

## Topics of social relevance in project funding instruments: evidences from European countries

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# BACKGROUND

Project funding allocation is generally used for research oriented toward producing useful results and effects on society, and for improving the capability of the government to steer the research activities (Braun, 2017).

Despite the growing importance of project-based funding in public R&D investment experienced in all the European countries from the 2000s (Lepori et al., 2007; Reale, 2017), there is a general concern about the low prominence of orientation toward social relevant objectives of research activities.

Tensions between relevance of scientific work for society and autonomy of research are at the core of several science policy studies (Demeritt, 2000; Scott, 2007).

# AIM AND ASSUMPTIONS

The paper explores the project funding instrument portfolios managed by the Research Funding Organisations (RFOs) in different European countries to understand how far they are targeted toward addressing problems of social relevance.

We assume that the implementation of project funding instruments is significantly related to the way in which the aims and objectives of the instruments are put into actions through the selection processes: criteria used and composition of the selection panel (Nightingale and Scott, 2007).

The mentioned implementation is correlated to the different characteristics of the RFOs managing the instruments

# PROJECT FUNDING INSTRUMENTS

Analysing policy instruments allows to understand the content of the policy implementation (Lascoumes and Les Gales, 2007).

Instruments show the actual characteristics of the policy design (Bleiklie, 2001) incorporating the motivations and the targeted objectives of the public action.

There is a distance between the policy design where the original goal of the policy makers is described, and the implementation of the instrument where the 'shaped goal' is put into action (Reale and Seeber, 2013)

Instruments are characterized by intended opportunities –those that policy makers want to realize, and provided opportunities –those concretely enacted through the policy instruments (Reale and Nedeva, 2016)

# ROLE OF RFOs IN POLICY DESIGN AND IMPLEMENTATION

RFOs have been settled in almost all European countries from the late nineties as quasi-independent organisations (Braun, 2006; Lepori and Reale, 2018).

A common trait is how to manage the policy-maker quest for relevant research, and the need to put 'social relevance' in the objectives of the instruments and in the selection criteria, because of the resistance coming from the scientific community both in case of basic and applied research (Braun, 2017).

The policy implementation of the funding instruments portfolio is affected by the tensions in the relationships between RFOs managing project funding and the government; RFOs struggle for maintaining their space of manoeuvre and the possibility to pursue their own objectives beyond the government steering (Braun, 2011)

# HYPOTHESIS

Instruments with targeted objectives toward topics of social relevance may be implemented in a way that lessen the relevance of the objectives when the selection

- is driven by criteria that do not score high the social relevance of the research proposals
- do not involve non-academic experts in the selection panels.

*The more heterogeneous are the criteria driving the ex-ante assessment of the proposals and the more they are scored of some importance -thus neither very important nor unimportant, the higher is the possibility to use the funding instrument to address purposes other than those established by their formal objectives.*

*The more the composition includes external non-academic expert, the more topics of social relevance of funding instruments can have room in the implementation of the selection criteria.*

# METHODOLOGY

- We explore a unique dataset derived from a large-scale study on public R&D funding supported by the Joint Research Centre of the European Commission (PREF).
- Data collection followed the rules of GBARD data developing a methodology combining quantitative data and descriptors concerning allocation modes and criteria, as well as information on the stream of public funding and on the RFOs managing funding
- In this paper we select eleven western European countries -Austria, Denmark, France, Germany, Italy, Norway, Portugal, Sweden, Switzerland, The Netherlands and United Kingdom, and consider the period 2007-2014.

# DESCRIPTORS USED FOR THE ANALYSIS

Descriptor	Characterisation and construction
Orientation of the project funding instruments	Describe the policy goal inherent to the schemes. Three broad groups of orientation: (i) economic innovation; (ii) general advancement of knowledge; (iii) policy-oriented instruments covering multiple domains.
Allocation criteria for the projects assessment	Each instrument received three different scores scaling (1-5) the importance of the evaluation criteria in the selection processes: “academic quality”, “topicality to instruments subject”, and “potential for economic innovation and public/private cooperation”.
Composition of the decision-making bodies	The decision-making body entitled to implement the selection process can be mostly composed of (i) academics (university professors/other public-sector researchers); (ii) experts from policy, society and economy, public administrators/actors at the political level, (iii) mixed composition.
RFO classification	Classification is based on RFO mission, domain and position in respect of the State: research/science ministry; sectoral ministries; innovation agencies; research councils; sectoral RFOs; higher education agencies; public research organizations with some funding agencies activities.



