Full economic costing

The Government intends to reform the way research is funded in UK universities. The reforms arise from an awareness in the Treasury that current methods are not sustainable in the long term. For many decades, universities have had insufficient resources to provide an adequate infrastructure to support the highest quality research. The inevitable result has been that much of their capital assets are well past their replacement date and the recurrent account is nowhere near adequate to provide for the necessary depth and quality of support.

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The ever-increasing volume of research imposes an intolerable load on an already creaking infrastructure. The graph below shows how £1 of funding council [the Higher Education Funding Council for England (HEFCE)] infrastructure grant, which supported £1 of external research income 15 years ago, now has to support £2 of income for the whole sector; for Imperial College, it has to support £2.50.

The Government, recognizing the importance of high-quality university research to the UK economy, now requires that universities’ infrastructure be fit for purpose. In successive Spending Reviews, substantial sums have been allocated for university science research and, in particular, for the indirect, infrastructure costs of that research.

Equally important, the Government intends that each institution should be financially sustainable in the medium term, i.e. be in a position to replace its research infrastructure from its own resources and not rely on hand-outs every 20–30 years from sympathetic chancellors. Universities need to earn sufficient from each research project for a proportion to be set aside for later investment.

The mechanism for delivering this is called ‘full economic costing’ (FEC) of research. FEC arose from a primary requirement by Government for universities to understand their costs activity by activity. The Transparent Approach to Costing (TRAC) is a Treasury-approved activity-based costing system which identifies all the various components, recurrent and capital, contributing to the costs of research, teaching and other activities. At its core is an estimate of how academics spend their time between different activities. At Imperial, we have run two major surveys, 10 years apart, based on academics reporting (anonymously) on what they do (from a predefined list of categories) for 30 minute slots each day for two randomly selected weeks in the year. With a 60% response rate, the results were statistically robust enough to be used to assign many different elements of cost (not just academic salaries) to the different teaching and research activities.

In calculating the cost of each activity for TRAC, two elements, the ‘Infrastructure Adjustment’ and the ‘Cost of Capital Employed’, will not be found in the published financial reports of any university, although they are very real. The latter is an estimate of the opportunity cost of...
capital and the former is an estimate of the cost of keeping the infrastructure in a safe and productive condition, fit for purpose. Both are derived from a centrally provided formula. For Imperial College, they totalled £48 million in 2003–2004, i.e., assuming break-even this is the amount of additional revenue needed each year to recover the full economic costs of all activities (teaching, research and all others).

Having identified the full cost of an activity, income can be assigned to it and a surplus or deficit identified. Most activities in most universities are undertaken at a loss, when the full economic cost is calculated. For example, research councils’ work at Imperial College showed a 56% deficit on income in 2003–2004. The FEC regime is intended to, and will, improve this position significantly. FEC is the extension of TRAC down to project level. From September 2005, all applications to the research councils will be expressed in terms of the FEC of the project. The new arrangements represent a fundamental shift from the present and all previous regimes. Currently, research councils pay for the marginal additional costs and make a standard, and partial, contribution towards institutional overhead costs associated with that work. Under the new regime, sponsors paying the FEC will recognize not only the marginal costs of a project, but also their full support costs, using the institution’s own figures. For research councils, the 46% overhead rate disappears.

The FEC of a project includes:
- the direct costs (research assistants, equipment, travel, consumables etc);
- principal and co-investigator salaries;
- estates and the other recurrent costs of support;
- the cost of infrastructure replacement (the ‘infrastructure adjustment’); and,
- the cost of capital employed.

Research councils will, for the first time, re-imburse the salary costs of the principal and co-investigators supervising the research. Applicants will be asked to estimate their time on each project. A salary cost will be derived from this, based on a full time equivalent (FTE) being 1650 hours per year. Research councils will also pay for the full support costs of their work, including central services (such as library, computing and human resources) and local technical support and facilities. Many of the support costs, including time spent by academics on support, will be incorporated into two or three institutional rates, which will be added to each grant. The rates will be provided by each institution’s central administration according to the FEC rules and will replace the standard 46% overhead on salaries currently paid. The rates (an indirect costs rate and two estates rates for laboratory and non-laboratory space) are expressed as £/FTE staff on the project (or the estates rates can be expressed as £/m²). The infrastructure adjustment and cost of capital employed elements are incorporated into these rates.

