Chapter 17

A Concluding Note

It has not been the principal purpose of this work to develop definitive answers to problems of social policy; it has been the objective rather to develop methods of analysis than applications. Nevertheless it is possible to outline briefly some of the insights into economic problems which the analysis yields.

Economic cybernetics

The most critical problem of economic policy for the Western world is whether the wide fluctuations in output and employment which have characterized its history can be reduced to tolerable dimensions. This is essentially a problem in "cybernetics," to use the word coined by Dr. Wiener.[1] An unrestrained and unrestricted capitalism exhibits complex and irregular fluctuations in its basic aggregates which are symptomatic of a lack of adequate homeostatic mechanisms. What the system clearly needs is a "governor" or "thermostat" of adequate sensitivity. Dr. Wiener himself, like most natural scientists, underestimates the degree of homeostasis, or self-regulating ability, which exists in a free market economy, and rather resents the unwillingness of man to behave like matter. Nevertheless the development of adequate cybernetic mechanisms for a free economy, which will not achieve stability only at the cost of tyranny or stagnation, is a project of the first priority, exceeded in urgency perhaps only by the necessity of developing similar cybernetic mechanisms for the stabilization of peace. These mechanisms clearly must come through the agency of government, which is the only organism that has the power to act like a governor. The mechanism itself, however, is complex, and neither the signals for action nor the actions themselves are easily identified.

The simplest form of cybernetic mechanism is the governor or thermostat, which always brings into play forces to restore the system it is controlling to a constant equilibrium. Thus a governor slows down the

[1] Norbert Wiener, *Cybernetics* (John Wiley & Sons, New York, 1948).

engine that is running too fast and speeds up one that is running too slow. Similarly a thermostat operates to warm up the house when it gets too cold, and cool it down when it gets too hot. All cybernetic mechanisms involve a cycle of some kind; the amplitude of the cycle, however, depends on the sensitivity of the mechanism. If the mechanism is insensitive there may be a considerable cycle. A hand-fired furnace has a thermostat in the shape of the human fireman, who reacts—usually rather slowly—to superoptimum temperatures by going down and checking the draft and to suboptimum temperatures by going down and shovelling coal. Because the reactions of a human fireman are slow, however, his activities are likely to result in a considerable, if irregular, temperature cycle, and the house will most of the time be either too hot or too cold. An automatic fireman is a more specialized brain, which sets the furnace in motion the moment the temperature falls below the optimum, and checks it the moment the temperature rises above the optimum. There is still a temperature cycle, but it is small enough hardly to be noticed. It should be observed that a too-sensitive and too-powerful thermostat will also set up fluctuations of a "surge" nature, the movement towards equilibrium being too violent and carrying the system beyond it in swings which may even be of ever-increasing amplitude.

It is tempting to apply this analogy to the economic system, with its swings of inflation and deflation, and to argue that all that is needed is a "governor" which will operate in an inflationary manner when the system is deflating, and in a deflationary manner when the system is inflating. The old gold standard was, of course, a mechanism of this kind—a deflation, by making gold production unusually profitable, eventually corrected itself by an increase in gold production and the gold stock, and an inflation, by making gold production unprofitable, led to a shrinkage in gold production and in the gold stock. There is some evidence that this mechanism actually operated in the nineteenth century; it operated, however, with a very long time lag, and was subject to all kinds of extraneous irregularities. Various substitutes which have been proposed, such as bimetallism, symmetallism, the composite commodity standard, even the adjustable tax plan, are mainly proposals for increasing the sensitivity of the governing mechanism, and as such, of course, are all to the good, as there seems to be very little danger of getting a too-sensitive "governor."

The analysis of this book indicates, however, that the problem may be much more complex than can be solved by the simple governing mechanism outlined above. It would be fairly easy for government to regulate the total volume of *payments* within reasonable limits by means of its

own payments system, given adequate and rapid information about the total volume of payments. This is the objective of the "adjustable tax plan" described in my *Economics of Peace.*[2] A decline in total payments could be followed automatically by a cut in tax payments, a rise in total payments by a rise in tax payments. To put the matter in another way, changes in payments velocities can be offset by changing the quantity of money in the private sector: if payments velocities rise, this can be offset by diminishing the quantity of money in private hands by running a government cash surplus; if payments velocities fall, this can be offset by running a government cash deficit.

Payments, however, are not output or income, and it would be quite possible to have a stable volume of payments within which output, income, and prices fluctuated violently. Economic cybernetics therefore involves more than a simple governing operation: it is more like the cybernetics of the automatic steersman, in that it involves at least two mechanisms, and perhaps more. It is not enough to stabilize payments through the deficit-surplus: it may be necessary to stabilize output and income through fluctuations in government absorption. This represents a much more intractable political and social problem, as it is more difficult to effect rapid changes in government absorption (except, ironically enough, in time of war) than to effect rapid changes in government payments. Nevertheless the problem must be tackled, as we cannot assume that payments fluctuations can be substituted altogether for absorption fluctuations.

Another possible solution is to make the level of government absorption large enough that it results in a "pressure economy" in which total planned absorption is always pressing on capacity, and then to regulate the economy by the direct control of consumption or of private investment. In a sense this is the Socialist solution, as seen in an extreme form in Russia and in a less extreme form in England. If government absorption is too large, however, the restriction of private activity, both of consumption and of investment, which it entails becomes burdensome and injurious to the general welfare of the economy. This is clearly true of Russia, where the ideology inhibits entrepreneurial activity even of the most obviously socially desirable kind, and it may even be true of England. It may well be, however, that a quite small extension of government absorption might well result in a situation where most of the benefits of private enterprise were retained, without the danger of severe depressions. This is particularly true, of course, if the "government multiplier" is large, as it may be in our society. A government

[2] Boulding, *The Economics of Peace* (New York, 1945), p. 161.

absorption of 20% of the national income, as opposed to about 11–12% in the thirties, might easily give us a resilient "moderate pressure" economy which could be regulated without severe controls.

