La inversión extranjera antes y durante la Gran Recesión: el caso del sector agroalimentario castellanoleonés

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Resumen

En este trabajo inferimos que el minifundismo fabril tradicional en el sector agroalimentario castellanoleonés está fuertemente asociado a mayores niveles de conocimiento implícito. Además, la presencia de algunas industrias específicas (v.g., *elaboración de productos cárnicos y de volatería*, *fabricación de vinos*, *galletas*, *azúcar*, y *fabricación de productos para la alimentación de animales de granja*, etc.), que históricamente han tenido fuertes lazos con la agricultura extensiva local, puede arrojar luz sobre el crecimiento inesperado de la inversión extranjera directa (IED) en tiempos de recesión económica. Según nuestro juicio, esta observación está alineada con la garantía que ofrece el conocimiento implícito —es decir, el conocimiento difícilmente comercializable— en tiempos de depresión económica. De hecho, afirmamos que la *Gran Recesión* sirvió como un punto de inflexión para explorar el conocimiento implícito —como una fuente explorable del nuevo valor económico— desde dos ejes centrales: las *empresas locales* y las *multinacionales*. En resumen, nuestro artículo proporciona evidencia adicional contra la concepción neoclásica de las empresas como tomadores de decisiones estrechamente racionales —actuando puramente en términos de "*precios*"—. En efecto, confirmamos un tipo de racionalidad heurística que parece intensificarse durante los tiempos de recesión económica.

Palabras claves: industrias agroalimentarias; minifundismo fabril; conocimiento implícito; IED; recesión económica; empresa multinacional.
Códigos JEL: F23; J24; N60; O33; Q13.

Foreign Direct Investment before and after the Great Recession: the case of Castilian-Leonese agri-food industries

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Abstract

We infer that traditional business smallholding in the Castilian-Leonese agri-food sector is strongly associated with higher levels of implicit knowhow. Moreover, the presence of some particular types of industries (e.g., *processing and preserving of meat*, *manufacture of wine, manufacture of rusks and biscuits, manufacture of sugar*, *prepared feeds for farm animals,* etc.), which turn out to historically have had strong connections with the local extensive agriculture, may shed light on the unexpected growth of FDI in times of economic recession. In our view, this observation is aligned with the warranty that implicit (i.e., hardly marketable) knowhow offers in times of economic depression. Indeed, the eve of *Great Recession* seems to have served as a saddle point in which implicit knowledge—as an explorable source of new economic value—has been better exploited from both sides, i.e., *local firms* and *multinational enterprises*. In short, our paper provides additional evidence against the neoclassical conception on firms as narrow rational decision makers—purely acting in "price" terms. Practically, it confirms a heuristic kind of rationality that seems to intensify over the periods of economic recession.

Keywords: agri-food industries; business smallholding; implicit knowhow; FDI; economic recession; multinational enterprise.
JEL Codes: F23; J24; N60; O33; Q13.

Over the years an individual may learn a piece of the company puzzle exceptionally well and he may even understand how the piece fits into the entire puzzle. But he may not know enough about the other pieces to reproduce the entire puzzle (Stanley H. Lieberstein, 1979).

1. Introduction

The empirical evidence suggests that in terms of the weight of total revenue generated from the EU's agri-food firms, the Spanish agri-food industry is ranked fifth, just after France, Germany, Italy, and the United Kingdom. On the other hand, in Spain, the agri-food industry with a revenue of 118,681.8 million of euros is the leading manufactural sector according to the most recent data provided by the Spanish Statistical Institute (MAPA, 2019; INE, 2019). Moreover, in relative terms, these figures point out that the sector makes up for 23.5% of the total revenue, 21.1% of employment and 18.7% and the gross added value generated by the industrial sector on the whole (ibid.).

Castile and León turns out to be a relatively representative case of the Spanish agri-food sector on the whole. Indeed, since the early decades of the XX-century, the weight of the Castilian-Leonese agri-food industry over the regional total industrial production weight exceeded 50%; the superiority was more than fourfold in weight compared with the industry ranked second according to the regional industrial importance, i.e., *wood and furniture* with a weight of 12.86% (Álvarez Martín and Hernández García, 2009, p. 355). An analogous situation was valid for Spain as a whole, although the leading position of the national agri-food industry was less superior (Prados de la Escosura, 2003, p. 65) compared to that of the region that nowadays constitutes Castile and León[1]. The weight of agri-food industry, however, began to fall over the next Spanish post-civil war decades, along with the overall diversification of the industrial production with other industries (e. g., *manufacture of motor vehicles*, *trailers and semi-trailers*, *manufacture of rubber and plastic products*, *paper industry*, etc.). Nevertheless, its leading status still endures among all industrial sectors in Spain and in Castile and León (INE, 2019; MAPA, 2019).

