



Non-tenured post-doctoral researchers' job mobility and research output: An analysis of the role of research discipline, department size, and coauthors



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ABSTRACT

To succeed in academia, non-tenured researchers aim to maximize their quality-adjusted research output. This paper analyzes if and how changing institutional affiliations as a non-tenured post-doctoral researcher influences publications, and how potential effects depend on the context of the researcher. Theoretically, moving to another university at another place can have positive and negative effects on career success. On the one hand when moving to another institution one stands to gain knowledge (human capital), colleagues and coauthors (social capital). On the other hand part of one's knowledge might no longer be relevant and contacts to colleagues and even coauthors might be lost. In line with the latter arguments, matching analysis of an extensive dataset of German-speaking economists and management researchers reveals a short-term negative effect on publications across contexts. Examining the researchers' contexts reveals that this negative effect of mobility seems to be driven by researchers with social capital (i.e. coauthors or colleagues) tied to the doctorate granting institution.

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1. Introduction

Post-doctoral students aiming for a career in academia face a very competitive labor market. Tenured positions as full professor are few and appointment requirements are high (see e.g. Fiedler and Welpe, 2008; Fitzenberger and Leuschner, 2012). Although experience in teaching and administration is at least a formally relevant appointment requirement, the first and foremost requirements are the number and quality of publications (see e.g. Combes et al., 2008; Graber et al., 2008).

To succeed and obtain a tenured position as a full professor, non-tenured post-doctoral researchers need to manage their careers wisely. Given the short time frame after obtaining the doctorate (e.g. as a post-doctoral scholar or assistant professor) in which non-tenured researchers can prove their worth, every career decision needs to be considered carefully. Examples of such career decisions include which research topics and projects to invest in, which trainings to undergo, or which administrative offices to strive for. The focus of this paper is the career decision to move to another university at another place (i.e. change institutional affiliation) at

least once after obtaining the doctorate and before being granted a tenured position as a full professor.

A change of affiliation can have positive and negative effects on career success, which is why non-tenured post-doctoral researchers should consider this decision carefully. This paper argues that, first, human and social capital are central resources for researchers and have a positive influence on publishing and therefore on career success (e.g. Li et al., 2013). Human capital will be defined as knowledge and skills following Becker (1960); social capital will be defined as resources resulting from social ties that can be capitalized on (see Burt, 1992; Iseke, 2009). Second, a change of affiliation influences human and social capital, thereby indirectly influencing career success. More precisely, depending on the elapsed time and the researcher's context, human and social capital can be both positively and negatively affected by a change of affiliation. In the long run, a change of affiliation provides the opportunity to increase both human and social capital through access to new knowledge (see Morano-Foadi, 2005; Röbbken, 2009; Scellato et al., 2012) and colleagues (Bidwell, 2011; Cañibano et al., 2008; Scellato et al., 2012). However, in the short run, which will be the focus of this study, a change of affiliation could have negative effects on career success if it is associated with a loss of human and/or social capital. Former contacts might be no longer available because they were tied to the old institution—for example due to research co-operations between universities (Bozeman et al., 2001; Oyer,

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2007). Consequently, the resources accessible through these contacts (i.e. the associated social capital) will also be lost. Therefore staying at the doctorate granting institution, i.e. inbreeding, might be advantageous. Moving to another university might also lead to a depreciation of human capital (Bougheas and Georgellis, 2004; García Pérez and Sanz, 2005) because knowledge that was relevant at the old institution is no longer relevant at the new university—for example, familiarity with the infrastructure of the old institution, or knowledge of research methods and topics that are not applied or pursued at the new affiliation (Bozeman et al., 2001).

This paper will focus on the potentially negative short-term effects resulting from a change of affiliation in the career phase after obtaining the doctorate and before obtaining a tenured position as full professor, given that these short-term effects would take effect in the critical time frame in which non-tenured post-doctoral researchers can prove their worth.