# LIMITATION AND VALIDITY

We must acknowledge two important limitations in the data used for the analysis:

- A general issue related to the experts' production of scores, which are likely to be contestable measures, where different experts might disagree on single assignments
- Due to the granularity of the decomposition of public R&D funding instruments sometimes the scores are applied to aggregations of a certain number of sub-schemes having similar characteristics but potentially slightly different evaluation criteria

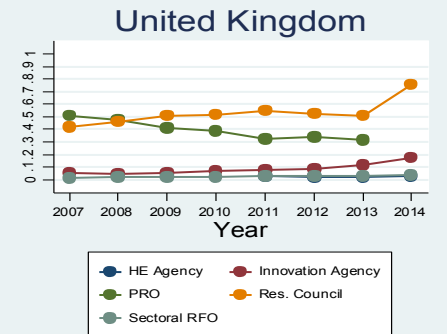
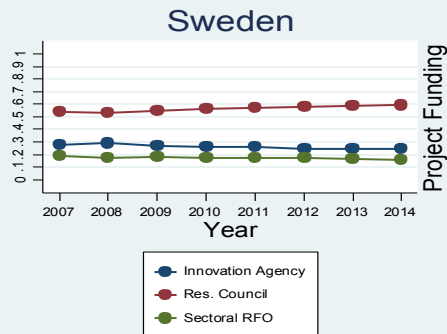
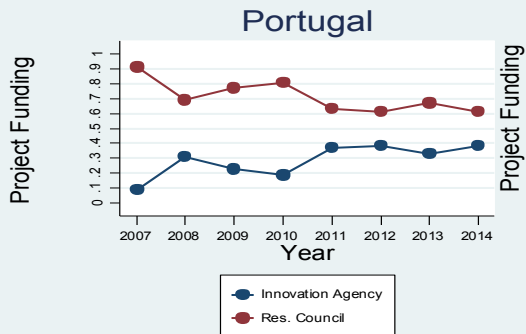
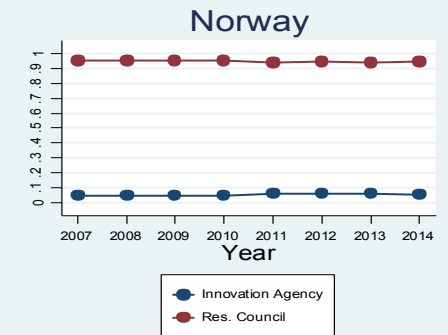
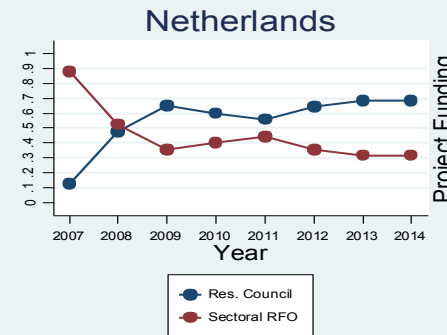
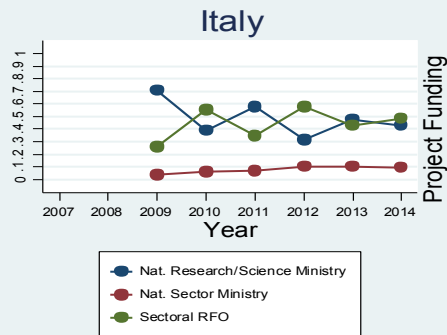
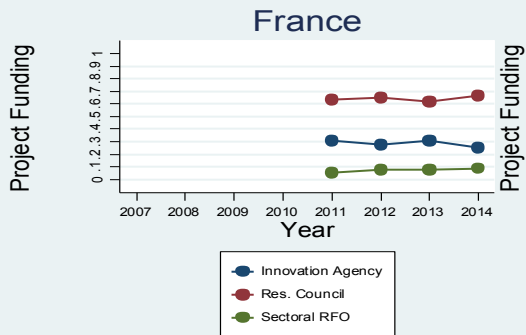
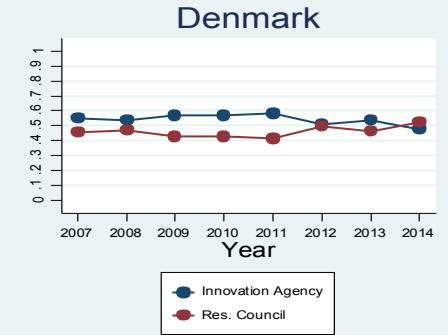
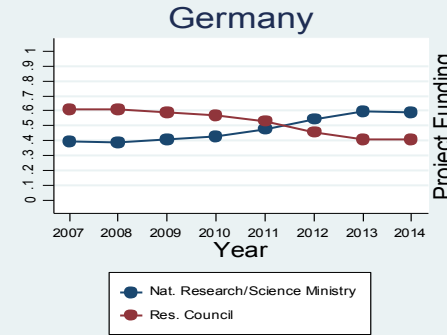
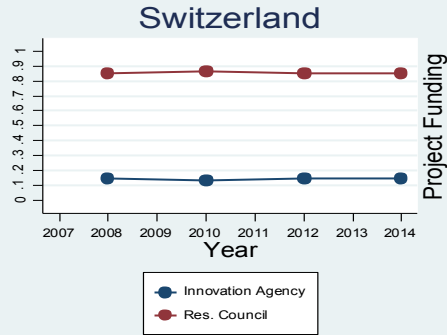
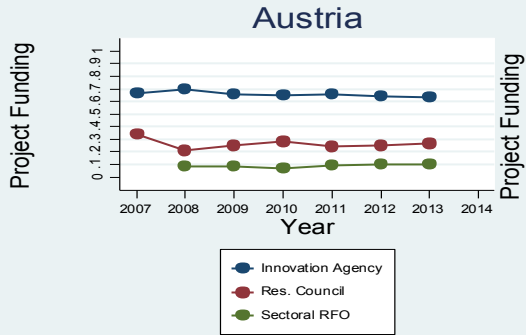
Given this consideration, we empirically tested the validity of the importance of the evaluation criteria for the projects instruments through text analysis of the project instruments funding call.

