

Science budget : allocations, 1987-88, planning figures, 1988-89-1989-90 : advice to the Secretary of State for Education & Science from the Advisory Board for the Research Councils.

Contributors

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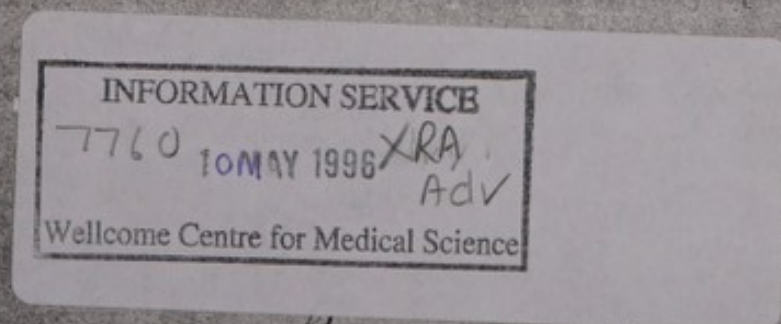
SCIENCE BUDGET:

ALLOCATIONS 1987-88

PLANNING FIGURES

1988-89-1989-90

Advice to the
SECRETARY OF STATE
FOR EDUCATION & SCIENCE
from the
ADVISORY BOARD FOR
THE RESEARCH COUNCILS



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FOREWORD

THE ADVISORY BOARD FOR THE RESEARCH COUNCILS was established by the Secretary of State for Education and Science in 1972 with the following terms of reference:-

- a) To advise the Secretary of State on his responsibilities for civil science with particular reference to the Research Council system, its articulation with the universities and departments, the support of post-graduate students and the proper balance between international and national scientific activity;
- b) To advise the Secretary of State on the allocation of the Science Budget amongst the Research Councils and other bodies, taking into account funds paid to them by customer departments and the purposes to which such funds are devoted;
- c) To promote close liaison between Councils and the users of their research.

The Board submits advice to the Secretary of State for Education and Science in the spring of each year in advance of the year's public expenditure survey on the overall size of the Science Budget; and at the end of the year once the outcome of the survey is known on the allocations to funded bodies.

The Board's advice in 1986 on the overall size of the Science Budget was published in July 1986.

On 6 November 1986 the Government announced the outcome of the public expenditure survey for the Science Budget: the Government made available additional sums of £24m, £20m and £20m respectively for the financial years 1987-88, 1988-89 and 1989-90. This report contains the Board's advice on the allocation of the Science Budget for 1987-88, and on planning figures for allocations for 1988-89 and 1989-90.

ABRC

February 1987

The Secretary of the Board of Directors of the National Science Foundation is hereby notified that the Board of Directors of the National Science Foundation has approved the proposed budget for the fiscal year 1955-56.

1. To ensure the efficient and economical operation of the National Science Foundation, the Board of Directors has approved the proposed budget for the fiscal year 1955-56.

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As a result of the Board of Directors' action, the National Science Foundation has approved the proposed budget for the fiscal year 1955-56. The Board of Directors has approved the proposed budget for the fiscal year 1955-56.

ABRC Membership

DECEMBER 1986

Professor Sir David Phillips, FRS (Chairman)

- Professor of Molecular Biophysics
University of Oxford

Professor R L Bell

- Director-General of ADAS
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and Food

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Mr H Fish, CBE

- Chairman, Natural Environment
Research Council

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- Economic Adviser to the Governor,
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Rt Hon Kenneth Baker MP

Your reference

Our reference

3 December 1986

Dear Secretary of State,

1986 PUBLIC EXPENDITURE SETTLEMENT: SCIENCE BUDGET ALLOCATIONS

1. I attach the Board's advice on Science Budget allocations in the light of your announcement on 6 November of the outcome of this year's public expenditure survey.
2. Early decisions are needed in respect of our recommended allocations so that the Science Budget bodies can draw up their draft parliamentary estimates for 1987-88; and so that they may have confirmed planning figures for later years. Our recommendations are summarised in Table 3 at the end of our advice. I should be glad to discuss them with you if that would be helpful.
3. Since 1982 the Board's annual advice to you on the outcome of the public expenditure survey has been published. The Board hopes that you will agree to the publication of the present advice as soon as it can be arranged.

Your sincerely

David Phillips

DAVID PHILLIPS

Telephone 01-254
01-254 0000
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The Secretary

On 10/11/82

Mr. John Kenneth S. 10/11/82

10/11/82

Dear Sir,

THE PUBLIC EXPENDITURE SETTLEMENT: SCIENCE BUDGET ALLOCATIONS

1. I attach the Board's advice on Science Budget allocations in the form of a memorandum on 6 November of the outcome of the year's public expenditure review.

2. Early decisions are needed in respect of our recommended allocations for 1983-84. Science Budget bodies can draw up their own preliminary estimates for 1983-84 and so they may have confirmed planning figures for later review. Our recommendations are summarised in Table 2 at the end of the document. I should be glad to discuss them with you if that would be helpful.

3. Since 1982 the Board's annual advice to you on the outcome of the public expenditure review has been published. The Board hopes that you will agree to the publication of the present advice as soon as it can be arranged.

