as well as to the cyclical oscillations of the time series concerned. We may summarily anticipate that the expectation is approximately satisfied.

II

As to the *long-term trend* of structural shifts, Table 5 also reveals, all in all, an increasing emphasis on collectivization. To be sure, the greatly varified composition of our five groups of expenditures causes partial—but by no means essential or decisive—deviations from this general trend. When inspecting the corresponding columns in Table 6, too, we note that the increase of the relative weight of *e,* for example between the years 1929 and 1946, was almost as great as the aggregate corresponding decrease of *a* and *b*. This can be clearly seen from a comparison of column X with columns VI and VII in Table 6.

Yet, the same table shows a considerable relative decline of *d,* and an even larger relative growth of *c*. As to the causal background of this *"irregularity,"* we may point out that the great majority of the particular items of which *d* is composed do not belong to those expenditures on relatively collectivized gratifications which traditionally increase when and while the nation must cope with such economic difficulties as presented by cyclical depressions or wars. On the contrary, the great majority of the items concerned customarily waive their priority to more "urgent" expenditures when the dangers of cyclical depressions emerge, and even much more so when the big practical problems of a war have to be solved. Columns III, V, VI, VII, and VIII of Table 4 reveal to what a substantial extent new private construction activities slacked during the Great Depression as well as during the Second World War. We may observe how religious and welfare activities, private education and research, and partially even transportation had to be relatively neglected during the same period. This group of columns also discloses that not even expenditures on medical care and death expenses could regain by 1946 the relative significance for the gross national product which they had had in 1929. Columns III and VIII of Table 4 show a conspicuous recovery in 1946. But the pertinent increase of the expenditures on new private construction activities and on transportation were still not sufficient to raise the relative importance of *d* to its 1929 level.

The reciprocal of this discrepancy is reflected in a somewhat magnified shape—allowing also for a corresponding difference between the aggregate relative decrease of *a* and *b* and the growth of *e*—by the considerable gain of *c*. We find a direct explanation of the latter

gain when considering mainly two facts. First, we may recall the well-known increase of expenditures on *food* during the Second World War owing to the rapidly growing relevant requirements of the armed forces and the great pressure of the precarious international food situation after the war. Second, we know that the sudden rise of foodstuff prices in 1946–1947 also played an important role. This role cannot entirely be eliminated by deflating money expenditures on food with the help of our general consumers' price indexes, since the latter are based also on prices which increased more slowly than those of foodstuffs.

We may conclude that the somewhat peculiar development of d and partially also of c in Table V is largely rooted in those structural changes which were caused by the Great Depression and especially by the Second World War. Consequently, the peculiarity under discussion does not obviate the validity of our above-mentioned statement concerning the long-term trend of *collectivization* during the last two decades.

III

Let us now turn toward a more general and direct inspection of the *cyclical fluctuations* expressed by Tables 3, 4, 5, and 6. In the causal background of most of the differences between these fluctuations and those to be found in Table 2, the same or at least similar factors are at work as behind the long-term tendencies and developments. To begin with, we may remember the features of the relevant general case. Many of the relatively more collective gratifications show a tendency to increase in significance within the scope of the national budget equation at the expense of the corresponding importance of the more individual want satisfactions when cyclical business depressions or wars have to be faced. After such processes of collectivization, periods of reprivatization traditionally ensue during cyclical business recoveries and postwar reconversion efforts. With respect to both the collectivization and the reprivatization periods, time lags may be operative.

The expenditures on *government purchases* of goods and services in Tables 5 and 6 exactly follow this pattern. We see that e resembles the development in column II of Table 2 inasmuch as it shows a lag of two years in the Great Depression but no lag whatever in the slight reces-

sion after 1937 and in the Second World War. Since the causal factors in the background of *e* are about the same as those influencing the behavior displayed by column II in Table 2, we may omit commenting on them. We must stress, however, that the weight of relevant changes in *e* is exceptionally great. In fact, it is great enough to determine almost entirely, in terms of a reciprocal development, all other simultaneous shifts in Table 5. Such an effect is by no means surprising if we consider that the relative weight of *e* almost doubled between 1929 and 1934 and considerably more than trebled between 1940 and the peak of the war effort in 1943 and 1944. No wonder that the four other groups of expenditures dropped in the latter two years exactly to their lowest relative levels in the whole range of time covered by our tables.

It is not surprising either that by far the heaviest drop then occurred in the development of *d,* while *c* displayed the relatively slightest decline. With regard to *d,* we have already mentioned the specific reasons for its shrinkage during the war. We may now add that a sort of direct *transference of wartime emphasis* between the two relatively most collective large groups of expenditures, *i.e.,* from *d* to *e,* should also be specified as a further obvious reason. As far as *c* is concerned, we have already pointed out its partial wartime reciprocity to *d,* with regard to the increasing want for food and to the rising food prices during and after the war, respectively. The simultaneous development of *a* and *b* meets our a priori expectations. Hence, we here need no specific explanation.

As to the shaping of our time series in the *Great Depression,* the foregoing motivation adequately covers *b* and *d,* since both of them display relative minima in 1934. Yet, *a* and *c* were then subject to oscillatory movements which at first sight seem to contradict our general argument. Column VI in Table 6 reached, after a mildly fluctuating phase, a relative peak in 1932; the changes in this column were not substantial, so that it retained a comparatively calm and almost stable attitude during the whole Great Depression. So also, but even more consistently, did *c.* However, this group of expenditures reached, after a similarly oscillatory development, its relative maximum in 1935.

With regard to *a,* the explanation is that some of the particular wants for recreation, for personal business equipment and services,

and for personal care failed to contract during the Great Depression, and especially at the trough of it, to the extent which was reached by the average of wants for all goods and services. Such a *rigidity* was displayed, for example—to mention only a few items involving some of the greatest expenditures in this group—by the wants for clubs' services, life insurance, legal services, creditors' services (with regard to interest payment on personal debt), certain spectator amusements such as motion-picture entertainment, certain commercial participant amusements such as golf instruction, toilet articles and preparations, and barbershop and beauty-parlor services. With respect to the first four wants, some of the underlying long-term contracts were at least partially responsible for the rigidity of the corresponding demands. The rest of the aforesaid wants usually refer only to minor particular items in consumers' demand schedules. The rigidity of these items was mainly due to such psychic factors as carelessness about minor expenditures, vanity, or adhering to personal customs and social conventions.

Partially similar *psychic* and, in addition, *physiological reasons* explain the rigidity in the development of c during the Great Depression. The consumption of food and tobacco is customarily reduced only with great reluctance even when the available purchasing power is rapidly decreasing. The motivation is similar behind the corresponding behavior of the wants and demand for household equipment and services with regard to such items as fuel, electricity, gas, water, telephone, telegraph, mail services, etc. As a result, the rigidity of c during the Great Depression was not only stiffer than the rigidity of a but it also showed a longer perseverance. Accordingly, c reached its relative maximum three years later than a.

At the cyclical business *peak of 1937*, the formation of a revealed a transitory relative maximum value, while the *recession of 1938* marked a clear-cut maximum in the development of e. Consequently, these two extreme groups then fully met our theoretical expectations. The somewhat blurred picture offered, at the same time, by the development of the other three large groups of expenditures can be explained partially on the basis of a comparatively strong gain of e in 1938, and partially with the minor intensity of this whole business wave, which admitted various specific lags and other particular deviations. For example, d displayed a relative increase from 1937 to 1938 in

spite of its above-discussed somewhat antithetical attitude during the Great Depression and the Second World War. The explanation of this increase can be found in specific lag effects. With regard to some of the particular items of which *d* is composed, the recession of 1938 was not vigorous enough to make them contract; they even partially continued expanding. So did the items in columns V, VI, and especially IV of Table 4. The conspicuous temporary expansion in the latter column is, of course, rooted in the peculiar development of prewar international economic relations. The relative trough of *b* in 1938 conforms to our general expectations. So do, at least partially, the simultaneous slightly oscillatory movements of *c*, which include a small relative decline from 1937 to 1938. Incidentally, such movements are compatible with the general significance entailed by the central location of *c* in the whole range of Table 5.

Diagrammatical Formation of a National Budget Equation

After our statistical discussion of the development disclosed by Table 5, we may briefly evaluate the possibilities of a corresponding diagrammatical illustration. We may undertake to plot a frequency histogram, or even a curve, for the relevant distribution of public expenditures. When doing so, we first must tackle the delicate task of assigning definite percentage values to the *degrees of collectivization* to which our five large groups of expenditures belong. It is evident that—if we wanted to be meticulously accurate—we could classify not only the 18 smaller groups in Tables 3 and 4 with the same number of different degrees of collectivization but we could easily continue a similar differentiation with regard to several scores or hundreds of the particular items of which these 18 groups are composed. Thus we could possibly reach a fairly realistic distribution with respect to the pertinent degrees. At the same time, those technical viewpoints and rules could also be utilized which will be discussed later in some detail, and which involve various operations of weighting and averaging factors relevant for such computations.

For the purpose of the present application, however, it will be adequate to simplify the procedure and to relate the classification concerned only to the five larger groups in Table 5. With respect to the varified composition of these groups, it will be justified not to go into any detailed computation when classifying them with the relevant

degrees of collectivization but to depend on some kind of a *schematic pattern*. To be sure, such a pattern could by no means be taken as accurate. Nevertheless, it can give us a reasonably useful approximate basis. Moreover, our keeping it within the limits of a modest approximation will be a less vulnerable and more logical method than if we tried to calculate details which would not be commensurate and proportionate to the general perspective of our essential argument.

We may thus classify *a* in Table 5 with the 10th percentual degree of collectivization, *b* with the 30th, *c* with the 50th, *d* with the 70th,

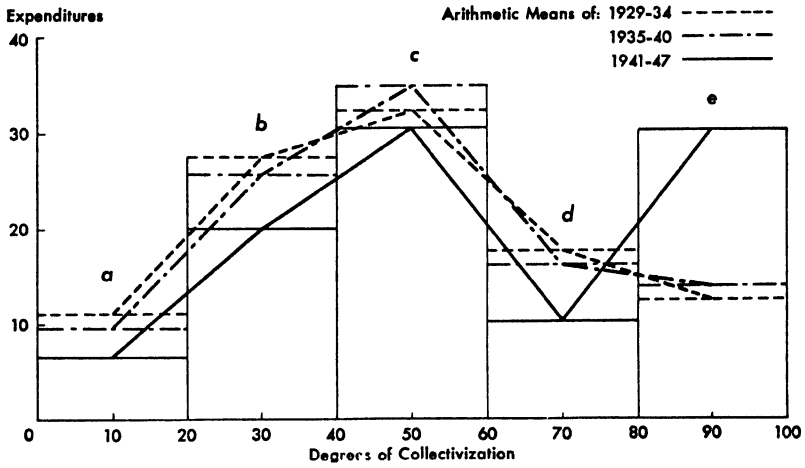

FIG. 6. The arithmetic means of *a*, *b*, *c*, *d*, and *e* in the years 1929–1934, 1935–1940, 1941–1947. Per capita real expenditures in percentages of U.S. gross national product.

and *e* with the 90th degree. We may now mark these degrees on the abscissa and the numerical values of *a*, *b*, *c*, *d*, and *e*, taken from Table 5, on the ordinate. As a result, frequency *histograms* may be plotted for the three periods 1929–1934, 1935–1940, and 1941–1947 by making use of the arithmetic means of each of these six-year periods (see Figure 6). Such a shape of our histograms primarily reflects the impact of the Great Depression of the 1930's, the ensuing recovery coupled with a state of increasing preparedness for an international clash, and the effects of the Second World War on collective planning.

If we are more interested in the long-term trend of collectivization than in the short-term oscillations caused by depression and war, we may prefer to plot histograms for each of the *one-year* periods 1929,

1937, and 1947. The first and second period accordingly mark peaks of the major business cycle (Juglar-cycle), while the third period characterizes the process of postwar reconversion (see Figure 7).

Adding the usual continuity assumption, we may develop these frequency histograms into *curves* illustrating the distribution of expenditures in every year covered by our statistical tables. The stand-

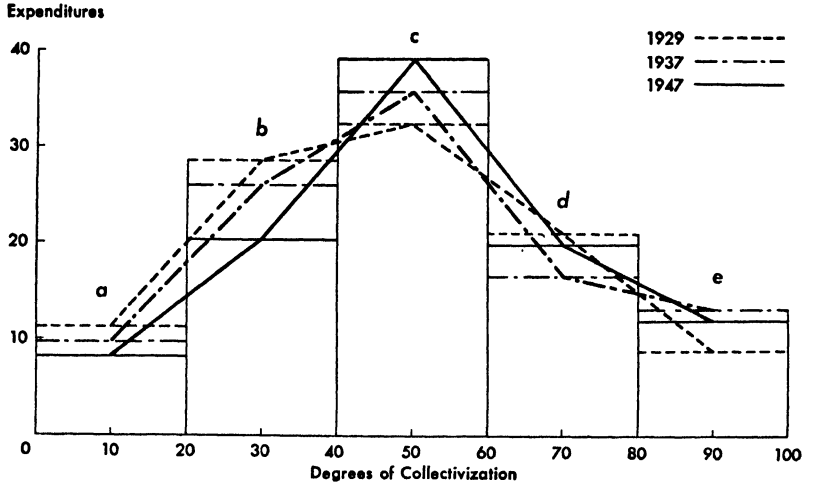

FIG. 7. The values of *a*, *b*, *c*, *d*, and *e* in the years 1929, 1937, 1947. Per capita real expenditures in percentages of U.S. gross national product.

ard deviation, the skewness, and the kurtosis of such curves can then be computed with the help of the conventional formulas. Time series composed of the relevant arithmetic and/or harmonic means may further illustrate and clarify the processes of collectivization and reprivatization involved (see Table 7).

It is obvious that the whole formation and most of the diagrammatical changes in the distribution of all expenditures are predominantly determined by the ups and downs in the relative magnitude of the *e*, which is here expressed by the expenditures on *government purchases* of goods and services. We have already seen that it is largely this group which directly influences also the shaping of the other expenditure groups. Thus *e* indirectly adds, too, to its decisive bearing on the development of the whole distribution concerned.

As a consequence, prosperous years of brisk and *peaceful business*, such as 1929 and 1937, in which *e* was relatively small, are marked

—as we may see in Table 7—by a fairly normal shape of the distribution with a moderate standard deviation and skewness. In such years, the corresponding kurtosis depended mainly on the relative size of *c*, the oscillations of which were, incidentally, not exceedingly great during the last two decades. In the depression periods which ensued after the business peaks of 1929 and of 1937, the relative growth of *e* was clearly reflected by the corresponding increase of the standard deviation. But *c* still retained its dominating role with respect to the relevant skewness and kurtosis.

Table 7. Approximate Standard Measurements of Distribution in Five Groups of Expenditures

Year	*Arithmetic mean* (I)	*Harmonic mean* (II)	*Standard deviation* (III)	*Skewness* (IV)	*Kurtosis* (V)
1929	47.33	32.62	22.25	0.02091	2.328
1930	48.04	32.91	22.82	0.02709	2.284
1931	48.34	32.70	23.49	0.03796	2.224
1932	48.91	32.56	24.13	0.03294	2.153
1933	48.99	32.84	24.08	0.03919	2.178
1934	49.93	34.12	23.88	0.03298	2.196
1935	49.20	34.01	23.33	0.04898	2.289
1936	49.41	34.39	23.30	0.05136	2.274
1937	49.27	34.08	23.08	0.03495	2.312
1938	50.74	34.90	23.66	0.01615	2.218
1939	50.49	34.93	23.51	0.02159	2.256
1940	50.44	35.52	23.10	0.02430	2.253
1941	50.39	37.34	24.47	0.18300	2.115
1942	60.29	41.72	26.69	0.04615*	1.725
1943	63.89	44.58	26.95	0.17260*	1.773
1944	63.94	44.35	26.97	0.18190*	1.791
1945	60.91	42.25	26.68	0.05825*	1.747
1946	51.44	36.89	22.85	0.02330	2.319
1947	51.38	37.05	21.98	0.00243	2.478

* These years show a negative skewness.

The great upheaval in the structure of expenditures was brought about by the *Second World War,* and especially by the events of 1943 and 1944, when the single group *e* reached a size almost as large as the aggregate amount of the other four groups. The result was not only an exceptionally great rise of the standard deviation and the skewness in the distribution of expenditures but also a sudden shift in

the determination of its kurtosis. The more leptokurtic shape which it then assumed was no longer ruled by *c*. The decisive role was taken over, also in this respect, by the great relative weight of *e*. The whole distribution of expenditures accordingly reflected the exceptional features of an intensive war economy. In fact, our standard measurements have very little meaning for the years 1942–1945. On account of the exceedingly great relative weight of *e*, this shape then was far from reflecting a normal distribution.

The march of peacetime *reconversion* after the end of the war is reflected by the restoration of a distribution which began to resemble its normal shape. In 1946, its diminishing standard deviation and skewness were distinctly coupled with the gradual resumption of a less leptokurtic form, for which *c* reoccupied its outstanding role. The direction of these shifts indicated an elimination of the structural distortion which was caused by the wartime economic emergency.

Yet, the shape of the relevant distribution characterized by the prosperity years of 1929 and 1937 could not yet be regained. The major structural difference displays a still heavy weight of *e* and the concurrent features of an increased significance of *collective planning*. The same result is expressed by the development of columns I and II in Table 7. The arithmetic and harmonic means, as well as the skewness of the distribution, with regard to their comparative magnitudes at the beginning and at the end of our time series, offer an approximate measure of the process of long-term collectivization to which the structure of American economy has been subject in the last two decades. The various economic aspects of the relationship between diminished structural symmetry and relatively accentuated uniformity, in terms of an increased emphasis on collective planning, will be evaluated in Chapters XIII and XIV. There, also, the effects of these shifts on productive activities and on the distribution of income in the U.S.A. will be explained.

CHAPTER XI

NATIONAL INCOME AND NATIONAL WELFARE

A Measurement of National Welfare

I

As soon as we tackle the task of institutionally evaluating our *national welfare function* (cf. p. 42) considerably increased methodological difficulties have to be faced. It will be shown that when endeavoring to make such a function specific, we can no longer depend on the same advanced level of simplification as was feasible with respect to the institutional meaning of national budget equations. It will also be demonstrated that no specific expression of the national welfare function on the basis of statistical observation is possible without assuming a direct or indirect cardinal measurability of the utility element involved.

Yet, here we encounter essentially the same obstacles which frustrated most of the efforts of the nineteenth-century welfare analysis and which Irving Fisher and Ragnar Frisch tried to overcome in the 1920's and early 1930's. The type of comparative family budget data of Oddland and Evenland to which Fisher refers the five fundamental restrictive assumptions[1] of his method of measuring the marginal utility of money are undoubtedly a step toward overcoming the methodological difficulties in question. Even more important is especially the complex translation method of Frisch, by which some principles underlying the Engel curves have been employed for the computation of absolute values of the money-utility curve.[2] In the last two decades, however, intensive analytical reconsideration and criticism[3]

[1] Cf. "A Statistical Method of Measuring Marginal Utility and Testing the Justice of a Progressive Income Tax," *Economic Essays, Contributed in Honor of John Bates Clark,* edited by J. H. Holander, New York, 1927, pp. 157*ff.* and 184.

[2] Cf. *New Methods of Measuring Marginal Utility,* Tübingen, 1932, pp. 28*ff.*, and 42*ff.*

[3] The following may be regarded as representative contributions in this field: Henry Schultz, "Frisch on the Measurement of Utility," *Journal of Political*

of the relevant achievements of these two scholars have clearly disclosed some of the statistical discrepancies and logical weaknesses involved. As a result, we still have no scientifically completed and accordingly acceptable method for the cardinal measurement of utility.

This limitation must consistently be borne in mind with regard to the meaning of our welfare function. In particular, we cannot reasonably expect to eliminate from it those elements of *indeterminacy* which are obviously owing to the pertinent role of utility considerations. Hence, correspondingly unavoidable flaws of our subsequent computations originate.

II

Our starting point for a numerical evaluation of the level of national welfare should be the national income of the countries concerned. The obvious first step is here a comparison between this level and the total amount of national expenditures. Such a comparison leads us to an inquiry into the correlation between the *gross national product* and the *national income* of the United States. Yet, even a superficial glance at this correlation[4] is sufficient to convince us of the precariousness of the argument at issue, and of the necessity of making several corrective adjustments.

Since the major items on which our current computation of the national product and of the national income is based refer exactly to

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Economy, Vol. 41, 1933, pp. 95*ff.*; Hans Staehle, "A Development of the Economic Theory of Price Index Numbers," *Review of Economic Studies,* Vol. 2, 1935, pp. 163*ff.*; A. Bergson, "Real Income, Expenditure Proportionality, and Frisch's 'New Methods of Measuring Marginal Utility,'" *ibid.*, Vol. 4, 1936, pp. 33*ff.*; R. G. D. Allen, "On the Marginal Utility of Money and Its Application," *Economica,* Vol. 13, 1933, pp. 186*ff.*, and "Expenditure Patterns of Families of Different Types," in *Studies in Mathematical Economics and Econometrics in Memory of Henry Schultz,* edited by Lange, McIntyre, and Yntema, Chicago, 1942, pp. 201*ff.*; W. Allen Wallis and Milton Friedman, "The Empirical Derivation of Indifference Functions," *ibid.*, pp. 185*ff.*; Robert L. Bishop, "Consumer's Surplus and Cardinal Utility," *Quarterly Journal of Economics,* Vol. 57, 1948, pp. 421*ff.*; James N. Morgan, "Can We Measure the Marginal Utility of Money?," *Econometrica,* Vol. 13, 1945, pp. 129*ff.*

[4] By computing a linear line of regression of national income on gross national product, we find that Pearson's coefficient of correlation between the corresponding magnitudes in column I of Table 8 and in column I of Table 1 has the unusually high value of .999.

the same magnitudes, there would be only remote practical chances for a substantial difference between the level of national welfare and the aggregate amount of national expenditures if we computed the former exclusively with the help of national income data. In other words, even if we considered only the purely material aspects of national welfare, we would always be led to find a considerably higher degree of proportionality between the two magnitudes concerned than what would correspond to our common-sense knowledge of the interdependence involved. There is no reasonably justifiable assumption on whose basis we could eliminate from our discussion the fact that even the purely material components of national welfare may change very *disproportionately* to the changes in aggregate national expenditures. In the causal background, we may obviously point out those actual components of national welfare which are inadequately, or not at all, taken into account by our current computation of national income and/or of national product. It is a well-known fact that this computation is not aimed at expressing either the aggregate national welfare or the total national cost of all want satisfactions.

It follows that if we still choose to base our numerical evaluation of the level of national welfare on the available statistical figures expressing national income, we first have to make a study of the relationship between the corresponding time series and those relevant other time series which may appropriately be used for the necessary *corrective adjustments*. With respect to the interdependence of the latter series and the time series statistically expressing gross national product, we may profitably distinguish endogenous from exogenous data. We may term endogenous those corrective series whose conventional calculation is either partially rooted in and directly related to, or at least indirectly connected with, the current computation of gross national product. We may call exogenous those time series which are not marked by such a relation or connection but are nevertheless significant for the corrective adjustments concerned.

III

Among the most obvious *endogeneous* series are those which directly determine the difference between gross national product and national income. Here we have to depend on the time series released by the federal statistical service with regard to capital consumption

allowances, indirect business tax and nontax liability, business transfer payments, and subsidies less current surplus of government enterprise. Also the items caused by statistical discrepancy should not be neglected. Relative to these five endogenous series, we may or may not insert the intermediate notion and magnitudes of net national product. A second group of endogenous series may include those items on which the difference between national income and aggregate personal income hinges. A third group may comprise the well-known and currently used business indexes other than national income, to which we usually refer when discussing the general possibility of a quantitative expression reflecting the level of national welfare.

Considerably more difficult is a proper selection of *exogenous* corrective series, whose relationship to the series on national income is not only more complex but also more indirect and problematic. We may regard as such exogenous corrective sources statistical data on public and private savings, investment, and debt, as well as on war expenditures. But we must realize that they are more or less closely linked to some of the above-mentioned endogenous data and actually represent a transition between our two main classes of corrective series. The methodological difficulties in question rapidly grow when we consider a second group of endogenous data, with which we may classify time series on man-hours lost by industrial disputes, on war casualties, on the number of individuals in military service, on birth, death, and marriage rates, and on similar quantities. They cannot even be translated into terms of dollars. But their bearing on the aggregate communal welfare is quite evident. Still more dubious becomes the possibility of a numerical coordination to the national income when we include time series concerning national health, domestic, and international safety, social equilibrium, and more or less purely ethical or aesthetical aspects—such as religious or artistic activities—which pertain partially or entirely to the sphere of spiritual welfare.

We readily see that the further we expand the scope of corrective series to be considered, the more arduous becomes the task of determining their weight relative to the series on national income and the more hopeless would be any attempt to compute weighted average magnitudes expressing the level of national welfare. We must accordingly subject the scope concerned to carefully balanced restrictive *limitations*. The principle of balancing should equally be rooted in our

quest for suitable quantitative approximations and in our endeavor to refrain from hazy speculations about "intangibles." It might be a useful procedure to work out, also in this sense, some sort of minimum and maximum scopes similar to the minimum and maximum program to which S. Kuznets has recently referred his discussion of adjusting national income data with regard to the international differences of the industrial structure.[5] Yet, we must realize that even a narrowly limited minimum scope of endogenous corrective series involves the evaluation of wide philosophical perspectives as soon as the relevant questions of weighting and coordination emerge. All the more caution is to be recommended for the consideration of any maximum scope aimed at including at least a few tangible exogenous corrective series.

National Welfare Indicators

I

A maximum scope of corrective series may easily spread over the examination of numerous more or less relevant statistical data. In the present context, however, it seems to be justified to minimize the number of endogenous and exogenous series with the help of which suitable adjustments with respect to a quantitatively expressed level of the national welfare may be attempted. A significant factor of the justification concerned is the evidently vague, evasive, and only approximative nature of all numerical estimates of the national welfare. We may accordingly restrict the aforesaid *first* and *second groups* of our *endogenous* series, for which the national income series may be corrected, to the items shown in Table 8.

It is obvious that every step toward a coordination of these series must be closely linked with the methodology, and systematically based on the technical principles, of our current *national accounting*. Corresponding actuarial considerations are definitely in the foreground. They must be taken into account when we evaluate the significance of the time series in Table 8 for the level of national welfare. A comparison among the particular series shows that the actual importance of such considerations varies. The greater this importance is, the more the meaning of the series concerned reduces, from the viewpoint of the

[5] "National Income and Industrial Structure," *Econometrica,* Vol. 16, 1948, p. 88.

present discussion, to a mere formality. For example, the formal features strongly predominate in column VII of Table 8 or in some of the partially similar items not mentioned in our table, such as business transfer payments, etc. To this category belongs the item "statistical discrepancy" which we did not include in the table because of the

*Table 8. National Income and Aggregate Personal Income**

Year	*Index numbers* (1929 = 100) *of*							
	National income (I)	*Capital consumption allowances* (II)	*Indirect business tax and nontax liability* (III)	*Corporate profits tax liability* (IV)	*Undistributed corporate profits* (V)	*Contributions for social insurance* (VI)	*Government transfer payments* (VII)	*Aggregate personal income* (VIII)
1929	100 0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1930	85.8	98.9	102.9	57.1	−115 4	150.0	111.1	92.8
1931	67.4	94.3	98.6	35.7	−207.7	150.0	222.2	78.9
1932	47.7	87.5	97.1	28.6	−230.8	150.0	155.6	60.0
1933	45.3	81.8	101.4	35.7	− 92 3	150.0	166.7	56.8
1934	55 6	81.8	111.4	50.0	− 61.5	150.0	177.8	64.8
1935	65.0	84 1	117.1	71.4	− 23.1	150.0	200.0	73.0
1936	76.9	87 5	124.3	100.0	− 11.5	300.0	322.2	86.0
1937	84.2	90.9	131.4	107.1	00.0	900.0	211.1	90.1
1938	77.1	90.9	131.4	71.4	− 34.6	1,000.0	266.7	83.2
1939	83.0	92.0	134.3	107.1	46.2	1,050.0	277.8	88.4
1940	93.0	95.5	142 9	207.1	92.3	1,150.0	300.0	95.4
1941	118.8	105.7	161.4	557.1	188.5	1,400.0	288.9	116 1
1942	156.2	112.5	168.6	835.7	196.2	1,750.0	300.0	148 8
1943	192.6	120.5	181.4	1,014.3	226.9	2,250.0	277.8	182 0
1944	208.6	134.1	200.0	992.9	200.0	2,600.0	344.4	200 9
1945	209.2	137 5	218 6	807.1	161 5	3,050.0	622 2	209.0
1946	203.9	125.0	241.4	621.4	265.4	3,000.0	1,200.0	215.8
1947	231.7	151.1	264.3	835.7	430.8	2,800.0	1,233.3	237 8
1948†	256.8	163.6	282.8	900.0	453.8	2,550.0	1,166.7	260.2

* For years 1929–1946: *National Income Supplement to Survey of Current Business*, July, 1947, p. 20. For 1947: *Survey of Current Business*, July, 1948, pp. 16–18.

† Preliminary, *Survey of Current Business*, February, 1949, pp. 8–10.

relatively small amounts it usually contains. In our statistical tables dealing with endogenous and exogenous corrective series we explicitly refer, also in other instances, only to the more typical and substantial magnitudes and omit the items of a relatively lesser practical weight.

With due allowance for the largely formal meaning of the actuarial

considerations in question, we may evaluate the *significance* of the various columns in Table 8 for the level of national welfare from three pertinent viewpoints. First, we may attempt to weight the purport of capital formation and capital consumption for this level. Second, we may examine the relationship between corporate business activities and national welfare. Third, we may relate this welfare to the role played by the collective sector in our national economy. It might be appropriate to repeat that, from all viewpoints concerned, we here strictly adhere not only to the economic interpretation and terminology but also to the technical structure, classifications, divisions, and subdivisions of the underlying current, and explicitly quoted, governmental statistical publications.

From the above-mentioned first viewpoint, we may undertake an analytical comparison between columns I and II of Table 8 and accordingly examine the national amounts of depreciation charges, of accidental damage to fixed capital, and of capital outlays charged to current expense as the components of column II. Such an inquiry ought to concentrate on the *capitalistic structure* of the national economy with regard to the need for new capital, to the problem of capitalistic maturity and of satiation with capital, and to the dangers of maldirected capital. The same inquiry ought to deal—last not least—with the prevalent actuarial practices of computing capital depreciation and of charging capital outlays to current expense. Experimental observation shows that capital consumption allowances are relatively high in periods of depression and relatively low when business is operating satisfactorily. In fact, these allowances amounted to 13.2 per cent of the gross national product in 1932, to 12.9 per cent in 1933, and only to 8.5 per cent, 8.9 per cent, 5.4 per cent, and 5.4 per cent in the years 1929, 1937, 1946 and 1947, respectively. Such percentages also determine the amount of the net national product, since it is customary to compute the latter magnitude by deducting the capital consumption allowances from the gross national product. Our comparison between columns I and II thus boils down to a weighting evaluation of the net national product for the level of national welfare and to a corresponding correction of the time series in column I inasmuch as we regard the latter as the basic statistical indicator of this level.

The next step is a similar comparison between national income and

aggregate *personal income*. Such a comparison may be carried through either directly, by correlating columns I and VIII in Table 8, or indirectly, by taking into account our aforesaid second and third viewpoints. As far as the second viewpoint is concerned, column V plays an essential part. From the same viewpoint, we may also consider, among those related items which are not explicitly mentioned in our table, the time series on corporate inventory valuation adjustments, of business transfer payments, and of the excess of wage accruals over disbursements. With respect to column V, its negative index numbers spreading over the years 1930–1938, as contrasted to the positive index numbers relating to the years 1929 and 1939–1947, display the prolonged dampening and weakening influence of the Great Depression on corporate business, as well as the corresponding strengthening effects during the revival and boom periods. The other three series, which do not figure in Table 8, show partially different effects.

Our evaluation of the bearing of all series covered by this second category on the level of national welfare will obviously be determined by our general approval or disapproval of corporate conglomerations. The *social infiltration* or the process of socialization involved may or may not be regarded as conducive to the level concerned. It is thus our relevant advocacy of corporate socialization or of personal (anti-corporate) individualization which ultimately decides on the weight we may attribute to the series in column V when correcting the series in column I with regard to the level of national welfare.

The third viewpoint under discussion applies similar considerations to the process of *collective infiltration*. From this viewpoint, it might be illuminating to inspect columns III, IV, VI and VII of Table 8, and such further series, which are important for official computation of national income and aggregate personal income, as subsidies minus the current surplus of government enterprises and net interest paid by the government. Since all pertinent data refer, directly or indirectly, to the governmental sector of the national economy, their sign as well as the relative weight which we here may attribute to them will obviously depend on whether and to what extent we think that the expansion of collective activities contributes to national welfare. This argument may be linked either to collective activities in general, or to the relevant particular type of governmental functions. For example, the stickiness of most of the magnitudes concerned during the Great

Depression or their spectacular rise in the postwar years may be evaluated accordingly. So may be also the whole correlation between the development of this group of data and our time series on national income when we use the former for a correction of the latter in order to obtain a more adequate numerical expression of the level of national welfare.

II

The pertinent relationship between national income and those *other general business indicators* which we may also use as more or less endogenous corrective data should be viewed from two partially different angles. On the one hand, these other indicators are largely based on the same statistical data which we utilize for the computation of national income. The time series concerned, including the data on national income, are consequently liable to show a high degree of positive or—as in the case of unemployment series—negative correlation. Due allowance must be made for hysteresis and corresponding lag effects. On the other hand, each currently computed general business indicator has at least a slightly different significance for the formation of national welfare. Therefore, even some of the smallest deviations between the time series on national income and the time series on these other general business indicators may well deserve our attention and may justifiably be allocated a considerable weight for a numerical expression of the level of national welfare. In such a sense, the series shown in Table 9 on page 180 may advantageously be consulted.

When evaluating these series in the present context, we must keep in mind that the primary objective of their computation by the governmental agencies in charge is to measure—and possibly to predict, as well as to counteract or at least mitigate—the periodic capitalistic *business cycle*. From such a viewpoint not only the technical structure of the particular series can best be explained but also their slight positive or negative deviations from the trend and fluctuations displayed by the corresponding national income series, as well as the above-mentioned lag effects. As an additional aspect, we may consider the evidently different weight of the various series with respect to their significance for measuring the level of national welfare. It may thus be observed that, for example, columns I and II in Table 9 have a

Table 9. General Business Indicators

Year	*Per cent of population*		*Index no. 1929 = 100*	*Index no. 1939 = 100*		*Index number 1929 = 100*			
	Employment[a]	*Unemployment*[a]	*Per capita real industrial production*[b]	*Per capita real manufacturers'*		*Per capita real retail sales*[d]	*Per capita iron and steel production.*[e]	*Per capita real gross farm production.*[f]	*Per capita real transportation*[g]
				Sales[c]	*Inventories*[c]				
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
1929	39 1	1 3	100 0	. . .	. .	100 0	100 0	100 0	100 0
1930	37 0	3 5	81 8	.	. .	62 6	72 2	96 0	86 5
1931	34 2	6 5	67 0	. .		42 2	45 1	102 2	69 6
1932	31 3	9 6	51 5		. .	23 4	23 4	98 6	55 3
1933	30 9	10 2	60 8			28 6	39 7	91 2	58 8
1934	32 4	8 9	65 7	.		37 2	44 2	78 3	62 2
1935	33 2	8 3	75 6		.	54 0	58 2	91 9	66 3
1936	37 7	7 0	89 0	.		67 6	81 5	81 9	77 1
1937	35 9	6 0	97 1		.	69 7	87 4	100 2	81 9
1938	34 1	8 0	76 0	.		42 0	48 0	96 6	68 6
1939	35 0	7 3	92 2	100 0	100 0	57 1	79 8	96 7	77 7
1940	36 0	6 1	104 9	113 1	110 5	74 1	102 0	97 8	84 9
1941	37 8	4 2	134 7	154 9	143 1	87.5	127 8	100 5	105 1
1942	39 9	2 0	163 6	167 4	138 7	87 2	135 3	109.3	131 6
1943	39 9	0 8	193 9	190 5	133 7	90 4	139 6	105 2	154 6
1944	39 1	0 5	188 5	196 4	124 8	97 4	136 6	108 3	159 6
1945	37 8	0 7	161 0	175 6	113 4	106 0	120 1	106 3	152 4
1946	39 1	1 6	133 3	155 4	134 8	137 6	97 3	118 5[h]	135 8
1947	40 3[i]	1 5[i]	143 1[i]	171 9	138 4	157 8[j]	124 0	115 4[h]	141 8[k]
1948[k]	40 5[i]	1 4[i]	145 2[i]	173 7	143 6	172 4[j]	130 0		

[a] For years 1929–1946 *Monthly Labor Review*, December, 1947, p 638. For 1947: *ibid*, February, 1948, p. 203.

[b] *Federal Reserve Bulletin*, Board of Governors of the Federal Reserve System, February, 1948, p. 215.

[c] *Survey of Current Business*, May, 1948, p 9, *ibid*, February, 1949, p. S3.

[d] For years 1929–1941 · *Supplement to Survey of Current Business*, p. 33. For 1941–1946. *Survey of Current Business*, January, 1948, p. 10.

[e] For years 1929–1947: *Statistical Abstract of the United States, 1949*, p 827. For 1948. *Survey of Current Business*, February, 1949, p. S2.

[f] Average 1935–1939 farm prices in each geographical division were used as weights in constructing indexes of real agricultural production for each geographic division. U.S. totals were obtained by summing the geographic division quantity-price aggregates. The index of gross farm production measures calendar-year production of all crops and pasture consumed by all livestock and the product added in the conversion of feed and pasture into livestock and livestock products for human use and into farm-produced horse and mule power. Cf. *Agricultural Statistics*, 1946, pp 560*ff*.

[g] For years 1929–1938: *Survey of Current Business*, September, 1942, p. 21. For 1939–1947: *ibid.*, February, 1948, p 32.

[h] *Agricultural Statistics*, 1948, pp. 532, 566.

[i] *Survey of Current Business*, February, 1949, back cover.

[j] *Ibid.*, p. S8.

[k] Preliminary.

greater relevant weight than columns IV, V, and VI or some of the other columns. Any detailed computation of the deviations, lags, and weights concerned must be based on the underlying theorems, methods, and tools of up-to-date research in the field of business cycles. The pertinent techniques of quantitative measurement deserve to be emphasized. A glance at the complexity of the task involved may indicate the scope of those difficulties which we encounter when attempting to coordinate the data in Table 9 to those of national income series.

III

The difficulties keep increasing in exponential proportions as we proceed from the consideration of more or less endogenous data to dealing with *exogenous* corrective series. Here we get into deep water. Although we cannot reasonably deny its existence and neglect its importance, it might be a wiser attitude to restrict our active interest in it to a brief survey and perhaps to a casual dip than to waste energy on futile attempts at swimming across the ocean. The methodological problem at issue is how far we want to trace the chain of causal relations determining whatever we mean by national welfare and how wide we accordingly stretch the scope of relevant time series to be observed and discussed.

After duly weighting the advantages and disadvantages involved, we may decide to consider only *five classes* of exogenous series, whose close causal relationship to national welfare is obvious. Such relationships pertain to the development of saving and investment, of public debt and government deficits, of industrial disputes, of the intensity of war efforts, and of the basic population trends. It may thus be neither too pusillanimous nor too farfetched and bold if we inspect the time series shown in Table 10.

It is evident that each of the relevant five classes has to be evaluated, in the present context, on its own merits, and without direct reference to the other classes. For an analysis of the first class, Keynesian viewpoints may profitably be utilized. It should accordingly be noted how clearly the numerical relationship between what governmental statistics term gross private *saving* and gross *investment* displays the ups and downs of national prosperity. It is indeed only in the four years marked by the two prewar business peaks of 1929 and 1937, as well

as by the postwar reconversion prosperity of 1946 and 1947, that the magnitudes in our column II were greater than those in column I. On

Table 10. Exogenous Corrective Time Series

Year	Index numbers of: Per capita real private saving[a] (I)	Per capita real gross investments[a] (II)	Per capita real net public debt[b] (III)	Government deficits as per cent of government expenditures[a] (IV)	Index numbers of per capita man days lost by industrial disputes[c] (1929 = 100) (V)	War expenditures as per cent of the gross national product[d] (VI)	Armed forces as per cent of total employment[e] (VII)	Marriage rates per 1,000[f] (VIII)	Birth rates per 1,000[f] (IX)	Death rates per 1,000[f] (X)	Index numbers of total population[g] (1929 = 100) (XI)
	(1929 = 100)										
1929	100 0	100 0	100 0	−10 8	100 0	. . .	. . .	10 1	18 8	11 9	100 0
1930	73 3	66 6	105 0	2 7	61 5		. . .	9 2	18 9	11 3	101 1
1931	60 0	37 4	126 6	22 8	126 7		. . .	8 6	18 0	11 1	101 8
1932	22 1	8 1	156 3	16 0	191 6		.	7 9	17 4	10 9	102.5
1933	22 4	11 6	177 4	12 3	306 6	. .		8 7	16 6	10 7	103 1
1934	44 6	23 7	192 0	18 8	353 3	. .	0 7	10 3	17 2	11 1	103 8
1935	60 9	43 8	203 5	13 6	277 4	. . .	0 7	10 4	16 9	10.9	104.5
1936	100 8	73 6	213 6	18 4	247 2	. . .	0 7	10 7	16 7	11 6	105 2
1937	78 6	78 2	210 1	−4 8	502 3	. . .	0.6	11.3	17 1	11 3	105.7
1938	65 5	50 8	217 1	9 0	160 6	. .	0 7	10.3	17.6	10 6	106 6
1939	87 2	68 4	227 6	11 0	309 8	2 0	0 9	10 7	17 3	10 6	107 5
1940	109 1	98 5	232 7	2 7	115 7	2 7	1 1	12.1	17 9	10 7	108.4
1941	156 3	122 5	271 9	12 2	393 4	11 4	3 2	12 7	18 9	10.5	109 4
1942	246 5	52 1	375 9	48 6	70.6	31 4	7 4	13 2	20 9	10 4	110.6
1943	265 8	12 2	504 0	47 3	225 3	42 0	16 3	11 8	21.5	10 9	112.1
1944	303 6	18 7	654 8	49 6	143 7	42 5	21 1	11 0	20 2	10 6	113 4
1945	257 2	41 6	747 2	38 1	620 0	36 9	22 0	12 3	19 6	10 6	114.6
1946	126 8	134 3	621 6	−7 5	1,871 3	13 6	6 9	16 3	23 3	10 0	115 9
1947	87 1[h]	128 0[h]	427 1[i]	−32 6[h]	547 0	....	2 8	....	...	.. .	117.7
1948	. .		....	.....	527 1	.. .	2 6	....	....	....	120.3

[a] For years 1929–1946. *National Income Supplement of Survey of Current Business*, July, 1947, pp. 20 and 23. For 1947: *Survey of Current Business*, February, 1948, p. 10 and back cover.

[b] Includes Federal, state, and local debt. *Survey of Current Business*, September, 1947, p. 14.

[c] For years 1929–1946: *Monthly Labor Review*, May, 1947, p. 782 For 1947: *ibid.*, February, 1948, p. 203. For 1948: *ibid.*, February, 1949, p. 268.

[d] *National Income Supplement to Survey of Current Business*, July, 1947, pp. 19 and 46.

[e] *Statistical Abstract of the United States, 1948*, p. 226. For 1948: *Monthly Labor Review*, February, 1949, p. 240.

[f] *Statistical Abstract of the United States, 1948*, pp. 66, 90.

[g] *Ibid.*, p. 9.

[h] *Survey of Current Business*, July, 1948, p. 17.

[i] *Ibid*, October, 1948, p. 21.

the other hand, the trough of the Great Depression and the Second World War produced the lowest amounts of investments as compared with savings: in 1932 savings were about two and a half times greater

than investments, in 1942 almost five times, in 1943 about twenty times, in 1944 about fifteen times, and in 1945 almost six times greater. These ratios are worthy of attention when we undertake to correct our national income series as indicators of the level of national welfare. At the same time, it should be taken into account that column I in Table 10 contains several data which are also used as components in our computations of national income and aggregate personal income. Such are the capital outlay charged to current expense, the accidental damage to fixed business capital, business depreciation charges, undistributed corporate profits, the corporate inventory valuation adjustment, and the excess of wage accruals over disbursement. With respect to these magnitudes, column I of Table 10 has partially endogenous features from the standpoint of the present discussion. Yet, the general exogenous characters of this column is deeply rooted in its component consisting of the amounts of personal saving, which has an outstanding relative weight.

With regard to *public debt* and *government deficits,* too, highly controversial theoretical considerations may be stressed. In the light of Keynesian theorems, the evaluation of these magnitudes from the viewpoint of national welfare may nowadays also lead to more favorable conclusions than it has frequently done on the basis of the earlier *laissez-faire* doctrines. Just as in the case of savings, we may today feel inclined to go even so far as to change the earlier, generally assumed and accepted mathematical sign of the welfare correlations involved. Pre-Keynesian economists might not have hesitated to deduct the annual growth of public debt from national income in order to correct the welfare significance of the latter. The remainders to be obtained from such a computation for the six successive years 1941–1946—on per capita basis, and after eliminating the changes in the purchasing power of the dollar—would show 695, 663, 742, 751, 836, and 1,170 dollars, respectively. This might be an obviously pleasing way of partially adjusting our national income series for the real development of national welfare in the recent years of war and peace economy. Yet, post-Keynesian economists may feel somewhat less certain about the justification of such a computation. They may be willing to apply other viewpoints for judging the purport of the spectacular growth of government deficits during the Second World War and for a general evaluation of the suddenly emerging government surpluses. The pre-

cepts of compensatory fiscal policy should be considered in every attempt at numerically coordinating public debt and government deficits to national welfare. At the beginning of the two decades under discussion, net Federal debt exceeded the total amount of net state and local debt by less than 20 per cent. In the last few years before the outbreak of the Second World War, they were almost three times and toward the end of the whole period almost twenty times as great. This rapid rise clearly indicates and illuminates the relevant trend toward national concentration in the hierarchical structure of economic collectivization.

The exogenous quality of columns V, VI, and VII in Table 10 is conspicuous. They reflect conditions of internal and external socio-economic *safety,* and they may accordingly be regarded as approximate indicators of the pertinent domestic and international aspects of national welfare. Yet, no hasty inferences should be drawn from any offhand assumption of negative or positive correlations between the magnitudes in the columns concerned and national welfare. Subject to the outcome of great strikes and war efforts, such domestic and international conflicts may or may not contribute to an internal and/or external strengthening of the national economic structure. A further indeterminacy may be rooted in the conventional contradistinction between chauvinistic attitudes and defeatist programs of any of the parties involved in labor disputes or in wars. In spite of the exceptionally wide scope of the corresponding penumbra, nobody could deny that columns V, VI, and VII in Table 10 have a significant direct and indirect bearing on national welfare. We may add that this bearing may differ from the consequences reflected by the numerical formation of national income. It is another question, of course, whether the particular columns could and should not be supplemented by additional series displaying further essential features of the relations concerned.

From such a viewpoint, it may be instructive to break down the *war expenditures* into their main components. As a result, it could be shown how definitely government purchases of goods and services predominated among these components during the Second World War. It could similarly be pointed out how suddenly military pensions, disability, retirement, and mustering-out payments, as well as payments

to discharged servicemen and for readjustment, self-employment, and subsistence to veterans, grew in the postwar years. The available government statistics throw ample light upon the related complex link between the civilian and the military sectors of the national economy.