According to our estimations, based on SABI data, Castilla y León had 2,504 active agri-food companies (including here *beverage industries* as well) in 2018. This represents 10% of the total number of companies that operated in this sector throughout the entire country. Furthermore, this figure indicates that the region ranks third nationwide, just after Andalusia (16.8%) and Catalonia (15%).

Referring to the data of INE (2019), we have estimated the turnover of the set of Castilian-Leonese food industries (i.e., *food companies* plus the *manufacture of beverages*) with respect to the set of all national food industries. It turns out that, in terms of the turnover, the Castilian-Leonese industry contributed, in the year 2017, to 8.55% of the total turnover of all national food industries.

Based on INE's Industrial Sector Business Structural Statistics 2017, we observe that the Castilian-Leonese agri-food industries (including here *beverage industries* as well) hired a total of 36,862 employees in the year 2017; this implied, 9.2% of the total employed staff in these type of industries nationwide.

The business smallholding, however, has traditionally been an intrinsic feature of the Spanish agri-food sector on the whole. In fact, based on the INE's recent reports on the size of agri-food firms in Spain, we infer that 96.32% of Spanish agri-food firms have less than 49 employees (MAPA, 2019; INE, 2019). The smallholding pattern is more distinctive in the *Bakery and Pastry* industries, which turn out to be the leading activities in terms of the number of active businesses with a total number of 11,745 firms, implying a significant share of 38.2% of all active agri-food businesses, which include here *beverage industries* as well (ibid.).

Overall, the sectoral configuration, since its early days, reflects the traditional persistence of an extensive type of agriculture in Spain given that small agri-food firms have been mostly focused

[1] The autonomous region of Castile and León is composed of the following nine provinces: Ávila, Burgos, León, Palencia, Salamanca, Segovia, Soria, Valladolid and Zamora. It is ranked first region in Spain in terms of land area and sixth in terms of population (INE, 2019).

on processing raw materials provided by the local agriculture (Fernández Pérez and Puig Raposo, 2007; Manero, 1983, p. 69). In this regard, the size and organization of agri-food firms were, to a large degree, shaped by the pervasiveness of that type of extensive agriculture. Indeed, in the case of Castile and León, industrial configuration appears to be significantly shaped by the weight of *wheat and flour farms* in the region. In line with our long-term perspective, this has been a result, in our view, of a natural process of economizing under environmental, technological, financial and labor force constraints; whereas the restrictive conditions imposed just after the Spanish civil war of the so-called autarky contributed to reinforce these constraints, and, at the same time, to impede firms' growth (Catalan, 2003).

The historical data corroborate the agri-food industries' strong contingency on agriculture inputs. According to the analysis that we have carried out for the province of Salamanca (one of the nine provinces of the present autonomous Castile and León region) using the data from the *Registry of Agri-food Industries* provided by the *Provincial Historical Archive of Salamanca* and including the food industries that operated in the province of Salamanca during the period 1925-1976, we find out that 451 industries were *Bakeries*; that is, out of a total of 967 family-size industries (46.6% of the record files). While the industries related to the activity *meat production and processing, and other meat related establishments* (e. g., *slaughterhouses*, *butchers*, etc.) occupied a much lower position, given that in total, they could not overcome the number of 36 family-size companies (that is, 3.7% of the files reviewed). On the other hand, Fernández Arufe et al. (2011) corroborate the latter configuration of business smallholding for the Castilian-Leonese region on the whole.

According to our estimation based on the recent SABI datasets on agri-food industry, we find out that 74.9% of Castilian-Leonese agri-food food firms have less than 10 employees; whereas 94.5% of these firms have less than 50 employees (SABI, 2020). As an expected and as a logical response to the latter phenomena, a historically inherited deficiency in the modernization capacity has prevailed. Consequently, considering that capabilities to afford costly human capital augmentation (e.g., via job-training activities) are low for these family-size companies, they would rather prefer to skip all these commitments. In brief, the setting is akin to an *adverse selection* situation determined by a free-riding problem that harms long-term innovative capabilities by limiting, thus, competitiveness. Historically, the low commitment to R&D has been broadly documented. Over the period 1969-1972, the percentage of R&D spending in terms of gross added value was, on average, about 0.07%; this turned out to be a very low figure compared to that of other sectors, such as, for instance, the chemical industry, with 1.43% devoted to R&D spending (Cruz Roche, 1978). In fact, during the period 1974-1978, the agri-food sector was within a group of four sectors, which led the national ranking of expenditures on technological transfer, patent fees and technical assistance from abroad (ibid.). We hold that this can also be due to a low FDIs' inflow associated to historically inherited deficiencies in handling investments in a sector dominated by family-owned businesses. Indeed, in normal business circumstances, it is hard to deal with an *implicit type of knowhow* that mostly characterizes family-owned businesses. In this vein, the empirical evidence provides us additional clues about a historical coexistence of business smallholding, low FDI inflow, and a poor modernization in the Spanish agri-food sector.