The magnitude of these potentially negative effects of mobility is influenced by the researcher's context. Within this paper, 'context' refers to the size of the researcher's department, the researcher's coauthors at the old and the new institution and the research discipline (see Cañibano et al., 2008 or Morano-Foadi, 2005 on the relevance of research discipline for the relationship between (international) mobility and academic career success). The size of the doctorate granting department and the number of coauthors at the doctorate granting department will be argued to be a proxy for *social capital* that the researcher might lose when moving to another university. The pluralism of the research discipline and the number of coauthors at the new institution will be argued to be a proxy for the potential loss of *human capital*. Research disciplines differ with respect to the pluralism of applied research methods. The more pluralistic the discipline, the higher the likelihood of being confronted with different research approaches and methods after changing affiliations. Therefore the research discipline will arguably affect the potential loss of human capital associated with a change of affiliation. Also, whether a researcher has a coauthor at the new institution indicates the likelihood of knowledge becoming irrelevant when moving to this new university: Having at least one coauthor at the new affiliation might indicate that a similar school of thought is followed at the new institution, reducing the likelihood of a depreciation of human capital when changing to the new institution.

To investigate the relationship between a change of affiliation and publications—taking into account the specific role of context—this study makes use of a large dataset of German-speaking researchers in economics and management collected on behalf of the German Economic Association. The dataset contains the (weighted) publication data, information on the career path of the researchers, demographics (i.e. age and gender), and research discipline (management or economics). While the dataset contains researchers of only two disciplines, the available disciplines are well suited to analyze the effect of the pluralism of research discipline: The disciplines of management and economics vary with respect to pluralism with management being more pluralistic in the applied methods and schools of thought. However, the two disciplines are comparable with respect to the applied journal rankings and the publishing culture. Thus, the chosen disciplines are in line with the most different and most similar systems design often used in comparative politics. To confront the potential problem of a selection bias, matching analysis is applied in addition to Ordinary Least Squares regressions.

Results from Ordinary Least Squares regression and matching analysis point to a negative effect of a change of affiliation of non-tenured post-doctoral researchers—at least in the short run. Examining the effects of mobility for different research contexts reveals that this effect seems to be driven by researchers with social



Fig. 1. The stylized career path in German-speaking academia.

capital (i.e. coauthors or colleagues) tied to the doctorate granting institution.

2. The institutional framework

The academic career within the German-speaking institutional framework is basically structured into three stages: (1) doctoral student, (2) "non-tenured post-doctoral researcher" and (3) tenured professor (see Fig. 1). The academic career starts with being a doctoral student (1). This first stage lasts about 3–5 years and ends with the student obtaining his or her doctorate. If the student decides to go on (s)he becomes what will be called a "non-tenured post-doctoral researcher" within this paper. Traditionally the non-tenured post-doctoral researcher would work on his or her "Habilitation". The "Habilitation" is a degree that is specific to the German-speaking system. It can be equated with a second, advanced PhD that grants the researcher the right to teach independently. During this phase (s)he would be called "Habilitand" or post-doctoral researcher. The reform of the Higher Education System in 2002 introduced the alternative career path of a junior professorship (similar to an assistant professorship), which—in contrast to the position of "Habilitand"—is a position without a formal advisor and with some budget power. Also the appointment process of junior professors is the same as for full professors, whereas for positions of "Habilitand" the scientific advisor (a full professor) decides whom to employ. The career stage of being a non-tenured post-doctoral researcher as either a "Habilitand" or junior professor is supposed to last about 4–6 years (the mean within the dataset is 6.3 years) and ends with obtaining a tenured position as full professor.

Generally, the German-speaking system does not allow academic inbreeding, meaning that non-tenured post-doctoral researchers in the "Habilitation"-career path cannot be granted a tenured position as full professor at the same institution where (s)he obtained the "Habilitation". Therefore, pure¹ inbreeding is not an issue in Germany (Soler, 2001). Non-tenured post-doctoral

¹ However, within the legal framework silver-corded inbreeding is possible, meaning that a researcher leaves the original institution after the doctorate but returns to his alma mater later in his or her career (Berelson, 1960). It is not possible to analyze silver-corded inbreeding here, as we only have data on two affiliations: the doctorate granting and the "Habilitation" granting institution.

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