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Contribution of an Industrial District

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Abstract

During the second half of the twentieth century, the Spanish cork industry had lost its hegemonic position to Portugal, in the world market of manufactured cork. In this work we intend to demonstrate that one of the most important explanations of the consolidation of this country's leadership in the cork business lies in the formation and development of the industrial cork district of Aveiro (Santa Maria da Feira) in the north of Portugal. It was there where the growth of the Portuguese stopper industry took place and with this, the decisive orientation of this nation towards the manufacture of natural cork, substituting the traditional Portuguese trade in cork planks. We argue that the legislation that established the control of the industrial investment in Portugal, the so-called Industrial Conditioning (*Condicionamento Industrial*) did not restrict the opening of small cottage industries in the north, that fact being a determining reinforcement of the competitiveness of Aveiro in the world stopper trade. Another measure of major importance was the wage regulation covering this industry, being responsible for the wage differential favourable to the north comparing with the south and the centre of the country. Finally, we highlight the role of a big company (Amorim&Irmãos) in the formation and development of this industrial district, which became a leader firm in this sector at a world-wide level.

Key words: Cork, “New State”, Portugal, Spain, Industrial District.

JEL classification : N4, N5, N74, N8, N9, R32, L52.

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1. Introduction¹

The cork business underwent deep changes throughout the 20th century. Until the decade of the 1930s, Spain appeared in the markets as the greatest world-wide power in the manufacture of cork, a condition which it had enjoyed almost from the beginning through the Catalan cork-stopper industry in the first third of the 18th century. Meanwhile, in Portugal the cork economy was dominated by semi-manufactured products, that is, by the preparation of the cork in planks and its sale on the international market.

However, the circumstances changed drastically in the decades following the great depression of 1929, and towards 1950's Portugal had already assumed the leadership in the world-wide business of manufactured cork; a leadership accompanied by significant changes in the cork economy not only of the country, but also of the Iberian Peninsula and, by extension, of the world².

Without intending to make an exhaustive description of these changes, it is worth mentioning at least one of them, which constituted a threat for the continuity of the industry and which has ended up causing, the concentration of the cork activities in the Iberian Peninsula. We talked about the substitution of natural products by synthetic ones, which, in terms of the cork business, presupposed the ceasing of the use of the cork in multiple applications in which it was used.

The consequences of this phenomenon have been more expressive in the industrialized countries which do not produce this raw material (like the United States, Germany or Great Britain), where the increasing cost of manpower and the increase of the acquisition cost of raw material made it more profitable to cease the transformation of cork, favouring instead the manufacture of synthetic products. Consequently, both Iberian countries, the two main cork producers world-wide,

¹ First versions of this work were presented in the *Jornadas sobre empresas, distritos y competitividad internacional* that took place in the University of Alicante in June 2008, and in the 9th Congress of the Spanish Association of Economic History (Murcia) in September of the same year. Also published in the Working Paper Series n.º 37 of GHES (ISEG) <http://hdl.handle.net/10400.5/923>. A second version of this work was presented in the XVth World Economic Congress that took place in Utrecht in 2009, in Session K5 – Clusters vs Industrial Districts in the formation of a competitive advantage, 1820-2008.

The authors are thankful for the commentaries and suggestions made by those present in these events, as well as the detailed commentaries made by Santiago Zapata and also Manuela Rocha that have contributed to improve the original text. However, the authors are the only ones responsible for the errors that remain in the text.

had to assume the roles of protagonists on the world stage, giving rise to what Zapata (2002) has called the “Iberization” of the world-wide cork business.

The “Iberization” process has had different implications for Spain and Portugal in terms of productive specialization. Portugal, which until then had led the semi-manufactured product market, proceeded to dominate the world-wide market of cork manufactures, in a period (coinciding with the civil war and Franco’s autarky in Spain) in which the Spanish industry had few possibilities of providing a response³. These changes of specialization were accompanied by important alterations in the location of the Portuguese cork industry, which took shape in the conversion of the administrative district of Aveiro into the largest cork manufacturing center of the world⁴.

One of the main contributions of this work is to take a step more in the explanation of Portugal’s ascent to world-wide leader in the business of cork manufactures and the consolidation of this leadership until the present time. We established as hypothesis that the formation and later development of the industrial cork (stopper) district of Aveiro⁵ permitted the gain of a competitive advantage of Portugal in the world-wide cork business. Both facts have coincided in time with the strong decline in the Spanish transforming industry, which occurred between 1929 and the 1950s⁶. We argue that the agglomeration of industrial cork firms in Aveiro has displayed the characteristics of an industrial district, according to the theoretical definition that has been given by Giacomo Becattini, which would have generated a competitive advantage to Portugal in the cork business⁷.

According to this author (Becattini, 1994) - and departing from the classic notion of the Marshallian industrial district - the industrial district is a socio-economic entity associated to a certain territory, in which a significant number of small and medium firms is centred, among which competitive and cooperative relations exist. The proposed model presents a certain rigidity because it is specified for the historical-economic reality of some Italian regions, in which productive sectors

2 These changes have been analyzed in several works; Zapata (2002); Parejo (2006); Branco and Parejo (2008); and Zapata and others (2009). In these, the reader will find a panoramic vision of the evolution of the cork business in Spain and Portugal in the two last centuries.

3 Branco and Parejo (2008); Parejo (2009b).

4 The administrative district of Aveiro is in the north of Portugal. It borders the district of Oporto to the north, Viseu to the east, Coimbra to the south and to the west, the Atlantic Ocean. It has an approximate surface area of 2,808 km² and a population of more than 700,000 inhabitants. It is interesting to emphasize that the capital of the district, the city of Aveiro, is little more than 50 kilometers to the south of Oporto. It should also be pointed out that, of the 19 councils that form the district, that of Santa Maria da Feira (where the cork industry is centred) is in the north of the district, being little more than 25 km from the city of Oporto. According to data from the Portuguese Statistics Portugal (*Instituto Nacional de Estatística*), today 75 per cent of the Portuguese cork industry is located in Aveiro, both in terms of employment and in number of firms. In concrete terms, there are at present some 800 firms which operate in the cork sector in Portugal, which produce some 40 million stoppers per day, of which around 90 per cent are manufactured in the north of the country; APCOR (2009: 23) (The original source is the *Boletim Mensal de Actividade Económica*, January 2007).

5 Given that, in the administrative district of Aveiro, the industry of cork manufactures was concentrated in the council of Feira (Santa Maria da Feira), we refer to “Aveiro cork district” or “Feira cork district”, because according to our criteria, they are the same thing.

6 Parejo (2006); Branco and Parejo (2008); Parejo (2009b).

7 Parejo (2006); Branco and Parejo (2008); Parejo (2009b).

with technical, organizational and particular institutional characteristics act⁸. According to Zornoza and Morales (1998: 16) there should exist a certain flexibility in the empirical application of the industrial district model, in such a way that other possible geographical and historical variables are taken into consideration.

In the case of the industrial cork district of Aveiro, which can be classified as a local system of work - in the terminology of Boix and Galletto (2006) -, specific characteristics are observable. Among these features is the presence of a great number of small industrial establishments specialized in the manufacture of natural cork stoppers, which coexist with a giant in the production of cork manufactures, Amorim & Irmãos, one of the largest industrial company of the sector in the world at present, which was set up in Aveiro in 1908.

The setting-up of the cork industry in the council of Feira obeys a historical process whose roots are situated at the end of the 19th century. Later, throughout the first third of the 20th century, factories were set up in Feira, and in the middle of the century there was already a considerable number of cork firms. In this process of geographical agglomeration, the state policies also played a determining role during the period of Estado Novo, in particular the Industrial Conditioning (Condicionamento Industrial) and the wage policy. As we shall see, these and other micro and macroeconomic considerations allow us to postulate that the appearance of the industrial cork district of Aveiro reinforced (together with other factors) the competitive advantage of Portugal in the world-wide market of cork manufactures. The formation of this industrial district would have allowed a greater efficiency in the production of cork stoppers due, mainly, to a more flexible productive organization able to respond in a more effective way to the specific characteristics of the demand's market. All this, under the protection of an institutional framework that, far from being a hindrance, favored (deliberately or not) the development of the industry in the north of the country, while institutionally supporting lower production costs in this area.

In this paper we have two objectives. First to provide empirical evidence of the formation and development of an industrial district in the council of Feira (Aveiro); that is to say, the formation and development of a geographical agglomeration of cork industries there fulfills the theoretical requirements that define the industrial district and as so, being able to generate a competitive advantage. In this context it is indispensable to know the factors that led to the location of the cork industry in Aveiro. With this objective it is intended to deepen the historical context of this industrial district, departing from the theory of the industrial location developed by A. Weber. A second objective is to provide empirical evidence of the Portuguese competitive advantage in the cork business, that had resulted from the creation of this district. The geographical concentration of cork stopper factories in these areas led to an increase of the efficiency of this branch of the Portuguese cork industry, giving rise to a progressive improvement in its position in the worldwide market⁹.

⁸ Becattini (2005).

⁹ This objective is also present in a work that we published recently in which several explanatory hypotheses of Spain's loss of leadership in the world-wide cork business are studied; Branco and Parejo (2008).

After this introduction, the paper is organized as follows. In the first part we make a review of the literature about the theoretical concept of industrial district. In the second part, we analyse the elements which, determined the formation of the industrial cork district of Aveiro. We concentrate our investigation on these elements because we understand that they shed light on the competitive advantage of Portugal in the business of cork stoppers. In the third part we analyse the influence of this industrial district in the ascent of Portugal to first world-wide power in the cork business. This is what leads us to conclude that the competitive advantage created by this district allowed Portugal to substantially improve its quota in the world-wide cork trade, not only through greater production but also by its greater competitiveness in terms of cost.

2. Industrial districts: a brief theoretical approach

The concept of an industrial district is associated to the territorial agglomeration of a significant number of companies in a certain territory (municipality, province or region). Nevertheless, this association is not sufficient to limit this concept, demanding other characteristics that, besides giving form to the district, confer to it an internal operating coherence which marks the difference from other concepts such as “enterprise network”, “industrial estate”, or even, “cluster”¹⁰.

Secondly, the firms located there are usually connected or related through a certain sector of activity (in our case, the manufacture of cork stoppers), because they are involved in the main activities of this sector, or because they render services or provide products necessary for this activity.

Thirdly, usually these are small and medium firms, in terms of number of employees per firm¹¹. In addition, the productive process of the sector of activity connected to the firms is frequently susceptible to be divided into different phases, in which the firms are specialized.

