Shortfall In Britain — Capital Spending, Skilled Labor, R and D

Britain today faces a margin of surplus value in the form of North Sea oil that could be used to rebuild her industry and society and furnish essential productive powers to the world economy. Yet a look at recent trends in the fundamental categories of fixed capital expenditures, skilled labor, and research and development shows that the British economy has deteriorated markedly in the last 10 years.

Perhaps the most important question is the quality of the workforce. Although it is widely known that British industry is outmoded and has been displaced in stagnant world export markets by newer industries like those of Japan, it is less widely known that Britain has important reserves of skilled labor and scientific personnel that can enable it to make a rapid recovery once the nation undertakes a crash program in capital improvements. Several recent studies by the British government's weekly, *Trade and Industry*, however, show that there are growing, severe problems with the labor force as well, even beyond the inevitable attrition of skills of the unemployed worker or the effects of the counterculture and the associated anti-industrial organizing of Friends of the Earth and similar groups, some of which have the misplaced support of business figures like Sir James Goldsmith.

Trade and Industry found that the quantity, and in some areas quality, of professionals entering manufacturing is deteriorating. The proportion of university graduates entering employment in manufacturing has dropped to 26 percent in 1975, down from the 40 percent range typical before 1970. Moreover, the absolute number has declined. In 1975, manufacturing took 26 percent of those graduates with degrees in engineering and technology, and 11 percent of those with degrees in science. *Fourteen* years earlier, in 1961, the corresponding figures were 42 percent and 20 percent.

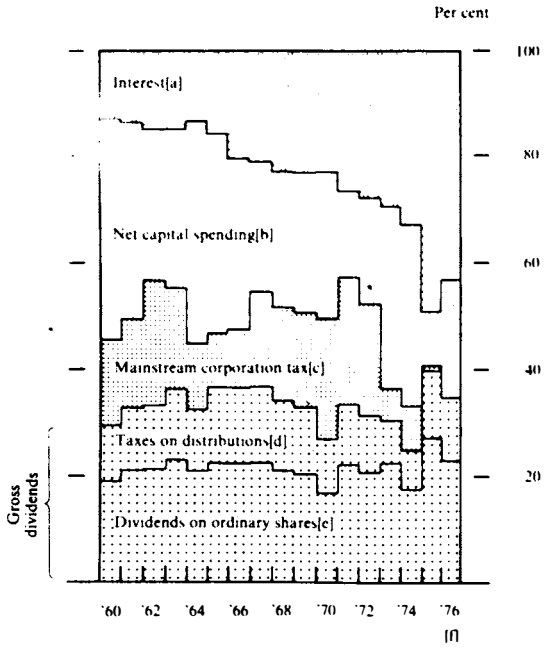
As to quality, *Trade and Industry* complained that many of the current engineering graduates, especially in the machine tool sector, are "unsatisfactory." This fact is doubtless associated with Britain's traditional reliance on on-the-job training rather than academic-based training for most of its skilled operatives. This shows up clearly in the fact that even as late as 1965, 55 percent of qualified engineers in Britain were trained outside the universities; by comparison, the corresponding figure for the U.S. was 25 percent.

Skilled Workers Vs. Scientiists

There is a historic dichotomy between skilled operatives and scientifically trained workers in Britain, reflecting the anachronistic class divisions caused in particular by the monetarists' persistent hold over the economy, a control that, for example, kept the working population's standard of living absolutely flat from 1810 to 1860. A 1965 study highlights the division: the percentage of business establishments employing "technically qualified personnel" (with degrees) in the metals industry in 1955-56 was 31 percent for Britain. In contrast the figures for the U.S., Austria, West Germany and Italy were 69 percent, 73 percent, 67 percent and 72 percent respectively. Illustrating the other side of the class division, the same study showed that in the same year British research and development used a greater proportion of *scientists* than the U.S.

