What future for dual support?

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Executive Summary

1. The United Kingdom's successful academic research base is underpinned by a system of funding that provides funds to institutions in two streams, one as part of their core grants, and provided by the Funding Councils, and the other generally in the form of project grants, provided by Research Councils. This is known as the dual support system. A key feature of the dual support system -- and widely regarded as one of its strengths -- is that the Funding Council grant is for the university to spend entirely at its discretion. This means that there are multiple sources of funding for research, with multiple points of decision about what research should be supported and where research resources should be concentrated.

2. There is some ambiguity about the exact scope and purposes of the Funding Council part of the dual support system, which have evolved over time. Originally it was conceived of in large part to enable blue skies research to be conducted; it is now seen largely as providing the basic research infrastructure which underpins a university's ability to carry out research funded by others. Nevertheless, particularly in the humanities and social sciences, it continues to provide the means by which some basic research can be conducted.

3. There has also been ambiguity about whether the Funding Council part of the dual support system is intended to support projects carried out with grant from charities. Charities are in general unwilling to pay anything other than the direct costs of the research that they support. On the other hand the Funding Council stream of research funding does not take explicit account of funding from charities either in terms of its total amount, nor in terms of its distribution.

4. Concerns with the working of the dual support system are not new, and have been expressed for at least 25 years. The main problem now is that while both the Research Council and the Funding Council legs have increased in value, the latter has done so very much more slowly. This pattern is repeated with charity funding, which has also increased at a faster rate than core funding.

5. Providers of project grants -- Research Councils, charities and industry -- have behaved like classic purchasers, and have sought to maximise the number of grants that they could obtain with their money; and universities, and academics within them, have sought an increasing number of grants, because this was the only way that they could get more resources. The result has been that more and more project grants are being loaded onto an inadequate research base, and the consequence is in part a decline in the ability of academics to conduct blue skies research, and in part a running down of the research infrastructure.

6. Although allocated on quite separate criteria, and on the basis of independent judgements, the two sides of the dual support system allocate funds in a remarkably consistent way. There is a very close alignment between the money received by universities from Funding Councils and what they receive in grant and contract income from Research Councils, charities and other sources. Those universities that receive more of one receive more of the other, and those receiving less of one receive less of the other. This is a reassuring confirmation that the two legs of the dual support system are working in harmony and that, for example, project grants are being given to those institutions in the best position to support them.

7. On the other hand, this has led some to conclude that there is unwarranted duplication in the methods for allocating research funds, and that means should be sought to cut the cost of the research allocation processes, by cutting out one or other of the legs of the dual support system. It is estimated that the cost of administering the Funding Council grant, which relies on the periodic research assessment exercise (RAE) for its allocation, will be something like £90 million (mainly the cost of the 2001 RAE) over the seven-year period between 2001 and the next RAE in 2008, to allocate about £8 billion -- a compliance cost of about 1.1 per cent. On the other hand, it is estimated that the Research Council project allocation mechanism will cost around £200 million over the same seven years, to allocate about £4.2 billion -- a compliance cost of about 4.8 per cent.

8. In order to address these concerns about cost and duplication, it is been suggested by some that research funding should no longer be a Funding Council function, but that the money currently provided by the Funding Councils for research should be allocated instead by the Research Councils. This could be done either as enhanced project grants, or simply as a separate stream of funding to universities in proportion to the Research Council grants that they win, but at an institutional level, thus retaining a sort of separate stream of funding.

9. A problem with both these approaches is that whereas the present arrangements allow a diversity of judgements and decision points, these proposals would reduce them and reinforce bad decisions while reducing the opportunity for alternative judgements. Moreover, a large proportion of humanities and social sciences research is conducted with funding provided by the Funding Council block grant, and these alternative approaches would need to find a way of addressing that fact. And finally, although in general it is the case that there is good consistency between the funding provided by Funding Councils and Research Councils -- at institutional level it is very close indeed -- there are some subjects where the amounts provided by the two legs differ markedly.

10. An alternative to providing all funding for research through the Research Councils would be substantially to reduce the Research Council remit, and to transfer the money to the Funding Councils to allocate as part of their block grant. Given how very much more onerous and costly the Research Council processes are than the Funding Council processes, this might be a logical response to concerns about duplication and cost. However, if this approach were pursued the Research Councils would still need funds in order to kickstart new research areas and for big science and national infrastructure centres; and the Funding Councils would need to establish mechanisms for identifying and funding national priority areas.

11. The fundamental problem with the dual support system is neither to do with duplication nor with cost. Rather, it is that the purposes and rationale of the two legs are not clear, nor is it clear who is responsible for what aspects of research expenditure. There is a further problem with the scope of the system, and in particular whether charities are part of the dual support system or not, and if so, how funding from charities can be recognised by the Funding Council leg of the system. The problems are recognised by the Government and by HEFCE, ad are being addressed in discussions between all the parties concerned.

12. The greatest problem, though, is that over time there has developed an increasing imbalance between the money provided as core research funding by the Funding Councils and the amount provided as project grants, with the consequence that universities are unable properly to support the amount of research that they are carrying out. The key issue is not one of changing the way funds are allocated, but substantially restoring the core funding stream and building back the characteristics that have enabled the UK research base to be so effective and so efficient for so long.

Introduction

13. Notwithstanding the success of the UK's research base - and the undoubted role that the dual support system has played in the past in enabling this success - problems are increasingly identified with the present arrangements on both sides of the dual support system, and there have, consequently, been calls for a review. The Royal Society has recently called attention to this (Royal Society, 2003), but such proposals have been made regularly (e.g. May, 1997a) and, in response, the Government has regularly reviewed the dual support arrangements and confirmed that they will continue. On 24 November 2003, Alan Johnson, Minister of State for Lifelong Learning, Further and Higher Education in England and Lord Sainsbury, UK Minister for Science and Innovation, re-affirmed their commitment to the dual support system (DfES, 2003). That will not prevent the issue being raised again.

14. This paper discusses the origins of the dual support system, a system that has never been formally defined but has evolved mainly through custom, practice and policy convenience. It

considers the changing balance between the dual streams of research funding, which has critical implications for the viability of the system. It also considers both the costs of operating that duality and the effectiveness of the allocation system in directing funds. Finally, it sets out some initial ideas about alternative arrangements for funding research.