Yours sincerely,

David Phillips

DAVID PHILLIPS

SUBMISSION TO THE SECRETARY OF STATE

1986 PUBLIC EXPENDITURE SETTLEMENT: SCIENCE BUDGET ALLOCATIONS

Introduction

1. On 6 November the Secretary of State announced that the Science Budget would be £654m in 1987-88 representing an increase in cash of £24m compared with previous plans. In each of the following years an additional £20m would be available compared with previous plans. This submission presents the Board's response to this announcement; and our advice on the allocation of the new Science Budget totals. Firm decisions are required for 1987-88; while for later years bodies require a provisional indication of their likely allocations for planning purposes.

General comment on the settlement

(i) Science Budget

2. Our reaction to the settlement is one of dismay. In our advice to your predecessor, at the beginning of this year's public expenditure survey, we recommended additional provision for the Science Budget of £35m in 1987-88 rising to £50m in 1988-89 and £60m in 1989-90. We also advised full compensation for the effects of the decline of the £ on foreign exchanges on the cost of international subscriptions (eg to CERN and ESA). International subscriptions account for more than 10% of the Science Budget. In our advice we said:

"We are putting our bid forward as the **minimum** increase necessary to put the Science Budget in a position adequately to respond to national needs. We urge the Government to regard meeting the bid as a necessary investment which should yield substantial returns".

3. The new money provided actually falls significantly short of what would be needed just to maintain the buying power of the Science Budget at the level it was at the time we formulated our advice. Since then (April) the £ has continued to fall against European currencies, taking the total increase in the sterling cost of

THE PUBLIC EXPENDITURE SETTLEMENT: SCIENCE BUDGET ALLOCATIONS

Introduction

1. On 6 November the Secretary of State announced that the Science Budget would be £25m in 1957-58 representing an increase in cash of 15% compared with previous years. In each of the following years an additional £1m would be available compared with previous years. This statement presents the Secretary's intention to the House of Commons and our advice on the allocation of the new Science Budget to the various departments. It is requested that the House will note the Secretary's intention and indicate of their own intention for the coming year.

General comment on the statement

2. Science Budget

3. Our reaction to the statement is one of surprise. In our advice to the House of Commons at the beginning of this year's public expenditure survey, we recommended additional provision for the Science Budget of £15m in 1957-58 rising to £20m in 1958-59 and £25m in 1959-60. We also pointed out the importance for the future of the country of the £2 on foreign research, on the last of which we recommended expenditure of £1.5m and £2m. International expenditure should be more than 10% of the Science Budget. In our advice we said:

"We are sorry we did not see the statement before it was necessary to do so. The Science Budget for a nation is a matter of national importance. We urge the Government to regard meeting the bill as a necessary first step which should not be delayed."

4. The new money provided actually falls significantly short of what would be needed for to maintain the buying power of the Science Budget at the level it was at in 1954-55. It is estimated that the Science Budget in 1954-55 was £10m. The new money provided is only £25m in 1957-58 and £20m in 1958-59 and £25m in 1959-60. This is a very small increase in the buying power of the Science Budget.

international subscriptions to over £20m in 1987-88. A second factor has been the negotiation of a new pay settlement for the scientific civil service, representing an 8% increase on previous salary levels, 5% more than the inflation allowance in the Government's plans. Most Research Council staff are paid on scientific civil service scales; others are paid on NHS-related or on university pay scales where settlements in excess of the Government's inflation factor are also expected. The Research Councils have no say in the negotiation of any of these pay settlements. In total, this year's pay settlements are expected to cost the Research Councils up to £9m per annum more than the Government's plans have allowed.

4. The gap between these increased costs - pay and international subscriptions - and the additional money provided is brought out in Table 1.

Table 1

| | £m | | |
|---|----------------|----------------|----------------|
| | <u>1987-88</u> | <u>1988-89</u> | <u>1989-90</u> |
| 1. <u>Cost increases</u> | | | |
| - international subscriptions | 20.5 | 25.5 | 25.5 |
| - Pay increases not covered by Government's inflation allowance | 9.0 | 9.0 | 9.0 |
| Total | <u>29.5</u> | <u>34.5</u> | <u>34.5</u> |
| 2. <u>New Money</u> | 24.0 | 20.0 | 20.0 |
| 3. Shortfall (1) - (2) | 5.5 | 14.5 | 14.5 |
| 4. (3) as % of Science Budget Total (%) | 0.9 | 2.3 | 2.2 |

5. These figures show that after this year's PES settlement, the Science Budget is actually worse off in real terms - by almost 1% in 1987-88 rising to more than

international subscriptions in 1957-58. A request for the negotiation of a new pay settlement for the scientific staff service, representing an 8% increase on previous salary levels, far more than the inflation allowance in the Government's plan. Most Research Council staff are paid on scientific staff service scales which are paid on non-subsidized or on relatively pay scales. The settlement in excess of the Government's inflation factor are also expected. The Research Councils have no say in the negotiation of any of their pay settlements. In total, this year's pay settlements are expected to cost the Research Councils up to £100 per annum more than the Government's plan provided.

The gap between these increased costs - pay and international subscriptions - and the additional money provided is brought out in Table 1.