10 On the definition and characteristics of “cluster”, see Porter (1991). In Company (1994), which includes a part of Michael Porter’s work, there appears a reference to the cork “cluster” located in Santa Maria da Feira (Aveiro). To this end a book was recently published, titled “Amorim - clusters united by nature. O mundo do vinho e da cortiça”, which studies in detail the relationship between “clusters” of cork and wine in the North of Portugal; Santos (2009). But, are we really speaking of a “cluster”? ; we thought not. In general terms, the concept of “cluster” includes a set of organizations of a certain dimension whose interrelations generate or reinforce the competitive advantage, these industrial entities being providers, clients or subsidies with respect to the main economic activity of the “cluster”; Company (1994: 52). It is also the agglomeration (territorial concentration), as in the industrial district, that gives rise to the competitive advantage of the members of the “cluster”, and the advantage of the cluster as a whole. What differentiates both concepts is that the competitive advantage generated in the industrial districts results not only from the agglomeration of firms, but also from the “social atmosphere” that channels the relations among them, this aspect being totally absent in the “cluster”; Dei Ottati (2006). In Becattini (2006) other differences between concepts have been emphasized, and here one can highlight, in practical terms, the small and medium dimension of the firms in the districts and the larger dimension of these in the “clusters”, which, in addition, may not have an industrial nature (unlike the districts).

11 On the dimension of the cork industry in Spain and Portugal, Zapata (2009).

These three features, which denote the existence of an industrial district, can be stated empirically from several indicators¹²: first, that the branch of activity of the district hosts more than 10 per cent of the total employment of the region; secondly, that the economic activity in question carried out in this region represents at least 5 percent of the national employment in the area; and thirdly, that this area of activity has more than 10 firms with more than 10 employees.

Besides the above-mentioned, the industrial district reunites other characteristics which grant an internal coherence in terms of organization and operation, from which competitive advantages are generated. The study of the territorial agglomerations and their advantages has its theoretical origin in the seminal work of Alfred Marshall¹³. This new form of organizing the production arises in alternative to the enterprises' strategies based on vertical integration, horizontal concentration and in the diversification of products and of markets, associated generally to the large modern companies¹⁴. The agglomeration in a certain territorial space of a significant number of small and medium firms would produce external economies (or agglomeration economies) that give rise to a competitive advantage. These economies are a consequence of common access to a pole of productive factors, knowledge, services and infrastructures¹⁵. The possibility that these small and medium producers specialize in some of the phases of the productive process ends up harnessing these economies of agglomeration¹⁶, although for this the social division of labour must be viable technically and economically. That is to say, it must be possible to divide the productive process into phases, and the resulting products of each of these must be transportable between the firms of the district in a fast and competitive manner.

The above-mentioned would allow us to conclude that the formation of an industrial district is not due so much to the existence of a favorable endowment of productive factors, but, mainly, to the capacity to adapt the production to the demands of the markets¹⁷.

Marshall also introduced the concept of "the industrial atmosphere", understanding by this the set of social and productive elements present in the local system. Within this concept the studies of a group of Italian economists headed by Giacomo Becattini¹⁸ emphasized the social slant of the industrial district. The scheme presented by the Italian school is more complete and enlightening than the Marshallian one, although it requires, for the empirical establishment of the district, an arduous and complex work (for this it is necessary to study the social relations existing between the agents of the district, for example). According to this scheme, the industrial district is the result of the

12 Courlet and Pecqueur (1994: 50-51).

13 The bases of this study can be found in the *Principles of Economics* (1890), and also in a later work by Marshall, entitled *Industry and Trade* (1923)

14 Chandler (1996).

15 Harrison (1992); Sunley (1992); and Bellandi (2006).

16 Sunley (1992).

17 Corolleur and Courlet (2003)

18 The contributions of Becattini on the industrial district are synthesized in Becattini (2004).

geographical concentration of firms in certain areas, in which interrelated productive and social activities are developed. The productive activities are inserted in the local system (in which there is a predominance of small and medium companies), and we may identify this as a community of knowledge where the different agents share values, information and beliefs¹⁹, and where for this, relationships of a cooperative character, beyond the competitive ones, are established.

The economic reality cannot be disassociated from the social one, because both realities appear intermingled in space. The internal coherence of the district comes from the existence of relations between the firms, and these are frequently guided by custom; that is to say, certain behaviors reiterated in the community have created with time a set of unwritten values and rules which govern the activities of the community²⁰. The mere act of belonging to the community (to the district) allows the firms to accede to a “bank of shared information” that provides useful data to about the demand and the role that they must play in the district as suppliers.

The regulation of the industrial district should also be called into question. This, according to Bellandi (2006), is based on the market and the principle of reciprocity. From the part of the firms, this principle is incontestable because the fluid interchange of information already mentioned occurs among them, inherent to the stable and systematic relations which exist. Concerning manpower, the labour market is regulated by supply and demand, but it is also conditioned by relations of reciprocity, because the labour relations are based on mutual knowledge. In reality, a true solidarity exists among the agents, in spite of being concurrent to each other in the markets. In spite of this harmony, the administration of the different “networks” of the district (network of producers, network of suppliers, network of clients, etc.) can demand the intervention of external agents who influence the strategic decision-making process of the firms. For example, it would involve the existence of a remarkable level of public intervention in the district or the presence of a large-sized firm in it, be this a customer/client, supplier or producer. In the second hypothesis, the relations established between the firms of the district would be hierarchized, the larger firm(s) showing its (their) power²¹.

Having arrived at this point, it is worth specifying the origin of the competitive advantage in the industrial districts; that is to say, where does it come from? According to Dei Ottati (2006), this resides, basically, in territorial concentration and sectorial specialization. The interaction among the different elements mentioned above presupposes competitive advantages to the firms that are located in the industrial district against those which are not. The competitive gains can be from external economies produced by the reduction of labour costs connected to the formation and

19 Camisón and Molina (1998: 88).

20 Becattini (1992 y 1994).

21 The degree of influence of this (these) in the district will depend on factors like the number and characteristics of the suppliers and the clients. In this manner, the regime of governance of the district will oscillate between a system without a nucleus (that is, a system without hierarchy) and a nucleate system (where the district “is hierarchized” by the large firm, there being intermediate situations between these two systems; Storper and Harrison (1994: 171-187).

training of manpower. They can also arise from the reduction transaction costs as a result of a fluid circulation of information among the producers. In fact, these gains can appear through the free circulation of information, and also through the existence of a market of specialized labour shared amongst the firms in the district²².

Becchetti and Rossi (2000: 54-55) also place the emphasis on the competitive advantage generated by the existence of an efficient system (formal or informal) of information exchange which is able to replace the firms' internal shortage of resources. This system increases the flexibility of these firms faced with the fluctuations of demand and allows for specialization within the industrial district.

In the next section we shall demonstrate that the industrial cork district of Aveiro, by presenting some of the features described above, was able to provide Portugal with a competitive advantage in the manufacture of cork products.

3. The formation and the development of the industrial cork district of Aveiro

3.1. The location of the Portuguese cork industry: evidence of a geographical concentration

Being an industry depending on raw material and abundant manpower, the question of the location of the cork industry can be fitted within the parameters of the classical theory of industrial location developed by Alfred Weber, in his seminal work "Theory of the Location of Industries"²³. According to Weber, the location factors grant an economic advantage to the firms, that is to say, this advantage appears by the mere fact of choosing a certain location in alternative to another one. The firm, when deciding its location, manages to reduce its production costs, which makes the space factor an element to consider in the process. Supposing there is a rational behavior of the economic agents in its decisions and an homogenous space, Weber places the emphasis on the transport and manpower costs as being the determining factors of the firm's location decisions²⁴. The prevalence of one or another type of cost depends on multiple aspects, although one may expect that a greater coefficient work/capital will represent a bigger weight of the manpower costs in the choice of the firm's location²⁵.

22 Inchausti (1995: 117) follows the same line; for him competitive advantage comes from the training of the local human capital; from the economies of information and communication, these last ones very connected with the transaction costs; and from the specialization economies, that derived from the division of labour between the firms of the local productive system.

23 Weber (1929).

24 Weber (1929: 33). In concrete terms, Weber points initially towards the criterion of proximity to natural resources (sources which generate raw materials), and then adds the criterion of proximity to consumer markets and availability of manpower and lower wages.

25 Weber (1929: 113).

The transport costs depend on the characteristics of the raw material and the final product, that is to say, the relation weight/volume or weight/value of these and their perishable character. These circumstances can determine the proximity of the industry to the raw material's supply sources or to the consumer markets. It should be emphasized that the transport cost factor loses importance as technology improves (in the production process itself or in the logistics) and depends on the development of the markets. Besides this, Weber points towards a last location factor which is the economies or diseconomies of agglomeration, very opportune when one refers to industrial districts (as is the case). This concept is bound to greater efficiency in terms of cost than can be reached by a geographical concentration of firms²⁶.

What elements, then, can explain the location of the cork industry? And how did these evolve throughout the 19th century and the first half of the 20th?

There is no consensus when locating the first Portuguese factory of cork products in time and space. The most consensual idea points towards the establishment of a stopper factory in Santiago do Escoural, a village in Alentejo near to Montemor-o-Novo – at the beginning of the 19th century²⁷. This date is was considered incorrect by one of the most important experts in the cork business, Hernâni de Barros Bernardo, who placed the origin of the first manufacture of cork in Portugal at the time of the Marquis of Pombal²⁸. In fact, the Portuguese *Balanças de Comércio* (commercial registry records) already registered exports of cork stoppers in the year 1797²⁹, although it is very probable that these first experiences from the 1700s were, as was the case in other branches of industry, early experiences which failed shortly afterwards³⁰.

In the list of factories provided by the *Real Junta de Comercio* in 1788, there appeared an important range of industrial sectors in Portugal among which the cork industry was not present. It also does not appear in the statistical map drawn up by the same entity for 1814, where the listing of established industrial branches in Portugal had been extended to some other sectors³¹. It does not

26 Weber (1929: 124-127). Voth (2009) has studied the location of the cork industry and the changes which occurred in it in Germany, Spain and Portugal. For the case of Portugal, this work emphasizes the importance of the agglomeration economies, although it indicates other extraeconomic factors, which are difficult to quantify and not being considered by the classic theory of industrial location. When speaking of agglomeration economies we refer to the external economies (external to the companies and internal to the district) that appearing in the “agglomerate” firms, resulting from sharing infrastructures, information and services, insofar as this grants a greater flexibility in facing a changeable market demand. Another kind of agglomeration economies are related to the fact that the firms participate and share the local labour market (of qualified workers), and don't have to support their training and apprenticeship costs.