Even more intricate are the exogenous properties of the last four columns in Table 10. Their intricacy obscures the presumably positive correlation between national welfare and *marriage* rates, *birth* rates and total *population*, on the one hand, as well as the negative correlation between national welfare and death rates, on the other hand. Short-term lags, long-term trends, and the obvious effects of socioethical relations bring in a maze of disturbing elements. To be sure, column VIII approximately reflects the two periodic business peaks of 1929 and 1937, the reconversion prosperity of the postwar years, as well as the business troughs of 1932 and 1938. Yet, for the war years we have to rely on methods of causal explanation other than those stressing a parallelism with the development of the national income. At the beginning of the war, the encouraging effects of the partially anticipated and partially performed mobilization of the armed forces played an important role, while in the last two years of the war the increasing disruption of social relations actually discouraged and impeded marriages.

For socioethical explanations of this kind, for physiological, medical, and related arguments we have to refer to the modern theory of *population statistics*. There we may find a great variety of such arguments especially with regard to birth rates, death rates, and total population. Neo-Malthusian considerations and contrarily directed nationalistic tendencies—as displayed by tax-financed education, recreation and medical care of children, by family wages, by income-tax exemptions for dependents, and by similar institutional devices—should not here be neglected. However, when taking such factors into account, it becomes an arduous task to find any numerical expression for those undoubtedly significant relationships between population data and national welfare with respect to which we may correct our national income series.

Another step in the same direction leads to a possible evaluation of further exogenous corrective data, which may be regarded as either quantitative or preponderantly qualitative. For example, the fact that

the war casualties of the United States of America during the Second World War involved the direct loss of almost 400,000 human lives[6] should certainly not be neglected from the viewpoint of its bearing on the level of national welfare. Public health, conditions of domestic and international sociopolitical equilibrium, and a wide array of already mentioned more general ethical items are cases in point. The further we choose to penetrate into the realm of such items, the more *unscientific* it would be to search for objectively definable numerical criteria on whose basis a satisfactory quantitative coordination to the national income series could possibly be established. Strictly speaking, somewhat similar arguments can be referred to most of our endogenous and exogenous corrective series discussed in connection with Tables 8, 9, and 10.

For obvious epistemological reasons, attempts at the objective computation of any over-all relative weights expressing the significance of these series for a numerical correction of our national income data must be discarded. Accordingly, we must renounce all schemes, however pleasing and alluring they may be, and resist the enticement of calculating any objectively valid general welfare indicators. All we can do within the scope of scientific argumentation is to discuss systematically the *methodological possibilities* and the numerous *pitfalls* to be encountered on the treacherous way pointing toward such a calculation.

[6] Cf. *World Almanac*, New York, 1948, p. 551.

CHAPTER XII

STRUCTURAL PROPERTIES OF THE AMERICAN ECONOMY

Original and Corrected Expenditure Figures

I

OUR TABLES 8, 9, and 10 have not only an indirect but also a considerable direct bearing on the numerical magnitude of the various *amounts of want satisfaction* in the national welfare function. In a simplified analysis of the national budget equation, we may rely on the dollar amounts of private, mixed, and public expenditures. Yet, as soon as we assume the more realistic attitude necessary for dealing with our national welfare function, the numerical meaning of the various gratifications and the level of national welfare must be more closely correlated. The interdependence of the personal, temporal, and spatial coverage of want satisfactions on the various degrees of collectivization, on the one hand, and their cost coverage, on the other hand, may be linked to the relationship between the national income series and the corresponding corrective series. In other words, we may also profitably utilize our endogenous and exogenous corrective series to achieve a more refined interpretation of the numerical significance of the various gratifications for the level of national welfare. For a given level, we may assume that our national welfare function can be made specific. The latter will thus express a particular functional relationship among individual and collective gratifications with respect to a constant level of national welfare. May we at the same time reasonably suppose that this relationship displays only proportional changes as the national welfare passes from one level to another? Such a supposition may be more or less justified as long as economic life shows a smooth development and if we consider only short periods of development. For smooth and short periods, we may accordingly assume an appropriate *homogeneity,* of a certain degree, of the national welfare function with respect to the relevant gratifications, and we may even

attempt to handle these homogeneous relations mathematically with the help of Euler's Theorem.[1]

Yet, a similar procedure would not be justified for restless economic situations involving sudden, jerky, and considerable structural changes or for any longer periods of development in which such changes are likely to occur. Here the assumption of a corresponding heterogeneous composition of the functional relation under discussion will be more justifiable.[2] The consideration of Tables 8, 9, and 10 may suggest several aspects of such a *heterogeneity*.

So it may be that for *short* and "peaceful" periods of economic development we can quite well express the numerical magnitude of individual and collective gratifications by referring them only to private and public expenditures. For more agitated or *longer* periods, however, it may be justifiable to correct this simple procedure by the concurrent consideration of such further factors of weighting as the personal, temporal, and spatial coverage of the pertinent want satisfactions. Here the time series in Tables 8, 9, and 10 may help. From the viewpoint of these series, we may decide that the number of individuals and/or the length of time covered by the satisfactions change in the course of economic development and that with respect to such dynamic changes our quantitative expressions have to be altered.

For example, the production of certain goods or services may be *more important* or less significant for the level of national welfare in depression than in prosperity, or in war than in peace. The greater importance may mean that the wants of more individuals, or of the same number of individuals but for a longer time, are satisfied by the same dollar expenditures. This may evidently boil down to the practical problem of "guns or butter." In a slightly different sense, the appropriate choice of means in a Keynesian pattern of compensatory fiscal policy is another case in point. The one million dollars spent on food in 1929 may have another weight for the numerical expression of the corresponding gratifications than in 1932 or in 1944.

[1] For example, we may assume that the same given changes in all gratifications will cause an exactly proportional change in the level of national welfare.

[2] In this case, there are no "constant returns to scale," similar to those in the homogeneous production functions. Even the same changes in all gratifications concerned may then bring about a disproportional change in the level of national welfare.

There is no scientifically satisfactory method for an *objective* evaluation of such differences. Yet, every step in economic policy and business activities necessarily involves complex decisions in terms of a similar evaluation. On a more or less *subjective* basis, we may be induced to refer the different weights under discussion to a preconceived appraisal of private-enterprise activities and collective planning with respect to their economic merits and demerits. When doing so we may be caught, at least to a certain extent, by the vicious circle of a *petitio principii*. While trying to investigate essential features of the structural relation between individual and collective gratifications, we postulate already as a starting point a certain subjective evaluation of such gratifications in general.

It may serve as a consolation that economic reasoning as well as practical economic life is teeming with similar logical shortcomings. They are deeply rooted in the intricate connection between subjective and objective *value judgments* on socioeconomic issues. From a subjective viewpoint, we may be inclined to attribute to any gratification a great or small significance for the national welfare, because we think that the gratification belongs to the collective type and because we do or do not believe in the efficiency of collectivization.

Let us refer to the societary processes which lead from subjective judgments of the individual to the formation of majority standpoints and of a prevailing *public* opinion. With respect to the importance of these processes, it is not useless to analyze the factors which determine our subjective evaluation of the functional link between gratifications and national welfare. We may thus be led to a better cognizance of the objective relations between collectivization and reprivatization. Instead of relying on a number of scattered fragmentary examples, it may be appropriate to elucidate the purport of the various welfare indicators and of their bearing on the expression of the relevant functional link by one more comprehensive application.

II

For example, let us make the following three restrictive and explanatory *assumptions:*

1. We may suppose that a high degree of simplification in our quantitative expressions is practicable. On such a degree, let us refer all gratifications to their *cost coverage*. We shall later see to what

extent this reference is abstract and hypothetical. Let us also stress the above-mentioned high positive correlation between national income and gross national product and assume that changes in the former are approximately proportional to changes in the latter.

2. In order to simplify our example as much as possible, let us relate it to a national welfare function, which contains *only two* differ-

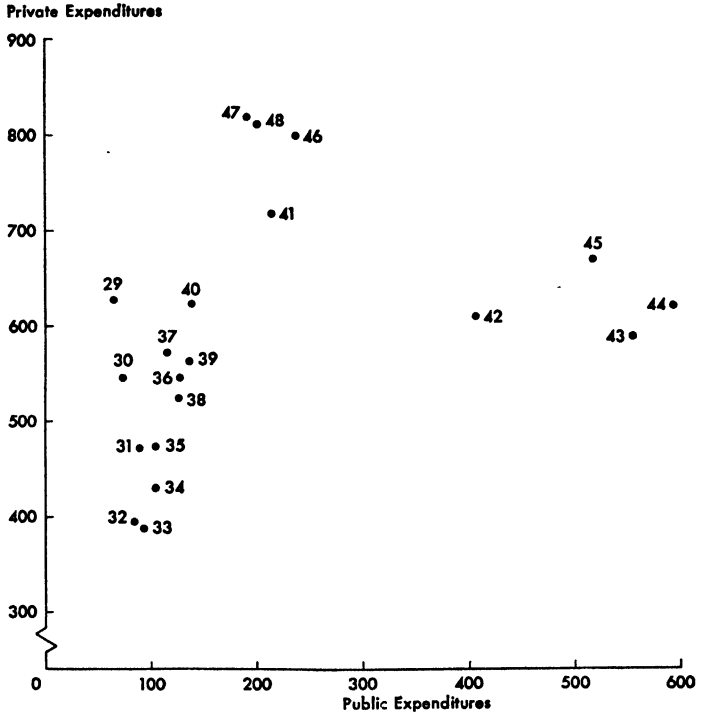

FIG. 8. Simple scattergram of private and public expenditures (per capita real expenditures in average 1935–1939 dollars).

ent types of gratifications. If we express them by the two groups of expenditures specified in columns I and II of Table 2, we may plot the scattergram shown in Figure 8.

3. A glance at this scattergram is sufficient to convince us of the clear-cut dichotomy in the pertinent development from 1929 to 1948. If we carried through the obvious bipartition by distinguishing between the peace period 1929–1940, and the war—and postwar—period 1941–1948, we could obtain two separate welfare functions, each reasonably well expressing the downward sloping and convex

curve of an expected normal relation between individual and collective gratifications. With respect to the fundamental disruptions caused in the American economic structure by the Second World War, we would be justified to undertake the bipartition concerned and to refer our whole subsequent discussion to the corresponding two separate welfare functions thus obtained. This would undoubtedly be the simplest and analytically most defensible procedure. Later, we shall deal with such separate parts of our whole scattergram. As an alternative, however, we may undertake a corrective computation in order to *eliminate the dichotomy* in question.

When doing so, we may recall the fact that in *war* and *postwar* periods national income by itself is an obviously inadequate indicator of the level of national welfare. We may accordingly consider any or all of the time series in Tables 8, 9, and 10, weight their corrective significance, and calculate with respect to them the changes to be carried through in those magnitudes of the welfare level which we may derive solely from the per capita real national income series. As a result, we may decide to decrease the latter with regard to each of the years 1941–1948 by, say, $500 and use the remainder as an acceptable numerical indicator of the level of national welfare.

We may also assume that by far the greatest curtailment of national welfare during a modern war occurs in the domain of *individual* gratifications and in the corresponding sphere of private-enterprise economy. In other words, we may suppose a heterogeneity of the national welfare function to the effect that, in the war and postwar years, the individual gratifications had a much smaller actual significance for the national welfare than in the peace years, for which we may more justifiably express the collective and individual want satisfactions only by their cost coverage and by the relevant distribution of public and private expenditures. On the one hand, we may safely say that in the modern war economy even the sphere of relatively private expenditures reveals an exceptionally wide scope and great weight of collective planning. For the peace period 1929–1940, on the other hand, we may invariably regard cost coverage as the only basis for the measurement of all gratifications. For the years 1941–1948, we may substantiate our corrections by taking into account the personal and temporal coverage of the various gratifications and by basing our computations on some or on all of the data in Tables 8, 9, and 10.

As an issue, we obtain the corrected scattergram and fitted curve shown in Figure 9.

The hyperbolic curve in this diagram expresses the pertinent budgetary relations with respect to the *unchanged* values of the public expenditures, as they also figure in Figure 8, and to the partially corrected values of the private expenditures.

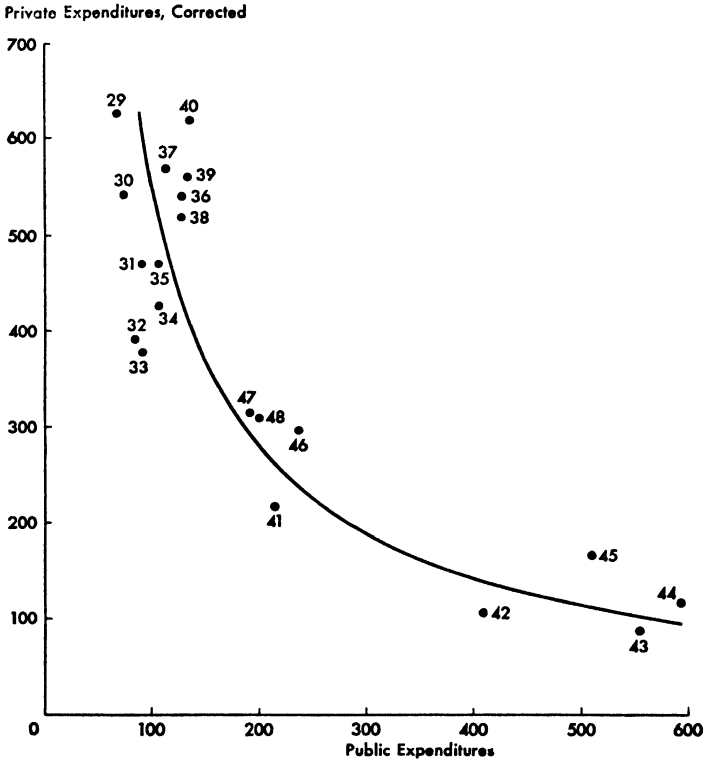

FIG. 9. Corrected scattergram of private and public expenditures.

For the purpose of fitting curves and computing *two separate* welfare functions with regard to the peace period 1929–1940 and to the war and postwar period 1941–1948, we may use similar but simpler methods. Their relative simplicity results from the fact that we may rely on the original magnitudes of both private and public expenditures, as illustrated by Figure 8. We thus do not correct either of them with the help of any endogeneous or exogenous corrective series. This is a considerable advantage also from the viewpoint of making our example

more tangible. A concurrent disadvantage is the necessary bipartition of the period under discussion.

For the whole period 1929–1948, the shape of our curve in Figure 9 may be referred to an approximate relationship between American individual and collective want satisfactions with respect to the development of American national welfare. This relationship indirectly reflects also the relative strength of private enterprise and collective planning in the American economy. Yet, we must not forget that such an interpretation pertains to a *transferred,* or secondary, meaning of our comprehensive curve and function. Their primary and *direct* meaning only involves the functional interdependence of private and public expenditures with regard to the formation of the gross national product. The major part of the significance of this primary meaning relates to the domain of public finance. For economics proper, the secondary meaning is more instructive.

Empirical Responsiveness and Elasticity

I

An inspection of Figure 9 suggests significant relations of the substitution between private and public expenditures in the last two decades. Let us project these relations to the relevant interdependence of private enterprise and collective planning. At the same time, let us keep the level of national welfare—here expressed by the per capita real gross national product—constant and regard our curve as an indifference curve. The part of the curve covering the peace years 1929–1940, when individual gratifications were strongly predominant, displays a comparative ease of steps toward an increasing emphasis on collective planning. This is shown by the corresponding steep downward slope and low *marginal rates of collectivization.* In the war years, however, and particularly toward their end, after the American economic structure had already proceeded far on the path of collective planning, further measures designed to restrict the scope of private-enterprise activities had to encounter rapidly increasing impediments. Such is the meaning of the diminishing downward slope and the relatively high marginal rates of collectivization which refer to those years.

It is obviously on account of the same reason that the reciprocals expressing the *marginal rates of reprivatization* are relatively great in

the part of our indifference curve which covers the peace years and comparatively small in the part which refers to the war years. Practical experience in the course of intensified wartime economic planning has sufficiently proved how necessary, and accordingly easy, it became to revert—in certain fields and to a certain extent—to an increasing emphasis on the productive initiative of private-enterprise activities based on profit motivation. During the Great Depression and the prewar years, we frequently hesitated to undertake similar steps, because they then faced greater structural obstacles.

Since our comprehensive curve in Figure 9 covers structural changes in *both directions,* its suitability for a comparative contradistinction between collectivization and reprivatization is moderate. If we want to utilize the viewpoints of responsiveness and elasticity for such a distinctive comparison, we have to apply a partially different technique.

For example, we may now carry through the above-mentioned *bipartition* of the whole period 1929–1948. We accordingly drop the computation of corrected data and again base our discussion on the original values in Figure 8. Such a simplification may be less realistic than the complex method of corrective adjustments. But the quantitative treatment of the argument becomes easier and smoother.

Since we now inquire into the *difference* between shifts toward collectivization and toward reprivatization, the direction of these shifts has to be stressed. Corresponding subdivisions of the periods concerned are in order. So we may distinguish between sections or years of collectivization and of reprivatization within each of the two main periods 1929–1940 and 1941–1948. It is the latter period which represents a more clear-cut case for such a subdivision. Within this period, the watershed is marked by the end of the Second World War. The year 1944 was the last whole year spent on increasingly intensive war efforts. It may thus be regarded as the last year of the war collectivization era beginning with 1941. The second half of the year 1945 was already devoted to the postwar trend of reprivatization leading up to 1947. The year 1948 revealed a renewed relative increase of public expenditures. But the increase was so small that we may include this year in the postwar reconversion era. So we may juxtapose the four-year periods 1941–1944 and 1945–1948 when examining the structural responsiveness and elasticity of the American economy in the period 1941–1948.

Plotting separate indifference curves for the two corresponding sections of collectivization and of reprivatization, we obtain the diagram shown in Figure 10. Both indifference curves have the normal shape of downward sloping convexity to the origin. As an *alternative,* we could fit a straight line for the section of reprivatization. Yet, in the present context, the convex hyperbolic function fitted in Figure 10 sufficiently meets the requirement of analytical accuracy.

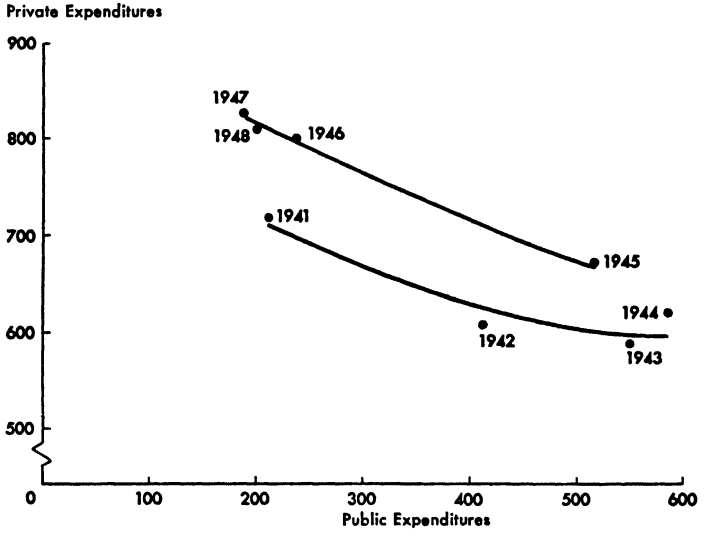

FIG. 10. War collectivization and postwar reprivatization (per capita real expenditures in average 1935–1939 dollars).

The general meaning of this graph for the structural properties of the American economy in the war and postwar years is evident. Even a simple inspection shows that the depth of the convexity in our curve 1941–1944 is greater than the depth of the convexity in our curve 1945–1948. In other words, the curvature in the former is greater than in the latter, and the former displays an accordingly smaller structural *responsiveness* than the latter, although both have an approximately normal, *i.e.,* downward sloping and convex shape.

Computations based on public and private expenditures show that at the beginning of the *war* section, 1941–1944, the responsiveness of collectivization of the American economic structure was still greater than unity (cf. Tables 13 and 14). This revealed a comparative ease in

increasing the stress on collective planning. Yet, with the growing intensity of planning and with the accordingly decreasing scope of private-enterprise activities, the augmenting difficulty of further shifts toward collectivization became apparent. In the second war year, the American responsiveness of collectivization already was considerably below unity, and it kept diminishing until the end of the war. It became more and more difficult to replace individual gratifications by additional collective want satisfactions. The small relevant responsiveness covering the years 1943 and 1944 represented an increasingly serious warning for the country with respect to its rapidly growing structural rigidity.

Looking from similar viewpoints at the *postwar* section, we cannot be surprised to find a correspondingly growing ease of structural changes toward reprivatization. The year 1945 marks but a starting point for our comparative analysis. It was only in 1946 and 1947 that the rehabilitation of private-enterprise economy at the expense of collective planning could considerably speed up its progress. Having gone a substantial part of the way toward collectivization during the war and having accordingly encountered the aforesaid impediments of a growingly rigid structure, it was obviously easy to revert to a renewed stress on private-enterprise economy. The correspondingly growing ease is clearly displayed by the rapidly rising American responsiveness of reprivatization in these years. Whether the year 1948 marked only a slight interruption in the postwar process of reconversion or the end of it will have to be decided from a future perspective.

II

When computing the dynamic *elasticity* of collectivization and of reprivatization for the period 1941–1948, we may consider average values for the responsiveness of collectivization and reprivatization with respect to the two subsequent sections 1941–1944 and 1945–1948, and then relate them to each other.

Such calculations reveal that the average American elasticity of collectivization in the years 1941–1944—as approximately derived from the relationship between private and public expenditures (cf. p. 360)—was great and that its reciprocal expressed by the average American elasticity of reprivatization in the section 1945–1948 was small. During the war, collective planning had gone so far that a great

propensity accumulated in the national economic structure to resume its previous emphasis on private-enterprise activities. So every further step of collectivization involved a substantial—and from year to year growing—amount of stored inherent propensity to resume the former shape of the economic structure. Hence the vigorous forces of restitution and the accordingly *great* elasticity of collectivization.

On the other hand, no similarly strong forces of restitution inhered in the process of reprivatization during the postwar years. In view of the still prevalent comparatively great intensity of collective planning in America, any small structural shifts in the opposite direction, *i.e.*, toward reprivatization, were connected only with a small intrinsic propensity to restore the wartime volume of collective gratifications. Immediately after the war, when a substantial part of the previous great military efforts still retained a heavy momentum, the corresponding elasticity of reprivatization began to decrease at first slowly, but then its decline considerably speeded up in 1946 and 1947. The result was the *small* average value shown by the corresponding average elasticity in the period 1945–1948.

Fundamentally, the average elasticities of collectivization and reprivatization under discussion refer to the whole war and postwar period, 1941–1948, with regard to the two sections 1941–1944 and 1945–1948, respectively. *In principle,* these elasticities could accordingly be used as characteristic indicators of the whole period and not only of those halves of it to which we have previously related them. Yet, it is evident that speaking of an elasticity of reprivatization concerning 1941–1944 or of an elasticity of reprivatization relative to 1945–1948 would have no *practical* meaning. On account of the empirical trend of structural shifts, the problem of such elasticities did not actually emerge. We may therefore be justified in discussing the pertinent elasticity of collectivization only for 1941–1944, and the elasticity of reprivatization only for 1945–1948.

III

The present example could obviously be continued in three different directions. First, it might be instructive to compute similar elasticities for each of the years 1941–1944 with respect to any of the years 1945–1948, and vice versa. Such computations would still have to be based on the functions underlying our curves in Figure 10. As a

result, we could obtain *point* elasticities instead of the *arc* elasticities represented by the ratio of the two separate average responsiveness values for the years 1941–1944 and 1945–1948. Corresponding partial arc elasticities could be calculated by thus relating any combinations of the years 1941–1944 to any combinations of the years 1945–1948. Several minor details of the American economic structure in the war and postwar period could be examined by such and similar methods of further analysis.

Second, we could develop our discussion of specific two-dimensional relations between private and public expenditures into the specification of corresponding *multidimensional* relations, such as indicated by the interdependence of the specific values in columns I, II, III, IV, and V of Table 5. The picture to be obtained would be more realistic. The relevant marginal rates, responsiveness values, and elasticities would better tie in with the composite structure of the actually prevalent economic systems. Yet, the necessary consideration of the endogenous and exogeneous corrective series concerned, as well as the required mathematical and statistical apparatus, would be more complex and accordingly more difficult to handle.

Third, all analytical viewpoints expounded in the present context may obviously be applied not only to the war and postwar period but also to a similar examination of structural shifts in the *peace period,* 1929–1940. An inspection of the relevant parts in Figure 8 suggests the rough bipartition of this period with a turning point, or watershed, marked by the years 1932 and 1933. We may accordingly regard the years between the business peak of 1929 and the trough of the Great Depression as characterized by a process of collectivization, while the subsequent section ending with the last peace year, 1940, may be interpreted as a general process of reprivatization. To be sure, the latter process displays a clear-cut break, which was caused by the short-lived cyclical decline from 1937 to 1938 and by a corresponding reverse movement toward collective planning. After this ephemeral relapse, however, the years 1939 and 1940 again continued the general shift toward an increasing emphasis on private-enterprise features of the economic structure. In the background of the break and relapse concerned, as well as in the whole latter half of the period 1929–1940, the economic effects of the anticipation of the Second World War were closely interwoven with the aftermath of the

Great Depression. The structural complications hence arising strongly blurred the picture of the functional relations in question. Consequently, we would have to correct the corresponding data for private and/or public expenditures, to which our Figures 8 and 9 refer, in order to obtain partial collectivization and reprivatization functions of the normal downward sloping, convex type and comparable to those in Figure 10. In spite of these and a few similar unavoidable complications, additional features of the American economic development could be brought to light by such an inquiry.

CHAPTER XIII

PARTIAL AND TOTAL PLANNING

European Extremism

I

THE STRUCTURE of the American economy can more appropriately be interpreted in connection with the concurrent developments of the *international* background. To be sure, our foregoing institutional discussion is based on several hypothetical assumptions which necessarily weaken the practical applicability of the arguments concerned. Yet, the degree of the resulting weakness is not so high as to obviate the possibility of a correlation between the American development which we have thus surveyed and the concomitant international trends.

The general contours display a jerky tendency toward *radical shifts* of the economic structure in most of the foreign countries. But the concurrent behavior of the American economy is characterized by a more smoothly *balanced cooperation* between private enterprise and collective planning. Such a distinction would not be justified with regard to the decades prior to the First World War. The American economy then was still in its nonage, and it was accordingly guided by the prevalent directions in the progress of European economic life. Since the First World War, however, America has come of age not only in a societary and cultural sense but also in the economic field. This development was certainly facilitated and expedited by the rapid downfall of European economic hegemony. Maturity has since obliged America to become more and more aware of the peculiar features of her own economic structure and to crystallize around them her own pattern of integrating individual gratifications with collective want satisfactions.

The recent economic difficulties of Europe, which induced somewhat similar disturbances in the Near East and in the Far East, were accompanied by symptoms of extreme radicalism, of revolutionary upheavals, and of counterrevolutionary reactions. Accordingly, un-

avoidable losses were caused by sudden changes in the direction of structural economic shifts. The material aspect of these symptoms will be discussed in the next chapter. As a preliminary step, let us here survey the immaterial, mental, or *spiritual* aspect of the symptoms and contrast it to the intellectual reaction which it has recently brought about in the peculiarly American way of thinking and theorizing about the problem of private enterprise and collective planning. On such a basis, it will be easier to evaluate the corresponding institutional pattern in the material progress of the American economy.

II

It was unfortunate that a considerable part of the public opinion in Europe was led to radically *extreme conclusions* by the economic decline in that continent after the First World War. The mistakes made by European dictatorial political systems between the two wars and the economic collapse caused by the Second World War have further pushed these attitudes toward pessimistic and accordingly harmful exaggerations. As a result, a substantial number of European economists have renounced their belief in a smooth continuation of the previous cooperation between individual and collective gratifications. Instead, they have drifted towards a one-sided acceptance of either the all-inclusive type of collective planning or the purely private-enterprise pattern of economic activities. Both opposed groups have connected their attempts, to discredit each other, with a merciless criticism of compromising "third ways." Adherents to the moderate view have become partially discouraged and have retreated into modest defense positions. Such positions have largely been restricted to the further relevant controversy on the European continent, while the two vigorous extreme groups have succeeded in rapidly expanding their intellectual influence not only in England but also in America.

The initiative in the whole dispute has undoubtedly been taken by the adherents of total socialism complying with the precepts of an all-inclusive collective economic planning. The main objective of this group has accordingly been to prove the theoretical possibility of drawing up and executing a total collective plan superior to whatever any private-enterprise economy or partial collective planning may achieve along the lines of social welfare. In the 1920's, the emphasis on the totality of planning was still somewhat hesitant. The en-

couragement derived from orthodox Marxist doctrines in the direction of planning has always suffered from the predominantly critical trend, coupled with a lack of positively constructive suggestions, in the work of Marx. Neo-Marxist revisionism has also failed to make substantial contributions to any positive theory of total planning. To be sure, the newfangled Soviet Russian example and the gloomy clouds of economic incertitude gathering over the horizon of the capitalistic countries gave an impetus to the pessimistic quest for a radical socio-economic reform.

Yet, it was only the experience of the *Great Depression* in the 1930's that definitely pushed the ideology of economic planning toward the standpoint of an all-inclusive totality. The striking contrast between the depth of the depression in the capitalistic countries and the fact that the Soviet economy proved to be immune to a similar blow was indeed fascinating. The obvious inference seemed to be that only total collective planning of the Soviet pattern would be able to avert such depressions, while attempts at any partial planning would only be makeshift, incomplete, and accordingly inefficient devices. From this viewpoint, the superiority of total collective planning was at once —and often carelessly—accepted as a foregone conclusion and as an accomplished fact. The vital question of an improved cooperation between private enterprise and collective planning became submerged in the remote background of interest. The decisive mistake in the setting of the problem was made.

The primary concern now shifted to the question whether total collective planning was *possible* at all and which were the methods and tools for its adequate execution. The theoretical and pseudo-analytical problems which then were brought into prominence have since been incorporated in every textbook of economics on the freshman level. The fundamental goal of total planning evidently is the elimination of an alleged chaos in the "market" economy owing to some sort of a "missing link" between capitalistic production and consumption. Monopolistic abuses, exploitation of labor and natural resources, wasteful discrepancies in the distribution of income and wealth, and concomitant shortcomings in several related fields are considered necessary corollaries of the chaos concerned.

The starting point for such considerations is the assumption that

it is easier to plan for full employment by *direct governmental action* aimed at a coordination of production and consumption than by the indirect, roundabout ways of influencing entrepreneurial decisions with respect to investment, employment, quantities and qualities of goods and services to be produced, wage and interest policies, and the like. In the absence of the marketing mechanism based on the consumers' dollar vote, total planning must cope with obvious difficulties in ascertaining actual schedules of consumers' preference. Such difficulties, however, are expected to be overcome by careful observation of the consumers' behavior, by adequate statistical computations, and by erudite prognostication. The complex problems clustering around the consumers' different time discounts with respect to various goods and services, around the underlying different individual want schedules of the consumers, and around acceleration effects pertaining to the link between planning for consumers' goods and producers' goods are considered to be similarly soluble.

Nowadays, it is by no means overlooked that the core of *value planning* is the task of coordinating dollar costs of production to dollar prices of products without the regulating directive of a competitive market. Yet, it is maintained that there is no necessity to solve, for every minute, millions of pertinent equations of the Walras-Pareto type in order to secure an appropriate equilibrium between costs and prices, as well as among the numerous underlying individual sacrifices, gratifications, and utilities. Relying on the large bulk of actual similarities in consumers' choices and on the relevant wide scope of the majority behavior, instead of unduly overemphasizing individual exceptions and minority peculiarities, is said to help a great deal. Realistic estimates, a "truly democratic" application of adequate checks and balances, and an appropriate handling of the cut-and-try method is expected to reduce the errors of total planning to a practicable minimum. The proponents of this standpoint usually add that in such a way the limited number of changes and adjustments which have to be made with respect to production and consumption can be computed by total collective planning with a much closer approximation than by any traditional methods of capitalistic calculation and speculation. Anyhow, even when several hundred thousand equations must be computed by a central planning board in a relatively short time,

the necessary calculations are expected to be easily carried through with the help of the available up-to-date bureau machinery.

It is well known how effectively some of the above-mentioned arguments have been formulated by such proponents of government economic planning as C. Landauer,[1] O. Lange,[2] A. P. Lerner,[3] H. D. Dickinson,[4] or F. M. Taylor,[2] and how vigorously such adherents of a private-enterprise economy as L. von Mises,[5] F. von Hayek,[6] or L. Robbins[7] have opposed. Part of the doctrines presented by either group does not belong to the extreme patterns. Both groups have outstanding members who are of a *continental European* background. Since the members concerned have taught and written for many years in America or England, it is difficult to say which of their ideas are rooted in continental European thought and which have been added under the influence of English and American economic thinking. Nevertheless, several elements of these ideas have been absorbed by some of the younger economists in England and America.

III

The intransigent defense of the private-enterprise economy in the spirit of a rejuvenated *laissez-faire* doctrine concentrates on attempting to refute most of the aforesaid contentions which have been advanced by the proponents of an all-inclusive planning. In doing so, however, this defense is frequently guilty of shooting beyond the target. While apparently being possessed by a somewhat emotionally motivated zeal for private-enterprise freedom, protagonists of the defense in question are prone to discard as untenable all, or too many, sorts and shades of governmental economic intervention. Accordingly, they often do not even raise the vital issues of a practicable optimal re-

[1] Cf. p. 3, footnote 1.

[2] Oscar Lange and F. M. Taylor, *On the Economic Theory of Socialism,* edited by Benjamin Lippincott, *Minneapolis,* 1938.

[3] Cf. p. 3, footnote 1.

[4] *Economics of Socialism,* Oxford, 1939.

[5] *Socialism,* New York, 1937, translation of the German original *Die Gemeinwirtschaft,* Jena, 1922; *Omnipotent Government,* New Haven, 1944; *Bureaucracy,* New Haven, 1944; *Human Action,* New Haven, 1949.

[6] Cf. p. 3, footnote 1.

[7] *Ibid.*

lationship between individual and collective gratifications but try to cut the Gordian knot by entirely or largely eliminating and ignoring the latter.

From the standpoint of the present discussion, the varying amount of relative emphasis put by this school of thought on its *critical arguments* is of minor significance. Such arguments are primarily aimed at upholding the dependence of collective planning on the solution of a bewildering multitude of Walrasian and Paretian equilibrium equations. Concurrently, substantial attention has been paid to a "rediscovery" and glorification of E. Barone's undoubtedly important mathematical analysis[8] illuminating the relevance and further developing the purport of the equations concerned. Those who believe in these arguments frequently indulge in pointing out practically insuperable obstacles to any meaningful observation and reliable expression of diverging consumers' choices by those governmental representatives who are in charge of planning. Pertinent critical arguments often stress the wide scope of indeterminacy and arbitrariness unavoidably underlying any such observations and expressions. The critics also question some of the similar fundamental assumptions made by the adherents of planning. Several other more or less justified critical objections to total planning are usually added. The objectors customarily emphasize the great difficulties of "physical planning." At the same time, they contend that the above-mentioned "value planning," which pertains to a social evaluation of the utility aspects with regard to economically significant physical relations, is practically impossible. Concomitantly, the welfare achievements of the free-market mechanism are often overestimated. This school of thought frequently underrates even obvious welfare contributions of thoroughly justified and widely accepted practices in the domain of partial collective planning.

Yet, it would be a misrepresentation of facts to maintain that there are only two extreme groups of proponents and opponents of collective planning in the show. Concerning *balanced attitudes* of carefully weighing and comparing the advantages and disadvantages concerned, let us refer only to two significant economists, the first of con-

[8] "The Ministry of Production in the Collectivist State," *Collectivist Economic Planning,* edited by F. von Hayek, London, 1935, pp. 245–290, translation from the Italian original "II ministero della produzione nello stato collettivista," *Giornale degli Economisti,* Rome, 1908.

tinental European and the second of British background, who have a considerable influence on the related American thinking: J. A. Schumpeter[9] and B. Wootton.[10]

Furthermore, let us remark that *Keynesian* and post-Keynesian economists go somewhere halfway between the two extreme standpoints. The path of such a halfway trend, cautiously winding between the Scylla and Charybdis of emotional and unrealistic exaggerations, is by no means smooth. Keynes and some of his adherents are certainly open to criticism inasmuch as they have indulged in indeterminate statements and hesitate to face clear-cut issues when quantitative or similarly definite relationships between the domain of private-enterprise activities and the field of collective planning have to be discussed.

Several other *compromising doctrines* are afflicted with such an indeterminacy. Some of the noteworthy recent exceptions have already been mentioned. But their number is small. Hence the wide scope of confusing and accordingly discouraging penumbra, which surrounds the various shades of the compromising standpoint. The lack of vigor of this standpoint is especially remarkable when we consider the undeniable fact that the great numerical majority of economists and laymen even nowadays fundamentally believe in some sort of a cooperation and coordination between individual and collective gratifications. Such a diagnosis may not hold concerning the Soviet Union and the countries in the orbit of its direct political influence, but it certainly stands with regard to all other countries including the United States of America.

The American Reaction

I

It is a significant fact that the U. S. A. managed to retain a fairly balanced *coordination* between private enterprise and collective planning in spite of the enticing and controversial arguments of extremists and in spite of the violent oscillations caused by the Great Depression, by the two World Wars, and by the two corresponding periods of postwar reconversion. The relevant behavior of the Ameri-

[9] Cf. p. 3, footnote 1.
[10] *Ibid.*

can economic structure may be appraised from three partially different viewpoints.

First, it is important to note that as far as the intrasectoral shifts of public expenditures and the underlying gratification of collective wants are concerned, the United States of America had already attained in the second and third decades of the twentieth century a relatively high degree of structural economic *maturity*. This is clearly indicated by our Figures 3, 4, and 5. They manifestly show that the U. S. A. could even then retain its steady progress leading from the relatively primitive level of a power community toward the more advanced stage of a welfare community. To be sure, the comparatively favorable general locus of this country within the turmoil of war and postwar international economic relations proved to be substantially helpful. Nevertheless, the increasingly declining trend in the relative significance of American national expenditures for power policy during the two decades concerned displays the main direction of the pertinent transformation. This is the *negative* side of the picture.

The *positive* side shows a correspondingly increasing rate in the relative rise of American expenditures for production policy and in the concomitant emphasis on governmental activities aimed at fostering material production. The strength of the relative stress on other aspects of material welfare and on the various public activities promoting spiritual welfare is reflected by the rising over-all trend of the American national expenditures for welfare policy. The relative decline of these expenditures in the second decade of the century is more than offset by their spectacular relative increase in the third decade. A synopsis of the negative and positive sides of these relations must result in our above-indicated conclusion concerning the structural maturity of the American economy.

II

Second, intersectoral changes in the American public and private expenditures show that this country has been able to retain its structural *stability* and *equilibrium* with respect to the issue between private enterprise and collective planning. From such a viewpoint, the downward sloping convexity characterizing the relationship between American private and public expenditures in the fourth and fifth dec-

ades of the twentieth century reveals an important structural feature.

Any relevant *concavity* would have meant that the propaganda of intellectual extremists had gained the attention and influenced the action of responsible agencies in the American economy. For such a concavity would have displayed an increasing ease of further shifts toward collectivization or reprivatization when substantial steps in the respective direction had already been made. For example, speeding toward an accordingly extreme solution of the pertinent structural economic problems in terms of a further approach toward total collective planning and a further restriction of private-enterprise activities would have been facilitated had the structural features exhibited concavity. This would have happened not in spite of, but on account of, the essential concessions to governmental economic planning during the Great Depression and in the Second World War.

Yet, the actual *convexity* indicated increasing marginal rates and a correspondingly decreasing responsiveness in the functional relationship between private and public expenditures. This is revealed not only by the downward sloping convexity of our comprehensive curve (Figure 9) for the years 1929–1948 but also by the shape of the partial curve (Figure 10) for the years 1941–1944. The supplementary fact that the convexity of the latter function is deeper than the convexity of a similar function which can be computed for the years 1945–1948 manifestly corroborates our pertinent conclusion. The nearer the country proceeded toward the climax of war economy based on a rapidly intensifying collective planning, the more aware it became of the necessity to guard the interests of its structural stability and equilibrium and to distrust the arguments of extremists addicted to total collectivism. Such is also the meaning of the decreasing marginal rates of reprivatization which the American economic structure displayed in the same years, *i.e.*, with respect to the same comprehensive and partial functions. While further steps toward collectivization involved rapidly increasing cost sacrifices and correspondingly growing related difficulties, any reverse steps toward reprivatization were facilitated by a decreasing tendency of the cost involved.

III

Third, the predominance of a structural stability and equilibrium in the American economy is further exemplified by our statistical figures

on a rapidly increasing (and accordingly great average) *elasticity* in the relation between private and public expenditures for the years 1941–1944, which approximately indicates a great elasticity of collectivization. On a similar basis and with similar structural effects, a swiftly diminishing (and correspondingly small average) elasticity of reprivatization may be found for the years 1945–1948. In the former period, a sober inclination of the American economic structure to retain its well-balanced stability and equilibrium induced it to develop a substantial and increasing propensity to restitute and rehabilitate private-enterprise activities. In the latter period, however, an essentially similar inherent tendency determined the American economy to show a small and decreasing interest in restoring efforts toward collective planning.

Inasmuch as we approve of such a balanced coordination between individual and collective gratifications in the democratic structure of the American economy, we evidently agree with its compromising attitude relative to the underlying metaphysical, socioethical, and sociophilosophical issues. On such a basis, it is easy to establish an identity or at least a high degree of positive proportionality between our statistically examined *marginal* rates and our desirable *optimal* rates of collectivization and reprivatization for the American economic system. In the same system, we can indicate a similar relationship between actual and optimal degrees of the responsiveness and elasticity of collectivization and reprivatization which we approximately derived from our computation of public and private expenditures.

In other words, we may state that we are satisfied with the relevant recent behavior of the American economy. We may accordingly contend that it is for the *benefit* of the American national welfare if increasing difficulties develop in the underlying economic structure when it is pushing further toward collective planning after having already attained relatively high levels of collectivization. But we may add that we also approve of a reverse relationship revealing increasing obstacles to greater emphasis on private-enterprise activities when already high degrees of reprivatization have been attained. Let us look at developments involving any structural economic imbalance. Then it is evident that we may also accept the correspondingly opposite inferences with respect to facilitating the restoration of a balanced cooperation between private enterprise and collective planning by low

marginal and optimal rates, as well as by a great responsiveness and a small elasticity of collectivization and reprivatization.

It might not be superfluous to stress that our essential conclusions with regard to the behavior of the American economic structure would not change if we retained the traditional *Marshallian terminology* as applied to economic elasticities. We could also then derive these conclusions by referring them to simple Marshallian elasticities of collectivization and reprivatization and to ratios of such elasticities with respect to different times. Yet, our terminology and our whole argumentation would be accordingly clumsy. From all viewpoints concerned, it seems to be a more satisfactory procedure to distinguish, also in the present application, between degrees of static responsiveness and dynamic elasticities. With the help of such a distinction, we can better visualize the sober American reaction to extreme solutions of the fundamental problems pertaining to the development of the economic structure.

CHAPTER XIV

FOREIGN AND DOMESTIC TRENDS OF ECONOMIC POLICY

The Impact of Planning Abroad

WHEN SURVEYING the *material* consequences of the recent ideological fight between forces acting in the background of private enterprise and collective planning, we may start out by evaluating the relevant structural shifts in several foreign countries. Most of them have recently shown a relatively great emphasis on government intervention. It will be instructive first to examine this emphasis abroad and to return thereafter to an appraisal of the corresponding American perspective.

In principle, we could employ two fairly appropriate methods of investigating, in institutional terms, the prevalent recent shifts toward collective planning in foreign countries. First, we could resort to *macroeconomic* computations similar to those which we tried out when examining the statistical aspects of structural development in the American economy. Following this method, national budget equations and national welfare functions could also approximately be calculated for foreign countries with the help of related data based on national economic accounting. For the same countries marginal rates, degrees of responsiveness, and elasticities of collectivization and reprivatization could then also be specified and approximately evaluated with respect to the pertinent optimal magnitudes.

Second, we could refer to particular examples of economic policy and to other particular steps along the path of the recent transformation which has resulted in a relatively increasing stress on collective planning in the economic structure of most of the countries concerned. The outcome would be a sort of a mosaic picture for each country. Such pictures could then be integrated with the help of adequate international comparisons. We could term this second procedure *microeconomic,* since it starts out with an examination of particular details instead of concentrating from the very outset on the comprehensive magnitudes represented by the national aggregates with which our

social accounting deals. The microeconomic method in question is somewhat similar to the approach on which economic analysis relies when starting out by an examination of individual utilities, and thence drawing conclusions with regard to the communal, or national, welfare.

In the present context, neither of the two methods can rigorously be applied, and neither of the corresponding inquiries can be carried through with any appreciable degree of comprehensiveness or accuracy. The partial lack of factual information is in both respects unfortunately linked with inherent methodological difficulties. We must consequently satisfy ourselves with a rather cursory treatment of both procedures, and with *approximate conclusions*. Yet, the latter may still help in further illuminating the institutional aspects of the recent structural economic shifts.

The Macroeconomic Picture

I

We have already pointed out that in the last few years significant attempts have been made to develop our macroeconomic research in the direction of *social accounting* and especially of national economic budgets. Such attempts have continued a tradition which goes back at least as far as the latter part of the nineteenth century. This tradition has brought forth, in several dozens of countries, more or less erudite computations of national income, national product, as well as of public and private expenditures.

Until the 1930's, however, no serious steps had been taken toward an adequate *coordination* and unification of such computations in order to enhance the comparability of the resulting international figures. After the Great Depression, the League of Nations and, more recently, the United Nations have paid considerable attention to the problems of a pertinent coordination. But most of the relevant figures and ratios are still not sufficiently comparable. In this field, meticulous caution and extreme circumspection must be observed for even the most modest attempt at international comparisons.

As far as the germane pitfalls, discrepancies, and plans for improvement are concerned, we may refer to three significant *recent contributions*. First, we may mention the report on "Measurement of National Income and the Construction of Social Accounts" of the

Sub-committee on National Income Statistics of the League of Nations Committee of Statistical Experts, and especially its appendix on "Definitions and Measurement of National Income and Related Totals" prepared by J. R. N. Stone, chairman of the sub-committee. This report,[1] in which formerly available information and previous relevant research were appropriately taken into account and further developed, was adopted by the sub-committee at its session held at Princeton, New Jersey, in December, 1945. Second, we may point out the importance of the paper which J. B D. Derksen[2] prepared with respect to a resolution adopted in March, 1947 by the Economic and Social Council of the United Nations. In this resolution, the Council requested the Secretary-General of the United Nations to pursue as expeditiously as possible work on national income and expenditures for the purpose of providing comparable international data. Third, the more extended report should be consulted which the Statistical Office of the United Nations has prepared with regard to this request and which will be cited in our Table 11.

These three sources and other essential contributions to the elucidation of the same relations clearly show how great some of the *international differences* are when it comes to the definition and practical interpretation of those fundamental magnitudes with which national and fiscal accounting traditionally deal. Of course, the differences in minor details are even more numerous. The basic aggregates to which the total sums of national economic budgets refer display in various countries at least the following seven differently defined and interpreted concepts: national income at factor cost, domestic national income at factor cost, national income at market prices, gross national product at factor cost, domestic gross national product at market prices, gross national product at market prices, and total available means. Essential international differences exist with respect to the computation of various nonmonetary items,[3] of pensions and social

[1] Recently published as No. 7 of the *Studies and Reports on Statistical Methods,* United Nations, Geneva, 1947.

[2] *World Statistical Congress, The Comparability of National Income Statistics,* United Nations Economic and Social Council, CN. 3/WSC/5, Lake Success, N. Y., August, 1947, mimeographed.

