I have undertaken to show in these lectures that the modern industrial society, or that part of it which is composed of the large corporations, is in major essentials a planned economy. By that I mean that production decisions are taken not in response to consumer demand as expressed in the market; rather they are taken by producers. These decisions are reflected in the prices that are set in the markets and in the further steps that are taken to insure that people will buy what is produced and sold at those prices. The ultimate influence is authority.

The role of such planning authority is also manifested in the prices that are set for the things that business enterprises buy. It is reflected in the further steps that insure that the requisite materials and components for production will be forthcoming at these prices; and it is manifested in the decisions to withhold earnings for reinvestment and thus for the expansion of the firms and ultimately the economy.

I am not arguing that market influences are entirely excluded from effect on these decisions. Economics, as it exists rather than as it is sometimes taught, has very few pure cases. It is a cocktail, a compote. But the notion that the consumer is the sovereign influence in the economy—that all decision begins with him—is a pure case that will not do. Or it will serve only for those who wish to believe in fairy tales. The important decisions in the modern economy are made by producing organizations in the service of their own goals. And, in one way or another, public behaviour is accommodated to these decisions. Thus, the planning.

In the non-socialist economy, the modern large corporation is the basic planning unit. For some planning tasks it is exceedingly competent. I have just now mentioned the more important. The large corporation can effectively fix minimum prices. It can manage consumer wants. In conjunction with other corporations, it can control prices of production requirements and arrange supplies at these prices. And it can extract from revenues the savings it needs for growth and expansion. But some things it cannot do. Though the modern corporation can set and maintain minimum prices, it cannot set maximum prices and wages. It cannot, in other words, prevent wages from forcing up prices and prices from forcing up wages in the familiar inflation spiral. And while it can manage the demand for individual products, it cannot control total demands—it cannot insure that total purchasing power in the economy will be equal, or approximately equal, to the supply of goods that can be produced by the current working force.

There are two other planning tasks that the large corporation cannot perform. It cannot supply the specialized manpower that modern technology, and organization and planning, require. It can train but it cannot educate. And it cannot absorb the risks and costs that are associated with very advanced, forms of scientific and technical
development—with the development of atomic power or supersonic air transport or anti-missile defences or weapons systems or other such requirements of modern civilized living.

When the State Steps In
I come now to a conclusion of some importance. The shortcomings of the large corporation, as a planning instrument, define the role of the modern state in economic policy. Wherever the private corporation cannot do the job, the state comes in and performs the required function. Wherever the private firm can do the job—as in setting minimum prices or managing consumer demand—the state is required to remain out. The private firm cannot fix maximum prices, so we have the state setting what in the United States we call wage and price guideposts and what here in Britain is called a pay and wage freeze. The private firm cannot regulate aggregate demand so the state comes in to manipulate taxes, public spending, and bank lending—to implement what we call modern Keynesian policy. The private firm cannot supply specialized manpower so we have a great expansion in publicly supported education. Private firms cannot afford to underwrite the Concord or what we call the SST. So governments—British, French, or American—come in to underwrite that job.

Our attitudes on the proper role of the state are firmly fixed by what private firms can or cannot do. A private corporation is perfectly capable of setting minimum prices for cigarettes; of persuading people to buy a new and totally implausible detergent; or of developing a new and more drastic kind of laxative. This being so, this planning is naturally held to be sacred to private enterprise.

The planning functions of the state are less sacred as public tasks. Most of them are assumed to serve some special function. Or they have, an improvised or ad hoc aspect. They are not yet seen as part of an overall structure of planning that dovetails with private planning. Thus, ceilings on wages and prices are perpetual emergency actions; Keynesian regulation of aggregate demand is thought to have been occasioned by the particular imperatives of full employment and growth; the expansion of education is regarded as the result of a new enlightenment following the second world war; the underwriting of especially expensive technology is a pragmatic response to the urgent social need for faster travel, emigration to the moon, bigger explosions, and, of course, competition with the Soviet Union.