27 Sampaio (1985: 44).

28 Bernardo (1946).

29 Bernardo (1948: 25 y 42).

30 Mendes (2002: 35-37).

31 We do not know whether this was hidden in the section “other industrial branches” which includes the source; Caetano (1986: 33).

even appear in the list of Portuguese industries made by Balbi (1822) for 1821, and here there are around 50 branches³².

According to the *Inquérito Industrial* of 1881, the statistical presence of cork firms only takes place in 1852, with only 2 factories of manufactured cork products employing 57 workers, one of them in the district of Lisbon and the other in Portalegre³³. For 1880, the same source gathers 22 factories of cork planks and stoppers, which employed 1,612 workers, with the peculiarity that only 2 of them represented over 1,000 of these jobs; *Robinson* in Portalegre, with 560 workers, and the Villarinho & Sobrinho factory in Silves (administrative district of Faro) with an average of a thousand workers.

The numbers given by Jaime Salazar Sampaio for 1890 seem to us a more accurate account of the situation of the Portuguese cork industry at the end of the 19th century. This author registers 117 firms (50 factories and 67 small factories) and 2,539 workers in the sector in Portugal. Of these, around 4 firms (all of them small) were located in Aveiro, where only 7 employees worked; 27 firms (10 small factories and 17 factories) and 135 workers, in Évora; 15 firms (9 and 6) and 1,128 employees, in Faro; and 34 in the administrative district of Lisbon (14 and 20), with 950 employees³⁴. The remainder were distributed in the districts of Beja, Braga, Bragança, Castelo Branco, Portalegre, Oporto, Santarem and Viana de Castelo³⁵.

In fact, at the end of the 19th century the Portuguese cork industry was still very insignificant if it were compared with the Spanish³⁶, and it was concentrated in the regions of Alentejo and the Algarve, near to the great cork oak groves, being an industry essentially of preparation and not of manufacture. This means that, in the first phase of the industrialization of cork in Portugal, the proximity to the areas of greater production was a determining factor in the location of the firms working in the sector³⁷, priority being given to the setting up of these firms in the south and centre of the country, and also in a very disseminated manner, according to the degree of dispersion of the cork oak groves in Portugal. The specialization of the Portuguese factories in the preparation phase of cork justified their location near the source, because the transport costs also weighed in this decision.

32 See Balbi (1822), quoted in Caetano (1986).

33 It is necessary to consider that the statistical information contained in this source presents important limitations, essentially because only those with more than 10 workers had been considered as industrial establishments. For this reason, there certainly already existed cork firms in the period before 1852. In the cork sector, for example, this *Inquérito* omits the existence of Bucknall, one of the largest cork factories of the country at that time, located in Margueira (Setúbal).

34 It should be remembered that the district of Setúbal did not exist as such until 1926, being until then under the jurisdiction of the district of Lisbon. In any case, 24 of the 34 cork firms registered in the district of Lisbon were situated in areas which today belong to the district of Setúbal.

35 Sampaio (1985: 44).

36 Until 1900 there were some 1.250 cork factories in Spain, which employed around 34.000 workers; Zapata (1986: 259).

37 Bernardo (1945: 10).

However, as the Portuguese cork trade grew, the location criteria changed. According to Hernani de Barros Bernardo this gradual process had occurred since the end of the 19th century, when the transports were developed, giving rise to a second phase in which “the physical” proximity to the raw material ceased to be a determining factor and the priority became proximity to the coast, that is to say, to the main ports of exit of the manufactures (and of entry in cabotage of the raw material)³⁸. According to Bernardo (1945: 9), the distribution of the cork factories between end of the 19th century and the decade of the 1920s, while still maintaining a certain dispersion of the firms, pointed towards the location of the main part of the industry in the hydrographic river basins of the Tagus, the Sado and the Douro; three navegable rivers in their final section to the sea.

What does seem clear is that throughout the first third of the 20th century the industrial location in the centre of the country became more pronounced, the administrative district of Setúbal being converted into the reception centre of foreign investments, preparing the ground for the setting-up of great companies like Mundet (in Seixal), which became the most important cork factory in the world. Probably, the proximity to the raw material and the port of Lisbon was behind these strategic entrepreneurial decisions which, in any case, continued to be oriented towards the preparation of cork in planks. It should be stressed that only 24 of the 432 existing cork firms in the country were located in Aveiro, where only 165 employees worked out of almost 9,000 in the Portuguese cork industry as a whole³⁹.

Finally, there was a third phase (after the end of the 1930s) in which the process of the cork industry's concentration was consolidated, although now this also had consequences for the stopper industry. This industry tended towards setting up factories along the coastal zones, in particular near the country's most important ports. These zones also coincided with the main population nuclei, which was the reason why the abundant supply of manpower had to constitute an incentive at the time of taking the decision to locate. Access to navigable rivers and the proximity of mainstream railroad lines or good roads were also important factors in the decision-making process. To summarise, in this last phase, the Portuguese cork industry was concentrated in three zones: first, and especially, in the North zone, between the river Douro and the Vouga, where the council of Feira and a great part of the administrative district of Aveiro are geographically placed, and where most of the Portuguese transforming industry (mainly the stopper industry) are located⁴⁰; secondly, although

38 Bernardo (1946).

39 Caetano (1987). However, it must be pointed out that Santos (1997) states that during these years Amorim & Irmãos already had some 150 workers, therefore making the 165 cork workers mentioned by Caetano appear insufficient in number.

40 In section 3.2.3. information is given on Amorim & Irmãos which may help to understand better the location of the industry in this northern district.

less importantly, in the centre, in the basins of the Rivers Tagus and Sado; and thirdly, in the south, near the river Mira and the ranges of Monchique and Caldeirão⁴¹.

Given that the firm's decisions regarding its location regarded also a efficiency in terms of cost, it is worthwhile briefly reviewing the studies that approach the cost structure of the cork industry in the second half of the 20th century⁴². According to Sampaio (1977: 132), in the 1950s, the raw materials represented more than 50 per cent in this structure⁴³, followed by salaries (which represented 13 per cent), and fuel and electricity costs, together with "other costs", were around 11 per cent. Towards 1960, the weight of salaries was already around 27 per cent, and fuel, electricity and "other cost" (together), around 14 per cent. This last percentage highlights the lesser importance of transportation costs in the cost structure of the cork industry at this time⁴⁴.

Despite the fact that the weight of wages in the cost structure was far less than that represented by the purchase of cork, the effect of the wage variable with regard to the behaviour of export prices for cork products in Portugal has been proved empirically, being more significant than other variables such as the price of raw material. In an empirical study which attempts to clarify the impact of certain variables in the export prices of cork products, Guerreiro and others (1983) approached the analysis of three of these variables for the period 1960-1974: the price of the raw material; the cost of manpower; and the index of use of the productive capacity of the Portuguese cork industry. The authors concluded that the evolution of the wage rate is more explanatory than the other two variables regarding the behavior of the prices of cork exports, especially after the end of the 1960s⁴⁵.

Returning to the industry's cost structure, how should the figures be understood? It is possible to admit that the cost of the raw material (we simply referred to purchase of the raw cork, without including its transportation cost) is supported by all the cork firms, probably in similar conditions, regardless of the proximity or distance of these to the production centres. In other words, the acquisition cost of the raw material is the same for an industry located in Aveiro, where only 1 percent of the cork produced in Portugal comes from, as it is for another located in Setúbal,

41 Bernardo (1946).

42 Among these studies we can highlight Guerreiro and others (1983); Mira (1998); and also other more general studies, which, however, equally approach the question of the cost structure of the industry, such as Moura (1957) and Sampaio (1977 y 1985). Other information can also be taken from Sala (2003).

43 Almost 65 per cent is the figure quoted by the same author in Sampaio (1985).

44 Mira (1998: 379) concludes that the transport costs have a limited importance in the total costs of the cork industry; as much regarding the transfer of the raw material (in the most onerous case, the transport of the raw material can reach 7 percent in the cost structure) as those referred to in shipment of finished products to the market (this being between 0.3 and 3.5 percent of the production costs). In addition, these costs can be compensated for (as we have stated above) by the "saving" that can take place in other costs like those of information or wages in certain locations.

45 Guerreiro and others (1983: 472-473).

Santarem or Évora, these three districts being responsible for more than half of the Portuguese cork production⁴⁶.

The above-mentioned, while being open to discussion⁴⁷, can be sustained by the low vertical integration in the Portuguese' cork business. The ownership characteristics of the "montados" have not played in favor of vertical integration in the Portuguese case and the same happened in Spain. First, the dimension of the property (large properties) hindered access to these by the factory owners because small factory owners prevailed in Portugal, with little financial capacity to acquire properties or to pay high rents. Second, the social characteristics of the owners of "montado" was an obstacle against the processing of cork in the raw material producing areas. This results from the fact that the owners in the south (and also the centre, we might add), were generally absentee owners (perhaps like those in Estremadura and Andaluzia in Spain⁴⁸) and did not help the vertical integration in the sector⁴⁹.

In any case, it seems proven that nearly three quarters of the cost structure of the cork industry refer to the acquisition of raw material and wages. And therefore, it is also true that the cost of manpower (and its availability) has been a determining variable at the time of choosing the optimal location of the factories. In fact, in the particular case of the Aveiro cork industry, this factor seems to us especially relevant, as we will see further on.

Since Aveiro has been a pole of attraction of cork factories, one may question whether their agglomeration in this location displays the defining characteristics of the industrial district. The answer to these questions is approached in the following paragraphs.

3.2. Formation and development of the industrial cork district of Aveiro

3.2.1. Existence of an industrial tradition

Lucília Caetano studied the industry of the administrative district of Aveiro in depth in her doctorate thesis⁵⁰. The roots of this industry can be found at the end of the 18th century in a reduced number of textile factories and potteries (1788). In the mid-19th century, there was already a greater number of factories in these branches and other new areas of activity such as the tanning of skins,

46 Sampaio (1977: 78).

47 And it is so because there are significant regional differences regarding the price of cork in Portugal, certainly because there are also important differences in its quality among the different geographic regions of the country. Therefore, access to the raw material is not a question which all the firms (that is, all the locations) face in equal conditions.

