

The emergence of winemaking cooperatives in Catalonia

Jordi Planas (University of Barcelona)

Abstract: This article traces the emergence of winemaking cooperatives in Catalonia, one of southern Europe's main winegrowing regions. It analyses the stimuli that led to the creation of winemaking cooperatives in the early twentieth century and the difficulties that they faced in a depressed wine market, such as financing the construction of winemaking facilities, the governance and organization of cooperative services, and marketing their produce. We explore the reasons why many more wine cooperatives were created in Catalonia in early twentieth century than in Spain's other winegrowing regions and we try to identify the obstacles that hindered their further development.

Keywords: cooperatives, winegrowers, viticulture, wine sector, Catalonia.

1. Introduction

The first decades of the twentieth century were a critical period for the development of the wine sector in southern Europe. The replanting of the vineyards after the phylloxera plague had very high costs and the evolution of the wine prices did not allow growers to recover their investments. In fact, low prices became more the rule than the exception, as a result of chronic overproduction in the international markets.¹

The creation of cooperatives was a response to these low prices and rising production costs. Winegrowers could reduce their outlay by producing and marketing wine together, and could purchase essential agricultural inputs at lower prices – for example, chemical fertilizers and fungicides like sulphur and copper sulphate, which were necessary for the new vineyards. Wine cooperatives represented a way for small-scale producers to benefit from industrial processes, raising the quality of the wine and making the most of by-products; small growers could focus their energies on cultivating

their vines, and could pass on the costs of processing and selling the wine to the cooperative. Membership of the cooperative increased the quality of wines (by introducing improvements in its processing and conservation) and also the winegrowers' bargaining power in the market. Working individually, growers were forced to sell their grapes or wine even when prices were low due to their lack of cash flow or storage capacity; joint sale via the cooperative, on the other hand, secured more favourable prices and also by-passed the intermediaries, who had previously obtained most of the profits. What is more, cooperatives could also provide credit and mutual assistance to their members.

All these advantages stimulated the creation of wine cooperatives in the early years of the twentieth century. However, for many years the agricultural cooperative movement in Spain remained weak² in comparison with other European countries.³ As was the case with credit cooperatives,⁴ the first wine cooperatives were set up in Germany in mid-nineteenth century. According to Adrien Berget, in Europe the "true cradle of the cooperation in viticulture" was the Ahr valley in Rhineland.⁵ Its success led to its expansion in Germany, Austria-Hungary, Switzerland and Italy in the late nineteenth century. In France, before 1900 the attempts to set up cooperative wineries had been very few and not so successful, but they spread rapidly in the first decades of the twentieth century. In Spain it was only after the examples from Italy and France when the first initiatives were taken, and before the outbreak of the Civil War in 1936 there were only about one hundred winemaking cooperatives operating (by the 1970s the figure had risen to over 800).⁶ France, in contrast, had 827 wine cooperatives operating in 1939 and roughly the same number in 2000:⁷ winemaking cooperatives there developed much earlier than in Spain.

Within Spain, Catalonia was clearly an exception to the rule. In the mid-1930s, Catalonia had more than 80 winemaking cooperatives, that is, 70 % of all those existing in Spain. Some of them had magnificent wine cellars known as “wine cathedrals” because of their size and their fine architectural styles. Designed by renowned architects, today these cooperative wineries constitute a unique example of a specific cultural heritage of genuine architectural and artistic interest. But this was far from being the norm: very few cooperatives built in Catalonia in this period (11%) had a storage capacity of more than 15,000 hectolitres of wine, and the majority (56%) were small cellars able to hold less than 10,000 hl. As regards membership, the cooperatives were also small-scale: there were rarely more than two hundred members, and often fewer than one hundred. In the neighbouring French Midi, wine cooperatives were larger: their storage capacity averaged between 10,000 and 15,000 hectolitres,⁸ but some of them were much larger, and membership of two hundred or more was not uncommon.

