

Introduction

At the Barcelona meeting of the European Council in March 2002, Heads of State and Government agreed that research and technological development in the EU should be increased with the aim of approaching 3% of GDP by 2010, with the level of business funding rising to two-thirds of the total investment. The Council also invited the Commission and Member States to become involved in the modernisation of the EU rules on State Aid.

The provision of State Aid for R&D can play a part in the attainment of the 3% objective by leveraging additional private sector investment in R&D. Care has to be taken, however, to ensure that this aid does not distort competition unduly. The current State Aid Framework was designed to avoid such distortion. Since its adoption in 1996, however, there have been many changes in the ways R&D and innovation actors behave and interact. The time is ripe, therefore, for a revision of the State Aid Framework for R&D.

This survey is part of a study aimed at exploring the effect of State Aid on R&D investment levels. It is designed to feed into the forthcoming revision of the R&D State Aid Framework. Recent consultations and reviews in this area have already suggested many potential changes, but they also pinpointed a number of issues that still need to be resolved. One of the aims of this survey, therefore, is to throw more light on particular issues. These include:

- The leverage effects of existing R&D support schemes
- The indirect leverage effects of innovation support schemes on R&D investment levels
- Assessments of the effectiveness of State Aid
- Appropriate categories and ceilings for R&D State Aid
- Increased ceilings when there is an overlap with other aid categories
- The range of eligible costs for R&D State Aid
- The boundary between R&D and Innovation
- R&D Support to Public Research Organisations (PROs)
- The efficiency of R&D State Aid procedures
- The efficiency of Innovation-related procedures

This questionnaire is being sent to companies/employers' federations and public research organisations. A similar questionnaire, appropriately modified, is being sent to policymakers.

R&D Support Schemes

- 1 Please name and briefly describe up to three **R&D support schemes** in your country with high leverage effects on private sector R&D investment levels (i.e. schemes which attract the highest levels of additional private R&D investment).

Scheme 1

UNICE is not in a position to describe national schemes

Scheme 2

Scheme 3

- 2 If possible, please estimate the **leverage** associated with these schemes by indicating the expected or realised ratio of public to private expenditure on R&D.

Scheme 1

UNICE is not in a position to estimate the leverage of national schemes.

Scheme 2

Scheme 3

Innovation Support Schemes

- 3 Please name and briefly describe up to three **Innovation support schemes** in your country with high (albeit indirect) leverage effects on private sector R&D investment levels.

Scheme 1

UNICE is not in a position to name and describe national Innovation support schemes.

Scheme 2

Scheme 3

4 If possible, please estimate the scale or describe the nature of these effects.

Scheme 1

Scheme 2

Scheme 3

Assessing the Effectiveness of State Aid

- 5 When assessing the overall effectiveness of R&D State Aid (on either an *ex ante* or *ex post* basis), should this be judged solely in terms of the leveraging effect on private sector R&D levels, or should factors such as the potential to increase innovation and enhance competitiveness also be taken into account? Please explain your choice, listing the other factors that should be taken into consideration and indicating how this might be done.

In addition to the familiar “positive externalities” argument, we see three additional arguments for public funding of private R&D:

- *Strengthening the international competitiveness of domestic industry and creating a level playing field may require matching the financial support that competitors get elsewhere. For example, in 2001 the level of government funding of business R&D amounted to 8.5 % in the EU, whereas in the US it was 12.3 %¹. An OECD study² found an optimum at 12.7 %, well above the EU average.*
- *For their public tasks in healthcare, defence, education, energy and environment, governments need technologies from the private sector.*
- *To remove bottlenecks in the flow of knowledge in the innovation systems at European, national or regional levels, there is a need to stimulate networks, mobility, and partnerships between R&D actors.*

Accordingly, also these arguments should be taken into account when assessing the effectiveness of State aid.