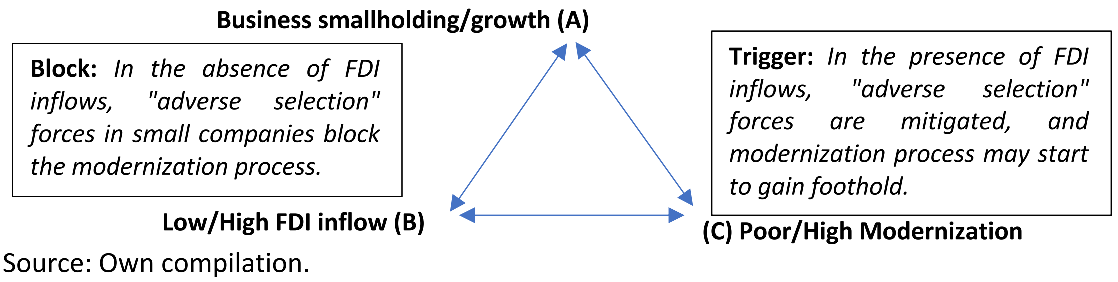
To our knowledge, the evolution of the Spanish agri-food sector —especially that of Castile and León— has not yet been approached from the perspective of modernization in relation to foreign direct investment (FDI). The typical analyses in this area of research focus more precisely on the following lines: (i) food transition (e. g., Clar, 2005, 2006; Germán Zubero, 2006; Collantes, 2017); (ii) the international opening and liberalization of industrial policy in Spain (e. g, Pires Jiménez, 2005; Delgado Gómez-Escalonilla et al., 2016); (iii) the entry of foreign capital into Spain and the penetration of the multinational company (e. g., Puig Raposo and Álvaro Moya, 2007, 2015; Puig Raposo and Castro, 2009; Álvaro Moya, 2010; Cruz Roche, 1978); and (iv) the issue of modernization without innovation in Spain (e. g., Fernández Prieto 2001, 2003, 2007; Martínez López, 2010).

The paper is organized as follows: in the following section 2, we provide the model description and its specifications; in the section 3, we provide empirical evidence that supports our proposed model; and finally, in the last section 4, we summarize the main findings of this paper.

2. Model description

Kogut and Zander (1993) in their evolutionary perspective have pointed out that "*the strength of a multinational enterprise MNE stems from the fact that it can trade knowledge internally more quickly than two firms which have to negotiate conditions each time*" (p. 23). In the light of this perspective, we believe that economic recession (e.g., Great Recession) conditions may possibly trigger the search for those new forms of economic value embedded in traditionally family-owned businesses. This search would, in addition, be beneficial for local firms to the aim of allowing them mitigate the "*adverse selection*" forces that have historically hampered their growth.

Figure 1: The vicious and virtuous triangle: block/ trigger technological change model



Source: Own compilation.

In order to simplify the complexity of numerous scenarios, our proposed model is dichotomous. On the one hand, the block may take foothold due to the risk involved, for example, in