The following analysis of the emergence of wine cooperatives in Catalonia is an attempt to fill a gap in our still limited knowledge of the early development of the cooperative movement in the southern European winegrowing areas.⁹ This article presents data for the first general survey of the emergence of the winemaking cooperatives in Catalonia, one of the main European winegrowing regions. No reliable statistics are available to trace the evolution of winemaking cooperatives in the early twentieth century in Spain,¹⁰ and so we have compiled data from different sources, including the archives of the Catalan official agricultural services, comprehensive searches of the agricultural and local contemporary press, and many published and unpublished local studies. Also drawing on information from case studies, the article analyses the stimuli that led to the creation of winemaking cooperatives in the early twentieth century and the difficulties that these associations faced in a depressed wine

market, such as financing the construction of winemaking facilities, the governance and organization of cooperative services, and marketing their produce. This inside view sheds some light on the apparent paradox of the emergence of wine cooperatives in Catalonia: though few in number, they nevertheless represented the vast majority of all those set up in Spain. As other scholars have highlighted,¹¹ the role of the state was a major factor. This might seem a striking finding, given that cooperative principles were precisely founded on the idea of self-help; but in fact recent literature on the cooperative movement has underlined that self-help and state help were not incompatible, but interdependent.¹²

The article is organized as follows. After this introduction, in section 2 we describe the emergence of winemaking cooperatives in Catalonia in the early twentieth century at a time of falling prices. We pay special attention to their geographical concentration and their uneven distribution according to the winegrowing specialization. Section 3 examines the reasons why many more wine cooperatives were founded in Catalonia than in Spain's other winegrowing regions, and section 4 focuses on the obstacles that hindered their development. The article ends with some brief conclusions.

2. Catalonia's early winemaking cooperatives

Between 1860 and 1880, Catalan viticulture experienced strong growth as a result of the destruction of French vineyards by the phylloxera plague. The crisis to the north had enabled Catalan wine producers to export large quantities of wine at highly profitable prices. However, in 1879 the phylloxera insect reached Catalonia, and in the 1890s the plague had completely wiped out the country's vineyards.¹³ The only way to stop phylloxera was to replant the vineyards with new vines grafted with American vines, which were immune to the insect. But the enormous effort of replanting did not

reap the expected rewards, because the emergence of new producers in the early twentieth century led to repeated crises of overproduction.¹⁴ Between 1890 and 1922, thirteen years of extremely low prices were recorded in Catalonia (1892, 1893, 1894, 1900, 1901, 1905, 1907, 1908, 1909, 1914, 1918, 1920, 1921), with wine being sold at a loss; this had not happened even once in the preceding 40-year period from 1850 to 1890.¹⁵ And during the 1920s and 1930s the wine prices showed no signs of rising: as Figure 1 shows, except for the exceptional period of World War I, wine prices did not recover their initial level and were especially low in 1905-10, 1920-25 and 1930-35. From 1890 onwards, wine prices followed a downward trend, while the price of other agricultural products such as wheat remained steady. But switching from growing vines to other crops was by no means easy.

[Figure 1 near here]

As had previously happened in France, one of the responses of the Catalan winegrowers to this market situation was to create cooperatives in order to cut their costs by introducing collective production, improving the quality of the wine, and achieving higher prices through joint sale. Cooperation also enabled winegrowers to pay less for chemical fertilizers and anticryptogamic preparations such as sulphur and cooper sulphate, which they needed to prevent mildew and other new vine diseases. Membership of a cooperative not only meant that winegrowers were guaranteed the sale of their produce, but it also entitled them to receive loans until the wine was sold. When the “golden age” of wine prices (1870-1890) came to an end, the only way to face the new market situation was to industrialize the winemaking process, and for small winegrowers the cooperatives represented the only feasible way to do so.¹⁶

In Catalonia, the first experiment in collective winemaking took place in the 1890s in the village of Barberà, where some small-scale growers grouped together and rented cellar facilities and equipment for winemaking. Later, in 1901, they built their own winery, which was enlarged in 1911 and again in 1929 to reach a capacity of 18,000 hectolitres.¹⁷ At the time, several agricultural cooperatives sprang up in Catalonia to allow their members to purchase chemical fertilizers and other agricultural inputs, but very few were able to build a wine cellar in order to produce wine.