[3] Such as unpaid services of housewives, rents of owner-occupied dwellings, services of other durable consumers' goods, farmers' consumption of own produce, or payments in kind to household personnel.

insurance, and of some significant items in the government sector. The latter items refer to profits and losses of government-owned enterprises, to interest on the national debt outside government enterprises, to the income of armed forces abroad, etc. Considerably disturbing also are those international differences in fiscal accounting which pertain to certain difficulties in properly distinguishing between expenditures of the central governments and of other public authorities, between budget estimates and final accounts of public expenditures, among public, semipublic, and private expenditures at large, etc. It is evident that such obstacles to meaningful international comparisons are deeply rooted in the different societary, political, economic, and administrative structure of the countries concerned.

II

Consequently, we must again stress the only approximate character of any relevant computations based on the available statistical evidence. With such a restriction, one of the alternative approaches to a comparative examination of structural shifts in various national economies is the calculation of *ratios* of public expenditures to gross national products or to national incomes (see Table 11).

It would be a more rigorous method to use in columns I and II of this table figures of gross national products, since they can be related more directly to government expenditures. But we may again take into account the very good positive linear correlation between the current data on gross national products and *national incomes.* With respect to this correlation, we may take advantage of the recent efforts of the Statistical Office of the United Nations to achieve international comparability in computing national income, or net national products, at factor cost. No similar degree of comparability could now be achieved if we tried to refer to gross national products.

Columns III or IV (Table 11) cannot serve as a basis for international comparisons concerning the absolute weight of public expenditures, the size of the public economic sector, or the degree of collectivization in any particular country or at any particular time. The international differences in the scope and composition of expenditure items covered by these columns are too great. We insert columns III and IV only to clarify the significance of column V with respect to

the difference in *percentage shifts* related to low and high national levels of government expenditures as compared with national incomes. For example, from this viewpoint there is a conspicuous difference between Switzerland or Denmark, on the one hand, and the United Kingdom or Canada, on the other hand, with regard to the low relative levels in the former and the high levels in the latter.

Such differences, the fact that our choice of postwar years is not the same for all countries, and several changes in the methods applied to the computation of government expenditures, to which our footnotes refer and which took place during our period of observation, essentially influence the significance of column V. Consequently, no attempt should be made to rank the 18 countries in Table 11 according to the size of the percentage increase in this column. It seems to be sufficient if we approximately distinguish between a group of such countries as Australia, the United Kingdom, the Netherlands, Norway, Switzerland, and Czechoslovakia, in which the increase concerned was relatively large, and another group of such countries as Canada, Ceylon, Brazil, Argentina, the Union of South Africa, New Zealand, etc., which displayed a relatively small increase. When also referring our numerical comparisons to the United States of America, we must obviously discount, among other changes, the trend toward a federal concentration of government expenditures which this country has recently revealed. Allowance must be made for the fact that the process of *private-enterprise reconversion* in several countries was not yet completed in the postwar years to which our table relates. From this viewpoint, one will be in a better position when a comparison between average relevant values for several prewar years and similar values for several postwar years will be possible.

We may thus restrict our main conclusion to the statement that in all 18 countries covered by our table the ratio of government expenditures to national income *increased* in the period of observation. It is evident that a similar statement can also be made concerning several other countries, which could not be included in the table on account of various deficiencies in the available statistical data. The countries in the economic orbit of the Soviet Union obviously show substantial pertinent increases. The underlying shifts toward *collective economic*

Table 11. Ratios of Government Expenditures to National Income

Years	*Country*	*National income in units of national currencies*		*Government expenditures as a percentage of national income*		*Relative per cent increase of government expenditures*
		Prewar (I)	*Postwar* (II)	*Prewar* (III)	*Postwar* (IV)	(V)
1938–1945	Argentina	6,795	12,298	18.8[a]	29.2[a]	55.3
1938–1947	Australia	761	1,231	10.0[b]	35.3[b]	253.0
1938–1946	Belgium	64	198.4	17.7[c]	29.4[d]	66.1
1940–1944	Brazil	33 1[e]	65[e]	14.3[f]	14.5[g]	1.4
1939-1946	Bulgaria	56 7	334[e]	17.4[h]	24.2[i]	39.1
1940–1946	Canada	3 9	9.4	24.1[j]	26.5[j]	10.0
1938–1947	Ceylon	556.5[e]	1,736.1[e]	12.8	17.3	35.2
1937-1946	Czechoslovakia	59 2	155.4	23 0[k]	41.2[l]	79 1
1938–1947	Denmark	6	14 5	8.2[m]	14 2[m]	75 2
1938–1946	Greece	61.3[e]	5,940[e]	25 3[f]	27.9[n]	10 3
1938–1946	Netherlands	5 1	9.3	19 0[f]	57 5[o]	205.5
1938–1946	New Zealand	193	378	18 5[p]	27 4[q]	48.1
1938–1947	Norway	3,741	6,968	12.9[r]	44.1[r]	241.9
1938–1947	Sweden	10.6	20.7	10.5[s]	12.7[s]	21.0
1938–1946	Switzerland	8.7[t]	15[t]	7.0[u]	14 0[u]	100.0
1938–1947	Union of South Africa	364.8	673.5	18.1[v]	27.7[v]	53.0
1938–1947	United Kingdom	4,761	8,886	24.8[w]	48 4[w]	96 8
1938–1947	United States of America	66.6	201	10 8[x]	21 8[x]	109.1

[a] *Monthly Bulletin of Statistics*, Statistical Office of the United Nations, Lake Success, N. Y., Vol. 3, No. 6, June, 1949, p. 7. Includes combined expenditures of autonomous governmental agencies.

[b] *International Financial Statistics*, International Monetary Fund, Washington, D. C., Vol. 2, No. 5, May, 1949, p. 28. Figures include pay warrants, which approximate cash payments.

[c] Budget estimates. *The Statesman's Yearbook*, London, 1939, p. 719.

[d] *Ibid.*, 1948, p. 719. Revised budget estimate including supplementary credits.

[e] Figures not revised by the United Nations' Statistical Office because of the lack of the necessary data.

[f] *The Statesman's Yearbook*, 1941, pp. 745, 987, and 1142. For Greece, budget estimate.

[g] *Ibid.*, 1948, p. 745. Includes war expenditures.

[h] *Ibid.*, 1947, p. 757.

[i] *Ibid.*, 1948, p. 754.

[j] *International Financial Statistics*, May, 1949, p. 38. Includes loans to the Canadian National Railway to meet maturing bonds and for other purposes.

[k] Budget estimate. *The Statesman's Yearbook*, 1941, p. 820. Includes railway expenditures.

[l] Budget estimate. *Ibid.*, 1948, p. 818.

planning were vigorous. But other countries, not mentioned in Table 11, also revealed more or less similar tendencies. For example, such a tendency prevailed in France[4] or—to refer only to two more coun-

[m] *International Financial Statistics*, May, 1949, p. 80. Expenditures on closed accounts.

[n] Budget Estimate. *The Statesman's Yearbook*, 1948, p. 981.

[o] *Ibid.*, p. 1095. Includes ordinary and extraordinary expenditures.

[p] *Ibid.*, 1940, p. 416. Expenditures on public works excluded.

[q] *Ibid.*, 1948, p. 542. Expenditures on public works excluded.

[r] *International Financial Statistics*, May, 1949, p. 94. Cash expenditures on closed accounts. Adjusted to include changes in the Occupation Account of the Bank of Norway.

[s] *Ibid.*, p. 108. Total current expenditures of the Working Budget, plus the net expenditures (if any) of the State Capital Funds (after the addition of the net expenditures on Capital Investment Account).

[t] *Ibid.*, p. 110. National Income estimates are not revised for international comparability.

[u] *Ibid.* Closed accounts of the Federal government.

[v] *Ibid.*, p. 116. Gross issues of the Exchequer. Payments to the government agencies, not the actual payments of these agencies.

[w] *Ibid.*, p. 118. Issues from the Exchequer, not payments effected.

[x] *Ibid.*, p. 120. On basis of checks issued. Includes net expenditures, if any, on the trust accounts.

NOTE: Where the fiscal year does not coincide with the calendar year, the practice followed is to pair the national income figures (which are usually on a calendar year basis) for a year with that fiscal year which includes within itself the major portion of the year in question. Where the fiscal year ends later than June 29, the fiscal year is paired with the later of the corresponding two calendar years. For example, the government expenditures for the fiscal year ending June 30, 1946, are paired with the national income figure for 1946. The expenditure figures for the year ending March 31, 1946, would be paired with the national income figures for 1945.

Columns I and II list the national income figures of selected countries for a prewar and a postwar year. The years 1938 and 1946 or 1947 have been used wherever possible. The national income concept used is that employed by the Statistical Office of the United Nations and is national income or net national product at factor cost. All figures, except where otherwise noted, have been taken from *National Income Statistics*, 1938–1947, Statistical Office of the United Nations, Lake Success, N. Y., 1948. In this context, it was not felt necessary to enumerate the various national currencies and the units in which they are expressed. Millions and billions are omitted.

Columns III and IV are government-expenditure figures for the prewar and the postwar year, respectively, expressed as a percentage of the appropriate national income figure and referred to central government expenditures only, except where otherwise noted.

Column V is the difference between column III and column IV expressed as a percentage of column III.

[4] For this country, we may refer to real national income figures (cf. *National Income Statistics, 1938–1947*, p. 135) and compare them with the indexes

tries of the Western Hemisphere—in Chile[5] and the Dominican Republic.[6] The different magnitudes of the shifts concerned suggest corresponding differences in the stress on government expenditures, in spite of the substantial indeterminacies caused by the shortcomings of the available statistical data.

The differences are more conspicuous when we also consider some of those countries which seem to reveal a pertinent *decrease* instead of an increase. In the case of Italy,[7] such a decrease of about 16 per cent between the years 1938 and 1947 can be explained with respect to an over-all trend toward reprivatization necessitated by the collapse of the semicollectivistic planning under fascism. A somewhat similar development may be found in the Western zones of Germany and Austria, although the financial burden of the Allied Occupation is still blurring the picture. But somewhat similar decreases of the stress on governmental expenditures which could superficially be computed for such countries as Ireland[8] or Mexico[9] should be evaluated with a due amount of scepticism.

It will probably take another few years of carefully organized international statistical *coordination* before a more rigorous comparative study of the present pattern can be carried through. In the meanwhile, we must content ourselves with an intermediate conclusion to the effect that the recent development of the ratios of public expenditures

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of government expenditures in prewar prices as computed by another office of the United Nations (cf. *Survey of the Economic Situation and Prospects of Europe,* United Nations, Department of Economic Affairs, Research and Planning Division, Economic Commission for Europe, Geneva, 1948, p. 77). The pertinent increase between the years 1938 and 1947 is slightly more than 10 per cent.

[5] We may compute a relevant increase of about 17 per cent between the years 1940 and 1945 (cf. *International Financial Statistics,* October, 1948, Vol. I, No. 10, p. 141, and *The Statesman's Yearbook,* 1943, p. 761, and 1948, p. 766).

[6] As a rudimentary item, for this country we may calculate a corresponding increase of about 43 per cent between the years 1943 and 1946 (cf. *International Financial Statistics,* p. 145, and *The Statesman's Yearbook,* 1948, p. 835).

[7] Our computations for Italy may be based on the methods and sources which we mentioned in footnote 4 with regard to France.

[8] Cf. *National Income Statistics, 1938–1947,* p. 64, and *International Financial Statistics,* May, 1949, p. 80.

[9] Cf. *National Income Statistics, 1938–1947,* p. 68.

to national incomes, or products, also display a long-term trend in which a gradual expansion of collective planning at the expense of private enterprise seems to be the predominant feature.

Microeconomic Mosaics

I

If we now turn toward the microeconomic aspect of the recent shifts in the economic structure of foreign countries, we have to face a bewildering mass of *scattered information* and statistical data. Much of the available material is directed toward either a favorable or unfavorable evaluation of current national economic policies. Alternative goals are a direct or indirect substantiation or refutation of arguments proposed by political, economic, religious, or other societary groups for the purpose of promoting their particular objectives. Only few truly objective reports are available. It is frequently difficult to distinguish facts or solid schemes from merely wishful propaganda and unwarranted rumors.

After overcoming, at least to a certain extent, such difficulties in collecting the pertinent basic evidence from official, semiofficial, and private statistical publications, other reports, periodicals, newspapers, etc., we still have to decide how to *classify,* coordinate, and group our material in a workable and presentable way. One of the possible ways would be to survey foreign countries, one by one, in a sequence reflecting the increasing or decreasing stress which they have recently put on economic collectivization. Such a survey could bring into prominence several relevant differences among countries participating in the American Marshall Plan, and countries belonging to the Soviet sphere of influence. An alternative procedure could embrace the comparative consideration of various fields in economic activities and policies, such as agricultural and industrial production, domestic and international trade, transportation and communications, money, credit, and banking, public finance, and the distribution of income and wealth. Under such headings, we could then appropriately group the foreign countries concerned with regard to the various intensities of their recent attempts at collectivization and to any particular shifts toward reprivatization. We may attempt to combine a few viewpoints of both approaches, as a basis for our following brief discussion.

II

Developments in the domain of *agricultural and industrial production* undoubtedly represent the backbone of all recent structural shifts. Let us refer to those difficulties which were caused by the world-wide dislocations in productive activities during the Great Depression of the 1930's, and particularly by the various direct and indirect effects of the Second World War. It is evident that such difficulties resulted in wants and in market demand whose primary pressure pointed toward goods to be provided by a partially reorganized and partially expanded agricultural and industrial production. With regard to this pressure and immediate urgency, other economic activities represented only direct or indirect consequences of the underlying structural changes. In other words, activities dealing with trade, credit, banking and public finance reflected only corollaries of the strife between private enterprise and collective planning in the domain of agricultural and industrial production.

Such are the nature and significance of the hierarchical primacy displayed by the recent objectives of agricultural and industrial reconversion and increased production in practically all foreign countries. Yet, this primacy is far from being unrivaled. Its two important rivals have recently been a drive toward further progress along the path of *equality* in the distribution of income and wealth and a stress on an accelerated tempo of economic *collectivization*. In many countries, the two rivals have been satisfied with presenting themselves as complementary postulates and with acting as more or less indispensable auxiliaries. Accordingly, it has been said that in such countries agricultural and industrial production could efficiently be reconverted and increased only by the help of further societary equalization and economic collectivization.

Wherever this or any similar assumption of complementarity could justifiably be established and wherever it has been accepted by economic experts and public opinion, a fairly smooth *cooperation* among the three objectives rooted in production, equality, and collectivization has been assured. With regard to such a cooperation, it has not seemed to be necessary or at least not particularly interesting to inquire into any dynamic changes in the relative vigor of the motive forces underlying the three objectives. It has not been of vital significance if

and when the cooperation concerned has moved from the original subordination of the latter two objectives toward their coordination to the first objective or in some countries even toward their gradual superordination. Nor has it been especially important whether the second or the third objective has proved to be stronger in this development.

In several countries which could not attain such a smooth co-

important steps in the same direction. As a result, the Brazilian government has recently secured an extensive control of railways; of planning for agricultural production and settlements, as well as for other resources in the Amazon region; of irrigation works, silos, and farmer's credit cooperatives; and of various branches of manufacturing and power industry, such as electricity. The vigorous Mexican swing toward collectivization under Cárdenas in 1934, which involved vital parts of agriculture, mining, and manufacturing industries, was undoubtedly stimulated by the spirit of the New Deal in the United States of America. Indirectly, so has been the rapid recent development of government-controlled Mexican cooperatives, railways, banking, and other enterprises including the production of such commodities as plows, sugar, motion pictures, and electricity. In other countries of this group, too—for example, in Guatemala, Honduras, Ecuador, Bolivia, Peru, Chile, Uruguay, etc.—a significant tool of government economic planning has been the gradual spreading of state monopolies, most of which have been motivated by considerations of public finance. Some of the favorite objects of such monopolies have been petroleum, salt, tobacco, alcoholic beverages, matches, nitrates, arms, munitions, and explosives.

A partially parallel development has taken place in the majority of the countries embraced by the *Economic Cooperation Administration*. In addition, long-term economic plans had to be worked out in these countries with respect to the comprehensive framework of the Marshall Plan. But the collective planning involved has left a relatively wide scope for private enterprise.

England—and indirectly the major part of the British Empire—has some sort of a key position among the countries supported by the American economy through the Marshall Plan and the North Atlantic Pact. Until about the middle of 1949, in about four years of office, the British Labor Government has nationalized about 20 per cent of the United Kingdom's industrial activities. It has taken over seven basic industries: coal, gas, electricity, public transport, civil aviation, overseas communications, and central banking. The iron and steel industry and other important fields are likely to be next in the course of collectivization. An extensive governmental control over the acquisition of raw materials, investment activities, semipublic housing schemes, etc., also mark the path of a gradual weakening of

free competition in the country which once was the traditional stronghold of the *laissez-faire* principle.

In some parts of the *British Commonwealth,* as India, Pakistan, the Union of South Africa, and Australia, the shift toward collective planning has been buttressed by the uprise of vigorous nationalistic tendencies. When early in 1947 *The New York Times* made, through its correspondents, an on-the-spot survey of collectivization trends in 19 Western and Eastern foreign countries, Canada appeared to be the only one in which private enterprise was functioning with the freedom from government controls which characterized the U.S.A. Since then, Canada has also made substantial steps toward collective planning in the field of public utilities, airlines, radio stations, wholesale and retail trading, etc.

Several beneficiaries of the Marshall Plan show, of course, structural features of a *peculiar* economic development. To mention only a few examples, France experienced a powerful wave of economic collectivization as early as 1936. It was engineered by the Blum government. A continuation of this trend after the Second World War has resulted in the present semiprivate and semicollective French economy. As in France, a comprehensive confiscation of the properties of former collaborators with the Germans has facilitated moderate shifts toward collectivization in countries like Belgium, the Netherlands, Norway, Denmark, and Greece. Turkey has further developed the partially socialistic reforms of Kemal Atatürk between the two wars. The recent turn of Sweden toward collective planning may be regarded as a surprise. Swedish farming, forest industries, iron-ore production, electricity, building industry, etc., have been subjected, to a greater or lesser extent, to state control.

The countries which were *defeated* in the Second World War and which have since been economically guided by the Western powers now connected by the Marshall Plan reveal the relatively strongest features of economic reprivatization. In the Western zones of Germany and Austria, in Italy and Japan the postwar period of private-enterprise reconversion has been exceptionally long. International security and democratic pacification have proved to be more powerful factors in the recent economic development of these countries than the trend of collectivization. The Western victors have so far emphasized the eradication of institutions in the field of collective planning which

could be utilized for military aggression. It is probable, however, that after the liquidation of such institutions, economic progress in terms of nontotalitarian government intervention will again be stressed.

IV

In the economic orbit of the *Soviet Union,* we may distinguish between two relevant tendencies. The U.S.S.R., on the one hand, has reached a stage of relative satiety and stability in terms of economic collectivization. The country is not likely to go, in the near future, beyond this stage. After the pertinent ups and downs marked by the periods of War Communism in 1918–1920, the New Economic Policy in 1921–1926, and the successive Five Year Plans since 1927, private-enterprise activities have been diminished to a negligible role. They have been restricted to small, private gardens rented from collective farms by their members and to small shops in which some repair-work or manufacturing and selling of furniture and other household articles is done. With respect to such small concessions to private enterprise, only minor oscillations have recently been brought into prominence. In the background, largely opportunistic considerations of no substantial practical consequence or significance as to the underlying fundamental principles have been at work. Such was the case, for example, when about the middle of 1948 the construction of privately owned homes up to a certain modest size was encouraged by an authoritative declaration stressing, and even legally guaranteeing, private ownership rights in the homes concerned. Such has been the tenor of the whole Fourth Five Year Plan inaugurated in 1946, and the trend of the Fifth Five Year Plan, which will probably begin in 1950, promises to be similar.

On the other hand, those countries which have recently joined the *Soviet orbit* have displayed, in the postwar years, an accelerated rate of economic collectivization. Poland, Czechoslovakia, Hungary, Rumania, Bulgaria, Yugoslavia, Albania, the Eastern zones of Germany and Austria, Finland, Northern Korea, etc. are still in the process of approximating, as speedily as they can, the U.S.S.R. level of collective planning. Of course, there are international differences among them. For example, while about 95 per cent of the manufacturing industries in Czechoslovakia were probably collectivized by the beginning of 1949, Yugoslavia seems to have recently deviated somewhat

from the over-all program of the Soviet economy inasmuch as it retarded its program of collectivization.

V

Let us add a few examples taken from the group of countries which directly belong neither to the sphere of the Marshall Plan nor to the orbit of Soviet economic influence. Falangist or related *nationalistic* trends have also recently favored devices of partial collective planning in Spain and Argentina. In the former, vertical "syndicates" and the "National Institute of Industry" act as advanced posts of governmental intervention. In the latter, the Five Year Plan of 1947–1951 indicates a large-scale expansion of collective guidance embracing production, money and banking, transportation, and communications.

As to the *Far East,* the government on the Communist mainland of China is undoubtedly preparing for incisive collectivistic reforms. On the scattered islands of nationalist China there have also been a few recent attempts to carry through significant land reforms, to extend farm credit loans, to foster the development of cooperatives, to balance the budget, and to make other steps toward partial collective planning. The underlying effort to meet halfway the powerful impetus of socialistic ideas is evident. But it is interesting to observe that the same nationalistic government has promoted a vigorous campaign of economic reprivatization in Formosa for the purpose of wiping out the vestiges of collective planning under the former Japanese occupation. This is a telling analogy to the far-reaching private-enterprise reconversion in the defeated countries under Western influence. Extremely strong tendencies of economic collectivization, backed by motives of recently acquired national independence, are at work in such countries as Indonesia, the Philippine Islands, and Burma.

VI

We may now *summarize* some of the main features in the recent structural development of foreign economic systems. Even without going into any exact quantitative verification of the above-discussed relations, we may draw a few approximate conclusions.

The countries participating in the American Marshall Plan and all other countries more or less supported by the *U.S.A. economy* seem to display increasing marginal rates, a decreasing responsiveness, and

an increasing elasticity of collectivization. As a result, these countries are clearly characterized by an appreciable degree of elastic propensity to reconvert their economic structure, *i.e.,* to restore at least a somewhat greater emphasis on private-enterprise activities. As to the actual degree of this propensity, there are manifest differences among the particular countries under discussion. The more they are also impressed by the Soviet economy, the better they can harmonize the objectives of production, equalization, and collectivization within the development of their economic structure and the smaller is their corresponding elasticity of collectivization. Concomitantly, their structural development is subject to more or less violent controversies between capitalist majorities and communist minorities. Therefore, they cannot avoid a certain discrepancy between their marginal and optimal rates of collectivization.

In the *Soviet Union* and in the orbit of its direct economic influence, all such discrepancies have apparently been eliminated by a forced, or at least collectively planned, harmony among production, equalization, and collectivization. Outward appearances indicate no capitalistic pressure groups. At first sight, an increasing responsiveness of collectivization is being exhibited especially in those countries which have already made substantial progress along the path of government intervention. On the surface, a concurrent small elasticity of collectivization is said to prevail, and everybody is supposed to be happy with the more or less accelerating advance toward total collective planning.

It is difficult to ascertain to what extent these structural economic features of the Soviet orbit do not prevail *below the surface.* In all countries with a communistic majority there are anticommunistic minorities which would hail a reverse movement toward structural reprivatization. The stronger such minorities are and the more justifiably their future growth into power majorities may be expected, the more reasons we may have to assume that under the surface there is no actual harmony among the objectives of production, equalization, and collectivization. At the same time, we may assume that the pertinent marginal rates of collectivization are actually increasing and are far from harmonizing with the alleged optimal rates of collectivization. We may also suppose, that the relevant responsiveness of collectivization is actually diminishing and that below the surface the concomitant actual elasticity of collectivization is increasing.

Yet, we must stress the fact that we have no accurate knowledge of the strength of the minorities concerned. Therefore, the relationships mentioned in the preceding paragraph are *indeterminate* and *intangible*. They are about as indeterminate as similar speculations would be if we referred them to the economic programs of any present anti-capitalistic power minorities in the countries outside the Soviet orbit of influence and to any concomitant discrepancies between accordingly alleged and actual features of the economic structure in these countries.

American Synthesis

In order to complete our institutional discussion of the issue between private enterprise and collective planning, we must also evaluate, from a microeconomic standpoint, the structural development in the *United States of America*. Any detailed survey of this development would comprise most of the material traditionally presented by our applied economics textbooks. There are hardly any steps in the recent growth of the American economy which cannot be justifiably interpreted as direct or indirect results of the prevalent endeavor to coordinate government intervention to private-enterprise activities. The precepts of such a coordination are reflected by the long-term trend pointing toward a gradual progress of collective planning and by the short-term waves caused by oscillatory ups and downs which periodically deviate in both opposed directions from the long-term trend. All we can do, in the present context, is to supplement our macroeconomic examination of the recent American economic development by briefly referring to a few of the main particular events which bring into relief the long-term and short-term processes of the structural growth concerned.

From the viewpoint of a long-term infiltration of collective planning in the American economy, it would be necessary to go back at least as far as the Colonial period and the first decades of the independent Federation for the purpose of canvassing the successive fundamental steps of government intervention. Positive and negative governmental measures aimed at encouraging, directing, regulating, restricting, or suppressing various productive and distributive activities have long been intermingled with policies leading to an outright government ownership in the economic field, *i.e.*, to definite collectivization. The

typical, successive—but by no means necessarily coherent or organically connected—domains of such a gradually *spreading governmental intervention* have been armaments and ammunitions, patents, banking, highways, waterways, flood control and drought relief, various postal services, meat packing, liquor dealing, railroads, the telegraph and telephone, express companies, coal, electricity, oil, pipe lines, the merchant marine, the radio, airlines, monopolistic combinations, forestry, farming, irrigation, housing, medical services, scientific research and testing, atomic power, foreign investments, and various other areas of economic activity.

More recently, the First World War, the Great Depression of the 1930's, and the Second World War were the landmarks along the road of rapidly expanding governmental economic activities. *Total warfare* and comprehensive *anticyclical economic policies* are unavoidably synonymous with some sort of a totalitarian concentration in productive and distributive efforts. The U.S.A. economy has also been subject to such a concentration in terms of governmental coordination and planning. Let us especially refer to the large schemes involving governmental intervention under the New Deal and during the reconversion after the Second World War. The Home Owners' Loan Corporation, the Farm Relief Act, the Tennessee River or the Boulder Dam development, the financial support to war veterans announced by the Veterans' Readjustment Allowance Program after the Second World War, the predominant American participation in the United Nations Reconstruction and Rehabilitation Administration, or the Economic Cooperation Administration based on the Marshall Plan are only a few relevant examples. They illustrate the march of recent American governmental planning in the field of domestic and foreign economic activities. As an item typical of the increasing importance of the government in the American economy, it may be noted that early in 1946 about one man in every six employed in nonagricultural establishments was on government civilian payrolls and that about 8 per cent of the total income payments to individuals were wages and salaries paid by the government.[10] We have already pointed out that a *peak* of the recent collective efforts was reached in the American economy toward the end of the Second World War. In the 1920's, the government bought between 10 and 15 per cent of all the goods and

[10] Cf. Lorie Tarshis, *The Elements of Economics,* Boston, 1947, pp. 49*ff*.

services produced in the U.S.A. economy. This percentage grew in 1938 to 18, in 1941 to 22, and in 1944 to almost 50.[11]

In the subsequent postwar years, a long series of reverse processes were staged in the course of private-enterprise *reconversion*. The corresponding interdependence between war conversion and postwar reconversion represents the main feature of recent short-term fluctuations in the American economic structure.

The most important step in the process of postwar economic reconversion undoubtedly was the restoration of the *"market"* forces in the field of price formation. The fact that by the middle of 1946 by far the major part of the wartime governmental price control was removed amounted to a large-scale release and revival of those societary and economic motive forces which stimulate private-enterprise activities. The temporary continuation of a dampened rent control and of a few scattered similar regulative devices could not obviate the over-all significance of a rehabilitated profit motivation and the essential effects of a concurrent economic reprivatization. As a result, three years after the end of the Second World War only about one-eighth of the output of the United States was produced by the government and about seven-eighths by private enterprise.[12]

To be sure, governmental planning has retained a more or less firm grip on the *agricultural and industrial production* by multitudinous and multifarious regulations. Yet, the wartime discouraging, restrictive, or prohibitive features of the latter have been substantially reduced. Stimulating directive measures have instead been brought into prominence. Employment provided and orders placed by the above-mentioned and similar large governmental undertakings as well as other purchases effectuated by the government, have performed the vital functions of the stimulus concerned. The backbone of this whole system of directly or indirectly regulated agricultural and industrial production has been an elaborate combination of reconversion and up-to-date anticyclical economic policies coupled with compensatory fiscal measures.

Transportation, communications, and *banking* have concomitantly been brought into line with the requirements of agriculture and manu-

[11] *Ibid.*, p. 50. Cf. Table 2.

[12] Cf. Sumner H. Slichter, *The American Economy. Its Problems and Prospects,* New York, 1948, p. 5.

facturing and equilibrated with respect to the reconverted cooperation between private-enterprise activities and governmental planning. In the *distribution* of income and wealth, there has been a strong collectively planned equalitarian tendency. The redistributive effects of progressive taxation and related policies in the field of *public finance* accordingly have been conspicuous. Three years after the Second World War, on an average, only 62 per cent of the profits of all large and medium-sized corporations were left for the owners, while 38 per cent went to the government.[13] Within the scheme of redistributive measures, a substantial part of personal incomes has also been taken by the government. At the same time, however, such measures have carefully been kept within border lines which have still left a sufficient scope to the profit motivation needed as a fundamental incentive of capitalistic production.

All in all, the postwar reconversion of the American economic structure seems to have adequately restored the basic conditions for a dynamic *equilibrium* between individual and collective want satisfactions. This structure reveals a remarkable perseverance in retaining the features of a well-balanced composite economy. Its equilibrium and stability seem to be appropriately reflected by a relative harmony between the prevalent marginal, and the desirable optimal, rates of collectivization and reprivatization.

But we indicate only a relative, and by no means an absolute, harmony. *Conflicts* among political and economic pressure groups invariably disclose the virtual significance of disharmonies and imbalances pertaining to the actual roles of private enterprise and government intervention in the economic development of the nation. Nevertheless, in any reasonably constructed international comparison, these disharmonies and imbalances seem to be small. In spite of them, the reconverted American economic structure has succeeded in retaining satisfactory degrees in its responsiveness and elasticity of collectivization and reprivatization.

The resulting long-term cooperation between the spheres of individual and collective economic activities will be an essential requirement for the *"American way,"* if it is to stand the test of those heavy strains and violent shocks to which it will probably be exposed in the near future.

[13] *Ibid.*, p. 6.

CHAPTER XV

PLANNING AND ECONOMIC ANALYSIS

Demand, Supply, and Price

THE CONCLUSIONS at which we arrived in the preceding chapters of this book call for *practical application*. Such an application refers to the elaboration of practical economic policies suitable for an optimal coordination between private enterprise and collective planning. Many details pertaining to this coordination, to the cooperative movement, and to similar methods of compromising need to be examined and evaluated from realistic viewpoints of the current economic development. Yet, details of this kind must be reserved for another investigation. In the present context, we may content ourselves with surveying those aspects of economic analysis which are designed to lead to the practical application concerned. The reader may choose to connect the resulting loose ends and to develop them into practical precepts applicable to the details of economic and business life in which he is interested. Our following comments should be interpreted in such a sense.

Most of the traditional economic analysis has so far been coined in accordance with *two distinct patterns*. On the one hand, the bulk of analytical thinking and research has been related to private-enterprise activities. Such thinking and research have been based on the assumption of an approximate individual freedom of choice and of a corresponding economic motivation more or less closely linked to profit maximization. On the other hand, a certain amount of analytical investigation has also been done in the field of total collective planning subject to the assumption of an economic motivation directly coordinated to the welfare of the whole community. The two patterns differ with respect to the assumed fundamental economic incentives, as well as the expected effects in the domains of production, distribution, and consumption.

There is a certain gap between these two prevalent patterns emphasizing allegedly opposed economic systems. We shall attempt to fill the gap by contributing toward the clarification of an *intermediate*

pattern. Its theoretical discussion with regard to an optimal cooperation between private-enterprise activities and collective planning becomes significant as soon as we recognize the actual predominance of composite economic systems. We limit our remarks to outlining the main contours of such a discussion.

Concerning the examination of human *wants* as the starting point of economic analysis, we pointed out in the Introduction and in Chapter I the essential interdependence of individual and collective elements. It would be useful to investigate further details of the differences among pure individual, social, group, collective, and public wants with respect to the simple and cross relationships between the absolute and relative types of such wants. The socialization and individualization, as well as the collectivization and reprivatization, of wants reveal meaningful perspectives. This also refers to the motives of particular types of individual action aimed at the allocation of private means to the partial or total satisfaction of group wants.

It is obvious that the heuristic viewpoints of marginal utility can generally be applied to an elucidation of all types of wants, and particularly of collective wants with regard to their links to individual wants. Accordingly, an amplified interpretation of Gossen's two laws is here in order. Whatever the new welfare analysis has done on the various stages of its development in critically examining the relation between interpersonal utility comparisons and the so-called social value function should be further evaluated and projected to the meaning of collective *values*. The latter are manifest counterparts of the individual and social values, which attracted the attention of economists early in the twentieth century. Taking into account the difficulties of a cardinal measurement of all sorts of gratifications, the merits of an ordinal measurement can be brought into prominence. The indifference approach can thus usefully be applied not only to a two-dimensional but also to a multidimensional examination of the cooperation among various individual and collective gratifications. From the standpoint of such a cooperation, it is important to realize the multifarious complexity of the relevant competitive and complementary relations.

Our whole traditional cost analysis can be rejuvenated with the help of an appropriate emphasis on the coordination between individual and collective disutilities or *sacrifices*. In such a light, the opportunity cost aspect, as well as the customary theorems dealing with the cost of

production and of reproduction, may be developed in a more realistic direction than hitherto. The sundry ties between the psychic and societary significance of cost obtain a partially new meaning as soon as we relate them to the motive forces of group formation and collective conglomeration. The purport of economic integration and disintegration can efficiently be illuminated, with respect to the structural hierarchy of smaller and larger communities, by an appropriately analyzed correlation of subjective and objective features.

Demand and *supply* disclose new interrelations worthy of analytical investigation as soon as we regard them as magnitudes composed of individual and collective elements. The customarily examined fundamental cases of competitive and monopolistic demand and supply can be supplemented by the concomitant consideration of a third and equally fundamental case, which refers to collective demand and supply. The intermediate cases of monopolistic and imperfect competition and of duopolistic or oligopolistic situations, which stand between the two extreme cases of perfect competition and absolute monopoly, can be matched by similarly intermediate and combinative cases connecting collective demand and supply with the competitive and monopolistic types of market factors. From such viewpoints, a clear-cut distinction must be made between private-enterprise monopolies and all forms of collective participation in market relationships. The terminological device of calling the latter collective, public, or governmental monopolies is usually of little help. The unavoidable confusing effects of such a terminology tend to predominate.

Any pertinent essential differences can better be brought into prominence when we relate them to the availability of *purchasing power,* which must be coupled with utility for the purpose of raising demand to an effective level. Collective demand is financed by collective revenues, and the cost of collective production is a part of collective expenditures. The revenue from collective production cannot properly be evaluated without close reference to other collective revenues and to the whole body of collective finance. In those specific cases in which the collectivities concerned are based on public law, a reference to public expenditures and revenues, as well as to other problems of public finance, may satisfactorily reveal the issues which we indicate.

The process of *price* formation undergoes essential changes as soon as the market is subject to collective intervention. All types of such

intervention may directly or indirectly participate in the various formative phases of price relations on the basis of perfect or imperfect competition and of oligopolistic or monopolistic activities. In the specific case of government intervention, various stages of price formation may be influenced and controlled by more or less direct and intensive measures of governmental price policies. On the most direct and intensive level, we encounter the multifarious devices of governmental price fixing. Corresponding price regulations, maximum and/or minimum prices, and similar measures may or may not be limited to exceptional emergency situations. It is manifest that the more permanent any intensive patterns of collective price policies, the greater the extent to which the "market" as a nerve center of private-enterprise activities is paralyzed; at the same time, the nearer any composite economic system is liable to shift toward total collective planning. The responsiveness and elasticity of demand and supply undergo concomitant steps of metamorphosis. Such steps also refer to all shades of perfectly and imperfectly competitive, as well as to monopolistic and oligopolistic, price formation. A wide field of hitherto unexplored interdependences of demand, supply, and price may thus be opened for analytical investigation.

Production

Concerning a composite economy, there are two approaches suitable to an evaluation of the fundamental relationships in the field of production. First, we can analyze the effects of any partial collective planning on those *conventional factors* of production which are viewed and distinguished by the private-enterprise considerations of our traditional economic theory. On such a basis, we can direct our investigation toward an analysis of returns and of the conditions of equilibrium in the domain of any production aimed at an optimal cooperation between private-enterprise activities and collective planning. The results may be expected to offer a fairly adequate picture of the now prevalent patterns of productive efforts and institutions.

Second, we may take a more daring step toward an up-to-date and comprehensive *reconsideration* of our customary theorems in the field of production. Such a step is obviously marked by the usual inconvenience entailed in any similar reconsideration and reform. But this second approach might compensate for the troubles involved by leading us to a grasp of composite phenomena in the field of production

which is theoretically more significant and practically more efficient than the one offered by the aforesaid first approach. Accordingly, we may undertake to amplify the range of our traditional factors of production by segregating, and explicitly considering, those productive achievements which are directly or indirectly owing to collective activities. Any collective support granted to production may thus be pointed out and treated as a more or less separate factor of production coordinated to land, capital, labor, and entrepreneurial services.

The conventional *quadripartition* of the factors of production was already subjected to serious blows late in the last, and early in the current, century. As two important such assaults, let us mention the Austrian theory of distribution and the English and American generalization of the theory of rent. Both are rooted in what is customarily termed neoclassical economics. The former is sometimes referred to as the Austrian theory of "imputation" (*Zurechnungslehre*). It has contributed to the destruction of any exclusive or even major emphasis on the direct connection between rent, interest, wages and profit, on the one hand, and land, capital, labor, and entrepreneurship, on the other hand. By doing so, it has weakened the theoretical weight of the quadripartition concerned. The latter has attained a partially similar result by relating the productive significance of land and rent, of capital and interest, as well as of labor and wages, to the common denominator of differential advantages and differential rent. There have also been a few other concomitant considerations stressing certain recent technological and business developments in the domain of production and resulting in more or less radical attempts to reshape the customary theoretical framework of the factors of production.

In the course of this gradual transformation, two pairs of factors have been brought into prominence. Economists have thus displayed an inclination to reduce the previous quadripartition to a corresponding *bipartition.*

One pair has comprised the *personal* factors of labor and entrepreneurship. The difference between the two members, or parts, of this pair has recently revealed a certain tendency to shrink or at least to become somewhat hazy and indeterminate. This was particularly true when the significance of employed managerial work began to grow rapidly and when further branches of labor also began to participate to an increasing extent in managerial functions.

The other pair has even more definitely developed toward a gradual

merger of land and capital, as the two *material* factors of production. In this case, the driving forces of amalgamation have been the occupation of practically all available land; the concomitantly developing similarity between the property rights to, and the acquisition of, land and capital; and the increasing importance of man-made improvements on all sorts of land. As a result, those who still regard land and capital as two distinct factors of production have in recent years been referred to by some of the younger authors as "nineteenth-century economists."

Yet, this formation of two pairs of factors has proved to be neither a happy nor a lasting solution of the underlying theoretical and practical problems. The *failure* became the more conspicuous the more widely the issue between private enterprise and collective planning began to spread over the whole scope of productive activities.

By and large, it has been felt that the consideration of personal and material factors of production alone has not been wide enough to cope with the complexity of the problems at issue. At this stage, it is helpful to supplement our consideration by including as a third factor, or as a third group of factors, all kinds of *collective* support to production in the above-mentioned sense.

If we choose to regard this third item as a pair of factors, we may distinguish between *direct* and *indirect* collective support. The former then relates to the various types of mild or vigorous collective devices aimed at an immediate guidance of and participation in the production of goods and services. The latter consists of the wide scope of collective measures designed to control productive activities indirectly by intervening in the field of distribution and consumption, as well as in the more or less closely related domains of power and welfare policies. It is easy to visualize, and exemplify, such a distinction between direct and indirect collective support to production if we refer all particular degrees of the partial collectivization concerned to governmental planning in a system of composite economy.

It is relatively simple to deal, in similar terms, not only with the *positive* but also with the *negative* measures of collective support to production. Whenever and wherever the government decides to interfere with, to discourage, to prohibit, or to suppress any undesirable activities aimed at the production of certain goods and services, the desirable productive activities are *eo ipso* meant to be encouraged by

an accordingly, and implicitly or explicitly guided allocation of productive efforts and resources. We may in this manner translate any negative collective measures into corresponding positive devices and express them in the relevant positive terms of collective support to production.

It is evident that collective support as a factor of production is closely linked to the factor of *entrepreneurial skill.* The relationship involved is partially competitive and partially complementary. In a composite economy, the latter features and effects should be more emphasized than the former. In other words, it is more conducive to an optimal cooperation between private enterprise and collective planning when private productive initiative is complementarily coupled with than when it is competitively replaced by governmental measures. To be sure, the complementarity involved presents intricate problems of economic analysis and policy. Competitiveness here is relatively simpler. It can more easily be expressed by the analytical tools of marginal rates and elasticities of collectivization and reprivatization. But in this case, complexity offers greater practical advantages than simplicity.

Most of the conventional doctrines dealing with marginal productivity and with increasing, constant, and decreasing returns can well be applied to a trichotomous investigation of personal, material, and collective factors of production. All three of them are manifestly meant as *societary* categories. Accordingly, all three are social, and not individual, factors of production. Their marginal productivity and their relations to returns must correspondingly be examined from the multifarious viewpoints of both technological and societary progress. With respect to the latter, the various motive forces of societary integration and disintegration may be brought into prominence. Overhead, variable, total, average, and marginal cost can appropriately be related to total, average, and marginal revenue concerning the interdependence of personal, material, and collective factors of production. The static and dynamic conditions of short-term and long-term production equilibria can therefore be elaborated. At least some of the usual penumbra surrounding the issue among freedom, coercion, chaos, and order in production may thus be more satisfactorily clarified than hitherto. However, an essential condition *sine qua non* is a proper recognition of and distinction between the quantitative and qualitative

features of our personal, material, and collective factors of production. Only such a distinction can secure the basis for a useful analytical evaluation and practical application of the above-indicated type.

Distribution and Redistribution of Income

By regarding collective support as a factor of production coordinated to the personal and material factors, we are led to a more realistic and simplified explanation of the now prevalent distributive processes in our composite economic systems. Such a result may be achieved by the obvious concomitant facility of avoiding the cumbersome, and frequently confusing, *distinction* between a distribution and a redistribution of income.

This distinction is doomed early to *obsolesce*. It is to be regarded as a reminiscence of the pattern of thinking which was almost entirely focused on private-enterprise activities and which considered collective planning a strange, if not undesirable, element in the economic structure. The branches of income, such as rent, interest, wages, and profits, which are based on private-enterprise activities were accordingly contrasted to public revenues. A parallel contradistinction was made between private and public spending, as well as between gratification of wants by private and public means. The evident logical and empirical discrepancies of such reasoning could not adequately be repaired by erecting the shaky superstructure of redistribution theorems. Yet the impression made by the latter proved to be of sufficient depth to attract even the attention of a few adherents of total collective planning. The resulting, and partially still prevailing, situation is that, while believers in the capitalistic system stress the significance of primary distribution, some of those economists who advocate collectivization emphasize the importance of the secondary distribution or redistribution of income.

On an up-to-date level, *collective revenues* can more appropriately be regarded as a distributive share for the productive services of direct and indirect collective support. We can thus organically coordinate taxes and other collective revenues to wages and profits as the distributive shares of the personal factors of production and to rent and interest by which the material factors of production are rewarded. In the domain of distribution, such coordination is liable to open new perspectives for an optimal cooperation between private enterprise and

collective planning. To be sure, in public finance we have long been experimenting with attempts aimed at explaining public revenues as distributive rewards for public services. But the conventional overemphasis on a distinction between concomitant viewpoints of public and private law has proved to be harmful. It has unavoidably resulted in a confusing subordination of rent, interest, wages, and profits to taxes and in a correspondingly segregated treatment of the private branches of income and of public revenues.

At this point, the recent concentration on national income within the scope of *national economic budgets* may substantially help in coordinating private and public branches of income. So may the Keynesian and post-Keynesian synoptical discussion of private and public spending with respect to their economic necessity and effects. But a close connection between collective support to production and collective revenues might be the most efficient approach to a satisfactory solution of the theoretical and practical issues concerned.

On the surface, competitive and complementary relations between entrepreneurial services and collective support to production are manifestly reflected by the relative size of *profits* and *taxes,* which represent the distributive shares for entrepreneurial activities and for collective planning, respectively. In the course of any collectivization, profits customarily cede to taxes, while any process of reprivatization is usually marked by distributive shifts in a reverse direction. The cost of private enterprise and of collective planning can appropriately be compared and evaluated with the help of such tools as offered by the marginal and indifference analysis. The significance of human relations, as well as the motive forces of economic integration and disintegration, must concomitantly be taken into account.

Below the surface, it cannot escape our attention that more or less similar interdependences are at work between *wages, rent,* and *interest,* on the one hand, and collective revenues, on the other hand. It will accordingly be significant to investigate not only the primary mutual influences among these branches of income and profits but also the secondary cross relationships and changes to which all distributive shares rewarding personal, material, and collective factors of production are subjected on account of the primary influences in question. For example, it is obvious that the modern development of collective revenues has an essential primary bearing on wages, profits, rent, and

interest, and vice versa. However, those secondary effects are also significant which such primary changes in profits, rent, interest, and collective revenues may have on the actual formation of wages. Mutual tertiary and further interdependences may similarly be meaningful.

An appropriate coordination between the private and collective branches of income will be secured if we consistently look at the interdependences concerned rather from a *functional* than from a causal viewpoint. Also a pertinent quantitative analysis will thus be substantially facilitated. Homogeneous and heterogeneous production functions of the two-dimensional and multidimensional types can be related to similarly constructed income functions. Such relations can advantageously be analyzed with the help of partial derivatives and with respect to all relevant combinative shifts among the personal, material, and collective factors of production, as well as among the corresponding branches of income.

The assessment and levy of collective revenues and the gratification of wants by the allocation of collective expenditures are manifestly not the only ways in which collective planning influences the distribution of income. From the standpoint of distribution, those collectively planned *regulative measures* which are not linked to directly proportional amounts of collective expenditures or revenues are also more or less essential. Such is the nature of many positive and negative devices in the field of distributive policy, which comprise various degrees of intensity and which are aimed at shaping the development of rent, interest, wages, and profits. In the recent course of collectivization, this process of shaping has brought about significant transformative effects. Most of them can be expressed by transformations in the supply of and demand for durable plant and equipment, short-term, and long-term loanable funds, skilled, semiskilled, and unskilled labor, and various types of entrepreneurial services. When endeavoring to ascertain the diagrammatical form and analytical expression of the corresponding supply-and-demand functions, we obviously face a wide scope of complex problems. They are meaningful from theoretical as well as from practical viewpoints.