Ex Ante Assessments of R&D State Aid

- 6 What are the most important *ex ante* criteria for anticipating both the leverage of State Aid on private sector R&D levels and the potential of the R&D to generate innovation and enhance competitiveness? Please indicate using 1 – 5 scales ranging from 1 (not important) to 5 (very important)

Criteria	Importance (as an indicator of high potential leverage on private sector R&D levels)	Importance (as an indicator of potential to lead to innovation and enhanced competitiveness)
	1 (not important) – 5 (very important)	1 (not important) – 5 (very important)
The transnational, cooperative nature of the R&D	5 - although one could argue that the efficiency derived from cooperation would allow for reaching the same R&D results at less cost!	5 - because of multiplier effects, efficiency gains and strategic advantages (multiplier effects and efficiency gains are: sharing risks, costs, scarce human resources, complementing competences, achieving economies of scale and critical mass, shortening time-to-market, stimulating

¹ Main Science and Technology Indicators 2002/1, OECD.

² Science, Technology and Industry Outlook, OECD, 2000.

		<i>clear goal setting and structured way of working; <u>strategic advantages are:</u> acting as window on world of science and technology, building networks, benchmarking R&D efforts, facilitating standardisation, reducing market risk, exploring possibilities for future business alliances.)</i>
The potential for spillover effects to other organisations	2	<i>4 – part of the same benefits apply as for cooperation</i>
The level of risk associated with the R&D	<i>5 – however, risk could be more relevant for assessing the incentive effect (additionality) than the permissible aid intensity</i>	<i>5 – risk sharing is an important advantage of R&D cooperation</i>
The areas in which the R&D is being performed (e.g. areas in which the EU has fallen behind competitors)	2	5
The additionality associated with the R&D	<i>1 – in practice it is very difficult to prove that certain R&D activities are carried out in addition to normal day-to-day operations (see also UNICE 2004 paper).</i>	<i>1 – the Commission’s interpretation of this requirement should not put European companies at a competitive disadvantage vis-à-vis their competitors located outside the EU who are not suffering from comparable constraints; in any case, the Commission should not a priori disqualify aid for R&D projects that fall within a firm’s core business or which have a clear market potential (see also UNICE 2004 paper).</i>
Other criteria (please specify)		

State Aid R&D Categories and Ceilings

- 7 State Aid ceilings currently vary for different categories of R&D activity. Please indicate your preferred State Aid **ceilings** for each of the **categories** shown below. (Please note that choice of the same ceilings for different categories is equivalent to the amalgamation of categories).

Category	Current Ceiling for State Aid (as a % of eligible cost)	Suggested Ceiling
Fundamental research	100%	100%
Industrial research	50%	50%
Pre-competitive development	25%	50%

Patent protections	Same % as that for the research leading to it	<i>Same % as that for the research leading to it</i>
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8 If the ceilings you have suggested differ from the current ceilings, please explain your preference.

We propose a merger of the categories industrial research and precompetitive development into a single category industrial RTD, funded at 50 %.

Increased Ceilings

9 Current State Aid rules allow the ceilings for the categories of ‘Industrial research’ and ‘Pre-competitive development’ to be increased in special circumstances, e.g. when the R&D is performed by SMEs or conducted in less favoured regions. Please indicate your preferred State Aid ceilings for each of the categories shown below.

We propose to merge industrial research and precompetitive development into a single category funded at 50 %

Special Circumstance	Industrial Research		Pre-competitive Development	
	Current Ceiling	Suggested Ceiling	Current Ceiling	Suggested Ceiling
SMEs	60		35	
Less Favoured Region Objective 1	60		35	
Less Favoured Region Objective 2	55		30	
In accordance with EU R&D Framework Programme (FP) objectives	65		40	
In accordance with EU R&D FP objectives plus cross-border cooperation	75		50	
Special cases of cooperation and dissemination	60		35	
Other case 1 (please specify)	50		25	
Other case 2 (please specify)	50		25	

Other case 3 (please specify)	50		25	
Total ceiling including all bonuses	75		50	

10 If the ceilings you have suggested differ from the current ceilings, please explain your preferences.

- *As we propose to merge industrial research and precompetitive development into a single category it is appropriate to fund it at 50 %.*
- *In view of the ERA, transnational cooperative R&D through national or intergovernmental programmes should in any case qualify for the same ceiling as in the Framework Programme.*