[Figure 2 near here]

Figure 2 shows the number of cooperative cellars built in Catalonia before the outbreak of the Spanish Civil War in 1936. In the absence of reliable statistics for this period, the figure is based on a thorough research on archive sources, contemporary agricultural journals, and local studies that provide useful data.¹⁸ In Spain no specific legislation was passed to regulate producer cooperatives, and most of the winemaking cooperatives were created as specific sections of already existing agricultural syndicates. Consequently, wine cooperatives were not specifically registered associations, and it is impossible to establish the exact number of foundations during the period analysed. Although some cooperatives started to produce wine using rented cellar facilities, they soon built their own cellars. This is the reason why we take the construction of cooperative cellars as the best indicator for assessing number of the winemaking cooperatives in operation.

Figure 2 shows that only 14 cooperative cellars were built before 1917; but over the next eight years (1917-1924) 52 new wineries were built – that is, nearly two thirds of all the wine cooperatives founded in Catalonia in the entire period between 1900 and 1936 and half of the number founded in Spain. In the next twelve years (1925-1936)

only 17 new winemaking cooperatives were built; some were planned, but could not be finished before the outbreak of the Civil War. This lag between the early crises of overproduction (1905-10) and the spread of the cooperative wineries bears witness to the difficulties facing the winegrowers who wanted to create a winemaking cooperative, as we will see in section 4.

There are three main reasons for the sudden burst of foundations in this second period (1917-1924). The first was the difficulty in obtaining chemical products like sulphur and copper sulphate which were needed to fight mildew and other vine diseases, due to the market distortion caused by World War I. A mildew attack in 1915 meant the loss of nearly all vine harvests¹⁹ and prompted winegrowers to group together in order to purchase these chemicals that were difficult to find but absolutely essential for the new vines. Secondly, the social unrest and the subsequent mobilization of farmers (especially winegrowers) during these critical years led to the foundation of many agricultural associations.²⁰ Some of the cooperatives were founded to defuse social tensions and to prevent the creation of farmers' unions, which were feared by the landowners. Consequently, in some municipalities two cooperatives were founded – one by the small producers, and the other by priests or well-off landowners – which offered similar services.

The third and most crucial factor was the contribution of the Catalan government, which compensated for the lack of response from the central Spanish authorities. In 1914 an autonomous government was set up in Catalonia, and three years later certain areas of agriculture came under its jurisdiction. A modern agricultural policy was introduced and, in 1919, a special service was set up to promote the creation of agricultural cooperatives.²¹ This unit launched an intense campaign in the rural areas of Catalonia to encourage the formation of agricultural and winemaking cooperatives, and

provided technical support, information and advice regarding their foundation and management. As we will see later, this support was a critical factor in explaining Catalonia's exceptional position inside the Spanish context.

In 1924, following Primo de Rivera's *coup d'état* the previous year, the official agricultural services of the Catalan government were closed down and did not reopen until 1931, after the proclamation of the Second Spanish Republic. The removal of the Catalan government under the Primo de Rivera dictatorship clearly affected the creation of wine cooperatives. As Figure 2 shows, between 1925 and 1930 only two new associations were set up, while under the Second Republic (1931-1936) 15 new winemaking cooperatives were created, and when the Civil War broke out in 1936 twenty other cooperatives were about to start building their wineries.

[Figure 3 near here]

Figure 3 shows the unevenness of the distribution of the winemaking cooperatives in Catalonia. They were highly concentrated in the province of Tarragona, which was not the most specialized in winegrowing; the areas most heavily dependent on wine production were in the province of Barcelona, which had the lowest ratio of wine cooperatives. It has been argued that in the most specialized winegrowing area the merchants' networks were more firmly established and the major landowners refused to participate in wine cooperatives – two major obstacles to the development of these associations.²²

But, in our view, there were other more important factors that contributed to the uneven distribution of winemaking cooperatives in Catalonia. One was the question of landownership: that is, whether a particular area had a large proportion of small

landowners among the winegrowers (who would have a greater incentive to participate in cooperatives) or, on the contrary, a strong presence of large landowners. In the province of Barcelona, for instance, most of the land belonged to landlords and the vineyards were cultivated by sharecroppers (*rabassaires*). As we will see in section 4, cooperation was difficult in a context of social division where the atmosphere of trust needed for such a venture was sadly lacking. In contrast, in the province of Tarragona most of the winegrowers were small landowners.