Secular inflation

The question still remains, however, whether if we avoid the Scylla of secular stagnation we do not fall into the Charybdis of secular inflation. This is a problem which most Keynesians have not adequately faced, though Keynes himself gave it an uneasy recognition. According to Keynes "true inflation" does not begin until there is full employment, but long before this state is reached prices in most of the economy may be rising because of the "bottlenecks" problem—immobility of resources leading to inelastic supplies, and therefore to rising prices instead of rising outputs, in one industry after another as demands increase. In this regard the experience of 1936–1938 is depressing, when a recovery in output began to move off into price-wage inflation at high levels of unemployment, and the attempt to check the price inflation led instead to the sharpest output deflation on record. There are strong long-run forces in our economic institutions which make for secular inflation. It is obviously easier to run an economy with highly organized labor and agricultural groups if the general monetary level is rising slowly, as this provides a setting in which it is relatively easy to satisfy the sociological need of these groups for "victories." A fall in the cost of living for the individual is something that happens to him: a rise in money wages is something that he gets—and for which appropriate credit is usually given! As, therefore, the effect of a change in money wages on employment is so complex that it is almost impossible to predict even its direction, no effective social pressure can be brought to bear in favor of wage-price reductions even in time of unemployment. Hence the political and sociological forces would certainly indicate that a full employment policy would predispose the economy to secular inflation. We have had so little experience of such a phenomenon in the United States, where there has been no secular trend in the price level for well over a century, that we are probably too blind to the problems it may raise, e.g. for insurance, pensions, and social security. There is also a problem as to the extent to which the favorable effects of inflation are due to its unexpectedness. If this factor is important, then inflation would have to be accelerating to be effective—a most unpleasant prospect! On the other hand, one certainly does not wish to come to the conclusion that a full employment policy is possible only with price-wage control, for we have certainly not developed as yet the administrative skill which can make governmental price regulation an adequate substitute for the free market.

The future of capitalism

Another question on which the analysis of this work throws some light is one which concerned the classical economists a good deal, but which has unaccountably dropped out of much modern economics. This is the question of what happens to the distributive shares "in the progress of society." Must profits ultimately disappear as accumulation proceeds, and is there consequently an internal contradiction in capitalism which seals its historic doom? Can we possibly maintain full employment in the stationary state? There are hardly any more important questions for the Western world to answer. The analysis of Chapter 14, in particular, clears up some doubtful points in this connection. It is clear from the business-savings identity (8) on p. 249 that there cannot be any long-run future for business savings. In the long run there cannot be a perpetual increase in business money holdings, or in net household indebtedness to business, and in the stationary state there cannot be any long-run business accumulations. There may be short-run variations in all these items, permitting alternations of periods of business saving with periods of business dissaving, but these must cancel out in the long run. Business saving, therefore, along with all saving, must disappear in the stationary state, and outgo must be equal to income. This does not mean, however, that profits also must disappear. From the profits identity (9) on p. 249 we see that, even though business savings (dG_b) are zero, profits can still be positive as long as they are distributed, according to the "widow's cruse" principle. Hence the distribution schema in the stationary state is quite indeterminate, except as dividend or entrepreneurial consumption policy determines it. There is no need for profits to disappear as long as businesses are willing to distribute them.

Exactly what policy is desirable in regard to such distributions is a difficult question. In general it can be laid down that the proportion of national income going to profits should be at the minimum consistent with efficient operation of a free enterprise system. Where that minimum lies, however, is a difficult problem. A system of free enterprise is conceivable, in a stationary state, in which there is no profit, i.e. in which all income is labor income, and in which each enterprise maintains itself by the process of simple "homeostasis of the balance sheet." The fact of change and uncertainty, however, and the possibility of a retreat of entrepreneurs into liquid assets, mean that a certain average level of profits is necessary if the system is to operate at capacity. Thus the disappearance of profits in 1931 and 1932, due to business disinvestment (a negative dQ_b), price decline, and a cautious dividend policy, led to serious disruptions in the economy and widespread unemployment. The

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the equivalent of system "profit" is a necessity for resilience ... ! and to use it for system resilience not extracted

methods of this work are not adequate to discover what determines the optimum rate of profit. It is encouraging, however, to find that whatever the rate may be, there is no reason why it should not be attained.

The importance of dividend distributions in the determination of profit raises once again the question whether an undistributed-profits tax (i.e. a tax on business savings) should be added to the armory of policy weapons. The administrative difficulties of such a tax are considerable, yet it might prove to be an unusually valuable piece of control apparatus to prevent the disappearance of profits when business investment declines.

As the stationary state approaches, of course, output will come closer and closer to consumption. It may be very important, therefore, to raise the consumption function either by direct encouragement through the tax system or by the expansion of government absorption. There certainly seems to be no reason why the consumption function cannot be adjusted to that level which would yield optimum output, even without any net investment. Hence there seems to be no absolute reason why a suitably modified free enterprise society could not survive its own success in accumulation. To determine whether it can in fact survive would lead us far beyond the limits of economics in the direction of the total dynamics of social ecology, but we can at least show by economics that the task of preserving a free economy is not economically impossible. This note of hesitant optimism may well bring the work to a conclusion.

(output) production & consumption approach each other, yes, but the production surplus may not be "spent" on excess production or non-production consumption.