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THE DETERMINANTS OF INVENTORS' INTER-REGIONAL MOBILITY BETWEEN EU REGIONS

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OBJECTIVE

The aim of the present paper is to identify the determinants of the geographical mobility of skilled individuals, such as inventors, across European regions. Among a large number of variables, we focus on the role of social proximity between inventors' communities. Therefore, our aim in the present paper is to determine (1) whether, after controlling for the fact that the spatial distribution of innovators is not random throughout space, migration costs associated to physical separation influence the mobility patterns of these skilled workers; and (2) whether other variables may explain this phenomenon, after controlling for physical distance as well.

MAIN RESULTS AND POLICY IMPLICATIONS

On average, the distance covered by inventors' movements reported between 2002 and 2005 was around 397 kilometres – approximately the driving distance between Paris and Luxembourg. This figure is relatively low and is around half the distance found in another study for the US. Furthermore, 30.79% of movements into the regions come from their five nearest neighbours, and 44.33% from their ten nearest ones. Note again from Table 1 that the average distance covered by the movements computed increases by around 25 kilometres between the first and the second time

periods. This seems to suggest that, over time, distance is becoming less important as an explanation of inventors' geographical mobility.

Our empirical analysis shows that physical separation from the inventors' former workplace is a critical predictor of their spatial movements, even after controlling for the spatial distribution of innovation and economic activities. In fact, we expected this variable to play a more secondary role. However, in spite of the announcements of "the death of distance", we find physical space to be pivotal in mediating inventors' mobility across regions. These results are robust to the sample choice, specification, and inclusion of controls.

Other more meaningful distances are also significant predictors of inventors' mobility patterns, such as social/professional connections, the institutional framework, or technological and cultural similarities. However, these measures do not succeed in explaining the role of physical distance away.

We also obtained results for the role of amenities and job opportunities as talent attractors. Our results suggest that job opportunities have a greater influence, especially in the later period, though natural amenities also appear to play a role as well.

We must admit that, although a negative and significant effect of physical distance in explaining geographical mobility of people is a common result in the migration literature, we did not expect to find such large and strongly significant coefficients. One plausible interpretation of, at least, part of these findings, is as follows: when knowledge workers decide to move, they place a high value on locating close to their former colleagues, from whom they receive constant inflows of information about job and business opportunities, technical solutions, and, in general, knowledge spillovers. Next, on the way towards the ERA, this paper also shows that the fragmentation of the institutional framework between countries impedes frictionless mobility across national borders. Despite recent progress, much work remains to be done to overcome this fragmentation, which remains a prevailing characteristic of the European research base. Thus, policies aimed at making recruitment procedures more transparent,

improving the portability of social security provisions across countries and reducing differences in taxation must be implemented sooner rather than later. In this sense, a promising avenue of future research is the specific analysis of the international mobility of inventors between EU countries and the ENP countries.

More promising findings are the decreasing role of institutional distance over time, and the significant influence of formal and professional relationships across distant inventors' communities. Thus, from a regional perspective, joining international and inter-regional networks of research collaboration is beneficial for two main reasons: first, because of the direct knowledge acquired via research collaborations, and second, because of their effect in smoothing out frictions that may impede the free mobility of talent across Europe. This would be especially important for the diffusion of knowledge between EU and ENP countries, which would lead to higher economic growth and development in both areas.

Table 1. Descriptive figures

Inventors identified (1975-2005)	768,810
Share of mobile inventors (1975-2005)[(1)]	11.54%
Inventors' distribution across regions: Gini index (1975-2005)	0.71
Movements	15,365 (10,813)
Total number of movements	26,178
Regions with 0 inflows	5.5% (9.5%)
Regions with 6 or less inflows	19.1% (25.5%)
Top 20 inflow regions	50% (44.5%)
Movements from 5 nearest neighbours	30.79%
Movements from 10 nearest neighbours	44.33%
Movements from within national borders	76.18%
Average distance covered by inventors' movements	
Euclidean	3.56º (3.23º)
Great circle	188.32 (175.29)
Km	397.46 (374.68)
Time (seconds)	14,970.35 (14,221.72)

Notes: Values for the period 2002-2005, when applicable. In parentheses, 1996-1999. **(1)** Mobile inventors are those reporting more than one NUTS2 region of residence throughout the whole period.