A second important factor is the degree of specialization in viticulture. While in the province of Barcelona most winegrowers were relatively specialized and had their own winemaking facilities, albeit modest, in the province of Tarragona winegrowers also grew other crops (wheat, olive trees, hazel trees, carob trees) in the same plot, and produced no wine themselves. In this case, the incentives for creating a wine cooperative were much higher, as the cooperative was not only the best way to reduce production costs and improve wine quality, but it also enabled members to start making wine themselves. They could thus add value to their product and avoid depredation by merchants, since the grapes had to be sold immediately after the harvest.

Looking at the factors explaining the growth of cooperatives prior to the Second World War, Catalonia has been described as a “notable exception” to the general observation that cooperatives appeared late in regions with high levels of sharecropping.²³ But when we examine their distribution more closely and see the predominance of the province of Tarragona and the strong contrast with the winegrowing areas of Barcelona, we have to conclude that it was not really an exception at all. Only in the province of Tarragona do we find a cooperative ratio that is comparable to the French Midi, the European winegrowing region with the highest presence of wine cooperatives.²⁴ Most of the cooperatives were created in the second

period (1917-1924), but it was also in this area where the earliest winemaking cooperatives were built, and where, in 1980, the majority of wine cooperatives were still concentrated, in a clear example of path-dependence. This finding indicates the importance of successful previous experiences to the spread of cooperatives, which was also a critical factor for the development of the cooperative movement: as a contemporary observer noted, “there is nothing so important as the example to transmit the spirit of partnership”.²⁵

3. Incentives for creating wine cooperatives: Why was Catalonia different?

In the early twentieth century, before the outbreak of the Spanish Civil War, Catalonia was home to 70 % of all wine cooperatives built in Spain. This figure was clearly far above the proportion of its vine area, because Catalonia possessed only 20% of Spain’s vines and about 30% of wine production. La Mancha, an inland region that was becoming increasingly specialized in winegrowing, devoted a larger area to vines (30% of all Spain’s vineyards) and produced nearly as much as Catalonia (25% of the country’s total wine production), and the eastern regions of Valencia and Murcia had nearly the same extension of vines (19%) and 15% of Spain’s production. However, very few wine cooperatives were founded in these regions. In La Mancha a winemaking cooperative had been created in Campo de Criptana as early as 1901; but no one followed its example until 1928, when three other winemaking cooperatives were founded in Socuéllamos, Tomelloso and Villarrobledo, and the great expansion of wine cooperatives only took place after the Civil War. In the region of Valencia, the first winemaking cooperatives were founded in 1918, in Torís, Cheste and Pedralba, and it was not until the creation of the Winegrowers Federation of Valencia in 1924 that a campaign to create wine cooperatives was launched in the region. In spite of this, no

more than ten wine cooperatives were operating when the Civil War broke out. In Navarre, a region with a solid Catholic cooperative movement, the first cooperative winery opened in Olite in 1911; it was followed by the wine cooperatives of San Martín de Unx (1914 and 1916), Villafranca (1917), Cintruénigo (1920), Olite (1920) and Pueyo (1921), but until the 1930s very few were well established and some of them were very short-lived.²⁶ In other Spanish regions like Aragon, La Rioja, Galicia and Mallorca winemaking cooperatives were few and far between. In conclusion, then, it was only in Catalonia (mainly in the province of Tarragona) that these organizations had a real significance in the first decades of the twentieth century.

[Figure 4 near here]

In this section we try to account for Catalonia's atypical behaviour inside Spain as a whole. One of the reasons for the earlier development of wine cooperatives in Catalonia was its proximity to the French Midi, where these cooperatives spread very fast in the early years of the twentieth century.²⁷ Wine cooperatives were an attempt by small growers to remain competitive in the new situation of winemaking after the phylloxera plague, with the emergence of a modern wine industry and organized trade.²⁸ France was not only Europe's largest wine producer, but it had also been the first country to suffer from phylloxera and to introduce institutional innovations in its aftermath.²⁹ Catalan winegrowers were well aware of the attempts in the neighbouring winegrowing regions of France to stave off the ecological, economic and social crises of the late nineteenth century, and followed the organization of the French cooperative movement very closely: many of them visited the winemaking cooperatives over the

border in the Midi, which were taken as a model to imitate and were described in the Catalan agricultural journals and other specialized publications.³⁰

Another factor behind the emergence of wine cooperatives in Catalonia was social capital, which is defined as one of the positive outcomes of civic associations.³¹ It has been suggested that the pre-existing stock of social capital played an important role in the emergence of agricultural cooperatives in Spain, in the form of the social networks built up around common lands and communities that shared irrigation systems.³² Personal links built around the pre-existing rural associations played a similar role by facilitating coordination, decision-making, and resource mobilization and management in most of the winemaking cooperatives, especially if we take into account that most of the winemaking cooperatives were created as specialized sections of pre-existing agricultural organizations and never broke away from the larger institution.

