The Blackett Memorial Lecture 1983

Work and the Future

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I was very honoured to be asked by Professor Brian Haley to give this year’s Blackett Memorial Lecture. He and I have worked together on a school governing body and I have great admiration for his gifts. I also appreciate all that industry has gained from the practice of operational research and therefore the debt which we owe to Patrick Blackett, whom we look up to as the discipline’s founding father.

Against that background I was delighted to accept the Society’s invitation, challenging though it was, and I decided to talk on “Work and the Future”. I recognize that I have chosen a general subject for the annual gathering of a specialist society. There would be general agreement, however, that the key to the effective use of operational research is the correct definition in the first place of the problems to which it is to be applied. Too often we use operational research in industry to optimize the way a particular function is carried out, when the real question is whether that activity should be undertaken at all.

My object in discussing “Work and the Future” is to separate out some of the strands entangled in the broad issue of what the pattern of jobs is likely to be in this country in the years ahead. It will mean treading some well-worn paths, because one of the questions is whether the pattern will be different in Britain from that in other countries. The statistics of Britain’s relative economic decline since the Second World War are incontrovertible, but a number of the plausible generalizations which have been advanced to account for that decline are not. This point needs to be explored because if the diagnosis is wrong, some of the simple nostrums currently being prescribed are unlikely to effect a cure.

We should however start by accepting that there is no shortage of work. Quite apart from the natural aspirations of the community for continuing material improvement, Britain is accumulating a backlog of work which needs to be done to maintain the deteriorating fabric of our urban society. To take just one example, the drainage and water systems of our cities are mainly one hundred or more years old and overdue for renewal. A crude estimate of their replacement cost is £50bn, which gives some idea of the size of that task alone. Maintaining and modernizing the road and rail networks is another vast task which needs to be tackled. People are not therefore without jobs because there is nothing useful for them to do. What is missing is our ability to make an adequate connection between those who are seeking work and work which needs to be done.

This is not a peculiarly British problem; it is one which faces the industrialized countries as a whole, and when the world has worked its way through the present depression, it will not be solved even if it becomes less acute. It is unlikely that world trade will return to the rate of growth it registered from the Second World War to the mid-1970s, in the foreseeable future. The 1980s and 1990s are likely to be a period of slow growth and great uncertainty, with the unpredictability of the economic environment being in itself a brake on progress. If this is to be the scene, then we cannot rely on external growth to provide new jobs in this country on the scale of the post-war years.

Why is it that we have seen a sharper rise in unemployment in Britain than in other industrialized countries, aside from the effects of current economic policies? There are a number of significant changes in the pattern of employment in this country, which overlap but which need distinguishing in attempting to answer that question.
In the first place there is the decline of such basic industries as steel, shipbuilding and textiles. This kind of structural change hits old industrial nations like Britain hardest, because we carry the overheads of the past.

There is the further problem that the industries concerned are concentrated in particular parts of the country. Efforts to temper the effects of the decline of the basic industries on the regions where they are located may slow the rate of decline but will not halt it. We come back to the old issue of whether jobs should move to people or the other way round. The track record of the first option is discouraging, and the barrier to the second is that Britain is a relatively immobile society.

Another change in the pattern of employment stems from the increasing demand by British consumers for manufactured goods made abroad. Cars are the obvious example, but it applies to a wide range of household goods of all kinds. Cars, however, provide a useful illustration of the impact on employment of this kind of switch. Not only are more than half the cars sold in Britain imported, but imports are forming a larger part of the models sold by domestic manufacturers. The drop in cars made in Britain affects suppliers to the motor trade adversely twice over: their orders for original equipment are cut and so are their orders for replacement parts.

The loss of jobs through structural change is due to industries becoming obsolete; the loss due to the upward trend in imported manufactures mainly reflects the failure of British industry to be competitive. Compared to our competitors, we have increased our wages faster and our productivity more slowly. The figures from 1970–1980 show that pay in Britain went up by 346% and productivity by 26%. This compares with 190% and 52% respectively for the average of competing countries.

A vital factor in the competitive equation is the exchange rate. In theory floating exchange rates should adjust for productivity differentials. Exchange rates are however affected by a country’s financial policies, by confidence in its economy and apparently by whether or not it is an oil producer.

Nevertheless competitive factors are largely under our own control in this country and so are different in kind from underlying changes in the pattern of employment, which affect all countries equally at the same stage of development. The most fundamental of these changes is the swing in employment away from manufacturing industry towards the service industries. This is a feature of developed economies and is relatively predictable. There are certain physical limits to the demand for goods, and capital is continuously being substituted for labour in their manufacture. There are no obvious limits to the demand for such services as health care, education and the provision of information, and these services depend primarily on people, even though the administration of them can be automated. Service industries are also less subject to foreign competition than are the manufacturers of goods.

The swing to the service industries and away from manufacturing has speeded up dramatically in Britain in the last few years. I have included a breakdown of the way in which the pattern of employment has changed between June 1976 and September 1982 to bring this point out. The drop in employment over that relatively short period of time is 1.5m, which is roughly the loss in the manufacturing sector alone. By September 1982, professional and scientific services, insurance and banking, and catering employed more people than manufacturing industry. The December 1982 figure for manufacturing is 5,487,000, and the four sectors which account for most of the decline since 1976 are engineering, textiles and footwear, metal manufacture and vehicles, in that order.

At the same time the number of people self-employed is estimated to have risen from 1,888,000 in 1976 to 2,057,000 in 1981. These estimates have recently been revised upwards and probably understate the position, quite apart from those working for themselves for cash, in what is politely known as the informal economy.

To the extent that manufacturing was more subject to over-manning (in effect was less competitive internationally) than other industries or occupations, the reduction in jobs is once-for-all. It is also true that we have seen massive changes in the pattern of employment before; for example agriculture and domestic service were still major employers in the