Eligible Costs

The current framework for R&D State Aid classifies eligible costs under the following categories:

- Personnel costs (researchers, technicians and other supporting staff employed solely on the research activity)
- Costs of instruments, equipment, and land and premises used solely and on a continual basis (except where transferred commercially) for the research activity
- Cost of consultancy and equivalent services used exclusively for the research activity, including the research, technical knowledge and patents, etc. bought from outside sources
- Additional overheads incurred directly as a result of the research activity
- Other operating expenses (e.g. costs of materials, supplies and similar products) incurred directly as a result of the research activity).

11 Are these categories adequate and easy to work with? If not, how could they be reformulated or supplanted (e.g. by requesting only that eligible costs are those “necessary and economical to realise the research project”, as in the Sixth Framework Programme cost approach)?

We are not experiencing any problem with the eligible cost categories and do not recommend any changes. In particular, we do not recommend adoption of the FP6 cost approach, for two reasons:

- The notion of “eligible costs” has been abolished in FP6*
- The FP6 cost approach is extremely complicated, with a very detailed manual of over 200 pages. There are widespread complaints about red tape, see e.g. the Marimon report. The FP6 cost approach is NOT a “best practice” worth being taken over in national programmes!*

R&D and Innovation

Currently R&D and Innovation-related activities are treated separately as far as State Aid is concerned, with innovation-related activities not corresponding to the R&D

categories noted above only benefiting from State Aid if they conform to Community policy on investment aid.

- 12 Given the difficulty of distinguishing between some innovation-related activities and pre-competitive development, should there continue to be a separation between R&D and Innovation-related activities?

Yes, because somewhere well before entering the market, public support has to stop, in order to avoid undue distortion of competition.

- 13 If yes, what criteria should be used to distinguish between R&D and innovation-related activities?

The new category “industrial RTD” (merging “industrial research” and “precompetitive development”) should include prototypes (as long as the primary objective is to make further improvements) and computer software (if its completion depends on the development of a scientific and/or technical advance and its aim is the resolution of a scientific and/or technological uncertainty on a systematic basis). Routine or periodic changes made to products, processes and services, on the other hand, should be excluded. This would also be in line with the broader definitions of R&D as provided in the Commission Regulation on the application of Article 81 (3) EC to categories of research and development agreements (Regulation 2659/2000) and the OECD guidelines for the classification of scientific and technological activities (Frascati Manual).

- 14 If no, how should innovation-related activities be treated? Should, for example, all activities related to technological and product innovation (as opposed to organisational innovation) have the same State Aid ceilings as pre-competitive development?

- 15 Should there be any special provisions for support measures aimed at the creation of strong networks and clusters of R&D and innovation actors? If so, what form should they take?

- 16 Should there be any special provisions for support measures aimed at the creation of high tech start-ups? If so, what form should they take?

- 17 Should there be any special provisions for large-scale public-private partnerships and technology platforms? If so, what form should they take?

Large-scale PPPs, European Technology Platforms, Joint Technology Initiatives and major EUREKA programmes or projects should be treated as “important projects of common European interest” qualifying for the derogation in art. 87.3.b of the Treaty; see also section 3.2-3.4 of the current State aid framework for R&D.

- 18 How should technology procurement (whereby the State procures goods and services necessitating further R&D prior to their commercial availability) be treated within a revised State Aid framework for R&D (and innovation)?
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R&D Support to Public Research Organisations (PROs)

The current rules governing support for R&D carried out by PROs on behalf of, or in collaboration with, industry specify that State Aid is **not** involved when:

- PROs receive payment for the R&D services they perform
- The firms involved pay all the R&D costs
- All IPRs are allocated to the PROs and results not giving rise to IPRs are available for widespread dissemination
- PROs are compensated for any IPRs resulting from projects and, once again, results not giving rise to IPRs are available for widespread dissemination

- 19 Have the existing rules led to any problems for existing or proposed R&D support schemes linking PROs and industry (e.g. collaborative R&D schemes or schemes in which PROs allow industry to use their laboratories for industrial research)? If so, please describe the problems encountered and if and how they were overcome.