Background to dual support

15. Dual support is a system that provides one funding stream of predictable, core support for general purposes (allocated in the UK by the University Grants Committee until 1989 and more recently by the Higher Education Funding Councils) alongside a second, competitive, stream of project specific funds (from Research Councils, charities and industry). Money from the funding councils is allocated following a retrospective view of the quality of an institution's research, whereas project grant funding tends to be prospective, in response to proposals. Many countries have multiple funding streams to their universities: sometimes from state and region; sometimes from different national sources; sometimes from internal endowment and external customer. The UK's dual support system has brought the benefit of a relatively stable core with selective funding for the most promising research proposals. It has enabled the UK research base to be one of the highest quality and most cost-effective performers in the world (Adams, 1998; Adams et al, 2000; May, 1997b, 1998).

16. A key feature of thre dual support system in this country – and widely regarded as one of the strengths of the system – is that it provides a stream of funding to universities, through their block grant, which is theirs to spend entirely at their discretion. It ensures that there are multiple sources of funds, but also multiple judgements about where research funds should be invested.

17. The Annex to this paper gives a brief history of the dual support system, which has evolved through practice rather than design. Its exact nature, extent and function have never formally been defined and these have in practice shifted as funding for research has grown since 1918. Its present form became most apparent after the expansion of the Research Council system in the mid-1960s. As recently as 1982 the Merrison Report gave an account of the purpose of UGC grant for research as being to enable universities to do research on their own account. There was nothing about enabling them to conduct research with grants won from others. This had changed by 1987, when an ABRC report said

> 'University money for the support of research serves two purposes. On the one hand it provides for a basic level of research activity for all university academic staff. On the other hand it provides the "well-found" laboratory in which work supported by the Research Council and other funding agencies can be undertaken.'

18. Here, the UGC grant was described as being to underpin research carried out with grant from Research Councils and others, and it is worth noting that at this stage the UGC was explicit that others – and charities in particular – were to be supported

19. The history of dual support shows a gradual evolution of ideas about what it actually meant (see Annex). A definition is perhaps unimportant, because the flexibility of the system is one of its merits, but its nature has been a grey area of policy. Even within one document, such as the detailed analysis provided by the ABRC/UGC working party (ABRC, 1987), there is a transition between paragraphs from 'Research Councils and other funding agencies' to 'Research Council funds'. The funding position of charities was also repeatedly fudged. And what was once deemed to support science fields alone has tacitly spread to all, and with the establishment of the Arts and Humanities Research Board explicitly so

20. The dual support system as presently funded cannot operate as it did historically. As May (2003) argues, the expansion of the university system through new institutions and many additional researchers makes this impractical. For at least 25 years, the record shows a frequently expressed concern that the system was no longer as effective as memory suggested. Over that time the real erosion became more clear: first, the ability of the core system alone to support speculative 'blue skies' research became extremely limited in most science and technology fields; and second, as is

apparent from the analysis in the next section, the funds provided by the Funding Councils for their leg of the dual support system became insufficient to provide the research infrastructure required to support the volume of research grants being awarded by the other leg of the system.

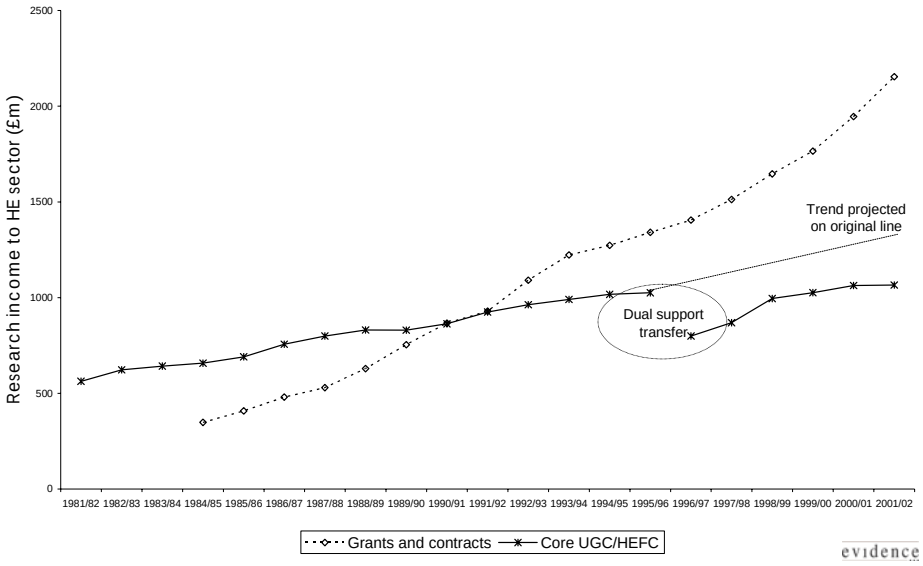
Is the current system balanced?

21. To be effective, the two legs of the dual support system must be balanced: if the purpose of one is to provide infrastructure support for the other, the amounts provided by the two must keep roughly in step. The following paragraphs look at this question, and show how the amounts provided by the two sides of the dual support system have diverged

22. Because the dual support funding streams are not functionally linked there is nothing to prevent a growing funding gap. There has been no mechanism to ensure that the UGC's or HEFCE's basic floor for the well-found laboratory has varied in harmony with the grant and contract funding from other sources. Nor has there been an efficient check to ensure that project grants really cover all appropriate costs. Consequently, an increasing amount of these costs have fallen to be borne by the core UGC and Funding Council grants and the infrastructure has inevitably become increasingly stretched. This was already a problem as much as 40 years ago, to the extent that by the mid-1970s the UGC was already expressing concern

23. For this paper, the changing ratio has been indexed by analysing the components of R&D spend in the Higher Education sector (HERD in OECD terms). The declared UGC research element in the Annual Review of Government Funded R&D has been compared with the total research grant and contract income and then the series has been extended using data from the OST Forward Look and the Higher Education Statistics Agency (Figure 1). There are some issues of changing accounting procedures and shifts between data series but the broad pattern is robust.