In contrast to other Spanish regions, in the early years of the twentieth century Catalonia had already a dense network of associations facilitating cooperation in rural areas, especially the province of Tarragona.³³ Moreover, it was in Catalonia where the winegrowers started to mobilize in order to lobby the government at the time of the wine crisis.³⁴ The strong links between the cooperatives and the winegrowers' associations provided social interaction and cohesion, as also happened in France.³⁵ In Catalonia, the leaders of these winegrowers' associations encouraged the creation of agricultural cooperatives in every municipality and, seeing the French government's support for cooperatives, they called on the Spanish state to provide them with technical and financial backing. The winegrowers' organizations of Valencia and La Mancha also promoted the creation of wine cooperatives, but these federations were created in the 1920s, much later than the Catalan organization, set up in 1910.

Unlike its French counterpart,³⁶ the Spanish government provided little support for the creation of wine cooperatives, in the form of either funding or technical assistance. A bill presented in Parliament to offer subsidies and loans to winemaking cooperatives in 1914 was rejected. No specific legislation was passed to encourage the creation of producers' cooperatives, and after the approval of the Agricultural Syndicates Act (1906), which aimed to promote the creation of agricultural cooperatives,³⁷ the Spanish government was even reluctant to let wine cooperatives enjoy the benefits of this law, as the first wine cooperative founded after this date would soon discover.³⁸ This inertia on the part of the central government has been identified as one of the main reasons for the differences in the performance of the early wine cooperatives in Spain and France.³⁹

In fact, the Catalan “exception” mentioned above is due to a large extent to the fact that Catalonia was the only Spanish region to offer substantial official support to wine cooperatives. This support came from the Catalan autonomous government, set up in 1914. The government tried to introduce a modern agricultural policy, and producers' cooperatives were one of the main elements of its attempts to do so. An official service was created to promote the creation of agricultural cooperatives, and another one was set up to provide technical and financial assistance to wine cooperatives during the construction of their cellars and also when they started production. This service supervised the designs for building new cooperative wineries and for expanding the existing ones, and offered help for obtaining the machinery required. It also provided assistance with the winemaking process itself: this was particularly important, because the small-scale producers lacked the skills needed to produce wine in large quantities and the wine cooperatives could not afford to employ specialists.

The official agricultural services of the Catalan government were closed down after Primo de Rivera's *coup d'état* in 1923, but they were reopened in 1931. In 1936, after the outbreak of the Civil War, the government assistance went further: the Viticulture and Enology service oversaw the winemaking process in 84 municipalities. In 64 of these localities (76%) winemaking was carried out entirely by cooperatives, while in the others the process was shared by cooperatives and individual winegrowers.⁴⁰

4. Obstacles to the development of the wine cooperatives

In the last section we saw that many more wine cooperatives were founded in Catalonia than in other winegrowing regions in Spain. Even so, they represented a small proportion of the agricultural cooperatives existing in Catalonia (more than five hundred agricultural syndicates in the 1930s)⁴¹ and, compared with another major winegrowing region like the French Midi (with 340 wine cooperatives built during the interwar period)⁴², their numbers were modest. Many attempts to create wine cooperatives fell through, some even after the beginning of the construction of the wine cellar. In this section we will focus our attention on the obstacles that hindered the development of wine cooperatives. Some of them were related to general problems that were common to all these cooperatives, while others were more related to the economic and social context of the winegrowing region that we are analysing.