As a preliminary remark we would like to emphasise that the conditions listed above under which State Aid is not involved apply as “or..., or...”, not as “and..., and...”. To address the “European Paradox”, which refers to Europe’s notoriously poor track record in translating the results from its strong public research base into successful innovative products and services in the market place, the links between industry and public research need to be strengthened, for example by means of public-private R&D partnerships. Unfortunately, the framework’s provisions for “R&D carried out by public non-profit making higher education or research establishments on behalf of or in collaboration with industry” (section 2.4) are insufficiently attractive to industry. They are ambiguous and imprecise, and therefore prone to interpretation problems, particularly regarding IPR issues. For example, one of the alternative situations of permitted state aid is “where the public non-profit-making establishment receives from the industrial participants compensation equivalent to the market price for the intellectual property rights which result from the research project and which are held by those industrial participants, and where the results which do not give rise to intellectual property rights may be widely disseminated to interested third parties”. In this case, it is not clear whether and how such compensation would take account of the contributions that the industrial participants may make to the project by means of their own R&D activities, financial payments, non-financial (‘in-kind’) support or pre-existing know-how.

To stimulate public-private partnerships in R&D and clarify the relevant section in the framework, the following recommendations apply:

- a. *Make a clear distinction between the roles of universities and public institutes as vehicles of indirect aid to industry and as recipients of direct aid.*
 - b. *Make a clear distinction between collaborative research (i.e. universities or public institutes working with industry as their partner, e.g. in an R&D aid scheme) and contract research (i.e. universities or public institutes working for industry as their principal);*
 - c. *In the case of collaborative research, apply the same IPR provisions as in the EU Sixth RTD Framework Programme, so that no compensation would have to be paid for access and use of IPR (pre-existing know-how and knowledge resulting from the project) where the FP rules allow them royalty-free, unless otherwise agreed before the collaboration contract is signed.*
 - d. *In the case of contract research, State aid in the meaning of Article 92(1) of the EU Treaty is not involved where industry bears the full cost of the project. In case part of the cost is publicly financed, due account should be taken of industry's contributions to the project in the form of financial payments, non-financial ('in-kind') support or pre-existing know-how when determining the fair compensation to be paid to the university or public institute for the resulting IPR.*
- 20 Given that more and more PROs now operate – at least in part – like commercial organisations, is there a case for revising the above rules? If so, what form should such revisions take?

Make a clear distinction between the roles of universities and public institutes as vehicles of indirect aid to industry and as recipients of direct aid.

While the research and education tasks of PROs and even (part of) their valorisation tasks rightly qualify for public funding, care should be taken that their commercial valorisation tasks (either directly publicly funded or indirectly by internal cross-subsidisation) does no unduly distort competition with commercial private R&D actors.

R&D State Aid Procedures

- 21 The efficiency and effectiveness of the application of State Aid in specific sectors of the economy can vary considerably. Please comment on any particular factors that will need to be taken into account in any future revision of the State Aid Framework for R&D.

The Commission has the option either to adopt a block exemption regulation for R&D aid or to adopt revised rules. UNICE has consistently held that strict control of state aid, on the basis of clearly defined criteria, is necessary to prevent distortions of competition in the internal market and has repeatedly called on the

Commission to define these criteria through guidelines and block exemption regulations, while at the same time urging the Commission to ensure that any new specific block exemption regulations do not undermine the efficiency of state aid controls. Decentralisation of state aid control by means of block exemption regulations, which rely heavily on self-assessment and monitoring by the Member States themselves, should not detract from the uniform application of Community law.

Decentralisation clearly amplifies the risk of inconsistencies within the system. Consequently, and considering the complexity of R&D aid schemes, UNICE believes that the Member States should continue being compelled to notify their R&D aid measures to the Commission. However, the thresholds for notification to the Commission of individual projects under an approved R&D scheme should be increased, so as to allow the Commission to focus on assessing large individual projects.