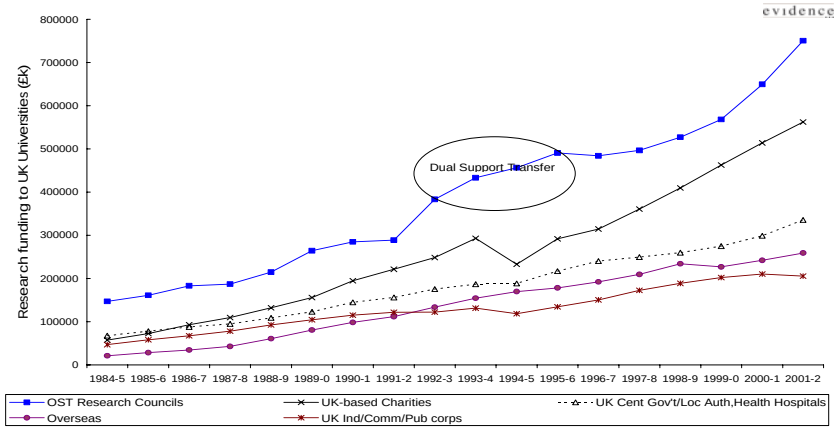
Figure 1. The changing balance of dual support; the disaggregation of UK HERD into core and project sources [Data sources:1981-1994 Annual Review of Government Funded R&D; 1988-2001 OST SET statistics; Higher Education Statistics Agency; OECD]



24. The ratio of general research funds to project-specific grants has declined through the period analysed in Figure 1. This has seriously eroded the ability of universities to maintain the historical function of dual support. The balance was clearly worsening even before the 'dual support' transfer[1] between the HE Vote and the Science Budget in the 1990s. These long term data also show an essentially linear increase in core funds through a period of significant fluctuations in underlying inflation. That linear trend fails to meet the sustained rate of increase in project funds. If past performance is any predictor of future change, then dual support has become dysfunctional.

25. Which project funding sources have contributed most to this growth? In Figure 2 the data presented in Figure 1 are disaggregated by the main sources of income.

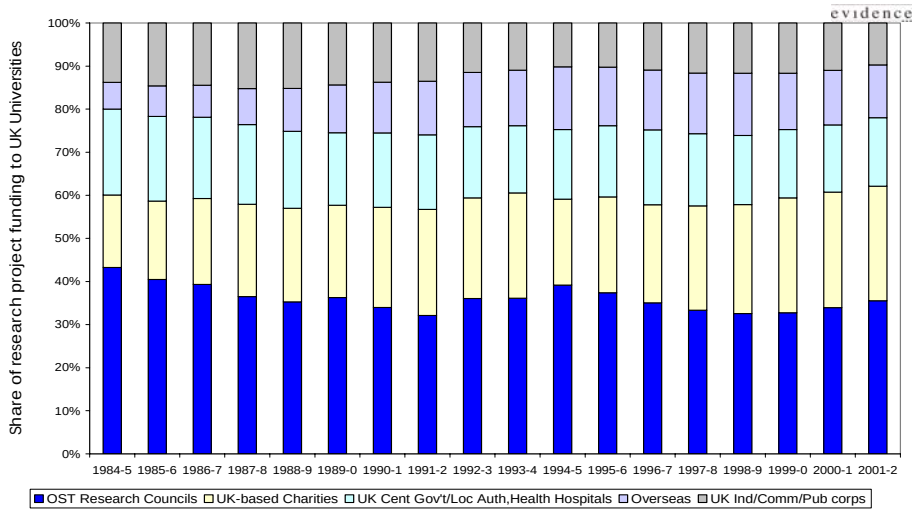
Figure 2 Research project funding to UK Universities, analysed by main source of grants and contracts. [Data sources: 1981-1994 Annual Review of Government Funded R&D; 1988-2001 OST SET statistics; Higher Education Statistics Agency, OECD]



[1] In 1992 the Secretary of State for Education and Science agreed that about £150 million per year (out of a total annual grant of about £900 million) should be transferred from the Funding Councils to the Research Councils to enable the latter to cover a larger proportion of the cost of the research projects that they supported.

26. The Research Councils remain the main funding source of project grants but the charity sector has become much more significant relative to the others (the blip in the early 1990s is due to a shift between datasets). The growth in charity income is partly due to the Wellcome Trust, which has a constructive strategic relationship with the Government research funding agencies. The Trust is not the sole party, however, and account needs to be taken both of well-established charities with a broad brief and of a cluster of specialist medical and related charities. Overseas funding has also grown and by 1992 had overtaken research contract funding from industry. The main growth factor in this was funding from European framework programmes. FP1 (1984-87) started at €3.3 billion but FP4 (1994-98) had grown to €13.1 billion and FP6 is scheduled to disburse €17.5 billion. Although contract income from industry has grown through the period, it has grown at a disappointingly slow rate compared to the others, so increasing the importance of other sources of strategic funding.

Figure 3 Research project funding to UK Universities, analysed by course as a proportion of total project funding. [Data sources: 1981-1994 Annual Review of Government Funded R&D; 1988-2001 OST SET statistics; Higher Education Statistics Agency, OECD]



27. These same data can be examined as a proportion of total research project income to UK Universities (Figure 3). The expansion of European funds in the overseas line can be seen in the late 1980s and the relative growth of charity funds (again, note a data 'blip' around 1994) appears to be progressive and continuing. This analysis does show that the Research Council component is now relatively smaller than it has been in the past, despite the net transfer of funds from the HE Vote to the Science Budget. But, as was shown in Figure 1, it has grown at a faster rate than the UGC/HEFC component.

28. In seeking to award as many grants as they could with the funds they had available, grant giving bodies (including the Research Councils) have acted like purchasers in a marketplace - trying to get the most for their money. This was identified as a problem in a 1996 review of the dual support transfer by Coopers and Lybrand, (DTI, 1996) when it was found that the transfer of funds from the Funding Councils to the Research Councils had led to an increase in the number of grants. The intention had been that it would lead only to better funded grants, but no increase in their number. Anecdote suggests that the problem remains. For their part, academics have been anxious to seek as many grants as they could, even though they have not been properly funded, because the only way that they could get more funding was to offer to do more research.

29. One of the most pervasive effects of the changing balance between core and project funds has been a growing infrastructure gap. This has arisen progressively over the years and has been manifested by a running down of equipment and buildings (e.g. Georghiou et al, 1996). It has only been halted by the injection of large amounts of specific funding by the Government (with the help

of charities, and the Wellcome Trust in particular) through the SRIF and JIF schemes.

30. To conclude this section, over almost two decades there has been a progressive worsening of the dual support balance, whether taken as Research Council funds alone or (as is in practice the case) as total project funding. Growth of most sources of funding has been at a faster rate than core Funding Council grant for research. An additional problem has been that the various providers of project grants have not in general been willing or able to provide the overheads and indirect expenses that universities need to meet the full costs of the research they undertake - a topic addressed by the OST document 'The Sustainability of University Research: A consultation on reforming parts of the Dual Support System' (May 2003) the results of which are awaited. In consequence, it is increasingly difficult to conduct blue skies research with core funding and to maintain the research estate.