Historically the dichotomy has not prevented Britain from training very high quality scientific personnel who have given the nation a high reputation in basic research. This expertise enabled Britain to make many important technological breakthroughs — such as radar and insulin — but Britain was unable to implement these advances on a mass scale, a task that had to be left to other nations. Numerically controlled machine tools are a more recent example of this. Britain has developed more sophisticated numerically controlled machine tools than even West Germany, but it still manufactures only about 600 per year.

The distribution of appropriations and net capital spending, 1960–1976



[a] Including dividends on preference shares.
[b] Net of capital consumption and stock appreciation.
[c] In 1976, taxes on distributions exceeded total company tax accruals by £193 million.
[d] Taxes on distributions (at the basic rate of income tax) and advance corporation tax (since the introduction of the imputation system).
[e] Net of tax. Gross dividends are obtained by adding taxes on distributions.
[f] Provisional.

Source: *Bank of England Quarterly Report*

If Britain is to have real growth in employment and production, the declining proportions of scientifically trained graduates who enter manufacturing and the persisting dichotomy between skilled workers and university trained personnel must be abolished.

R and D

The other side of the question concerns what these highly trained workers have to work with. Have there been increasing rates of capital spending, and funding for research and development? Here again, the trends are discouraging.

The picture for fixed capital expenditure is especially bad. For all industry this was down 7.2 percent during the first quarter of 1977 from a year earlier, continuing a historic decline exemplified by the fact that fixed capital expenditures were lower in 1976 than in 1966. The increase for the manufacturing sector for the first quarter of 1977 was favorable but negligibly — 1 percent. The nationalized industries, which constitute much of Britain's basic industry, last year reduced their capital expenditure £300 million below their forecasted spending: and in May the British Steel Corporation announced a major reduction in its expansion plans for the early 1980s.

In the light of these developments, the Department of Industry prudently trimmed its estimate of capital expenditure increase from 20 percent to 6 to 10 percent. However, the first quarter figures do not lend much support even for this modest prognosis.

One of the prime causes of the consistent squeeze on capital spending has been the enormous increase in debt service. The accompanying chart shows the increasing slice out of company appropriation that interest payments have taken, reaching 50 percent and more in the 1975-76 period.

As for the crucial area of research and development, Britain has not assured its continued preeminence in this area, judging from postwar and recent trends. In the 1950s and 1960s the country placed a greater proportion of its R and D funding into the more labor-intensive industries and not in aircraft, electronics, chemicals, machinery, vehicles, and instruments. Ironically, this reflects the same dichotomy between theory and practice, scientist and engineer (machinists), discussed earlier. The shortage of scientist-workers combined with the absence of up-to-date instrumentation, computers, and sophisticated machinery of all types leaves the skilled worker affixed to his outmoded machine, unable to engage in the making or replicating of significant discoveries.

R and D Expenditure

current millions of £

	1967	1972	1975
Private Industry	55.0	745.0	1178.0
Public Corporations	42.0	69.0	124.0
Research Associations	13.0	19.0	31.0
Government Contribution (%)	29.0	33.0	31.0
Chemicals	88.0	141.0	252.0
Mechanical Engineering	62.0	55.0	96.0
Machine Tools (component of Mechanical Engineering)	5.4	1.6	4.3
Electrical Engineering	153.0	220.0	353.0
Motor Vehicles	46.0	58.0	88.0
Aerospace	144.0	208.0	291.0

SOURCE: *Trade and Industry*

The financial support for R and D has been worse than even the stagnant levels of fixed capital expenditure. Total R and D funding declined in real terms by 20 percent from 1967 through 1975, while employment in R and D in 1972 was 14 percent less than in 1969. The government, however, did not appreciably alter its share, which remained about 30 percent. In 1975, only 3 percent of the government funding went to basic research, about £60 million. The applied category received 25 percent and the development category 72 percent of the funding. There is no evidence of a trend toward an increasing ratio of funds for basic research.

The accompanying table shows the allocation of R and D funding. Note the small amounts for research associations and the ridiculous, declining values for machine tool though hopefully some of the research on behalf of numerically controlled tools is represented in the electrical engineering sector. Only the aerospace, electrical, and chemical sectors increased R and D expenditure sufficiently to offset at least some of the inflation in monetary values.