

The
ECONOMICS
of **PEACE**

BOULDING

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TO ELISE

Preface

The main key to the economics of the postwar world is a simple truism—that the rate of accumulation is equal to the rate of production less the rate of consumption. This is the "Bathtub Theorem." Production may be likened to the flow of water from the faucet, consumption to the flow down the drain. The difference between these two flows is the rate at which the water in the bathtub—the total stockpile of all goods—is accumulating.

War drains the economic bathtub in a great waste of consumption. The first problem of reconstruction is to rebuild the stockpile. It can be rebuilt only by widening the gap between production and consumption, or, in the case of a single country, by importing more than is exported. It is difficult for a ravaged country to increase either its production or its net imports. Unless it can obtain outside help, therefore, it must suffer a drastic restriction of consumption. Frequently the only way consumption can be restricted is by inflation. Here, therefore, is the key to the most fundamental problems of reconstruction.

As the reconstruction period ends, however, a new shadow falls across the economic scene. Accumulation cannot proceed forever. The time must come, as the stockpile continues to grow, when the world has enough buildings, machines, equipment, raw materials, and other goods in its inventory. With two crops of wheat in our warehouses there is not much point in adding a third. A time will come, therefore, when the rate of accumulation must decline—that is, when the gap between production- and consumption-flows must shrink. This decline can take place in only two ways—by an expansion of consumption, or by a contraction of production. Depressions—and especially great depressions—are a symptom of the attempt to solve the problem of overstuffed stockpiles by the most stupid method possible—by a

restriction of production. This restriction is brought about by deflation—for deflation reduces production by making it unprofitable.

If a free economy cannot avoid deflation and mass unemployment, it is doomed. I believe, however, that a policy for full employment can be devised. It consists of two elements: an “adjustable tax plan” designed to support consumption and prevent deflation, coupled with proposals to prevent the penalization of investment and encourage capitalists to hold goods. Such a policy could not prevent local depressions nor unemployment caused by maladjustments of industry. It could, however, prevent disasters such as the Great Depression of the 'thirties. It would mend the most fundamental flaw in the noncentralized economy and give economic and political freedom a new lease on life.

Instability and unemployment, while they seem to be the big problems of mature capitalism, are not the prime cause of the hideous poverty under which the mass of mankind groans. It is the sheer unproductiveness of human labor, rather than unemployment, that condemns two thirds or more of the world's people to a life of semi-starvation. In the long view, therefore, economic progress is still the world's greatest economic problem, and the world's best hope.

For all its darkness, this is a millennial age. For the first time in human history, a world without poverty and without war is technically possible. It may be, of course, that in the smallness of our minds we shall dash from each other's mouths the cup of plenty that our skills have fashioned. Yet it is not impossible for our ideas to keep pace with our techniques. It may well be, when the history of the last two or three decades is written, that a silent revolution in economic thought may bulk larger than the frenzy of dictators or the fortunes of war. If a free world is to survive, these new ideas must spread beyond the circle of professional economists, and there is dire need for intellectual middlemen who can assist in their distribution. It is to that task that I have endeavored to dedicate myself in this book.

My obligation to the ideas of Lord Keynes is almost too

PREFACE

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obvious to mention. I am indebted to my colleagues at Iowa State College for many helpful suggestions and criticisms. I am particularly indebted to my friend Albert G. Hart, to whom I owe many of my best ideas.

K. E. B.

Ames, Iowa,
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Part I

THE ECONOMICS OF RECONSTRUCTION

CHAPTER 1

Physical Reconstruction

The nature of war's destructiveness

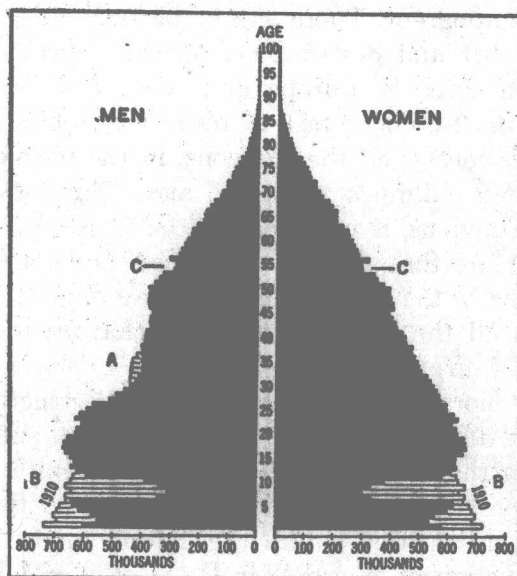
At the end of the war the economic life of the world will be in a sad condition. The most obvious and dramatic weakness will lie in those areas where the physical destructiveness of war has been most apparent. There will be battlefields churned in a nightmare of dirt and destruction; bombed areas like gaping wounds in the cities of Europe and Asia; the dead and the maimed. The most obvious task of reconstruction is that of the builders, the farmers, and the surgeons, in the physical restoration of shattered buildings, soils, and men. This task, although it is the most obvious, is not the greatest. It is an odd paradox of modern warfare that the destructiveness lies not so much in the efficiency as in the expense of its destruction. It is doubtful whether, with all the immense technical changes in the art of war, in spite of airplanes, bombs, and high explosives, war has become much more efficient as a means of destruction than it was in ancient times. No modern city has, as yet, suffered quite the fate of Carthage or of Jerusalem, and in spite of the advance of science, the most efficient and perhaps the cheapest instrument of destruction is still the lighted torch. The actual physical destruction of World War II, as of World War I, can be repaired in a few years. This is true, strangely enough, even