Is the allocation of dual support appropriate?

31. The previous section looked at the sector as a whole, and showed that the two sides of the dual support system have become increasingly unbalanced. This section looks at the funding of individual institutions. Given that one of the purposes of the dual support system is to provide universities with core funds to establish the foundations on which they can conduct research with project grants won from grant-giving bodies, there ought to be some relationship between the funds an institution receives from the two sources

32. Three models are shown here, drawing on related research funding data[2]. The first analysis (Model A) shows the relationship between the distribution of Funding Council research income against Research Council income (a similar but independent analysis was reported by May (2003)). The second (Model B) takes a broader view, and looks at the ratio between Funding Council income on the one hand and all research grant and contract income received by universities on the other, whether from Research Councils, charities or industry. Although not strictly relevant to the workings of the dual support system as narrowly defined, a third analysis (Model C) was carried out to determine the relationship between Funding Council research grant and the industrial contract income that institutions earned. The three models are illustrated in Figures 4a-c.

[2] The data sets are for England only and are as follows:

- Funding Council grant data from (a) the HESA Finance Record out-turn for 2001-2002 and (b) QR research funding for 2001-2002 from HEFCE.
- Total research grant and contract data from the HESA Finance Record out-turn for 2001-2002, Table 1: Income and Expenditure Account by Institution 2000/01 and 2001/02
- OST Research Council grant income from the HESA Finance Record out-turn for 2001-2002, Table 4: Research Grants and Contracts Income by Institution, Cost Centre and Source 2001/02

Data were summed across cost centres for each institution. A total of 117 institutions contributed to the Research Council Income analysis, and 106 contributed to Research Council and contract income analysis. Institutions were removed if they had no Research Council Income (n=21) or no Research Council and Contract income (n=8). In addition 2 institutions were excluded that received less than £20k in QR income. All analyses were conducted using Stata (Version 8, 2003, StataCorp).

The statistical distribution of income from QR, Research Council and Research Council and Contract Income is non-normal, which is to be expected because the UK research base is concentrated in a small proportion of the institutions that actually receive funding. In order to fulfil some of the assumptions of linear regression modelling the income data were transformed using the natural logarithm, giving a better approximation to normality. They were also plotted using log-log plots for project versus QR income.

***Fi**gure 4a Research Council income and QR income*

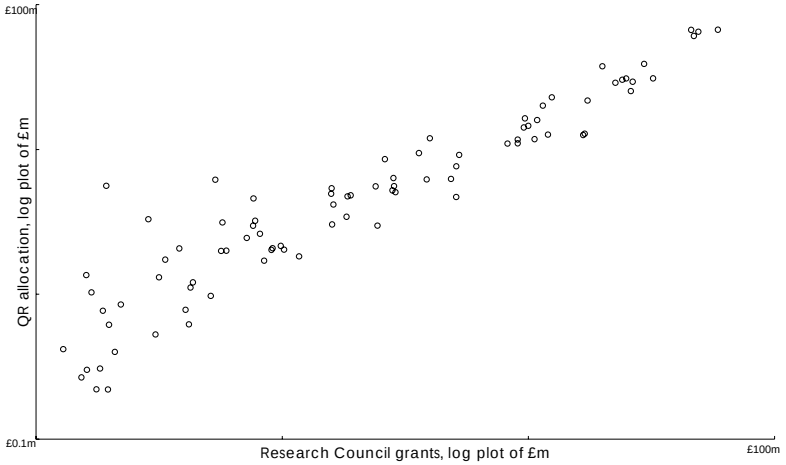


Figure 4b Total research grant and contract

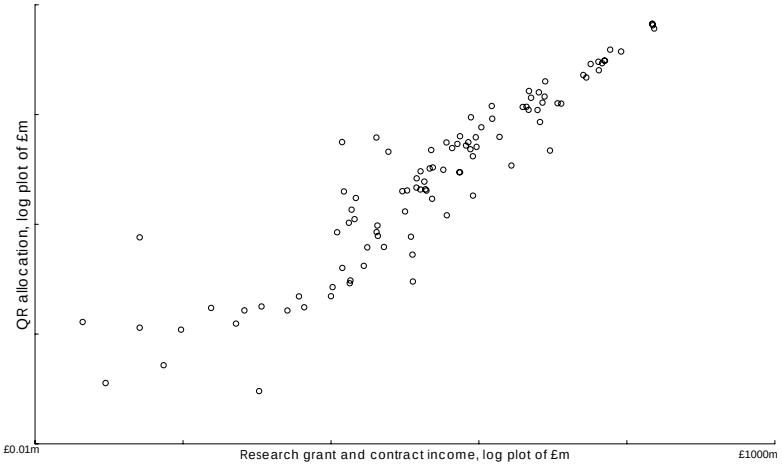
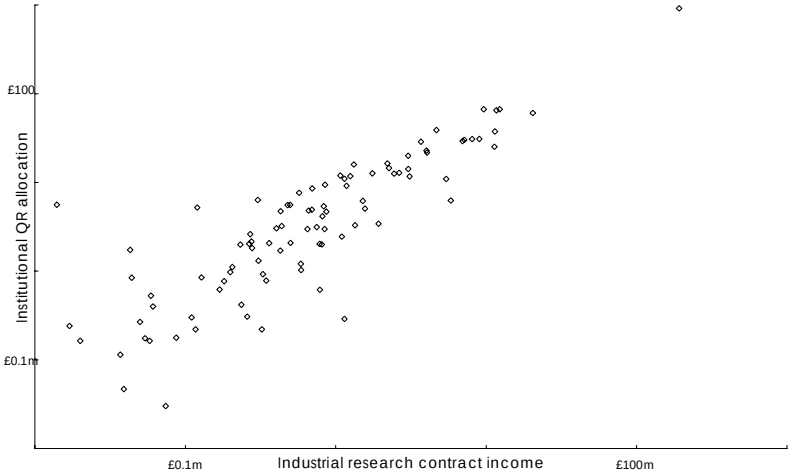


Figure 4c Industrial research contract income and QR income



33. Income from Funding Councils is very closely correlated with income from other sources on all three measures. These correlations are statistically very highly significant (Table 1)[3]. Data were also analysed for an earlier period and the correlations were similar (data not shown) although there may then have been a slightly looser match between the two different parts of the system.