Table 1

| | 1957-58 | 1958-59 | 1959-60 |
|---|---------|---------|---------|
| 1. Cost Increase | | | |
| - International subscriptions | 20.2 | 23.7 | 25.5 |
| - Pay increases not covered by Government's inflation allowance | 7.0 | 8.5 | 9.5 |
| Total | 27.2 | 32.2 | 35.0 |
| 2. New Money | 24.0 | 20.0 | 20.0 |
| 3. Shortfall (1) - (2) | 3.2 | 12.2 | 15.0 |
| 4. (3) as % of Science Budget | 0.1 | 2.3 | 2.5 |

These figures show that after the year's PES settlement, the Science Budget is actually worse off in real terms - by almost 1% in 1959-60 than in 1957-58.

2% in 1988-89 - than it was in April when we advised of the need for additional provision of £35m in 1987-88 rising to £60m in 1989-90. At that time we estimated that the Government's plans implied at least a 1% reduction in real terms between 1987-88 and 1988-89. In the light of developments since April the total reduction by 1988-89 has become at least 3%. We say "at least" because these estimates make no allowance for the increasing real cost of scientific equipment and materials. There are two aspects to this: on the one hand the availability of technologically more advanced equipment in already capital intensive fields; on the other the increasing dependence of all fields of science on costly equipment and techniques. Studies in the USA which have compared start-up costs for university departments in particular research fields have suggested that equipment costs per scientist rise at 20% per annum. The Royal Society is to undertake a similar study in the UK. A significant proportion of the scientific equipment used in the science base has to be imported and the decline of the £ has been a further factor pushing up costs.

6. Table 2 (page 4) contrasts the trend in the real value of the Science Budget between 1985-86 and 1989-90:-

a) measured against average inflation as indicated by the GDP deflator (line 4); and,

b) taking some account of the additional costs (over and above average inflation) attributable to international subscriptions, restructuring, superannuation and pay settlements in excess of the Government's provision for inflation (line 5).

7. The first of these series (line 4) gives an impression of growth, which is wholly inconsistent with the acute problems of financial management which the Research Councils are facing. The second series (line 5) is much closer to reality, but even this understates the pressures on the Science Budget because, as the footnote says, it makes no allowance for the increasing costs of equipment and materials mentioned in paragraph 5 above.

(ii) The Universities

8. In his announcement of 6 November 1986, the Secretary of State announced that the recurrent grant for the universities between the financial years 1986-87 and 1987-88 will increase in cash by £95m or 7.2%. This increase is in excess of

1951 in 1950-51 - that it was in April when we started at the head of the column
 between 1950 and 1951 in 1950-51 ending in 1951-52. At that time we estimated
 that the Government's share improved at least a 10% reduction in total income
 1951-52 and 1952-53. In the light of the Government's share "with the total income
 1951-52 and 1952-53 we can say that the Government's share improved at least 10%
 no allowance for the increasing cost of scientific equipment and personnel.
 There are two aspects to this on the one hand the availability of scientific
 more advanced equipment in industry and the other the increasing
 dependence of all States of science on costly equipment and techniques. Studies
 the USA which have compared scientific costs for various departments in the
 research field have suggested that scientific costs are around 10% of the
 annual. The Royal Society is an interesting study in the UK. A significant
 proportion of the scientific equipment used in the science field has to be imported
 and the decline of the £ has been a further factor pushing up costs.

Table 1 (page 4) compares the trend in the real value of the science budget
 between 1953-54 and 1959-60.

a) measured against average inflation as indicated by the CIP deflator
 (line 4) and

b) taking into account of the additional costs (over and above average
 inflation) attributable to technological developments, particularly in
 and pay settlements in excess of the Government's provision for inflation (line
 5).

The first of these series line 4 gives an impression of growth which is clearly
 inconsistent with the acute problems of financial management which the Research
 Councils are facing. The second series (line 5) shows a more realistic picture
 this understates the pressure on the Research Councils because, as the footnote says,
 it makes no allowance for the increasing costs of equipment and personnel mentioned
 in paragraph 3 above.

10 The Universities

11 In the announcement of a 10% increase 1955, the Secretary of State announced
 that the increase was for the universities between the financial years 1954-55
 and 1955-56 and between 1955-56 and 1956-57. The increase is in excess of

Table 2

1986 PES OUTCOME: OVERALL IMPLICATIONS

£m

| | 1985-86 | 1986-87 | 1987-88 | 1988-89 | 1989-90 |
|---|---------|---------|---------|---------|---------|
| 1. January 1986 plans (Cmnd 9702) | 584 | 615 | 630 | 644 | 660 |
| 2. Latest plans | NA | 615 | 654 | 664 | 680* |
| 3. Increase of (2) over (1) | - | - | 24 | 20 | 20 |
| 4. Index of latest plans in constant prices (GDP deflator) | 100 | 102 | 105 | 103 | 102 |
| 5. Index of latest plans in constant prices making allowance for increased international subscriptions and pay costs ⁺ | 100 | 99 | 99 | 97 | 97 |

* PES transfers for additional commitments eg student benefits, increased UK contribution to European Space Agency will result in small adjustments to the 1987-88 to 1989-90 figures.

⁺ Including superannuation costs. Note: this index takes no account of the effect on buying power of increased scientific equipment and materials costs.