# STATISTICAL ANALYSIS

The analysis uses exploratory approaches to characterise project funding instruments :

- Descriptive analysis on instruments characteristics and project funding between agencies in different countries
- Multiple Correspondence Analysis (MCA) to explore the pattern of relationships of several categorical variables and type of RFOs
- Text analysis (extracting meaningful information from unstructured corpus of text) on the frequency of words based on the calls of project funding instruments in different countries.

# PROJECT FUNDING INSTRUMENTS BY COUNTRY AND RFO (2007-2014 K€)



## ORIENTATION OF FUNDING INSTRUMENTS BY RFO CLASSIFICATION

RFO Classification	Economic innovation	General advancement of knowledge	Policy
Research/science ministry	1	1	5
Sectoral ministry	0	1	0
Innovation agency	17	1	3
Research council	1	87	6
Sectoral RFO	2	16	13
Higher education agency	1	0	0
Public research organization	0	0	1

# COMPOSITION OF DECISION-MAKING BODY

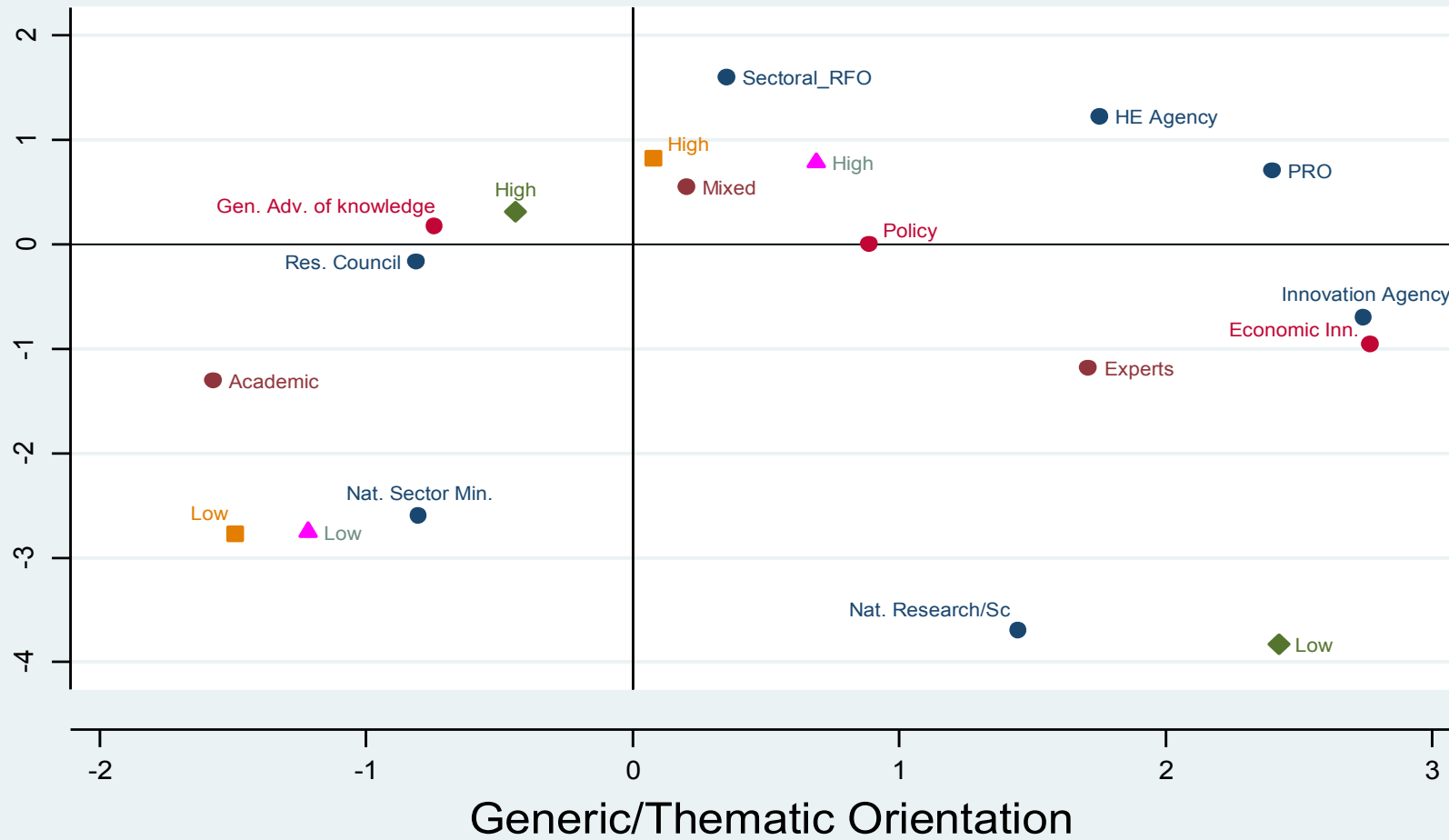
Thematic orientation	Academic	Experts	Mixed	Missing
Economic innovation	0	7	15	0
General advancement of knowledge	31	6	65	4
Policy	4	4	19	1

# IMPORTANCE OF ASSESSMENT CRITERIA

Thematic orientation	Academic quality score > 3	Topicality score > 3	Economic Innovation score > 3
Economic innovation	7	11	21
General advancement of knowledge	104	69	45
Policy	20	21	15

Thematic orientation	Academic quality score < 3	Topicality score < 3	Economic Innovation score < 3
Economic innovation	5	2	0
General advancement of knowledge	1	21	22
Policy	3	2	7

# MCA coordinate plot



- RFO classification