Table1 Summary models of research income against the block grant QR (dependent)

	Model A Research Council grant income	Model B Total research grant and contract income	Model C Industrial contract income
Number of observations (after outliers removed)	117	106	98
Correlation coefficient	0.979	0.986	0.997
Linear regression r^2 and probability of obtaining result by chance	0.958, P < 0.0001	0.973, P < 0.0001	0.994, P < 0.0001
Slope of the model line (QR earned per pound of research income)	£1.22	£0.43	£4.80
Intercept (QR income when research income is zero)	£1,066,714	£833,652	£18,873

34. Scale could be a confounding factor, but there are large institutions with low levels of research income. Furthermore, there can be Funding Council income with no Research Council income. On the other hand, although the assessment processes are technically independent, in practice the RAE's subject-based panels use grant and contract funding data to arrive at their grading judgments, and vice versa.

35. These correlations can be interpreted in two ways. On the one hand, they can be taken as a reassurance that the two legs of the dual support system are reinforcing each other, even if the values of the two legs are out of kilter. Furthermore, there is nothing here to suggest that industrial income is not being duly recognised in the allocation of Funding Council research grant.

36. On the other hand, as is discussed in the next section, some have taken these correlations to indicate that it is unnecessary to have two legs to the research funding system, since by and large they provide funds to the same institutions and in roughly consistent proportions. At the same time, few would suggest that industrial research income should be the sole arbiter of Funding Council allocations, although it is in fact marginally more closely correlated with Funding Council than is Research Council income.

[3] There are a substantial number of institutions that depart from the general trend despite the statistical significance of these correlations.

Problems with the present arrangements

37. The previous sections have shown that:

- There is a growing imbalance between the two parts of the dual support system
- Institutions nevertheless secure funds from the two parts of the system in roughly proportionate measure.

This section considers some of the other issues that have arisen that have led some to call for a reappraisal of the way research funding is distributed.

Bureaucratic cost

38. The bureaucratic cost of the research funding mechanisms are significant. There are also two lots of assessment effort for two lots of support funds. What is the scale of this cost? Does this represent valuable differentiation and plurality or is it unnecessary redundancy?

Funding Council compliance

39. There is a bureaucratic cost in assessing quality in order to allocate Funding Council grant. The estimate for RAE1996 was £37m (a figure arrived at after consultation with HEIs). This estimate includes some allowance for costs within institutions, although this is offset by the assumption that every university would anyway be engaged in monitoring and managing its research portfolio as part of its normal business. Scaling up to 2001, and adding a generous allowance for greater internal efforts by institutions, leads to a top end cost of £60m.

40. This £60m is the compliance cost in one intense period for distributing about £8 billion over the seven years between the 2001 RAE and the next exercise planned for 2008 (this is HEFCE plus assumptions about Scotland and Wales). To this should be added something for the administrative costs of running the research allocation process within the HEFCs. HEFCE's total administration budget was £14m in 2001-02. If it is assumed that that 20 per cent of this is related to research funding and policy then this amounts to £2.8m per year or £20m over the seven year cycle. Costs for Scotland and Wales would raise the total to around £30m.

41. Thus the total seven year cycle cost of assessment will be around £90 million, while the total value of distributed funds will exceed £7 billion. This results in a ratio of a minimum of £88.88 QR distributed for every £1 in attributable costs. Compliance costs are 1.1 per cent.

Research Council compliance

42. In 2001-02 there were about 10,000 Research Council grant applications of which about 3,000 were funded. Preparing a project plan for a grant application is a part of normal business in carrying out research, and so some of this could be discounted, but it is here assumed that grant application costs £750 of academic time (average of 2 x £375 per diem costs) to referee and reject or £1500 to referee, approve and then pass through a committee. That adds up to just over £10 million per year of academic time to which can be added a very conservative minimum estimate of 25 per cent of Research Council administrative costs to run the system, monitor spend and then get reports back. Total administration costs were £70 million in 2000-01 so that amounts to at least £17.5 million per year to be spent on grant administration (the rest going on research students, laboratories and facilities).

43. Therefore, over a seven year cycle, the sum associated with the Research Council part of the dual support system is at least £200 million: a minimum of £70 million for academic labour costs involved in assessment plus oversight and administration costs of about £130 million. For this, the Research Councils distributed £586 million research grants in 2000-01 (OST SET statistics, table 5.2), or approximately £4.2 billion over seven years. This results in a ratio of £21 of project grants distributed for every £1 in attributable costs. Compliance costs are at least 4.76 per cent.

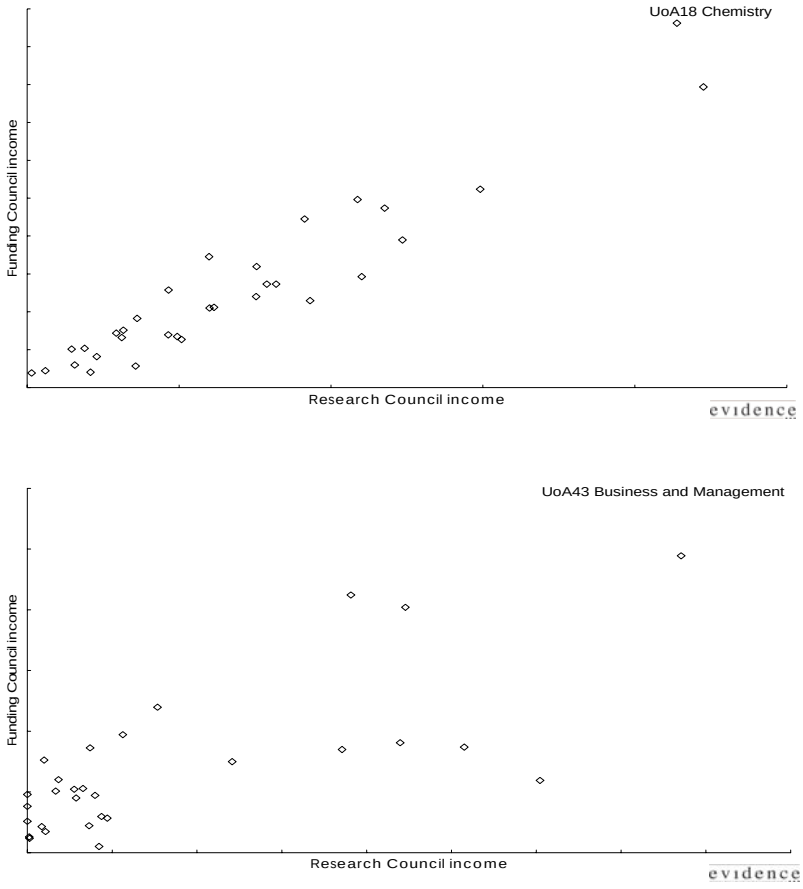
44. In conclusion, it is apparent that the cost of the Research Council system is much greater. This is not surprising in view of the more intensive level of scrutiny that comes in peer review and the cost of managing many small grants, compared to the lumpier core allocations from the Funding Councils.