The influence of partial collective planning on the formation of explicit and implicit rent, on the Keynesian "euthanasia of the rentier" resulting from the postulate of relatively low rates of interest, and on the human and ethical aspects of wages may sufficiently indicate the

complexity of the problems concerned. The so-called twilight of profit motivation offers another series of closely related problems. The essence of class strife in the Marxian sense and the socioethical issue between distributive and equalitarian justice may serve as master keys to these and similar up-to-date problems in the field of distribution. So may the relationship among the various productive incentives with respect to the distribution of income and wealth in an optimal cooperation between private enterprise and collective planning.

Money, Banking, and Credit

The above-discussed relationship between production and the distribution of income refers not only to activities in the field of agriculture and manufacturing but also in the domain of trade, transportation, and communication. Concerning these branches of production in the broader sense, particular differences in the applicability and significance of the general links between production and distribution are relatively small. Such differences are substantially greater when it comes to a parallel evaluation of the issue between private enterprise and collective economic activities clustering around money, banking, and credit. These activities are also primarily directed toward a smoother working of production and distribution. Nevertheless, the interdependence of individual, mixed, and collective gratifications has, in this respect, a peculiarly *comprehensive purport,* which immediately embraces the whole economic structure.

Only a few such peculiarities could be indicated with regard to the provision and regulation of adequate means of exchange and concerning several closely attached, old, and conservatively limited "functions" of money. As far as these questions are concerned, economic activities in the monetary field are also subjected to our general viewpoints of collectivization and reprivatization pertaining to production and distribution. Similar viewpoints rule over banking as long as it keeps within the border lines of intermediary services connecting the supply of and the demand for short-term and long-term loanable funds. Yet, when monetary and banking activities embark on schemes of creating or suppressing *purchasing power* in the shape of cash or credit, the whole setup changes fundamentally. Such activities may substantially transform the process of price formation with respect to practically all sorts of goods and services, including the whole market

range of demand and supply. Moreover, the same activities may directly govern the entire scope of production and distribution within given systems of monetary and credit policy. With respect to this wide range and all-inclusive scope of effects, the activities in question must be considered from somewhat singular viewpoints. Especially so when we discuss an optimal cooperation between private enterprise and collective planning.

It has long been recognized that the particular viewpoints concerned are characterized by a relatively high degree of standardization and comprehensiveness. It has also long been ascertained that in the domain of money, banking, and credit the principles of profit maximization and of communal welfare are frequently incompatible. Such incompatibility has been known to display a tendency to increase substantially above the average level of similar discrepancies, or imbalances, in other sectors of economic life. Hence the well-known early attempts of *government intervention* and of multifarious other measures of collectivization in the field of monetary and credit activities.

We can thus explain why for thousands of years public policies have gone beyond moderately rigorous positive and negative regulations and other devices of mere encouragement or discouragement concerning the basic issues of money, banking, and credit. Outright collectivization, usually in the form of *nationalization* coupled with corresponding prohibitive rules, has early been introduced for the purpose of coping with these issues. The government minting of coins within the framework of metallic monetary systems, as well as strict police and other regulative measures aimed at eliminating fraudulent practices from banking and credit operations at large, have long and generally been accepted as self-evident necessities. This also refers to a few similar measures upholding business honesty and fair play in the related fields. On the other hand, some of the modern issues in the same fields, even at present, rank with the most acute controversies in the strife between private enterprise and collective planning. In the last century or so, such particular controversies have centered around various schemes pertaining to the collectivization of credit and to the neutralization of money. The relevant monetary and banking policies have accordingly been brought into prominence.

In particular, the "art" of *central banking,* the issuance and coverage of bank notes, the handling of other types of fiat money or cash

substitutes with regard to their desirable quantity in circulation, and the concomitant surveillance of commercial bank activities have developed into focal objects of government intervention. Discount policy and similar measures having a direct or indirect bearing on the market rates of interest and on the propensity to spend and to save may be viewed as major items in a collective or semicollective guidance of capital formation. The resourcefulness and flexibility of private enterprise in the field of banking must carefully be correlated to the weighty collective interest in all inflationary or deflationary developments.

The participation of the banking system in the various kinds of interest-bearing or interest-free *public loans* can be theoretically analyzed and practically decided only with regard to several other issues relative to the role of private enterprise in financing public expenditures. The problem of public debt versus taxes can be usefully elucidated from the standpoint of those compromising postulates upon which every composite economic structure hinges. With respect to numerous questions concerned, the welfare aspects of full, and less than full, employment can satisfactorily be coordinated to moderately equalitarian objectives in the distribution of income and wealth as long as any partial collectivization of banking services is properly counterbalanced by the consideration of justifiable processes of reprivatization.

The latter exigency should also be referred to those recent developments in the Soviet orbit, in England, and elsewhere which tend toward an outright nationalization of the *whole banking system.* An appropriately applied indifference analysis of the marginal efficiency of private, mixed, and public banking services may be helpful. Such analysis is likely to be the basis for a critical evaluation of those practical proposals which consider the nationalization of all monetary and credit activities as one of the most urgent steps in the course of total collective planning.

Business Cycles

With regard to the problems clustering around cyclical economic movements, it is useful to recall a famous remark of Böhm-Bawerk. According to him, any generalized discussion of the business cycle should be either the first or last chapter in a book on economics. We may add that the better choice is to make this discussion the last

chapter. It can thus advantageously utilize and appropriately *summarize* all particular conclusions to which our analysis of an optimal cooperation between private enterprise and collective planning in the fields of price formation, production, distribution, monetary relations, credit, and banking may lead. Such utilization and summary are manifestly needed also in the present context.

The pertinent application can be carried through in *two directions,* or domains, which partially overlap. First, we may examine the relevant aspects of the traditional business cycle, including the so-called minor oscillations and major fluctuations, as well as the long-term trends and secular waves. Second, we may refer such wavelike movements to the alternative hegemony of private enterprise and collective factors as motive forces in our economic development.

Concerning the first application, every composite economic system is necessarily afflicted, to a certain extent, with the cyclical fluctuations of both the private enterprise and the planned economic structures. The salient question is whether these two types of fluctuations can be adequately *counterbalanced* and coordinated so that they mutually offset each other. As far as this can be done, the composite nature of any economic systems will be justified. Other aspects of justification may or may not concur.

What we conventionally term the *capitalistic* business cycle has actually been fought, for more than a century, by various methods of government intervention. Practically every historical discussion of the recent economic fluctuations offers an enumeration and evaluation of such methods. The deeper a periodic depression, the more intensive the methods of government intervention and the greater the attention paid to their justification and elaboration in the field of economic thinking, research, and teaching. From this viewpoint, the recent substantiation of compensatory anticyclical policies by Keynesian economics certainly is a logical development. The exceptionally widespread popularity of such policies and of the underlying economic theorems is well rooted in the similarly exceptional depth of the Great Depression of the 1930's. It is easy to point out the features of compromising concessions which the Keynesian economics of full, and less than full, employment necessarily makes to the pattern of partial collective planning.

On the one hand, it is a fact that the *Soviet* economy was not hit

by the Great Depression. We have already explained that collective economic planning of the Soviet pattern has thus proved its immunity from the traditional capitalistic business cycle. On the other hand, even outstanding active leaders of the Soviet economic planning nowadays already openly admit[1] that this system also is subjected to certain severe economic fluctuations involving the danger of crisis. To be sure, it is still maintained that the Soviet economy is free from those *general* discrepancies between production and consumption which cause the "over-all capitalistic chaos" and result in the comprehensive type of periodic capitalistic depressions. But the menace of *particular* imbalances of a more or less analogous character is also being admitted in the case of Soviet planning. Such imbalances are said to jeopardize the relationships between industry and agriculture, between the production of producers' and consumers' goods, between the growth of production and the development of transportation, and between the accumulation of capital and consumption. The disturbances in question seem to have a cyclical character, although not enough factual evidence has so far been available to establish any rigorous periodicity or to measure the length of any inherent wavelike fluctuations.

It is meaningful to compare systematically these cyclical symptoms with the customarily analyzed causes of capitalistic crises. In the present context, however, it is more important to note the fact that Soviet planning, when it attempts to cope with the cyclical symptoms concerned, frequently relies on a partial reintroduction of certain motive forces pertaining to the private-enterprise economic pattern. Such forces may primarily be rooted in the economic incentives which are based on private ownership, profit motivation, and on substantial differences in the distribution of income and wealth at large. In other words, collective planning of the Soviet pattern seems to realize

[1] Cf. the much-discussed, recent book of N. A. Voznesensky, *The Economy of the U.S.S.R. during World War II*, the English translation of which was published in the latter part of 1948 by the Public Affairs Press, Washington, in cooperation with the American Council of Learned Societies. Voznesensky is Deputy Premier and Vice-Chairman of the State Council of Ministers and member of the Soviet Politburo. As chief of the State Planning Commission, he is in charge of coordinating the work of commission, ministerial, trust, and factory economists in drafting state economic plans. On the adoption of these plans, he is responsible for supervising their execution.

to an increasing extent that its particular cyclical disturbances can adequately be cured by a partial restoration of formerly ousted devices which are based on the *automatic mechanism* of the "market" economy.

The resulting mutual *rapprochement* between the private-enterprise system and collective planning is manifest. In terms of generalization, we may draw the following conclusion. The nearer a composite economic system stands to the pattern of private-enterprise activities, the more susceptible it is to the menace of capitalistic business fluctuations and the more intensively it is likely to use methods of partial collective planning in order to fight such a menace. Reverse relations prevail in the opposite case. The farther a composite economy proceeds along the path of collectivization, the more jeopardized it is by the particular cyclical disequilibria inherent in collective planning and the more it is inclined to depend on a partial restitution of private-enterprise features for the purpose of maintaining its balance. It is obvious that these two effects supplement each other and that the resulting over-all trend of development points toward structural coordination, reconciliation, and integration.

Closely related and essentially similar are those tendencies which result from any long-term alternation of the *general emphasis* on motive forces of private enterprise and of collective planning. The economic incentives linked to both types of forces must be kept alive, and to a certain extent even active, in order to be readily available when needed by the above-mentioned antithetical and compensatory measures, which are currently used by the prevalent patterns of anticyclical policy. Let us refer to our summary evaluation of the relationship between marginal and optimal rates and between the responsiveness and elasticity of collectivization and reprivatization in Chapter III. It is significant to correlate the results of this evaluation to the various forms of economic fluctuations and to the anticyclical policies which are practiced in composite economic systems of different hues.

International Economic Relations

The coordination of private-enterprise activities and collective planning in the domestic or national economy can be readily expanded and applied, concerning most of the pertinent essential issues, to the domain of international economic relations. In this sense, an *interna-*

tional application of several viewpoints suggested by the first five sections of the present chapter can appropriately be carried through. Attention must be paid, of course, to the customarily accepted criteria of the difference between national and international economic functions.

Within the general scope of such an application, there are two particular aspects which, to an appreciable extent, are suitable for a relevant juxtaposition of private enterprise and collective planning. Let us refer to the two aspects as *indirect* and *direct* methods of international economic planning. The former cover all considerations underlying and all consequences resulting from any collective participation in the market processes which cluster around the formation of comparative costs and prices. The latter indicate immediate collective guidance of the international movement of goods and services, *i.e.*, any short-cut collective determination of such movements. The former are more meaningful for an understanding of our prevalent composite economic structures, while the latter may acquire a substantial practical significance on advanced levels of collectivization.

Indirect planning for international economic relations is largely based on the theorem of *comparative* international and interregional *costs* and prices. This theorem is undoubtedly one of the best established, and most generally accepted, parts of classical as well as modern economics. It has advantageously been coupled with the doctrine of increasing, constant, and decreasing returns. It has satisfactorily been applied to bilateral, as well as to multilateral, international relations. It has been successful in elucidating international interdependences of the traditionally considered factors of production. The germane costs of production and branches of income have also been adequately taken into account in an international sense. Various pertinent multiplier effects along the lines of Keynesian reasoning have been computed in an elaborate fashion. The responsiveness of several items in comparative costs has also been calculated with respect to the related technological, commercial, and other structural economic changes. As a result, it has been recognized that comparative international differences among the traditionally examined costs of production show a tendency to diminish in the long run. But such a tendency has an unavoidably dampening effect on the international exchange of goods and services. At this point, we can consider taxes

and other collective revenues as costs of production corresponding to collective support as a factor of production.

Multifarious channels of international contact and interchange have indeed contributed to *diminishing* some of the formerly great—absolute and comparative—international differences among the productive efficiency of labor, entrepreneurial skill, capital, and land. Wages, profits, interest, and rent have been subjected to more or less similarly leveling influences. To be sure, various factors of rigidity in these branches of income and in the underlying productive agents have led to certain variations in the actual extent of the international leveling or equalization concerned.

With regard to the *collective* factors of production and to taxes, the comparative international differences are still substantial. The size of such differences is conspicuous when we refer our comparisons to countries which essentially differ from each other in their emphasis on private enterprise and on collective planning. Different shades of structural compromises accordingly redound to different tax burdens carried by the production of goods and services. The concurrent comparative differences in the costs of production may still act as a potent stimulus to the international exchange of such goods and services at a stage of development where comparative differences in other cost items tend to diminish.

The significance of these international developments in the field of costs must be evaluated, not only concerning its relationship to the comparative differences in the personal and material factors of production, but also in the pertinent domains of the distribution of income. A concomitant examination should also be carried through with regard to the interdependence of structural economic changes, on the one hand, and tariff policies, international monetary relations, and transformations in the balances of payment, on the other hand. The outcome of such investigations may be that those international differences in comparative cost ratios which are due to the corresponding structural varieties also gradually *decrease* when the streams of international contact flow abundantly.

A necessary condition would evidently be some sort of an underlying *structural rapprochement* among the countries concerned. Some sort of international assimilation, standardization, and unification

would then take place with respect to the fundamental issues of collectivization and reprivatization. Offhand, we may be induced to say that better international understanding would ensue and that it would be designed to foster international economic relations. But would such encouraging effects be greater than the concurrent discouragement brought about by the shrinkage of comparative differences in an important item of the costs of production? Not necessarily, if international good will and mutual tolerance prove to be compatible even with substantial differences in the underlying economic structures. This is about as far as analytical research can go. From here on, institutional considerations must take over. They have to concentrate on the relevant philosophical, psychological, sociological, and historical interrelations.

Institutional viewpoints must also be brought into prominence when we investigate the purport of direct collective planning in the field of international economic relations. As long as such planning is only *partial,* it must be coordinated to those exigencies of the "market" which are rooted in the complex mechanism of comparative costs. In this case, direct planning may depend on prohibitive tariffs, import quotas, abnormally great export bounties, and any similarly imperative discouraging or encouraging measures designed for a partial determination of the international trade and exchange streams. Yet, cooperation must be maintained with the indirect devices of international economic planning, which refer to the formation of comparative costs. Such a coordination of direct and indirect planning is rather difficult because it offers a more or less wide scope for the consideration of private-enterprise activities in the international field.

The latter activities are greatly hampered or even entirely suppressed as we proceed from partial to *total* direct planning in the domain of international economic relations. On high levels of collectivization, noneconomic motive forces of societary integration tend to predominate. They frequently determine not only the objectives but also the means and techniques of direct planning. Various viewpoints of power policy usually stand in the foreground. The sundry policies directing production, distribution, and consumption are mostly subordinated, also with respect to their international aspects, to such viewpoints. International economic relations planned correspondingly

may disregard the private-enterprise forces of price formation. Relations of this kind are likely to be linked to some sort of collective price fixing.

If the fixing is pushed too far, the underlying economic structure is liable to lose its flexibility. A stage of development may soon be reached where the concomitant elimination of private-enterprise incentives seriously interferes with communal prosperity by lowering the level of material welfare. A process of *reprivatization* may then advantageously set in. Direct collective planning for international economic relations may be reduced from a total to a partial level, and relevant composite features of the economic structure may accordingly be restored. On such a level, practical postulates may again be derived not only from institutional research but also from up-to-date economic analysis.

PART TWO

THEORETICAL PERSPECTIVES OF THE ECONOMIC STRUCTURE

CHAPTER XVI

GRATIFICATIONS, WELFARE, AND COST

Degrees of Collectivization and Types of Gratification

I

IT HAS been emphasized that an institutional discussion of the relationship between private and public expenditures can only lead to a partial explanation of structural economic shifts. The first step toward a *theoretical generalization* requires that we go beyond such a partial explanation when examining the processes of economic collectivization and reprivatization. Our primary stress on the link between these processes and the distribution of expenditures must here be dropped. An expression of the pertinent structural shifts has to be found which more directly refers to and comprises the whole array of differences ranging from a private-enterprise economy through total collective planning. We may contrast this pattern of inquiry with the traditional way of investigating particular structural forms of freedom and control. Consequently, we have to envisage structural relationships not so closely tied to a given time and space as those referring to private and public expenditures.

On such a level of generalization, *quantitative* features of the economic structure may advantageously be brought into prominence. We shall concentrate on these features as consistently as possible. By doing so, we propose to go into the details of those analytical concepts and interdependences the significance of which we briefly anticipated in the second section of Chapter II.

Only those readers are likely to be interested in the present Part II who have an understanding of the merits of generalized analysis in economics and of the concurrent limitations to which the resulting conclusions are subjected. For the benefit of such readers, we first introduce and explain the *magnitudes,* in terms of variables and constants, to which the subsequent quantitative interdependences refer.

The relevant *constants* are (1) the various degrees of collectivization, and—classified in like manner—the various types of individual,

collective, and mixed want satisfaction; (2) the particular and aggregate communal costs which must be incurred in order to secure these gratifications and which typically act as parametrical constants; (3) the level of communal welfare. In certain respects, however, we shall regard this level and the corresponding aggregate communal costs as variables. The basic *variables* of our analysis are the various amounts of gratification which are provided with regard to each type. The quantitative interrelation of such amounts determines the part of communal welfare into which we shall inquire. As an essential preliminary, the nature and the purport of these constants and variables will be examined one by one.

II

Let us first construct a general and schematic percentual scale expressing various *degrees of collectivization* with regard to want satisfactions. These degrees range from the types of pure individual gratification, which we mark by 0, through patterns of mixed or partially controlled satisfactions to the types of entirely collective gratifications. The latter are denoted by 100. We divide the distance between 0 and 100 into equal percentual degrees and classify with them mixed gratifications, which we arrange in an increasing order according to their stress on collective planning. When classifying actual want satisfactions with such percentual degrees of collectivization, all phases of the pertinent economic activities must be examined with respect to their individual and collective elements. The whole process of the production and distribution of goods and services, which may obviously contain various features of private enterprise as well as particular forms and stages of collective planning, must be considered in every detail. Even a direct collective regulation of consumption may play some role for our classification, which accordingly relies on weighted averages of collective elements in every particular want satisfaction. The significance of collective planning for the production or consumption of particular goods or services may outweigh the role of private enterprise in their distribution, and vice versa.

The grouping and classifying of wants with respect to the various levels of particular or more comprehensive classes of goods and services will largely depend on the *specific objective* of applied analysis. On a general level, we may coordinate the whole group of producers'

goods with the corresponding comprehensive group of consumers' goods. Within the latter large group, when gradually descending toward less general levels, *i.e.*, toward more particular viewpoints of classification, we may similarly coordinate food with clothing and housing; meat with bread and sugar; beef with mutton and pork, etc. It is obvious that the further we proceed in considering particular details the more complex becomes the task of the classification concerned. For the purpose of clarifying this complexity, we may first survey at least the principal categories of governmental interference with economic freedom, which represent the various degrees of transition from individual want satisfaction and private enterprise to collective gratifications and collective planning. Second, we may examine how these categories and degrees can be related to an appropriate grouping of the gratifications which are the object of our inquiry. Third, we may also discuss the quantitative methods of weighting collective elements in the particular phases of the process which provides goods and services for the satisfaction of wants.

We may suppose that on the zero degree of collectivization economic activities depend only on the unhampered and unrestricted mechanism of individual supply and demand with regard to price formation. All other degrees designate a certain amount of collective intervention, and the arrangement of increasing degrees in our percentual scale is intended to reflect the depth or *intensity* of this intervention. Between those positive and negative measures of collective economic policy, whose various degrees of intensity has already been discussed (cf., pp. 35 ff.), there is a certain reciprocity. The latter is obvious when public expenditures incurred for the purpose of encouraging given economic activities have to be met by public revenues, the burden of which must be carried by other activities. But a similar reciprocity can also be shown in the case of nonfinancial measures of collective planning. With respect to this reciprocity, various branches of economic activities may be interrelated in manifold numerical combinations.

More or less complex cross relationships may emerge when given want satisfactions belong to *different levels* of generality and comprehensiveness with regard to the processes of production, distribution, and consumption. The empirically established structure of private and public budgets and of other similar practical classifications

usually help in surmounting some of the theoretical obstacles concerned. The grouping of gratifications in our Tables 3, 4, 5, and 6 may be regarded as a case in point.

III

When facing practical economic issues, we always have a series of wants, adequately grouped, which we endeavor to gratify. We may classify particular want satisfactions with various degrees of collectivization. As a result, we obtain different *types of want satisfaction,* each of which may contain any number of particular gratifications. The purpose of a systematic classification is to assign every particular gratification to the proper type of want satisfaction, which corresponds to a given percentual degree of collectivization.

The classification is relatively easy when the goods and services which have to be provided as means of achieving the gratifications in question are manifestly and exclusively tied only to *one phase* of economic activities, *i.e.,* only to one particular stage of production, distribution, or consumption. But in the great majority of practical cases, *several* different phases, or stages, must be considered. They may be represented by the production of raw materials, of intermediate products, or/and of finished goods, as well as by the successive levels of wholesale or/and retail distribution. For example, it may happen that each of these different phases or stages corresponds to different percentual degrees of collectivization. In addition, it may occur that the consumption of the finished product which is already in the possession of the consumer is somehow or other directed by various degrees of collective intervention.

When facing such situations, we have to depend on an adequate *weighting procedure* with the help of which we compute the relative importance of every stage of the pertinent economic activities for the whole process of providing goods and services for want satisfactions. If we are not pretentious and limit ourselves to an attempt at elucidating one part of the picture by weighting only the manifestly quantitative factors concerned, then the actual cost of the various phases of production, distribution, and consumption may be regarded as a useful indicator of their importance for the relevant want satisfactions. By cost we here mean that part of disutilities, sacrifices, and efforts which can be clearly measured and expressed in dollars. It

would be helpful if we could include in our weighting not only the immediate relations but also the indirect economic purport of the cost element concerned and of its manifold ramifications. Yet such a broad basis of weighted computations and the correspondingly more comprehensive picture which we could obtain in this way would necessarily contain elements the measurability of which is doubtful. Similar considerations refer to the possibility of including qualitative elements which cannot easily be quantified in our weighting procedure. We think of ethical and related elements which are largely based on subjective evaluation. Reducing the ordinal sequence, or hierarchy, of such qualitative factors to percentual scales of their importance for the types of gratification concerned may somewhat help. But their appropriate coordination to clearly quantitative factors of weighting, such as the dollar cost involved, is an arduous task. For the forthcoming results, we cannot claim any rigorous objectivity.

Nevertheless, the nonmeasurable factors under discussion are significant for every weighting and averaging process aimed at the classification of types of want satisfaction with the corresponding percentual degrees of collectivization. By the introduction of appropriately defined coefficients, we may generalize the argument. We may thus express a *general pattern* of classification and the relationship of its several components in terms of mathematical symbolism (cf. p. 322). As an applied example, we may consider the structure of our Figures 6 and 7 and relate their horizontal dimension to degrees of collectivization with which we classify five different types of want satisfaction cf. pp. 167*f*.).

Amounts of Consumption and Want Satisfaction

I

The meaning of the same two figures may also be utilized as an example, if we change the labeling of their ordinates and refer them to *amounts of want satisfaction* provided on various degrees of collectivization. But the measurement of such amounts involves an additional set of difficult problems.[1]

[1] These and other problems of measuring the variables and constants which we introduce in the present chapter are further discussed, with the help of additional details and ramifications, in the author's article on "Measuring Economic Freedom and Planning," *Weltwirtschaftliches Archiv,* Vol. 64, 1950.

Amounts of goods and services which we consume can usually be measured without substantial impediments. Those who prefer simple arguments instead of complex considerations may relate the whole subsequent discussion of amounts of gratification to amounts of *consumption, i.e.,* of goods and services consumed. They will thus be able to deal with "tangible" magnitudes. The level on which they do so may be somewhat superficial. Nevertheless, their attitude will be justified inasmuch as attempts at the measurement of gratifications cannot avoid referring to the corresponding amounts of consumption when occasion arises for verification and/or practical application of the underlying abstract formulations. Such a link should consistently be kept in mind by those who wish to probe beneath the surface and to examine some of the fundamental interdependences even though these may be somewhat intangible. Our reference to Figures 6 and 7 and the following pages are primarily meant for those who assume the latter attitude.

II

As will be seen later (cf. pp. 273*ff.*), the questions which arise with respect to the measurement of gratifications are more or less closely connected with, and rooted in, the debate between "old" and "new" *welfare economics.* There are at least four inherent issues on which this debate hinges and to which reference should be made. First is the question whether utility and welfare are measurable only from an ordinal or also from a cardinal viewpoint. The second issue is whether interpersonal utility comparisons should or should not be entirely eliminated from economic analysis. The third point in dispute concerns the possibility of achieving an adequate analytical expression of what is termed the total or social welfare function. The fourth question concerns the validity of current attempts to apply some of the results of this dispute to an explanation of the difference between perfect and imperfect competition, or between economic freedom and governmental intervention.

As to the *first* problem, the standpoint on which the present discussion is based agrees with the emphasis which modern welfare economics puts on the ordinal aspect whenever utilities have to be measured and compared. We accordingly endeavor to rely, as much as possible, on such an ordinal measurement. With respect to our

amounts of gratification, however, we do not entirely avoid recourse to the corresponding concept of cardinal measurability. On the one hand, we assume that duly limited attempts at an indirect, simplified, and approximate cardinal measurement of the amounts concerned may be practicable. On the other hand, we reject any primitively unrestricted assumption of the cardinal measurability of utility. We refrain from proceeding in our related attempts even as far as Irving Fisher or Ragnar Frisch have in their pertinent theorems (cf. pp. 274*ff.*).

With regard to the *second* question, we may concur in the attitude of the new welfare analysis—as contrasted to the older type of welfare theories—that interpersonal comparisons of utility should be avoided, because they are not compatible with some of our basic epistemological postulates. In other words, concerning the recent controversy between the adherents of Pareto and the school of thought represented by Marshall and Pigou, we side with the former. We thus concentrate on positive want satisfactions, and we imply that the amounts of gratification with which we here deal assume only positive values. Nevertheless, we cannot entirely ignore the fact that in certain relations—especially when we must refer to the approximate cardinal size of the amounts concerned—interpersonal utility considerations cannot be rigorously eliminated.

With reference to the *third* point, we accept the prevailing assumption that what we call communal welfare is ultimately composed of as many individual utilities as there are combinative relationships of want satisfaction between individuals and commodities in the whole community. In this respect, we acknowledge the validity of the Lerner-Lange-Bergson (Burk)-Samuelson type of social-value function which implies that the relative importance of the utility of all individuals is decided by judgments made by the community, or by certain "representatives" of the community. Maxima of this function with regard to a corresponding transformation function of the commodities concerned can suitably be found with the help of Lagrangean multipliers, matrices, and similar mathematical methods. Second-order utility functions, which express the gratification derived by individuals from the want satisfactions of all other individuals in the community, and corresponding higher order utility functions, as well

as several further implications along similar lines, are not incompatible with our interpretation of aggregate amounts of gratification.[1]

Our argument can also be correlated, concerning the *fourth* issue, to the relevant investigations of Harold Hotelling[2] and Gerhard Tintner.[3] We refer to their attempts to apply the main results of the new welfare analysis not only to the relationships between free and monopolistic competition but also to certain interdependences, including the mutual substitution, of privately owned commodities and publicly owned goods and services.

While duly allowing for the manifold dependence of the present discussion on the modern welfare economics, we must stress the *difference* between the variables currently examined by this school of thought and our amounts of want satisfaction. The latter are not focused on individual gratifications with regard to various commodities but on the differences among various degrees of collectivization with which we classify the corresponding types of want satisfaction. Other distinctive features in our examination of a composite economy will be pointed out later.

III

Since we consider aggregate amounts of want satisfaction on various degrees of collectivization comprising the whole community, our amounts may be *partial* or *total* gratifications with regard to any particular wants and to any number of members in the community. Any such member may participate—even with reference to the same wants—in several different types of satisfaction, on correspondingly different degrees of collectivization. These partial gratifications may or may not add up to total want satisfactions of particular members

[1] Cf. A. P. Lerner, *The Economics of Control* (New York, 1944), and "The Concept of Monopoly and the Measure of Monopoly Power," *Review of Economic Studies,* Vol. 1, 1934, pp. 157*ff.*, "Economic Theory and Socialist Economy," *ibid.,* Vol. 2, 1934, pp. 51*ff.*; O. Lange, "The Foundation of Welfare Economics," *Econometrica,* Vol. 10, 1942, pp. 215*ff;* A. Bergson (Burk), "A Reformulation of Certain Aspects of Welfare Economics," *Quarterly Journal of Economics,* Vol. 52, 1938, pp. 310*ff.*; A. P. Samuelson, "Foundation of Economic Analysis," *Harvard Economic Studies,* Vol. 80, 1947, pp. 146*ff* and 219*ff.*

[2] Cf. "The General Welfare in Relation to Problems of Taxation and of Railway and Utility Rates," *Econometrica,* Vol. 6, 1938, pp. 247 and 268.

[3] Cf., pp. 277*n.*

of the community. By "total" we here mean the gratification of a particular want to the point of perfect satiation.

Our discussion must be referred to a given *community,* such as a family, a city, or a nation, and to a given period of *time*—a week, a month, a year—within which all total or partial gratifications add up to the corresponding aggregate amounts of gratification. Within the period, any changes and shifts in total or partial gratifications may occur on any degrees of collectivization and concerning any number of members of the community. Only those aggregate amounts of gratification are relevant which appear at the end of the period.

To every particular want satisfaction we may assign a definite number which expresses the relative importance of its actually secured quantity for the welfare of the community. Such numbers, too, may range from 0 through 100. They designate the percentual participation of the corresponding amounts of particular gratifications in securing the aggregate communal welfare. This participation or importance may be computed, for example, with reference to the corresponding distribution of aggregate public and private expenditures. Allowance must be made, however, for the fact that no single statistical series can appropriately indicate the importance in question. *Composite data* may provide better indicators. Such indicators comprise various quantitative and qualitative factors, which may indirectly be related to the arguments underlying our Tables 8, 9, and 10. Weighted average values expressing the importance concerned, *i.e.,* the amount of gratifications, are somewhat similar to those weighted averages which we may compute for types of gratification in order to classify them with the appropriate degrees of collectivization. But a degree of 99 per cent would mean in the latter case almost entirely collective types of want satisfaction, which rank with the 99th degree of collectivization. In the former case, a degree of 99 per cent would indicate that communal welfare almost entirely relies upon the relevant amount of gratifications. In both cases, an assumption of 100 per cent degrees would be unrealistic.

It has already been mentioned that the most important quantitative factor of weighting for a computation of the amounts of gratification under discussion is their dollar cost. The meaning of the *cost coverage* involved and its relationship to dollar expenditures has been examined, from several institutional viewpoints, in Chapters VII

and X. Some of the underlying theoretical considerations will be dealt with later (cf. pp. 265*ff*. and 319*ff*.).

A secondary quantitative indicator for the determination of the definite numbers which we assign to the amounts of want satisfaction is their *personal coverage, i.e.,* the number of individuals who participate in the corresponding type of gratifications. But we cannot assume that there is a strict or direct proportionality between the number of participating individuals and the importance of the amounts of gratification for the aggregate communal welfare. Such an assumption could only be based on ethical and religious postulates which maintain that all humans have exactly the same dignity, value, and general significance. With regard to the issue between the two fundamental Aristotelian viewpoints of distributive and equalitarian social justice, our now prevailing socioethical attitude strongly leans toward the latter. Even on such a basis, the proportionality concerned must be restricted to the gratification of universal wants, which frequently are social and group wants (cf. pp. 19*ff*.) and always have a tendency to develop into collective wants. In this respect, particular wants do not come into question. Concerning all sorts of wants, we may refer to a multitude of diverse social hierarchies on whose structure and smooth working communal welfare directly depends and which clearly demonstrate the relative differences among individuals with regard to their societary functions and importances. Such differences are reflected by our conventional differentiation in the distribution of wealth and income, as well as in the attribution of esteem, respect, and reputation. Age, sex, natural abilities, acquired education, training, general background, and specific erudition coupled with productive efficiency are the factors on which this attribution is habitually based and are customarily considered as qualifications for various positions and jobs. Exaggerated administrative optimism and zeal has brought forward a variety of methods aimed at a numerical grading and classifying of individual properties, abilities, and achievements. In the present context, however, it is sufficient to concede that giving gratifications to a few individuals holding some sort of a key position may or may not be more important for the whole community than securing similar satisfactions for a large number of other individuals.

The relevant tertiary and more remote quantitative factors of weighting are even inflicted with greater indeterminacies. For exam-

ple, we may try to establish an approximately proportional relationship between the communal significance of gratifications on the one hand, and on the other hand the length of time over which their duration stretches as well as the size of the area which they indirectly cover. In such a sense, we may indicate a *temporal* and *spatial* coverage of gratifications, respectively. But the corresponding factors of weighting are weakened by the fact that such a proportionality does not always hold. It might be better if we revert to a coverage in terms of *man-hours,* the volume of *employment,* the volume or weight of some basic *raw materials* needed for the production of the goods and services on the allocation of which want satisfactions depend, etc. (cf. pp. 40*f.*). Somewhat more efficient as a similar macroeconomic factor of weighting might be the number of dollars which the production of these goods and services adds to *national income.* This however brings us to the primary indicator of the cost involved in providing the pertinent gratifications.

The *qualitative* factors of weighting are closely connected with the direct objectives, intermediate aims, and ultimate goals of individual as well as social life. Several institutional aspects of these aims and goals relating to shifts in the economic structure have been examined in Chapters IV, V, and VI. Attempts at a quantification of the inherent ethical and other qualitative factors may be problematic. Of course, only methods of ordinal measurement can be considered. But even then, a coordination with the quantitative factors of our weighting procedure necessarily includes elements of subjective evaluation. Therefore, the weighting concerned might be simplified when we exclude the qualitative and the more or less intangible quantitative factors. We may thus aim at increasing levels in the simplification of our argument. On a relatively high level, we may derive the definite figures assigned to the amounts of gratification ranking with the corresponding various degrees of collectivization solely from the required individual, mixed, and collective dollar expenditures. At the same time, we must also discount the obvious disadvantages of such a great simplification.

Communal Welfare and Budgets

I

We have already looked at some of the institutional questions pertaining to the measurement of *communal welfare* from the viewpoint

of the available statistical material (cf. Chapter XI). In terms of generalization, let us here add that we do not attempt to personify the community by attributing to it as an entity any subjective welfare which might be regarded as more or less independent of the individual welfare of the members of the community. On the other hand, we interpret the communal welfare as an objective function of the aggregate amounts of want satisfaction secured by all members of the community.

By *members* we mean those individuals who actively or passively participate in communal activities or communal life at large. *De facto* participation is sufficient, and no specified legal relationship between individual and community, such as citizenship, formally accepted or declared membership, or the like, is required. It is evident that this kind of actual membership is a function of the period of time, and of the scope, size, or pattern of the community the welfare of which we examine. So is the directness or indirectness, as well as the practical intensity of individual membership, which may assume many different degrees.

The *hierarchy of communities* in which we are interested with regard to the level of communal welfare is manifestly a function of primary and secondary collective wants, (cf. pp. 25*ff.*) and of the dynamic development of their interrelationships. The quality of the primary collective want, or wants, determines the initial pattern of the community. Possibly accruing secondary collective wants may strengthen, partially change, or entirely transform such patterns.

As a result, mixed communal conglomerates may spring up, and various types of partial or total *metamorphosis* may occur with regard to the structure as well as to the scope and size of communities. An initially small economic or religious community may thus grow into a large national or political union, which may later weaken and gradually assume the pattern of a smaller ethical or cultural community. Throughout the gradual steps of such transformations, the hierarchical relationships of internal and external subordination and of other essential features in the communal organization may also undergo various changes. Evolutionary forces of differentiation and integration may cause at any stage of the related transformations the splitting of large communities into several smaller ones or the reverse process of communal uniting.

For analytical purposes, it would be useful to examine the functional relations between levels of communal welfare and the underlying want satisfactions with respect to as many different patterns of communities as possible. Only such a *synoptical view* could give us a satisfactorily plastic picture. The smaller the community and the shorter the period examined, the simpler and easier the analysis under discussion. Analytical complexity and difficulties will grow more than proportionally with the size of the communities and with the length of the periods concerned. Yet, we must not forget that the simple picture may be remote from reality, while the complex analysis may be considerably more realistic. As things are now, the computation of welfare levels for national communities and for their administrative parts and subdivisions necessarily stands in the foreground and clusters around the concept of national income.

II

The *cost* of particular want satisfactions is not only the most obvious and most important quantitative economic factor from the viewpoint of which we may determine the amount of the various gratifications in composite economic systems. This factor also has a more general significance for the computation of the amounts concerned. If we proceed with adequate circumspection and care, we may regard the cost coverage as an approximate indicator of all other quantitative factors which enter our weighted calculation of the amounts of gratification and which we have already summarily surveyed. In other words, we assume the existence of an approximate positive proportionality between these other quantitative factors so that the latter fairly well expresses, and may accordingly substitute for, the former. Yet, the pertinent difference between approximate and exact proportionality is significant for our analysis.

For example, it is instructive to examine from such a viewpoint the *ratios* of the cost-coverage of gratifications to the concurrent personal, temporal, or spatial coverage. The consideration of increasing, constant, and decreasing returns with respect to particular processes of production, distribution, and consumption plays a decisive role. It can be shown that the first of the three ratios has a tendency to be less than unity, while the other two ratios usually assume values of more than unity. This means that the cost of gratifications frequently

increases less than proportionally to the number of individuals but more than proportionally to the time or area embraced by the same gratifications.

We may also be interested in the cost of gratifications from an essentially different viewpoint. It may be necessary to compute the cost of all gratifications in order to add them and to find out their sum for the whole community. For such a purpose, the cost element is no longer just an auxiliary factor of subordinate significance utilized as one of the means for the purpose of computing types or amounts of want satisfaction. The cost element may here acquire a certain degree of *independence* and primary purport directly reflecting the economic structure of a community with respect to the relative weight of individual, mixed, and collective gratifications.

From this viewpoint, we may refer to the particular dollar cost of the various particular amounts of want satisfaction. The sum of all such particular costs adds up to the total—private, mixed, and collective—expenditure for, or dollar cost of, want satisfactions in the whole community. It is understood, that the *unit of measurement* for our various amounts of gratification is a percentual unit expressing 1 per cent of significance for the aggregate communal welfare. On the other hand, our unit of measurement for the related particular costs is one dollar of actual cost. It is possible to generalize and to express this interdependence by mathematical symbols (cf. pp. 324*ff*. and 328).

We may also examine the practical probability of a *proportionality* between the costs and the amounts of want satisfactions. If the dollar cost of gratifications were the only basis for the assignment of definite numbers to the variables standing for the amounts of gratification in composite economic systems, then the proportionality concerned would be perfect. In other words, when we disregard all other quantitative and qualitative factors of weighting and calculate our amounts of gratification exclusively with the help of the cost factor, we implicitly assume such an exactly proportional relation.

As we gradually also consider quantitative factors other than cost, as well as qualitative factors of weighting, the practical probability diminishes that the relations under discussion will display an exact proportionality. Such a proportionality is even less probable with respect to quantitative and qualitative factors of weighting other than

personal, temporal, or spatial coverage, which we might gradually include in the scope of our computation of the amounts of gratification when approaching reality. Accordingly, we are justified in stressing the significance of *cost coefficients* of the variable amounts of gratification when our primary interest refers to the cost structure in the economic system of a community.

III

Let us assume that in every community there is a ceiling of *aggregate individual efforts,* or sacrifices, which the community as such is willing to undertake in order to attain a desired level of welfare. From the standpoint of an analytical interpretation, such a ceiling plays the role of a typical parametric constant. When we compare various communities with each other and raise the question whether they are nearer to the ascetic or to the voluptuous attitude, then the numerical value of the ceiling is a parameter, on the inspection of which we base our comparisons. Such a parametric indicator may have a considerable heuristic significance. However, if we confine our inquiry to the discussion of structural changes within a given community, then the ceiling must be regarded as a constant, and it may be assigned the role of a given budget. Even in this sense, our ceiling may change over time and may be analyzed, accordingly, from a dynamic viewpoint.

We consider the ceiling as the sum of the costs of all particular gratifications in the whole community, and we may thus express it as the sum of all products derived from a multiplication of the variable amounts of gratification by their cost coefficients (cf. p. 328). The latter must obviously be referred to the dollar cost per unit of the corresponding amounts of gratification. The ceiling accordingly indicates a *communal budget* by which the expenditures for all individual, mixed, and collective want satisfactions must be covered. If we relate the ceiling to a given national—or any other communal—product, then our budget shows various allocations which are made via the channels of public expenditures to all kinds of collective and semicollective want satisfactions, as well as allocations by means of private—corporate, cooperative, or individual—expenditures, to all different groups and shades of individual gratifications. We may then compute our cost coefficients as the weighted average cost per unit of

particular want satisfactions classified with the corresponding degrees of collectivization.

For the aggregate communal cost, our conventional computations of gross and net *national product* can be utilized, because they concentrate on the expenditure aspect of the output of goods and services produced by the nation's economy. With respect to a numerical expression of the level of communal welfare, current figures on *national income* and on several other indicators of general business activity, or economic prosperity, may give useful hints. But we have to avoid statistical pitfalls, which have been mentioned in Chapter XI.

CHAPTER XVII

STRUCTURAL SHAPE AND WELFARE FUNCTIONS

Uniform and Symmetric Economic Systems

I

IN ORDER to visualize in a *realistic* way past or present composite economic systems, we must repeat that the want satisfactions which belong to the two extreme cases marked by 0 and 100 degrees of collectivization represent only hypothetical limiting possibilities. In other words, those individual want satisfactions which are not at all connected with collective aims are relatively rare. Similarly exceptional are those collective activities in which private initiative based on some sort of acquisitive motivation is entirely disregarded. Such satisfactions and activities have no essential bearing on real economic life. We have pointed out that even "pure" individual wants have at least some remote relationship to collective considerations. On the other hand, even in the "thoroughly planned" sectors of collective economy at least some attention is given to the traditional merit of entrepreneurial achievements, *i.e.*, to the advantages of the play of self-interest and to the greater efficiency of decentralization which can be secured by private enterprise.

Essential for a realistic analysis, however, are the gratifications which rank between the above-mentioned two extreme cases. The *intermediate degrees* of collectivization, which range from the 2nd to the 99th percentual degrees, comprise all practical forms from the slightest and hardly noticeable control to "rigorous" collective planning. Within this intermediate range, we encounter a great variety of transitional phenomena.

Most of the customarily discussed "isms," which refer to the loci of economic systems between private-enterprise activities and collective planning, can be analytically expressed by adequate particular relations among our variables and constants. Once the initial difficulties of properly measuring the percentual degrees of collectivization and the corresponding amounts of gratification are surmounted, a comparison

between various averages of these amounts may be instructive. A comparative evaluation of the relevant arithmetic and harmonic means on the one hand, and the median and the mode, on the other hand, may give a fairly clear picture of the *analytical shape* reflecting the economic structure of the community. Traditionally accepted, conventional or popular types of individual want satisfaction and of collective activities favor the occurrence of multimodal forms. Even in such cases, however, an inspection of the related standard deviation, skewness, and kurtosis will further characterize any given economic structure, as well as elucidate comparisons among various economic systems, with regard to their emphasis on individual and collective gratifications. For a diagrammatical illustration, we may plot the degrees of collectivization on an abscissa and the amounts of gratification on an ordinate.[1] In Section III of the Appendix, we indicate appropriate analytical expressions and diagrammatical examples.

It is evident that the *uniformity* of any economic system, with respect to its dependence on a more or less equable solution of the problem of private enterprise and collective planning, is a monotonically decreasing function of the aforesaid standard deviation. In other words, the smaller the related spread of gratifications, the more uniform the whole economic system in terms of applying the same kind, or closely similar patterns, of economic policy to the issues of collectivization and reprivatization. At the same time, the smaller is also the spread, or dispersion, of the actually chosen policies in the wide possible scope between a system of private-enterprise activities and one of total collective planning. A small value of the standard deviation concerned may indicate an approximately all-comprehensive freedom of private enterprise, or an almost total collective planning. It may also refer to an economic system which admits only one largely uniform type, or is based only on a few similar patterns, of merger between individual and collective want satisfactions.

When the measured standard deviation is great, the economic system is characterized by a *diversity* of quasi-private or semicollective forms of various degrees. A decreasing value of the standard deviation marks the road to a structural uniformity of the economic system. Yet composite economic systems are likely to suffer and to deteriorate when

[1] The result may be, for example, a correspondingly generalized interpretation of Figures 6 and 7.

they have to forego the incentive and stimulus which can be derived from the application of diverse measures of economic policy.[2]

II

During the transition toward collectivization or in a process of reprivatization, it does not frequently happen that a state of perfect symmetry in the economic structure can be retained for any length of time. Such a state would indicate that all want satisfactions, on an average, contain exactly as important individual elements as collective features. The reality of dynamic development usually shows a different picture, in which either the individual elements or the collective factors prevail. Accordingly, only a hypothetical limiting case may display any *symmetrical arrangement* of all scores about the arithmetic or harmonic means of our various amounts of gratification.

It may now be useful to assume that the differences among these amounts are not expressed step by step but that they are continuous. In fact, the manifold complications of our socioeconomic development and the great number of individual and collective factors which determine any processes of collectivization or reprivatization forcefully suggest such a continuous structure. The continuity resulting is manifest especially with regard to the aggregate effects of the maze of particular government interventions, which relate to the various provinces of economic life and which may have positive as well as negative signs. This is the meaning of our continuity assumption. On such a basis, the above-mentioned (cf. p. 270) graph of our various gratifications may be developed from a frequency histogram or a frequency polygon into a smooth probability curve. Its shape is likely to be *asymmetrical.* It may reveal any degree of skewness, or it may even be J-shaped. If the square root of the numerator in our relevant

[2] Up-to-date compensatory fiscal policy and other anticyclical devices of the Keynesian and post-Keynesian pattern exemplify the current reliance upon the diverse methods in question. Another example is given by the way in which America deals with the development of atomic energy. The multifarious measures of governmental economic policy designed to foster this development range from the mildest forms of persuasion, education, and propaganda to rigorous collectivization of the productive activities directly involved. At the same time, however, the initiative of private enterprise is utilized in those branches of production and distribution on which progress in the atomic field indirectly depends.

formula of skewness (cf. Section III of the Appendix) is negative, then the negatively J-shaped, or negatively skewed, economic structure displays a prevalence of private enterprise. A positive sign of the same factor, however, indicates a corresponding preponderance of collective planning. Whenever our probability curve is U-shaped, extreme solutions resembling pure individual and absolute collective want satisfactions are brought into prominence. Then the refined transitional forms of a composite character are at primitive stages of development. Such U shapes will not frequently occur in countries which are anxious to avail themselves of a variety of the up-to-date and efficient tools of government policies in the economic field.

To a certain extent, it may be considered a token of progress when a wide range of the refined tools in question is applied and aimed at a combined utilization of private initiative and collective planning. In order to measure this relation, it is advisable to proceed from a consideration of the third moment about the arithmetic mean of the various amounts of gratification in composite economic systems to the fourth moment. The lower the value of the resulting kurtosis, the more widespread the combinative reliance upon individual and collective types of want satisfaction and the stronger the tendency toward an even and balanced distribution of both types of satisfaction in their concurrent application. This is the case of a *platykurtic* economic structure, with a squat shape of its pertinent curve.