48 In this respect, there seems to have been a strong parallel between Spain and Portugal; Zapata (1996).

49 Fonseca (1996: 52-72). As we will see, the case of Amorim & Irmãos is again exceptional, due to the fact that from the 1930s it had as its aim to guarantee the provision of raw material; section 3.2.3..

50 The main ideas of this doctorate thesis have been published in Caetano (1986). See also Ruivo (1982).

glass, and especially, in the paper-making industry⁵¹. Only then (in 1865, as we have stated) can one locate Aveiro on the map of the Portuguese cork industry, long after other central districts or those in the south like Évora, Faro or Setúbal⁵².

In fact, this Portuguese district had at the end of the 19th century an average rate of industrialization in the context of the country, having a great number of textile factories (tanning of skins, footwear and clothes, included), also an important number of small lumber industries and paper mills, and a very remarkable presence in the ceramics, glassware and mechanical transforming industries. There was industry, therefore, and industrial tradition, although the cork industry still continued to be an on-looker towards 1890, with just 4 small factories in operation⁵³.

This was, then, a district with a certain industrial dynamics, whose population had witnessed considerable growth around 38 per cent between 1864 and 1890⁵⁴.

This growth can be seen in the industrial sector of Aveiro in the period nearing the 1930s⁵⁵. Aveiro had a “high” degree of industrialization (in the Portuguese context), being only below the more important administrative districts of Lisbon and Oporto in industrial and economic terms and on a par with the “cork district” *par excellence* of the time, Setúbal. The industrial sector of Aveiro was constituted, approximately, by around 1,700 factories which employed more than 10,000 employees, in a universe (in the total of Portuguese industry) made up of more than 30,000 factories and 186,000 workers⁵⁶.

That is to say, towards 1930s there was already a considerable, diversified and significant industrial network in Aveiro compared to that which existed in the rest of the country, although the district still played a secondary role in Portugal’s cork business.

Certainly this industrial tradition in Aveiro was propitious to the development of the cork industry in this administrative district during the 1940s and 1950s. These decades saw the development of the conditions for the exponential growth of the number of stopper factories⁵⁷. The cork industry also grew in the centre (Setúbal) and in the south (Faro), but these locations carried out the

51 According to *Inquérito Industrial de 1881*, towards 1860 there were in Aveiro some 26 paper mills which employed 406 workers, very significant numbers within the national panorama of the Portuguese paper industry; Rodrigues and Mendes (1999).

52 Mendes (2002: 57).

53 Caetano (1986: 58). If Caetano’s figures are correct, the cork industry had towards 1890 a relative importance in the Portuguese industrial setting of around 3 per cent as regards the number of large factories, less than 1 per cent in number of small factories and around 3 per cent in the number of employees. In the particular case of Aveiro, the weight of the transformation of cork in industrial activity was inferior to that of the national average, because there were no large cork factories and only 4 small factories referred to, compared with 1.183 small-scale industries in different branches of activity in the district.

54 Caetano (1986: 64).

55 Caetano (1986: 91).

56 According to this data, the district of Aveiro hosted 6 per cent of the country’s factories, where slightly over 5 per cent of the Portuguese workforce in the secondary sector was employed.

57 See Caetano (1986); and especially, Matos and Pinto (2003).

preparation of cork products, unlike Aveiro. As Zapata (2002: 129) states, the cork district of Aveiro became the main world-wide producer of cork manufactures, relegating the areas traditionally associated to the sector to second plan, both in Spain (the case of Catalonia, more concretely Gerona) and in Portugal (the case of Setúbal).

Some indicators lead us to confirm the formation of an industrial cork district in Aveiro during the 1940s and 1950s, in line with the criteria established by Courlet and Pecqueur (1994: 50-51). First of all, according to the *Inquérito Industrial* of 1957-1959, Aveiro had 4,497 workers employed in the cork industry at this time, which represented around 22 per cent of the workers in Portugal in this branch of the industry (a percentage far superior to the 5 per cent that these authors require to recognize the existence of the industrial district), and more than 8 per cent of the workers in the manufacturing sector in Aveiro. This percentage did not reach the 10 per cent established by these authors as being necessary to reach this status, although 8 per cent became 41 per cent when one focuses only on the council of Feira, where the majority of Aveiro's cork industry was situated.

A third criterion referred to by these authors refers to the existence of a great majority of small (or very small) factories. According to the data contributed by Moura and others (1954: 127) for the 1950s, 538 cork factories (350 of them manufactured cork factories) of the 695 existing in the country, had less than 20 employees (77 per cent). In fact, this is the same percentage which the cork factories of the same dimension represented in Aveiro.

Finally, regarding the activity carried out by the factories in this district, without any doubt they were all oriented towards the manufacture of cork stoppers. To quote some examples, Aveiro only produced 5 per cent of the cork planks manufactured in Portugal while Setúbal produced more than 62 per cent. In fact, the Aveiro cork industry was mainly oriented towards stoppers, because in the 1950s, it already produced 35 per cent of the Portuguese production, and towards 1961, nearing 44 per cent, being already, at this time, more important than in the Portuguese stopper business⁵⁸.

Of all that has been mentioned above, it is interesting to draw a conclusion that can be argued to justify the "recent" location of the Portuguese cork industry in Aveiro: a certain economic activity can decide on a location that is penalised in terms of transportation costs (of the raw material or finished products) if this penalty (understanding by this greater transport costs) is compensated by a reduction in labour costs and/or by the existence of agglomeration economies. In any case, supposing that the factories in Feira were penalized in terms of transportation costs due to being "far from the cork and from Lisbon" cannot be a very well-founded premise; first, because the distance of the port of Lisbon could be compensated for (and had to be) by the proximity to the port of Oporto;

58 See numbers 366 (of April 1967, P. 67) and 390 (of April 1971, P. 67) of the BJNC. The statistics regarding the machinery used to produce cork stoppers (Jack planes, drills and polishing machines) reinforce what is stated in this paragraph. In this way, according to Lopes (1957), in 1955 Aveiro registered 1,186 Jack planes, and Setúbal 1,106. The number of polishing machines and drills was, nevertheless, greater in the latter district, which indicates the existence of a more artisan model of cork production in Aveiro.

and secondly, because the provision of raw material for the companies of the district was from the end of the 1930s organized and guaranteed, something in which Amorim & Irmãos played a fundamental role, as we will see in section 3.2.3.. Finally, also because institutionally a favorable atmosphere for the establishment of the cork industry in the region was created, in a double sense; on the one hand, as a result of the establishment of competitive wages for the cork industry in the north of Portugal; and on the other, due to the little effect of the *Condicionamento Industrial* on the main part of the cork industry. We shall deal with both of these issues below.

3.2.2. “Institutional aid”: a boost for the formation of the industrial district

3.2.2.1. The wage difference between the north and the centre/south of Portugal

The location of the cork industry in Aveiro could well be justified by the wage differential with respect to the south and the centre of the country - where the vast majority of the Portuguese cork oak groves are located -; and also by the existence of smaller transaction costs, this last being a result of the agglomeration of a great number of small factories in this area⁵⁹.

Matos and Pinto (2003) studied the cork industry of Feira (Aveiro) and concluded as follows: “It was an industry supported by overprotection of the state, low wages and the use of female manpower and apprentices (minors), which freed the owners from real investments in technology”⁶⁰.

To a large extent, the overprotection by the state can be understood from the above affirmation. It remains, therefore, for us to provide some data that demonstrate the existence of lower wages in the Aveiro cork industry, since we understand, as we argued in section 3.1., that the cost of manpower has been a determining factor in the decisions to locate.

Cordeiro (2002) analysed the issue of the wage differential explaining factor of the relocation of cork industry from the centre and south to the north of Portugal. These wage differences probably existed before the *Estado Novo*, however they were only institutionalised in 1941, when they were recognized by law by the Portuguese dictatorship⁶¹.

Table 1 presents the wage differences fixed in 1941 by the Portuguese dictatorship for the cork industry, for the 3 zones institutionally created. In all the categories, the advantage in terms of wage costs in the North, compared with the south and centre, is evident. This advantage was more marked in terms of male manpower and, depending on the area, in manual or mechanical work. In

59 Mira (1998: 381).

60 See Matos and Pinto (2003: 313-324). In this work the characteristics of the manpower occupied in the cork district of Feira are analyzed in depth.

61 It is a fact that a decree of 10th March 1938 had already established, exclusively, maximum wage limits for the cork industry in the administrative district of Aveiro; Matos and Pinto (2003).

the same way, the greatest differences were registered in the centre, where the wages were, in the most extreme cases, up to 50 per cent higher than in the north. Only in the case of mechanical work, the wage levels of the south were similar to those of the north, there being a difference of between 20 and 30 per cent in the case of manual work.

This had to represent a determining advantage for the northern cork industry, and, an incentive for the economic agents to establish their businesses in districts like Aveiro, Castelo Branco or Oporto. In addition during the 1940's, favorable demand conditions were formed in the international market.

TABLE 1

WAGE AVERAGES FOR THE PORTUGUESE CORK INDUSTRY DETERMINED BY DECREE LAW
OF 2nd AUGUST 1941 FOR THE PORTUGUESE CORK INDUSTRY (*)

(Index Numbers: North = 100)

	South (a)	Centre (b)	North (c)
Men (manual work)	131	147	100
Men (Mechanical work)	108	149	100
Women (manual work)	118	126	100
Women (mechanical work)	100	135	100
Auxiliary personnel (minors)	120	143	100
<i>Average salary</i>	<i>117</i>	<i>142</i>	<i>100</i>

(*) The average salaries result from the arithmetical average of the maximum and minimum wages fixed by the labour categories mentioned in the decree.

(a) Includes the administrative districts of Portalegre, Évora, Beja and Faro.

(b) Includes the districts of Setúbal, Lisbon and Santarém.

(c) Includes the districts of Aveiro, Oporto, Coimbra and Castelo Branco.

SOURCE: BJNC nº 36 (1941).

The Unionist Jose dos Reis Sequeiro, reproduced in Cordeiro (2002) stated the following: "(...) the cork producers of Lamas de Feira (Aveiro) were the worst paid in all the country, with a difference of 40 per cent or more. And this constituted an obstacle for the cork producers of the south" (and of the centre, we would say), who saw that it was impossible to maintain their businesses "because of the competition of the producers in the north, who had far cheaper manpower" (Our translation).

Above all, it appears to us that the wage differential lasted for a long period of time, giving a structural character to the advantage of the north against the south and centre in terms of costs⁶².