Duplication

45. The arguments concerning the bureaucracy of the dual support system are not only about the costs of one leg or the other, so much as about the fact that they to some extent appear to duplicate each other and that it is unnecessary to have two processes in parallel. Figure 4a illustrates the high degree of correlation at the level of the institution in the way Research Councils and Funding Councils allocate their money. It should be possible to dispense with one or other of the processes, it is argued, thus lifting from the university system a significant time burden, and significant cost.

46. This analysis is true up to an extent, but it is only true at the aggregate of the institution. Below institutional level, there can be more substantial differences in the allocations by Research and Funding Councils. Figure 5 shows the comparative distribution of HEFCE QR and Research Council project grant income at the level of specific research Units of Assessment (UoAs).

Figure 5 Comparative dual support income for Chemistry and for Business and Management in English universities, 1997-2001



47. The two UoAs in Figure 5 were chosen because they both cover a large number of institutions, are well defined and rich in income data. The Figure shows that while there is a good correlation at this level of detail in a mainstream science subject, this relationship is rather different in the social sciences. At both high and low levels of income there is much variability on opposing axes.

Lack of coordination

48. What is felt by many to be one of the strengths of the dual support system - that there is a plurality of decision-making points, and that consequently all eggs are not put into a small number baskets - is seen by others as being a disadvantage. There is a lack of coordination, not only in the way that funds are allocated, but also in the way that they are used. So, Research Councils may develop priorities which are not reflected in the allocation of Funding Council grant or in the way universities themselves decide to allocate their money internally. The block grant is both a help and a hindrance, since on the one hand it means that universities are not obliged to spend the money they receive from Funding Councils by reference to the way Funding Councils calculate the money, and so they are able to allocate funds internally in response to external stimuli. On the other hand, the block grant also means that universities are free to put their resources into research that does not match Research Council priorities.

Alternative approaches

49. The previous sections have shown that the amounts of money provided through the two legs of the dual support system have diverged, and that there are serious questions that arise with regard to the cost of the dual support system, duplication and lack of coordination. The fundamental question is whether, setting aside the acknowledged historical value of dual support, it can continue to operate given the relative changes in volume of the contributory streams (Figure 1) and the growth of project funding sources (Figures 2 and 3). This section considers some alternatives to the present arrangements, and the implications, strengths and weaknesses of these

Adjustments to the current system

50. Even if the problems with the present system are acknowledged, it is not self evident that it would need to be replaced. Above all, it is a system that has worked in the past and has led to an outstanding research base. The present strengths could be retained and means sought to address the weaknesses, In particular, it would be necessary to make it clearer who was responsible for what expenditure, and to ensure that universities priced their projects correctly.

51. It would be necessary above all to ensure that Research Councils (and all other customers) paid in full that part of the cost of the research that they were responsible for. This would almost certainly mean an adjustment in the amount of funds provided by the Funding Councils on the one hand and the Research Councils on the other, and a reduction in the number of projects that could be supported for any given amount of money. This would no doubt be opposed by the Research Councils and by the majority of academics, if not by university managers. However, a reduction in the number of projects is a likely consequence of any arrangements that address the problems that have been identified. If overtrading is a core problem then, with the same total pot of funding, fewer but better funded projects is an inevitable outcome.

52. There are those who will be sceptical about whether any further adjustments to the current arrangements will succeed given the history over the last decade of making adjustments between the Funding and Research Councils. They point to the dual support transfer in 1993-95, to the review by Coopers and Lybrand in 1996 and to the consequent adjustments made to the balance between Research Council and Funding Council support for research (DTI, 1996). They point out that, if anything, the situation has worsened.

53. It is also essential to consider the position of those charities that fund research. The data show that this source has shown the greatest relative growth (Figure 3) much of which is attributable to the Wellcome Trust. Charities do not pay the indirect costs of the research they support, relying on the historical position they enjoyed under the much smaller system supported by the UGC. This convention is almost certainly untenable in a system as stretched financially as the research base now is and HEFCE is in discussions about this with the charities concerned. If this is not resolved, other changes may make little impact and the complexity of university research management could increase.

Allocate all funds through Research Council project grants

54. A radical approach advocated by some is to remove the Funding Councils completely from funding research, and to give all the money to the Research Councils to allocate as part of their project grants. This would enable them to fund fully the grants that they award. The problem with such an arrangement is that giving more money to the Research Councils would not necessarily lead to properly funded grants. Past experience suggests that there is a risk that it would encourage them to give more grants. In any case, if one of the present problems is overtrading, a reduction in the number of grants awarded will be necessary even if all the funds are in a single hand.

55. An advantage of a single-pot arrangement would be that the bureaucracy associated with the Research Assessment Exercise (RAE) would be dispensed with, and so the cost to the sector would be reduced. In addition, with only one source of funds, such an arrangement would ensure that local and central judgements were more likely to be in step.

56. A disadvantage of such an approach is that the present plurality of judgements and of funding would be reduced, and even more power would be put into the hands of the centre. It is highly doubtful if the government machine – even informed by experts, as the Research Councils are - always knows best in terms of what research should be carried out at local level. Moreover, with a reduction in that part of the block grants provided by the Funding Councils for research, universities would lose the capacity for blue skies research (such as it is) and for any local management since all funding would be tied to specific grant proposals. Moreover, a very large proportion of humanities research is conducted with funding provided by the Funding Council block grant, and this option, together with the option that follows, would need to find a way of addressing this fact.

Allocate all funds through Research Council grants, plus a university overhead

57. A variation on this theme would be for Research Councils to have all the money but in addition to the project grants that they award (whose number will need to be reduced) to provide grants to institutions each year by reference to the total amount of grants received by each institution in previous years. This would retain a dual funding system of sorts, though both the legs would be from the same bodies. The analysis of Figure 4a suggested that at an institutional level such an arrangement would ensure that resources went more or less to the right places.