When the curve is tall and slim, then its *leptokurtic* composition, with a correspondingly great kurtosis, indicates a considerable emphasis on one type, or on a few closely alike types, of want satisfaction, irrespective of its being nearer to the individual or to the collective extreme. The causes for such a predominance of approximately uniform types of want satisfaction may be accounted for by reference to certain institutional conditions of the economic development. Although the causes concerned and the economic motives behind them may be manifold they are definitely not irregular in the sense of being random.

Accordingly, any conventionally defined *"normal"* shape of our probability curves will indicate well-balanced economic systems, which have reached a relatively high degree of harmonic and undisturbed development. Similar conclusions may be derived from a relevant kurtosis which is smaller than 3 (cf. p. 326). But any kurtosis greater

than 3 displays the effect of one-sided structural tendencies in the system, which are possibly caused by extraordinary disturbances or by any consistent, well-organized, and efficient bias of the prevailing economic policies. In Chapters IV and V, we indicated the puzzling diversity of the underlying institutional factors.[3]

Basic and Index Functions of Communal Welfare

I

We may now consider the level of aggregate communal welfare as a function of all want satisfactions in the community which we classify with the various percentual degrees of collectivization. Thus we obtain our *basic* function of communal welfare, in which the level of this welfare is the dependent variable and the amounts of the various gratifications are independent variables. The relevant mathematical expression and interpretation are presented in Section IV of the Appendix. Any detailed examination of this function, if concentrated on the pure utility aspect of the aggregate welfare, would necessarily involve a repetition or, at most, a reconsideration of a favorite and frequently discussed topic of welfare economics. Without embarking upon such an examination, we may content ourselves with briefly pointing out the relationship between our basic welfare function and the three successive stages which mark the development in this branch of economic literature.

It is a well-established fact that the main trend of interest in modern welfare analysis deviates from the nineteenth-century approach. While the latter sought to investigate the interrelationship of particular utilities and total utility, the former stresses the functional connections between the various particular utilities, with regard to their effects on total utility. During the nineteenth century, the primary interest was in total utility. Twentieth-century economic analysis primarily concentrates on the relations between particular utilities and is only secondarily concerned with the concept of total utility. As far as the relationship between individual utilities and communal welfare is concerned, nineteenth-century welfare analysis accordingly had to face the delicate problems clustering around the cardinal measurability of

[3] Cf. also the author's, *Weltwirtschaftspolitik im Entstehen. Beiträge zur Lehre von den Gemeinbedürfnissen,* Jena, 1933, pp. 90*ff*., 134*ff*., 268*ff*.

utility. Economists know the deadlock in which this *first* stage of the development of welfare analysis resulted and which was marked by the then generally accepted standpoint that utility cannot be measured in a cardinal sense.

The *second* stage displayed a remarkable bifurcation. Its main trend successfully overcame the aforesaid impasse. In this trend of thought, the earlier stress on cardinal measurability was replaced by the indifference approach. The quantitative analysis of utility and welfare was correspondingly limited to its ordinal aspects. Yet, surprisingly enough, research activity along the earlier lines also was revived. Late in the 1920's and early in the 1930's, when the indifference analysis seemed to have won supremacy, I. Fisher and R. Frisch published the results of their carefully prepared attempts at a cardinal measurement of utility.[4] The effect was rather puzzling, and it gave the adherents of

[4] Cf. p. 171. Fisher's statistical measurement of the marginal utility of money, as well as the isoquant method, the quantity-variation method, and the more complex translation method of Frisch may be regarded as improvements. Fisher's analysis of the "wantability-of-one-more" or "advantage-of-one-more" and his interpretation of the traditional meaning of utility, desiredness, desirability, ophelimity, advantage, wantedness, or wantability are suitable bases to which we may refer the purport of "welfare" as a merely formal fact and positive result of want satisfaction. But with respect to the cardinal measurement of utility, we have already pointed out vulnerable parts in Fisher's approach as well as in the methods of Frisch.

As far as the difference between the first and second stage of welfare economics is concerned, we find a classical example when examining the gradual development in the theory of F. A. Fetter. In the earlier editions of his *Principles of Economics,* he was inclined to emphasize the problems of marginal versus total utility. After the First World War, however, he stressed the free choice among the means at one's disposal. He did so in the spirit of voluntaristic psychology and—what is essential in the present context—quite along the lines of twentieth-century economics ("Price Economics versus Welfare Economics," *American Economic Review,* Vol. 9, 1919, p. 467, or "The Economists and the Public," *ibid.* Vol. 15, 1925, p. 13). Of course, Fetter and the great majority of his earlier contemporaries looked at utility and welfare from the standpoint of "literary" economists. In the last two decades, confusion and damage has been caused by the tendency of overstating both the arguments in favor of and against the necessity of measurement in welfare economics. Carl Snyder was right in pointing out that "almost wholly, scientific understanding and revolutionary inventions are the result of patient measurement, comparison, and experimentation" ("Measurement versus the Theory of Economics," *Essays in Honor of Gustav Cassel,* 1933, p. 592). There is more wisdom, nevertheless,

the indifference method a new stimulus to revise and to buttress their own approach.

The *third* stage of development, which roughly includes the last ten or fifteen years, has combined a fruitful utilization of the economic theory of index numbers, as well as of the modern analysis of production and exchange, with a subtle refinement of the indifference approach. Recognizing the difficulty of interpersonal utility comparisons, the proponents of the related refinement endeavor to avoid assumptions in this respect. Consequently, the economists in question are able to dispense, to a greater or lesser extent, with such comparisons. This stage represented the culmination of a long line of development which gradually led from the fundamental pertinent thoughts of V. Pareto,[5] K. Wicksell, E. Barone, and E. Slutsky—as opposed to the earlier type of utility and welfare economics of A. Marshall and A. C. Pigou—to those economists whose ideas represent the transition from the second to the third stage of modern welfare theories. Among the noteworthy contributions published in England and in America, we may mention those of A. L. Bowley, R. G. D. Allen, J. R. Hicks, L. Robbins, N. Kaldor, J. E. Meade, F. H. Knight, G. Haberler, R. Frisch, W. Leontief, H. Hotelling, O. Lange, A. Lerner, A. Wald, G. Tintner, T. Scitovsky, G. J. Stigler, A. Bergson (Burk), P. A. Samuelson, and M. W. Reder.

The emphasis in the *new welfare analysis,* as reflected by the third stage of development, is on the maximization of different individual utilities. The maximization is carried through by the help of methods designed to obtain a formula satisfying the condition that everybody is as well off as possible without making anybody worse off. This leads to a social or total welfare concept embracing all individuals in the community. By thus eliminating the necessity of stressing the import of interpersonal utility comparisons and by clarifying suitable transformation functions between various goods and services, the new welfare economics adequately explains several meaningful issues.

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in the statement of J. M. Clark that the mathematical analysis of indifference curves "excludes major parts of the essential problem" on account of its attempts to avoid psychological implications ("Mathematical Economists and Others: A Plea for Communicability," *Econometrica,* Vol. 15, 1947, p. 76). The truth is that both the abstract mathematical approach and the institutional aspect are needed in order to elucidate the problems concerned.

[5] Among his predecessors, at least M. Pantaleoni should here be mentioned.

In our basic function of welfare and gratifications, we imply that aggregate communal welfare has to be interpreted with respect to the essential results of this long theoretical development. We especially imply that partial and total satisfactions (cf. p. 260) of individuals derived from the possession of various goods and services are the ultimate components of what we term aggregate communal welfare. From the viewpoint of the individual, positive as well as negative effects of private-enterprise activities and collective planning may be considered (cf. pp. 36*ff.*). Some of these effects may offset each other. But the aggregate amounts of want satisfaction, which we classify with the various percentual degrees of collectivization and which we regard as variables in our communal welfare function, assume only positive values. We may also accept the modern *social-value function* which has been elaborated by A. P. Lerner,[6] O. Lange,[7] A. Bergson (Burk),[8] A. P. Samuelson,[9] and some of the above-mentioned more or less congenial adherents of the new welfare analysis. It has already been mentioned (p. 259) that this function relates to judgments made by certain representatives of the community. Such representatives are "formally designated." It is evident that their representative actions are not of the particular kind which we emphasize when examining the allocation of private goods and services to the gratification of collective wants (pp. 27*ff.*).

With regard to several other essential issues,[10] our interpretation is closely connected with the new welfare economics. But let us repeat

[6] In addition to his already mentioned articles (p. 260*n*), cf. the further clarification offered in *The Economics of Control,* New York, 1944, pp. 72*ff.*, 96*ff.*, and the critical remarks of J. E. Meade ("Mr. Lerner on 'Economics of Control,'" *Economic Journal*, Vol. 55, 1945, pp. 47*ff.*)

[7] Cf. "The Foundation of Welfare Economics," *Econometrica,* Vol. 10, 1942, pp. 215*ff.* Particularly interesting is Lange's method of interpreting the social or total welfare not as a sum but as a vector of individual utilities.

Cf. p. 260*n*.

[8] Cf. "Foundation of Economic Analysis," *Harvard Economic Studies,* Vol. 80, 1947, pp. 146*ff.* and 219*ff.* Concerning interpersonal comparisons of utility, we may note Samuelson's witty remark that new welfare economics is only a caricature and that Pareto as well as some of his adherents sidestepped such comparisons rather than denied them (*ibid.*, p. 252).

[10] Significant viewpoints have been developed by Harold Hotelling (cf. p. 260*n*). His application of a line integral, which provides a measure of value corresponding to the sum of consumers' and producers' surpluses, is a helpful

that we do not stress the difference among individuals and among commodities. Nor do we aim the gist of our inquiry at the strife between perfect competition and monopoly. Instead, we relate the welfare concept directly to the aggregate communal amounts of *individual, mixed,* and *collective gratification* in their above-defined meaning. We thus obtain a direct analytical approach to the processes of collectivization and reprivatization. In order to explain further details of this approach, it may be useful to revert briefly to the early foundations which offer suitable starting points.

II

With respect to the Paretean general index function of utility, we may consider a similarly constructed general *index function* of communal welfare (cf. Section IV of the Appendix). Such a function may advantageously be used as a subsidiary intermediate step in our analysis. Every bona-fide economic system is aimed at maximizing the total welfare which can be derived from combining individual and collective want satisfactions. Accordingly, every such system is designed to secure an optimum structure with respect to the relative significance of private-enterprise activities and collective planning. From this viewpoint, it is immaterial whether the particular or the total welfare due to the various want satisfactions is or is not cardinally measurable.

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method of quantitatively expressing the social utility of *private and public investments*. A further step has been made in this direction by Gerhard Tintner, (cf. "A Note on Welfare Economics," *Econometrica,* Vol. 14, 1946, pp. 71*ff*). He relates the findings of the new welfare economics to *collective wants* and to the social value pertaining to the relative amounts of privately owned and publicly owned commodities. He proves that the marginal rates of substitution of such different commodities must equal their marginal rate of transformation derived from the corresponding transformation function. He then refers this interdependence to the conventional expressions of the social-value function. Both Hotelling and Tintner focus their interest on utilities provided by the possession of various commodities. In this respect, both of them follow the general trend of modern welfare economics.

The best critical evaluation of the whole controversy on old and new welfare economics, including the related recent publications of the aforesaid score of authors, is to be found in the "Foundations" of P. A. Samuelson (*op. cit.,* pp. 146*ff*. and 203*ff*.), and in M. W. Reder, "Studies in the Theory of Welfare Economics," *Studies in History, Economics and Public Law,* edited by the Faculty of Political Science of Columbia University, No. 534, New York, 1947.

Likewise, it is a matter of indifference what particular form any basic welfare function assumes, as long as the general index function of welfare is a strictly monotonic increasing function of the level of communal welfare. In other words, the first derivative of our index-function must be positive.

We can relate the *marginal utility* of every change about the various amounts of gratification in our basic communal welfare function to the first derivative of the corresponding index-function (cf. p. 328). This function, however, may assume different particular forms. Consequently, there is no general way of determining the marginal utility of those changes which are made about the various individual, mixed, and collective want satisfactions. The marginal utility of an increase or decrease in the emphasis on any of these satisfactions concerning a given economic system is indeterminate, if we have no initial knowledge of the particular form of our basic welfare function. In ordinal terms, it may be ascertained that the satisfaction of any given individual, collective, or mixed wants will raise the level of aggregate welfare of the whole community. But if we seek to know by how much this level will be raised and whether it could not be raised more by a transfer of stress from individual to collective want satisfactions or vice versa, then we can no longer depend on our general welfare functions. It is therefore advisable to subject attempts at a statistical expression of specific welfare functions to considerable simplifications (cf. Chapter XII and Sections XVII to XIX of the Appendix).

When facing practical problems of collectivization and reprivatization, our attention is neither directly nor exclusively concentrated on the maximization of all want satisfactions for the whole community. In the great majority of cases, it is only our secondary, though ultimate, interest which is thus directed. The primary stress, however, is likely to be placed on a *comparison* between possible individual and collective want satisfactions. In other words, we frequently evaluate the alternative choice among gratifications belonging to different degrees of collectivization, with respect to the total welfare to be derived for the community.[11]

[11] *E.g.*, when we examine whether the nationalization of a private bank or the establishment of a state bank is economically justified, we are inclined to compare directly—according to the attitude which is now prevailing in our theory—the economic achievements of a collectivized bank with those of a

If such choices obey the precepts of a rational economic behavior, then the marginal utility of all changes about the different gratifications must be in the same proportion to each other as the corresponding first derivatives of our index-function of communal welfare. This *proportionality* displays the relationship among the different solutions of the problem according to the amount of emphasis which we place on private enterprise, on various mixed activities, and on collective planning. At the same time, the proportionality in question is evidently independent of the particular form of our basic function of communal welfare. Hence, the field is open for an analytical discussion of the merits and demerits of particular steps toward collectivization, with emphasis on their comparison with the corresponding alternative achievements of private-enterprise activities, and vice versa. The successive analytical steps leading to such a discussion are indicated in Section IV of the Appendix.

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bank which represents a private or semiprivate enterprise. It is only on the basis of such a primary comparison that we refer their respective achievements to the aggregate welfare of the country, or nation. Although this is likely to be our ultimate interest, we put only a secondary emphasis on it as far as our practical discussion of the underlying structural problem is concerned.

CHAPTER XVIII

EVOLUTION VERSUS REVOLUTION

Indifference Maps of Welfare

THE PROPORTIONAL relations among our above-mentioned marginal utilities also suggest another step. We know that all particular amounts of want satisfaction, which rank with the various degrees of collectivization, can only be attained for a given amount of *sacrifice,* effort or disutility. Regardless of the actual size and allocation of the corresponding particular costs, their ultimate source resides in the sacrifices which the individual members of the community have to make.

Relative to individual or quasi-individual wants, the individual sacrifices are more direct. Concerning collective or quasi-collective wants, the required individual sacrifices are attained through the indirect channels of taxation or other means of public finance. Concurrent side effects of "income-redistribution" might be caused by the shifting and incidence of taxation. We have also mentioned the interdependence of particular costs and the total cost incurred by the whole community for the purpose of securing a given level of aggregate communal welfare. A corresponding *communal budget equation* may be expressed by equating the cost of all particular gratifications to the total cost which the community is willing to incur (cf. p. 42 and p. 328).

Let us refer to the Paretean indifference approach. By doing so, we may keep the level of communal welfare, with reference to our basic function of welfare, constant. We thus obtain a multidimensional *indifference map,* which is related to the various aggregate amounts of individual, mixed, and collective gratifications in the community (cf. Section V of the Appendix). It is evident that in this map the constant level of aggregate communal welfare is closely connected with the total amount of communal cost. Likewise, the various amounts of gratification are closely linked to their respective cost coefficients, which we must explicitly emphasize in our communal

budget equation but may only implicitly consider in the notation of the indifference map under discussion. In other words, the community would prefer to obtain more gratification with regard to its various individual, mixed, and collective wants, if it could or if it were willing to increase its aggregate individual sacrifices and/or if the pertinent particular costs could be reduced. Yet, for any given level of communal welfare and for any given amounts of particular and total costs, we have to examine the general properties of the aforesaid indifference map.

If we suppose that there is a given relationship among the various amounts of stress on private enterprise, mixed activities, and collective planning concerning which all of them are on a level of indifference with any other sets of similar relationships, then we may also here add the customary *continuity assumption*. We may assume the possibility of infinitesimally small changes in the mutual proportions among the various amounts of stress in question, to which we may assign infinitesimally small distances on the corresponding indifference, or iso-eupractical,[1] hyper-surfaces. Such a continuity is sufficiently warranted by the great number and by the exceedingly diverse composition of those factors which determine the aggregate communal amounts of any type of want satisfactions within the range of individual, mixed, and collective gratifications. Besides, this continuity can evidently be derived as a corollary of that fundamental continuity which we assumed concerning the transitions between the particular scores in our frequency histograms of a composite economic system, and on account of which we can indicate corresponding probability curves.

If we consider, for a while, only two of the variable amounts of gratification, the rest being constant, then it may be further assumed that the indifference curves which can be plotted for them are *downward sloping*.[2] With respect to the fixed amount of aggregate sacrifice, in terms of given particular costs, to be made by all members of the

[1] Εὐπραγία or εὐπραξία = welfare, and εὔπρακτος = doing well. We may similarly indicate "iso-eupractical curves or surfaces," instead of using the clumsier term "indifference curves or surfaces of welfare." Our curves or surfaces are meant to express a potential field of politico-economic forces. These iso-eupractical curves and surfaces are not intended to represent some welfare index independent of the balance of forces in existence at a given time.

[2] Such curves are likely to be similar, as to their slope and curvature, to the curves in Figures 9 and 10.

community for their given level of communal welfare, there are definite quantitative combinations between individual and collective want satisfactions. By individual we mean, in this case, any type of gratifications which ranks more nearly to the hypothetical extreme of pure individual wants; by collective, on the other hand, we here indicate that the gratifications concerned are relatively nearer to the extreme limiting case of absolute collective wants. We may assume that the means, as expressed by the particular dollar costs, are common with regard to the gratification of individual and collective wants. The available quantity of such common means is relatively scarce, since we interpret the amount of total communal cost as a given limited budget. Accordingly, we may assume that the more means are allocated to individual gratifications, the less means will be left for collective satisfactions, and vice versa. On account of this inverse relationship between the two variables, their iso-eupractical curves are downward sloping and indicate that increasing amounts of collective want satisfactions can only be associated with decreasing amounts of individual gratifications, and vice versa. In many cases, the range of private enterprise activities relatively narrows when the sphere of collective planning expands; conversely, private enterprise will frequently thrive and its scope will relatively grow when we reduce the field of collective production, trade, transportation, communication and/or banking. In such cases, collectivization and reprivatization are inverse functions of each other.

In the indifference map which may accordingly be plotted, the indifference curves will not intersect themselves or any other indifference curves, since all of them have only one downward sloping common direction, which is determined by the inverse functional relationship between collectivization and reprivatization.[3] It can readily be seen that, for increasing levels of communal welfare, which reflect increasing amounts of total communal cost, the *preference direction* on our iso-eupractical map of various amounts of gratification will point toward northeast in the positive quadrant.

[3] In diagrammatical terms, with reference to a multidimensional indifference map, we may compare any two amounts of want satisfaction, which rank with different degrees of collectivization, by considering the projection of our multidimensional map on the plane of these two variables, the other want satisfactions being assigned constant values.

Normal and Abnormal Structural Properties

I

It is a more complex task to ascertain the probable curvature of the downward sloping indifference curves under discussion. When considering the two-dimensional relationship which underlies such a curvature, we can not rely upon a strictly percentual interpretation of the significance which we attribute to our various gratifications for the level of communal welfare (cf. p. 328). Obviously necessary adjustments must be made in our relevant computation (cf. Chapters XI and XII). If there is an inherent tendency in the economic structure toward uniformity, with respect to emphasizing private enterprise, any mixed pattern, or collective planning, then the amount of individual gratifications will decrease at an increasing rate as the amount of collective want satisfactions increases, and vice versa. In this case, our map will show a system of indifference curves which are all *concave* to the origin. If, however, there are more persuasive reasons for believing that there is an intrinsic tendency in the economic structure toward diversity, then we may assume a system of indifference curves which are *convex* to the origin. Then only larger and larger increases in individual gratifications will compensate for decreases in collective gratifications, and vice versa, for the purpose of keeping the aggregate welfare effect of both variables on an indifference level.

It may well happen that those inherent properties of collectivization or reprivatization which render the shape of our indifference curves convex or concave tend to have cumulative effects. Such effects will normally display a series of *monotonic* functions. Alternatively, the series may also be *polytonic*. Then the functional equation of our iso-eupractical curves must have an accordingly higher degree, because the curves will interchangeably show convexities and concavities to the origin. For example, a community may be highly impressed by the "decreasing costs" and, correspondingly, by the "increasing returns" of its collective planning. Its indifference map of collectivization will show a conformable concavity of iso-eupractical curves.[4] But there

[4] Their curvature will be similar to the "normal" shape of the "transformation curves" of F. v. Hayek, which may also be called "production indifference curves," or of the "investment opportunity lines" of I. Fisher.

may be stages in the course of collectivization where we encounter "constant returns to scale," as expressed, for example, by the linear homogeneity in Euler's Theorem, or where the costs of collective planning tend to increase. The result may be downward sloping indifference curves with a wavelike variation of concavities, stationary or straight parts, and convexities. Their lines of regression may suggest sine or cosine curves. Any further analysis of such interdependences would necessarily lead us to a discussion of particular forms of our indifference map.[5] Especially would it be necessary to point out those minimum areas of individual initiative and of collective planning, as well as those mutually fructifying relationships between the two factors with which no healthy and normally balanced economic structure can reasonably dispense. It may be anticipated that any emphasis on such minimum areas and optimum relationships involves the supposition of a convexity in our iso-eupractical curves. Therefore, we may assume, in general, that the normal shape of these curves is convex to the origin.

[5] A simplified discussion of this kind is presented in Chapter XII. As interesting general cases, it seems to be appropriate to mention the points of satiation of individual and of collective gratifications, as well as the question whether either or both become a positive nuisance beyond these points. F. H. Knight ("Realism and Relevance in the Theory of Demand," *Journal of Political Economy,* Vol. 52, 1944, p. 293) recently called our attention to such cases, with regard to the market demand for two commodities, and J. M. Clark ("Realism and Relevance in the Theory of Demand," *ibid.,* Vol. 54, 1946, pp. 351*ff.*) has further discussed the argument. The "completed rainbow," which also includes the parts of the customary indifference curves beyond zero marginal utility, as suggested by Knight, has a better chance to lie within the range of probable experience, if we relate the supersatiation curves to iso-eupractical maps of collectivization and reprivatization. Collective planning can easily reach a point of satiation beyond which additional collectivization has no power to offset any further restriction of private enterprise, and even undesired surpluses of obnoxious and obtrusive collective activities may accumulate. Likewise, private enterprise may reach supersatiation levels of neutral or even harmful redundancy. In both cases, Clark's straight redundancy lines, which have also been indicated by Knight and which are parallel to the axis, or even his reclining supersatiation curves would certainly correspond to reality. Concerning "normally" convex indifference curves of collectivization and reprivatization, the application of this theorem would necessarily add straight and/or even concave parts within the same system of curves, if we "completed the rainbow" beyond the points of satiation. Nevertheless, we could still regard the concave parts as "abnormal."

Both the downward sloping direction and the convexity may evidently be related not only to curves and to three-dimensional indifference surfaces but, *mutatis mutandis,* also to *multidimensional* indifference hyper-surfaces of collectivization and reprivatization, as suggested by the multidimensional indifference maps concerned. In such a sense, a low value of standard deviation and high values of skewness and kurtosis in our above-discussed distribution of gratifications will favor the occurrence of concave iso-eupractical surfaces or hyper-surfaces. Conversely, a great spread in the structure of this distribution, possibly connected with an approximately symmetric and platykurtic shape, will be conditions of convexity. We have substantiated the probability that the standard deviation is great while skewness and kurtosis are small in a normally balanced, harmonic, and undisturbed economic structure. Therefore, convexity may here be assumed as the normal shape, while concavity may be regarded as an abnormal case. According to this interpretation, however, abnormal is far from being synonymous with exceptional or rare. There are many institutional factors which may narrow down the dispersion, increase the skewness, and accentuate a leptokurtic shape in the pertinent distribution of gratifications. The manifold aspects of such factors, which may frequently swing the whole economic structure toward any one-sided uniformity, have been considered in the chapters dealing with the motives and morphological problems of collective planning.[6]

From a formal viewpoint, we may add that there is an a priori probable positive, and functional connection between *normalcy and stability* with regard to the convex indifference surfaces of individual and collective gratifications. As far as a concavity of such surfaces is abnormal, the underlying particular indifference functions must be unstable. Concavity may be caused by some "abnormal"—though by no means exceptional or rare—curtailment of dispersion, *i.e.*, by some accumulation or concentration. It may also be brought about by any skewness or by a leptokurtic slimness with regard to the distribution of gratifications in a composite economic system. In other words, such

[6] In Chapter XX, we analyze some of the cases in which individual, mixed, and/or collective gratifications are partially or completely complementary. There we also examine the a priori more probable and, therefore, more frequent situations in which private enterprise, mixed activities, and collective planning are partial or perfect substitutes.

a concavity may be caused by some "abnormal" pressure toward uniformity with respect to individual, mixed, or collective want satisfactions. There is, of course, a tendency toward restoring "normal" conditions as soon as the pressure ceases to act. Conversely, when a wide spread, an approximate symmetry, and a squat structure in the relevant distribution are expressed by the convexity of the corresponding indifference surfaces, then the normalcy of such a state is liable to account for a corresponding degree of stability. In such cases, there might even be room for minor changes in terms of pressures or dislocations, without any necessarily upsetting effect on the stability of the whole structure. A very strong pressure might be required in order to swing the pendulum to an extreme position and to keep it there for any length of time. Thence, the inherent normal tendency of the indifference surfaces will again point toward the resumption of a better balanced, composite economic structure.

Nevertheless, we must *not overstate* the actual significance of the positive functional interdependence of convexity, normalcy, and stability in their present application. On account of many institutional factors which usually participate in shaping the curvature of our iso-eupractical curves or surfaces, every individual case must be examined as to its own merits. Only on the basis of such a particular examination can the stability in question be ascertained with any acceptable degree of accuracy. In any exact analysis, we must pay attention to this methodological rule.

II

We may add a more *practical* viewpoint to the evaluation of the relationship between the downward sloping convexity and concavity of our iso-eupractical surfaces. This relationship is a suitable analytical expression of the difference between evolutionary and revolutionary patterns of development in the economic structure.

When our downward sloping surfaces are convex, the concurrent structural stability admits a long-term, peaceful development in the economic system. The deeper the convexity, the more rapidly increases the cost of any radical and one-sided structural shift toward collective planning or private-enterprise activities. Such shifts become the more difficult the further the economic structure proceeds along the path of collectivization or reprivatization. Convexity of the type under

discussion is indicative of a more or less smooth structural *evolution,* which is marked by gradual transitions between any periodically shifting emphasis on collective planning and private-enterprise activities. In the long run, such an economic structure has a good chance to establish some sort of an optimum cooperation between private, mixed, and collective economic efforts. The cooperation concerned may prove to be stronger than any disturbing effects of structural fluctuations.

Concave downward sloping iso-eupractical surfaces disclose the tendency of the economic structure to favor more or less radical types of *revolution.* Such a tendency is rooted in the concomitant increasing ease of replacing individual want satisfactions by collective gratifications, and vice versa. The ease is greater the farther the structural shifts go toward extreme collectivization or reprivatization; consequently, the greater is the resulting concave curvature. Since concavity is inherently connected with structural instability, this pattern is characterized by abrupt transitions and by a tendency to wipe out entirely those economic activities which happen temporarily to be weaker. Extreme one-sidedness, exclusive reliance upon either private enterprise or collective planning, and radical changes are the distinctive features of this pattern. Its periods of transition are marked by heavy personal and material sacrifices. Both the intransigent attitude of *laissez faire* and the doctrine of total collective planning reveal revolutionary features of this kind. Both of them are optimistic in terms of expecting an all-inclusive, socioeconomic salvation solely from their own extreme solution of structural problems. Therefore, both of them are unrealistic.

Some of the extremists in question bluntly state their radical ideas. One group contends that economic collectivization can be successful only if carried through "at maximum speed," and not "by gradual steps."[7] Another group is inclined to castigate even mild measures of governmental planning.[8] Fortunately, there are still numerous economists who believe in some sort of an economic *integration* coordinating

[7] Cf., for example, O. Lange, "On the Economic Theory of Socialism," *Government Control and the Economic Order,* edited by B. E. Lippincott, Minneapolis, 1938, Vol. 2, pp. 124*ff.*

[8] Such is the general attitude of some of those staunch adherents of the private enterprise system to whom we referred in Chapter XIII (cf. p. 204).

private initiative with collective activities.[9] Even Soviet collectivization tolerates gradual steps of transition which spread over several years or decades.

[9] Such is the standpoint of many Keynesian economists (cf. pp. 206*ff.*) Even many outright proponents of collective planning refrain from advocating a complete elimination of private enterprise or any rapid transition. An instructive example of this type has recently been given by P. M. Sweezy (*Socialism*, New York, 1949, pp. 236*ff.* and 241*ff.*)

CHAPTER XIX

EQUILIBRIUM AND STABILITY

Marginal Rates of Collectivization and Reprivatization

I

LET US now further consider the relationship between our above-discussed basic welfare function and the corresponding communal budget equation. We have found that they are closely connected with each other by the fact that in both of them the essential variables are the amounts of gratification which we classify with various percentual degrees of collectivization. The role of the cost coefficients of these amounts indicates the link between the level of communal welfare and the aggregate cost of all want satisfactions in the community. Within the given limit of these costs, we can raise the level of communal welfare by adequate shifts among the various amounts of gratification. In other words, we can improve the economic situation of the whole community by appropriately directing our allocation of efforts and sacrifices to the various gratifications and by thus changing the distribution of our emphasis on the corresponding individual, mixed, and collective want satisfactions. Every bona-fide government will act in this way when it ascertains that increased stress on private-enterprise activities is more conducive to the welfare of the community than collective planning, or vice versa. By the help of such shifts and adjustments, every bona-fide government endeavors to attain a *maximum* level of communal welfare with respect to any given particular and aggregate costs of the required private-enterprise and collective planning activities. Accordingly, the problem of this maximum level is brought into prominence.

In Section VI of the Appendix we apply one of the conventional mathematical methods to find a suitable general expression for the maximum concerned. On the level of such a maximization, we reach an equilibrium in which the economic situation of the community cannot be improved by making further adjustments in the allocation of costs and by carrying through further shifts in the emphasis on vari-

ous types of want satisfaction. Therefore, such a maximum communal welfare expresses an *equilibrium* position with stable relations between the various amounts of want satisfaction for any given aggregate effort and for any particular costs, to which all relevant shifts within the whole economic structure must conform. The *stability* of this equilibrium position does not change if the functional relationship among the various amounts of gratification in our basic welfare function is replaced by any function of this relationship. Consequently, the stability position is independent of the actual form of the basic welfare function and of any difficulties in the measurability of utility and welfare. The present chapter is aimed at elucidating and substantiating this statement.

II

As a first step, it will be useful to revert to our iso-eupractical map. With respect to this map, we consider a constant level of communal welfare, which is the function of variable amounts of want satisfaction on different percentual degrees of collectivization. When a change occurs in any of these amounts, *corresponding changes* in the other amounts will be required in order to keep the level of communal welfare on its given constant level (cf. pp. 42*ff.*). Such required changes can be expressed by the ratios of the corresponding partial derivatives of our communal welfare function as mathematically explained in Section VII of the Appendix. Of course, the ratios relate only to infinitesimal or else very small changes because they depend on the limit concept and continuity assumption underlying the derivative or differential notation.

We can again simplify the arguments by examining two-dimensional iso-eupractical maps, which involve only one variable amount of "relatively individual" and another variable amount of "relatively collective" gratifications of the above-discussed pattern. Here it will be a more or less simple task to find the ratios concerned. As in other references to such two-dimensional cases (cf. p. 283, and p. 328), here we must also refrain from stressing a percentual relationship between our two amounts of different aggregate gratifications and allow for necessary adjustments in our underlying computation of the relevant amounts. Let us first examine the ratio of the partial derivatives concerning shifts toward collective planning. Both are partial derivatives of the magnitude expressing the level of communal welfare with re-

spect to the pertinent amounts of gratification. This ratio indicates the amount of collective want satisfactions which will *compensate* for a given small reduction in the sphere of individual gratifications at a given stage in the process of collectivization. The ratio shows that positive contribution to the welfare of the whole community by collective planning which can offset a curtailment of aggregate welfare by a small additional amount of interference with private enterprise.

It is therefore justified to term this ratio the *marginal rate of collectivization*. In the present context, we deal with such a rate in a static sense inasmuch as we refer it to a given level of communal welfare. For example, our rate will show how great the aggregate services must be which the maintenance and improvement of a public highway system can render to the members of the community in order to compensate for the sacrifices which are made by the payment of the corresponding taxes. The direct or primary effect of the taxes necessarily is a proportional reduction of individual want satisfactions and private-enterprise activities. Such a reduction may mean spending less on cars, clothing, housing, and even food, or investing less in any privately owned farm or industrial plant. Some of the indirect or secondary effects, which may work via the expectation or the accomplished fact of a well-maintained and improved public highway system, undoubtedly foster individual want satisfactions and private enterprise. Some tertiary effects, however, may again point toward increased taxation and, consequently, toward further steps of collectivization. No matter how far we choose to follow this manifestly endless chain of causal effects, they must always proceed according to the marginal rates of collectivization lest they will obviously be unreasonable and uneconomical. This again obviously refers to our static interpretation involving a given level of aggregate communal welfare.

With regard to shifts toward any relatively increasing emphasis on private-enterprise activities, we can similarly compute a *marginal rate of reprivatization*. It is the reciprocal of the marginal rate of collectivization. Therefore, it denotes the amount of additional individual want satisfaction which is required for the maintenance of a given level of communal welfare, when a small reduction is made in the sphere of collective planning, resulting in a correspondingly small decrease of collective want satisfactions. Such is, for example, the additional welfare to be derived from the production of more and lower

priced automobiles for private enterprises and individuals, when the automobile industry reduces its production for the government and especially for the armed forces. The direct result is a corresponding decrease in the sphere of collective services, which has to be offset by the additional individual gratifications concerned. Beside these primary liabilities and assets, secondary or tertiary and further effects may here also qualify the picture considerably.

It is important to note that our marginal rate of collectivization and its reciprocal, which is the marginal rate of reprivatization, depend only on the ratio of derivatives of particular welfare functions. Consequently, such rates are independent of any questions concerning the measurability of the actual aggregate welfare to be derived from collectivization or reprivatization. In this sense, our rates are closely related to those marginal rates of *substitution* which have been successfully developed by recent analysis in the domain of welfare economics.

Dropping now the assumption of only two different kinds of want satisfaction and referring our discussion to the hyper-surfaces indicated by a multidimensional iso-eupractical map, we may again generalize. By doing so, we can derive a series of marginal rates of substitution in a multidimensional sense. As an obvious application, we may examine relevant marginal rates of reprivatization, with reference to the hypothetical limiting case of pure individual want satisfactions and to the corresponding extreme case of unrestricted private enterprise. By such an application, we attempt to determine the additional amount of pure individual want satisfactions necessary to maintain the welfare of the community on a given level, when gratifications which contain various portions of collective emphasis are successively reduced by small quantities. The applied question here refers to that expansion of entirely free private-enterprise activities which has to take place, with regard to the maintenance of a given level of communal welfare, when the various forms of mixed activities and collective planning are successively restricted by small amounts. A similar question can be raised, however, concerning the necessary expansion of various types of private-enterprise activities other than the entirely free and unrestricted type, subject to the same condition of reprivatization. By such "other types of private enterprise," we mean the mixed forms to be successively met when surveying the

whole sequence from hypothetically unrestricted private-enterprise activities, which are at most slightly influenced by collective considerations, through those private-enterprise activities in which collective planning strongly prevails. On the basis of these relationships, *general formulas* (cf. Section VII of the Appendix) of the marginal rate of reprivatization can be computed. The reciprocals of such formulas express similarly generalized and interpreted marginal rates of collectivization.

In real economic life, all relevant formulas of marginal rates are only valid with reference to the *particular costs* of the various amounts of want satisfaction and to the *aggregate sacrifice* which all members of the community are willing to make for their material welfare. Therefore, the parametric constants in our corresponding communal budget equations must consistently be taken into account when we examine the effects of any process of collectivization or reprivatization. It would be a mistake to disregard, in this context, the necessarily inherent interdependences of economic satisfactions and sacrifices, *i.e.*, of utilities and disutilities in terms of aggregate welfare and aggregate efforts.

Conditions of Stable Equilibrium

I

Can we substantiate our emphasis on the marginal rates of collectivization and reprivatization? From the viewpoint of *practical* significance, is it worth while to undertake the analytical effort involved? Would it not be simpler to rely only on the diagrammatical form of iso-eupractical maps and to read from them, whenever required, any such rates and the corresponding structural adjustments? An answer to these questions seems to be in order before we continue our discussion toward the examination of more complex pertinent relationships.

We have already mentioned that even in the extreme cases of a free-enterprise economy, which refer to the highest degree of individual freedom ever attained in the history of economic life, there are more or less potent factors of collective planning at work. Contrariwise, even in strictly organized systems of collective planning, there are fields reserved for some kinds of individual want satisfac-

tion.[1] In the normal course of a more or less smooth economic development, there is a more or less customary inclination toward accepting without reluctance, and even toward taking for granted and justified, not only the "majority" types of economic activity which are typical for the prevalent general pattern of the whole system, but also some of those types which on principle better fit the opposed extreme of economic structures. Nevertheless, when doubts arise, they usually refer to the extreme cases of individual or collective want satisfaction. In current economic systems of the mixed, moderate, or well-balanced type, there is a larger field of economic institutions which we are inclined to accept without any doubts as being justified in their existing forms which they have developed for a certain length of time and in which they present themselves. We have stressed the actual importance of such systems in Chapter II. They stand somewhere in the middle between a private-enterprise economy and an economic structure ruled by collective planning. The greater the number of economic activities, which we consider "natural," "self-evident," or "granted and justified" as they are in their given shape, the less aware we are of the possibility of any *comprehensive shifts* between the relative shares of private enterprise and collective planning in the whole economic system. Accordingly, we do not even have a hypothetical or approximate picture of any general indifference map of private enterprise and collective planning, with regard to a given level of communal welfare. The assumption of any *ex ante* or primary existence of such an indifference map would most probably belong to the realm of unwarranted abstractions.

It is more likely that we are sensitive, primarily, to any additional shifts which might possibly alter the established—static or dynamic—equilibrium of private enterprise and collective planning. As soon as any vague or definite plan for, and the probability or necessity of, such shifts emerge, we are liable to evaluate them with regard to the

[1] On the one hand, *e.g.*, even fervent adherents of economic freedom would readily agree that the construction and maintenance of landways and waterways, the national and international postal service, or several types of "public utilities" should at least primarily be a collective responsibility. On the other hand, even a systematically collectivized country would allow, to a greater or lesser extent, for the individual initiative of the small farmer and at least for such other private-enterprise activities as those of independent craftsmen and artisans.

given level of communal welfare. We are also inclined to inquire into and to ascertain those further economic activities which might be required for the maintenance of a given level of communal welfare, when such shifts are to occur. We frequently have a ready a priori answer to the questions concerned. In other words, we often have at least an *approximate estimate of the marginal rates* of collectivization and reprivatization. Needless to say, our estimate may or may not be subconscious. Whether it does or does not present itself as a result of purposely outlined considerations and logically conducted reasoning is more or less irrelevant for its actual economic significance. It is essential, however, to recognize the fact, that such an estimate frequently plays the primary role, when we consider the problems of collectivization and reprivatization. It is estimates of this kind from which any picture of the general indifference map under discussion may usually be derived. Consequently, the indifference map can at most play a secondary part. We usually have approximate *ex ante* estimates for the marginal rates of collectivization and reprivatization which can be translated into differential equations. In the integrability case, we may hence proceed and derive inferences as to the general indifference map of collectivization and reprivatization by integrating our differential equations. In the case of nonintegrability, on the other hand, we must dispense with the notion of such an indifference map and content ourselves with the marginal rates under discussion.

Several countries have acquired in the last few decades extensive experiences concerning various degrees of collectivization and reprivatization in the field of transportation, communication, some branches of agricultural and industrial production, medical and veterinary services, etc. It is to be assumed that, with regard to such activities, they can fairly well infer from the marginal rates of collectivization and reprivatization the structure of all possible small changes in question, *i.e.*, a whole relevant indifference map. This situation would give us an example for the *integrability* case concerned.

The opposite case of *nonintegrability* may occur when we consider collectivizing the smallest farms, handicraft, retail trade, or any other such economic activities which have "always" been performed by private enterprise. We may have to deal with a similar case when planning for the reprivatization of a state mint, of a municipal port, or of any other such sectors of collective economy which have, at least for

a long time, not been based on private enterprise. All we can here evaluate are the marginal rates of collectivization and reprivatization, respectively, because we may possibly estimate the pertinent effects of small changes, namely, of particular steps toward collective planning or toward increased stress on private-enterprise activities. But we have no comprehensive picture of all possible changes which may emerge and of all corresponding structural adjustments which may be required. What we here lack is a whole indifference map.

II

In the foregoing analysis of the economic structure, we implicitly referred to the integrability case, since we assumed the existence of isoeupractical maps. It is appropriate to emphasize the hypothetical character of our assumption. Only on such a hypothetical basis may we reasonably examine the possibility of finding a general expression for the *highest level of communal welfare* in terms of the maximum aggregate utility secured by the optimum allocation of efforts to the various types of want satisfaction. In our indifference analysis, we deal with a constant level of communal welfare. Let us again regard this level as a variable. We equate the first derivatives of the basic welfare function and of the communal budget equation to zero. The latter differential equation will then be a logically connected side relation of the former. The logical connection here refers to the necessity of duly considering the best possible allocation of the aggregate sacrifices made by all members of the community or of the aggregate efforts with regard to the particular costs of the various want satisfactions. This is the meaning of the interdependence of constants and variables in the side relation under discussion.

We extend our aforesaid *continuity assumption* with regard to the variables in our basic welfare function and in the corresponding index-function of welfare. By doing so, we bring into prominence the complex nature of the various amounts of want satisfaction in composite economic systems. At the same time, we emphasize the manifold implications of those institutional factors which warrant the assumption of smoothness in the transitions between the particular gratifications. On account of similar considerations, we have already made a continuity assumption relative to the cost coefficients in our communal budget equation, because these parametric constants also figure as

composite aggregates of a highly intricate structure. Therefore, it is justified to assume that our basic welfare function has continuous partial derivatives of the first and second order and that we can find the extreme values concerned by proceeding to the relevant differential equations (cf. pp. 329*ff.*).

Throughout the major part of the present discussion, as we have already mentioned, we assume that the various amounts of want satisfaction in our welfare functions are *independent* variables. It is obvious, however, that indirectly they depend on the whole economic structure, which changes with any shifts concerning the relative magnitude of individual and collective gratifications. In other words, every particular form of private enterprise, of mixed activities, or of collective planning depends on the whole structure of the economic system and, accordingly, on any changes which may occur among the shares of individual, mixed, and collective want satisfactions in the system. In fact, the mutual interdependences in question display an intricate network of manifold relationships between the processes of collectivization and reprivatization. Therefore, when we examine the pertinent problems from a more realistic and institutional viewpoint and not on the present level of abstraction, we may assume the *dependence* of the variable amounts of gratification classified with different percentual degrees of collectivization. The concrete nature of this dependence is a suitable topic for further analysis. Later we shall refer to some of the concomitant analytical relations.

III

At this point, we may better appreciate the pivotal significance of the marginal rates of collectivization and reprivatization for every small change in the pertinent structure of any economic system. Every such change is evidently a function of, and cannot reasonably be undertaken on, given levels of communal welfare, without paying attention to the ratios which analytically express our marginal rates. At the various stages of economic development, there are many different kinds of combinations between private enterprise and collective planning. When we seek to improve the general economic structure by adjustments in these combinations, the marginal rates of collectivization and reprivatization consistently rule the decisions concerned.

If we consider only two different types of want satisfaction, then

our derived iso-eupractical curves are necessarily connected with corresponding aggregate effort and particular cost functions of the usual budgetary type. The contour map of such functions consists of downward sloping and parallel straight lines. The tangency of these straight lines and the indifference curves expresses the minimum level of costs on any given level of aggregate effort. Since the cost lines are downward sloping, there will be only one point of tangency if the indifference curves are convex to the origin, at least as far as their relevant points are concerned. If we extend our analysis to include three different types of want satisfaction, the relationship between convexity and stability can accordingly be indicated by downward sloping and convex indifference surfaces and their tangency with aggregate effort and particular cost planes. Any practical reliance upon evolutionary methods of economic development, which are opposed to revolutionary methods, shows a close connection between the "normal" shape of our indifference curves and surfaces, and their convexity. Consequently, the *stable* equilibrium of communal welfare, which we are here discussing, implies the above-indicated "normal," namely, the convex, shape of the iso-eupractical curves and surfaces of collectivization and reprivatization.

In this sense, an equilibrated economic organization of the community can only be reached if all shifts in the organized structure are ruled by a due consideration of the marginal rates under discussion. At the same time, there must be a proportionality between these rates and the ratios relating the various particular costs of private enterprise, mixed activities, and collective planning. If these conditions are satisfied, then we can find the analytical expression for a general *equilibrium* in which there is a definite relationship among individual, mixed, and collective gratifications with respect to any given level of aggregate efforts or sacrifices. Accordingly, such a situation indicates equilibrium shares of private enterprise, composite activities, and collective planning in the economic system. We know that the equilibrium is approximately stable. The concept of stability involves the thought that any institutional changes, within reasonable limits, are not likely to cause sudden disruptions or considerable disturbance in the whole economic structure as far as the relations between private enterprise and collective planning are concerned (cf. Sections VI and VII of the Appendix).

IV

There are several lines of analysis along which composite economic systems can further be examined and clarified. It may be useful to survey briefly these lines of analysis, some of which will be expounded in our subsequent discussion.

1. The possibility has already been mentioned that we can find *no whole indifference map* which integrates the picture shown by the marginal rates of collectivization and reprivatization. This is the nonintegrability case for the ratios expressing the relevant marginal rates. Here our whole analysis must cluster around these rates. It is obvious that, as compared with the general character of such an analysis, our above-mentioned assumption of integrability refers only to a particular case.

2. In real economic life, the various amounts of want satisfaction, which we consider our basic variables, depend on a series of *variable functions* reflecting numerous factors of the institutional background. Accordingly, it is appropriate to proceed from the finite to the infinite, namely from a finite number of functions to a whole class of functions, and to introduce the symbolism of functionals. The maximum welfare in question can then be expressed by means of the calculus of variations.

3. The substitution between private enterprise and collective planning may or may not be easy. The difficulty of substitution, in this respect, can be expressed by the "depth" of the convexity, which has been considered the normal shape of our iso-eupractical curves and surfaces. The examination of such a depth or flatness of convexity points toward an analysis of the *responsiveness* of collectivization and reprivatization. We shall see that the static and dynamic aspects of this responsiveness are not necessarily parallel to the traditional elasticity theorem in economics.

4. A study of the parametric constants, which are represented by the aggregate efforts or sacrifices of the community and by the particular cost coefficients of the various amounts of want satisfaction, is undoubtedly the most important further step. The first objective of such a study is to clarify the problem of *preference directions* relative to the indifference map of collectivization and reprivatization. Second, the study is expected to analyze, on an exact basis, the *costs* of

private enterprise as compared with the costs of collective planning and also the costs of any shifts between individual and collective want satisfactions. Third, in connection with the statistical aspects of this study the complexity of those factors which determine the course of collectivization and reprivatization can also be investigated from the underlying specific *institutional* viewpoints.