So to regard matters is to fail to see the nature of modern planning. It is also to assume that it is purely an accident that the state comes in to perform the planning tasks that are beyond private reach. There are many reasons for trying so to avert our eyes. Economists have a deeply vested interest in the market. It is our intellectual stock-in-trade. In the United States, where faith in free enterprise is deep, it is painful for us to concede that we have graduated into a directed or planned economy. And in Britain it is equally repugnant to socialists to realize that planning, which was supposed to originate with the state, has come into existence very largely under private auspices. Perhaps, with so many people finding the truth so unpleasant, it would contribute to general contentment were it just suppressed. But this is not practical. You cannot depend on people to leave an unpleasant truth alone. The planning functions of the state are not ad hoc or separate developments. They are a closely articulated set of functions which supplement and fill the gaps in the planning
of the modern large firm. Together these provide a comprehensive planning apparatus. It decides what people should have and then arranges that they will get it and that they will want it. Not the least of its achievements is in leaving them with the impression that the controlling decisions are theirs.

I would like now to examine in slightly more detail these planning functions of the modern state.

**Wage and Price Fixing**

On the fixing of maximum wages and prices, the guideposts or wage and price freeze, I have only a word or two to add. It stands very much in relation to modern economic policy as does prostitution to the theory of business management. Both are widely recognized to exist and to serve a function. But no one wants to admit of their permanent need. They are not aspects of the good society. And certainly no one wishes to study them in order to see how they could be made more efficient, or more serviceable to the general public. It would be well were we to recognize that wage and price fixing, at least, is indispensable in the planned economy. The next step would be to learn how this wage and price fixing could be made more effective and more equitable. Even the universities might, in time, desert the fictions of the free market for the modern reality of regulation and control. That, however, may be optimistic. Thorstein Veblen once observed: ‘It has generally held true that the accredited learned class and the seminaries of the higher learning have looked askance at all innovation’.

The Keynesian regulation of aggregate demand also requires only a word. It is a thoroughly well-established feature of modern industrial planning, although economists have pictured it not as a necessary aspect of planning but as a way of improving the market economy. The need for it follows in fact directly from modern industrial planning. As we have seen, corporations decide authoritatively what they will reserve from earnings for reinvestment and expansion. This planned corporate withholding is overwhelmingly important as a source of savings in the non-Soviet countries, as planned withholding by the state is the overwhelmingly important source of savings in the socialist economies. But in the non-Soviet economies there is no mechanism which insures that the amounts so withheld for investment will be matched in the economy as a whole by what is invested. That is to say there is no mechanism outside the state. So there must be direct action by the state to equate the two. And this the state does, primarily by manipulating spending and taxation. The need to equate the planned savings and the planned investment of the large corporations is not of course the only reason for such action. Saving and investment elsewhere in the economy must also be matched. But corporate savings and investment are by far the largest and most important in the total.

The successful regulation of demand requires that the quantitative role of the state in the modern economy be relatively large. Demand is regulated, by increasing or decreasing the expenditures of the state or decreasing or increasing the taxes the state collects. Only when the state is large and its revenues substantial will these changes be large enough to serve. One effective way of insuring the requisite size is to have the state underwrite modern technology, which is admirably expensive. Such is the case with modern weaponry, space exploration, even highway and airport design.
Technology, we have seen, is a prime instrument in destroying the effectiveness of the market. But it does help make possible the planning that replaces the market.

The next function of the state is to provide the specialized and trained manpower which the industrial system cannot supply to itself. This has led in our time to a very great expansion in education, and especially in higher education, and this has been true in all of the advanced countries. In 1900 there were 24,000 teachers in colleges and universities in the United States; in 1920 there were 49,000; by 1970, three years hence, there will be 480,000. This is rarely pictured as an aspect of modern economic development; it is the vanity of educators like myself that we have the initiating power in this new enlightenment. But it is significant that when industry required for its purposes millions of unlettered proletarians, that is what the educational system supplied. As industry has come to need engineers, sales executive’s, copywriters, computer programmers, personnel managers, information retrieval specialists, product planners, and executive panjandrums, that is what the educational system has come to provide. I might say that anyone who listens to lectures should on occasion ask for some proof that is related to his common experience. And all who lecture should welcome this test. It arrests the mandarinism which is the principal occupational hazard of lecturers.