1964 PER EUROPE ON RAIL LOCATIONS

| | 1952-55 | 1955-57 | 1957-59 | 1959-61 | 1961-63 | 1963-65 |
|--|---------|---------|---------|---------|---------|---------|
| 1. January 1955 price (round trip) | 140 | 145 | 150 | 155 | 160 | 165 |
| 2. Latest price | 145 | 150 | 155 | 160 | 165 | 170 |
| 3. Increase of (2) over (1) | - | - | 34 | 35 | 36 | 37 |
| 4. Index of latest price in constant prices (CIP) (base 1955) | 100 | 105 | 110 | 115 | 120 | 125 |
| 5. Index of latest price in constant prices (CIP) allowance for international subsidies and pay costs* | 100 | 105 | 110 | 115 | 120 | 125 |

* PES transfer for additional movements of freight trains between the countries to which the PES transfer will result in such movements to the 1955-57 period.

* Including expenditures for the PES transfer. The index is based on the index of the 1955-57 period.

the expected average inflation rate and it might be thought that the pressures on the Science Budget would be eased somewhat by virtue of a rather better settlement for the universities - which constitute the other side of the dual support system.

9. However, in his announcement the Secretary of State made clear that, within the increased amounts of recurrent grant, he expected the UGC to set aside provision for redundancy and premature retirement costs; essential repairs and maintenance of plant and buildings; increases in library purchasing; special initiatives in teacher training; and an expansion of continuing education. The UGC have therefore had to hold back sums from the distribution of block grant in order to provide for these purposes. While elements of them, for example the increase in library purchasing, could benefit scientific research in the universities, in general they will not. A more realistic assessment of how the university settlement might serve to ease pressures on the dual support system is derived therefore from considering the increase in the sum the UGC has been able to distribute to universities as block grant. In cash terms, and for academic years, that increase is 2.2% between 1985-86 and the revised figure for 1986-87; and 3.3% between that figure and the figure for 1987-88. Both these increases are less than the rates of inflation which the Government is itself expecting over this period.

10. We appreciate that there are many pressing claims on public expenditure. We appreciate the difficult tasks the Government has in reconciling these claims within its overall policy on public expenditure and borrowing. We know that all those with an interest in particular expenditure programmes are inclined to argue that their claims for additional funds are in some sense special.

11. With this in mind, it may be helpful to restate the principal arguments we deployed in support of our case for increasing the nation's investment in science:

- i) whatever analyses based on average rates of inflation purport to show, the real buying power of the Science Budget has declined and is continuing to decline. The country's investment in its science base is falling further behind the investment made by other OECD countries;

- ii) demands on the UK science base are growing. There are social and medical demands, for example, the AIDS emergency, where our understanding of the disease and our capacity to work towards practical counter-measures

the expected energy inflation rate and it might be thought that the pressure on the scientific budget would be eased somewhat by virtue of a higher inflation rate for the universities - which constitutes the other side of the coin which would...

8. However, in the announcement the Secretary of State made clear that within the increased amount of resources granted he expected the UGC to set aside part of the industry and university research council research grants and endowments for plant and building research in the way previously agreed. This is a very important training and an expansion of existing research. The UGC will therefore have to hold back some from the distribution of funds grant in order to pay for these purposes. While elements of this, for example the interest in library construction, could benefit scientific research in the universities in general they will not in any realistic assessment of how the university system might have to make provision on the total support system is denied therefore from considering the balance in the total the UGC has been able to distribute to universities as block grant. It will therefore for academic years 1985-86 and 1986-87 and the related figures for 1987-88 and 1988-89 between the figures for 1984-85 and 1985-86. Both these increases are less than the rates of inflation which the Government is likely to allow over this period.

10. We appreciate that there are many pressing claims on public expenditure. We appreciate the difficult tasks the Government has in controlling these claims within its overall policy on public expenditure and borrowing. We think that all those with an interest in particular expenditure programmes are inclined to agree that their claims for additional funds are to some extent justified.

11. With this in mind it may be helpful to consider the principal pressures we deployed in support of our case for increasing the science investment in research...

(i) whatever analysis based on average rates of inflation applied to the total buying power of the science budget has declined and is continuing to decline. The country's investment in its science base is falling faster than the investment made by other OECD countries.

(ii) demands on the UK science base are growing. There are social and medical demands for example the AIDS emergency which are unprecedented of the science and the capacity to meet rapidly growing requirements.

are critically dependent on fundamental research supported by the Science Budget. There are industrial demands, with signs of increasing awareness in industry of their dependence on the science base for technological innovation. Industrialists are seriously concerned about the effect of financial pressures on the capacity of the science base to provide industry with the support it needs; and,

(iii) given the increasing importance of science and technology in all sectors of national life, and the rapid growth of scientific opportunities, present levels of investment are simply inadequate. Our comparative study of expenditure on science in 6 OECD countries supports this view.

12. It would appear that the Government have set aside these arguments. The Government's declared policy, nonetheless, is to maintain and enhance the strength and quality of the science base. Our advice has to be that this policy and the cumulative tenor of the Government's financial decisions can be reconciled only by reducing significantly the scale of the science base in terms of the numbers of fields in which world class effort is maintained; the numbers of researchers employed and the numbers of laboratories. This kind of contraction will require substantial restructuring funds. We shall be addressing the implications of a major contraction in the strategy paper which we hope to have ready as a basis for consultation in the first quarter of next year. But our strategy paper will also restate our firm view that it cannot be sensible to reduce (whether by default or by overt policy) the research capability of an advanced industrial economy at a time of rapid scientific and technological development.