5. In the formal part of our approach, we have so far taken two successive steps. First, we have examined some questions of the maximization of total welfare, with regard to the issue between private enterprise and collective planning. Second, we have inquired into the interrelationships of collectivization and reprivatization, with respect to the marginal rates of the shifts concerned. The first viewpoint undoubtedly is typical of the economics of the nineteenth century, while the second aspect is representative of the general trend of twentieth-century economic research. For the analysis of both of them, we have availed ourselves mostly of the traditional tools as forged by Gossen, Jevons, Edgeworth, Pantaleoni, Fisher, Pareto, Slutsky, Frisch, Hicks, Allen, and Davis. With the help of these tools, we have been able to deal with various amounts of want satisfaction as independent variables. Yet, if we endeavor to consider them—in a more realistic way—as dependent want satisfactions, then it may not be sufficient to rely upon a further development of those viewpoints which we mention in Chapter XX with regard to the pertinent applicability of Euler's Theorem. The aforesaid (cf. p. 299) reference to the calculus of variations may be helpful. But we may even more advantageously rely on mathematical methods of a different pattern. Such methods have recently been offered by an application of the *theory of sets* to economics. The same application may enable us to undertake a third step and concentrate entirely on the issue between private enterprise and collective planning, without direct reference to the development of communal welfare.

By an appropriate modification in the general ideology and terminology of *J. von Neumann* and *O. Morgenstern,* we may assume that both the economic forces of collectivization and those of reprivatization have an intrinsic tendency to expand. The objective of the forces behind collective planning is to maximize the scope of collectivization and to minimize the range of reprivatization. Conversely, the forces on which the private-enterprise system is based aim at a maximum

amount of reprivatization and at a minimum acceptance of collectivization.[2] Without going too far in personifying the economic forces which act in the background, we may refer to corresponding "standards of behavior" on which the "moves and choices" in the development of our socioeconomic organization[3] depend. The general principles governing these choices may be expressed in the form of *strategies* and rules, which determine the gains or losses in the competitive development of private enterprise and collective planning. In Section VIII of the Appendix, we make an attempt at pointing out several relations with respect to which such strategies can be derived from an adequate application of the modern "Theory of Games."

[2] But we may still consider composite economic systems and disregard the extreme cases of total collective planning and of an exclusively private-enterprise economy.

[3] Cf. J. von Neumann and O. Morgenstern, *Theory of Games and Economic Behavior,* Princeton, 1944, p. 43.

CHAPTER XX

RESPONSIVENESS AND ELASTICITY OF THE ECONOMIC STRUCTURE

Static Responsiveness

I

SEVERAL ECONOMIC relations involving marginal rates, responsiveness, and elasticity can be explained and approximately expressed with the help of mathematical symbols and formulas. In Sections IX to XII of the Appendix, we present such expressions with regard to the structural issue between private-enterprise activities and collective planning. On the following pages, however, we make an attempt at developing the essential interdependences concerned in terms of *verbal* analysis. Those readers who find our pertinent verbal explanations not sufficiently determinate or accurate may advantageously look up the corresponding mathematical expressions in the Appendix.

Let us first reiterate that changes in the economic structure become highly dubitable in regard to their usefulness as soon as they embrace, within a relatively short period of time, *both* shifts toward collectivization and opposed shifts towards reprivatization or a reverse sequence of both of these processes. The doubts and problems involved relate to the probably substantial economic sacrifices which must be made for the purpose of such double-faced structural shifts. Unfortunately, many periods of our economic history are marked by prevalent shifts and sacrifices of this kind. Their general purport can efficiently be analyzed when we project them to the perspective offered by the theory of economic responsiveness and elasticity. Such an analysis is the gist of the subsequent discussion.

In order to tackle the analytical implications of iso-eupractical surfaces with regard to the depth of their normal convexity, we have to revert to our generalized marginal rates of reprivatization, of collectivization, and of all combined changes in the course of structural development. We have mentioned that the latter changes comprise all possible small shifts within the economic structure, irrespective of any

particular stress on collectivization or reprivatization. It is understood that we refer these changes to amounts of gratification on various degrees of collectivization and to a constant level of aggregate communal welfare. We may now apply the utility calculus which Pareto, Slutsky, Hicks, and Allen have derived from the Marshallian notation of the elasticity demand. As a result, we obtain analytical expressions appropriately linked with the depth of the convexity in our iso-eupractical surfaces. When the properties revealed by these expressions include all possible shifts in the economic structure, we may term them the general *responsiveness* of structural substitution. By primarily relating the expressions to shifts toward collective planning or toward an increased stress on private-enterprise activities, we arrive at corresponding formulas for the responsiveness of collectivization and of reprivatization, respectively.

What is the economic relationship to be explained by the relevant formulas? It is evidently the rate at which the difficulty of structural substitutions increases in the course of cumulative changes in the economic structure (cf. pp. 43*f.*). Such rates can well be expressed by ratios or fractions. Let us consider the case of structural shifts toward collective planning. The downward sloping convexity of our iso-eupractical surfaces implies that the marginal rate of *collectivization* becomes increasingly greater as we proceed toward total collective planning. At every stage of the process of collectivization, the rate of this increase can be indicated by the "slope" of our convex surfaces, or—analytically speaking—by the first derivative of the marginal rate of collectivization, which itself is a ratio of partial derivatives. Thus we have an expression necessarily involving second derivatives. These second derivatives express the curvature, or the depth, of the convexity under discussion. The greater this curvature, or depth, the smaller our responsiveness of collectivization. Therefore, in our formula for such a responsiveness, which is a fraction, the first derivative of the corresponding marginal rate of collectivization must be the denominator. The numerator must adequately indicate the stage in the process of collectivization to which our responsiveness refers. This stage is reflected by the first derivative of the ratio of the "relatively collective" to the "relatively individual" amounts of gratification. It is advantageous to express both the numerator and the denominator in proportional terms for the purpose of making them independent of

any units of measurement. This can be achieved by multiplying the numerator by the reciprocal of the basic ratio in it and the denominator by the reciprocal of the marginal rate of collectivization. In other words, we transform the numerator and the denominator into logarithmical derivatives. In doing so, we follow a time-honored, relevant custom set by Alfred Marshall.

With the help of obvious adjustments, our formula for the responsiveness of *reprivatization* can be derived in a similar way. The same is true for the derivation of our formula for the general responsiveness of all structural *substitutions*. Since this formula embraces the meaning of both the responsiveness of collectivization and of reprivatization, we may expect or anticipate that our formulas for the latter two properties will have the same values. The corresponding analytical notations and derivations may be found in Section IX and X of the Appendix.

Our formula for the general responsiveness of structural substitution is apt to express also the partial responsiveness of substitution with respect to any number of amounts of gratification as against any number of other amounts, which rank with other degrees of collectivization, within the same economic structure. In a similar sense, we may content ourselves with an examination of the connection between only two different types of want satisfaction, with respect to the whole range of variables in a multidimensional iso-eupractical map. Such an aspect leads us to a substantially less general perspective of those necessary adjustments which have to be made in the economic structure for the purpose of keeping the total welfare of the community on a constant level. But the aspect concerned is useful for the elucidation of a particular class of relationships between any two given types of want satisfaction which may be compared with the much discussed analysis of the *competitiveness* and *complementarity* of economic factors. These relationships might indicate that individual and collective gratifications compete with and can accordingly replace each other concerning their functional contributions to the aggregate welfare of the community. Alternatively, some sort of a complementary link may also occur between them. They are then needed in fixed and more or less rigid proportions and cannot freely be substituted for each other. When either of them decreases or contracts, it must consequently be replaced by a corresponding increase

or expansion of a third type of want satisfactions or of any combination of the other types.

There is no difficulty in expanding our discussion to the competitive and the complementary interrelationship of more than two particular types of want satisfaction. It is obvious that the whole economic structure cannot consist only of complementary links. Even at the most developed degree of complementarity, the necessary presence of at least one competitive interdependence will preserve the *variform* character of the structure. On the other hand, it is possible that only competitive links exist. In fact, the normal stability of economic systems, as expressed by the negative slope and convexity of the surfaces in our iso-eupractical maps, implies that, broadly speaking, competitiveness is the prevailing and more frequent structural feature.

II

For the discussion of a few pertinent details, it is again helpful if we consider the simpler relationship in a two-dimensional iso-eupractical map. Our corresponding two variables are, also in this case, amounts of "relatively individual" and "relatively collective" gratifications. We must again stress the difficulties (cf. pp. 283, and 290) which would hamper any percentual computation of the two variables concerned. The diagrammatical meaning of the indifference curves in such a map is obvious. There is only one hypothetically limiting case in which the curves represent straight lines. It is the case of perfect substitutability between individual and collective want satisfactions where there are always the same proportions of collective efforts needed to replace any reduction in private enterprise, and vice versa. In other words, when the activities of private enterprise are successively curtailed, there are no growing difficulties in this case owing to their replacement by increasing collective efforts for the purpose of maintaining a given level of communal welfare, and there are no converse difficulties in the case of reprivatization. Here the curvature of our indifference curves must be zero, and the responsiveness of collectivization and reprivatization will be *infinite*. This infinity expresses the zero curvature, *i.e.*, the flatness of our curves and, accordingly, the "perfect"—because linearly proportional—ease of collectivization and reprivatization.

It may be that cumulative shifts in the social structure become more

difficult, because rapidly increasing amounts of collective efforts are needed in the course of collectivization, or only rapidly growing services of private enterprise can keep the total welfare of the community on a given level as the scope of collective planning is being reduced by small amounts. Then the corresponding interdependence between individual and collective gratifications is indicated by a correspondingly "deep" curvature in the convexity of our indifference curves. A hypothetically limiting extreme case in this direction is given where the curves have right angles and the responsiveness of collectivization and reprivatization thus becomes equal to *zero*. At such extreme points, no further efforts of any extent invested in collective planning could possibly replace even the smallest further curtailment of private enterprise. Instead of a responsiveness, we there have a perfect rigidity of collectivization. Conversely, a zero responsiveness or perfect rigidity of reprivatization would necessarily exclude the possibility of any further replacement of collective planning by private-enterprise activities, regardless of how small the further reduction of collective want satisfactions and how large the further expansion of individual want satisfactions might be. We here evidently deal with points of saturation of collectivization and of reprivatization, respectively. Old and recent history can furnish many examples which prove that even extremely collectivized economic systems cannot forego relying at least on a certain minimum of profit motivation, as operative in private-enterprise activities, and that even extreme emphasis on private enterprise cannot be void of at least a reasonably modest scope of collective planning. A good example for the former case is given by the development of the "War Communism" (1918–1920) in Soviet Russia. This system broke down on account of its exaggerated stress on collective planning. Consequently, a moderate degree of reprivatization had to be introduced in 1921 by the New Economic Policy of that country. Conversely, we may again refer to the famous "three exceptions" of Adam Smith. Even the father of free-enterprise economics emphasized that there are three obvious grounds for governmental action, *i.e.*, for collective planning: protecting the society from the violence of other independent societies; shielding every member of the society from the injustice or oppression of every other member of it; and erecting as well as maintaining certain public works, because the profit could never pay the expense to any individual. Since

the Second World War, England has furnished a telling illustration of the methods by which the scope of such "*state duties*" can be expanded (cf. Chapter XIV).

In addition to the two extreme cases here discussed, a third hypothetical case is given by the *homogeneity* of the first degree of the basic welfare function which determines the shape of our iso-eupractical curves. The assumption of such a third case seems to be especially pleasing and obvious on account of the considerable attention which has been directed, in the last few decades, to the economic application of Euler's Theorem. We mean its application to the mathematical theory of productive activities and, particularly, of the structural relationship among the various factors of production. A similar application also leads to interesting results in the present context. When assuming a pertinent homogeneity, we emphasize the dependence of the two different amounts of gratification in our basic welfare function on an underlying peculiar law (cf. p. 300). It can be shown (cf. p. 340) that when this function is homogeneous of the first degree then the relevant responsiveness of collectivization and of reprivatization can be expressed by the same formula, which is simpler than the two corresponding general formulas. But we must realize that the assumption which we are here making concerning the applicability of Euler's Theorem has no considerable importance in real economic life. In the great majority of practical cases, "constant returns to scale" with regard to all particular types of want satisfaction and to the aggregate communal welfare, as we have already indicated, are not likely to occur. The assumed homogeneity of our basic welfare function is correspondingly remote from reality. Incidentally, so are the above-discussed two extreme limiting cases, in which the responsiveness of collectivization and of reprivatization is infinite and zero, respectively. In any well-balanced economic system responsible leaders will endeavor to avoid both the state of perfect saturation in terms of collective planning and the state of exclusive emphasis on private enterprise. The present reference to the two hypothetical cases of saturation is justified only by the time-honored practical experience that we sometimes do not know what is enough unless we know what is more than enough.

Significant for a more realistic approach are, however, those numerous cases in which the basic welfare function is *heterogeneous* and

the curvature of our corresponding iso-eupractical curves, at the relevant points, ranges between *flat and deep convexity, i.e.,* between convex curves which approximate a straight line and a rectangle, respectively. Within this range, we are likely to encounter the large bulk of meaningful phenomena which—on account of their great, moderate, or small responsiveness of collectivization and of reprivatization—show small, medium, or great resistance to various shifts in the socioeconomic structure. Practical considerations support the assumption of a heterogeneous structure of the basic welfare function, because even similar changes in want satisfaction which rank with different degrees of collectivization are likely to affect the aggregate welfare of the community in different ways and, especially, with quantitatively different results. In other words, it is reasonable to suppose that equal efforts, in terms of aggregate communal sacrifice, have different effects on the total welfare of the community, according to their allocation to the private-enterprise sector, to mixed activities or to collective planning.

It is worth while to mention the connection between the aforesaid structural competitiveness and complementarity, on the one hand, and the problem of homogeneity versus heterogeneity in the economic structure, on the other hand. A consistent competitiveness of all relationships of partial responsiveness in the economic structure is obviously compatible with the prevalence of structural homogeneity. Such a compatibility may be described by the term *homogeneous competitiveness.* But it is possible that a consistently competitive structure is heterogeneous in the sense under discussion. The occurrence of structural complementarity always implies a heterogeneous composition in the whole scope of the relations of partial responsiveness concerned.

III

So far, we have limited our discussion of the responsiveness of collectivization and reprivatization as well as our analysis of the pertinent relationships between homogeneous and heterogeneous functions to the case in which we have an a priori comprehensive knowledge of iso-eupractical maps. Yet we have already seen that in practical life we more frequently encounter another case. It often happens that all we know of a given economic system are its marginal rates of collectivization and of reprivatization for structural shifts. But we

cannot integrate the corresponding set of differential equations and so acquire the comprehensive picture of whole iso-eupractical maps. This case of *nonintegrability* involves analytical complications. Nevertheless, it can be proved by the methods which we indicate in Section XI of the Appendix that the main viewpoints of our equilibrium and stability analysis require only a slight modification to make them applicable in this case as well. It can likewise be shown that as we proceed toward collectivization or reprivatization additional structural shifts are usually hampered by a more than proportionally increasing difficulty of replacing private-enterprise activities by collective planning, and vice versa. When we say "usually," we mean a more or less normal evolution in the economic development. Structural revolutions reveal a different picture.

When attempting to relate the rate of growth of the difficulty concerned, in the nonintegrability case, to any depth of convexity, we must realize that corresponding indifference curves or surfaces do not exist. In this case, our argument must be subjected to appropriate restrictions. Nevertheless, our above-discussed formulas expressing the structural responsiveness of whole iso-eupractical maps can also here be considered as a suitable basis for the evaluation of various relations involving *responsiveness* of collectivization and of reprivatization. For example, with reference to the pertinent interdependences of three various amounts of want satisfaction we may examine their ranking with a relatively low, with a medium, and with a relatively high degree of collectivization. Then the specific relationship between the responsiveness of collectivization and of reprivatization is obviously rooted in the fact that the second amount stands nearer to the type of absolute collective want satisfactions than the first amount and that the third amount similarly contains more significant elements of collective planning than the second amount. On account of the corresponding three-dimensional space, however, there are three relations of responsiveness when each of our relevant amounts of want satisfaction is considered apart from the other two variables, between which the responsiveness of substitution is being examined. This gives a total of nine such relations, which can distinctively be expressed by appropriate analytical symbols. By developing our investigation along these lines, the difference between a complementary or competitive nature of the aforesaid variables can also be evaluated.

Likewise, considerations of homogeneity or heterogeneity can adequately be superimposed.

The main difference between the integrability case and the nonintegrability case, with regard to their responsiveness of collectivization and of reprivatization, is that only the former has a necessary symmetry of structure, which facilitates and simplifies its analysis. In the nonintegrability case *no such symmetry* can be indicated. This case is accordingly more complex and less clear-cut. On account of the resulting distinctive effects, the question of symmetry deserves further consideration.

Dynamic Elasticity

I

It can be proved with conventional mathematical tools that in the integrability case our formulas which express the responsiveness of collectivization and of reprivatization are *perfectly symmetrical* with regard to the variables involved. The proof is simple if we refer it to the case of only two variables, namely, to the interdependence of a relatively individual and a relatively collective amount of gratification. But by the help of somewhat more complex methods it can also be shown that a similar symmetry holds with regard to the structural relationships displayed by any multidimensional iso-eupractical maps. Therefore, the numerical value expressed by our formulas for the responsiveness of collectivization is always necessarily equal to the value expressed by our corresponding formulas for the responsiveness of reprivatization. In other words, the two types of formulas are identical in a mathematical sense. This is a logical and necessary corollary of the reciprocity between the marginal rates of collectivization and of reprivatization, as well as of the peculiar composition of the formulas concerned. Our pertinent mathematical arguments in Section XII of the Appendix are brief. But from the viewpoint of shifts in the economic structure, the symmetries, identities, and reciprocities in question indicate important properties.

They obviously mean that, concerning the case under consideration and with respect to small changes, it is exactly as easy—or as difficult—to collectivize as to reprivatize, *i.e.,* to shift from a mainly private-enterprise economy toward collective planning as to retrace our steps from a predominantly collective economy toward an eco-

nomic structure which puts the primary emphasis on private enterprise. More specifically, they also mean that in our basic welfare function any two various amounts of gratification can be substituted for each other, as long as the changes involved are small, with exactly *the same ease or difficulty,* regardless of the direction, toward collectivization or toward reprivatization, which we happen to choose for the substitution. We could further infer, on the same basis, that any small productive plant or economic firm could be collectivized or reprivatized with exactly the same ease or difficulty. But there are two essential limitations to which the validity of these interpretations must be subjected. First, we have to refer the responsiveness under discussion to strictly static conditions. Second, the relations of responsiveness which we here examine are necessarily based on the assumption of a perfect elasticity in a given economic structure, with regard to collectivization and reprivatization. It should be emphasized that our interpretation of such an elasticity manifestly deviates from the traditional Marshallian elasticity concept. The significance of these two limitations must be substantiated.

In our present application, *static* conditions mean that the conventional *ceteris paribus* clause includes all economic factors and relationships other than mere structural shifts toward collective planning or toward an increasing emphasis on private enterprise. Accordingly, such an economy is "timeless" in the sense of relating the shifts concerned exactly to the same time. This obviously eliminates the possibility of their consecutive occurrence. The assumption of static conditions also involves the restriction that all elements of cost and all other factors which are directly or indirectly the cause of the degree of responsiveness stay exactly equal for both collectivization and reprivatization. Diagrammatically, we here move always along the same downward sloping and convex iso-eupractical curves or surfaces. We proceed downward on them when collectivizing and upward when reprivatizing, provided that the amounts of gratification marked by the vertical dimension are nearer to the type of pure individual want satisfactions than those scored in the horizontal dimension.

Analytically, the *same* function denotes the relations pertaining to collectivization as well as those referring to reprivatization. It is obvious that such assumptions are necessary for theoretical reasoning. But they are abstract and not sufficiently realistic.

With regard to the present state of the old methodological controversy about the difference between static and dynamic relations in economics, it seems to be necessary to explain our simplified application of these terms. According to the well-established tradition based on relevant theorems of J. B. Clark, J. M. Clark, H. L. Moore, F. H. Knight, J. A. Schumpeter, R. Frisch and on a long series of other kindred contributions spread over the last five or six decades, we emphasize the flow of time when contrasting dynamics to statics. With regard to the *time differential* in dynamic economic relations, we imply that essential shifts occur in some of our variables during and on account of the pertinent lapse of time. Concurrent and/or underlying changes in the parameters and in the functional form by which the variables are connected may or may not take place. In this sense, we regard dynamic conditions not as a general case comprising also static relations but as distinctly different from the latter.

Here our standpoint accords with some of the recent relevant interpretations, such as the meaning of the *"welfare maximising course"* proposed by M. W. Reder.[1] However, Reder considers in his dynamic theory of welfare given parameters and functional forms of the economic system,[2] regards possible variations of parameters through time as a special case,[3] and concentrates his analysis on the difference among forms of perfect and imperfect competition with respect to various commodities.

We may also relate our interpretation of the issue between the static and dynamic approach to an analysis of the corresponding interdependence of static and stationary, as well as of dynamic, historical, causal, and stochastical properties of economic systems. When doing so, we may refer to the *six categories* recently elaborated by P. A. Samuelson,[4] subsume his first two combinations under our interpretation of the static case, and assume that his third, fourth, fifth, as well as his sixth categories may adequately be covered, on principle, by what we have termed dynamic relations. In other words, we may con-

[1] "Studies in the Theory of Welfare Economics," *Studies in History, Economics and Public Law*, edited by the Faculty of Political Science of Columbia University, No. 534, 1947, pp. 167*ff*.

[2] *Ibid.*, pp. 103*ff*.

[3] *Ibid.*, pp. 175*ff*.

[4] "Foundation of Economic Analysis," *Harvard Economic Studies*, Vol. 80, 1947, pp. 315*ff*.

sider our static conditions stationary or historical, *i.e.*, involving constancy (alternatively: periodically repetitive behavior) of our variables or representing data given by a cross section of historical development. Our dynamic approach may similarly include the cases of historical, of causal but nonhistorical, of stochastical and historical, as well as of stochastical but nonhistorical, relationships. Here we have a wide scope for further distinctions among the relevant causal, historical, and stochastical properties. The details of such distinctions are a suitable topic for further inquiries into the methodological problems of economics pertaining to structural shifts.

Our second aforesaid limitation implies a *perfect structural elasticity* of the given economic system. It means that, while discussing the responsiveness of collectivization and reprivatization, as we have done so far, we assume a propensity of the economic system to react in the same way and to the same extent in both directions: toward collectivization as well as toward reprivatization. In other words, we assume that if economic factors of a given quality and strength cause a structural shift toward collective planning, then similar factors of the same quality and strength, but acting in the opposite direction, will necessarily bring about a shift of the same magnitude toward increased emphasis on private enterprise. Our assumption also implies that the economic system shows a certain amount of resistance against initial structural shifts. The greater the stability of the system, the firmer the resistance in question. Yet, if given economic factors are strong enough to cause a structural change in spite of the resistance, then the assumed meaning of the resistance is that the economic system has an intrinsic propensity to resume its former structural shape. We here suppose that such a restitution would partially take place if the initially acting economic factors were partially removed and that the restitution would be perfect if the factors concerned were entirely removed. According to the terminology which we here introduce, such a propensity indicates a perfect elasticity[5] of the economic system with regard to structural changes toward collectivization as well as in the direction of reprivatization. What our above-discussed formulas for the responsive-

[5] A detailed explanation of this terminology and of the underlying general interpretation of physical and economic elasticities may be found in the author's article, "The Concept of Elasticity in Economics" (*Weltwirtschaftliches Archiv*, Vol. 62, 1949, pp. 11*ff.*) Cf. also Section XVI of the Appendix.

ness of collectivization and reprivatization express and measure is by no means elasticity or a degree of elasticity. It is the responsiveness, *i.e.*, the changeability, the deformability, or the flexibility of a perfectly elastic economic system concerning the structural shifts in question. The smaller the responsiveness of collectivization and reprivatization, the "deeper" the convexity of our iso-eupractical curves or surfaces, the more difficult the structural shifts in both directions and the greater the stability of the economic system. Conversely, the greater the responsiveness of the system, the "flatter" the convexity of the surfaces, the easier the structural shifts, and the less stable the whole structure. But in all cases concerned, what we fundamentally assume is a constant and perfect elasticity of collectivization and reprivatization.

It must be remembered that perfect elasticity is here employed in a strictly static sense. Therefore, the propensity of perfect restitution can only have the meaning that the system would perfectly resume its former structural shape *if* the acting factors were entirely removed. No allowance can be made for the lapse of time between the acting of the factors and their removal, because here we deal with the *"timeless"* responsiveness and elasticity of the economic structure. Such a rigorous interpretation in terms of eliminating temporal relations from our static interdependences of responsiveness and elasticity, or—what has essentially the same meaning—of always referring both of them to the same time, is a necessary condition for the maintenance of the wide scope of our underlying *ceteris paribus* assumption.

II

As soon, however, as we also consider the *flow of time* which actually takes place between every structural shift in the economic system and the possible restitution of the previous economic structure, a similarly wide scope of the *ceteris paribus* clause can no longer be maintained. When we speak of a structural shift toward collective planning and a consecutive, *i.e.*, afterwards ensuing and contrarily directed shift toward increased emphasis on private enterprise, we have to allow for the possibility of another class of changes. They may occur with regard to the propensity of the economic system to resume its previous structural shape, *after* the removal of the initially acting factors, which caused the primary shift. For example, we may contrast the primary shift of collectivization with a successively occurring and con-

trarily directed secondary shift of reprivatization. The primary shift takes place under the pressure of some factors acting upon the structure of the economic system, and the secondary shift ensues after and because of the removal of the pressure exercised by the factors concerned. The secondary shift may be equal to, or smaller than, the primary shift, because the propensity of the economic system to resume its former structural shape may or may not be perfect. Perfect propensity of restitution in this sense means perfect elasticity of collectivization, to which an imperfect propensity of restitution, *i.e.*, an imperfect elasticity of collectivization must be contrasted. If the initial structural shift points toward stressing private enterprise, then a similar difference may appear between a perfect and an imperfect elasticity of reprivatization. In both cases, such differences are obviously due to inherent structural properties of the economic system, which may correspondingly be termed perfectly or imperfectly elastic.

We here inquire into the *dynamic* structural elasticity of the economic system, because we refer our inquiry to the flow of time. In this instance, our fundamental assumptions are less extensive and, accordingly, more realistic. But the theoretical analysis concomitantly becomes less clear-cut and more difficult. Nevertheless, it seems to be appropriate to use the term "elasticity of collectivization and reprivatization" only in its present dynamic sense because it is only in such a sense that significant economic interdependences, involving various degrees of the elasticity concerned, can be distinguished, examined, and measured.

At this point, several particular relations may further be clarified. The opposite of the responsiveness of collectivization is *rigidity,* which makes additional progress toward collective planning difficult or impossible. The antithesis of the elasticity of collectivization is *inelasticity,* which means that the economic system has no propensity to resume its former structural shape by reprivatizing, after the cessation of an initial pressure which has shifted it toward more extensive collective planning. Inelasticity of collectivization implies that, after the primary shift has taken place, no ensuing and corresponding secondary shift of reprivatization can be expected.

As far as collectivization is concerned, any degree of elasticity may be linked with great or small responsiveness. Yet zero responsiveness, *i.e.*, perfect rigidity, is necessarily connected with perfect inelasticity. The

interdependence of responsiveness and elasticity may therefore assume several particular—increasing or decreasing—functional forms. It is primarily a problem in institutional economic research whether there is any a priori probability here for the occurrence of an increasing functional relationship. A similar probability may be examined concerning the connection between the responsiveness and the elasticity of reprivatization.

Referring our present interpretation of a dynamic economy to the case of collectivization, we may find that the relevant structural propensity of restitution, in terms of successive reprivatization, is perfect. The obvious reason for such an equality is that the shift toward private-enterprise restitution works under the same law as the previous shift toward collective planning. Such an identity of the operative law means that not only the primary shift is ruled by the corresponding basic welfare function but also the secondary shift happens to be determined by a function which has exactly the same form. This secondary function, however, may have any other form. It is therefore easy to see that the *elasticity of collectivization* can be expressed by the ratio of the responsiveness of reprivatization to the corresponding responsiveness of collectivization. In this ratio, the latter responsiveness is ruled by a function which may or may not be different from the function by which the former responsiveness is determined. The elasticity of *reprivatization* can similarly be expressed by a ratio of the responsiveness of collectivization to the corresponding responsiveness of reprivatization.

III

If the ratios under discussion are unity, then the elasticity of collectivization and of reprivatization is *perfect*. If the ratios are equal to zero, then the elasticity of collectivization and of reprivatization is *zero,* which means that both relations are perfectly inelastic. This may be caused by perfect rigidity or by the lack of any propensity of restitution. In the latter case, no secondary shifts whatsoever will take place, irrespective of the size of the primary shifts. An *imperfect* elasticity of collectivization and reprivatization is indicated when the relevant ratios are greater than zero but smaller than unity. This case is by far the most important one in real economic life, because it undoubtedly covers the most obvious structural relationships.

It seems to be justified to exclude from our analysis the cases in which our ratios are greater than unity or smaller than zero. Such cases indicate what may be termed a hyperelasticity and a hyperinelasticity of collectivization and of reprivatization, respectively. *Hyperelasticity* occurs when the secondary shifts are greater than the primary ones. It is simpler to interpret this relation in terms of a perfect elasticity upon which is superimposed the simultaneous action of some additional factors—or external variables—in the direction of restitution. Alternative interpretations would be to assume imperfect or zero elasticity, or even hyperinelasticity simultaneously coupled with correspondingly more powerful additional factors of a similar type. The incidental occurrence of such additional institutional factors may be an interesting and important economic phenomenon. But its investigation would reach beyond the scope of the present discussion. Here we must be satisfied with simply stating the action of new factors and accordingly reducing hyperelasticity to relationships of perfect, imperfect, or zero elasticity. A similar reduction to the case of hyperinelasticity would not be logical and feasible, because such a case could likewise not be examined in the present context.

When *hyperinelasticity* occurs, the action of additional factors in the direction of the primary shift must be assumed. It will depend on the assumed strength of these new factors whether we couple their occurrence with a perfect inelasticity, or an imperfect or perfect elasticity of the economic structure. Coupling such an occurrence with a hyperelasticity would obviously not be helpful in simplifying or clarifying the explanation of the underlying structural phenomenon.

It is evident that perfect, imperfect, and zero elasticity of collectivization, on the one hand, and perfect, imperfect, and zero elasticity of reprivatization, on the other hand, may be linked not only in the above-mentioned connections but also in all other mathematically possible *combinations*. The factors of restitution may happen to be exactly the same for both the elasticity of collectivization and of reprivatization. We then have a rather exceptional, limiting case. It is much more likely, however, that the two sets of factors are different. In real economic development, it is imperfect elasticity of collectivization, coupled with another degree of imperfect elasticity of reprivatization, which most frequently occurs.

With the help of adequate mathematical methods, which are ex-

plained in Section XII of the Appendix, we can examine the meaning and significance of a *partial elasticity* of collectivization and reprivatization. Similar analytical investigations can be carried through with respect to the competitiveness and complementarity of the relations involved, as well as concerning the relevant case of *nonintegrability*. Thus we may also in this context visualize marginal rates of collectivization and of reprivatization, irrespective of the number of different types of want satisfaction with regard to which we explore problems of structural changes. But it will usually be only with respect to the case which does not involve more than two different types of gratification that we shall be able to indicate a whole iso-eupractical map and analyze the structural elasticity of a given economic system. Relative to three or more various types of want satisfaction, our interpretation of total and partial elasticities of collectivization and of reprivatization can be applied only in a restricted number of cases. It is probable that multidimensional structural relationships seldom satisfy the general *integrability* conditions.

Nevertheless, even when such conditions are not satisfied, small primary and secondary shifts of the economic structure can be considered from the viewpoint of the difference between the particular marginal rates of collectivization and reprivatization. As we have already mentioned, the fundamental idea involved in the formulas by which we express interdependences of responsiveness relative to iso-eupractical maps can also be utilized in the corresponding nonintegrability case. Likewise, in this general case, the analysis of total and partial elasticities can—with due qualifications—be based on the above-discussed ratios of the total and partial responsiveness of collectivization to the similar responsiveness of reprivatization, and vice versa. Further conclusions can be drawn, in a similar sense, concerning the homogeneity and heterogeneity of the pertinent partial elasticities, with respect to their competitiveness or complementarity. But we have to cope with the difficulty caused by the *asymmetry* which has already been stressed with regard to the structural responsiveness of economic systems in the nonintegrability case. The reason for this difficulty is quite obvious: it is to be expected that the elasticity of the economic structure cannot as clearly be expressed and as definitely be measured when we see only small and scattered changes as when we know the whole relevant structure of the economic system, *i.e.*, when our analysis

can refer to the more clear-cut properties of the integrability case. The relative difficulties which arise in connection with the case of non-integrability also occur in those cases in which we have no whole iso-eupractical map, although we consider only two various types of want satisfaction.

In the integrability case, the constant of integration reappearing as a result of the integration has a meaningful significance. We have seen that the level of communal welfare, to which the constant refers, is closely connected with the constant expressing the total costs of all gratifications in our corresponding communal budget equation. Thus we may assume that primary shifts in the structure of our iso-eupractical maps are caused by some preceding—and, therefore, only indirectly acting—displacements in the interdependences of the relevant particular *cost coefficients*. As soon as the possibility of any imperfect structural elasticity emerges, distinctive proportions among the various cost coefficients are brought into prominence, because such proportions —and certain economic factors acting in their background—largely account for the differences concerned. In other words, the former constants expressing our cost coefficients now act as distinctive parameters.

Since primary increases or decreases in any particular amounts of want satisfactions mostly reflect preceding displacements with regard to some of the particular cost coefficients, the above-discussed relations of responsiveness can more or less justly be linked to the cost of collectivization or of reprivatization. Accordingly, we are also justified in stressing the cost aspect of the corresponding structural elasticities. It is above all the cost coefficients of the various amounts of want satisfaction that directly or indirectly determine the quantitative relation between the primary and the contrarily directed secondary structural shifts in the economic system. Yet we must warn that such an emphasis can be only approximately correct and that it should not be interpreted in a sense which involves any overstated or one-sided conclusion. It especially cannot mean that the structural responsiveness and elasticity of economic systems refer *only* and exclusively to the cost relations between private-enterprise activities and collective planning. The proper meaning is that such relations usually play an important role in this respect. Utility and welfare cannot directly be measured, but aggregate and particular costs of want satisfactions, in terms of dollars,

can. Therefore, as soon as we look at structural changes of the economic system from realistic viewpoints, it is not the iso-eupractical maps but the pertinent communal budget equations on which we have to put the primary emphasis. This is the significance of the particular and total costs of gratifications, as parametrical constants, for the responsiveness and elasticity of collectivization and of reprivatization. The fundamental meaning also holds in the nonintegrability case, in which all various amounts of want satisfaction manifestly have their cost coefficients.

It is a further question to ask which economic factors act in the background of initial displacements in the cost structure concerned. There, spatial, temporal, and material factors are at work shaping the particular cost elements so that they necessitate an increasing—or decreasing—stress on collective planning. Such a primary shift automatically calls for corresponding adjustments in the private-enterprise sphere, and vice versa. In the *spatial* sense, it is the mobility of economic relationships which may alter and cause changes in the cost of particular want satisfactions. The *temporal* factor acts through the possibly changing degree of postponability or deferability which determines the various costs under discussion. In the *material* sense, changes with respect to the substance of goods and services available for the—direct or indirect—satisfaction of any particular wants, which may be nearer to the pure individual or absolute collective type, may essentially transform the cost coefficients. Natural events, social innovations, or technological improvements may be responsible for such a material transformability. Primary and secondary shifts in the economic structure may then ensue. By the intermediary of the changing cost coefficients, the responsiveness of collectivization and of reprivatization will express the extent to which the economic structure will react. The elasticity of collectivization and of reprivatization is imperfect, or there may be a corresponding hyperelasticity, perfect inelasticity, or hyperinelasticity, when the aforesaid spatial, temporal, and/or material factors lead to any differences between the functions which determine the magnitude of primary and of oppositely directed secondary shifts in the economic structure. The elasticity of the economic structure will be perfect, however, when such differences do not occur.

The obvious interdependences of the particular cost coefficients, the

aggregate communal cost of gratifications, and the relevant spatial, temporal, and material factors open *further perspectives* for the analysis of the economic structure. The main emphasis of such an analysis must be on the institutional aspect, for which purely formal considerations play only a minor role (cf. Chapters XIII and XIV).

Consequently, it is the *institutional* discussion of this topic for which the examination of two further relations must also be reserved: first, of the difficulties which structural changes frequently encounter when the responsiveness of collectivization and/or of reprivatization is small; and second, of the great socioeconomic dangers which may easily be connected with every structural change when the elasticity of collectivization and/or of reprivatization shows a small degree. In an abstract discussion, all we can indicate is a certain probability that on high levels of collective planning the marginal rates of collectivization will be, in the general and normal case, correspondingly great. We may add that when collective planning rapidly expands, the responsiveness of collectivization in the structure will probably show a corresponding tendency toward decreasing. The reciprocally related structural rigidity will accordingly increase. As another group of effects, we may state that on account of given sets of factors a high level of collectivization, connected with a rapid further shift toward collective planning, will probably bring about a more or less proportionally great elasticity of collectivization in the economic structure. On the other hand, even rapid progress toward collective planning on a low level of collectivization or slow further shifts toward collective planning on a high level of collectivization will probably be linked only to a small elasticity of collectivization. It is obvious that the appropriately conceived or constructed *reverse relationships* will lead to the statement of corresponding effects concerning the marginal rates, responsiveness, and elasticity of reprivatization in the economic structure. It is only a logical further step to say "vice versa," and to point out probable relevant effects in terms of a small or great structural rigidity or inelasticity of collectivization and reprivatization. The institutional and practical meaning of these relationships can be thrown into relief when we refer them to empirically observed fluctuations in the economic structure (cf. Chapter III).

APPENDIX TO PART TWO

MATHEMATICAL NOTATIONS AND FORMULAS

I

WE MAY denote the schematic percentual scale, which expresses *degrees of collectivization*, by $x_1, x_2, \ldots, x_n$. The subscripts indicate an increasing stress on collective planning. x_1 accordingly stands for the level of purely individual gratifications. $x_2, \ldots, x_{n-1}$ mark the level of mixed or partially controlled want satisfactions, which we arrange in an order of increasing collective emphasis. x_n expresses the level of entirely collective gratifications. With regard to the equal spacing of percentual degrees of collectivization between 0 and 100, we may suppose that $x_1 = 0$, and $x_n = 100$. The x_i are assigned to the appropriate percentual degrees. As an example, we may decide that $x_2 = 8$, $x_3 = 35$, and $x_{n-1} = 92$.

The various *types of want satisfaction* may be designated by $S_1, S_2, \ldots, S_n$. The problem of computing weighted average degrees of collective intervention results in an attempt to classify the S_i with the proper x_i.

In the *general case*, we may consider n different phases of the productive and distributive activities aimed at gratifying particular wants. We may relate these phases to their I percentual degrees of intensity of collective planning or of governmental intervention and to their D percentual grade of participation in the aggregate dollar cost of the ultimate want satisfaction concerned. Then we may express an approximately weighted average degree of collectivization by

$$\frac{I_1D_1 + I_2D_2 + \cdots + I_nD_n}{D_1 + D_2 + \cdots + D_n} = \frac{\sum_1^n (ID)}{100}$$

A numerical determination of the I and D or of any other relevant quantitative or qualitative factors of weighting with which we may choose to supplement this expression is usually difficult. The desirable level of mathematical accuracy can not always be reached. More than an *approximate* quantitative guidance can never be expected. But it may still be better than no mathematical analysis at all. The consideration of 100 as a possible value for the formula should be discarded, because in practical life S_{100} types of gratification, which rank with an x_{100} degree of collectivization, are not likely to be encountered.

Let us mark by s_i the actual *amount* of the S_i type of want satisfactions which we classify with the x_i degree of collectivization. Composite economic systems can then be expressed by

$$s_1, s_2, \ldots, s_n \tag{1}$$

This basic arrangement, or pattern, indicates the various amounts of gratification which are secured in the whole community on the corresponding levels of collective intervention.

For the purpose of assigning definite numbers to the s_i in (1), let us first consider all *quantitative* factors of weighting and designate the weighted average of their percentual importance for the aggregate communal welfare by k_{ij}, subject to $k_{ij} > 0$. Concerning the calculation of such weighted averages, we may coordinate the cost coverage, temporal coverage, and other quantitative indicators. We may consider coefficients which adequately express the differences in the relative significance of the cost items and the other quantitative factors. If s_i comprises the aggregate communal amount of $n_i = f_i$ particular gratifications, where f_i stands for the simple frequency of such gratifications, then $k_i = \sum_{j=1}^{f_i} k_{ij}$ gives the importance of the s_i computed only on the basis of the relevant quantitative factors.

From the viewpoint of the correspondingly pertinent *qualitative* factors, we may similarly consider $l_i = \sum_{j=1}^{f_i} l_{ij}$ as the qualitative importance of s_i. l_{ij}, where $l_{ij} > 0$, designates the weighted average of the percentual importance of all qualitative factors for the aggregate communal welfare, with regard to given amounts of particular gratifications. Yet we know that in real economic relations $k_i \gtreqless l_i$. We therefore may introduce a coefficient α when attempting to coordinate the k and the l within the same formula. If $-k_{ij}/l_{ij} < \alpha_{ij} \gtreqless 0$, and if A_{ij} stands for the quantitative and qualitative percentual importance of particular gratifications for the aggregate communal welfare, then we have

$$A_{ij} = \frac{k_{ij} + \alpha_{ij} l_{ij}}{2} \quad \text{and} \quad \frac{\sum_{j=1}^{f_i} k_{ij} + \sum_{j=1}^{f_i} \alpha_{ij} l_{ij}}{2} = \sum_{j=1}^{f_i} A_{ij} = s_i$$

In the domain of abstract speculations, we may conceive of cases in which $\alpha_{ij} \leqq -k_{ij}/l_{ij}$, and it may be illuminating to trace out the corresponding theoretical meaning of $s_i \leqq 0$. However, our general assumption is that the s in (1) take *only positive* values. We may evidently reverse the

relative positions of the quantitative and qualitative factors in our above two formulas and transfer the α coefficient from the l to the k, in which case it accordingly changes its admissible values into $-l_{ij}/k_{ij} < \alpha_{ij} \lesseqgtr 0$. In both cases, it is possible that either the significance of the qualitative factors or the importance of the quantitative considerations is relatively small due to the α coefficient and that either of them assumes even a negative value. From the corresponding viewpoints, only a small partial utility or even a partial disutility may then be connected with the gratifications concerned. Yet we assume that such a partial disutility cannot increase to a magnitude whereby it would entirely offset the positive utility, or communal welfare effect, of the other factors of weighting and accordingly reduce the total importance of any particular gratification or of the whole s_i to 0 or to a negative magnitude. Zero amounts of gratification are nonexistent, and they are accordingly meaningless as far as our (1) is concerned. Negative gratifications could be interpreted and regarded as diminishing the aggregate communal welfare. However, such an interpretation would by no means contribute to the clarification of the structural meaning of (1). It is more practicable to assume that "negative gratifications" simply result in an increase of the corresponding wants and to point out that (1) is not directly concerned with the origination, growth, and decline of the various types of wants. Our S and s directly refer only to the satisfaction of wants. Furthermore, we know that the definite numbers to be assigned to the s express percentual significances for the aggregate communal welfare. It would be meaningless to speak of negative percentages in this respect.

Our attempt at a *coordination* of various quantitative and qualitative factors of weighting includes intangible and arbitrary elements. Those who place no confidence in such elements and who refrain from any quantification of qualitative factors should only think of the s in terms of cost coverage and express them by the corresponding dollar expenditures on individual, mixed, and collective want satisfactions. Or else, they may rely on other alternative methods for a numerical computation of the s. In some respects (cf. p. 283 and p. 328), we explicitly refer to the necessary consideration of such other methods. The development of economic thought has frequently led on arduous paths. Future solutions of the underlying problem, which will probably be more efficient, might be facilitated by our emphasis on difficulties in the present attempt.

II

We may designate by $c_1, c_2, \ldots, c_n$ the dollar *cost* per unit of the s, so that $c_i s_i$ expresses the dollar cost of s_i in (1). The sum of all cs adds up to

the aggregate communal cost of want satisfactions, which we may denote by C. The level of the aggregate communal *welfare* may be marked by w.

With respect to the interdependence of w and the s, on the one hand, and of C and the c, on the other hand, we may examine the relation between w and C. These two magnitudes differ from each other not only in the nature and meaning of their components and in their units of measurement but also with regard to the way in which they depend on their *components*. C is composed of all cs, which stand for the aggregate cost of all particular gratifications classified with the various S and which can be measured in dollars. It follows that also C can be measured in dollars. On the other hand, the components of w are the s, which we measure in percentual degrees of their significance for w. While w is a function of the s capable of assuming various forms, C is a simple sum of the cs. In the full complexity of real economic life, it may easily occur that even extremely great communal efforts, sacrifices, and cost do not bring about a correspondingly high level of communal welfare. A great value of C is then connected with a small value of w. Moreover, C may further increase, while w may still go on decreasing, and vice versa. In such a case, there are no *proportionality* or positive reactions between the two magnitudes. An approximate relation of $s_i \propto c_i$ and $w \propto C$ must be subjected to two conditions in order to be used as a heuristic tool of analysis. First, the expression of the s must be restricted to the corresponding dollar cost. Second, we must assume a strictly rational economic attitude when referring to efforts and sacrifices as possible sources, or indicators, of communal welfare. But even then, we should refrain from sweeping generalizations which could lead to the unwarranted supposition of $c_i/s_i \propto C/w$, $c_i/s_i = C/w$, or to similarly misleading speculations.

III

It must be kept in mind with regard to (1) that the magnitudes $s_2, \ldots, s_{n-1}$, which are classified with $S_2, \ldots, S_{n-1}$ and $x_2, \ldots, x_{n-1}$, have a substantially greater *practical* purport than s_1 and s_n, which rank with S_1, x_1, and S_n, x_n, respectively.

Some of the *characteristic measures* which disclose relevant structural properties of (1) are the following:

$$\mathrm{M.} = \frac{\sum_1^n (sx)}{\sum_1^n s} \tag{1.1}$$

$$\text{H.M.} = \frac{\sum_1^n s}{\sum_1^n \left(s\frac{1}{x}\right)} \tag{1.2}$$

$$\sigma = \sqrt{\frac{\sum_1^n (sx'^2)}{\sum_1^n s}} \tag{1.3}$$

$$\beta_1 = \frac{\left[\sum_1^n (sx'^3)\right]^2}{\left[\sum_1^n s\right]^2 \sigma^6} \tag{1.4}$$

and

$$\beta_2 = \frac{\sum_1^n (sx'^4)}{\left[\sum_1^n s\right]\sigma^4} \tag{1.5}$$

The time series of empirically computed figures on p. 169, subject to the modified interpretation explained on p. 355, may be regarded as numerical examples for (1.1), (1.2), (1.3), (1.4), and (1.5).

