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Breaking down the growth of family farms: A case study of an intensive Mediterranean agriculture

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ABSTRACT

Agricultural statistics performed in Europe show the persistence and strength of the processes of concentration, capitalization and intensification of farms in the last years. Remarkably, these patterns of change appear to be compatible with the persistence of family farms. One of the elements enabling family farms to advance along these pathways of growth has been the transformation of their organizational forms. Thus, the spread of partnership arrangements involving several related families have been registered in several OECD countries. This paper pursues a twofold objective: On the one hand, to analyze the farm structural dynamics at the micro-level in a study area specialized in an intensive agricultural system such as horticulture. This purpose makes it necessary to develop an analytical scheme in order to capture the diversity of individual farms' trajectories and to reduce it to a limited number of categories of structural change. On the other hand, we aim to shed light on the relationship between some family characteristics and the farm structural dynamics, paying particular attention to the existence of multifamily partnerships. The primary data for this research was provided by a survey of 135 farmers. A combination of Multiple Correspondence Analysis and a K-means clustering was performed to obtain a farm typology upon the base of both farms' 'static' characteristics and their patterns of structural evolution. The results show that multifamily partnerships are widespread in the study zone, and have made it possible for farms to embark on more aggressive growth pathways.

1. Introduction

European farms are compelled to follow a continuous process of adaptation to the wavering conditions of the context where they develop, and the transformations they undertake influence agricultural structures. The analysis of the driving forces of farm structural change has constituted a matter of interest in agricultural and rural studies for long. Decades ago, the well-known model of Schultz (1953) based the explanation of the structural adjustment on the relative evolution of agricultural productivity (in expansion mainly due to technological progress) and an inelastic demand of food in developed countries. After the 80s, commentators reported that the *price–cost squeeze* in European farming had been aggravated due to the reduction in the price support and the turn towards market liberalization of the Common Agricultural Policy, which has put an additional pressure for structural change (Blandford, 2006; Marsden et al., 1989).

In this context, a body of studies during the 90s aimed at analyzing the different 'adjustment strategies' of farms to survive to the tougher conditions, within the conceptual framework of the "post-productivist transition". This approach postulated that European agriculture would be undergoing a gradual reversion of the dimensions characterizing the 'modernization paradigm' – i.e. concentration, specialization and of farms (Ilbery and Bowler, 1998). However, this assumption was strongly contested in the following years by numerous scholars, who declared the persistence of the productivist patterns of production in European farming (Evans et al., 2002; Morris and Evans, 1999; Walford, 2003).

Focusing on structural change, it must be acknowledged that agricultural statistics back the latter authors' allegations: the historical trend of decline in the total number of farms and increase in the average size of the remaining ones is still in progress in Western Europe (with the exception of United Kingdom), according to the Farm Structure Surveys performed by EUROSTAT (European Commission, 2010). More concretely, there is a trend of drop in the number of small farms and an increase in the number of the large ones, being the break-point size between falling and increasing farm numbers different across countries (Hill, 2006). This process of structural adjustment implies a rising concentration of the agricultural output in fewer farms (Ahearn et al., 2009; Poppe et al., 2007). The fact that the mainstream of structural change in Europe at the macro-level is still basically following productivist principles is even more evident in Southern countries, allegedly because their agricultural structures have been lagging behind the rest of Europe for long – a fact which has traditionally constituted an important

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research and political issue in these countries (Arnalte, 2002; Arnalte et al., 2008; Baptista, 1995).

The dynamics of farm structures at the macro-level is the result of the aggregation of individual management decisions of the production units. On that account, commentators have underlined the importance of a better understanding of the structural change at the farm level (Iraizoz et al., 2007; Moreno and Ortiz, 2008; Poppe et al., 2007), consistent with the generalized emphasis on the micro-analysis of farm adjustment strategies and farmers' decision-making that we have witnessed in recent times (Evans, 2009; Johnsen, 2004; Wilson, 2008). Researchers have thus identified a broad diversity of individual farm trajectories, and need to confront the methodological challenge of transforming such diversity into several categories which are both theoretically informed and analytically functional.

The structural transformations of agriculture outlined above are taking place against the backdrop of the domain of family farms. Remarkably, the steps of agriculture on the way of intensification and concentration observed in Europe and in other developed areas have been compatible with the persistence of a family farming, even in the upper strata of farm size (Hill, 2006; Hoppe et al., 2008). The advance of family farms along these pathways of growth has been possible by means of different processes of adaptation of these holdings. On the one hand, one of their traditional characteristics, the predominance of the family labor in the farm, has been modified by the progressive incorporation of hired labor. This process has been particularly important for intensive agricultural orientations, where the raising labor requirements in the farm could not be met by the family members – as Arnalte (2002) points out for the horticultural systems located in the Mediterranean coast of Spain. On the other hand, many farming families have undertaken a trajectory of growth based on an intense capitalization of their agricultural businesses (i.e. investments in mechanization, irrigation infrastructures, etc.)

