Strangling the future

The government neglects research at the nation’s peril

The dismal science of economics drives the world. Questions like who eats well and who doesn’t and how long people live are determined primarily by economic forces. Wealth tends to equal health. In every country the government department that deals with money heads the pecking order, and the Treasury pundits are not keen on spending on health care. They see it as money wasted in that it does little to generate future wealth. The money men dislike public expenditure because the high taxes needed to support it are, they are convinced, economically inefficient. They thus constantly try to cut it back, and hence the choruses of protest from the health service, the schools and universities, the arts, the police, and the armed forces—indeed, every section of the economy that depends primarily on public expenditure. But what the Treasury is inclined to forget in its enthusiasm for cutting is that some of the activities that public expenditure supports are vital for the nation’s future wealth. Most important are education and research.

Michael Porter, a professor at Harvard Business School and a man widely tipped for a Nobel prize in economics, has conducted an exhaustive analysis of the factors that lead nations to prosper or decline. One of the countries he studied was Britain, and he identifies poor performance in education and limited expenditure on civil research as central reasons for Britain’s progressive decline.

The British education system has badly lagged behind that of virtually all the nations we studied. Access to top quality education has been limited to a few, and a smaller percentage of students go on to higher education than in most other advanced nations. British children are taught by teachers less qualified than those in many other nations, receive less training in math and science, put in fewer hours and drop out more. The British workforce is well behind in education and skills compared with that of many other advanced nations. Managers in Britain are much less likely to have college or university degrees. Most British companies have done little inhouse to offset a weak education system. The net result is that Britain has lagged badly in upgrading the average quality of human resources. This is in many ways the most fundamental problem for the nation’s economy.

Sir Claus Moser drew attention to these appalling deficiencies in a powerful speech last year to the British Association for the Advancement of Science, and education has now moved to the top of the political agenda.

Research, unfortunately, is still not an important political issue. The House of Lords Select Committee on Science and Technology produced a report last month showing that the government’s investment in science falls far short of what is needed even to stand still. The Medical Research Council’s corporate plan published last month is a plan for decline, and data released earlier this week show a collapse in citations to British research (p 986). Yet Kenneth Clarke, Secretary of State for Science and Education, in a manner made famous by Emperor Nero, boldly told the House of Lords committee that investment was enough to permit the continued excellence of British science. He is wrong. And his penny-pinching will not just stop a few academics engaging in arcane research—it will accelerate the economic decline of Britain that his party is so anxious to reverse.

“An upgrading economy,” writes Porter, not a scientist protecting his patch but a man even more hard headed than Mr Clarke, “demands a steadily rising level of technology. Improvements in technology... are integral to improving efficiency, commanding higher prices, and penetrating new industries and segments, the underpinnings of productivity growth. Stimulating improvements in science and technology is a widely acknowledged role of government.” In his 800 page book Porter then looks at the features of an effective science policy, and one is that the emphasis should be on research in universities. Universities’ advantages are threefold: students are trained in the latest techniques as a byproduct of research; the universities’ openness encourages diffusion of research; and they are fertile incubators of new businesses. Yet the British government is squeezing the universities harder than any other part of the research system, and the chairman of the Committee of Vice Chancellors and Principals earlier this month said that the universities now have a running deficit totalling £23m. At least four medical schools are rumoured to be hovering on the edge of bankruptcy.

One particular defect of British research identified by Porter and many others is the high expenditure on defence research. Almost half of British government expenditure is on defence research, compared with 3-5% in Japan, 12-5% in Germany, and 7-8% in Italy. “Defence R and D,” writes Porter, “cannot be relied upon as the backbone of a nation’s technological strategy. It is no longer centred on core technologies as was the case in the 1930s, 1940s, and 1950s.” Porter’s research was conducted before the Berlin Wall came down, and the case for spending so much on defence research is now weaker than ever.

What is especially depressing about the destruction of Britain’s once proud performance in research is that nobody much seems to care: the broadsheets and the specialist press...
Postnatal depression and infant development

*Emotional and cognitive development of infants may be adversely affected*

Although the impact of parental psychiatric disorder on school aged children is well described, only recently has attention turned to the possible consequences for infant development of maternal depression in the postnatal months. This is of particular concern: firstly, because of the high incidence of non-psychotic postnatal depression (about 10%), and, secondly, because in many cultures mothers largely constitute infants' social environment and mediate their experience of the external world.

Young infants are highly sensitive to the quality of the care they receive. Even neonates respond selectively to social stimuli. By 2 weeks they preferentially respond to their caretakers' characteristics (for example, voice and smell) and by 6 weeks become distressed if their interpersonal contacts are disrupted, even slightly. The infant's interpersonal environment is likely to be substantially influenced by maternal depressive symptoms such as persistently low mood, social withdrawal, irritability, impaired concentration, hopelessness, guilt, and anxiety.

Recently work has begun to elucidate the course of infant and child development associated with postpartum depression. Several studies have reported appreciable difficulties in the mother-infant relationship in the early months: depressed mothers are typically unresponsive to infant cues, being either withdrawn with flatness of affect or else intrusive and hostile. The infants in turn are withdrawn from maternal contact and are discontented, and this withdrawal is generalised to interactions with other adults.

Researchers have assessed the longer term impact of postpartum depression on the child, largely by interviewing the mother about the child's current behaviour some years after the postnatal episode. This research has produced inconsistent findings. Although the balance of evidence suggests that serious behavioural disturbance in the preschool years probably does not follow postnatal depression, less serious difficulties might result.

Recent follow up studies of postpartum samples have found that the mother-infant relationship and the cognitive development of the children were adversely affected. In these studies direct assessments were made of the infants and young children of mothers whose mental state had been assessed postpartum. In one study infants of postnatally depressed women were found to be more insecure on an assessment of their relationships with their mothers than infants of non-depressed controls. In a second study the development of a group of 19 month old infants of women who had experienced postnatal depression was compared with infants of the same age of non-depressed mothers. On the basis of standardised assessments of the mother-infant interaction in the home it was found that the index mothers and children were more likely to display difficulties in their interaction—for example, the mothers helped their children less in play; and the infants behaved more negatively towards their mothers.

Two studies have found that postpartum depression may adversely affect the cognitive development of infants. In one of these studies cognitive deficits were found to relate significantly to the quality of the mother-infant relationship in the early postpartum weeks. In these studies the adverse effects on emotional and cognitive development were found despite the maternal depression mostly remitting within a few months, and after account was taken of the effects of social class, marital discord, maternal depression occurring beyond the first year, and (in some cases) paternal psychiatric history.

These findings argue forcibly for the early detection and treatment of postnatal depression. Yet, despite the considerable input of health service resources to mothers of young infants, the primary health care team identifies few cases of postnatal depression. Rates of detection may now sub-