**Demand for Specialized Manpower**

For proof of the point I have just made on specialized manpower you have only to turn to your Sunday, or even your daily, newspaper. Here you will find that every kind of esoteric and arcane specialism is being sought. Electronic engineers, senior systems programmers, instrument engineers, minerals dressing engineers, work study engineers, lady assistant training officers, and technically oriented personnel for an Embodiment Selling Team are my culling from a single London newspaper.

Once the ability to obtain capital was decisive for the firm that was seeking to expand. Now it is the supply of such manpower. Once in the industrially advanced world the community—or the nation—that wanted more industry gave first thought to its capital supply, and how to reassure the bankers. Now it gives first thought to its educational system: how to obtain the required specialists.

Nor can we be altogether happy about education that is so motivated. There is danger that it will be excessively vocational. We shall have a race of men who are strong on telemetry and space communications but who cannot read anything but a blueprint or write anything but a computer programme. When we realize that our new concern for education is the result not of a new enlightenment but a response to the needs of industrial planning, we shall begin to worry, I think, a good deal about the future of liberal and humane education. In the end college and university rectors, presidents and vice-chancellors may even make speeches about it, believing, as so many of these excellent men do, that a thoughtful speech is an effective substitute for serious action.

Much the most interesting of the planning functions of the state is the underwriting of expensive technology. Few changes in economic life have ever proceeded with such explosive rapidity. Few have so undermined conventional concepts of public and private enterprise. This activity includes, as I have noticed in past lectures, the direct financing of research and development; this is something on which the United States
Government in 1962 spent an estimated $10.6 billions. This was more than its total dollar outlays for the United States Government for all purposes, military or civilian, before the Second World War.

But this activity also involves the provision of a guaranteed market for a large number of highly technical products from aircraft to missiles to electronic gear to space vehicles. Nearly all of this expenditure—some 80-85 per cent.—goes to the large corporation, which is to say that it is in the planned sector of the American economy with which these lectures are concerned. This activity brings the modern large corporation into the most intimate association with the state; in the case of public agencies such as the United States Atomic Energy Commission or the United States Air Force, it is no longer easy to say where the public sector ends and the private sector begins. The private sector becomes, in effect, an extended arm of the public bureaucracy. I might add that no one flaunts the banner of private enterprise so aggressively as the firm that does 75 per cent, of its business with the government and yearns to have more.

In the past, it has been argued by good Keynesians that there is nothing very special about a particular kind of government business. Replying to standard Marxian charges that capitalism depends excessively on armaments, Keynesians have pointed out that spending for housing, concert halls and theatres, for more automobiles to drive into central London and for more highways to allow more automobiles to drive into central London, and for more radios to amuse people while they are sitting in the resulting traffic jams, and for other of the attributes of modern gracious living would serve just as well as spending on armaments. But this is not so certain. It is not that the Marxians are right; it is one of the rules of discourse that this must never be conceded. It is rather that the simple Keynesian view is incomplete.

The expenditures I have just mentioned for concert halls and highways would not serve to underwrite technology as do present expenditures of the state. And this underwriting is a function, we have seen, that is beyond the reach of private planning. Replacement of military spending, with its emphasis on underwriting advanced technology, would have to be therefore by other equally technical outlays if it was to serve the same purpose. Otherwise, technology would have to be curtailed to that level where corporate planning units could underwrite it on their own. And this curtailment under present circumstances would be very, very drastic.

I find myself, in consequence of this analysis, a considerable supporter of the space race. It is not that I think that exploring the Moon, Mars, or even Saturn—which has always seemed to me the most original of the lot—is of high social urgency. And pleasant as it would be to select the passengers for the first flights, especially if they promise to be One-way, I imagine that President Johnson will want to do this himself. But the space race allows an extensive underwriting of advanced technology. And it does this in a field of activity where spending is large and where, in contrast with weapons and weapons systems, competition with the Soviets is comparatively safe and comparatively benign. So the turning of technological knowledge to this particular competition does not seem to me to be something we can entirely regret.