One of the major difficulties facing winegrowers who wanted to create a winemaking cooperative was the securing of funds for the initial investment. In Catalonia, the cost of building a wine cellar with a storage capacity of 10,000 hectolitres and the machinery to produce this volume of wine was estimated at 100,000 pesetas.⁴³

Taking into account a membership of about 160 (a figure that many wine cooperatives did not in fact reach), this represented an initial investment of more than 600 pesetas per member (a contemporary estimation suggests a range of 338 pesetas to 1,936 pesetas)⁴⁴. This was a considerable sum for small winegrowers, who earned little more than agricultural workers – seven pesetas a day in the 1920s.⁴⁵ What is more, the cost of the building mentioned was calculated before the significant increase in wage costs in the following years, while wine prices (that is, the winegrowers' main revenue) continued to fall. Such an investment required external resources, because wine cooperatives also had to offer their members a fair price for their grapes. In addition, as members were mainly small producers with limited means, they were hard pressed to find credit in the private sector, and the lack of financial aid meant that most of the plans came to nothing.

The example of France suggests that financial support from public institutions was critical to the development of wine cooperatives. In France, cooperatives could obtain long-term public credit at very low interest (1.5 - 2%), but in Spain they could get credit only from private banks, at a much higher rate (6%); the central bank's policy was so restrictive that few cooperatives applied for public backing.⁴⁶ This lack of support from governmental institutions is the main reason why very few wine cooperatives were created in early twentieth-century Spain, and it has been argued that public financial assistance was also the main reason for the later expansion of wine cooperatives between 1950 and 1970.⁴⁷

The Catalan government tried to provide financial assistance, but its resources were limited. Long-term loans for building cooperative facilities could be obtained from a public savings bank (*Caixa de Crèdit Comunal*) at a low interest rate, under certain conditions: loans could not exceed 50% of the amount invested, and annual repayment and the interest could not exceed 75% of the average net revenues of the cooperative.

Notwithstanding, only ten out of the thirty cooperatives that applied for the loans eventually secured them. The total amount received by agricultural cooperatives was 757,250 pesetas, that is, 17.6% of the public saving bank's capital.⁴⁸ Around 60% of these loans (447,100 pesetas) were received by wine cooperatives, but with this total sum no more than four wineries could be built. Comparison with the credit provided by a local private bank highlights how limited the contribution of the Catalan government actually was: the Bank of Valls provided loans to 16 cooperatives in the southern counties of Catalonia amounting to more than three million pesetas.⁴⁹

Wine cooperatives not only required a high initial investment, but also a high degree of discipline and a commitment to collective action – much more than cooperatives that supplied production factors. Initially, winegrowers were involved in the building work,⁵⁰ but the management of wine cooperatives called for a much higher level of discipline than other agricultural associations. First, members had to stay in the cooperative at least until the initial investment was repaid. Second, most cooperatives had specific rules obliging members to hand over all their produce, in order to avoid free-riding (that is, winegrowers sending their best grapes directly to the market and giving the cooperative only the produce that they could not sell elsewhere for higher prices). If these rules were not enforced, the cooperatives would produce wine of a lower quality and, at the same time, underuse their facilities, thus pushing up the production costs for the rest of the members. Cooperatives that only supplied fertilizers and other agricultural inputs did not require a similar commitment nor a high initial investment, and this is the reason why many more were set up.

On the negative side, the greater commitment to the cooperative meant a loss of entrepreneurial freedom, as winegrowers were unable to take their own economic decisions.⁵¹ This was one of the reasons why some large winegrowers refused to join

the cooperatives. For small growers with limited means (and, thus, a weak position in the commodity chain), the advantages of participating in the cooperative could offset this loss of freedom; but this was not the case for the larger concerns. One of the problems was the quality of the wine. Small growers unable to purchase adequate equipment became more competitive by participating in cooperatives, and, as we have seen, wine cooperatives were created more easily when winegrowers had no facilities for winemaking. But for large growers with winemaking skills and cellar facilities, membership of the cooperative meant a fall in quality: the cooperatives took grapes of different qualities, and even though their members were expected to take good care of their vines, it was difficult to control the methods of cultivation and difficult also to reject low quality grapes. The limited control that the managerial board had over the members' methods is reflected in the meeting reports, when the leaders of the cooperative asked members – in fact, pleaded with them – to take better care of their vineyards, to make sure that the grapes they brought to the cooperative were of the required standard.⁵²