What reasons could be behind the wage differentiation fixed by the Portuguese authorities? *A priori*, it seems that the measure intended to compensate for the transport cost to take the cork to the factories in the north, where it was important to get the industry operating, given the abundance of unemployed manpower⁶³. Cordeiro (2002) presents some reasons argued by the industrialists of the north, like the existence of differences in the standards of living; the distance to the ports of embarkation for the manufactures, in particular to the port of Lisbon, which was the main exit of the exports manufactured by the factories in the north⁶⁴; or the inexistence of agglomerate factories in the north which consumed the waste material generated by the transforming industry of natural cork⁶⁵.

On the other hand, Bernardo (1946: 90) presents historical reasons (in particular, he speaks of historical “anarchy” in the question of remunerations), that would have caused the establishment of different wage structures in the three regions which could not be - in the author’s opinion - quickly equalized during the *Estado Novo*. On these historical reasons, Lucília Caetano has documented the reduced number of labour strikes which occurred in the district of Aveiro during the course of 19th to 20th centuries. In the particular case of the cork, this author does not register any strike in the district of Aveiro⁶⁶, which is significant, because in the national context of the cork industry there were 18 strikes in the period 1903-1912, this branch being the second most affected in Portugal by labour movements (after the textile industry). It hangs in the air, therefore, whether the low pressure from the Unions was an element which generated (or reinforced) the historical wage differences⁶⁷.

In any case, it seems reasonable to think that these differences could contribute towards the formation of a new “cork geography” in Portugal and, as a result, also to the shift of the Portuguese cork industry’s specialization from the preparation phase to the manufactured phase.

62 In Ruivo (1992: 229) the fixation of the cork industry wages by the State is analyzed by chronological order, based in *Diário do Governo*. This author shows that the wage differentiation retained at least a considerable margin until October 1968, the date of the last intervention considered in this work.

63 This is the reason given in Nascimento (1955).

64 Towards 1950, 78 per cent of the volume of cork products exported by Portugal left for the exterior through the port of Lisboa, and another 12 per cent from Oporto, the remainder of the Portuguese ports handling the other 10 per cent; Nascimento (1952: 10).

65 There are indications that the Industrial Conditioning was very restrictive with the opening of agglomerates factories of cork in the north of the country. Américo Ferreira de Amorim complains bitterly of this in an interview with Maria Filomena Mónica, published in Mónica (1990).

66 Caetano (1986: 73).

67 Probably, the absence of strikes in the Aveiro cork industry follows, simply, the already reduced number of these at this time, and not the demands of the workers of this district.

3.2.2.2. Another institutional boost: The *Condicionamiento Industrial* and the “home industry”⁶⁸

“The legislative, economic and political conditioning, put into practice in the last decades, far from being detrimental, were favourable” (Our translation)⁶⁹

From the previous paragraphs we can draw the conclusion that Aveiro constituted a pole of attraction for the setting-up of the cork industry. However it does not explain the reason for the reduced size of most of the factories located in this district. During the *Estado* a regulatory intervention of private investment was put in place since the thirties, which would establish a regime of previous authorization for the opening of new factories or industries: the so-called *Condicionamiento Industrial* (CI) – Industrial Conditioning -, only abolished in 1971, by Decree-Law nr 533 of 10th October.

The CI had already been instituted in the twenties, affecting certain branches of industry such as resin and canned fish⁷⁰. However, it only acquired a more general character (although its application was never universal) when Decree nr. 19354 of January 1931, was approved, which extended the CI to a long list of industrial sectors. Immediately afterwards, in March 1931, by the Decree nr 19409, the cork industry had become submitted to CI. This exempted from the control of the General Directorate of Industrial Services (Direcção Geral dos Serviços Industriais – DGSI - the organism responsible for handling the requests of the firms) the factories with fewer than 5 workers and which used no more than 5 HP of power; that is to say, the small cork factories. In the same way, “saved” from this regulation was the “home industry”, a legal figure whose definition did not take place until 1934 (Decree nr 23630 of 5th March)⁷¹.

How did the CI affect the cork industry? In accordance with Table 2, it appears that the application of the CI did not hinder the growth of activities in the cork sector. In fact, a great part of the factories in this sector were exempt from this, being classified as “home industry”. However, it is a fact that at least 50 factories (those classified as medium-sized industries) indeed had to submit themselves to the regime of previous authorization to enlarge and/or to improve their premises, or to begin new activities in them⁷².

68 Home work or cottage industry.

69 Bernardo (1946: 53).

70 Brito (1989).

71 When using the expression “home industry” we translate the expression literally. This expression was used by the Portuguese dictatorship in the legislation on the Industrial Conditioning to talk about the cottage industry.

72 Certainly some (or many) more, because a part of which comprised of the “small industry” exceeded the limits imposed by the decree for the exemption.

TABLE 2

NUMBER OF CORK FACTORIES IN PORTUGAL PER DISTRICT UNTIL 1940 (*)

	Aveiro	Évora	Faro	Lisbon	Santarem	Setúbal	Others	Total
Large industry	—	—	—	—	—	5	—	—
Medium industry	7	5	5	6	2	20	5	50
Small industry	19	13	83	2	6	92	4	219
- “Home”	19	9	22	2	3	44	2	101
- Other (a)	—	4	61	—	3	48	2	118

(*) According to the criterion of the Portuguese dictatorship, the industry of **manufactured cork** presented different forms depending on the tonnage of raw material to be transformed and the number of workers employed. Thus, it was distinguished between small industry (which transformed up to 500 tons of cork and where up to 130 employees worked; medium industry (between 500 and 1,000 tons of raw material and between 130 and 400 workers); and large industry (than 1,500 tons of cork transformed and over 400 workers)⁷³.

(a) Includes the number of “intermittent” factories which did not work the whole year long.

SOURCE: BJNC.

In short, up to 101 home industries existed in the Portuguese cork business until 1940. The majority was located in Faro(south), Setúbal (center) and north Aveiro(north), in this last district (in a majority compared with other types of factories).

However, what was a “home industry”? The definition of “home industry” used by the Portuguese government during the dictatorship was based upon 4 elements⁷⁴. In first place, it had to be an autonomous work, that is to say independent. This left outside the definition those cork producers who, in spite of owning their factories, worked for an industrialist who provided the raw material to them and remunerated them for the finished product. Secondly, the establishment had to be domiciliary, that is to say, the house of the cork producer or an annexed property. Thirdly, the activity had to be carried out by the cork producer himself and members of his family, without there being any limit to the number of “family” workers. Finally, there were also no concrete limits as far as the industrial equipment was concerned and this could be manual or mechanical.

The Law nr 1956 of 17th May 1937 gave continuity to the CI. This law was developed by the Decree nr 27994, which in its article 6 contemplated the application of the CI for those industries that produced merchandise whose destination was exportation (among this, cork). In line with what had happened until then, Decree nr^o 31403 of 18th July 1941 once again declared the home industry

⁷³ BJNC (1939, n^o 4).

⁷⁴ We used the definition given by the Portuguese dictatorship in a dispatch of 23rd November 1943, which profiled the definition given in the previous Decree Law, nr 23630.

exempt from the CI, besides other initiatives like the incorporation of the denominated “finishing machines” and some other auxiliary equipment⁷⁵. The decree in question modified the above definition for home work, now defined as a situation in which a foreman in the cork sector helped by people of his family until the second degree (of family relations) in a direct or collateral line, with a maximum of 3 employees and which had not more than 3 Jack planes or equivalent machines. At the same time, the restrictions to home industry disappeared but were not exempt from the obligation to obtain the operating licence from the Junta Nacional da Cortiça (JNC)⁷⁶.

The situation remained largely unchanged until 1947, the year in which Decree nr 31403 was revoked. In substitution, Decree nr 36279 of 15th May came into force. This introduced some modifications in the conception of home work. On the one hand, it widened the family ties for these workers until the 3rd degree in a direct or transversal line, not only in relation to the foreman but also to his wife); and on the other, it eliminated the quantitative restrictions for the machines, leaving the limit in the use a power of 10 HP.

In fact, the legislation on the CI was conducive to the growth of the cork industry, and in particular, to that in Aveiro. It is possible to see this through a study of the files of requests presented by the industrialists of the sector to the DGSI or, if so (when the requested initiative was free of CI, as was the case of all the “home” factories), from the obligatory authorizations expedited by the JNC⁷⁷.

The JNC issued at least 7 authorizations for the opening of home industries in 1941⁷⁸; 28 more in 1942; another 38 in 1943; 21 in 1944; 7 in 1945; 17 in 1946; 22 in 1947; 14 in 1948; and 7 in 1949. In total, at least 161 domestic factories were opened (or authorised to do so) in the district of Aveiro in the 1940s⁷⁹. And what is more interesting, the vast majority of these licences were granted for the opening of stopper factories.

It should be stated that the JNC also authorized, for the same decade, the opening of a great number of home industries in other districts. In Faro, for example, up to 74 new ones were authorized, and in Setúbal the remarkable number of 192 (31 more than in Aveiro). The difference

75 By “finishing machines” we mean those which participated in the finishing of the product, that is to say those used in polishing, marking, washing, parafining, cleaning, calibration, selecting and drying the manufactured items (cork stoppers and discs).

76 The organism responsible for the management of cork matters within the corporativist organization created by the government during the Portuguese dictatorship.

77 All the requests presented and solved were published in the BJNC for the knowledge of all those interested, and the same happened with the authorizations granted by the JNC (these last ones, either for the opening of establishments of family work, or for the incorporation of machines exempt from CI). For this text we have only reviewed the documentation regarding the decade of 1940, in which we think lies the heart of the question. In any case, we are preparing an ampler work in which we will examine the complete collection of the BJNC and where we will analyse this and other aspects in more detail.

78 We state at least, because the BJNC has a monthly periodicity and in some cases we could not consult the 12 numbers which make up the year.

79 BJNC (numbers 1-266).

was the fact that in these cases, the authorizations were essentially granted for preparing factories, and not for the manufactured industry, as was the case in Aveiro.

The above-mentioned is indicative that the industrial panorama of the cork sector in Portugal was beginning to change. In addition, far from the industrial change in Aveiro being merely quantitative, it had to have a qualitative aspect, in the sense of the incorporation of new machinery (better and in greater number) for the factories⁸⁰.

Returning to the authorizations issued by the JNC (for that machinery exempt from the CI), we have managed to register, only for Aveiro, up to 180 licenses granted for the incorporation of new machinery to the production process⁸¹; this is not a trivial question, if we consider that the industry of the main competitor (Spain) was having tremendous difficulties in these years (of Franco's autarky) to even supply itself with the most essential necessary auxiliary materials for its factories⁸².

