

Competitive research grants

Competitive research grants are the main funding instruments for public sector research. They influence all the activities and outcomes associated with public sector research (e.g. strategic orientation of research, scientific publications, R&D collaboration, technology transfer and knowledge diffusion). Most OECD countries use several types of competitive research grants (e.g. grants based on broad calls for bottom-up proposals, grants targeting predefined areas, and grants funding predefined research projects). Factors to be taken into consideration when implementing competitive R&D project grants include: the requisite capabilities of research performers and funders for competitive R&D project grants to be used successfully, the coherence with institutions and beliefs regarding science, the concentration versus fragmentation of research grants, and the mix of block and competitive R&D project grants.

What are competitive research grants?

Competitive R&D project grants are funding instruments for public research through which researchers based in research universities and PRIs obtain public funds on a competitive basis. Together with discretionary organisational funding (block grants), in which public resources are allocated directly to institutes according to various criteria (e.g. formulae, performance indicators, or budget negotiations), competitive R&D project grants are the main funding instruments for public sector research. While block grants usually tend to ensure sufficient public financial resources for research institutes in the long-run, competitive R&D project-based funding regimes put more emphasis on the outcomes and quality of the research performed by researchers in a shorter time period.

Given their prevalence, competitive R&D project grants typically influence all the activities and outcomes associated with public sector research, depending on the criteria for funding, e.g. excellence, relevance, collaboration, etc. Such grants, however, make their biggest contributions to supporting the scientific record, R&D collaboration and technological development, reflecting in part the often strategic nature of this type of funding.

What is the impact of competitive R&D project grants?

Competitive R&D project grants seek to rectify several failures in research systems, including a lack of strategic orientation of research, outdated patterns of research specialisation, and too few incentives for researchers to collaborate or to engage in certain types of activities. They operate as follows:

- Competitive R&D project grants are targeted at individual researchers or research groups, typically working in research universities and PRIs. They are awarded by various types of funding organisations (primarily public funding agencies, but also by others, such as third sector organisations) and policy-making organisations.
- In most OECD countries, the funding organisations providing competitive R&D project grants use different mechanisms to influence the nature of research performed by research universities and PRIs. The first mechanism consists of broad calls for investigator-driven, bottom-up proposals in which researchers apply for funding. This mechanism is often used by research councils to support scientific excellence. A second method of operation is for funding organisations to dictate predefined areas in which researchers can apply. A third mechanism offers funding for predefined research projects.
- Funding organisations providing competitive R&D project grants can dictate a set of requirements that recipients must fulfil to benefit from those grants. For instance, research

universities may be required to collaborate with the business enterprise sector, including SMEs, in order to increase university-industry linkages, or with public research institutes from other countries to foster international R&D collaboration.

- Competitive R&D project grants can be a means for funding organisations to influence the diffusion of new knowledge in the economy as whole. The latter can require grant recipients to provide them with an ex ante impact assessment or an ex post dissemination strategy. Furthermore, funding organisations can establish specific rules governing intellectual property rights resulting from the funded research.

What factors should be considered when implementing competitive R&D project grants?

The following factors should be considered when implementing competitive R&D project grants:

- **Requisite capabilities.** Both research performers and funders must adopt certain behaviours and acquire particular capabilities for competitive R&D project grants to be used successfully. Research performers need to be able to respond to competitive calls and have the incentives to do so. The latter may be weakened by too generous discretionary organisational funding, for example. As for funding organisations, they should be able to articulate research needs and to validate research quality, both ex ante and ex post. Both articulation and validation require close cooperation with the research performing community.
- **Institutions and beliefs regarding science:** On the one hand, success in winning competitive R&D project grants can be rewarded by academic career progression. On the other hand, where grant schemes are directed at explicit policy goals, they might be construed as being in conflict with scientific community norms and the perceived autonomous roles and status of research universities and public research institutes.
- **A mix of block and competitive R&D project grants in public research sector:** A rise in the share of competitive R&D project grants in total public funding in many OECD countries over recent decades has raised concerns about an excessive emphasis on short-term, often low-risk projects, and away from longer term fundamental research. There are also concerns about whether this trend negatively affects research institutes' capacity to invest in infrastructure. Hence it is important that funding organisations continue to provide block funding to give research universities and public research institutes a certain degree of autonomy in the selection of their research and to allow them to build up expertise in new fields.
- **Concentration versus fragmentation:** Competitive R&D project grants, if awarded largely on the basis of established notions of excellence, risk overly concentrating resources in a few centres of excellence and stifling the emergence of new centres (this is what is referred to as the "Matthew effect"). On the other hand, such grants might also be too thinly spread across the research system, providing insufficient critical mass of resources to yield satisfactory research outcomes.

Besides striking a balance with discretionary organisational funding, competitive R&D grants are closely related to several other core policy instruments, including support for R&D infrastructures and centres of excellence. Furthermore, other instruments such as collaborative R&D programmes, PhD studentships and post-doctoral fellowships are often awarded on a competitive basis.



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