The cooperatives improved the traditional technology used by the smaller growers, though of course this improvement had certain limits. Firstly, modern machinery required a considerable investment, and the cooperative had to recoup the money spent while at the same time paying a fair price to members for their grapes. Therefore, many cooperatives bought machinery that was less expensive, easier to operate and occupied less space, even though it did not obtain the best results.⁵³ The lack of technical knowhow also held back the attempts to improve quality, because, as mentioned above, members could not afford to pay expert professional staff, especially when the markets were depressed and prices were low. Government support was crucial,

at least to monitor the production process; but the Catalan authorities did not have the resources to pay for the services of enologists for all wine cooperatives.⁵⁴

Moreover, winemaking was only one of the services that cooperatives offered to their members. As mentioned above, many cooperative wineries were created as specialized sections of existing agricultural cooperatives which had other functions such as the purchase of fertilizers and other agricultural inputs, mechanical threshing, oil production, and the securing and provision of credit – all badly needed by their members, especially the small producers who specialized in winegrowing but also grew other crops at the same time. These services required considerable investment and reduced the financial resources available for winemaking, which nonetheless remained the principal function of the cooperative. For example, the investments undertaken by a wine cooperative in an oil mill, threshing machine and storehouse for fertilizers and other inputs amounted to 40% of its total assets, and some investments in the winemaking process had to be postponed and even cancelled in order to finance other cooperative services that were considered a priority.⁵⁵

To sum up, as quality was not the main goal, the cooperatives had difficulties in selling wine directly to consumers, which was the main way to increase its added value. Very few cooperatives sold bottled wine; a cooperative winery built in Alella in 1907 aged wine and sold it under a brand name, but this was an absolute exception to the general trend.⁵⁶ The attempts by cooperative members to sell wine directly to consumers were generally unsuccessful.⁵⁷ Most cooperatives sold table wines to a very limited number of merchants and quite often used auctions to wholesale, as they needed to sell their produce rapidly to make room for the next harvest and pay the members for their grapes. Trade was in any case limited to the local market, as the members in charge of marketing had limited information about the market conditions elsewhere. Moreover,

unlike private wineries, wine cooperatives could not adapt their supply to the fluctuations in demand, since their services consisted precisely in the processing of all the grapes handed over to them by their members.⁵⁸

Since members of the cooperative were in charge of most of the activities and management, the system was based on trust. This required a certain level of social homogeneity, since small and large growers had different, often conflicting interests. In some cooperatives, the board of directors was elected democratically by the members on a “one member, one vote” basis, and in others according to the number of vines or amount of grapes handed over to the cooperative. In any case, the participation of members in the cooperatives’ activities was high, which meant that the decisions were relatively transparent and sensitive to the members’ interests.⁵⁹ As has been suggested for other producer cooperatives, democratic governance had positive consequences for economic efficiency.⁶⁰

Of course, when there was conflict within the community the situation became very difficult to sustain: this was the case where growers did not own the land they were cultivating. In the most specialized winegrowing areas of the province of Barcelona the *rabassaires* who cultivated the vineyards fought to improve their contractual conditions and even to gain landownership. The conflict worsened during the wine crisis in the early twentieth century: as wine prices fell, so did growers’ profits, and the *rabassaires* tried to offset the fall in income by paying less rent to the owners. By the 1930s, this had become a major social and political conflict in rural Catalonia.⁶¹

As has been shown in other areas, social and political division makes cooperation more difficult.⁶² Because of social and political divisions within the community two different cooperative wineries might be set up in the same municipality, one constructed on the initiative of the small producers and the other by the well-off

landowners.⁶³ The existence of two agricultural cooperatives in the same municipality was quite common in rural Catalonia, but it had serious consequences when they were both winemaking cooperatives, as the building of the cellars required a high level of investment; low membership numbers meant that these organizations were more difficult to finance and permitted fewer economies of scale in winemaking and marketing.

In some places, social division inside the community might increase the number of cooperatives in the short term, but elsewhere it could put paid to winegrowers' attempts to join forces. This is probably why in the province of Barcelona, where the *rabassaires'* struggle was most significant, there were fewer wine cooperatives. And in the long run, the presence of two wine cooperatives competing in the same village was likely to end in failure or, at least, very limited development, because of their small size and reduced economic possibilities, as happened in many other agricultural cooperatives in the early twentieth century.⁶⁴

In 1934, an internal report of the Viticulture and Enology Service of the Catalan government stated that “wine cooperatives in Catalonia are struggling, for many different reasons. Because of the scarcity of financial resources (the majority of cooperatives being in debt) and the very low price paid for the wine, few cooperatives can afford the supervision of a specialized technician. This has been the cause of several resounding failures which, in addition to the damage caused to these cooperatives in particular, have caused incalculable harm to the cooperative movement, as they have prevented its steady and continuous development”.⁶⁵