Advice on Allocations

International Subscriptions

13. Our April submission set out many claims against any new money that might emerge from the public expenditure survey; for example, support for the strategic areas which SERC is seeking to build up at the science/engineering interface; and helping to meet the urgent need to boost equipment spending across a wide range of science. However, the progressive slide during the year of the £ against European currencies and other pressures on costs have effectively removed any discretion we

are critical dependent on fundamental research supported by the science budget. These are substantial demands, with some of increasing importance in industry of their dependence on the science base. The technology of tomorrow's industrialists are seriously concerned about the effects of financial pressure on the capacity of the science base to provide industry with the support it needs and.

10. Given the increasing importance of science and technology in all spheres of national life, and the rapid growth of scientific expenditure, general support of investment and research expenditure. Our committee's view of expenditure on science is a OECD committee supports this view.

11. It would appear that the Government have not made their intentions. The Government's declared policy, notwithstanding its intention to maintain the high level of the science base. Our advice has to be that the policy and the expenditure cuts of the Government's financial position can be reconciled only by reducing significantly the scale of the science base in terms of the resources of which it would make effort to maintain the number of research scientists and the number of laboratories. This kind of contraction will reduce substantially the number of laboratories. We shall be addressing the implications of a major contraction in the strategy paper which we hope to have ready as a white paper, consistent in the time period of next year. But our strategy paper will also indicate our firm view that it cannot be expected to reduce further by default or by sheer neglect the research capability of an advanced industrial economy at a time of rapid economic and technological development.

Advice on Allocation

International Subscriptions

12. Our April submission set out many views against any new money that might come from the public expenditure through the capital budget for the research areas which SERC is seeking to build up at the manufacturing research, and helping to meet the urgent need to build up research spending across a wide range of science. However, the Department's view of the 1990s European Conference and other matters has been extremely generous and generous in

might have had over the allocation of the new money. As we have pointed out in paragraphs 3 and 4 above the increased costs of international subscriptions and of pay exceed the new money provided in each of the next 3 years.

14. In 1987-88 SERC faces an increase of £20m in the total costs of its international subscriptions. The MRC faces an increase of £0.5m per annum from 1987-88 in the cost of their subscription to the European Molecular Biology Laboratory (EMBL). We see no logic in requiring SERC and MRC to absorb their international subscriptions costs so that all or some part of the new money can be deployed to the claims we identified in our April submission. The fact is that SERC could absorb its international subscriptions deficit only at a devastating cost to its domestic programme.

15. The major part of SERC's international subscriptions deficit is accounted for by the CERN subscription. We have noted that the UK is committed to continuing membership of CERN at least until January 1988. In principle there is an option to give the necessary 12 months' notice in December this year (1986) for withdrawal from CERN at January 1988. The funds saved from calendar year 1988 onwards could then be redeployed within the Science Budget. However, we recognise that it would be unrealistic to ask Ministers to decide before the end of 1986 to give notice of leaving CERN, even if the Abragam review were not in existence. For practical purposes, therefore, we must regard the UK as being committed to paying its CERN subscription in full up to January 1989, that is throughout the 1987-88 financial year and for 9 months of the 1988-89 financial year.

16. In 1988-89 the new money available falls to £20m - insufficient to cover SERC's international subscriptions deficit which will rise to £25m at current exchange rates. For the reasons given in the previous paragraph, we recommend that the extra £20m available in 1988-89 be allocated to SERC, subject to review (downwards only) in the light of further exchange rate movements. This means that MRC will in that year have to absorb its smaller international subscriptions deficit of £0.5m.

17. The position in 1989-90 remains too unclear for us to be able now to make any recommendation about allocations for that year. One factor will be the findings of the Abragam review, which are expected in mid-1987. We are clear, however, that in preparing its response to Abragam the Government will need to take account

might have been the situation of the new money. As we have pointed out in paragraph 5 and 6 above the estimated cost of international subscriptions and of pay exceed the new money provided in each of the next 5 years.

14. In 1975-76 SERC faces an increase of £100m in the total cost of its international subscriptions. The SERC faces an increase of £100m per annum from 1975-76 in the cost of their subscription to the European Molecular Biology Laboratory (EMBL). We see no light in regarding SERC and MRC as about their international subscriptions. It is not that all or some part of the new money can be deployed to the claim as identified in our April submission. The fact is that SERC could absorb its international subscription deficit only at a devastating cost to its domestic programme.

15. The major part of SERC's international subscription deficit is accounted for by the CERN subscription. We have noted that the UK's contribution to CERN membership of CERN at least until January 1982. In principle there is no reason to give the necessary 12 month notice in December 1981 (1982) for withdrawal from CERN at January 1982. The fact that the UK has been paying £100m annually could mean the withdrawal within the 12 month period. However, it is unlikely that it would be possible to ask Ministers to decide before the end of 1981 to give notice of leaving CERN, even if the Advisory Committee were not in existence. For practical purposes, therefore, we must regard the UK as being committed to paying its CERN subscription in full up to January 1982. But it is through the 1982-83 financial year and for 7 months of the 1983-84 financial year.

