Submission of abstracts

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« Innovation process: an analysis on European Community Innovation Survey »

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Innovation is seen as an important determinant of the competitiveness of companies, it plays the crucial role of economic engine. A whole series of measures has been put in place over the last few decades to promote innovation. However, innovation is not always a source of growth. It is therefore essential to understand the mechanism of innovation and its performance, in order to better guide the action of public policies.

It is very common to use the Community Innovation Survey (CIS) to study the innovation process. Indeed, these surveys are the main source of statistics on business innovation in Europe. They make it possible to study, among other things, the determinants of innovation, the complementarity between types of innovation, the dynamics and persistence of innovation, the environmental benefits of innovation, the link between diversity and innovation, and the impact of innovation on the performance of companies. Moreover, the CIS survey is currently available on a large time dimension, from 1998 to 2018, and this, for the companies of each member state of the European Union as well as those of Norway and Iceland.

The pioneering study of the relationship between innovation and productivity can be dated by the work of *Griliches (1979)* who, using a Cobb-Douglas type function, shows a positive effect of the flow of knowledge from an innovation on productivity.

Subsequently, many studies show that innovation contributes significantly to productivity (*Crépon et al., 1998*; *Loof and Heshmati, 2002*; *Galia and Legros, 2005*; *Griffith et al., 2006*; *Robin and Mairesse, 2008*; *Polder et al., 2010)*. The majority of these studies are based on the *Crépon, Duguet and Mairesse*

(1998) model (CDM model), but differ in the choice of explained/explanatory variables, in the estimation method and in the data used.

More specifically, Crépon, Duguet and Mairesse (1998) developed a model, which we will draw on, that has served as the basis for recent work on the performance of innovation. This model is composed of three equations. The first explains R&D activity, the second links innovation output to R&D, and the third links productivity to innovation output. This model, in addition to providing a structural explanation for the R&D-productivity relationship, solves two econometric problems:

i) First, a selection bias arising from the censorship of the data itself. Indeed, only firms that have carried out innovations, whether in progress or abandoned, provide data on their R&D activities, their cooperation, or their financing.
ii) Second, a simultaneity bias arising from the correlation of the perturbations in the different equations of the model.

Compared to the existing literature on innovation performance, our contribution consists in an extension of the CDM model. Indeed, most of these works concern a single country, or a comparison between two countries, and one to two waves of surveys. For example, *Loof and Heshmati (2002)* on Sweden, *Polder et al (2010)* on the Netherlands or *Robin and Mairesse (2008)* on France. We go further by taking advantage of European data from the Community Innovation Survey (CIS) from 1998 to 2018 for 21 countries, 9 of which are available for the entire period. This allows us, first, to make comparisons between European countries and, second, to extend our thinking by integrating this innovation process with the impact of anti-competitive product market regulations on employment. Indeed, we assume that a large part of this impact comes through innovation. However, anti-competitive regulations, also known as PMR, are only available at the national level. Thus, benefiting from European data would allow us to obtain enough variability to identify this effect.