Given this situation, it is not strange that, faced with this new orientation in the location of the cork activities in Portugal, critical voices should appear, such as that of Aldemiro Mira⁸³, for whom the "liberalizing" measures that were adopted would be disastrous for the industry, insofar as they would allow for a proliferation of a great number of factories "free" from intervention⁸⁴. The excessive spreading out of the cork industrial sector began to be a problem in many studies of the time⁸⁵. Moreover, it was a question which justified the setting up of a public commission to study it, whose final conclusion (of 16th June 1949) advised, among other things, the reorganisation (or return to regulation) of the "home industry"⁸⁶.

In a certain manner, Mira (1952) was right when he denounced the competitive advantage (generated institutionally?) of the home industry against the medium and large factories. Apparently, all the products of the "home industry" were negotiated and exported by exporting traders who sold them at far more competitive prices than those which the "the organized" industry (under the CI) was able to practise. The disappearance of a great number of factories (large, medium and small) was attributed to this, and also the fact that many others had left the manufacture of cork stoppers to concentrate strictly on the commercial facet of the business, that is in exporting the corks that they

80 On this question, the dates quoted by Matos and Pinto (2003: 308-313) are conclusive.

81 BJNC (numbers 1-266). The majority of these authorizations are for the incorporation of the "Jack planes" (manual and mechanical) for the manufacture of stoppers, which were already used in the industry after the mid-19th century and which continue to be used with few modifications.

82 Branco and Parejo (2008); Parejo (2009b).

83 Mira (1952: 301-302).

84 In relation to the exemptions under the CI, Mira stated: "All these concessions were taken advantage of to the full and even violated (...). It was then that the tragedy began which would progressively damage and ruin the organized industry"; Mira (1952: 301).

85 See, for example, Nascimento (1955). Sampaio also refers to this (1985).

86 The report in question, which is exhaustive, had as its title "Situação e perspectivas das actividades corticeiras. Relatório da Comissão nomeada para estudar a crise existente" and was coordinated by José Luis Calheiros Meneses, chairman of the JNC; Meneses (1949). It is worthwhile making a detailed analysis of this, which we are undertaking so as to include it in a work with a wider scope on state regulation of the cork industry.

had previously acquired to these home industries cheaper than if they they had produced them themselves⁸⁷.

In an article published at the time by Tavares de Almeida, also published in the BJNC, we find the answer to Aldemiro Mira and, thereby, the opposition to the report of June 1949⁸⁸. For Tavares de Almeida it did not make sense to establish institutional limitations on the “home industry”. The only limit imposed institutionally had to be its area of operation, that is to say the productive activity to develop. On this, Tavares defended that the “home industry” should be relegated to the exclusive production of cork stoppers and tiles (this was the case with most of these factories in the north), still enabling them to sell the waste materials generated when making the stoppers. Be it as it may, the open debate even reached the National Assembly and the dictatorship saw itself obliged to redefine the concept of “home industry” and also to change the bases of legislation regulating private initiative in the cork sector. In this way, in Decree Law nr 38783 of 16th June 1952 (which developed the new regulatory legislation of the Law nr 2052 of 11th March, from the same year) gave a new definition to home work: that which was carried out in the home of the factory owner or in buildings in annex to this, which was undertaken by family members who lived in “table communion” (eating at the same table) with the owner or his spouse.

Together with Decree Law nr 38783, the Decree-Law nr 39634 (of 5th May 1954) culminated in the new regulation completing the development of Law nr 2052⁸⁹. The most interesting aspect of the decree in question was the final reference to industries and activities submitted to the CI, amongst which “home industry” was absent, as was the case of the majority of the factories which produced manufactured cork. Only the agglomerates industry was subject to the regulation, and also a part of the preparing industry, the latter for reasons of hygiene and safety⁹⁰.

From 1954 onwards, the regulatory intervention became less common, concentrating on technical aspects and matters related with safety and health⁹¹.

3.2.3. The boost of a big company: The leadership of Amorim & Irmãos in the industrial district

87 We are trying to contrast the truth of these statements through the study of the inscriptions which the factory owners and exporters had to make in the JNC. These are all scrupulously published in the *Boletim da Junta Nacional da Cortiça* (BJNC), which provides an extraordinarily rich source of information.

88 Tavares de Almeida (1952).

89 In the report presenting the Decree nº 39634 the declaration of intentions of this document was summarised: “(...) the CI regime was limited to the situations specifically referred to in base III of Law 2052. At the same time, ample facilities with regard to the modifications of manufacturing equipment were granted and the restrictions for the transference of establishments were attenuated in force. In addition, and above all, it was decided to replace the regime of conditioning by that of demand, (...) of minimal conditions of technique, hygiene and security. (...) They were subjected to criteria of modernization and general improvement of the manufacturing facilities, substitution of machinery and installation of new equipment and the licences were not renewed in cases of recognised technical failings. The complementary industries of agriculture were also defined in ample terms and they were delimited (...) the consubstantial activities with the domestic, familiar and independent work. (...) Finally, the process of CI was simplified, suppressing dispensable formalities, reducing the terms to that which was strictly necessary for the defense of private interests (...)”.

90 BJNC (1954, nº 187).

91 Brito (1989: 185).

In section 3.2.2. we tried to place on the table (for further consideration) the contribution of the institutional framework towards the formation (or development) of the industrial cork district in Aveiro. But the analysis is incomplete if the study does not address the company Amorim & Irmãos; firstly for the role it has represented and still represents within the Aveiro cork industry, and secondly and more importantly, for its undeniable contribution to the generation of the competitive advantage of the Portuguese cork industry in the second half of the 20th century.

There are several aspects regarding the importance of a big company such as Amorim & Irmãos in the district. Firstly, the ability to marry the potential of markets with the internal production capacity of home work in the district⁹². Secondly, the role of facilitating the access of small and medium firms in the district to technical, productive, financial resources; for example, the access to raw materials, to information on foreign markets or even to credit. And thirdly, the attraction factor which the presence of this big firm represents in the establishment of related and similar industries.

Let us take as an example the fact that a firm did not have a commercial department, which is very common in the cork industry in general and, in the case of Aveiro, in particular⁹³. In this case, since most of the cork products are sold on the international market, the existence of this information system allows small businesses access to information on foreign markets at lower cost than if they had to create and maintain this type of department. Or also the existence of a local inter-business market - which Ruivo (1995: 349) calls "the square" because the place where this happens is the market square -, where the different stopper firms from the district buy and sell corks (of equal or different quality, and finished or not) to fit their supplies to the demand. For some medium and large firms this business can even be more important than their own internal production, besides being an ambience of fluid exchange of information and of the adjustment of the commercial margins⁹⁴.

At the same time, this big firm can constitute a great center of information and training of the industrial workforce, of which the remaining firms of the district can take advantage⁹⁵. In the case of the cork, this circumstance is then more than proven. For example, two employees of Amorim &

92 Becattini (1991).

93 For example, the 50 firms of Aveiro connected with cork that appear (for promotional purposes) in the lists of advertisers of BJNC No 264 (relating to October 1960), 10 of them did so only as manufacturers (thus, presumably did not have their own export department), the remaining 40 doing so as manufacturers/exporters. Throughout the country, the ones who advertised simply as manufacturers went up to 60, and 168 manufacturers-exporters, while 56 firms dedicated exclusively to exports were registered, with preferential locations in Lisbon and Oporto (none in Aveiro).

94 To register a discordant note, the information-sharing mechanisms cannot be so fluid in some aspects. We do not know what happens in the case of Aveiro, but in other cork districts, like the one of San Vicente de Alcántara (Badajoz), the contractual conditions for the acquisition of raw materials are a well-kept secret; that is to say, they are not part of the "information bank" shared by the firms, probably, because the price of the preparing industry (the majority in this district) is critical for their economic survival.

95 Brusco (1982), quoted in Corolleur and Courlet (2003).

Irmãos – (the present leading company in the world in this sector) took advantage of the experience acquired in this company to form the Suberus Group (also Portuguese), having managed to reach second place in the worldwide cork business. As these employees (Henrique Martins and Manuel Bastos) recognized in an interview carried out by Brito, Alves and Silva (2002: 97-81), its business conception was one that was learned from the “Great Master” in the “Great House” (this is how they refer to the Amorim family and their company), based on internationalization. It was about putting into practice what was learned and to always avoid direct competition in the markets with this business group, which had employed and trained them. It is not by chance that the Suberus Group also has established its head offices in Aveiro, in the same location as Amorim, its competitor and mentor.

According to the above-mentioned, it is possible to think that far from looking for proximity to the large patches of cork oak (located in the center and the south of the country), the cork industry of Feira was supported by a different organization of production, probably more efficient than in other locations, as it is inferred from the following words of Enrique Alves de Amorim: «(...) there is a difference of organization, methods, work and direction of the companies. The North “lives industry”, and the South “lives from industry”»⁹⁶.

The study of this firm is complicated, among other reasons, because it remains active to the present day, which makes it difficult to access internal sources of information within it. This and other reasons justify the comments that are made, which are superficial and not very novel, most of them based on Santos (1997)⁹⁷, the only work that exists on the group now called "Amorim Investimentos and Participações SA." This group, which began as a small stopper workshop set up in Vila Nova de Gaia, is today one of the most important in Portugal, participating, outside the cork business (which has a global leadership position), in highly dynamic economic sectors such as real estate and tourism.

The Amorim group's origins date back to 1870, the year António Alves founded a small cork workshop in Vila Nova de Gaia with the support of a capitalist family called Belchior. Its location, close to the town wharf, which shipped the famous port wine, sought to take advantage of the Portuguese custom of placing stoppers in vessels of wine sold overseas⁹⁸. Disagreements with Belchior caused friction and brought about the coming of the family to Santa Maria de Lamas (Feira), birthplace of Ana Alves Pinto, the wife of António Alves de Amorim⁹⁹. The coming to Santa

96 Cordeiro (2002).

97 This work consists of two volumes which trace the business (and social) history of the Amorim family from its origins in the late nineteenth century until today. This is a thorough job in terms of narrative details, and a very interesting one, but perhaps a little analytical and not at all critical of the business strategies followed by the "Amorim" over the past century.

98 Santos (1997: 15).

99 António Alves de Amorim was born in Santiago de Lourosa, a locality pertaining to the town council of Feira, district of Aveiro, near Oporto (30 km), it can be said that the origins of the family were in the administrative district of Aveiro.