of land. Observers who saw the battlefields of Flanders in 1919 debated whether the hideous scene would ever be fit for agriculture again and seriously proposed turning the whole area back to forest. Yet, as early as 1921 the battlefields had recovered in the production of cereals to a greater extent than the rest of Europe, and by 1924 had even recovered their livestock industry.

The destruction of human resources

More serious than the destruction of land and building is the destruction of human resources. There will be two great gaps in the population of those countries most affected by the war. One, affecting mainly the male sex, is the gap in the war generation itself—those who fought and will never return. Many of these men would have been the leaders of the postwar world, and the gap is likely to be felt in quality as well as in quantity. The other gap, affecting both male and female populations, is the legion of the unborn. This may be even larger than the number of those who died. The illustration below shows the age distribution of the German population in 1925: *A* shows the gap of the

AGE DISTRIBUTION OF THE POPULATION OF GERMANY
(Census of 1925)



Adapted from *Statistisches Jahrbuch für das Deutsche Reich*, 1928, *Graphische Darstellungen*, p. II.

war dead; *B* shows the gap of the unborn. These gaps persist for decades. Thus the gap of the unborn in the War of 1870 is apparent at *C* in the age distribution of 1925, when there were fewer people of 55 than there should have been.

The invisible cost of war

But the most serious destruction of war lies not in visible ruins or in visible gaps in the generations. It lies in the fact that the whole economic, political, and psychological apparatus of the warring nations has been turned to war. Huge war industries have been developed. The ordinary channels of trade have been blocked, and the flow of the materials of commerce goes through unaccustomed and perhaps temporary channels. Millions of men have lived for years in the armed forces where the habits of responsibility have been destroyed, and many have become unfit for the tasks of civilian life. Millions of other men have gravitated to war industries where there is now no demand for their services. Machines, even machine tools, may be specialized for war and are not easily adapted to the production of the goods of peace. This is the "real" cost of war—the diversion of so large a proportion of economic resources to produce that most expensive and often most disappointing of all commodities—victory.

The real cost of war

In thinking about the cost of war, the astronomical billions of dollars mean very little, except as they tell us what proportion of the national income is diverted to the war industry. The significant cost is the "real" cost—that is, the goods and the services that are *not produced* because the resources—men, land, and machines—that might have produced them are instead producing arms and ammunition. The resources used in war may be partly obtained, it is true, by absorbing unemployed men and equipment. Insofar as this is true, the war effort has no real cost. But, in a big war, the war industry eats up resources that might have been engaged in producing other things, and the loss of these things constitutes the major portion of the real cost of the war. The number of houses, for instance, *not built* because of the war effort is probably greater than the number of houses destroyed by bombs.

Capital consumption

The "real" cost falls on two groups. Part of the sacrifice is endured at the time of the war through the reduced consumption of the people. Part of it, however, falls on the postwar generation because of the consumption of capital during the war. Resources are obtained for the war effort by using up the existing equipment of society without replacing it. Houses are not repaired, railroads, machines, and factories deteriorate, soils are depleted, education is neglected; at the end of a long war the whole equipment of civilized life, both physical and mental, is on a lower level than it was at the beginning. The task of restoring this equipment involves real sacrifices from the postwar generation. This is true no matter how the war is financed: it is not the national debt that constitutes the burden on future generations, but rather the absence of real equipment which they might otherwise have possessed.