In (1.3), (1.4), and (1.5), $x' = x_r - \text{M}$. That is, x' indicates the negative or positive distance between any particular score and the *arithmetic mean* M of (1.1). Chiefly on account of the reciprocal relationship between collectivization and reprivatization, we may be justified in referring our analysis, at least partially, to the *harmonic mean.* From the viewpoint of (1.3), it is obvious that we cannot interpret in a strictly mathematical sense the "purely" individual quality of s_1, which belongs to the extreme case $x_1 = 0$. It is more practical to compute *standard deviations* for the cases ranging from x_2 through x_{99}. With regard to (1.4), the *skewness* of (1) is negative if $\sum_1^n (sx'^3) < 0$, and it is positive if $\sum_1^n (sx'^3) > 0$. Concerning the kurtosis in (1.5), we have to evaluate

$$\beta_2 - 3 \approx 0 \tag{1.6}$$

If (1.6) holds, or if β_2 shows a *negative* excess in (1.6), (1) has an approximately well-balanced structure. One-sided structural features are revealed by a *positive* excess of β_2 in (1.6).

IV

As a *basic* function of communal welfare we have

$$w = \psi(s_1, s_2, \ldots, s_n) \tag{2}$$

Throughout our further analysis we retain the various x as fixed degrees of collectivization which do not vary and with which we classify our variables s. Consequently, we may avoid stressing $s = f(x)$, consider the s independent variables, and treat ψ in (2) as a simple function instead of dealing with it in terms of and according to the rules of functionals. In other words, we look only at the relative changes in the amounts of want satisfaction which are provided on fixed degrees of collectivization, and we examine among the various s only the relationship which is expressed by the function ψ in (2). As a starting point, we may also regard the s in (2) as independent of each other. Then necessary changes in our procedure of assigning definite numbers to the s must be made. Alternatively (cf. pp. 297, 300*ff.*, and pp. 334*ff.*), we may refer to the more realistic assumption of a mutual dependence of the s, which makes it easier to relate the procedure concerned to the percentual significance of the s for the w.

We may mark by $u^{(i)}$ the *utility* which any member of the community derives from all of his want satisfactions provided on the i degree of collectivization. $u_j^{(i)}$ thus comprises all gratifications which may be classified with the S_i, and which the jth member of the community obtains from the possession of any number and any amounts of goods and services. Concerning 1, 2, . . . , k various goods and services, $u_{j1}^{(i)}, u_{j2}^{(i)}, \ldots, u_{jk}^{(i)}$ will accordingly be the components of $u_j^{(i)}$. With regard to this meaning of the $u_j^{(i)}$, and to m members in the community, s_i depends on $u_1^{(i)}, u_2^{(i)}, \ldots, u_m^{(i)}$. When maximizing $u_j^{(i)}$, we make an attempt to keep $u_l^{(i)} (l \neq j)$ constant in order to avoid, as much as possible, interpersonal comparisons of utility.

Our *index*-function of communal welfare[1]

[1] We base this expression on the symbolism which V. Pareto used when defining his system of indexes I with reference to the arbitrary function F. He also related his I to the multidimensional indifference map $I = \psi(x,y,z, \ldots)$, which gives $I = F(\psi)$. For small changes of x, we have $\partial I/\partial x = F'\psi_x$ and after differentiation, since I is a constant, $0 = \psi_x F'dx + \psi_y F'dy + \psi_z F'dz + \cdots$ or, if $F' \neq 0$, $0 = \psi_x dx + \psi_y dy + \psi_z dz + \cdots$. (*Manuel d'économie politique*, Paris, 1909, pp. 541*ff.*). Pareto here (p. 540) refers to F. Y. Edgeworth (*Mathematical Psychics*, London, 1881), and P. Boninsegni ("I fondamenti dell' economia pura," *Giornale degli Economisti*, 1902) as his predecessors.

$$W = F(w) = F[\psi(s_1, s_2, \ldots, s_n)] \tag{2.1}$$

is subject to the condition

$$F'(w) > 0 \tag{2.2}$$

With respect to (2.1) and (2.2), we can readily see that

$$\frac{\partial W}{\partial s_1} = F'(w)\frac{\partial w}{\partial s_1}; \qquad \frac{\partial W}{\partial s_2} = F'(w)\frac{\partial w}{\partial s_2}; \qquad \cdots; \qquad \frac{\partial W}{\partial s_n} = F'(w)\frac{\partial w}{\partial s_n} \tag{2.3}$$

Referring (2.3) and (2.2) to the Paretean thesis of the proportionality of marginal utilities, we have

$$\frac{\partial W}{\partial s_1} : \frac{\partial W}{\partial s_2} : \cdots : \frac{\partial W}{\partial s_n} = \frac{\partial w}{\partial s_1} : \frac{\partial w}{\partial s_2} : \cdots : \frac{\partial w}{\partial s_n} \tag{2.4}$$

V

A *communal budget equation* may be expressed by

$$s_1c_1 + s_2c_2 + \cdots + s_nc_n = C \tag{3}$$

Our iso-eupractical *indifference map*, which is inherently connected with (2) and (3), assumes the general form

$$\psi(s_1, s_2, \ldots, s_n) = \text{constant} \tag{3.1}$$

The connection between (3) and (3.1) is manifestly given by the above-discussed interdependence of s_i, c_i, C, and w, with respect to (2) and (2.1).

While (3.1) relates to the multidimensional case, we may also consider a corresponding *two-dimensional* relation. Consequently, we may restrict our investigation to the relationship between the s_g amounts of "relatively individual," and the s_h amounts of "relatively collective," gratifications. For example, s_2 in (1) may thus take the role of s_g. Then, s_3 or s_4 in (1) necessarily take on the meaning of s_h. In a general sense, if we express s_g, with reference to (1), as s_{n-k} then s_h will be s_{n-l}, subject to $n > k > l \geq 0$. The particular difficulty which we have mentioned with respect to a percentual expression of the relevant s (cf. pp. 283 and 324) should be taken into account.

If the values of σ in (1.3) are high, and the values of β_1 in (1.4) and β_2 in (1.5) are low, then our iso-eupractical indifference surfaces, with respect to the s in (3.1), are likely to be *convex* to the origin. But the surfaces will probably be concave to the origin if the σ have a low value and if the β_1 and β_2 reveal high values.

VI

With regard to (2) and (3), where w is a variable (cf. pp. 327 and 328),

$$dw = \psi_1 ds_1 + \psi_2 ds_2 + \psi_3 ds_3 + \cdots + \psi_n ds_n = 0 \tag{4}$$

subject to the side relation

$$c_1 ds_1 + c_2 ds_2 + c_3 ds_3 + \cdots + c_n ds_n = 0 \tag{5}$$

gives the *maximum communal welfare* which can be derived from all want satisfactions if

$$\begin{aligned} d^2w = {} & \psi_{11} ds_1^2 + \psi_{12} ds_1 ds_2 + \psi_{13} ds_1 ds_3 + \cdots + \psi_{1n} ds_1 ds_n \\ & + \psi_{12} ds_1 ds_2 + \psi_{22} ds_2^2 + \psi_{23} ds_2 ds_3 + \cdots + \psi_{2n} ds_2 ds_n \\ & \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots \\ & + \psi_{1n} ds_1 ds_n + \psi_{2n} ds_2 ds_n + \psi_{3n} ds_3 ds_n + \cdots + \psi_{nn} ds_n^2 \end{aligned} \tag{6}$$

is a negative definite quadratic form in the ds_i which are connected by the relation (5). We assume that the partial derivatives

$$\psi_p = \frac{\partial w}{\partial s_p} \quad \text{and} \quad \frac{\partial^2 w}{\partial s_p \partial s_t} \quad (p \text{ and } t = 1,2,3, \ldots, n) \tag{7}$$

exist and are continuous. Then, a sufficient condition is

$$\begin{vmatrix} 1 & \frac{\psi_2}{\psi_1} \\ \frac{\partial}{\partial s_1}\left(\frac{\psi_2}{\psi_1}\right) & \frac{\partial}{\partial s_2}\left(\frac{\psi_2}{\psi_1}\right) \end{vmatrix} < 0, \quad \begin{vmatrix} 1 & \frac{\psi_2}{\psi_1} & \frac{\psi_3}{\psi_1} \\ \frac{\partial}{\partial s_1}\left(\frac{\psi_2}{\psi_1}\right) & \frac{\partial}{\partial s_2}\left(\frac{\psi_2}{\psi_1}\right) & \frac{\partial}{\partial s_3}\left(\frac{\psi_2}{\psi_1}\right) \\ \frac{\partial}{\partial s_1}\left(\frac{\psi_3}{\psi_1}\right) & \frac{\partial}{\partial s_2}\left(\frac{\psi_3}{\psi_1}\right) & \frac{\partial}{\partial s_3}\left(\frac{\psi_3}{\psi_1}\right) \end{vmatrix} > 0, \ \ldots \tag{8}$$

Let us substantiate and explain the meaning of this derivation with respect to the necessary and sufficient conditions involved.

VII

An inspection of (2.4), with respect to its interdependence with (3.1) and to the ratios of marginal utilities of the s (cf. pp. 328*ff.*), leads us to an aspect of collectivization and reprivatization from which we may omit, for the time being, the cost coefficients c of the s. This aspect suggests the ratios

$$\frac{\psi_2}{\psi_1}, \frac{\psi_3}{\psi_1}, \ldots, \frac{\psi_n}{\psi_1} \tag{3.2}$$

They express the numerical value of those additional amounts of the want satisfaction s_i which are required in order to keep the aggregate welfare

of the community unchanged, when a small reduction is made in s_1, s_2, . . . , s_{i-1}, s_{i+1}, . . . , s_n. Relative to the particular case of only two given want satisfactions, with downward sloping, convex indifference curves, and to their partial derivatives, where $g < h$, we have

$$\psi(s_g, s_h) = \text{constant} \tag{3.3}$$

$$\psi_g = \frac{\partial w}{\partial s_g} \quad \text{and} \quad \psi_h = \frac{\partial w}{\partial s_h}$$

$$\psi_g ds_g + \psi_h ds_h = 0$$

$$\frac{ds_h}{ds_g} = -\frac{\psi_g}{\psi_h}$$

$$-\frac{ds_h}{ds_g} = \frac{\psi_g}{\psi_h} = \rho \tag{3.4}$$

and

$$\frac{\psi_h}{\psi_g} = \frac{1}{\rho} = \tau \tag{3.5}$$

In this two-dimensional relationship ρ is the *marginal rate of collectivization*, while τ expresses the marginal rate of *reprivatization*.

Our corresponding *general* formula for the marginal rate of reprivatization is

$$\frac{\psi_{n-k}}{\psi_{n-l}} = \mathrm{T}_{n-k,n-l} \qquad (n > l > k > 0) \tag{3.6}$$

where all partial derivatives of $\psi > 0$. This formula expresses all possible combinations of reprivatization, considering *two* different types of want satisfaction at a time, as we gradually decrease the value of k from $n - 2$ toward 0 and the value of l within the whole admissible range. We may readily expand the general rate of reprivatization and consider, on a similar basis, more than two different types of want satisfaction at a time, with regard to small changes which may occur in one or several s.[2]

[2] This is the case for an application of pertinent combinations which consider 3, 4, . . . , n various types of want satisfaction at a time. Then, as a general formula of the marginal rate of reprivatization, taking *more than two* variables at a time, we have

$$\mathrm{T} = \frac{\psi_{n-k_1}\psi_{n-k_2} \cdot \cdot \cdot \psi_{n-k_r}}{\psi_{n-l_1}\psi_{n-l_2} \cdot \cdot \cdot \psi_{n-l_t}} \quad (l_j > \max(k_1, k_2, \cdot \cdot \cdot, k_r) \text{ for } j = 1, 2, \cdot \cdot \cdot, t;\ 1 \leq r, t < n;\ k_1 \neq k_2 \neq \cdot \cdot \cdot \neq k_r;\ l_1 \neq l_2 \neq \cdot \cdot \cdot \neq l_t) \tag{3.6a}$$

This formula has a meaning similar to the meaning of (3.6), but it includes the consideration of small changes in more than two s in (3.1). Accordingly, (3.6*a*) is the ratio of two products of first partial derivatives of w with respect to different s. The conditions to which this ratio is subject are meant to express the postulate

Since τ is the reciprocal of ρ, we may generalize (3.5) into the general formula of the marginal rate of *collectivization*, which is

$$\frac{\psi_{n-l}}{\psi_{n-k}} = \mathrm{P}_{n-l,n-k} \tag{3.7}$$

subject to the same restrictions as (3.6). This formula may also be expanded by mathematical tools similar to those which we mentioned relative to the general formula of the marginal rate of reprivatization.[3]

Since both C and c (cf. p. 328) are parametric constants and since the variables clearly display a *linear* relation to each other in (3), it is evident that

$$d^2s_1 = d^2s_g = d^2s_h = 0 \tag{5.1}$$

Now using (4) and (5) as the necessary conditions for a maximum (cf. p. 329), the sufficient condition for a maximum of w, that is, for the highest level of communal welfare on a given C level of aggregate efforts, is satis-

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that all partial derivatives in the numerator refer to "more collective" s than any of the partial derivatives in the denominator. If we now consider m variables which are nearer to the purely individual type of want satisfaction and $n - m$ want satisfactions which are more of the collective type, then the number of formulas (3.6*a*) will be

$$\binom{m}{r}\binom{n-m}{t} \equiv \frac{m!(n-m)!}{r!t!(m-r)!(n-m-t)!} \quad [1 \leq r \leq m < n;\ 1 \leq t \leq (n-m)] \tag{3.6b}$$

As the general formula for all possible small changes in (1), irrespective of any particular emphasis on collectivization or reprivatization, we have

$$v = \frac{\psi_{a_1}\psi_{a_2} \cdot \cdot \cdot \psi_{a_u}}{\psi_{b_1}\psi_{b_2} \cdot \cdot \cdot \psi_{b_v}} \quad (1 \leq u, v < n;\ a_i, b_j = 1, 2, 3, \ldots, n;\ a_i \neq a_j \neq b_i \neq b_j) \tag{3.6c}$$

The possible number of formulas (3.6*c*) will be

$$\binom{n}{r}\left(2^r - 2\right) = 2\binom{n}{r}\left(2^{r-1} - 1\right) \quad (2 \leq r = (u+v) \leq n) \tag{3.6d}$$

[3] Formula (3.7) considers *two* various forms of want satisfaction at a time. The general formula of the marginal rate of collectivization, taking *more than two* variables at a time, is

$$\mathrm{P} = \frac{\psi_{n-l_1}\psi_{n-l_2} \cdot \cdot \cdot \psi_{n-l_t}}{\psi_{n-k_1}\psi_{n-k_2} \cdot \cdot \cdot \psi_{n-k_r}} \tag{3.7a}$$

subject to the same conditions as (3.6*a*). Incidentally, (3.7*a*) obviously is the reciprocal of (3.6*a*).

fied if (6) is a negative definite quadratic form in the ds_i which are connected by the relation (5).

With regard to the established relation between (6), on the one hand, and (4) and (5), on the other hand, as the *direct test* of (6) being a negative definite quadratic form we have the "bordered" determinant inequalities[4] which can readily be obtained from the discriminant of (6)

$$\begin{vmatrix} 0 & \psi_1 & \psi_2 \\ \psi_1 & \psi_{11} & \psi_{12} \\ \psi_2 & \psi_{12} & \psi_{22} \end{vmatrix} > 0, \qquad \begin{vmatrix} 0 & \psi_1 & \psi_2 & \psi_3 \\ \psi_1 & \psi_{11} & \psi_{12} & \psi_{13} \\ \psi_2 & \psi_{12} & \psi_{22} & \psi_{23} \\ \psi_3 & \psi_{13} & \psi_{23} & \psi_{33} \end{vmatrix} < 0, \ \ldots \qquad (6.2)$$

The ratios expressed by (3.2) are evidently independent of any cardinal measurability in the particular form of the welfare functions of which our determinant inequality (6.2) is composed. Accordingly, there may be non-measurable elements in (6.2). They can be eliminated, however, by developing this formula into a determinant inequality which refers only to

[4] Concerning a similar usage of determinants by V. Pareto, cf. *Manuel d'économie politique*, Paris, 1909, pp. 577*ff*. An appropriate further development of this method in economic analysis has been presented by H. Schultz, "Interrelations of Demand," *Journal of Political Economy*, Vol. 41, 1933, pp. 477*ff*; J. R. Hicks and R. G. D. Allen, "A Reconsideration of the Theory of Value," *Economica*, Vol. 1, 2d series, 1934, pp. 203*ff*; H. Hotelling, "Demand Functions with Limited Budgets," *Econometrica*, Vol. 2, 1935, pp. 71*ff*; R. G. D. Allen, *Mathematical Analysis for Economists*, London, 1938, pp. 481*ff*; J. R. Hicks, *Value and Capital*, Oxford, 1939, pp. 304*ff*. and 315*ff*.; and H. T. Davis, *The Theory of Econometrics*, Bloomington, 1941, pp. 66*ff*. and 170, where reference is made to Hicks. As an alternative method for finding a maximum of (2) under restriction (3), we may solve (3) for one of the variables and substitute in (2). We then have a function f of $n-1$ independent variables, for which the usual test for a maximum holds. This test is

$$dw = f_1 ds_1 + \cdots + f_{n-1} ds_{n-1} = 0$$
$$d^2w = \sum_{i,j=1}^{n-1} f_{ij} ds_i ds_j < 0$$

Accordingly, as an alternative sufficient condition of a maximum aggregate welfare we have

$$f_{11} < 0, \qquad \begin{vmatrix} f_{11} & f_{12} \\ f_{21} & f_{22} \end{vmatrix} > 0, \qquad \begin{vmatrix} f_{11} & f_{12} & f_{13} \\ f_{21} & f_{22} & f_{23} \\ f_{31} & f_{32} & f_{33} \end{vmatrix} < 0, \ \ldots \qquad (6.1)$$

Here we do not necessarily depend on the linearity of the function in the side relation. However, with regard to the essentially linear structure of (3), we may preferably use the bordered form in (6.2).

the corresponding marginal rates of collectivization or reprivatization. From (3.2) we have

$$\frac{\partial}{\partial s_1}\left(\frac{\psi_2}{\psi_1}\right) = \frac{\psi_{12}\psi_1 - \psi_{11}\psi_2}{\psi_1^2}, \qquad \frac{\partial}{\partial s_2}\left(\frac{\psi_2}{\psi_1}\right) = \frac{\psi_{22}\psi_1 - \psi_{12}\psi_2}{\psi_1^2}, \quad \ldots \tag{6.3}$$

We may now assume that our particular welfare functions, which have been given a positive meaning throughout our whole present analysis, retain the character of positive functions also in this case. Consequently,

$$\psi_1 > 0, \qquad \psi_2 > 0, \qquad \psi_3 > 0, \qquad \ldots, \qquad \psi_n > 0 \tag{6.4}$$

Our determinant inequalities (8) will be the *suitable reduction* of the sufficient condition (6.2) for which we are here looking. It expresses an equilibrium in the allocation of aggregate efforts to the various types of want satisfaction which meets the general requirements of stability. It contains only marginal rates of alternative changes, which make it independent of any difficulties about the measurability of the welfare concept. From (4) and (5), which involve our necessary conditions, it can be seen that

$$\frac{\psi_1}{\psi_2} = \frac{c_1}{c_2}; \qquad \frac{\psi_2}{\psi_3} = \frac{c_2}{c_3}; \qquad \ldots; \qquad \frac{\psi_{n-1}}{\psi_n} = \frac{c_{n-1}}{c_n} \tag{8.1}$$

In other words, the marginal rates concerned equal the ratios of cost per unit of the corresponding various amounts of want satisfaction. Accordingly, the stability which is expressed by (8) includes the various allocations of effort with regard to all particular cost items.

The connotation of (8) indicates marginal rates of reprivatization, while in (8.1) we refer to marginal rates of collectivization. This argument can be *extended* and equally applied to all similar changes, as expressed by the general formulas of the marginal rates of collectivization and reprivatization in (3.7), (3.7*a*), (3.6), and (3.6*a*), respectively. Therefore, the satisfaction of the determinant inequalities (8) furnishes us an over-all formula for the stability under discussion.

With respect to (3.3), which refers to only two dimensions (cf. p. 330), we have

$$C = s_g c_g + s_h c_h \tag{8.2}$$

The corresponding contour map reveals downward sloping and parallel straight lines. From the viewpoint of the structural stability involved, we may advantageously evaluate the tangency[5] of these straight lines to the

[5] The student may find an early evaluation of a similarly interpreted tangency between indifference curves and straight lines, with regard to problems of utility and demand, in the first book of F. Y. Edgeworth, (*Mathematical Psychics*, London, 1881, reprinted by the London School of Economics, London, 1932, pp. 113*ff*.

relevant indifference curves in (3.3). We may inspect, from similar viewpoints, the relationship between the generalized indifference map (3.1) and the generalized budget equation (3), as well as between our two "necessary conditions" (4) and (5). It is easy to see that the argument can be applied to the case of n various types of want satisfaction and to the shape of any corresponding iso-eupractical hyper-surfaces. Their "*convexity*" within the relevant range and their "*downward sloping shape*" are implicitly indicated by the stability conditions which we express in our determinant inequalities (8).

VIII

If we consider s_g and s_h elements of a set like (1), and denote them by α and β, we may further analyze them with the powerful tools of the modern set theory. Like s_g and s_h, α and β, too, must be taken as measurable in the ordinal sense. Then, the interplay of the forces which act on behalf of α and β, and which we accordingly may refer to these two variables, can be examined by means of a sequence of distinct steps. Every such step, which necessarily involves a shift toward collectivization or reprivatization, may also be regarded as measurable in the ordinal sense. With respect to this type of analysis, however, total welfare may again be treated as a constant; that is, the object of investigation may be exclusively the changing relationship between the variables α and β. Let V measure the degree of reprivatization. By $V(\alpha,\beta) = 0$, we may denote any given

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and 139*ff.*). He bases his analysis on the "law of indifference" of W. S. Jevons (*Theory of Political Economy*, London, 1871, 3d edition, London, 1888, pp. 98*ff.*). M. Pantaleoni (*Manuale di Economia pura*, Milano, 1889, English translation "Pure Economics," London, 1898, pp. 217*ff.* and 266*ff.*) has further developed the same viewpoint with closer reference to Jevons and to the two laws of H. H. Gossen (*Entwicklung der Gesetze des menschlichen Verkehrs und der daraus fliessenden Regeln für menschliches Handeln*, Brunswick, 1854, reprinted in Berlin, pp. 4*ff*). It was, however, I. Fisher (*Mathematical Investigations in the Theory of Value and Prices*, New Haven, 1892, new edition New Haven, 1926, pp. 70*ff.*) who first analyzed several details of the tangency concerned and explained the pertinent meaning of preference directions as well as of the convexity of indifference curves and surfaces. He was able to utilize the previous findings of R. Auspitz and R. Lieben in this field (*Untersuchungen über die Theorie des Preises*, Leipzig, 1889, pp. 170*ff.*). As a next step, W. E. Johnson ("The Pure Theory of Utility Curves," *Economic Journal*, Vol. 23, 1913, pp. 488*ff.*) improved the curve and tangent analysis of Edgeworth and elaborated the meaning of the type of functions as represented by (8.2). Two years later, E. Slutsky published his article ("Sulla teoria del bilancio del consumatore," *Giornale degli Economisti*, Vol. 51, 1915), which gave rise to the "Slutsky School" (cf. R. G. D. Allen, "Professor Slutsky's Theory of Consumer's Choice," *Review of Economic Studies*, Vol. 2, 1934–1935, pp. 155*ff.*).

equilibrium between private enterprise and collective planning. Then, a positive V means an increased degree of reprivatization, and a negative V has the opposite meaning, that is, increased collectivization. If we further assume that small changes in the forces working on behalf of the private-enterprise system or of collective planning produce only small changes in the degree of reprivatization or collectivization, then we may imagine $V(\alpha,\beta)$ as a two-dimensional surface in an ordinary three-dimensional space.

It may happen that an expansive action or move on behalf of α is anticipated by the forces which act on behalf of β, and vice versa. If this involves no advantage for the relevant forces, we may indicate, after von Neumann and Morgenstern, a strictly determined relationship and, otherwise, a nonstrictly determined relation. In the *strictly determined* case, which we may consider first, let us denote by A the forces which work for an expansion of the private-enterprise system and which endeavor to maximize V, and by B the opposite forces of collectivization which seek to minimize V. For each value α_k, where α_k refers to a definite action or move that A chooses, it can be predicted what the value of $V(\alpha,\beta)$ will be—namely, Min $V(\alpha_k,\beta)$. A aims to maximize this quantity. Accordingly, A will act so that $\text{Max}_\alpha \text{Min}_\beta V(\alpha,\beta)$ is achieved. Here we assume that A makes the first move in question. If, however, B makes the first move, then a β will be chosen so as to minimize the $\text{Max}_\alpha V(\alpha,\beta)$. B will consequently pick β so that $\text{Min}_\beta \text{Max}_\alpha V(\alpha,\beta)$ is achieved. Since we prescribed that there was no advantage if A or B found out the strategy of the other, or that it does not matter who acts first, we must have[6]

$$\text{Max}_\alpha \text{Min}_\beta V(\alpha,\beta) = \text{Min}_\beta \text{Max}_\alpha V(\alpha,\beta) \tag{9}$$

Geometrically, the problem is to choose an α so that a maximum V is obtained, knowing that, after α is fixed, β is varied so as to minimize V. The surface must be saddle shaped for this problem to be soluble, and the value of α that is chosen must be the value at the saddle point. Also β takes on the value where we have the saddle point. A further application of the pertinent methods of von Neumann and Morgenstern would show that the interplay under discussion can be analyzed in a similar manner for any further actions or moves of A and B.

In the alternative case of a *non strictly determined* relation, an advantage is gained, if the moves of the opponent are found out. Therefore, both A and B will try to keep their strategy from being discovered. The only way in which this can be done with assurance is not to have a "strategy"

[6] Cf. J. von Neumann and O. Morgenstern, *Theory of Games and Economic Behavior*, Princeton, 1944, p. 92.

or a fixed sequence of moves.[7] The method to choose a move is to assign to each possible move a probability and then to choose that move which chance has dictated. This is still quite general, because any particular strategy can still be followed simply by assigning probability = 1 to it, and probability = 0 to the rest. So let us suppose that A has strategies $\alpha_1, \ldots, \alpha_n$ available with probabilities $p_1, \ldots, p_n$ and B has strategies $\beta_1, \ldots, \beta_m$ with probabilities $q_1, \ldots, q_m$, where $p_k, q_k \geq 0$ and $\sum_1^n p_k = \sum_1^n q_k = 1$. Since their choices are, at this stage, independent, the expectation of the additional amount of reprivatization is

$$E(p,q) = \sum_{k=1}^{n} \sum_{l=1}^{m} (\alpha_k,\beta_l)p_k q_l \tag{10}$$

To this function $E(p,q)$ we can apply the same argument as to $V(\alpha,\beta)$ and thus obtain, as an analogy with (9), the solution[8]

$$\mathrm{Max}_p \mathrm{Min}_q E(p,q) = \mathrm{Min}_q \mathrm{Max}_p E(p,q) \tag{11}$$

With regard to the multidimensional structure of (1), a similar analysis of the interdependencies of $\alpha_1, \ldots, \alpha_n$ variables, and $A_1, \ldots, A_n$ corresponding forces acting on their behalf and aimed at their expansion, is more important than the consideration of only two variables. The mathematical difficulties which here arise can be overcome by means of considering coalitions, *i.e.*, by the assumption that the acting forces form into two groups, where each group has some more or less unified plan of action. With the help of such an assumption, the fundamental principles on which (9) and (11) are based can also here be utilized.[9] Furthermore, since the various amounts of want satisfaction in (1) are composite vari-

[7] *Ibid.*, p. 144.

[8] *Ibid.*, pp. 149 and 153.

[9] This is indicated by the formula

$$v(S) = \mathrm{Max}_{\vec{\xi}} \mathrm{Min}_{\vec{\eta}} K(\vec{\xi}, \vec{\eta}) = \mathrm{Min}_{\vec{\eta}} \mathrm{Max}_{\vec{\xi}} K(\vec{\xi}, \vec{\eta}) \tag{12}$$

which von Neumann and Morgenstern present in their examination of zero sum n-person games (*ibid.*, p. 240). $\vec{\xi}$ here stands for the range of probability values associated with all possible strategies of T, and $\vec{\eta}$ stands for the corresponding strategies of T' where T means a given group of A_j, and T' the coalition formed by all remaining $A_j (j = 1,2,3, \ldots, n)$ groups. $K(\vec{\xi}, \vec{\eta})$ denotes the expectation of the additional degree of reprivatization, and $v(S)$ accordingly expresses the value of the whole set, as it changes with respect to the strategies in question.

ables, it might help to regard them as subsets within the superset (1) and to analyze them from the viewpoint of *systems or aggregates of sets.* In this respect, too, stimulating analogies relative to structural changes may be found with the help of the economic strategies elaborated by von Neumann and Morgenstern.

IX

The formulas (3.6*a*), (3.7*a*), and (3.6*c*) are appropriate starting points (cf. pp. 330*ff*) for an analysis of multidimensional relationships involving structural responsiveness. If

$$\frac{s_u}{s_v} = \frac{s_{n-l_1} s_{n-l_2} \cdot \cdot \cdot s_{n-l_t}}{s_{n-k_1} s_{n-k_2} \cdot \cdot \cdot s_{n-k_r}} \tag{3.7b}$$

subject to the same conditions as (3.6*a*), then

$$\mathrm{H} = \frac{(s_u/s_v)d(s_v/s_u)}{(1/P)dP} \tag{13}$$

is our general formula for the *responsiveness of collectivization.* (3.7*b*) is a ratio of products of various s in (3.1). With respect to the relationship between numerator and denominator, this ratio has a meaning similar to the meaning of the ratio in (3.7*a*). In other words, all s in the numerator of the ratio in (3.7*b*) are "more individual" than any s in the denominator. This is specified by the conditions to which the subscripts in (3.7*b*) are subject. With respect to (3.6*a*),

$$\mathrm{O} = \frac{(s_v/s_u)d(s_u/s_v)}{(1/\mathrm{T})d\mathrm{T}} \tag{14}$$

subject to the same conditions as (13), gives the general formula for the *responsiveness of reprivatization.*[10]

Our basic assumption not only concerning (13) and (14) but also relating to (3.6*c*) evidently is that the shifts concerned are small and that

[10] At first sight, we could be inclined to assume that the number of possible ormulas (13) and (14) is

$$\binom{m}{r}^2 \binom{n-m}{t}^2$$

subject to the same conditions as (3.6*b*). This assumption would be based on an approach which regards the subscripts of the variables s in (3.7*b*) as different from those of the ψ in (3.6*a*) and (3.7*a*). We must realize, however, that such an assumption would necessarily refer to various hyper-planes as sections of the hypersurfaces in (3.1), which would deprive (13) and (14) of their proper meaning in the present application. We consequently have to rely on the same subscripts for the s in (3.7*a*) as well as for the ψ in (3.6*a*) and (3.7*a*). Therefore, the number of possible formulas (13) and (14) is also expressed by (3.6*b*).

such adjustments are made with regard to the magnitude of any other want satisfactions so as to keep the total welfare of the community on a constant—iso-eupractical—level. Consequently, (3.6*c*) denotes the *marginal rate of substitution*, that is, of any substitutive shifts with respect to the iso-eupractical hyper-surfaces in (3.1). The corresponding *responsiveness of substitution* of these hyper-surfaces is

$$\pi = \frac{(s_a/s_b)d(s_b/s_a)}{(1/\nu)d\nu} \tag{15}$$

where[11]

$$\frac{s_a}{s_b} = \frac{s_{a_1}s_{a_2} \cdot \cdot \cdot s_{a_\nu}}{s_{b_1}s_{b_2} \cdot \cdot \cdot s_{b_\nu}} \tag{15.1}$$

subject to the same conditions as (3.6*c*).

Then, the difference between (13) and (14) on the one hand and (15), on the other hand, is that the latter stands on a higher level of generalization inasmuch as it refers to and comprises all possible processes pertaining to the total and *partial* responsiveness of collectivization as well as of reprivatization.

A suitable expression for the partial responsiveness of collectivization with regard to only *two* particular amounts of want satisfaction is given by

$$\mu_{gh} = \frac{s_1\psi_1 + s_2\psi_2 + \cdot \cdot \cdot + s_n\psi_n}{s_g s_h}\frac{A_{gh}}{A} \quad (g < h = 2,3, \ldots, n) \tag{15.3}$$

where A_{gh} is the cofactor of ψ_{gh} in the determinant

$$A = \begin{vmatrix} 0 & \psi_1 & \psi_2 & \cdot \cdot \cdot & \psi_n \\ \psi_1 & \psi_{11} & \psi_{12} & \cdot \cdot \cdot & \psi_{1n} \\ \psi_2 & \psi_{12} & \psi_{22} & \cdot \cdot \cdot & \psi_{2n} \\ \cdot & \cdot & \cdot & & \cdot \\ \cdot & \cdot & \cdot & & \cdot \\ \cdot & \cdot & \cdot & & \cdot \\ \psi_n & \psi_{1n} & \psi_{2n} & \cdot \cdot \cdot & \psi_{nn} \end{vmatrix} \tag{15.4}$$

Since (15.3) is perfectly symmetrical in s_g and s_h, $\mu_{gh} \equiv \mu_{hg}$ also expresses the corresponding partial responsiveness of reprivatization.

[11] The number of possible formulas (1.5) would also here be

$$4\binom{n}{r}^2\left(2^{r-1} - 1\right)^2 \tag{15.2}$$

subject to the same conditions as (3.6*d*), if the subscripts of the variables s in (15.1) were different from those of the ψ in (3.6*c*). However, since they are necessarily the same subscripts in both cases, the number of possible formulas (15) is also given by (3.6*d*).

We may further restrict the scope of our analysis and consider only *one* particular type of want satisfaction, with respect to the proportion of aggregate social sacrifice which must be made and allocated to it on an iso-eupractical level. Recalling the interrelationship of our s and the cost parameters c and C, we may express an equilibrium position by the following:

$$\lambda_a = \frac{s_a\psi_a}{s_1\psi_1 + s_2\psi_2 + \cdots + s_n\psi_n} = \frac{s_ac_a}{s_1c_1 + s_2c_2 + \cdots + s_nc_n} = \frac{s_ac_a}{C} \quad (a = 1, 2, \ldots, n) \quad (15.5)$$

It is evident that (15.5) cannot indicate any special direction toward collectivization or reprivatization, although it may successfully be applied to the analysis of both of these processes.[12]

When we consider only two various types of want satisfaction at a time, that is, when $m = 2$, then the number of the *competitive* cases concerned can be 1 to $n(n-1)/2$, while the number of *complementary* cases ranges between 0 and $\frac{n(n-1)-2}{2}$. Generalizing for $n \geq m \geq 2$, we may have 1 to $\binom{n}{m}\left(2^{m-1}-1\right)$ competitive, and 0 to $\binom{n}{m}\left(2^{m-1}-1\right)-1$ complementary cases.

X

With respect to (3.3), (3.4) and (3.5) our general formulas (13) and (14) may be reduced to the following *two-dimensional* and simpler shapes, both of them subject to $g < h$:

[12] The method on the application of which (15.3), (15.5) and some of our pertinent viewpoints are based, has been elaborated by R. G. D. Allen with respect to production functions and to problems of consumer demand (cf. *Mathematical Analysis for Economists*, New York, 1939, pp. 504*ff.*). In this respect and with the help of certain qualifications (*ibid.*, pp. 508*ff.*), he has also ascertained that $\mu_{gh} > 0$ and $\mu_{gh} < 0$ may express the competitiveness and the complementarity, respectively, of the factors concerned. Such qualifications, however, could not readily be referred to the present case. It is more nearly adequate if we simply rely on the difference between positive and negative marginal rates of collectivization. $\psi_g/\psi_h > 0$ thus indicates a corresponding competitiveness, and $\psi_g/\psi_h < 0$ is the condition of complementarity, if the hyper-surfaces in (3.1) lie on one side of the tangent planes in the neighborhood of the points under consideration. In a similar sense, the marginal rates of reprivatization can also be used as suitable indicators.

$$\eta = \frac{(s_g/s_h)d(s_h/s_g)}{(1/\rho)d\rho} \tag{13.1}$$

$$\theta = \frac{(s_h/s_g)d(s_g/s_h)}{(1/\tau)d\tau} \tag{14.1}$$

Since $y''/(1+y'^2)^{3/2}$ is the conventional analytical expression of the *curvature* in $y = f(x)$ (cf. L. M. Kells, *Calculus*, 7th printing, New York, 1946, pp. 180–182, or G. H. Hardy, *A Course of Pure Mathematics*, 7th edition, Boston, 1938, p. 299) from (3.3) we have

$$s_h' = -\frac{\psi_g}{\psi_h}$$

$$s_h'' = \frac{-(\psi_{gg}\psi_h^2 - 2\psi_g\psi_h\psi_{gh} + \psi_{hh}\psi_g^2)}{\psi_h^3}$$

$$K = \frac{\dfrac{-(\psi_h^2\psi_{gg} - 2\psi_g\psi_h\psi_{gh} + \psi_g^2\psi_{hh})}{\psi_h^3}}{\left(\dfrac{\psi_g^2 + \psi_h^2}{\psi_h^2}\right)^{3/2}} = \frac{-\psi_h^2\psi_{gg} + 2\psi_g\psi_h\psi_{gh} - \psi_g^2\psi_{hh}}{(\psi_g^2 + \psi_h^2)^{3/2}} \tag{16}$$

If our equation is in the form $g(x,y) =$ constant, which in general cannot easily be solved for y, then (16) seems to be preferable to the method of denoting the curvature of indifference curves by the second derivative of one variable with respect to the other variable. The latter method, on which econometricians usually depend (*e.g.*, Allen, pp. 342*ff.*), would give d^2s_h/ds_g^2 for (3.3). To be sure, this formula is more suitable for the solution of many other problems in economics, because the analytical expression of curvature on which we base (16) is not invariant with respect to changes in the underlying relative scales.

It is evident that when K in (16) is zero, η in (13.1) and θ in (14.1) are "infinitely" great. Likewise, when K in (16) is "infinitely" great, η in (13.1) and θ in (14.1) become equal to zero. Concerning (3.3) we may assume a *homogeneity* of the first degree of the function ψ (cf. pp. 300 and 307). Such an assumption would lead to

$$\eta = \theta = \frac{\psi_g\psi_h}{w\psi_{gh}} = \frac{(\partial w/\partial s_g)(\partial w/\partial s_h)}{w\,\dfrac{\partial^2 w}{\partial s_g \partial s_h}} \tag{17}$$

It is understood that, according to Euler's Theorem and for any combination of individual and collective want satisfactions,

$$w = s_g\frac{\partial w}{\partial s_g} + s_h\frac{\partial w}{\partial s_h} \tag{17.1}$$

A similar structural relationship may hypothetically be assumed concerning the multidimensional indifference map (3.1) with respect to H and Θ,

as expressed in (13) and (14). On the basis of such an assumption, also $H = \Theta$.

From the viewpoint of a *homogeneously competitive* structure of (3.1) in the sense of (17.1), the question whether all elements of $\lambda_1, \lambda_2, \ldots, \lambda_n$ are or are not mutually proportional with regard to (15.5) retains a key position. We may state that there is no relevant perfect proportionality among these elements, or at least not among all of them, when a consistent competitiveness of all relationships of partial responsiveness in the structure of (3.1) displays heterogeneous properties in the sense of not satisfying (17.1).

XI

With respect to the general *nonintegrability case*, we may refer our argument to only three various forms of want satisfaction. We might know that

$$\alpha ds_1 + \beta ds_2 + \gamma ds_3 = 0 \tag{18}$$

denotes a maximum amount of communal welfare if certain necessary and sufficient conditions are met. At the same time, however, it may be that

$$\alpha\left(\frac{\partial\beta}{\partial s_3} - \frac{\partial\gamma}{\partial s_2}\right) + \beta\left(\frac{\partial\gamma}{\partial s_1} - \frac{\partial\alpha}{\partial s_3}\right) + \gamma\left(\frac{\partial\alpha}{\partial s_2} + \frac{\partial\beta}{\partial s_1}\right) \neq 0 \tag{19}$$

so that the relevant integrability condition is not satisfied. No ψ can then be found satisfying the equation

$$\int(\alpha ds_1 + \beta ds_2 + \gamma ds_3) = \psi(s_1, s_2, s_3) + \text{constant} \tag{19.1}$$

and we have no iso-eupractical map of the kind

$$\psi(s_1, s_2, s_3) = \text{constant} \tag{20}$$

But it is evident that, with regard to the particular costs c per unit of the s and to the given total sacrifice C which the community is willing to make for its material welfare, the budget balance (cf. p. 328) of the economic system is analogous to (3) and can be expressed by

$$c_1 s_1 + c_2 s_2 + c_3 s_3 = C \tag{21}$$

This balance will be in *equilibrium* if two conditions are satisfied: first, similarly to the case of (5), if

$$c_1 ds_1 + c_2 ds_2 + c_3 ds_3 = 0 \tag{22}$$

second, if concerning the corresponding indifference plane

$$ds_1 + \tau_1 ds_2 + \tau_2 ds_3 = 0 \tag{23}$$

where $\tau_1 = \frac{\psi_2}{\psi_1}$ and $\tau_2 = \frac{\psi_3}{\psi_1}$, the proportionalities

$$\frac{\psi_2}{\psi_1} = \frac{c_2}{c_1}, \qquad \frac{\psi_3}{\psi_1} = \frac{c_3}{c_1} \qquad \text{and} \qquad \frac{\psi_2}{\psi_3} = \frac{c_2}{c_3} \tag{24}$$

are valid. (23) represents an indifference plane, because it is one of the tangent planes of the s_1, s_2, s_3 surface with the perpendicular[13] to the tangent directions, satisfying

$$ds_1 = \frac{ds_2}{\tau_1} = \frac{ds_3}{\tau_2} \tag{23.1}$$

We may now refer to those rules of orthogonal systems which were first applied to economic problems by F. Y. Edgeworth and I. Fisher. From the marginal rates of reprivatization in (23)—as well as from the marginal rates of collectivization in the corresponding similar indifference planes—hints can be derived with respect to preferable changes in the economic structure, *i.e.*, concerning the relationship expressed by (23.1). In the case of integrability, (23.1) would show a system of *preference* lines in space, perpendicular to indifference planes of the type (23), which would cut our iso-eupractical surfaces. Although such a system of lines does not exist in the nonintegrability case, which we here discuss, the underlying general relationship is still essential for the consideration of preference with regard to any changes in (21).

The general *stability conditions* of (21), with respect to (22) and (23) as well as to (19), must be slightly different from those which are usually referred to a downward sloping convexity when (19) is not an inequality but a corresponding equality, and (20) can consequently be attained. Concerning (22) and (23), we may here use an adapted form of the stability conditions as derived and mathematically proved—for the case of the stability of consumers' demand—by R. G. D. Allen.[14] If τ_1 and τ_2 have continuous partial derivatives, then

$$\begin{aligned} &0ds_1^2 + \frac{1}{2}\frac{\partial \tau_1}{\partial s_1} ds_1 ds_2 + \frac{1}{2}\frac{\partial \tau_2}{\partial s_1} ds_1 ds_3 \\ &+ \frac{1}{2}\frac{\partial \tau_1}{\partial s_1} ds_1 ds_2 + \frac{\partial \tau_1}{\partial s_2} ds_2^2 + \frac{1}{2}\left(\frac{\partial \tau_2}{\partial s_2} + \frac{\partial \tau_1}{\partial s_3}\right) ds_2 ds_3 \\ &+ \frac{1}{2}\frac{\partial \tau_2}{\partial s_1} ds_1 ds_3 + \frac{1}{2}\left(\frac{\partial \tau_2}{\partial s_2} + \frac{\partial \tau_1}{\partial s_3}\right) ds_2 ds_3 + \frac{\partial \tau_2}{ds_3} ds_3^2 \end{aligned} \tag{23.2}$$

subject to (23), must be a negative definite quadratic form. The determinant conditions of stability are

[13] The product of two pairs of ratios of gradients such as $-\tau_1/\tau_2$ and τ_2/τ_1, with regard to the linear equations $\tau_1 ds_2 + \tau_2 ds_3 = 0$ and $ds_2/\tau_1 = ds_3/\tau_2$, is -1.

[14] *Op. cit.*, pp. 515*f.*, and J. R. Hicks and R. G. D. Allen, "A Reconsideration of the Theory of Value," *Econometrica*, N.S. Vol. 1, 1934, pp. 203*ff.*

$$\begin{vmatrix} 0 & 1 & \tau_1 \\ 1 & 0 & \frac{1}{2}\frac{\partial \tau_1}{\partial s_1} \\ \tau_1 & \frac{1}{2}\frac{\partial \tau_1}{\partial s_1} & \frac{\partial \tau_1}{\partial s_2} \end{vmatrix} > 0$$

$$\begin{vmatrix} 0 & 1 & \tau_1 & \tau_2 \\ 1 & 0 & \frac{1}{2}\frac{\partial \tau_1}{\partial s_1} & \frac{1}{2}\frac{\partial \tau_2}{\partial s_1} \\ \tau_1 & \frac{1}{2}\frac{\partial \tau_1}{\partial s_1} & \frac{\partial \tau_1}{\partial s_2} & \frac{1}{2}\left(\frac{\partial \tau_2}{\partial s_2}+\frac{\partial \tau_1}{\partial s_3}\right) \\ \tau_2 & \frac{1}{2}\frac{\partial \tau_2}{\partial s_1} & \frac{1}{2}\left(\frac{\partial \tau_2}{\partial s_2}+\frac{\partial \tau_1}{\partial s_3}\right) & \frac{\partial \tau_2}{\partial s_3} \end{vmatrix} < 0 \qquad (23.3)$$

If we assume that $\tau_1, \tau_2 > 0$, this stability has a similar meaning to the one which, for the integrability case, is warranted and simply expressed by the downward sloping and convex shape of the iso-eupractical surfaces in (3.1).

XII

The meaning (cf. p. 340) of (13.1) can also be expressed by

$$\eta = \frac{(s_g/s_h)(1/s_g^2)(s_g ds_h - s_h ds_g)}{(1/\rho)[(\partial\rho/\partial s_g)ds_g + (\partial\rho/\partial s_h)ds_h]}$$

With regard to (3.3), $\psi_g ds_g + \psi_h ds_h = 0$, and $ds_h = -(\psi_g/\psi_h)ds_g$. So

$$\eta = \frac{(1/s_g s_h)[-(s_g\psi_g/\psi_h) - s_h]ds_g}{(1/\rho)[(\partial\rho/\partial s_g) - (\partial\rho/\partial s_h)(\psi_g/\psi_h)]ds_g}$$

Concerning (3.4),

$$\eta = \frac{\rho}{s_g s_h}\frac{-s_g\rho - s_h}{(\partial\rho/\partial s_g) - \rho(\partial\rho/\partial s_h)} = \frac{\rho}{s_g s_h}\frac{s_g\rho + s_h}{\rho(\partial\rho/\partial s_h) - (\partial\rho/\partial s_g)}$$

Now

$$\frac{\partial\rho}{\partial s_h} = \frac{\psi_{gh}}{\psi_h} - \frac{\psi_g\psi_{hh}}{\psi_h^2}; \qquad \frac{\partial\rho}{\partial s_g} = \frac{\psi_{gg}}{\psi_h} - \frac{\psi_g\psi_{gh}}{\psi_h^2}$$

$$\therefore \eta = \frac{\psi_g}{s_g s_h \psi_h}\frac{\dfrac{s_g\psi_g + s_h\psi_h}{\psi_h}}{\dfrac{\psi_g}{\psi_h}\left(\dfrac{\psi_h\psi_{gh} - \psi_g\psi_{hh}}{\psi_h^2}\right) - \dfrac{\psi_{gg}\psi_h - \psi_g\psi_{gh}}{\psi_h^2}}$$

$$\eta = \frac{\psi_g\psi_h(s_g\psi_g + s_h\psi_h)}{s_g s_h(2\psi_{gh}\psi_g\psi_h - \psi_g^2\psi_{hh} - \psi_h^2\psi_{gg})} \qquad (13.2)$$

An inspection of this equation shows that its structure is perfectly *symmetrical* with regard to s_g and s_h. It accordingly expresses not only the re-

sponsiveness of collectivization but also the responsiveness of reprivatization of a given economic structure. This result means that $\eta = \theta$, in spite of the validity (cf. p. 330) of (3.5). We may as well say that

$$\frac{(s_g/s_h)d(s_h/s_g)}{(1/\rho)d\rho} \equiv \frac{(s_h/s_g)d(s_g/s_h)}{(1/\tau)d\tau} \tag{13.3}$$

is a necessary corollary of the reciprocity between the marginal rate of collectivization and of reprivatization.