16. In 1982-83 the new money available falls to £100m. In addition to cover SERC's international subscription deficit which will rise to £100m a further exchange rate for the reasons given in the previous paragraph, we recommend that the sum £100m available in 1982-83 be allocated to SERC, subject to review downwards only in the light of further exchange rate movements. This means that MRC will in 1982-83 have in about its smaller international subscription deficit of £50m.

17. The position in 1983-84 remains too unclear for us to be able to make any recommendation about allocations for that year. Our recommendation will be the findings of the Advisory Committee, which are expected in early 1983. We are clearly, however, that in preparing its response to A report the Government will need to take account

of the following factors:

- i) last year, in considering the Kendrew report, ABRC and SERC thought that an acceptable level of UK support for CERN, bearing in mind other pressures on the Science Budget, was no more than about £30m - 20-25% less than the then current UK subscription of £40m;
- ii) the fall of the £ over the last year has increased the sterling cost of the CERN subscription to some £55m;
- iii) the possibility that further adverse exchange rate movements will cause a continuing rise in the costs of our CERN subscriptions.

18. The advice above in respect of allocations to SERC and MRC leaves £3.5m out of the £24m available in 1987-88. We have considered the allocation of this £3.5m jointly with the allocation of some £1m which remains in the ABRC's flexibility margin for 1987-88. (The greater part of the margin - £11.56m - is being used to purchase a third supercomputer, as agreed with your predecessor). Of the £1.1m remaining in the margin, £200,000 has already been set aside for the agents' fees that would be due if for any reason the sale of the AFRC's Plant Breeding Institute were cancelled. This leaves £900,000 together with the £3.5m of new money from the settlement; £4.4m in total.

University research fellowship scheme

19. We recommend that a modest amount of this sum be used to fund a further 20 fellowships under the Royal Society's university research fellowship scheme. This is a highly successful scheme which since 1983-84 has provided a total of 94 university research posts for bright young scientists and engineers. The fellowships are for a fixed term of 5 years in the first instance, but renewable. They are proving an invaluable means of giving promising scientists and engineers an opportunity to develop their research at a time when there is a dearth of the more conventional type of academic appointment. The scheme helps keep talented new blood working in the science base and in the UK. Looking ahead to the mid 1990s when a large number of university academic staff will be retiring, it will be important to ensure that there are good quality people available to fill the vacancies. The Royal Society scheme

1) Last year, in considering the 5-year report, AEC and AECF thought that an acceptable level of the report for AECF would be to have a report on the Science Budget and the report on the AECF report on the Science Budget.

in the fall of 1957 the report was received the following day at the CERN laboratory in Geneva.

2) The possibility that further research might be undertaken with the continuing use of the CERN laboratory.

3) The above three factors in respect of allocation to CERN and AECF have been out of the CERN available in 1957-58. It has been considered the allocation of the CERN jointly with the allocation of some £10 million to the AECF's research margin for 1957-58. The greater part of the margin - £11.5 million - is being used to purchase a third supercomputer, as agreed with the Government. The CERN remaining in the margin, £100,000, has already been set aside for the AECF's research that would be due to the AECF's research budget. The AECF's research budget was cancelled. This leaves £200,000 together with the £10 million of new money from the settlement £4.5 million in total.

University research following scheme

4) The Government has a modest amount of the sum to fund a further 10 fellowships under the Royal Society's University research fellowship scheme. This is a highly successful scheme which since 1955 has provided a total of 25 fellowships for research posts for bright young scientists and engineers. The fellowships are for a fixed term of 3 years in the first instance, but renewable. They are given to research posts of giving promising scientists and engineers an opportunity to develop their research at a time when there is a shortage of the most successful type of academic appointment. The scheme has been highly successful in the past, and in the last 10 years alone in the last 10 years a large number of university research staffs will be retiring. It will be important to ensure that there are good quality people available to fill the vacancies. The Royal Society scheme

is an important instrument for keeping such people in play. Without it we believe that many more talented young scientists and engineers would abandon scientific careers or be tempted to pursue them abroad. The poor outlook for science in the light of this year's public expenditure settlement strengthens the case for keeping the scheme going.

20. The cost of the rolling the scheme forward by providing a further 20 fellowships beginning in 1987 are tiny in relation to the overall Science Budget. The costs are, however, significant as a fraction of the Royal Society's grant in aid, of which the costs of 20 fellowships represent 5%. The costs build up as follows:

| | £m | | |
|--|----------------|----------------|----------------|
| | <u>1987-88</u> | <u>1988-89</u> | <u>1989-90</u> |
| | 0.216 | 0.369 | 0.393 |

We recommend that the £0.216m needed in 1987-88 should come out of the remaining £4.4m. The costs in the later years will be a first charge on the ABRC's flexibility margin for those years.

Under-indexation of salary increases

21. Paragraph 3 above noted that all the Science Budget bodies will have to absorb increases in wages and salaries costs flowing from actual and expected pay settlements in 1986-87. The total additional annual recurrent cost on this account approaches £9m. All Science Budget bodies are affected. We accordingly recommend that the remaining £4.184m be distributed to bodies pro rata to their staff related expenditure to help them meet some of the additional costs in 1987-88. Thereafter, since the new money provided falls by £4m, Science Budget bodies will have to absorb all the additional costs of the 1986-87 pay settlements at the expense of existing provision.

22. Our recommendations for allocation of the new funds as explained in paragraph 13 to 21 are summarised in Table 3 (page 11).