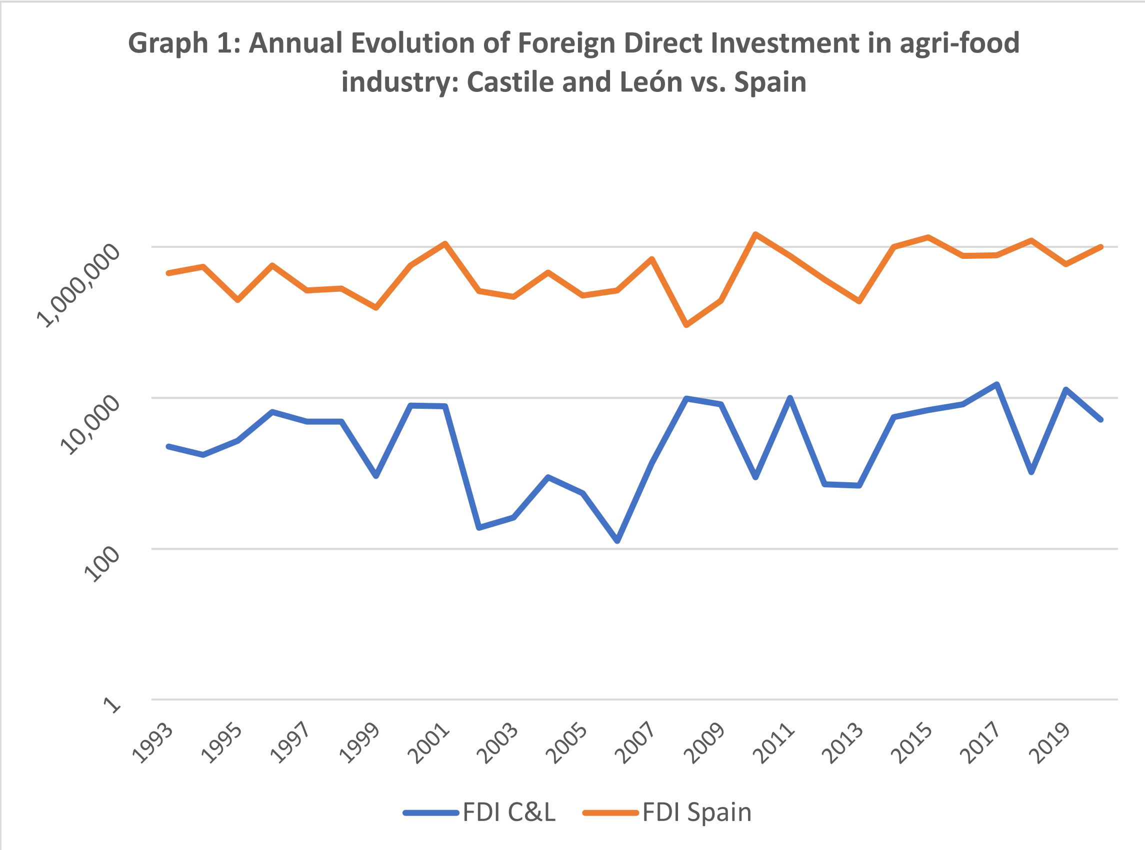
R&D projects, when these have to be carried out employing the extremely scarce capital resources of the small-family businesses (e.g., Castilian-Leonese agri-food firms). On the other hand, trigger may suddenly follow when an exogeneous inflow of FDI mitigates "*adverse selection*" forces to the end of extracting economic value from implicit knowhow embedded in locally small firms. We hold that economic recession (e.g., Great Recession) may motivate this "jump" from the vicious (block) to the virtuous (trigger) triangle.

Our proposed model should not be misaligned with Hymer's prediction of global collusive oligopoly as a direct result of the firms' incentives for control, power and value capture (Dunning and Pitelis, 2008, p. 171). On the contrary, our position will reinforce Hymer's view on supercession of the market by firms, which leads to increased concentration (Hymer, 1970). Nevertheless, we are aware of the most recent evidence that shows that firms can both create new markets, and reconfigure the existing ones, through the invention of new uses for existing products (Schumpeter, 1942; Penrose, 1959; Simon, 1995). Indeed, Simon (1995) correctly anticipated the complementarity between markets and firms, a viewpoint that nowadays is taken for granted. The novelty resides in fact that we argue that this complementarity may increase over periods of economic recession. Furthermore, the presence of varieties of *implicit knowhow* in agri-food sector (i.e., Castile and León agri-food firms) may intensify incentives for MNE's new value capture. On the other hand, the latter possibility would become highly viable as long as the vicious triangle hypothesis predominates (see Figure 1). That dominance, in fact, entails a significant share of *implicit knowhow*, which can be possibly explored and transformed into new economic value *via* FDI inflow/MNEs entry (see trigger scenario in Figure 1).

Finally, our proposed model is also aligned with Teece's earlier observation about a nature of the firm that is conceptualized as a structure designed to organize the employment of various assets which have greater value when employed under the internal control apparatus of a firm than under the external control apparatus of a market (Teece, 1982, pp. 32-33).