One of the elements which have enabled family farms to reach increasing levels of capital investment has been the transformation in their organizational forms and the development of more complex governance structures. Thus, partnership agreements involving the "extended family" (i.e. family members living in different homes) are been pointed at as a way to 'pool' the capital resources of several households, as well as to enlarge their managerial capacity and financial risk-taking. Interestingly, these changes in the farms' governance structure make possible to 'break the ceiling' of growth of family farming.

In fact, arrangements between related households – what we will refer to as "multifamily farms" – have since long been acknowledged for British agriculture (Gasson et al., 1988; Marsden et al., 1989). Over the last decade, however, both commentators and agricultural statistics have highlighted their increasing importance in a number of OECD countries. Pritchard et al. (2007), for instance, state their presence in Australian horticulture. Lillywhite and Duffy (2001) acknowledged the existence of these organizational structures in United States. Since 2002, Agricultural Censuses performed by USDA collect data about the number of households sharing in the net income of a farm, information which was subsequently discussed by Allen and Harris (2005). Agricultural statistics also reveal that multifamily farms are widespread in Canada (Agriculture and Agri-Food Canada, 2006; Bollman, 2005; Machum, 2005). As for Europe, the importance of multifamily partnerships in intensive agricultural systems such as horticulture has been reported in Belgium (Calus and van Huylenbroeck, 2005) and the Netherlands (Jongeneel and Slangen, 2005; Poppe et al., 2004; Van der Veen and Van Bommel, 2005).

Despite these contributions, it could be hold that the proliferation of multifamily organizational forms is not receiving as much consideration by the academy as other major trends of evolution of family farms. Indeed, the attention of European scholars is currently more focused on the patterns of farm change fitting in the so-called "multifunctional" regime of agriculture, particularly those involving some degree of disengagement of the family from conventional farming (Lobley and Potter, 2004; Renting et al., 2009). Nevertheless, the crucial role that the full-time farms embedded in a model of capitalized and market-oriented agriculture play in Europe, justifies a further analysis of their own pathways of evolution and growth.

Within this framework, this paper has a twofold objective: On the one hand, to analyse the farm structural dynamics at the micro-level in an intensive agricultural system such as horticulture. This purpose makes it necessary, as stated above, to develop an analytical scheme capable to capture the diversity of individual farms' trajectories and to reduce it to a limited number of categories of structural change. On the other hand, we aim to shed light on the relationship between some farm family characteristics – particularly the existence of multifamily arrangements – and the farm structural dynamics.

This paper is focused on a case study of a Mediterranean area specialized in intensive horticulture. It is worth noting the suitability of the selected agricultural system for the purposes of this research. A study performed by Arnalte et al. (2008) highlights the intense structural change registered in Spanish horticulture with the turn of the century. Thus, the horticultural system has a prominent role in terms of what these authors called the "hard-core" of Spanish agriculture – composed by farms belonging to the upper strata of economic dimension, which are gaining importance in numerical terms and concentrating increasing shares of the total agricultural output, labor and land of the country. To reach a deeper understanding of the structural transformations of horticultural farms at the micro-level in our case study would contribute to clarify the macro dynamics of this agricultural system.

2. Study area and methods

The area of *Campo de Cartagena*, located at the South-Eastern Spanish coast (see Fig. 1) is specialized in greenhouse production of vegetables and, to a lesser extent, floriculture. Family-based farming has traditionally constituted one of the main pillars of the local economy in this area – though the importance of building and tourism industries in this zone has brought about a strong land use competition. The intense transformations undergone by the agricultural holdings located in this area over the last decades, mainly by way of investments in fixed capital, have been widely documented by researchers (see, for instance, Pedreño, 1999). This process of growth was definitely boosted by the introduction in the early 90s of the '*California*' green pepper cultivar, which was highly demanded by European markets. However, great variability can be observed in terms of the main structural decisions when farms are studied at the micro-level.

The empirical data for this analysis was provided by both in-depth semi-structured interviews and a survey undertaken between February and April 2009. Interviews were conducted with farmers, representatives of local farmers' organizations and technicians of cooperatives and horticultural auction markets (*alhóndigas*) located in the zone – the two main marketing channels for agricultural products in this area. A total of 18 agricultural agents participated in this stage of the fieldwork, allowing for a preliminary identification of different farm and farm family profiles, as well as of the main variables determining the differences among them.

This information was of utmost importance for the design of the second stage of the fieldwork, i.e. the survey with 135 farmers.