

The efficiency of Portuguese Technology Transfer Offices and the importance of university characteristics

A. Monteiro¹ and A.A.C. Teixeira²

¹ Faculdade de Economia, University of Porto, Portugal.

² Faculdade de Economia, University of Porto; INESC Porto; OBEGEF.

University-Industry (U-I) relationships have been the focus of a growing number of studies, particularly since the 1990s [1]. The relevance of cooperation between University and Industry has been highlighted by several authors [2] who stress, for instance, that universities can contribute to regional development through the production and transfer of knowledge [3].

Given that one of the most noticeable structural weaknesses of the Portuguese economy is the virtual lack of linkages between universities and industry [4], following the creation of the GAPI (*Gabinetes de Apoio à Propriedade Intelectual*) network, in March 2007, the Portuguese Science and Technology Foundation (FCT) launched the University Technology Enterprise Network (UTEN), in conjunction with the IC2 Institute, The University of Texas at Austin (UTEN, 2011). Formally, the UTEN network includes all the public Portuguese universities and a private one, their associated Technology Transfer Offices (TTOs), research centers and, in some cases, technology parks. It focuses on capacity building for the accelerated commercialization of Portuguese Science and Technology (S&T).

Despite the political and economic relevance of such a program, to date, an assessment of the efficiency of these TTOs has yet to be conducted and there is, consequently, no account of what may comprise its main determinants. The issue of efficiency in technology transfer, although to some extent neglected in the innovation literature, has been addressed in a few important studies. Most of these studies focus their analysis on more advanced countries, where U-I relations are mature and well developed, namely the USA [5], the UK [6], Spain [7], and France [8].

This study therefore intends to complement the research that has been conducted in the field of technology transfer, by comparing the efficiency of several Portuguese universities' TTOs, assessing the evolution of their efficiency in technology transfer processes in the last ten years. Specifically, the main research question of the present study is: Do the characteristics of universities impact on the efficiency of the associated TTOs?

Using the Data Envelopment Analysis (DEA) approach, which is a multiple-measure evaluation tool, the performance of several organizations is evaluated over a five-year period (2007-2012) when there are multiple inputs and multiple outputs to the system. Additionally, the main determinants of TTO efficiency are econometrically assessed through panel data estimations.

References:

- [1] Teixeira, A.A.C.; Mota L. (2012). "A bibliometric portrait of the evolution, scientific roots and influence of the literature on university-industry links". *Scientometrics*, 93(3): 719-743.
- [2] Bekkers, R.; Bodas Freitas, I.M. (2008). "Analyzing knowledge transfer channels between universities and industry: to what degree do sectors also matter?" *Research Policy*, 37: 1837-1853.
- [3] Bergman, E.M. (2010). "Knowledge links between European universities and firms: A review". *Papers in Regional Science*, 89(2): 311-333.
- [4] Teixeira, A.A.C.; Costa, J. (2006). "What type of firm forges closer innovation linkages with Portuguese Universities?". *Notas Económicas, FEC*, 24: 22-47
- [5] Anderson, T.R.; Daim, T.U.; Lavoie, F.F. (2007). "Measuring the efficiency of university technology transfer". *Technovation*, 27: 306-18.
- [6] Chapple, W.; Lockett, A.; Siegel, D.; Wright, M. (2005). "Assessing the relative performance of U.K. university technology transfer offices: Parametric and non-parametric evidence". *Research Policy*, 34: 369-384
- [7] Caldera, A.; Debande, O. (2010). "Performance of Spanish universities in technology transfer: an empirical analysis". *Research Policy*, 39(9): 1160-73.
- [8] Curi, C.; Daraio, C.; Llerena, P. (2012). "University technology transfer: How (in)efficient are French universities?" *Cambridge Journal of Economics*, 36: 629-654.