3. Empirical evidence

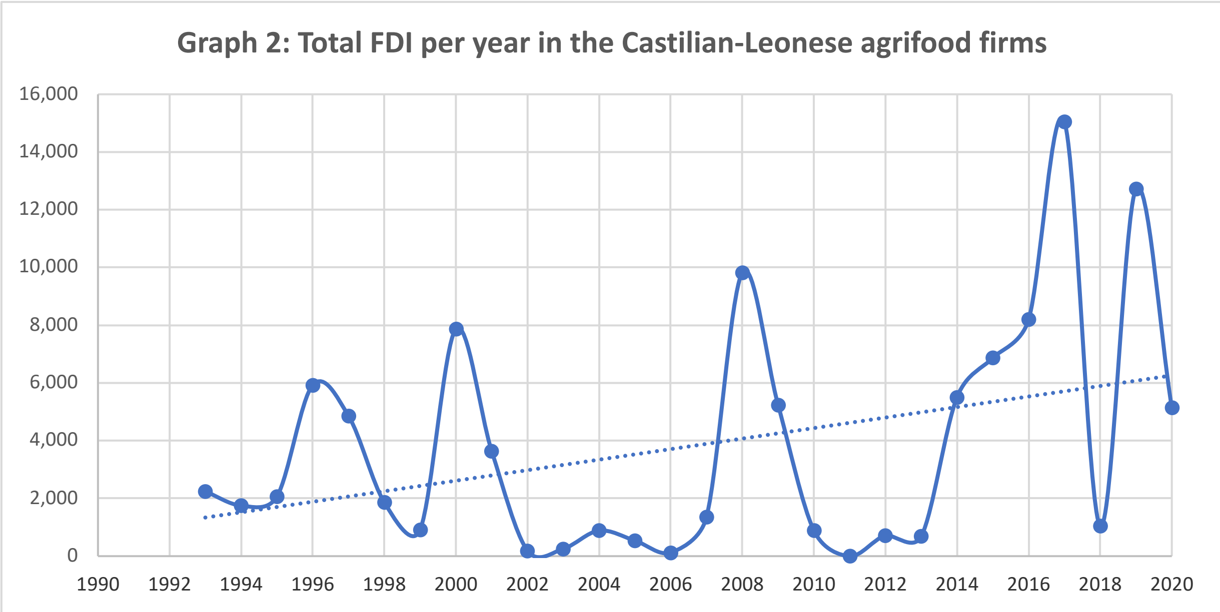
The empirical evidence, over the period 1993-2020, confirms our hypothesis that FDI's inflows growth in the Castilian-Leonese agri-food sector have been, on average, less correlated to the Spanish FDI's inflows. In fact, an opposite movement (i.e., significant growth) of the former is observed just in the eve of the economic recession; whereas the Spanish FDIs have been plunging at the time (see Graph 1). More specifically, Graph 1 indicates the annual average evolution of FDIs inflows (in thousands of euros) for the Castilian-Leonese and for the Spanish agri-food sector over the period 1993-2020. The representation is, however, made in logarithmic scale due to the fact that the aggregate share (that is, considering the whole time-extension) of Castilian-Leonese FDI does not exceed 0.71% of the aggregate FDIs in the Spanish agri-food industries. Surprisingly, the Castilian-Leonese propensity in receiving FDI inflows has been revived over the post-recession period, i.e., 2008-present. The observed phenomena turn out to becomes even more interesting due to the moderate weight FDIs tended to historically have (note that the regional share is, on average, 0.71% of the total amount of FDIs allocated to the sector) in the Castilian-Leonese agri-food industry.



Source: Own estimation and compilation based on DATAINVEX evidence; FDIs are represented in logarithmic scale.

Secondly, in the following Graph 2, we summarize the analysis we have made on FDI's inflow relative to the Castilian-Leonese agri-food firms over the period 1993-2020. In particular, we clearly notice the positive trend FDIs have had over the last three decades. Additionally, the latter pattern has been strongly intensified over the Spanish post-economic recession period (2008-present). The *crisis leverage*[2] in FDI inflows seems to have been stronger for the Castilian-Leonese agri-food firms compared to their Spanish counterparts.

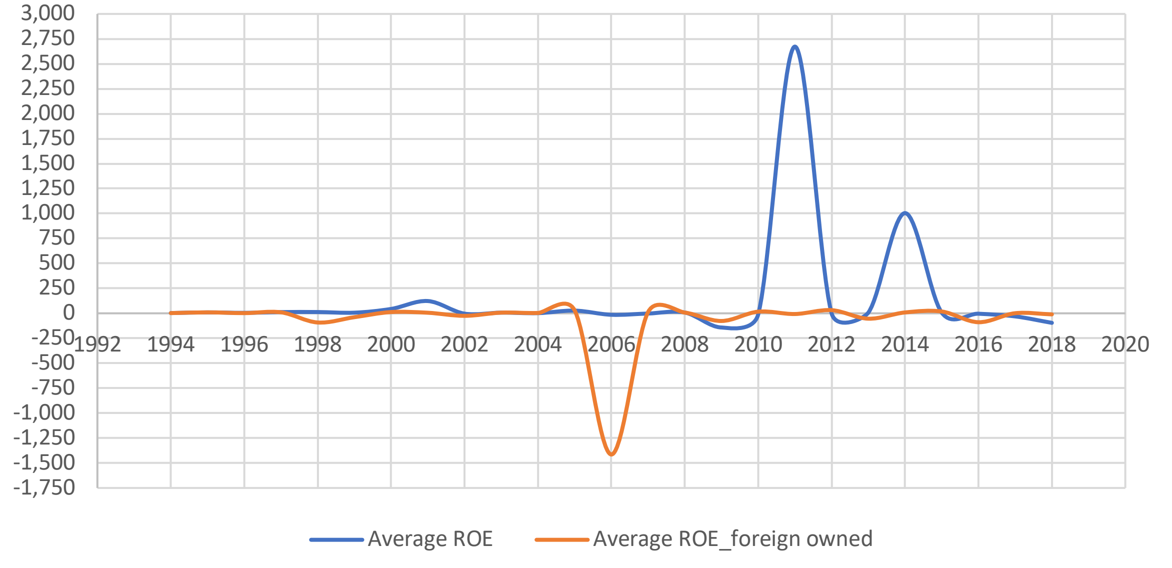
[2] According to our own estimations based on DATAINVEX (1993-2020), we find out that pre vs. post-crisis FDIs growth for the Castilian-Leonese agri-food firms has been 2.27%; whereas for their Spanish counterparts has been 2.13%. The saddle point is assumed to correspond to the eve of economic recession, i.e., year 2008. Moreover, the post-crisis annual growth in FDIs for the Castilian-Leonese agri-food sector has been 3.55 times higher than the Spanish one. We use the term "*crisis leverage*" to describe this multiplicative factor.