Maria de Lamas in 1908 prompted the opening of a small workshop to manufacture stoppers, where some of the 11 children of the couple, together with half a dozen workers and several Jack planes, began to work. The business did not go badly at first, because in 1917 they moved the factory to the small village of Cortinhas in the same council, this new setting having 17 Jack planes and, secondly, because in 1922 Amorim & Irmãos was set up, the forefather of the company that has survived until nowadays, and a pillar around which this group has risen.

This company was founded in the March 11th of the year 1922 with a capital of 90,000 Escudos, the founding partners being the 9 of the 11 children of António Alves Amorim (who died shortly after, on October 31st of that same year) and Ana Pinto Alves: José, Manuel, Henrique, Américo, Ana, Rosa, António, Joaquim and Bernardina¹⁰⁰. With this second Amorim generation, a new dynamics was given to the company, which would be a reference in the cork industry in northern Portugal in the first instance and then the whole nation. This firm was the largest producer of stoppers in the north region until 1930, when it had about 150 workers and exported to markets around the world.

This is a unique case for several reasons. In the first place, it is significant that the Amorim's early experiences in Gaia and Lamas were in the stoppers business stoppers, when the vast majority of the Portuguese industrial activity was in the cork planks. This does not serve, in our criterion, to link the business success of Amorim to the advantages that usually accompany the first to arrive, because this description cannot be applied to this company in Portugal¹⁰¹. In fact, when Amorim begins to have a certain weight in the Portuguese cork industry (this is in the 1930s) several foreign multinationals operated in the Portuguese cork market, which had settled a short time before in the south of the River Tagus (close to Lisbon) in order to gain control of the market for cork planks.

Although Amorim's position was pioneering and consisted of acquiring a small store in Abrantes (district of Santarém), near the main area of cork oak and the railway line crossing Portugal from north to south. It was clear that the company's objective was to guarantee the supply of cork to avoid having to depend on large foreign companies established in the Centre region, and therefore, to avoid the strong speculation that was occurring around semi-manufactured. The small store acquired in 1935 had in 1939 become a factory for the preparation of cork planks, giving continuity to the business strategy launched four years before, a strategy of backward vertical integration that can be described as exceptional in the Portuguese cork business of the time.

100 The other two of the eleven children had already died. Of the nine, in 1917 Antonio had emigrated to Rio de Janeiro, Brazil and founded the company Amorim & Pinto, which still exists. The success of António carried his brother Joaquim to try his fortune in this country, and he founded another cork company in a partnership in São Paulo with Rogério Pinto Coelho, called Amorim & Coelho Lda.; Santos (1997: 49). Both António and Joaquim were members of Amorim & Irmãos, from a distance, until 1939, when they sold their shares to their brothers.

101 Though it appears that it was one of the first to arrived to the industrial cork district of Feira.

We think that this business decision was to overcome one of the weaknesses of the industry's location in the north: the physical remoteness of raw material. Santos (1997), narrating the story of the fire that razed the Amorim factory located in Lamas in March 1944¹⁰², states that much of the population of Vila de Feira lived around the house Amorim & Irmãos, supplying raw materials for dozens of home industries) for producing stoppers. As noted in the newspaper *Janeiro* at the time "many of the 200 factories in the area purchased with credit of one per cent from that company (Amorim) all the cork they needed (to produce)"¹⁰³. It is, therefore, due to business decisions that positively affect the development of the industrial district, to the extent that the supply of raw materials was also guaranteed to the firms located there. One must bear in mind that even, when the Lamas factory was inactive due to the fire, up to 7 trains a day arrived in Feira loaded with cork from Abrantes, and this was possible thanks to the efforts made by Amorim with the Junta Nacional da Cortiça (JNC) and the General Director of Train Transport, which gave priority to the transportation of cork to the region¹⁰⁴.

But if something could have been the key to the position of Amorim & Irmãos in the industrial cork district of Feira, it was the ability to adapt the supply of the district to the external demand, and this was the determining factor in the internationalization of the firm. In our criterion, this is where the main responsibility of the success of this firm lies.

Already in the 1930s (still with the second generation of the family) the excellent choice of distribution channels can be seen. For example, to access the French market, the most important in the world for cork stoppers, Amorim used the commercial agent José Carvalho da Silva, based in Paris, and with extensive experience in representing the wine houses of Oporto and Madeira in France. It is possible to say that the "channels of wine distribution of Oporto served to introduce the corks of Feira. This representative also opened the door for the company to other markets of Central Europe, being an important figure in the increased presence of Portuguese (or of Amorim) corks in the markets of the old continent.

But the internationalization strategy acquires its greatest significance from 1953, the year when there are changes to the shareholders of the company (the death of Américo Alves de Amorim), which led to the third generation. Armando and Amorim (1997) have studied this process of internationalization¹⁰⁵ in which at least four well-defined objectives can be observed. In the first place, renouncing the monoproduct and the monomarket, that is to say, diversifying production and

102 At this time, it was already the largest cork factory in the district of Feira, directly employing 321 workers and with a production capacity of 70,000 corks a day.

103 Santos (1997).

104 Santos (1997)

105 In an implicit form, although in great detail, this process is also present in Santos (1997), where the numerous trips realised by Amorim to all of Europe are registered, in particular to the USSR, which is unusual in the middle of the Cold War.

increasing the number of destinations. Implicitly, the objective was more domestic than entrepreneurial, possibly understood as overcoming the stage in which cork planks were the main export to several destinations such as the United States, England and Germany. The second objective was in the sense of maximizing the buying power of clients. In the third place, changing the productive and commercial specialization that had accompanied Portugal from the beginning, adding value to the products produced, and integrating and developing the cork industry in the country. This was the final step towards manufacturing. Finally, Amorim proposed not only to transform Portuguese cork, but also that from the south-west of Spain and North Africa; once and for all, to lead the commercialization process of cork. It is possible to sense that these objectives pierced deeper into the north than in the regions of the centre and south of the country, for it was in Aveiro where the transforming industry of Portuguese cork was put into operation.

Based on this philosophy, in the 1960s, the firm initiated a horizontal growth through the acquisition of firms in diverse cork subsectors and in different countries, while at the same time trying to complete the verticalisation of its business with the setting up of factories for granulates (to use the waste generated by manufacturing of corks) and of agglomerates. In this process, this industrial group is going to crash with the *Condicionamento Industrial (CI)* head-on, in particular in the foundation of agglomerate units, something that the Portuguese dictatorship had reserved for the central region of the country¹⁰⁶. In any case, the attainment of these objectives will end up representing on the one hand, the solidification and diversification of the industrial structure of the Amorim Group, and on the other, the multiplication of contacts with the exterior, the latter exemplified in the presence of the group in all geographical zones of the world. And all of this should affect the multitude of small businesses that surround the giant Amorim in Aveiro, as they provide to the multinational a complement (qualitatively and quantitatively) of supply which it needed to supply the high and diverse demand for stoppers in of the exterior markets.

In recent years the perfection of the internationalization strategy of the Amorim Group has come about: "The internationalization is needed to control distribution channels."¹⁰⁷. This internationalization has led to the establishment of "joint ventures" or cooperation agreements (and/or exclusivity) with major client firms. This has been the case, for example, of the agreement signed with the Austrian firm Schiesser in 1968, whose objective was to establish a triangular trade relationship with Eastern Europe and also the agreements signed with the firms Comatral (Morocco, 1972) and Samec (Spain, 1976), the latter with the intention to strengthen the Group's presence in the main areas producing raw material.

¹⁰⁶ See, again, Mónica (1990), and also Santos (1997).

¹⁰⁷ Armando and Amorim (1997).

Finally, and as the business returned to the manufacture of stoppers¹⁰⁸, the firm has prioritized the establishment of cork in consumer markets, principally in countries demanding sparkling wine, where it has tried to develop a strategy of proximity to the consumer, to better know the needs and preferences of the country's own culture towards the form of sealing these wines.

The results have been evident. Before the entrance of Portugal into the European Economic Community (1986), 85 percent of the group's sales were already made outside Portugal. On the other hand, at the same time, no country had a weight superior to 25 percent in any of the subsectors in which the company participated, and in addition, new consumer markets had also been created, reducing the dependence of the most relevant markets, quantitatively speaking. And more important, the weight of unmanufactured cork exportations of the sector, which by 1930 exceeded 70 percent, was around 10 percent in 1986, meaning that Portugal transformed three quarters of the worldwide supply of raw cork, while it produced little more than half.

Due to the fact that a great part of this has occurred in the cork district of Aveiro, or thanks to this, it makes sense to continue working in this line of investigation.

4. A competitive reality: the portuguese cork stopper industry or the Aveiro cork stopper industry?

As we stated in the introduction, one of the main aims of this work is to establish the relationship among the causes of two facts: the formation and development of the industrial cork (or stopper) industry of Aveiro and the ascension of Portugal to first power in the world in the business of cork manufactures, a position it maintains until today. Both of these developments are coincidental between themselves and with the strong decline of the Spanish manufactured cork industry, which took place, mainly, between 1929 and the 1950s¹⁰⁹.

108 V. Zapata (2002) and Parejo (2006).

109 Parejo (2006); Parejo (2009b).

TABLE 3
EVOLUTION OF THE QUOTAS OF DIFFERENT COUNTRIES
IN WORLD EXPORTS OF MANUFACTURED NATURAL CORK (+)

	<i>GERMANY</i>	<i>USA</i>	<i>SPAIN</i>	<i>FRANCE</i>	<i>ITALY</i>	<i>PORTUGAL</i>	<i>UK</i>	<i>OTHERS</i>	
1963-1965	0,7	6,3	14,8	1,0	0,7	57,5	8,7	10,3	100
1973-1975	2,2	4,1	13,1	1,7	0,4	73,9	1,1	3,5	100
1983-1985	3,4	2,5	7,7	3,8	1,0	79,2	0,8	1,6	100
1993-1995	3,8	0,9	8,1	3,2	3,8	74,6	0,2	5,4	100
2003-2004	2,3	1,5	11,2	4,0	3,4	73,7	0,0	3,9	100

(+) Calculations carried out in current dollars (USD). As stated, the manufactures of agglomerated cork were not contemplated, so the table refers fundamentally to the stoppers and natural cork discs.
 SOURCE: Parejo (2009a).