Flexibility Margin

23. In our advice last year we recommended, and your predecessor accepted, that the ABRC's flexibility margin should be £12.7m in 1988-89 and £17.7m in 1989-90. We recommend that these figures, representing respectively some 2% and 2.5% of

It is an important instrument for handling these funds in 1957. It is our belief that these funds should be retained in the hands of the Government and not be transferred to the private sector. The Government should retain the right of the year's public expenditure and should not be forced to pay for the scheme going.

20. The cost of the rolling the scheme forward by providing a further 10 percentage beginning in 1957 is that in relation to the overall public budget. The costs are however, significant as a fraction of the total public budget in 1957 and when the costs of 10 following years are taken into account.

| 1957-58 | 1958-59 | 1959-60 |
|---------|---------|---------|
| 0.15 | 0.15 | 0.15 |

We recommend that the £1.15m needed in 1957-58 should come out of the existing £1.15m. The cost in the later years will be a further £1.15m in 1958-59 and £1.15m in 1959-60.

Investigation of early returns

21. Paragraph 2 above noted that all the income budgeted for 1957-58 will be spent on wages and salaries and other costs. The total additional income required in 1957-58 is £1.15m. All income budgeted for 1957-58 is £1.15m. The remaining £1.15m is to be distributed to other public bodies to help them meet some of the additional costs in 1957-58. The remaining £1.15m will be provided by the Government Budget and will be spent on the additional costs of the 1957-58 and subsequent years at the expense of rolling forward.

22. The recommendations for allocation of the new funds are explained in paragraph 23 to 25 and summarized in Table 1 (page 11).

Financial Notes

23. In our report last year we recommended that the Government should be £1.15m in 1957-58 and £1.15m in 1958-59. We recommend that these figures represent the total cost of the scheme in 1957-58 and 1958-59.

the total Science Budget in those years, be maintained; and that in the longer term the flexibility margin should not fall below 2%-2.5% of the Science Budget. The margin gives the ABRC essential flexibility for facilitating shifts in the distribution of Science Budget funds between bodies to reflect changing priorities. If all Science Budget funds are allocated to bodies up to 3 years ahead, it very much reduces the Board's ability to recommend changes in the distribution without seriously disrupting bodies' plans and commitments.

24. The margin was first introduced in December 1984 for application in financial year 1986-87. In the first two years of its existence, the Board has become concerned that the margin has in practice not operated as intended. Instead of facilitating planned strategic adjustments in the balance of funding, it has drawn the Board into considering numerous small bids, at a level of detail which should properly be left entirely to the discretion of individual bodies. The Board has therefore thought it timely to reformulate the objects of the margin to underline its strategic purpose; and to revise procedures so that instead of, as now, distributing the margin only months before the financial year in question, henceforward the allocation of the margin will largely be planned between 3 and 5 years in advance. Our revised objectives are:

- i) to help bring about planned shifts of resources between funded bodies by providing financial assistance for restructuring. Restructuring may arise either at the initiative of the ABRC or of the bodies themselves;
- ii) to assist in funding 'lumpy' capital expenditure by incorporating a 5-year rolling Science Budget major capital expenditure plan covering all capital items over a certain money value. Each capital project would be funded to an appropriate extent by the funded body, the proportion being determined case-by-case;
- iii) to provide assistance, up to a maximum of 50% of the total cost, to funded bodies for unforeseen opportunities so that bodies can take advantage of these opportunities more rapidly than otherwise would be possible from within their budgets;
- iv) to provide assistance, up to a maximum of 50% of the total cost, for collaborative projects over and above the level possible from the collaborators' own budgets.

The Board will presently be consulting bodies about procedures for operating the margin in line with these revised objectives.

the total science budget in those years, he maintained, and that in the longer term the flexibility margin would not be below 15-20% of the science budget. The margin gives the ASAC essential flexibility for forecasting shifts in the distribution of science budget funds between bodies to reflect changing priorities. If all science budget funds are allocated to bodies up to 1 year ahead it is very much reduced the Board's ability to recommend changes in the distribution without seriously disrupting budget plans and commitments.

24. The margin was first introduced in December 1955 for application to financial year 1956-57. In the first year of its operation, the Board had no formal intention that the margin be in practice not operated as intended. Indeed, in fact, the planned strategic adjustments in the balance of funding it had from the Board and considering numerous small shifts, at a level of detail which would probably be entirely at the discretion of individual bodies. The Board has since then sought to help to reformulate the object of the margin to indicate its strategic purposes and to revise procedures so that instead of, as now, depending on the Board's initiative before the financial year is opened, it would be the allocation of the margin for largely be planned between 1 and 2 years in advance. The Board's objectives are:

i) to help bring about planned shifts of resources between bodies by providing financial assistance for individual bodies to carry out their part of the effort at the initiative of the ASAC or at the Board's discretion.

ii) to assist in funding "early" capital expenditure by providing a 1-year rolling science budget major capital expenditure plan covering an initial period over a certain money value. Each capital project would be funded to an amount extent by the limited funds, the provision being determined case-by-case.

iii) to provide assistance, up to a maximum of 5% of the total cost, to funded bodies for scientific equipment of the kind and in the amount of their requirements, more rapidly than otherwise would be possible from within their budgets.

iv) to provide assistance, up to a maximum of 5% of the total cost, for collaborative projects over and above the limit possible from the collaboration of own budgets.

