

# From basic research to the technological development: explaining the returns according to firm age

Alex Coad (\*) acoad@pucp.edu.pe

Agustí Segarra-Blasco (♣) agusti.segarra@urv.cat

Mercedes Teruel (♣) mercedes.teruel@urv.cat

## Abstract:

The relationship between R&D, firm growth and firm age has been a topic of interest in economics of innovation for a long time. However, studies have failed to decompose the different components of the R&D activity that may have different nature and impacts on the firm performance. This paper overcomes this limitation by focusing on the impact of the investment in basic research, applied research and technological development. Based on a sample of 3,972 Spanish manufacturing firms between 2004 and 2015, we analyse the relationship between R&D components on firm growth. Our descriptive statistics confirm an adaptation process of the investment intensity over time. Applying OLS and quantile regressions with fixed effects, our results show that basic research activities are positively linked with sales, employees and labour productivity growth while other investments such as those related with technological development may show a non-significant impact. We confirm the existence of a positive complementarity between the different investments.

*KEYWORDS: Applied research, Basic research, Firm growth, R&D, Technological development*

(\*) CENTRUM Católica Graduate Business School Pontificia Universidad Católica del Perú (Lima, Peru).

(♣) GRIT & CREIP, Department of Economics, Universitat Rovira i Virgili, Av. Universitat, 1; 43204 – Reus (Spain) Phone: +34977758911, Fax: +34977300661