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The relationship between research funding and academic consulting: An empirical investigation in the Spanish context

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ABSTRACT

This paper investigates the relationship between sources of funding for research activity and the engagement of scientists in a specific type of knowledge transfer, that is, academic consulting. We rely on a sample of 2603 individual scientists from five Spanish universities, who have been awarded public funding or have been principal investigators in activities contracted by external agents, over the period 1999–2004. We find that externally contracted research is positively related to the amount of monetary income from consulting contracts, but that international competitive funding has a negative effect. Our results show that this negative effect is positively moderated by the size of contract funding: the effect of international competitive funding becomes positive for moderate and high levels of contract funding. By investigating the relationship between academic consulting and different types of research funding, our paper sheds light on the conditions that favor academic consulting.

1. Introduction

Academic researchers are increasingly being required to produce excellent research and to demonstrate the economic and social relevance of publicly funded research. This balance between research excellence and utility is not always easy to achieve. Striking a balance between efforts oriented towards knowledge creation and efforts directed to effective transfer of knowledge to potential users can be difficult, and the findings are unclear about whether research activity and knowledge transfer are in conflict or are complementary [13,16,22,23].

In this study we investigate the relationship between extramural sources of funding for research and engagement in a specific type of knowledge transfer — academic consulting. While we acknowledge that knowledge transfer can take other forms, including patenting activity and licensing of intellectual property rights, spin-off creation and joint research collaboration with industry [12,20], we focus on academic consulting for the following reasons. First, academic consulting implies direct, personal interaction between scientists and users, and a purposeful (often bi-directional) effort to agree on expected goals and to deliver actionable knowledge and expertise. Second, academic consulting is a widespread phenomenon compared to other contractual (i.e. licensing) or relational (joint research) channels of interaction with non-academic organizations [18,26]. Third, consulting is generally rather overlooked in the literature, partly because the often informal nature of consulting activities makes them difficult to trace systematically [6,24].

In relation to extramural funding, we look at various sources of research money and distinguish between competitive and contract funding. Competitive research funding refers to regional, national or international grants awarded by public funding agencies based on peer-review of the research proposals from university scientists. Contract research funding refers to funding obtained by university scientists from sponsoring agencies (public or private partners) who often set the targets of the research being contracted.

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We test our hypotheses on the relation between faculty access to extramural research funding and their involvement in consulting activities on a sample of 2603 individual scientists from five Spanish universities, who received research funding in the period 1999–2004. We exploit the longitudinal nature of our data and estimate several linear and non-linear panel data models, which controls for unobserved heterogeneity and censoring in the data. We find that the amount of research financed through R&D contracts increases the amount of monetary income from consulting. In contrast, funding for research from international sources has a negative effect on the amount of consulting activity. However, this negative effect is positively moderated by the amount of contract funding, pointing to a complementary effect of competitive and contract funding on the level of consulting activities.

The paper is structured as follows. Section 2 provides the theoretical background to the paper; Section 3 presents the dataset and describes the sample used for the empirical analysis. Section 4 specifies the econometric models and the variables used. Section 5 summarizes the results of the econometric estimates, and Section 6 synthesizes the main findings, discusses some limitations of this study and proposes some directions for further research.

2. Theoretical background

2.1. Defining academic consulting

Several authors argue that consulting is a strategy for transferring knowledge between academic scientists and decision-makers in companies and government agencies, and it can be particularly effective to enhance interactive and problem-solving knowledge [19,20,27]. However, whether consulting distracts academics from *doing research* or whether research and consulting are activities that can be conducted simultaneously without harm to either [26,28] remains an open question. Before addressing this question we need to agree on a definition of academic consulting.

Following Perkmann and Walsh [26], we define academic consulting as the provision of a service by academics, to external organizations, on commercial terms, which may involve providing advice and solving specific problems. Consulting is not aimed at generating new scientific or technological knowledge; it is instead often meant to promote or facilitate technical and/or organizational innovation.[1] Consulting services can take various forms, such as technical expertise, advice, fact finding or intermediating roles depending on the contracting partner's needs [8].

Bozeman and Gaughan [3] point out that income from consulting is not generally considered 'university funding' since consulting agreements typically do not provide institutional funds (except in the form of university overheads) and are arranged on a bilateral basis with the individual researchers. Bozeman and Gaughan argue that the university's input to individual consulting contracts is mainly setting the amount of time that can be devoted to consulting, resolving conflicts of interest and setting the rules on use of university resources and level of personal income that researchers can earn from consulting.

Perkmann and Walsh [26] refer to research-driven consulting or opportunity-driven consulting depending on the researcher's motivations. Research-driven consulting is expected to be positively related to the academic's research projects; opportunity driven consulting is expected to be negatively associated with his/her research and aimed at boosting personal income. This characterization underpins our research questions on the complementarity or substitutability of scientists' efforts in research-driven activities and their involvement in consulting activities.

2.2. Relationship between research funding and involvement in consulting

Research activity requires funding — sometimes large amounts. Goldfarb [11] describes research as 'a sponsored activity'. However, who sponsors the research and how the research funding is channeled to the academic researcher can have a major influence on the balance between excellence and utility of research activities. There are two main types of funding for research: competitive funding and contract funding [3,10,11].

Competitive funding refers to public funding awarded to scientists by national science ministries, research councils or international institutions (e.g. European Commission Framework Programmes). These agencies allocate funds through research grants, awarded on the basis of peer review to determine the scientific merits of proposals and applicants. It is awarded in a competition among several proposals. The most outstanding projects (measured by applicant's scientific profile and research content) are awarded funding. While a variable proportion of competitive funding might depend on government targets, the system is characterized by being mainly a bottom-up process in which applicants (typically, university scientists) propose lines of research they believe will make a relevant scientific contribution, and to which they are attracted based on their personal research background.[2] Competitive funding is generally awarded to support high impact scientific production and allows the successful researchers to follow a curiosity-driven research agenda. In other words, competitive government funding prioritizes claims to and demonstration of scientific excellence over utility.

In the relationship between competitive funding for research and academic consulting, there seem to be two conflicting logics at work. On the one hand, a 'research orientation' effect: if grant holders are oriented predominantly towards curiosity-driven research and conformance with the norms of science such as priority and scientific impact, they are less likely to be concerned about attracting the attention, or identifying potential users, of their research results. Based on this reasoning, we expect grant holders to be concentrated on knowledge advancement and contributing to the scientific debates in their specific research

[1] In adopting this definition, we are in line with the definition of consulting activity of the Technology Transfer Offices in Spain and that of others such as Jacobson et al. [17], who define consulting as: '(…) a process of transferring expertise, knowledge, and/or skills from one party (the consultant) to another (the client) with the aim of providing help or solving problems' (19: 302).

[2] Funding from foundations to support research projects may fall into this category. However not all research projects financed by foundations come under competitive funding. Foundations can be part of a public or private institution and usually have well-defined missions with the result that they are equally likely to provide funding for targeted contract research.