58. Such an arrangement would have the benefit of dispensing with the bureaucracy and the cost of the RAE, and it would also retain some of the benefits of a separate stream of funding (for example, the ability to conduct "blue skies" research). However, it is at least questionable how truly separate such a stream of funding would be, since those who had “won” the money for the university would undoubtedly regard it as theirs, and there would be great pressure within universities to allocate most if not all of the thematic grants awarded in this way to those who had won the Research Council project grants in the first place.

59. Such an arrangement would be viewed by many with suspicion. It would be regarded as a slippery slope towards getting rid of dual support altogether - in a few years, the logic of two streams of funding from the same bodies would not be apparent, and a different logic would point to giving all the money to the Research Councils to allocate as part of their project grants.

60. A fundamental problem with such an arrangement, although not as great as with the alternative of giving the money to Research Councils to allocate as enhanced project grants but a problem nevertheless, is that it would duplicate any biases that there were in the Research Council part of the dual support system. For example, it would duplicate the subject balance and perhaps retain a conservatism about research opportunities[4]. This is a mirror image of the advantage of the present arrangement that permits multiple judgements and points of decision. Bad decisions would be reinforced, and the opportunity for alternative judgements would be reduced.

Reduce Research Council grant funds and increase block grants

61. No less radical an approach would be to reduce substantially the Research Council part of the dual support system, and to transfer money to the Funding Councils to allocate as part of their block grants. Or a more modest intermediate would be a hybrid system in which the Research Councils adopted part of the Funding Council management approach, and relied on the rAE for their judgments.

62. Such an arrangement would cut out most of the cost of the Research Council process, which, as is shown above, is by far the more costly. If one of the problems with the present arrangement that motivates the search for alternatives is duplication and cost, then it makes more sense to cut out the most costly leg.

63. A further advantage of such an approach is that it would provide more power to academics at local level (who are arguably best placed to decide where to put their efforts). Would this lead to research not being done that ought to be done? That is unlikely, as it will mean that universities, faculties, departments and academics will need to prioritise between the research that they would like to do, and concentrate on the most promising and important research. However, a downside of such an approach is that it means that universities would need to establish internal mechanisms to decide on resource allocation and research prioritisation, though many have significantly improved such arrangements over the last ten years (Adams et al, 2000).

64. Research Councils are giving increasing amounts of their funds to departments, not as project grants but as consolidated portfolio or programme grants -- for example, EPSRC is at present establishing a funding structure of this kind. BBSRC, and its predecessor AFRC, has always had a close and supportive liaison with the universities to which the bulk of its funds are directed. In this, the Research Councils are behaving increasingly like Funding Councils, and such an arrangement would be a development of that tendency. The concept is not new. When Chief Executive of the former SERC, Sir Mark Richmond made a similar suggestion and broadened it to include major programme portfolios for the leading research universities agreed as a contract with the Research Council and reviewed on a rolling basis.

65. At present, Funding Councils do not take any account of national needs or of research priorities in deciding how much to put into different subjects and when they calculate institutions' research grants. On the other hand, Research Councils identify research areas that need support and put their money into these. The Funding Councils would need to consider introducing a policy factor into decisions about the funding of different subjects, and they would need to establish mechanisms to enable this. In the past, when they have looked at this, they have concluded that it would be unnecessary, perhaps wrong and in any case very difficult, to decide on research priorities. They may not be able to avoid that if they became the sole funders of research.

66. Even if the majority of Research Council funds were transferred to the Funding Councils, Research Councils would still need funds to give as grants in order to kickstart new research areas, and also to provide funding for big science, and for national infrastructure centres. The cost of the Research Councils' part of the science bureaucracy could be reduced considerably, but it could not be eliminated totally. And universities would need to collaborate more to share facilities that they

[4] Note that Funding Council grant can be allocated where there is no other income. This is an important difference between the operation of the dual support components. The Funding Council research allocation recognises that there are small, specialist colleges where the research is of high quality but does not necessarily earn large external grants and contracts.

acquire through the block grant. At present, Research Councils are able to provide or to manage access to shared facilities, and the means would need to be established of enabling this more widely in future.

Conclusion

67. The values of the traditional UK system, involving dual support, were set in the Merrison report some twenty years ago. Many of the properties that Merrison emphasised have more or less vanished, particularly those around initial, exploratory enquiry, using the block grant. But universities still need and are able to find some flexibility in aiding new starters. They can make local decisions about investment in infrastructure and facilities. They can direct funds to promising lines of research and to foster interdisciplinary research centres. They are able to bankroll research groups between major funding pulses. But only just and only at the expense of other needs, such as building maintenance.

68. This paper has outlined some of the modern problems with the dual support system: the biggest is its imbalance compared with historical assumptions. It has also outlined some alternative models for maintaining a suitable balance and structure to research funding in universities. These could form a starting point for a discussion about modifications that would help to restore some balance and enable universities to function effectively as research managers as well as hosts. However the real answer to the stark problem captured in Figure 1 lies elsewhere. The evidence of this paper indicates that the key issue is not one of changing the way funds are allocated, but substantially restoring the core funding stream and building back the characteristics that have enabled the UK research base to be so effective and so efficient for so long.

Annex

A brief history of dual support

The present form of the UK's dual support system for university research funding became most apparent after the expansion of the Research Council system in the mid-1960s. More recently, dual support has been discussed primarily in terms of Research Council grants, a linkage reified by the November 2003 announcement by Alan Johnson, UK Minister of State for Lifelong Learning, Further and Higher Education and Lord Sainsbury, UK Minister for Science and Innovation (DfES, 2003). A wider relationship between the core platform and other income is, however, a part of custom and practice in the way Universities have managed their research portfolios.

In 1889, HM Treasury first established an ad hoc Committee on Grants to distribute £15k it had set aside for 11 university colleges. The University Grants Committee (UGC) remained the sole source of public funds until the 1914-1918 war. At the end of 1916 the Government created the Department for Scientific and Industrial Research (DSIR) to support civil science and to co-ordinate and commission its own research (Varcoe, 1974). While the UGC block grant paid for salaries and preliminary investigations, the DSIR gave university scientists funds to carry out specific research. The embryonic dual support system had only 24 DSIR funded university postgraduate research studentships in 1917 and this number had grown to no more than 81 by 1938.