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The Treasury’s drive for all sponsors to pay the full economic costs of the research they commission is much welcomed. Initially, though, the research councils will pay only 80% of the FEC, including 80% of most of the direct costs. The intention is that, under the dual support arrangements, institutions will make up the difference from their funding council grant. This assumption, though, has some flaws. In England, the HEFCE’s funding methodology recognizes only marginally the volume of external research when calculating each institution’s research grant (and the HEFCE intends to eliminate even this token). Universities will, therefore, not be sure that they can meet the full cost of work sponsored by the Research Councils. For example, in any particular discipline, the HEFCE will provide much the same resource to departments of the same RAE grade containing the same number of research active staff (as submitted to the 2001 RAE). A department in one institution winning twice as much research council grant as its identical partner in another institution will, therefore, have only half the HEFCE infrastructure funding available per £1 of grant. As it is required to be financially sustainable, it will have to ration its HEFCE grant and ultimately refuse awards after it has allocated all of its HEFCE funding. It follows that research council grants may not always go to the best places. The result is that the most successful institutions will be the ones which will either be forced to continue to ‘overtrade’ (i.e., not fully re-imburse the cost of their research) or to decline research won in fair and open competition, or to have fewer resources for blue-sky work.

By the end of the decade, though, the Government have indicated that they will provide sufficient resources to pay 100% of the FEC of research council projects. This is very welcome and will solve the problem of
using HEFCE grants to make up the difference between 80% and 100%.

Pricing strategy, as distinct from costing, will be important for those bids that are subject to market pressures. Price should always equal or exceed cost except where special circumstances determined otherwise. The temptation will be for general funds to be used to subsidize work that is thought to be uncompetitive when expressed at FEC rates. Government departments form a major sponsor of university research. Although they have been instructed by the Treasury to pay 100% of the FEC immediately, a degree of cynicism exists as to how this instruction will be implemented in practice, especially as the departments with the largest expenditure have not had their budgets increased to pay the FEC. It is unlikely that departments will decrease the volume of research in order to pay the FEC. Ministers could always claim, for research let by tender, that they are duty bound to accept the bid which offers the best value for money. We hope that the 2006 Spending Review will provide additional budgets to the spending departments to enable them to pay 100% of the FEC without decreasing the volume of research they commission.

Another consequence of public sector sponsors not paying 100% of the FEC is that other sponsors may use this as an excuse for them to pay less than the full cost as well. For industry, the changeover to FEC will not be palatable. Industry will see a price increase without any immediate change of delivery. It is, though, as much in their long-term interest as the universities to have financially stable, high-quality, suppliers of research. Like them, operating at a loss is not an option for a university. We need to maintain and update our facilities in order to continue to provide the research outcomes they rightly expect. Paying the full cost for their research will help maintain first-rate institutions in the UK and, as an important by-product, continue the supply of high-quality researchers and graduates. Within such an environment, long-term relationships can be built and developed for mutual benefit.

Charities are a very important group of research sponsors for the biosciences. Although charities often pay a broader range of direct costs than the research councils currently do, they do not pay any overheads. The charities’ stance remains that it is for Government to provide the infrastructure of universities.

FEC brings a degree of complexity and change, and will incur costs in its implementation. In the main, though, complexity and the need to understand all the detail will be limited to the professional support services of an institution. If 100% of the FEC is achieved for all sponsors, universities will have the resources to re-invest in their infrastructure according to their own needs and timetable. Unlike now, the more successful an institution is in winning awards, the more resources will be available to cover the costs and provide for the future. The arrival of FEC, together with the substantial additional resources that have been made available to the research councils to implement it, should be welcomed.

The present Government is increasing the amount of support channelled through the funding council for charity-funded research (by £90 million by 2007–2008 and possibly more thereafter), but this is unlikely to be sufficient to cover 100% of the FEC. It will be important that, between the charities and the funding council, universities receive at least the same percentage of the FEC of charity research as they will for research council work. By the end of the decade, in order to become financially sustainable across all sponsors, charity research would need to be 100% funded in total.

Despite the problems of persuading all our sponsors to pay FEC, universities are still set to increase their income by a significant amount from the research councils alone. It will be very important to ensure that these new funds are used wisely. Increasing expenditure on increased research will, of course, only exacerbate the problem that FEC is intended to solve. The majority of the new funds will need to be applied to addressing the chronic under-investment in universities’ infrastructure. After the end of the decade, we cannot expect government to continue with capital grants such as the Science Research Investment Fund (SRIF).

Refurbishment or new building will have to be self-financed or provided from donors.

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