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Summary of the report

## Achieving Europe's R&D Objectives Delivery Tools and Role for the EU Budget

### Jorge Núñez Ferrer and Filipa Figueira

The EU's R&D policy has recently come under the spotlight, as it is a central element both in the recently launched "Europe 2020" strategy for promoting economic growth in Europe and in the review of the EU budget. One of the objectives of the Europe 2020 strategy is to increase the level of investment in R&D in the EU to 3% of GDP. This has been taken on board by the European Commission in its budget review, which calls for a reinforcement of the EU's R&D policy, even if it does not specify by how much funding should be increased.

However, despite stressing the importance of R&D spending as a part of both strategies, the Commission has yet to make concrete proposals on how EU spending on R&D should be boosted. The question on the size and role of the EU's budget support to R&D will be central in the discussions over the next Multiannual Financial Framework. EU support will need to be justified before the level of investment can be increased.

It is a widely accepted fact that there are advantages to funding research at the EU level, mainly because of economies of scale. However, there is much less consensus on how funding should be allocated and how much of the EU budget should be spent on R&D. Although several studies have advocated an increase in the EU's spending on research, the analyses have tended to avoid specifying how a beefed up EU research budget could be used.

Even though the EU budget attracts most attention, this report argues that the financing opportunities that the EU makes available are just as important. Loans by the European Investment Bank (EIB) and the mechanisms for public– private partnerships also play an essential role in supporting research in the EU. In particular, although grants are most appropriate to fund basic research, financing instruments based on loans may be preferable for research that has a direct commercial application.

This report, therefore, analyses both EU spending on R&D and the financial instruments at the EU level that can support R&D. In doing so, it looks at historical changes in research policy in Europe. These changes have been little short of a silent revolution; the functioning of R&D policy is crucial for the successful achievement of EU objectives and needs to be carefully assessed. The present study then makes recommendations on how both types of instruments should be used at the EU level.

The report shows that from a theoretical multidisciplinary analysis combining the insights from the economics of the public sector, fiscal federalism, political criteria and EU law, the EU has a strong role to play in R&D as a coordinator and financier. A larger share of R&D should be allocated to the EU than is the case at present. A rise in the level of spending at the EU level could lead to important efficiency gains without causing problems from the perspective of legitimacy. That increase should come both from a rise in the funding available from the EU budget from grants and from the better and expanded use of financial instruments. To achieve the objectives in the Strategic Energy Technology Plan for energy research it is estimated that the EU's R&D share would need to increase by at least €1 billion. An increase in the R&D budget from 15% to up to 50% of funding, including the funds to expand the use of loan instruments, is thus highly recommended.

However, as far as grants are concerned, before expanding the financial capacity of the EU, there is a need to ensure that it has the appropriate institutional setting to handle

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R&D efficiently. The main instrument currently in place to finance R&D at the EU level is the Framework Programme. The latest evaluation shows that this has managed to foster basic research and maintain a selection procedure based on excellence. It has nevertheless a number of important weaknesses. The main problems are a still excessive bureaucratic burden despite a number of reforms, unsuitable financial rules and budgetary controls based on excessive risk aversion, a lack of participation by the private sector and a lack of coordination and follow-up of research undertaken in the EU. These points need addressing before any substantial increase in funding is envisaged. Nevertheless, it is acknowledged that the European Commission is aware of the importance of those problems and that the EU budget review and innovation strategy set the principles for reforming the policies.

One of the fundamental needs is a review of the financial regulations, which treat R&D with the same risk aversion as other funds in the EU. It is of primary importance that member states and the European Parliament, in their respective roles in budgetary control, allow the EU's R&D to undertake ground-breaking target-driven research. R&D, by nature, operates in areas higher in risk and with higher unknowns, and this demands better risk management tools rather than rigid procedural barriers. The focus on value and results rather than process should take priority. Similarly, public and private interests should be better met to ensure increased private sector participation and funding. Although they are outside the scope of this report, the present bureaucratic and intellectual property rights rules present the wrong incentives, effectively discouraging the participation of companies.

This report considers the use of financial instruments, such as debt financing and loan guarantees through the EIB, as indispensable to approaching and meeting the EU's R&D objectives. Such loan-based instruments can expand R&D investment in research and innovation fivefold. This has been successfully achieved with the EIB's Risk Sharing Financing Facility instrument. It is important to distinguish between the role of the grants and loans; loans cannot replace public funding in basic and fundamental research nor can they replace public funding in high-risk areas of research with long terms to maturity. These are only appropriate to guarantee the stages of demonstration and deployment. Financial engineering cannot replace grants but it can complement them to increase R&D financing, helping potentially viable new developments to become mature for the market. Loan mechanisms, if well handled, can also help distinguish between projects with a commercial potential and those that need more grant support.

Presently, there is a need for "bridge financing", as longterm, risky or expensive demonstration and deployment stages can discourage private investment. In many areas, "bridge financing" consisting of debt financing or loan guarantees by the public sector can reduce the associated risks of new technological developments and attract private venture capital. This is a necessity in some areas, such in the energy or medical sectors, as well as in space-based applications.

This paper also recommends finding solutions outside the budget for projects such as the International Thermonuclear Reactor (ITER) project, which is increasingly eating away the Framework Programme because of cost overruns. ITER is an international undertaking that includes non-EU countries and should be treated as other supranational research undertakings, such as CERN1 or the ESA.2 Further research is needed to understand how space research should be handled in the future, clarifying the role of the EU and ESA budgets. The EU budget as it stands is overburdened with objectives without the appropriate funding commitments. Finally, it is clear that EU funding alone in R&D will not help achieve the objectives of the EU in R&D. More public financing at the EU level and even at the national level does not dispense member states from improving their regulatory frameworks to encourage research, nor does it guarantee success without well-functioning and appropriate administrative structures. Similar to this study's request to review the EU's financial and administrative procedures, member states should undertake a review of domestic policies and their impacts on R&D.

#### Swedish Institute for European Policy Studies

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Fleminggatan 20 | SE-112 26 Stockholm | Tel: +46 (8) 586 447 00 | Fax: +46 (8) 586 447 00 | info@sieps.se