After 1945, the UGC grant was moved to the Board of Education and its new terms of reference required the UGC to take a more active stance. By 1962 science research spend was at least tenfold that in 1945 (Wilkie, 1991) and the spend on conventional science had at least doubled in real terms. Throughout the growth period during the 1964 Wilson Government, there was clear evidence of overt selectivity. For example, there was the so-called take-over exercise: "the continued financing of research projects, hitherto funded by the Research Councils, which it was agreed should be continued as part of the normal activities of the universities" (UGC, 1966).

The UGC also asked HEIs for returns that divided expenditure into teaching and research, and this came in for a good deal of criticism. The Committee argued that it was right to seek a firmer basis for apportioning expenditure in its quinquennial cycles (UGC, 1967) but exactly how the data were used was never entirely clear. Walne (1973) presciently commented that if the UGC were to make public its methods then universities might respond by arranging their affairs to increase their entitlement. The nature (indeed, the existence) of the UGC's research algorithm caused much comment (Cook, 1976, 1977; Dainton, 1977) but success in attracting other research grants was evidently significant (UGC, 1984).

The UGC Annual Survey 1976-77 announced the breakdown of quinquennial grants. At the same time the UGC introduced planning figures based on four-year projections. The UGC noted that the dual support system was under great strain. The Annual Survey for 1979-80 (UGC, 1980) announced that the Committee had, with the Advisory Board for the Research Councils (ABRC)

decided to set up review of arrangements for dual support; this became the Merrison Review. In the meantime "the current distribution of equipment grant (£72m for 1980/81 cf. recurrent grant of £987m) takes into account each university's past record of attracting outside research grants and thus provides a slightly better equipment base for those with a proven research capability".

Through the 1980s, the Annual Review of Government R&D Funding repeated the following mantra to describe the purpose of dual support and the University Grants Committee's research allocations:

> "In the science fields the intention of the UGC input into research is that it shall provide the basic floor of research capability in university departments which is necessary if speculative ideas are to be generated and developed to the stage where they may attract support from external sponsors (the combination of these two types of money constitutes the dual support system)."

Note the references specifically to 'science fields' and not to research in general, but to external sponsors generally and not solely to the Research Councils.

The Merrison Report (ABRC/UGC, 1982) coincided with severe cuts in public funding. The Report concluded that while the overall University grant could be determined in proportion to research grants, this would lay the wrong emphasis on the nature of dual support, to the detriment of seed corn activity and innovation. It might however be a factor to take into account. It noted the advantages which the dual support system provides when working properly. Support from general funds:

a. "Enables academic staff to keep in touch with the frontiers of their subject, which feeds back beneficially into teaching

b. Allows new researchers to be come established and build up a reputation

c. Provides a continuity of research which is to some extent protected from the disruptive influences of an uncertain flow of external income

d. Enables a wide spread of initial and innovative investigations".

The ABRC set up a joint working group with the UGC to inform its strategic advice, particularly on the operation of dual support. Its report (ABRC, 1987: Annex A) comments (our bold emphases):

e. University research, particularly in science and technology, is funded by a complex arrangement known as the dual support system. Resources for research are provided by universities through fee income and block grants from the University Grants Committee (UGC), by the Research Councils in the form of research grants, and by a number of other sources, including Government, industry and charities. In theory the dual support system sets out the responsibilities of the funding agencies.

f. University money for the support of research serves two purposes. On the one hand it provides for a basic level of research activity for all university academic staff. On the other hand it provides the "well-found" laboratory in which work supported by the Research Council and other funding agencies can be undertaken.

g. The Merrison report outlines the advantages of the dual support system. … The dual support system – when working properly – provides a flexible framework for funding.

h. The vagueness of the definition coupled with the increasing complexity of scientific investigation and financial pressures have led to evolution of the dual support system. …

i. The Merrison report found that the dual support system was not working properly, largely because scientific research was becoming increasingly expensive, and the resources available to universities were inadequate to keep up. …

As with the Government's Annual Review, there is an assumption of broader support for all research, although the ABRC emphasises the need for full cost recovery wherever possible. The ABRC, following Merrison, also notes the value of a basic level of research activity supported from these general funds (the Annual Review's 'generation and development of speculative ideas').

'A Strategy for Higher Education into the 1990s' (UGC, 1984) suggested (at par. 5.14) a "more selective allocation of research support among universities" in order to ensure that resources for research were used to the best advantage. The UGC confirmed that it had in the past "taken account of research achievement". Subsequent paragraphs developed the rationale for a selective approach that would be related to the existing dual support system. The text confirms that the information supplied to the UGC by the Research Councils was a major driver in the research grant algorithm.

The 1985 UGC circular letter to universities said that the distribution of research funds would take account of work of special strength and promise, so as to maintain the quality of research in UK universities. In 1986, the UGC operated its first Research Selectivity Exercise. This asked universities to complete a four-part questionnaire covering various aspects of income and expenditure, planning, priorities and output. This was used by the UGC sub-committees to establish evaluative ratings, on a four-point scale, in consultation with the Research Councils. The ratings were then used for selective allocation of a part (JR) of the research resource.

The JR allocations were in fact a rather small part at first, perhaps 10-15 per cent. There were two larger elements: SR correlated simply with unit size while DR correlated with research grant income. DR thus represented a direct reward for gaining peer reviewed research grants. CR was a fourth element in the UGC model for research allocations, incentivising applied research contracts.

The JR element became a progressively larger part of the research allocation. The old formula disappeared with the advent of the Higher Education Funding Councils and, after RAE1992, virtually all block-grant research funding was allocated via a new 'QR' element that contained both quality and volume factors. DR disappeared and a transfer of funds was made from the Funding Council grant to the Science Budget in the 1993-95 period (the dual-support transfer in graphs below) so that indirect costs could be awarded with each Research Council grant.

We see a gradual evolution of ideas about what dual support actually meant for the sources of this brief history. The definition is perhaps unimportant, because the flexibility of the system is evidently one of its merits. Even within one document, such as the detailed analysis of the ABRC/UGC working party (ABRC, 1987), there is a transition from 'Research Councils and other funding agencies' to 'Research Council funds' between paragraphs. The funding position of charities is repeatedly fudged. What was once deemed to support science fields alone is spread to all.

The dual support system as presently funded cannot conceivably operate as it did historically. As May (2003) argues, the expansion of the university system through new institutions and many additional researchers makes this impractical. For at least 25 years, the record shows a frequently expressed concern that the system was no longer as effective as memory suggested. Over that time the real erosion became more clear: the ability of the core system alone to support speculative 'blue skies' research would now be considered laughable in most science and technology fields.

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