Source: Own estimations and compilation based on DATAINVEX evidence about the total FDI per year (in thousands of euros) allocated in all agri-food subsectors.

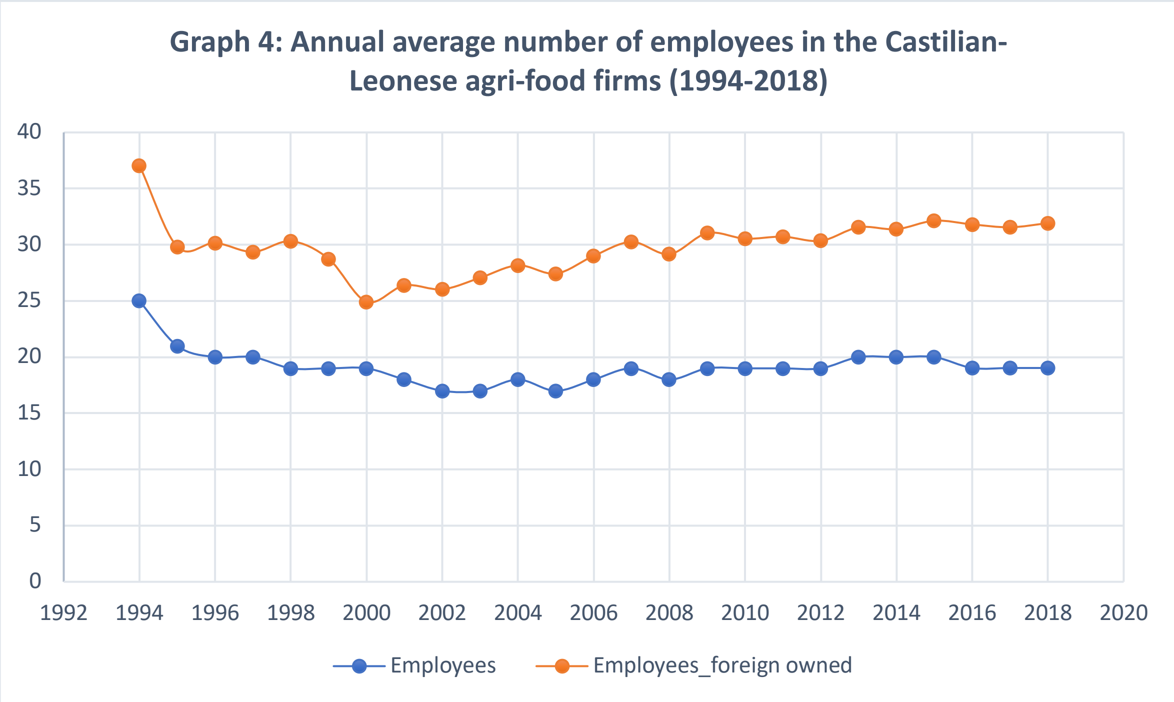
Thirdly, in the following Graph 3 we summarize the analysis made on the historical *Average Returns on Equity* for 554 Castilian-Leonese foreign-owned agri-food firms versus *Average Returns on Equity* for the aggregate sample of 2,454 Castilian-Leonese agri-food firms. It is clear that foreign-owned firms perform, on average, worse that the aggregate sample composed of all regional agri-food industries. This might be a sign that multinationals' capture and control is motivated by reasons that go beyond the narrow profitability logic (e.g., ROE measure). Moreover, it seems that this the counterintuitive pattern is intensified over the post-crisis period. In the light of the model described in Section 2, we infer that such behavior is aligned with an evolutionary perspective on multinationals (Kogut and Zander, 1993). Additionally, we believe that economic recession may serve as a saddle point to the aim of exploring new forms of economic value embedded in family-size firms. These new forms of economic value are related to the *implicit knowhow*, which is very present in small agri-food firms. The *implicit knowhow* tend to be a drawback in normal economic circumstance, however significant FDIs' inflows can possibly revive it, and possibly turn it into a trigger for technological change (see Figure 1).