- ◆ Acad. Criteria
- ▲ Inn. Criteria
- Decision making body
- Topicality Criteria
- Funding Orientation



# WORD CLOUDS – POLICY ORIENTED FI

## Innovation Agency



## Sectoral RFO



## Research Council





# SUMMING UP

The exploratory test (MCA) shows that Policy oriented instruments are not associated with low or high scores of assessment criteria, thus different combinations might produce an implementation of R&D funding far from the general objective that the instruments are supposed to address. Panel composition is also mixed.

The text analysis made on the project funding calls of these instruments confirms:

- The *heterogeneity* of the wording of the calls confirming the possibility to implement the instrument differently from the original orientation
- Different RFOs show *different heterogeneities* of the wording of the calls, a fact that is not against the idea that RFOs organizational features –including the positioning with respect to the government, is a key feature to be investigated to understand policy implementation

# SUMMING UP

Ongoing work but sound evidences that instruments oriented toward social relevant objectives face implementation problems

This approach allows to observe the policy implementation without considering the beneficiaries selected:

how far instruments translate the ‘intended opportunities’ and aims of policy makers into ‘provided opportunities’ and concrete objectives supplied to beneficiaries

This help to shed light on capability of policy makers to make the right signalling to beneficiaries as to the objectives and priorities of the instruments