Regarding the second of these facts, some studies have revealed the change of positions between Spain and Portugal in the production and marketing of cork manufactures¹¹⁰. This exchange of roles meant the abandonment of the privileged position occupied by Spain since the start of production (mid-eighteenth century) benefitting Portugal, which could (and did) take advantage of the difficulties of supply in the Catalan industry in the troubled years of the civil war and Franco's autarky. By 1959, the situation was virtually irreversible, and for decades afterwards and until now has only served to reinforce the Portuguese domination, especially in the stoppers and discs of natural cork, as can be seen in the evolution of export shares in Table 3¹¹¹.

As can be seen from the 60s, Portugal has improved its market share and is now responsible for three quarters of world exports of these manufactures. Along with Portugal, other Mediterranean countries such as France and Italy have increased their presence in the world market, but their contributions are still insignificant.

On the other side is Spain, which has been unable to maintain its share in world exports of stoppers, which has fallen from almost 15 per cent in 1963-65 to just over 11 per cent in 2003-2004, and there are also other countries like the United States and United Kingdom (UK), where the cork industry has been reduced in recent decades to a minimum importance.

110 Including those mentioned above, Parejo (2006) Parejo and Parejo (2009b), in addition to Zapata (2002) and Branco and Parejo (2008).

111 A more complete analysis of the global export shares of cork has been made in Zapata and others (2009).

TABLE 4

THE GROWTH OF THE INDUSTRIAL CORK DISTRICT of Aveiro (1955-1983)
(Number of establishments and number of employees in the cork industry in various Portuguese administrative districts and relative weights of these)

	1955				1983			
	Nr Firms	Nr.	(c) %		Nr Firms	Nr	(c) %	
	(a)	Workers (b)	(a)	(b)	(a)	Workers (b)	(a)	(b)
Aveiro	145	3.594	20,9	19,2	352	8.344	61,9	59,0
Évora	51	790	7,3	4,2	28	177	4,9	1,3
Faro	148	2.271	21,3	12,2	31	258	5,4	1,8
Setúba	269	9.979	38,7	53,4	129	3.959	22,7	28,0
Others	82	2.047	11,8	11,0	29	1.404	5,1	9,9
<i>Total</i>	<i>695</i>	<i>18.681</i>	<i>100,0</i>	<i>100,0</i>	<i>569</i>	<i>14.142</i>	<i>100,0</i>	<i>100,0</i>

(a) Nr Firms: Number of cork factories

(b) Nr Workers: Number of employees in these factories

(c) % = Percentage of the total.

SOURCE: Sampaio (1985: 44).

With regard to Table 4, it is possible to correlate Portugal's gain in shares on the world market with the progressively larger presence in the economy of Aveiro in this sector. The figures provided are, in our view, conclusive. Regarding the number of firms between 1955 and 1983 (time limits are established by the source in Table 4) there was a substantial drop of these in Portugal. For example, the figure had gone from 695 in 1955 to 569 recorded in 1983. This reduction in the number of cork factories has been practically shared among almost all districts, except for that of Aveiro, whose number increased by more than 2 in the same period (from 145 in 1955 to 352 in 1983). On the other hand, there has been a very significant decline of the number of factories in the district of Setúbal (269 factories in 1955 and only 129 in 1983), Évora (51 in 1955 and 28 in 1983) and Faro (148 in 1955 and only 31 in 1983), probably due to the closure of cork preparation establishments (the majority of them) which could have been more marked¹¹².

The reading is not very different if we consider the data of employees in the sector. Here, too, there has been a significant drop in the number of those employed in the country in the

¹¹² There are several reasons that point towards this. On the one hand, one must bear in mind that the international cork trade in planks started to decline because of the cessation of cork production in the developed countries. And on the other hand, it should also be considered that a part of the Spanish cork industry came to help the Portuguese, for which the efficiency in this subsector should increase considerably, being a hindrance in the development of efficient factories. It should be borne in mind that at this time Amorim already had factories for the preparation of cork products.

transformation of cork¹¹³, which also occurred in most of the districts except in Aveiro, and which again presented the best behaviour, doubling the number employees in the cork sector between 1955 and 1983. No wonder, therefore, that the relative weight of the Aveiro cork industry has improved substantially from mid-century (it was 20 per 100 of the national total, approximately, towards 1955) to the moments prior to the entry of Spain-Portugal into the European Economic Community (when it was around 60 per cent).

Ultimately, much of the Portuguese advance in the world cork business is due to the development of manufacturing in Aveiro, at least there was a temporary parallel (almost millimetrical!) of both circumstances. Table 5 only serves to underline this more clearly, insofar as it shows that by 1985 a majority of the Portuguese stopper factories were indisputably already located there. The figures leave no doubt: 331 of 362 factories engaged in the manufacture of cork in Portugal were located in the district of Aveiro at this time (that is, more than 90 per cent) very close, in relative terms, to the current situation.

This does not detract from the fact that the majority of the preparation factories have remained in the districts of Setúbal, Évora and Faro, where the Portuguese cork (preparing) industry had been historically concentrated, that is to say where there were (and there are nowadays) the largest patches of cork oaks not only in Portugal but (with allowed by the underexploited Maghrebi cork oaks) but also in the world.

113 The fall of the number of firms and workers in the cork industry in the second half of the 20th century is a characteristic that Spain and Portugal share; Zapata (2009).

TABLE 5

PREPARATION INDUSTRY AND STOPPER INDUSTRY IN PORTUGAL TOWARDS 1985 (+)

	<i>Preparation Industry</i> (a)		<i>Cork Industry</i> (b)		(a) + (b)	
	Nº	%	Nº	%	Nº	%
Aveiro	4	2,9	331	91,4	335	67,3
Évora	26	19,1	(c)	(c)	26	5,2
Faro	22	16,2	7	1,9	29	5,8
Portalegre	6	4,4	(c)	(c)	6	1,2
Santarem	11	8,1	2	0,6	13	2,6
Setúbal	64	47,1	18	5,0	82	16,5
Otros	3	2,2	4	1,1	7	1,4
<i>Total</i>	<i>136</i>	<i>100</i>	<i>362</i>	<i>100</i>	<i>498</i>	<i>100,0</i>

(+) This numbers don't include the industry of cork agglomerates

(a) Establishments in the preparation industry of cork planks and the number and relative weight of total firms in the country.

(b) Transforming industries that produce stoppers and natural cork disks: number and relative weight of the total number of firms of the country.

(c) Included in the category "Others".

SOURCE: Barros, Graça and Pereira (1986: 105).

Given the above-mentioned, in our criterion we cannot talk of a transfer of the cork industry from the districts of the central and southern parts of the country towards the north as some authors have done. In fact, the industry that existed in those areas belonged primarily to the the preparing industry, and it continues to do so today. By contrast, industrial growth registered in Aveiro was based on the natural cork industry, which primarily makes stoppers and discs of this material, so a "new" industry in Portugal, and not a transferred one, has appeared and grown in this district almost at the same time as it did in the whole country, aided by a number of competitive advantages that were already present in its origin.

4. Conclusions

Everything that has been presented leads us to state that the initial hypothesis is strengthened: the development of cork in the district of Aveiro helped to create a competitive advantage for Portugal in the world cork market. The territorial agglomeration of a large number of cork factories, the participation of a large cork company and the existence of lower wages, allowed, on one hand, improvement of the adaptability of the Portuguese cork industry to fluctuations in international demand, and on the other, increased the competitiveness of Portuguese manufacturing in the world

market. This is all in a few decades when the threat of substituting cork by synthetic products was already very present in the market.

Historically, the cork industry, for its technical and economic characteristics, has survived in small factories, contrary to what has happened to the industry of agglomerates. In the same way, it has frequently appeared to be geographically concentrated, as was the case with the preparation industry of cork in planks. The latter was predominant in the Portuguese industrial cork sector until the Second World War, the location preferred being to the south of the River Tagus, where proximity to raw materials and the ports of Lisbon and Setúbal ensured greater efficiency in terms of costs. Given these location factors, Setúbal, Évora and Faro emerged as the major poles of attraction and fixation of the cork industry in Portugal, followed by, although to a lesser extent, other locations such as Lisbon and Santarem.

In terms of location, the predominance of the south and centre in the Portuguese cork industry was reinforced in the early decades of the twentieth century by the emergence of large foreign firms to in the south of the Tagus. These managerial decisions were trying to make use of the advantages of scale in a location characterized by a virtuous triangle: abundance of labor, proximity to raw materials and proximity to ports of exit to the exterior. So the north, while not lacking in cork, retained a scarce presence in the first quarter of the twentieth century, the result, mainly, of the longer distance to facilities producing raw materials.

It is in this context that we must situate the emergence of the Aveiro cork district in the 1940s. It was a district that was physically far from raw material, but was showing, among others, the advantages of proximity to the port of Oporto, a remarkable industrial dynamics (in other branches of activity), with roots in the nineteenth century; wages significantly lower than in the centre and south, and above all, a flexible response to a very unstable global demand, yet increasing as regards stoppers.

In our criterion, it is these last two points wherein the success of the Aveiro stopper industry lies: its competitive advantage. And it is a success which, probably, the Portuguese government made a significant contribution towards. On the one hand, it encouraged the proliferation of “home producers” of stoppers in the north (on leaving them out of the CI). This during the few years (the decades of 1940s and 1950s) in which the right conditions appeared in the world market helping the Portuguese supply of these products to grow (adjusting to the demand). And on the other hand, because it established (at least in an institutional form) the wage differentiation between the north (Aveiro) and central and southern areas (Setúbal, Évora, Faro, etc.), which later on could have been determining in the spatial configuration of the business, especially so in the context of trade liberalization and the reduction of the Spanish presence in the cork manufacture markets.

But far from these wage differences, the interrelationships among the large number of small factories should be explored and the 3 or 4 large companies in the district (we have referred to the case of Amorim & Irmãos, which is the one that we have developed, but also that of *Empresa*

Industrial de Paços de Brandão, which also had an important factory). This helped the adjustment process of the ditrict's production capacities to the changing conditions of demand.

Concluding, the effect of low wages and the existence of a flexible productive organization in the north (that is, in the Aveiro industrial cork district) enabled Portugal to enjoy a competitive advantage in the world cork stopper business, which prevented Spain, after its long autarkic lethargy, from being able to recover the leadership it once enjoyed in this sector.

Abbreviations used

APCOR: Associação Portuguesa de Cortiça (Portuguese Cork Association)

BJNC: *Boletim da Junta Nacional da Cortiça* (Bulletin of the National Cork Board)

CI: Condicionamento Industrial (Industrial Conditioning)

DGSI: Direção Geral dos Serviços Industriais (General Directorate of Industrial Services)

JNC: Junta Nacional da Cortiça

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