Abstract for "The Role Played by ICT Human Capital in Firm Productivity"

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Both information and communication technology (ICT) literacy in a more general sense, and the effects of tertiary education on growth have been high on policy agendas across Europe. However, the influence of highly specialised human capital has not received equal attention. This paper aims at broadening the research perspective on how ICT relates to firm performance by studying the productivity effects of increases in the proportion of ICT-intensive human capital, an intangible input often neglected or difficult to measure. The effects will be investigated both on their own and together with the impact of ICT maturity in firms. ICT human capital is defined as employees with post upper secondary education in mathematics, physics, engineering or information technology and the ICT maturity variables are derived from the intensity of ICT usage in firms. Microdata from business, trade and education registers as well as from surveys on production, ICT usage and innovation activities have been linked together for the purpose of the analysis. Estimations and aggregations of the linked datasets are carried out by the Distributed Microdata approach (DMD). This approach is a means to access otherwise classified information for the purpose of cross country comparisons and impact analyses. By running a common code on identically built up national datasets several dimensions of the data can be captured, aggregated and pooled into a cross country dataset. The drawback of the method is that it may not always hold for as advanced modelling of microdata as when the dataset is directly at hand. This means that the results should be interpreted as indications of links, directions and magnitudes rather than as pure evidence. Starting from an augmented Cobb Douglas specification and by means of the Ordinary Least Squares technique, we estimate the influences on firm productivity in six European countries using the unique ESSnet (ESSLimit and ESSLait) panels of data covering the years 2001-2010. The aggregate and time specific changes are held fixed while controls are included for other factors related to firm productivity such as firm age, size, international experience and affiliation.