Reconstruction is capital rebuilding

Essentially, the economic problem of reconstruction is that of rebuilding the capital of society. It is not only the physical capital that needs to be built up—new houses, new factories, new machines. War damages psychological capital as well as physical capital, and lowers the economic value of human minds and wills. Despair is more destructive than dynamite, and the greatest obstacle to reconstruction may be the apathy of a war-worn people. This is so particularly in the defeated nations, where the tremendous sacrifices of war have apparently been made in vain. War also tends to destroy the subtle, moral bonds that are the unseen underpinning of all economic life. This is as true in the victorious countries as it is in the vanquished. The trust and confidence of man for man on which the whole economic structure is raised suffers as a result of war. The governmental regulation and the inflation which usually accompany war provide a medium in which large gains can be made by the unscrupulous. A class of *nouveau riches* may arise whose conduct is not subject to the restraints of an older aristocracy. The honest man finds himself beaten to the wall in a maze of governmental regulations and prohibitions; he finds unscrupulous competitors, who know the "black market" not only in com-

modities but in men, getting rich at his expense. Little wonder, then, that the temptations to dishonesty grow, that power is abused, and that the moral fabric weakens. No monetary value is usually placed upon an honest man; but in a very real sense, when honesty decays, the true capital values of society decline.

The meaning of "capital"

This concept of capital-rebuilding is so important that it may be desirable to digress for a moment. In the broadest sense of the word, *capital* means the sum total of the valuable things possessed by the individuals of a society, excluding "claims," that is, mere titles to property. The word is used to mean both the *inventory* of these valuable things—the houses, factories, machines, livestock, stocks of raw materials, and goods in all stages of completion—and also to mean the sum of the *values* of these things. It should generally be clear from the context which of these two meanings is intended.¹

Production adds to capital, consumption destroys it

Every time something valuable is created, there is an act of production. That is to say, all production adds, however momentarily, to the stock of capital. The farmer who grows wheat, the miner who mines coal, the builder who builds houses, the tailor who makes clothes, are all, in those acts, increasing the stock of capital, for they are adding to the existing stock of values. Even a singer may be conceived as creating a very short-lived capital good in the form of sound waves. Conversely, all consumption subtracts from the stock of capital. Consumption means destroying values in the way in which they were intended to be destroyed. Thus, when we eat a loaf of bread, wear out a suit of clothes, burn coal, or use

¹ Claims and titles, such as shares of stock, bonds, notes, securities of all kinds, bank deposits, and so forth, are not counted in the total of capital, although they represent *assets* to individuals. However, any claim or title which is an asset to one individual is a liability to another. Thus, a bond is an asset to its owner, but a liability to the company that issued it. A bank deposit is an asset to its owner, but a liability to the bank. Hence, if we were to add up the balance sheets of all individuals and organizations in society, we should find that the claims would cancel out, and we should be left with the inventory of capital goods on the one side, and an equal total of personal net worths on the other. For a fuller discussion see Boulding, Kenneth E., *Economic Analysis*, Chapter 14. New York: Harper, 1941.

furniture, we are by these acts diminishing the total stock of capital. There is nothing wrong about this; indeed, the whole aim of production is consumption. There is no particular virtue in having a stock of capital. It merely so happens that we cannot do many of the things which are necessary to living without consuming capital, and hence production is necessary in order to replace the capital destroyed. If we all had wishing wands, there would be very little need for capital; yet our satisfactions and our general welfare might be enormously increased, provided that we were wise enough to wish for the right things. Production is necessary because we cannot eat without destroying our stocks of foods, clothe ourselves without wearing out our garments, or build houses that will not crumble.

**Rate of increase of capital = production
minus consumption**

The rate of increase of the stock of capital is equal to the difference between production and consumption. This difference is sometimes called "saving," but since this word is ambiguous, it should be avoided as far as possible. If, for instance, production in a community is worth 1,000,000 dollars a year, and consumption amounts to 900,000 dollars' worth a year, there will be a net increase of 100,000 dollars in the value of the stock of capital. Thus a community can increase its rate of accumulation of capital only by increasing production, by decreasing consumption, or by some combination of the two.

**Production depends on capital, both material
and spiritual**

A complicating factor is introduced, however, because the rate of production itself is dependent on the amount and the character of the stock of capital goods previously accumulated. Without a stock of food sufficient to last from one harvest to the next, a community cannot occupy itself with agriculture, but must scratch a living from the woods. No modern method of production can be carried on without machinery and equipment of all kinds. In the accumulation of capital goods each kind of commodity tends to be accumulated to a point where further accumulation does not bring returns sufficient to compensate for the sacrifice involved. Thus, a community will in-

crease its stock of wheat up to the point where there is no danger of running short between harvests, or in bad years, but will not normally increase its stock beyond that point unless through governmental intervention. The same will be true of all other items, whether raw materials, goods in process, finished goods, or machinery, tools, and equipment.