The Board will presently be considering how to secure funding for the following 2 years in line with these stated objectives.

1986 PES: RECOMMENDED ALLOCATION OF ADDITIONAL FUNDS

| | <u>1987-88</u> | <u>1988-89</u> | <u>1989-90</u> |
|---|----------------|----------------------|----------------------|
| A Additional funds | 24.0 | 20.0 | 20.0 |
| B Unallocated sum in ABRC Flexibility Margin | <u>0.9</u> | - | - |
| Sub-total of (A) and (B) | 24.9 | | |
| <u>Recommended Allocation:</u> | | | |
| (1) International subscriptions; increases due to exchange rate movements | | | |
| SERC | 20.0 | 20.0 ^(a) | |
| MRC | 0.5 | | |
| (2) University Research Fellowships scheme | 0.216 | 0.369 ^(b) | 0.393 ^(b) |
| Sub-total of (1) & (2) | <u>20.716</u> | <u>20.369</u> | <u>0.393</u> |
| (3) Part compensation for costs of 1986 pay settlements (pro rata distribution of remaining sum (£4.184m) between bodies) | | | |
| AFRC | 0.505 | | |
| ESRC | 0.207 | | |
| MRC | 1.200 | | |
| NERC | 0.503 | | |
| SERC | 1.558 | | |
| BM(NH) | 0.153 | | |
| Royal Society | 0.056 | | |
| Fellowship of Engineering | <u>0.002</u> | | |
| | 4.184 | | |
| (4) Unallocated sums | - | - | 20.0 ^(c) |
| Total | <u>24.9</u> | <u>20.369</u> | <u>20.393</u> |

Notes (a) Subject to review (downwards only) in the light of further exchange rate movements

(b) Costs to be met from ABRC flexibility margin

(c) Held in reserve (see paragraph 17)

1975 PER RECOMMENDED ALLOCATION OF ADDITIONAL FUNDS

| | 1975-77 | 1975-77 | 1975-77 |
|--|---------|---------|---------|
| A Additional funds | 24.0 | 24.0 | 24.0 |
| B Unallocated from A/AFRC | | | |
| Flexibility margin | 0.7 | | |
| Sub-total of (A) and (B) | 24.7 | | |
| <u>Recommended Allocation</u> | | | |
| (1) International subscriptions | | | |
| increase due to exchange rate movements | | | |
| SEPC | 20.0 | | |
| MRC | 0.3 | | |
| (2) Library Research | | | |
| Follow-up scheme | 0.316 | 0.316 | |
| Sub-total of (1) & (2) | 20.316 | 20.316 | |
| (3) Part compensation for cost of 1974 pay settlements for rate distribution of remaining sum (\$2.18m) between bodies | | | |
| AFRC | 0.205 | | |
| ESRC | 0.257 | | |
| MRC | 1.328 | | |
| NERC | 0.203 | | |
| SEAC | 1.332 | | |
| SWARD | 0.137 | | |
| Royal Society | 0.236 | | |
| Fellowship of Engineering | 0.271 | | |
| | 0.182 | | |
| (4) Unallocated sum | | | |
| Total | 24.7 | 20.316 | 20.316 |

Notes (a) Subject to review (downward only) in the light of latest exchange rate movements

(b) Grants to be met from AFRC flexibility margin

(c) Funds to be met from paragraph (3)



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FROM THE SECRETARY OF STATE

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10 February 1987

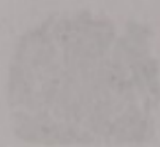
1986 PUBLIC EXPENDITURE SETTLEMENT: SCIENCE BUDGET ALLOCATIONS

Thank you for your letter of 3 December 1986 and the ABRC's advice on the distribution of the Science Budget.

I am happy to accept the Board's advice on the allocations to funded bodies for 1987-88, and on planning figures for 1988-89 and 1989-90. As you know, since the Board submitted its advice, I have made available an extra £1m per annum to enable the Medical Research Council (MRC) to increase its research on AIDS, and the MRC allocations will therefore reflect this additional sum.

I note the concern you express in paragraph 12 of the Board's advice, and your intention to address in a consultative strategy document what you see as the consequences for the science base of the Government's financial decisions. I look forward to receiving this document in due course.

I am content that the Board's advice should be published.



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 THE SECRETARY
 FROM THE SECRETARY

Professor Sir David Phillips FRS
 Advisory Board for the Research Councils
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10 February 1987

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1986 POLICY EXPENDITURE REVIEW: SECRETARY'S REPORT

Thank you for your letter of 1 December 1986 and the report's advice on the distribution of the balance budget.

I am happy to accept the Board's advice on the allocation of funded bodies for 1987-88, and on planning ahead for 1988-89 and 1989-90. As you know, since the Board's report its advice, I have made available an extra £100 million to enable the Medical Research Council (MRC) to increase its research on AIDS, and the NRC allocations will therefore reflect this additional sum.

I note the concern you express in paragraph 15 of the Board's advice, and your intention to address it in a comprehensive strategy document which you see as the counterpart for the balance of the Government's financial decisions. I look forward to receiving this document in due course.

I am content that the Board's advice should be published.

[Handwritten signature]