Graph 3: Annual average ROE for the Castilian-Leonese agri-food firms (1994-2018)



Source: Own estimations and compilation based on SABI evidence about *Returns on Equity* for 554 Castilian-Leonese foreign-owned agri-food firms, and for the aggregate sample of 2,454 Castilian-Leonese agri-food firms.

Graph 4 corroborates our argument borrowed from Hymer (1970) on supercession of the market by firms, which leads to increased concentration. Indeed, evidence suggest that foreign-owned agri-food firms tend to be larger in size. Accordingly, the graph indicates that this trend has been constantly preserved over the past three decades. We also infer that this evidence is an additional support to our proposed triangular model of dichotomous technological change. That is, FDIs may serve as an exogeneous mechanism to overcome the business smallholding trap for modernization. One straightforward claim emerges in relation to higher job-training possibilities, for instance, in larger firms, or the even the weaker "*adverse selection*" forces in the multinationals' innovation/modernization commitments.

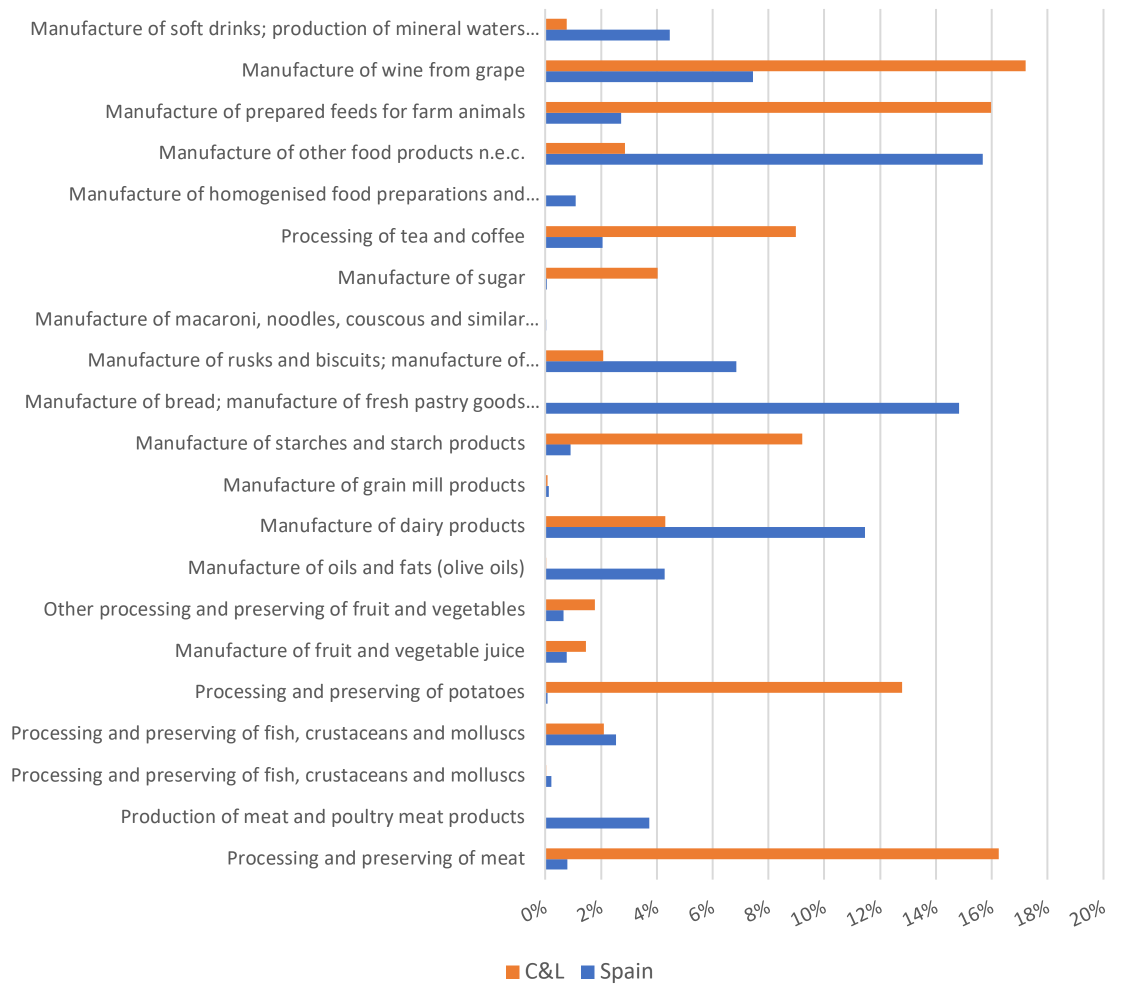


Source: Own estimations and compilation based on SABI evidence about *Employment* for 554 Castilian-Leonese foreign-owned agri-food firms, and for the aggregate sample of 2,454 Castilian-Leonese agri-food firms.

