



Explaining Vineyard Specialization in the Province of Barcelona (Spain) in the mid-19th century, Enric Tello¹, Marc Badia-Miró², Xavier Cussó³, Ramon Garrabou⁴ and Francesco Valls⁵

¹tello@ub.edu, University of Barcelona; ²mbmiro@tinet.org, Barcelona Open University;
³Xavier.Cusso@uab.cat, Autonomous University of Barcelona; ⁴Ramon.Garrabou@uab.cat,
Autonomous University of Barcelona; ⁵fvalls@ub.edu, University of Barcelona

Following the explanations proposed by many Catalan historians, we have built a model of agrarian vineyard specialization in the province of Barcelona in the mid-19th century. We have assembled a 1858 survey on the main land-uses, and another one for the years 1859-67 to assess the coverage degree of cereal consumption by local wheat or rye production. We also incorporate other statistics on population growth, and data on agrolological land endowments. With this panel set, the multidisciplinary team of the research project SEJ2006-15108-C02-01/GEOG has started to apply an econometric model to explain the local differences in vineyard or cereal specialization in the nearly three hundred municipalities of the province of Barcelona. A first statistical set of tests is already in print in Gérard Béaur and Vicente Pinilla's *The impact of markets in the management of the rural land*. In this chapter, we use a model that combines the "Boserupian" push of population increase (measured with population densities from the 1860 census or the previous population growth from 1718 to 1860), the demand pull of a "Smithian-type" of growth (measured using the terrestrial distances to the nearest seaport), and the agrolological land's suitability for sowing grain or growing vines (as measured by mean rainfall, slopes and frost risk). The explanatory power of this set of variables has become relevant but at the same time limited because the model omits one other important socio-institutional factor, the inequality of land ownership.

In our contribution to the XV Enometrics meeting we intend to improve our socio-economic and agro-ecological approach in three main ways: 1) by replacing the metric distances which we used in the former study with a panel set of the hourly distances to the nearest sea port towards 1824; 2) by replacing the mean annual rainfall in each municipality with the water deficit or surplus during the wheat growing season from January to June (measured in mm by the subtraction of the Thornwaite ETP values from the mean monthly rainfall), in order to gain a better assessment of the water stress for growing cereals (which in turn became a comparative advantage which led farmers to plant vines in the dryer areas); and 3) by including the previously omitted variable of the inequality in land ownership using a 1852 nominal list of taxpayers and their annual payment of the cadastral duties. We also intend to discuss the deeper economic and historical explanations that lie behind our econometric model and its statistical outcomes. Although they can be seen as an indirect confirmation of the Heckscher-Ohlin theoretical explanation of commercial specialization, by means of the relative factor endowments of land and labour, our main aim is to understand how these different land-labour ratios arose at a municipal level over a long historical period. The push of population growth, combined with the growing inequality in land ownership, seems to have played a very important role. We also discuss how to deal with the endogeneity problem that working with these socio-demographic variables entails.