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STUDY ON THE IMPACT OF THE INTERNAL MARKET AND THE DIFFUSION OF KNOWLEDGE ON PRODUCTIVITY CHANGE AND ECONOMIC GROWTH

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OBJECTIVE

The idea in this research is to provide an empirical verification of the relationship between innovation adoption and productivity growth. Initially, we are going to provide evidence of the above-mentioned relationship through means of descriptive statistics and subsequently, we will study the real impact that innovation adoption may have on productivity growth through a regression analysis. The analysis is made with the statistical information provided by the Community Innovation Survey in its third and fourth waves.

MAIN RESULTS AND POLICY IMPLICATIONS

Through a descriptive analysis we study the correlation between the extent of the change in the adoption of innovation in each country, change computed between the data in CIS3 and that of CIS4, and productivity growth in the period between 2000 and 2005 from EUROSTAT. As a first result (see Figure), we obtain that although the general correlation seems to be positive but non-significant, if looking at the countries, it can be observed how this positive relationship is mostly due to the correlation among both variables for the countries with productivity decreases (Figure 1). They seem to benefit more from the adoption of innovation (lower decreases of productivity as innovation adoption grows). This would be the case of Estonia, Bulgaria, Latvia, Spain, Portugal, Luxembourg and Hungary. On the contrary we do not observe such a

clear relationship for the countries with increasing growth rates of productivity, since there are very different patterns of behaviour: some countries present very low increases of adoption of innovation (such as France, Norway and Belgium) and some others important increases in innovation adoption (Italy, Finland, Sweden, Netherlands, Austria, Czech Republic, Lithuania and Slovakia). It seems therefore that the adoption of innovation is positively related with productivity in those countries that experience decreases of productivity, which can take more advantage of such intangible asset.

Figure. Scatterplot of the change in innovation adoption and productivity growth
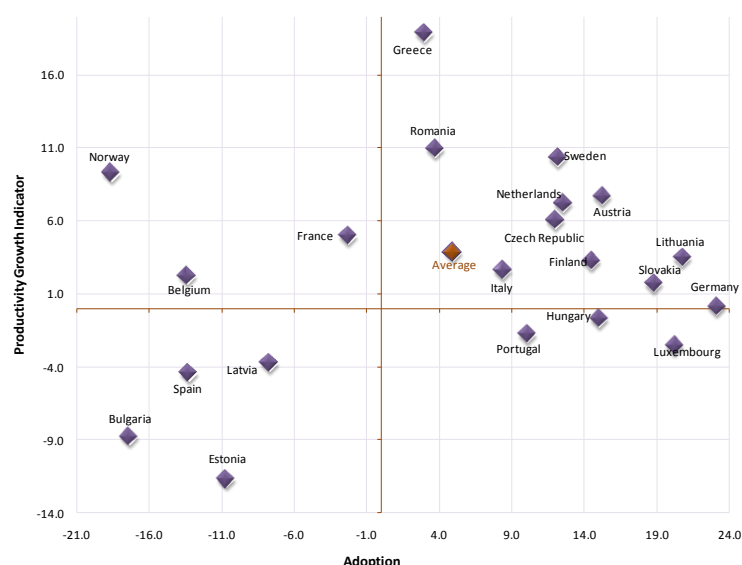
Also, if we disaggregated adoption into its main categories, for both product and process innovation adoption, the relationship seems more clearly positive than in the general case, being even more straightforward in the case of the adoption of process innovations. This could be due to the fact that introducing a new production process makes the firms to be more efficient, reducing costs and therefore each worker being more productive.

Additionally, through the estimation of a growth equation, we have obtained that the parameter of the innovation adoption rate is positive and significant, indicating that

those countries that increase their rates of innovation adoption tend to present higher productivity growth rates. This result would be in line with the conclusions drawn on the descriptive analysis. Therefore, it seems that an effort in incentivizing enterprises increasing innovation adoption, either in the form of cooperating with other enterprises of incorporating innovations made by other enterprises has a positive and clear impact on productivity growth.

On the other hand, the impact of increasing R&D expenditures is not as clear, but depends on the type of innovation carried out. In this sense, we have obtained that the countries making efforts to increase the number of their firms engaged in extramural R&D or the number of firms engaged in training tend to have higher increases in productivity. On the contrary, the result is not as clear if the type of innovation that is encouraged is R&D intramural, in acquisition of machinery or market introduction of innovation.