

# Public support for New Technology-Based Firms. Does it encourage employment? Spanish experience

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## ABSTRACT

### Motivation and aim of the study

In recent years, the number of studies measuring the impact of innovation on employment at the firm level has increased (Harrison, et al., 2008; Dachs & Peters, 2014; Vivarelli, 2014). And in parallel we have observed a raise in studies seeking to evaluate public policies to support R+D+i (for a review, see Zuñiga-Vicente et al., 2012). In this last group, there is a specific line devoted to New Technology-Based Firms (NTBFs), given their role in strengthening technological capabilities in intermediate economies (Fontes and Coombs, 2001). How do these companies contribute to employment creation? Is this contribution different in firms that have been supported through public venture capital? This article aims to evaluate the impact of public support to NTBFs on employment growth.

There are few studies linking public support NTBFs and employment. Two exceptions are Kösters & Cantner (2009) and Köster (2010), who evaluate the impact of subsidies for start-ups on employment for the region of Thuringia in Germany. Both analyses provide evidence of a positive effect on employment, although in the case of Kösters (2010), the impacts are not statistically within the first 3 years after the reception of the aid. This result points out the relevance of the time dimension for the analysis.

The objective of this paper is to contribute to the debate by analyzing the impact of public support to NTBFs on their employment growth. In particular, we will test whether there are different impacts depending on whether the support is received during the first year of the firms' life, or in later years.

### Data and methodology

The data come from a survey conducted by the CDTI for the years 2009 and 2010, which aims to characterize the profile of the technological entrepreneur. This survey was sent to about 2000 companies: on the one hand, to the companies that participated in the NEOTEC program during the years 2000-2010; on the other, to NTBFs located in science parks, participating in a forum organized by CDTI venture capital or receiving other support from the CDTI for the period 2005-2009.

In total, 337 companies answered the survey. This information has been complemented with the SABI database that contains data on the sector of activity, the geographical region of location, the year of birth of the companies and, specifically, their number of employees. After the merging, the available final sample consists of 271 NTBFs, 133 of which are beneficiaries of the NEOTEC program during the period under consideration.

Following the literature on impact assessment, to measure the effect of public aid on employment growth, we have to take into account that both selection and endogeneity problems. That is, we have to keep in mind that the participation within a funding programme could depend on the same firm characteristics that determine its future growth. Among the different methods suggested in the econometric literature (two examples are Heckman, 1979, and Cerulli and Poti, 2012), in this paper we will use the propensity score matching method.

Two groups of NTBFs will be evaluated: firstly, companies obtaining support within the first year of creation and, secondly, firms receiving the support two or three years after the date of birth. This division is based on previous literature about the expected growth rate of corporations (Coad and Hözl, 2012).

## Results and conclusions

We expect to find three different types of results: First, we expect to find evidence about the existence of a positive impact of public support for NTBFs on their employment rates. Second, if the positive impact is confirmed, we expect to obtain a higher magnitude for this effect when the funding is received during the first year of life of the company. And finally, we expect to provide evidence about the time span of the impact.

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