The rate of production itself depends primarily on two things: the state of knowledge and character of the people, and on the material goods which they possess. In one sense these are both aspects of capital, for the state of knowledge and character is itself a result of the educational processes of society, which bear a striking resemblance to the process of investment. Just as we value a house or a machine, so we might value the minds and bodies of persons according to their productive capacity, and in a broad sense the process of education consists in increasing the capital value of minds and bodies.

The more capital, the faster it grows

In the economic, as in the spiritual sphere, to him that hath shall be given. A rich society, possessing much capital, finds the process of accumulating more capital relatively easy, for its great capital enables it to have great production, and with great production it is easy to have a large excess of production over consumption. A poor society, on the other hand, with little capital, finds accumulation difficult, for even at low levels of consumption nearly all its meager production is consumed and there is little margin for accumulation. Very poor societies may never even be able to start accumulating capital, for production may never exceed that minimum below which the level of consumption cannot fall. In this miserable state production and consumption are equal yet both are at a level so low that consumption cannot be lowered further. Savage societies are nearly all in this condition, and even the relatively advanced societies of India and China are not far from it. Such a society cannot better its condition except by some intrusion from without, such as missionaries, teachers, businessmen, investors, or plague.²

² The Black Death in the 14th century, by effecting a sudden reduction in population in Europe, left the survivors with increased equipment per head and apparently started a snowball of economic progress.

The chain of production

The process of production is a long, chain-like structure with many links, connected in many ways. In the course of this process, certain goods, known as intermediate products, are transformed into other goods closer to the form in which they are finally consumed. Grass becomes wool, wool becomes yarn, yarn becomes cloth, cloth becomes clothes, and clothes become warmth. Some of these chains are even circular: manure becomes fodder, fodder becomes manure. Most of the chains have branches, either meeting where a number of things combine to make one commodity, or diverging, where one commodity is used to make a number of different things. Thus coal, iron ore, and limestone combine economically to become steel; the steel assumes the form of automobiles, bridges, buildings, cooking utensils, or a host of other things—and eventually becomes scrap, which in turn becomes a raw material of steel again.

The vicious circle and the benevolent spiral

The circularity of the production process is of the greatest importance in interpreting the growth of capital and of production itself. This is seen particularly if we recognize a link that often goes unnoticed—the link between human consumption and human energy and creativeness. Up to a point, consumption goods are transformed into human energy, which in turn is a factor of production. This “circle” may be “vicious” or may be entirely beneficial, depending on whether it is a closed circle or a rising spiral. In very poor societies, poverty is both a result and a cause of the low energy level of the people. Since the people are poor, they do not produce enough food and warmth to keep their bodies and minds active. Because their bodies and minds are not active, they do not have the energy to produce enough food and warmth. Societies caught in this vicious circle—as are all savage societies and even many sections of civilized society—find it impossible to break the circle except through some outside intervention or fortuitous favorable circumstances, such as an accidental discovery of new lands or new techniques.

Once the circle is broken, however, nothing can prevent the

improvement of the life of the people, for the circle has become a spiral: increased production leads to improved nutrition; improved nutrition leads to increased energy; increased energy leads to increased production, and so onward and upward until a new and higher equilibrium is reached. One of the great long-run problems of the world is that of how to turn the vicious circle, in which half or three-quarters of the world's population is trapped, into a benevolent spiral of increasing production. On a smaller scale, this problem is involved in postwar reconstruction, and in this case also the speed of reconstruction depends greatly on the extent to which outside help is available in restoring the capital structure, by permitting the distressed area to import without exporting.

The importance of "outside" help

What is true of a poor society is also true of a section made poor by the destructive effects of war. Such a devastated area may recover very slowly unless it receives help from outside in the form of gifts or investments. Had the battlefields of World War I been cut off from the rest of the world, they would still be devastated areas. Their rapid recovery arose from the fact that they were able to import great quantities of food, materials, livestock, equipment, and labor without paying for these things by exports. In the years following 1918 a large volume of goods poured into the devastated areas; the inhabitants were fed and clothed from outside and were able to devote their time to rebuilding houses and farms, filling up trenches and shell holes, ploughing the devastated fields, restoring the shattered factories and towns, and so on. Imagine the situation had there been no flow of commodities from the outside. The inhabitants would have had to devote almost their whole energies to growing food, often with very inadequate implements. Crops would have been poor and livestock scanty for many years. Not until a little reserve of food had been accumulated could they have devoted much time to rebuilding buildings, or to making equipment and machines. It would have taken many years to restore the cattle, sheep, and horses, for these are slow-breeding animals; meanwhile, the people would have been desperately short of meat