We see the modern corporation, in the technological aspects of its activities, moving into a very close association with the state. The state is the principal customer for such technology and the underwriter of major risk. In the planning of tasks and missions,
the mapping of development work and the execution of contracts, there is nowadays a
daily and intimate association between the bureaucracy and the large so-called private
firm. But one thing, you will say, keeps them apart. You will say the state after all is
in pursuit of broad national goals, whatever these may be. And the private firm is
there to make money— in the more solemn language of economics it is there to
maximise profits. This difference in goals, you will say, will always sufficiently
differentiate the state from private enterprise.

But here again we find that the reality supplies that indispensable thread of
consistency. For power, as we have seen, has passed from the owners of the
corporation to the managers, and to the scientists and technicians. They now exercise
full and autonomous power and, not surprisingly, they exercise it in their own interest.
And this interest differs from that of the owners. For the managers and technicians
security of return is more important than the level of total earnings. It is only when
earnings fail that the power of the managers is threatened. And growth is more
important to the managers than maximum earnings. That is because those in charge do
not get the profits, or anyhow not much of them. But they—the scientists and
technicians, do get the promotions, enlarged opportunities, higher salaries and
prestige which go with growth of the firm. I might say here that for clarifying these
matters I have been greatly indebted to the brilliant Cambridge economist Robin
Marris, who has written very lucidly and very wisely on this question.

So here, following this line of thought, we encounter a remarkable fact. For economic
security and growth as we reflect on it are also prime goals of the modern state.
Nothing has been more emphasized in modern economic policy than the prevention of
depression or recession. It is something that politicians promise automatically and
without any perceptible thought. And no test of social achievement is so completely
and totally accepted as the rate of economic growth. It is the common measure of
accomplishment of all the economic systems. Transcending political faith, religion,
occupation, or all except eccentric philosophical persuasion, the value of economic
growth is something on which Americans, Russians, Englishmen, Frenchmen,
Germans, Italians, and Yugoslavs all agree. I gather that not even the modern Irish
dissent.

So there is in fact no conflict between essential goals and the goals of the leaders in
the modern firms. On the contrary, there is a large symmetry. Both seek security. Both
value growth. We have seen that, as an aspect of its planning, the modern industrial
enterprise accommodates the behaviour and beliefs of the individual consumer to its
needs. It is reasonable to assume that it has also accommodated our social objectives
and associated beliefs to what it needs. In any case, we may assume that there has
been an interaction between state and firm which has brought the two to a unity of
view.

A very sombre thought will occur to many of you here. We have seen that the state is
necessary for underwriting the technology of modern industrial enterprise. Much of
this it does within the framework of its military expenditure. In the consumer’s goods
economy, the wants and beliefs of the consumer, including his conviction that
happiness is associated with the consumption of goods, these are all accommodated,
in greater or less measure, to what producers need and want to produce. Is this true
also of the state? Does it respond in its military procurement to what the supplying
firms need to sell, and the technology that they wish to have underwritten? Are images of foreign policy in the planned industrial communities—in the United States, the Soviet Union, great industrial countries of Western Europe—shaped by industrial need? Do we have an image of conflict because that serves technological and therewith planning need?

We cannot exclude that possibility; on the contrary, it is most plausible. We should also recall that it is a conclusion that was reached rather more intuitively by President Eisenhower while he was President of the United States. In President Eisenhower's now famous valedictory he warned of the influence of the 'conjunction of an immense military establishment and a large arms industry'. Our image is of a foreign policy which prescribes what will be required in responding armaments. This again will do for those for whom the mind is an instrument for evading reality. All others will see the possibility here of a two way flow of influence. The image of the foreign policy affects the demand of the state on industry. But the needs of economic planning may affect the view of the state on foreign policy. And there can be few matters where it will be safer to be guided by reality. It will also be observed that I am not confining my argument here to any particular planned economy, west or east. We had better, at least in the beginning, worry -lest it might be true of all.

This is a somewhat cursory view of the matter. I shall have a little more to say on this in a later lecture and I have a great deal more to say about it in a forthcoming book.