Looking deeper across different industries, we notice that FDIs inflows have especially been higher, on average, in traditional agri-food industries (see Graph 5). In particular, the *manufacture of wine from grape*, *manufacture of prepared feeds for farm animals*, *processing and preserving of meat* each exceed 16% of the aggregate annual FDI inflows annually allocated to all regional agri-food industries (i.e., food and beverage companies). Other traditionally important industries such as *manufacture of sugar*, *processing of tea and coffee*, *manufacture of starches and starch products*, *processing and preserving of potatoes* vary on a range of 4-12.8% of the aggregate annual FDI inflows in all regional agri-food industries.

On the other hand, other interesting feature revealed in the following Graph 5 is the one related to the higher skewness in the annual allocations of FDIs across the Castilian-Leonese agri-food industries, if compared to their Spanish counterparts. Indeed, reinforcing the above-mentioned arguments, the latter skewness is more pronounced in favor of traditionally predominant industries.

Graph 5: Relative annual average of Foreign Direct Investment in agri-food industries: Castile and León vs. Spain



Note: Own estimations and compilation based on DATAINVEX evidence about FDIs. We have represented the FDI's average annual weight over the period 1993-2020.

4. Concluding remarks

We propose a theoretical and an empirical approach on the rationales of FDI's historical evolution in the Castilian-Leonese agri-food sector. We were particularly focused on the past three decades, and in getting further insights into the effect of *Great Recession* along with collateral implications on the multinational entry and innovation possibilities. The main findings are highlighted as follows.

First, according to our own estimations, we find out that pre- vs. post-crisis FDIs' growth for the Castilian-Leonese agri-food firms has been 2.27%; whereas for their Spanish counterparts has been 2.13%. A saddle point is assumed to correspond to the eve of economic recession, i.e., year 2008. Indeed, the post-crisis (2008-present) annual growth in FDIs for the Castilian-Leonese agri-food sector has been 3.55 times higher than the respective Spanish one. We use the term "*crisis leverage*" to describe this multiplicative factor.

Second, we confirm the argument borrowed from Hymer (1970) on supercession of the market by firms, which leads to increased concentration. Indeed, our evidence suggest that foreign-owned agri-food firms tend to be larger in size. We also infer that this evidence is an additional support to our proposed theoretical model of dichotomous technological change. That is, FDIs may serve as an exogeneous mechanism to overcome the business smallholding trap for modernization.

Third, we notice that FDIs' inflows have especially been higher, on average, in traditional agri-food industries. In particular, the *manufacture of wine from grape*, *manufacture of prepared feeds for farm animals*, *processing and preserving of meat* each exceed 16% of the aggregate annual FDI inflows allocated to all regional agri-food industries (i.e., food and beverage companies). Additionally, it is discerned a higher skewness in the annual allocation of FDIs across the Castilian-Leonese agri-food firms, if compared to their Spanish counterparts. The latter skewness is more pronounced in favor of traditionally predominant industries—historically characterized by business smallholding.

Overall, we have inferred that traditional business smallholding in the Castilian-Leonese agri-food sector is strongly associated with higher levels of *implicit knowhow*. The presence of some particular types of industries (e.g., *processing and preserving of meat*, *manufacture of wine, manufacture of rusks and biscuits, manufacture of sugar*, *prepared feeds for farm animals,* etc.), which have had strong connections with the local extensive agriculture, may possibly explain the unexpected growth of FDIs in times of economic recession. Accordingly, our observation is aligned with the warranty that *implicit* (i.e., hardly marketable) *knowhow* offers in times of economic depression. Indeed, the eve of economic recession seems to have served as a saddle point in which *implicit knowledge*—as an explorable source of new economic value—has been better exploited from both sides, i.e., *local firms* and *multinational enterprises*. Finally, this paper may have provided additional evidence against the neoclassical conception on firms as narrow rational decision makers—purely acting in "*price*" terms. However, in order to fully prove the latter claim, we may need a further empirical inquiry into the historical evolution of innovation and human capital commitments across the industries of this important sector.

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