Lifebelt for UK Science

WHEN THE UNITED KINGDOM’S COALITION GOVERNMENT, FORMED IN MAY THIS YEAR, PROPOSED to eliminate the budget deficit by slashing annual public expenditures by more than £80 billion per year, there was anxiety about science funding. Would the United Kingdom follow the United States, France, and Germany (and the emerging economies of the Far East) and prioritize scientific research as part of its economic recovery and growth strategy? Or would it align with Spain and the Czech Republic, where these areas were cut? Two weeks ago, the Spending Review announced a “flat cash” science budget of £4.6 billion per year for the next 4 years (with no allowance for inflation). This gives the United Kingdom a fighting chance of preserving its science base. But major concerns remain.

Academics and the high-tech industry had argued vociferously that a severe cut in R&D spending would rattle a robust science base strengthened under the previous government and jeopardize long-term economic recovery, threatening the nation’s ability to attract talent and investment from abroad. It would also send a discouraging signal to young people contemplating scientific careers. These arguments fortunately found a resonance. But science is embedded in the university system, where the prospects remain uncertain. The United Kingdom is in the throes of an upheaval in university funding, with an aim of transferring the burden “from the taxpayer to the student.” Public funding for the teaching role of universities is being cut by 40%, and students will be expected to pay higher tuition fees through loans repayable out of future earnings. The Liberal Democrats (the minority partner in the Conservative-led coalition) are opposed even to current fees, capped at £3280 per year, and the cap would need to be raised to at least £7000 to compensate for the cut in public funding. The expected politically constrained compromise could prevent the universities from maintaining the infrastructure that research requires.

In the United Kingdom, research is concentrated in universities (as in the United States, but unlike France and Germany), and it is the only country outside the United States to have several universities consistently rank high in global “league tables.” This strength was an undoubted factor in the United Kingdom’s success in the Nobel Prize stakes this year—three winners in science, plus one in economics. The physics prize winners, Andrei Geim and Konstantin Novoselov, joined the University of Manchester in 2001, attracted to the United Kingdom by the promise of adequate funding and a supportive environment in a first-rate university. It is crucial that such people make similar choices in the future.

Total UK enrollment in full-time higher education, across all disciplines, has risen from less than 10% in the 1960s to around 40% today. But this welcome expansion has not spawned diversity in the types of undergraduate schools. In the United States, less than one-tenth of the institutions that offer bachelor-level qualifications have Ph.D. programs. The United Kingdom would benefit from likewise concentrating Ph.D.-level education into fewer institutions, accompanied by more collaboration between universities. Enhanced international collaboration is welcome too. British scientists collaborate more with the United States than with any other nation; they also benefit from the unrivaled shared facilities of Europe-wide consortia such as the European Laboratory for Particle Physics (CERN) and the European Southern Observatory.

In 2005, the U.S. National Academies published an influential report, Rising Above the Gathering Storm, highlighting the increasingly competitive global landscape for science. In September of this year, the update, subtitled Approaching Category Five, reinforced the message, remarking that: “You can’t make an overweight aircraft more flightworthy by removing an engine.” This message is even more vital for the United Kingdom, which must rebalance its economy away from an overdependence on the financial sector. Science and innovation are essential “engines” for long-term prosperity and confronting global challenges. We must hope that, after 4 years of straitened funding, UK science can share the fruits of the recovery that it will help to generate.

— Martin Rees

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Editor's Summary

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