It can be proved that a similar relationship holds, with regard to (3.7*a*) and (3.6*a*), for the *general* case of n various amounts of want satisfaction. Therefore,

$$\frac{(s_u/s_v)d(s_v/s_u)}{(1/P)dP} \equiv \frac{(s_v/s_u)d(s_u/s_v)}{(1/\mathrm{T})d\mathrm{T}} \tag{13.4}$$

The consequences here are similar to those which we just pointed out for (13.3).

Nevertheless, the difference in the *direction* of structural shifts is clearly expressed by (13.3) and (13.4). The identity concerned only refers to the magnitude of such shifts with respect to collectivization and reprivatization. This is the general case. As a particular case, (17) has not quite the same meaning. When Euler's Theorem is applicable (cf. pp. 300 and 307), we have only one formula covering both directions of structural shifts and entirely ignoring the difference between them. It is such a qualified identity in which the homogeneity of the first degree of the relevant functions, as a specific and exceptional condition, results.

If ϵ denotes the *elasticity of collectivization*, which is ruled by a possible difference between the functions ψ and φ, then

$$\epsilon = \frac{\dfrac{(s_h/s_g)d(s_g/s_h)^{\varphi}}{(1/\zeta_1)d\zeta_1}}{\dfrac{(s_g/s_h)d(s_h/s_g)^{\psi}}{(1/\rho)d\rho}} = \frac{(1/\rho)d\rho d(s_g/s_h)^{\varphi}}{(1/\zeta_1)d\zeta_1 d(s_h/s_g)^{\psi}} \tag{25}$$

where $$\rho = \frac{\psi_g}{\psi_h} \quad \text{and} \quad \zeta_1 = \frac{\varphi_h}{\varphi_g}$$

While this formula refers to (3.3), with respect to (3.1) the generalized elasticity of collectivization E is

$$\mathrm{E} = \frac{\dfrac{(s_v/s_u)d(s_u/s_v)^{\varphi}}{(1/\mathrm{Z}_1)d\mathrm{Z}_1}}{\dfrac{(s_u/s_v)d(s_v/s_u)^{\psi}}{(1/\mathrm{P})d\mathrm{P}}} = \frac{(1/\mathrm{P})d\mathrm{P}d(s_u/s_v)^{\varphi}}{(1/\mathrm{Z}_1)d\mathrm{Z}_1 d(s_v/s_u)^{\psi}} \tag{26}$$

where $$\mathrm{P} = \frac{\psi_u}{\psi_v} \quad \text{and} \quad \mathrm{Z}_1 = \frac{\varphi_v}{\varphi_u},$$

subject to the same conditions as (13). The two corresponding formulas for the *elasticity of reprivatization*, χ and X, with respect to a possible difference between the functions ψ and Φ, are

$$\chi = \frac{\dfrac{(s_g/s_h)d(s_h/s_g)^{\Phi}}{(1/\zeta_2)d\zeta_2}}{\dfrac{(s_h/s_g)d(s_g/s_h)^{\psi}}{(1/\tau)d\tau}} = \frac{(1/\tau)d\tau d(s_h/s_g)^{\Phi}}{(1/\zeta_2)d\zeta_2 d(s_g/s_h)^{\psi}} \tag{27}$$

where $$\zeta_2 = \frac{\Phi_g}{\Phi_h} \quad \text{and} \quad \tau = \frac{\psi_h}{\psi_g};$$

and $$\mathrm{X} = \frac{\dfrac{(s_u/s_v)d(s_v/s_u)^{\Phi}}{(1/\mathrm{Z}_2)d\mathrm{Z}_2}}{\dfrac{(s_v/s_u)d(s_u/s_v)^{\psi}}{(1/\mathrm{T})d\mathrm{T}}} = \frac{(1/\mathrm{T})d\mathrm{T}d(s_v/s_u)^{\Phi}}{(1/\mathrm{Z}_2)d\mathrm{Z}_2 d(s_u/s_v)^{\psi}} \tag{28}$$

where $$\mathrm{Z}_2 = \frac{\Phi_u}{\Phi_v} \quad \text{and} \quad \mathrm{T} = \frac{\psi_v}{\psi_u},$$

subject to the same conditions as (13).

A *zero* elasticity, or perfect inelasticity, of collectivization and of reprivatization is indicated by ϵ, E, χ, X $= 0$; an *imperfect* structural elasticity, by $0 < \epsilon$, E, χ, X < 1; a *perfect* elasticity, by ϵ, E, χ, X $= 1$; a *hyper-elasticity*, by ϵ, E, χ, X > 1; and a *hyper-inelasticity*, by ϵ, E, χ, X < 0.

In the great majority of practical cases, ψ, φ and Φ are *different* functions if we refer them to our primary and two oppositely directed secondary structural shifts which occur at times $t = t_0$, $t = t_1$, and $t = t_2$, respectively.

For all mathematically possible combinative cases, we must subject (25) to the further *restriction* of $-(\psi_h/\psi_g) \leq -(\varphi_h/\varphi_g) \leq 0$ or $\tau \geq \zeta_1 \geq 0$; (26) to $-(\psi_v/\psi_u) \leq -(\varphi_v/\varphi_u) \leq 0$, or $\mathrm{T} \geq \mathrm{Z}_1 \geq 0$; (27) to $-(\Phi_h/\Phi_g) \leq -(\psi_h/\psi_g) \leq 0$, or $\zeta_2 \geq \tau \geq 0$; and (28) to $-(\Phi_v/\Phi_u) \leq -(\psi_v/\psi_u) \leq 0$, or $\mathrm{Z}_2 \geq \mathrm{T} \geq 0$. With respect to all four restrictions, ψ, φ, Φ are assumed to be "convex" within the whole relevant range. An economic interpretation of the cases which are consequently excluded—such as the cases of $\tau < \zeta_1$, $\mathrm{T} < \mathrm{Z}_1$, $\tau > \zeta_2$, or $\mathrm{T} > \mathrm{Z}_2$—and an examination of the obvious connection among these restrictions with regard to ψ, φ, Φ and our above limitations on ϵ, E, χ, X would open new perspectives for the further evaluation of the elasticity of collectivization and of reprivatization.

As a further step, we may also analyze the question of relevant partial elasticities. Such a question evidently cannot emerge with respect to (3.3) and concerning (25) or (27), because for a partial elasticity between any pair of want satisfactions—each member of the pair containing any number of particular types— there must be at least three types of gratification.

This condition is satisfied by (3.1), for which (26) and (28) express not only the total but also any partial, elasticity of collectivization and of reprivatization, respectively. In order to find a suitable alternative expression for the corresponding partial elasticities with regard to only two out of n variables, we may revert to (15.3). There (cf. p. 328) we ascertained that $\mu_{gh} \equiv \mu_{hg}$ necessarily stands for both the partial responsiveness of collectivization and of reprivatization, since it is perfectly symmetrical in s_g and s_h. The partial elasticities concerned can also be expressed by the ratios of the responsiveness of the secondary shifts to the responsiveness of the primary shifts. Although the symmetry in s_g and s_h will also here be retained, asymmetry will obviously be caused by our introducing the two further functions φ and Φ, which play similar roles here as in (26) and (28), respectively. Our formula for the partial elasticity of collectivization, with respect to only two out of n existing various amounts of want satisfaction, will therefore be

$$\mathrm{E}_{gh} = \frac{\dfrac{s_1\varphi_1 + s_2\varphi_2 + \cdots + s_n\varphi_n}{s_g s_h}\dfrac{B_{gh}}{B}}{\dfrac{s_1\psi_1 + s_2\psi_2 + \cdots + s_n\psi_n}{s_g s_h}\dfrac{A_{gh}}{A}} = \frac{(s_1\varphi_1 + s_2\varphi_2 + \cdots + s_n\varphi_n)AB_{gh}}{(s_1\psi_1 + s_2\psi_2 + \cdots + s_n\psi_n)BA_{gh}} \tag{29}$$

For the corresponding partial elasticity of reprivatization, we have

$$\mathrm{X}_{gh} = \frac{(s_1\Phi_1 + s_2\Phi_2 + \cdots + s_n\Phi_n)AC_{gh}}{(s_1\psi_1 + s_2\psi_2 + \cdots + s_n\psi_n)CA_{gh}} \tag{30}$$

B and C with regard to φ and to Φ, respectively, must be evaluated by the same technique of determinants as A with respect to ψ in (15.4). (29) and (30) are subject to the same condition as (15.3). The exceptions (cf. p. 348*ff.*) concerning (26), (28), and the case in which $\mathrm{E}, \mathrm{X} = 1$, although $\psi \neq \varphi = \Phi$, also stand for (29) and (30).

According to the prevailing methods of the indifference approach in economics, we could also here be inclined to consider $\mathrm{E}_{gh} > 0$ and $\mathrm{X}_{gh} > 0$ indicators of a competitive relationship between s_g and s_h. $\mathrm{E}_{gh} < 0$ and $\mathrm{X}_{gh} < 0$ would then stand for corresponding complementary relationships. $|\mathrm{E}_{gh}|$ and $|\mathrm{X}_{gh}|$ would express the degree of competitiveness or complementarity concerned. Yet, the initial modifications which ought to be made in our basic assumptions for the purpose of applying such indicators would be even more cumbersome and less feasible here than concerning μ_{gh} in (15.3). Since elasticity is the ratio of two relations of responsiveness, we might preferably say that *competitiveness* is in this case indicated by $(\psi_h/\psi_g) > 0$, $(\varphi_h/\varphi_g) > 0$, while for *complementarity* we have $(\psi_h/\psi_g) < 0$, $(\varphi_h/\varphi_g) < 0$. When, however, these two pairs of marginal

rates are of different signs, we have an indeterminate case, in which neither competitiveness nor complementarity is indicated. Similar relations hold for ψ and Φ in the case of reprivatization. With regard to (29) and (30) too, competitiveness between various types of want satisfaction, on the whole, is more general than complementarity between them, and our combinative analysis (cf. p. 339) of the possible number of competitive and complementary relations with regard to (15) and (15.3) is also here applicable.

Throughout the foregoing discussion of the total and the partial elasticities of collectivization and reprivatization, we assumed that our relevant differential equations satisfy the integrability condition. With respect to the case of only three different types of want satisfaction (cf. p. 341*ff.*), we accordingly and implicitly assumed that (19) does not hold concerning (18), that a ψ can be found satisfying (19.1), and that (20) actually exists. Such an assumption led us to consider (3.3) and (3.1) the basic iso-eupractical maps, with regard to which we examined the meaning of (25) and (27) as well as of (26), (28), (29) and (30). At this point, however, we may generalize and view the far more general cases in which the inequality (19) holds, and in which non-integrability also prevails for n various types of want satisfaction. From such a perspective, we must again realize that while ρ, τ, ζ, P, T, and Z may be known, it is only (3.3) which can usually be ascertained; the vision of (20) and (3.1) will usually be hidden from our eyes, because their existence mathematically depends on the satisfaction of integrability conditions which are much more complex than those referring to the integrability case for (3.3). Nevertheless, we find that even in the case of nonintegrability some of the general viewpoints revealed by (26), (28), (29), and (30) can well be utilized for an evaluation of total and partial elasticities of collectivization and reprivatization.

XIII

The function ψ in (3.1) does not explicitly depend on any previous or concurrent changes in the *cost coefficients* c (cf. p. 328). Yet, the decisive role of the c becomes evident when we write (3.1) in its proper shape as

$$\psi(c_1s_1, c_2s_2, \ldots, c_ns_n) = \text{constant} \qquad (3.1a)$$

It is understood that the c are actually inseparable coefficients of all s throughout our whole discussion. We omitted them from the relevant equations only in order to simplify our mathematical notation and because we regard them as implicit parametrical constants. But their parametrical significance is manifestly emphasized by any difference among ψ, φ, and Φ.

If α stands for the *mobility*, β for the *postponability*, or deferability, and

γ for the *transformability* (cf. p. 320*ff.*) of the economic relationships which may cause any changes in the c, then

$$\psi_{\alpha_1,\beta_1,\gamma_1} = \psi \neq \psi_{\alpha_2,\beta_2,\gamma_2} = \varphi \neq \psi_{\alpha_3,\beta_3,\gamma_3} = \Phi$$
$$\left(\frac{\psi_h}{\psi_g} \neq \frac{\varphi_h}{\varphi_g} \neq 0; \qquad \frac{\Phi_h}{\Phi_g} \neq \frac{\psi_h}{\psi_g} \neq 0; \qquad h > g\right) \tag{31}$$

expresses the absence of any perfect elasticity of collectivization and reprivatization. In a positive sense, (31) may indicate the prevalence of a corresponding imperfect elasticity, zero elasticity, hyper-elasticity, or hyper-inelasticity. But we must also here allow for the small scope of indeterminancy to which (25.1), (25.3), (25.4), (25.5*a*), (25.5*b*) and the other closely connected exceptions (cf. pp. 349*ff.*) refer. In such exceptional and, therefore, practically unimportant cases, perfect structural elasticity may occur although the functions under discussion are different from each other.

A further examination of (31) points toward a corresponding notation of (1) and the other related hyper-surfaces. We then have

$$\psi_{\alpha_1,\beta_1,\gamma_1}(s_1,s_2, \ldots, s_n) \qquad \text{or} \qquad \psi(s_1,s_2, \ldots, s_n;\alpha_1,\beta_1,\gamma_1)$$

which we may compare with the corresponding

$$\psi(s_1,s_2, \ldots, s_n;\alpha_2,\beta_2,\gamma_2) = \varphi \qquad \text{and} \qquad \psi(s_1,s_2, \ldots, s_n;\alpha_3,\beta_3,\gamma_3) = \Phi.$$

The rate of increase in these functions with respect to α—while β and γ are fixed—can be expressed by the partial derivative

$$\psi_\alpha(s_1,s_2, \ldots, s_n;\alpha,\beta,\gamma).$$

Similar *partial derivatives* may be analyzed with respect to all other factors α, β, and γ. An evaluation of various combinations of these factors, with the help of differential and integral calculus, opens wide perspectives of structural problems in economics.

The conventional methods of computing *maxima* and *minima* can be applied to P, T, H, Θ, E, X, μ_{gh}, E_{gh}, and X_{gh} in (3.7*a*), (3.6*a*), (13), (14), (26), (28), (15.3), (29), and (30), respectively. This obviously involves the first step of any analytical inquiry into the *optimal* values (cf. pp. 48*ff.*) of the relevant marginal rates, responsiveness, and elasticity of collectivization and reprivatization.

XIV

There are *exceptional cases* in which ϵ, E, χ, X = 1, although $\psi \neq \varphi \neq \Phi$. They are not important from a practical point of view because of the specific nature of the conditions on the satisfaction of which they depend. But they may be mentioned here for the sake of the logical completeness of our argument.

The *first* group of such exceptional cases occurs, with respect to (25) and (27), at those points of our curves where[15]

$$\frac{\psi_\sigma\psi_\eta(s_\sigma\psi_\sigma + s_\eta\psi_\eta)}{\psi_{\sigma\sigma}\psi_\eta^2 - 2\psi_{\sigma\eta}\psi_\sigma\psi_\eta + \psi_{\eta\eta}\psi_\sigma^2} = \frac{\varphi_\sigma\varphi_\eta(s_\sigma\varphi_\sigma + s_\eta\varphi_\eta)}{\varphi_{\sigma\sigma}\varphi_\eta^2 - 2\varphi_{\sigma\eta}\varphi_\sigma\varphi_\eta + \varphi_{\eta\eta}\varphi_\sigma^2} \tag{25.1}$$

If ψ and φ have the same first derivative, that is, if

$$\frac{\varphi_\sigma}{\varphi_\eta} = \frac{\psi_\sigma}{\psi_\eta} = s'_\eta \tag{25.2}$$

then we may consider the *second* group of exceptional cases, which must satisfy the equation[16]

$$\frac{1}{\psi_\sigma}(\psi_{\sigma\sigma} - 2\psi_{\sigma\eta}s'_\eta + \psi_{\eta\eta}s'^2_\eta) = \frac{1}{\varphi_\sigma}(\varphi_{\sigma\sigma} - 2\varphi_{\sigma\eta}s'_\eta + \varphi_{\eta\eta}s'^2_\eta) \tag{25.3}$$

The *third* group of exceptions is given for the case when in (25.3) $s'_\eta = 0$. Here, the equation which has to be satisfied, and which can be derived from (25.3), is

$$\frac{\psi_{\sigma\sigma}}{\psi_\sigma} = \frac{\varphi_{\sigma\sigma}}{\varphi_\sigma} \tag{25.4}$$

An inspection of the mathematical structure of the conditions which must be satisfied for these three groups of exceptional cases clearly shows that the probability of a practical occurrence of the exceptions is extremely small and remote. As far as (25.1), that is, the most general case of exceptions is concerned, this statement holds not only relative to ϵ in (25), but also with respect to χ in (27), since (25.1) displays a perfect symmetry in s_σ and s_η. It can be shown that (25.3) and (25.4) possess the same symmetrical property for the relevant pair of two-dimensional formulas of elasticity. Consequently, the equations (25), and (27) can fairly well be relied

[15] Let us equate the first form of the equation (25) to 1. With regard to (13.3) we then have

$$\frac{(s_\eta/s_\sigma)d(s_\sigma/s_\eta)^\varphi}{(1/\zeta_1)d\zeta_1} = \frac{(s_\eta/s_\sigma)d(s_\sigma/s_\eta)^\psi}{(1/\tau)d\tau}$$

Application of (13.2) gives

$$\frac{\varphi_\sigma\varphi_\eta(s_\sigma\varphi_\sigma + s_\eta\varphi_\eta)}{s_\sigma s_\eta(2\varphi_{\sigma\eta}\varphi_\sigma\varphi_\eta - \varphi_\sigma^2\varphi_{\eta\eta} - \varphi_\eta^2\varphi_{\sigma\sigma})} = \frac{\psi_\sigma\psi_\eta(s_\sigma\psi_\sigma + s_\eta\psi_\eta)}{s_\sigma s_\eta(2\psi_{\sigma\eta}\psi_\sigma\psi_\eta - \psi_\sigma^2\psi_{\eta\eta} - \psi_\eta^2\psi_{\sigma\sigma})}$$

which can also be written in the shape of (25.1).

[16] Dividing numerator and denominator on the left of (25.1) by ψ_η^2, and similarly dividing by φ_η^2 on the right, we obtain after multiplication by the denominators

$$\varphi_\sigma(s_\sigma s'_\eta + s_\eta)(\psi_{\sigma\sigma} - 2\psi_{\sigma\eta}s'_\eta + \psi_{\eta\eta}s'^2_\eta) = \psi_\sigma(s_\sigma s'_\eta + s_\eta)(\varphi_{\sigma\sigma} - 2\varphi_{\sigma\eta}s'_\eta - \varphi_{\eta\eta}s'^2_\eta),$$

which directly leads to (25.3).

upon for a practically useful and *realistic* expression of the elasticity of collectivization and reprivatization, in spite of the aforesaid three groups of exceptions.

XV

From the viewpoints of mathematical accuracy and practical efficiency, *two alternative analytical ways* of expressing ϵ could be considered. First, if we can solve $\psi(s_g,s_h) =$ constant and $\varphi(s_g,s_h) =$ constant, for example, for s_g obtaining $s_g = f(s_h)$ and $s_g = F(s_h)$, respectively, then we may use the equation

$$\epsilon = \frac{F'/f'}{K_2/K_1} = \frac{F'}{f'}\frac{K_1}{K_2}$$

where

$$\frac{K_1}{K_2} = \frac{f''/(1+f'^2)^{3/2}}{F''/(1+F'^2)^{3/2}} \tag{25.5}$$

Yet, if we cannot solve for either of the variables, we have to depend on formula (16). Second, we may refer the elasticity of collectivization and reprivatization to an area denoted by definite integrals. If we can solve in the above sense, we may suggest

$$\epsilon = 1 - \int_{s_{h0}}^{s_{h1}} ds_h \int_{F(s_h)}^{f(s_h)} ds_g = 1 - \int_{s_{h0}}^{s_{h1}} [f(s_h) - F(s_h)]ds_h \,(f' \leq F' \leq 0) \tag{25.6}$$

If this cannot be solved, we here have to use

$$\epsilon = 1 - \iint ds_g ds_h \tag{25.6a}$$

where the double integral denotes the area between the ψ and φ curves, and the lines $s_h = s_{h0}$ and $s_h = s_{h1}$.

As compared with (25), (25.5) has the advantage that it is less indeterminate. With regard to (25.5), there are only two groups of *exceptional* cases, in which $\epsilon = 1$, although $f \neq F$. The first group comprises the cases in which

$$f' = F', \qquad f'' = F'' \tag{25.5a}$$

but any higher derivative of ψ is different from the corresponding derivative of φ. For an occurrence of the second group of relevant exceptional cases, the following equation must be satisfied:[17]

[17] If $f' \neq F'$ and $f'' \neq F''$, or if only one of these inequalities holds, then

$$\frac{F'}{f'}\frac{K_1}{K_2} = 1$$

$$\frac{F'}{f'}\frac{f''/(1+f'^2)^{3/2}}{F''/(1+F'^2)^{3/2}} = 1$$

from which (25.5*b*) is obtained.

$$\frac{F'(1+F'^2)^{3/2}}{F''} = \frac{f'(1+f'^2)^{3/2}}{f''} \qquad (25.5b)$$

The disadvantage of (25.5) is, however, that it is related only to the pertinent marginal rates of substitution but not directly to the relations of responsiveness concerned. Therefore, (25.5) shows a less adequate and a less clear-cut interdependence of responsiveness and elasticity than (25).

We see that (25.6) is mathematically *more rigorous* than either (25) or (25.5), because it admits of no exceptions similar to those expressed by (25.1), (25.3), (25.4), (25.5*a*) or (25.5*b*). In other words, if we rely on (25.6), then we have $\epsilon = 1$ only and exclusively when $\psi = \varphi$, and never when $\psi \neq \varphi$. In this sense, (25.6) is a perfectly determinate analytical way of expressing the elasticity of collectivization with respect to only two various types of particular want satisfaction. Yet, its disadvantage is that it is directly related neither to the marginal rate of collectivization nor to the responsiveness of collectivization concerned and that the interpretation of perfect inelasticity and hyper-inelasticity would here be inadequate and misleading. Therefore, it indicates even less than (25.5). The picture which it offers concerning the interrelationship of responsiveness and elasticity concerned is inappropriate and hazy.

It is obvious that the type of equations as suggested by (25.5) and (25.6) can—*mutatis mutandis*—also be referred to χ. If we do so, then the merits and demerits of such new equations have to be compared with those of (27). The aforesaid methods of *comparison* could also be applied in this case. The results in terms of advantages and disadvantages, too, would be similar.

With respect to all cases concerned, the merits of the type of equations represented by (25.5) and (25.6) do not outweigh their demerits, when we compare them with the (25) class of expressions. The former type may alternatively be used. On the whole, however, the latter class is preferable, because its slight mathematical indeterminancy is more than offset by the greater richness and comprehensiveness of its meaning concerning the *relations between* the elasticity and the responsiveness of collectivization and reprivatization.

A similar statement can also be made and substantiated with regard to the corresponding *multidimensional* cases, although they are more complex. When duly adapted, both alternative expressions of the types (25.5) and (25.6) may be used for such cases. All in all, however, they are not more efficient than (26) and (28). If we want to apply the general method indicated by (25.5), we have to use a ratio which involves the tangent hyperplane instead of the tangents f' and F'. At the same time, we must depend

on the Riemann curvature tensor R^a_{ijk} instead of referring to the simple curvature. For a corresponding application of (25.6), we define

$$\epsilon = 1 - \int_n \cdots \int ds_1 ds_2 \cdots ds_n \qquad (25.6b)$$

The integration here takes place over the volume cut out by the hypersurfaces (3.1), $\varphi(s_1, s_2, \ldots, s_n) =$ constant, and between the hyper-planes $s_h = s_{h_0}$ and $s_h = s_{h_1}$, provided that the integral has meaning. Neither of these two applications displays relations between the responsiveness and the elasticity of collectivization and reprivatization.

On the other hand, such relations are adequately indicated by (26) and (28). To be sure, we can also find with respect to these two equations *exceptional* cases in which E, X = 1, although $\psi \neq \varphi \neq \Phi$. The mathematical formulas which express the exceptions and which accordingly are comparable to (25.1), (25.3), and (25.4) are long, and they offer no considerable help toward clarification. The same may be said, incidentally, of the exceptions which belong to the families (25.5*a*) and (25.5*b*), and which necessarily occur when we apply the multidimensional extension of (25.5), in the above-mentioned sense. The exceptions concerning (26) and (28) refer to the satisfaction of extremely complex conditions, which imply and explain the rareness of any practical occurrence of such cases. For our current analysis, we are consequently led to prefer also (26) and (28) to the two alternative expressions under discussion.

XVI

If we denote by r strains, by p stresses which cause them, and by a the *modulus of elasticity* in the traditional sense, then according to Hooke's law

$$ar = p, \qquad \text{and} \qquad a = \frac{p}{r} \qquad (32)$$

Concerning two colliding spheres, we may designate their speed of approach by q_a, their speed of separation by q_b, and the relevant *coefficient of restitution* by e. Then

$$e = \frac{q_b}{q_a} \qquad (33)$$

where e is a positve number.

Expressions of the type (32) are also applied to the analysis of plasticity and viscosity. If s denotes a shearing force, if y stands for the distance of a particle of a liquid from the plane of the shear, and if u designates the velocity of the particle, then $s = \eta(\partial u/\partial y)$, where η is termed the *coefficient of viscosity*.

Alfred Marshall relied on an analogy between (32) and certain features in the behavior of *demand.* On such a basis, there is a close connection between the equation of Cournot's "point"

$$F(p) + pF'(p) = 0 \tag{34}$$

—where p designates the price, $F(p)$ stands for a continuous demand function, $pF(p)$ is the total value of the quantity annually sold, and F', according to Lagrange's notation, denotes the differential coefficient of the function F—and the Marshallian expression

$$\eta = \frac{dy}{dp}\frac{p}{y} = \frac{dy/y}{dp/p} = \frac{d(\log y)}{d(\log p)} \tag{35}$$

where p stands for the price and $y = y/p$ denotes the demand curve.

The prevailing notation used by current textbooks is (35) (for example, H. T. Davis, *The Theory of Econometrics*, Bloomington, 1941, p. 88). Marshall's well-known original expression was

$$\frac{dx}{x} + n\frac{dy}{y} = 0, \qquad \text{that is} \qquad xy^n = c \tag{35.1}$$

where n designates the coefficient of elasticity.

With regard to (35) and (35.1), the current formula for the *partial* elasticity of demand is

$$\eta_{rr} = -\frac{\partial(\log x_r)}{\partial(\log p_r)} = -\frac{p_r}{x_r}\frac{\partial x_r}{\partial p_r} \tag{35.2}$$

As a related current formula for the *arc elasticity* of demand, we have

$$\eta = \frac{q_0 - q_1}{q_0 + q_1} \Big/ \frac{p_0 - p_1}{p_0 + p_1} = \frac{q_0 - q_1}{q_0 + q_1}\frac{p_0 + p_1}{p_0 - p_1} \tag{35.3}$$

To the same family belong Roos's *functional* coefficient of elasticity of demand expressed by $(\partial y/\partial p)p/y$, and Champernowne's "operators"

$$\frac{E(\ )}{E(\ )} = \frac{d(\log\ )}{d(\log\ )} \qquad \text{and} \qquad \frac{e(\ )}{e(\ )} = \frac{\partial(\log\ )}{\partial(\log\ )}$$

where E and e denote Δ log, "the small—total or partial— change in."

The *dynamic* elasticity of demand, which corresponds to the responsiveness of demand in (35) but is related to the idea underlying (33), can be expressed by

$$\epsilon = \frac{\eta_1}{\eta} = \frac{(dy/dp)_1}{(dy/dp)_0} = \left(\frac{dy}{dp}\right)_1\left(\frac{dp}{dy}\right)_0 \tag{36}$$

which can conveniently be replaced by similar expressions involving the corresponding logarithmic derivatives. The subscripts 0 and 1 here denote

the evaluation of usually different functions $y = y_0(p)$, and $y = y_1(p)$ corresponding to times 0 and 1. This difference in time must be emphasized.

In an *earlier paper*,[18] the author discussed ratios of the type (33) and (36). He also presented the equation

$$\epsilon = \int_{(a,b,c)_1}^{(a,b,c)_2} \frac{P}{p}\, d(a,b,c) \tag{25.6c}$$

where p is the primary shift, P denotes the secondary, that is, the restituting shift, while a, b, and c stand for the temporal, spatial, and material factors which determine the magnitude of p and P. This equation served as a basis for developing our formulas (25.6), (25.6*a*), (25.6*b*), and (31).

XVII

The relationship underlying Table 2 (p. 149) may be referred (p. 330) to the *two*-dimensional indifference map (3.3), which corresponds to a national welfare function of the

$$\psi(s_g, s_h) = w \tag{3.8}$$

type, and to a national budget equation of the

$$s_g c_g + s_h c_h = C \tag{3.9}$$

form. When relating columns I, II, and III in Table 2 to (3.9), we have to repeat that our explicit mention of the *cost coefficient* c has only a formal significance. When we express the percentual importance of the s for w only in terms of their cost coverage, the numerical meaning of all c is obviously reduced to 1 per cent, expressed in dollars, of the C. We accordingly multiply the s_i, which numerically mean only so and so many per cent of importance, by the figure denoting this dollar amount in order to obtain the dollar cost of the actually secured amount of gratification of the S_i type. In other words, what we express on this high level of simplification by the products $s_i c_i$ are the actual dollar expenditures on the S_i type of want satisfactions.

On a similar statistical basis, we could also consider *three*-dimensional relations, which are indicated (cf. pp. 341*ff.*) by our indifference map (20) and by the budget equation (21), and which correspond to a national welfare function of the

$$\psi(s_1, s_2, s_3) = w \tag{3.10}$$

[18] Cf. "Elasticité et changeabilité économiques," *Journal de la Société Hongroise de Statistique*, 1936, No. 1.

type. The structure of (20), (21) and (3.10) obviously contains an amount of intermediate or mixed gratifications, marked by s_2 and corresponding to an S_2 type of want satisfactions, which ranks between the S_1 type of individual and the S_3 type of collective gratifications. We have already seen (cf. p. 154) that this three-dimensional relationship offers only a limited help for any realistic construction of (1).

Table 5 (p. 160) relates to *five* larger groups of expenditures. With respect to the qualifications, to which we subject these five larger groups, our corresponding national budget equation may assume the shape of

$$s_2c_2 + s_3c_3 + s_4c_4 + s_5c_5 + s_6c_6 = C \tag{3.11}$$

We may omit s_1c_1 in order to indicate that we disregard the hypothetically limiting case of "purely" individual want satisfactions.

For an analytical expression of the approximate *standard measurements* in Table 7, we may simplify our notations by omitting the c cost coefficients. Then we may refer these measurements to

$$s_2,\ s_3,\ s_4,\ s_5,\ s_6 \tag{3.12}$$

plot the values for the x as specified on p. 167 for (3.11) on the abscissa, and the s on the ordinate. Columns I, II, III, IV, and V in Table 7 may be computed with the help of our formulas (1.1), (1.2), (1.3), (1.4), and (1.5), respectively, which are mentioned on pp. 325*f*. For the negatively skewed variates in column IV, the $\sum_1^n (sx'^3)$ are minus in (1.4).

XVIII

The meaning of the relation among our various columns in Tables 8, 9, and 10 may be referred to the computation of specific values for the s and w in the above-mentioned two-dimensional welfare function (3.8), with which we may connect Figure 9. With respect to this figure, we may express the s_h by the unchanged values of public expenditures, as they also figure in Figure 8, and the partially corrected s_g, which we may mark as s_{gc}, by the correspondingly corrected values of private expenditures. Our function (3.8) may thus be given the specific *analytical form*

$$s_{gc}^2 + 402s_hs_{gc} + s_h^2 = w \tag{3.13}$$

where for w the specific value 23,392,800 may be computed.[19] This magni-

[19] Inspection of Figure 9 reveals that a good fit may be obtained by computing an adequate hyperbola with vertex 340 units from the origin along a line, passing through the origin, 45 degrees counter clockwise from the s_h axis. Using the formula

tude should not be regarded as the exemplary cardinal expression of any national welfare level; its significance is its ordinal interpretation coupled with the auxiliary role in which it helps us in specifically solving (3.13) for the s_h and s_{gc}. Accordingly,

$$s_h = \frac{-2.01s_{gc} + \sqrt{4.04s_{gc}^2 + 2{,}339.28}}{0.01} \tag{3.14}$$

and

$$s_{gc} = \frac{-2.01s_h + \sqrt{4.04s_h^2 + 2{,}339.28}}{0.01} \tag{3.15}$$

Having found the *parametrical constants* in the functional relation between the s_h and s_{gc}, we can now derive the approximate value of either of them

---

$\frac{x^2}{a^2} - \frac{y^2}{b^2} = 1$ for a hyperbola with transverse axis on the abscissa, we rotate the axis by -45 degrees:

$$x = s_h \cos \phi - s_{gc} \sin \phi,$$
$$y = s_h \sin \phi - s_{gc} \cos \phi,$$

where $\cos \phi = \frac{1}{\sqrt{2}}$ and $\sin \phi = -\frac{1}{\sqrt{2}}$

$$\therefore \frac{\left(\frac{1}{\sqrt{2}} s_h + \frac{1}{\sqrt{2}} s_{gc}\right)^2}{a_2} - \frac{\left(-\frac{1}{\sqrt{2}} s_h + \frac{1}{\sqrt{2}} s_{gc}\right)^2}{b_2} = 1$$

If $a = 340$ and $b = 342$, then

$$\text{Center to focus} = \sqrt{a^2 + b^2} = \sqrt{340^2 + 342^2} = 482$$

and

$$\text{latus rectum} = \frac{2b^2}{a} = 685$$

$$\therefore \frac{\left(\frac{1}{\sqrt{2}} s_h + \frac{1}{\sqrt{2}} s_{gc}\right)^2}{340^2} - \frac{\left(-\frac{1}{\sqrt{2}} s_h + \frac{1}{\sqrt{2}} s_{gc}\right)^2}{342^2} = 1$$

$$\frac{s_h^2 + 2s_h s_{gc} + s_{gc}^2}{115{,}600} - \frac{s_h^2 - 2s_h s_{gc} + s_{gc}^2}{342^2} = 2,$$

$$s_h^2 + 402 s_h s_{gc} + s_{gc}^2 = 23{,}392{,}800$$

When solved explicitly, this equation yields (3.14) and (3.15). K. Pearson's index of curvilinear correlation shows that the relationship between s_{gc} and s_h, as expressed by (3.16), is 0.70. Yet, using R. A. Fisher's method of analysis of variance, we find the variance ratio $F = 7.68$. In conjunction with the appropriate degrees of freedom, this indicates that the probability is between 0.99 and 0.999 that the curve is a good fit.

only from the knowledge of the other for any of the years 1929–1948. It should be repeated, however, that we cannot compute, on the basis of this function, the absolute level of national welfare.[20] It has been shown that the methodological difficulties involved would be practically insurmountable.

XIX

Further developing our analytical application, we may now recall the meaning (cf. p. 330) of the two-dimensional indifference map (3.3), and the general assumption subject to which it can be derived from the corresponding (cf. p. 354) national welfare function (3.8). Concerning (3.13), this leads us to an *iso-eupractical map* of the particular form

$$s_{gc}^2 + 402 s_h s_{gc} + s_h^2 = \text{constant} \tag{3.16}$$

For the hyperbolic function in (3.13), the constant is 23 392 800. Computing the ratios of the first partial derivatives successively taken from (3.16) for s_h and s_{gc} with respect to w, we have

$$\rho = \frac{s_{gc} + 201 s_h}{s_h + 201 s_{gc}} \tag{3.17}$$

as the marginal rate of collectivization, and its reciprocal

$$\tau = \frac{s_h + 201 s_{gc}}{s_{gc} + 201 s_h} \tag{3.18}$$

as the marginal rate of reprivatization relative to (3.16). Substituting in (3.17) or (3.18) any pair of specific values for s_h and s_{gc}, we obtain the specific rates of collectivization and of reprivatization for any of the years 1929–1948. With the help of these specific rates and our general formulas for the responsiveness of collectivization and reprivatization concerning two variables (13.1), (14.1), (13.2), and (13.3), we may then readily calculate the relevant cases of specific responsiveness for (3.16). As a particular formula for the responsiveness of collectivization we have

$$\eta = \frac{(s_{gc}/s_h)d(s_h/s_{gc})}{\frac{s_h + 201 s_{gc}}{s_{gc} + 201 s_h} d\left(\frac{s_{gc} + 201 s_h}{s_h + 201 s_{gc}}\right)} = \frac{(201 s_{gc}^2 + 40{,}402 s_{gc} s_h + 201 s_h^2)(s_{gc}^2 + 402 s_{gc} s_h + s_h^2)}{s_{gc} s_h (1{,}624{,}120 s_{gc} s_h + 40{,}400 s_{gc}^2 + 40{,}400 s_h^2)} \tag{3.19}$$

while for the corresponding responsiveness of reprivatization we obtain

[20] With respect to the specific value of w in (3.13), we could say that 23, or 2.3, mark an ordinal level of national welfare. Corresponding comparisons with higher or lower levels of national welfare could be considered, on this basis, only in an approximate, simplified, and hypothetical sense.

$$\theta = \frac{\frac{s_h}{s_{gc}}\, d\left(\frac{s_{gc}}{s_h}\right)}{\frac{s_{gc} + 201 s_h}{s_h + 201 s_{gc}}\, d\left(\frac{s_h + 201 s_{gc}}{s_{gc} + 201 s_h}\right)} \equiv \eta \qquad (3.20)$$

Carrying through the necessary numerical calculations and simplifying the results, we may compute the following specific values:

Table 12. Specific Values for ρ, τ, and $\eta \equiv \theta$ with respect to (3.16)

Year	*Expected* (I)	*Empirical* (II)	*Expected* (III)	*Empirical* (IV)	*Expected* (V)	*Empirical* (VI)
	Marginal rates of collectivization, $\rho = \frac{s_{gc} + 201 s_h}{s_h + 201 s_{gc}}$		*Marginal rates of reprivatization,* $\tau = \frac{s_h + 201 s_{gc}}{s_{gc} + 201 s_h}$		*Responsiveness of collectivization and reprivatization,* $\eta = \frac{(s_{gc}/s_h)d(s_h/s_{gc})}{\frac{s_h + 201 s_{gc}}{s_{gc} + 201 s_h}\, d\left(\frac{s_{gc} + 201 s_h}{s_h + 201 s_{gc}}\right)} \equiv \theta$	
1929	0.15	0.11	6.67	9.09	1.04	1.05
1930	0.19	0.14	5.26	7.14	1.02	1.04
1931	0.26	0.20	3.85	5.00	1.02	1.03
1932	0.36	0.23	2.78	4.35	1.02	1.02
1933	0.28	0.24	3.57	4.17	1.02	1.02
1934	0.31	0.25	3.23	4.00	1.01	1.00
1935	0.26	0.23	3.85	4.35	1.01	1.02
1936	0.20	0.23	5.00	4.35	1.03	1.03
1937	0.18	0.20	5.56	5.00	1.03	1.03
1938	0.22	0.25	4.55	4.00	1.03	1.02
1939	0.19	0.24	5.26	4.17	1.03	1.02
1940	0.17	0.23	5.88	4.35	1.02	1.03
1941	0.98	0.97	1.02	1.03	1.01	1.01
1942	2.97	3.67	0.34	0.27	1.02	1.02
1943	5.36	6.13	0.19	0.16	1.02	1.04
1944	5.90	4.88	0.17	0.20	1.03	1.03
1945	4.28	3.03	0.23	0.33	1.02	1.02
1946	0.77	0.80	1.30	1.25	1.01	1.01
1947	0.57	0.59	1.75	1.69	1.00	1.01
1948	0.63	0.65	1.59	1.54	1.00	1.00

An inspection of this table may lead to useful viewpoints for a comparative discussion of the American economic structure as it developed in the years 1929–1940 and 1941–1948. Columns I, III, and V contain those values which we computed on the basis of hypothetical expectation, viz. with regard to those points of the curve (3.16) which are nearest[21] to the

[21] A line perpendicular to the tangent of the curve (3.16) and passing through the empirically observed point determines the point on the curve which is nearest

empirically observed magnitudes of the s_h and s_{gc}. These magnitudes are the basis for our computation of columns II, IV, and VI. Supplementary and corrective viewpoints derivable from Tables 8, 9, and 10 can profitably be utilized for an explanation of the deviation between the empirical and expected values in Table 11. Here again we must not expect to obtain any specific information on the absolute level of w in the years concerned. In the causal background, the general difficulties of measuring such a level, the ordinal significance of the relevant magnitudes, and the meaning of our corrective adjustments with regard to s_{gc} have already been pointed out. The additional quantitative information obtainable from Table 11 refers to the relative degree of ease with which *structural changes* could be effectuated in the American economy.[22]

XX

With respect to Figure 10, we may revert to the unchanged values of private and public expenditures and refer them to the original shape of our welfare function (3.8). For the section marked by *collectivization*, we may thus fit the hyperbola

$$s_g^2 - 800s_g + 468.75s_h - \frac{1}{2.56}s_h^2 = 17{,}344 \qquad (3.21)$$

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to the observed magnitude. If two points of the curve are so located, the shorter of the two distances marks the desired point on the curve. Yet, the computation of such a perpendicular is too lengthy. For the accuracy which we need in the present context, we may depend on the approximately nearest distance which we obtain by finding the equation of the perpendicular to the tangent of the indifference curve on which the point of empirical observation lies. Such a perpendicular line has a slope which is the negative reciprocal of the first derivative ds_{gc}/ds_h taken from the left-hand side of (3.16). Substituting the s_{gc} and the s_h of the observed point in the derived slope formula, we obtain the slope of the line which adequately connects the point and the specific curve (3.16). The formula $(y - y_1) = m(x - x_1)$, where $y = s_{gc}$, $x = s_h$, and m is the slope of the straight line, yields the equation for the particular line. When this linear equation is solved simultaneously with (3.16), we obtain the coordinates of the point on the curve approximately nearest to the empirically observed point.

[22] As a test of the usefulness of (3.16), (3.17), and (3.18) in approximately expressing the ρ and τ of the empirically observed values, we may compute the percentage obtained from the fraction

$$\frac{\text{Expected average minus difference between empirical and expected average}}{\text{Expected average}}$$

Such a fraction will show how nearly the curve approximates—on the average—the empirical ρ and τ. By this method we find that (3.16), (3.17), and (3.18) are 96 per cent effective in measuring the empirical ρ and τ.

while for the years of *reprivatization* we may compute the hyperbola

$$-2.86s_g^2 + 2{,}860s_g - 1{,}360s_h + s_h^2 = 197{,}384 \qquad (3.22)$$

Both (3.21) and (3.22) represent reasonably good fits.[23]

Holding the magnitudes on the right hand side of (3.21) and of (3.22) constant, we have two corresponding *indifference curves*, or two-dimensional iso-eupractical maps, for which we may compute the characterizing specific values:

Table 13. Specific Values for the Structural Properties of (3.21)

Year	ρ		η		ϵ	
	Expected (I)	*Empirical* (II)	*Expected* (III)	*Empirical* (IV)	*Expected* (V)	*Empirical* (VI)
1941	2.04	2.12	5.58	4.82	1.00	1.16
1942	3.08	2.79	0.75	0.87	7.47	6.44
1943	11.06	10.42	0.089	0.093	62.92	60.22
1944	76.60	109.50	0.011	0.009	509.09	622.22

Table 14. Specific Values for the Structural Properties of (3.22)

Year	τ		θ		χ	
	Expected (I)	*Empirical* (II)	*Expected* (III)	*Empirical* (IV)	*Expected* (V)	*Empirical* (VI)
1945	0.33	0.33	0.57	0.56	0.89	0.91
1946	0.52	0.52	9.77	9.30	0.052	0.055
1947	0.53	0.53	15.93	16.03	0.032	0.032
1948	0.53	0.53	13.64	14.17	0.037	0.036

The relation between the odd and even columns has here the same significance as in Table 11. The ϵ are computed as ratios of the average θ for the period 1945–1948 to the η of each of the years 1941, 1942, 1943, and 1944. Similarly, the χ represent ratios of the average η for the period 1941–1944 to the θ of each of the years 1945, 1946, 1947, and 1948. The calculation of the averages concerned follows the method to be discussed below with regard to (3.25) and (3.26).

In Chapter XX, we mentioned the possibility of computing average values for the responsiveness of collectivization and reprivatization with respect to the distribution of private and public expenditures in the two

[23] Pearson's index of curvilinear correlation is 0.94 for (3.21), and 0.99 for (3.22).

subsequent periods 1941–1944 and 1945–1948, and then of relating such averages to each other. This procedure, concerning the period 1941–1944, leads us to an *average elasticity* of collectivization

$$\bar{\epsilon}_1 = \frac{0.56 + 9.30 + 16.03 + 14.07}{4.82 + 0.87 + 0.093 + 0.009} = 6.92 \tag{3.23}$$

and with regard to the years 1945–1948, to an *average elasticity* of reprivatization

$$\bar{\chi}_1 = \frac{1}{\epsilon} = 0.14 \tag{3.24}$$

The averages are based on the arithmetic means of the relevant magnitudes in column IV of Table 13 and column IV in Table 14. Alternative, and somewhat more adequate, averages may be computed by substituting in η and θ for s_g and s_h the arithmetic means obtainable for the years 1941–1944 and 1945–1948 from columns I and II of Table 2 and indicated in the corresponding part of the scattergram in Figure 8. Taking such averages, we may replace (3.23) by

$$\bar{\epsilon}_2 = \frac{5.60}{0.51} = 10.98 \tag{3.25}$$

and (3.24) by

$$\bar{\chi}_2 = \frac{0.51}{5.60} = 0.091 \tag{3.26}$$

In columns V and VI of Tables 13 and 14, we computed several hypothetically expected and empirically observed values for the ϵ and χ, which represent a blend of *point and arc elasticities*. Their "point" element is rooted in the fact that all magnitudes concerned consider only one year. The "arc" element refers to the feature that all ϵ are related to the average values of 1945–1948, and all χ to those of 1941–1944. We indicated in Chapter XX the direction in which the calculation of arc elasticities could further be developed.

All relevant computations may also be referred to the interdependence of columns I, II, III, IV, and V in Table 5, and to such *multidimensional* relationships as indicated by (3.12). Instead of (3.4), (3.5), (13.1), (14.1), (25), and (27), the multidimensional formulas (3.7*a*), (3.6*a*), (13), (14), (26), and (28) may be taken into account for the calculation of specific marginal rates, responsiveness values, and elasticities of collectivization and of reprivatization. In addition, empirical partial elasticities of the American economic structure according to (29) and (30) may be specified, and an institutional investigation of specific effects concerning (31) may fruitfully be carried through.

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