5. Conclusions

Europe's most successful rural cooperatives (for example, the Danish dairy associations) were highly specialized and connected to international markets.⁶⁶ By contrast, early wine cooperatives in Catalonia sold only to the local market and offered diversified services. As we have mentioned, the development of other cooperative services reduced the resources available to the main function of wine cooperatives, which was the production and marketing of wine; but the versatility of these entities suited the needs of their members, who grew vines and other crops and might be in need of credit and other services. They also played little part in the marketing of their produce and, as they could not absorb the marketing functions of the intermediaries and reduce their numbers, they could not raise significantly wine prices, the main revenue of their members.

Other major problems facing the early wine cooperatives were obtaining funding to finance investments and technical supervision. Small winegrowers (who were the majority of the membership) were unable to build cellars without access to external resources, which were difficult to obtain from private banks. They also lacked the technical knowhow to produce wine in large quantities, and the assistance of specialists to monitor the production process was costly and not easy to afford when wine prices were low.

In this article we have argued that the contribution of the state was a critical factor for the development of these cooperatives. In France, the state provided long-term and low-interest loans to overcome these problems, and wine cooperatives expanded rapidly. That was not the case in Spain, where the government did not set up a credit system for cooperatives and the central bank posed severe restrictions on borrowing. All this meant that very few wine cooperatives were founded, and the initiatives that succeeded had to limit debt and had little scope for investments. Later on, in the second

half of the twentieth century, the Spanish government was more proactive towards wine cooperatives, as it used them to regulate wine markets and to exert a certain social control; consequently, cooperatives spread much more rapidly, reaching a similar number to France in the 1970s.

We have tried to explain the "exceptional" nature of the emergence of winemaking cooperatives in the Spanish context, by looking especially at the role of the state. In the early twentieth century, the Catalan regional government was much more sensitive to the needs of agricultural cooperatives than the central government, and it provided technical and financial support for wine cooperatives. The lack of economic resources and the curtailing of its activity during the Primo de Rivera dictatorship limited the extent of its involvement. Even so, thanks to this aid, in the 1930s more than 80 wine cooperatives were operating in Catalonia. It was certainly a modest number for a winegrowing region that produced more than four million hectolitres a year: according to a contemporary observer, half of this amount was produced by large winegrowers which owned all the facilities necessary; but for small winegrowers to produce the other half in acceptable technical conditions, the existence of two hundred wine cooperatives producing 10,000 hectolitres was required.⁶⁷

This was not the case. In our estimations, taking into account the number of wine cooperatives and their storage capacity, no more than 18% of the wine produced in Catalonia in the 1930s came from cooperatives. Nevertheless, as we have seen, these associations represented a very large proportion of the wine cooperatives founded in Spain, and the province of Tarragona, with only 6.5% of the area of vines, was home to around half of the total number. As it has been shown, the structure of land ownership was a key factor for this concentration.

In the second half of the twentieth century the number of wine cooperatives in Catalonia doubled, and the province of Tarragona still concentrated more cooperatives than any other in Spain. However, during the Franco regime the cooperative movement expanded much more in other Spanish regions, and in 1980 Catalonia's share had fallen to around a fifth (behind La Mancha, for example).⁶⁸ The reasons for this evolution are again to do with the institutional framework, and especially the financial assistance offered by the Spanish government to the wine cooperatives. But this is something that cannot be explored in this article.

Acknowledgments

Earlier versions of this article were presented at the 17th European Business History Association (EBHA) Congress in Uppsala (Sweden), 22-24 August 2013, and the 14th International Congress of Agrarian History (SEHA) in Badajoz (Spain), 7-9 November 2013. I am grateful for all the comments I received at these congresses, as well as the suggestions of the journal's referees. Financial assistance provided by the Spanish government (HAR2012-38920-C02-02) is also gratefully acknowledged.

References:

- Badia-Miró, Marc, Enric Tello, Francesc Valls and Ramon Garrabou. "The grape phylloxera plague as a natural experiment: the upkeep of vineyards in Catalonia (Spain), 1858-1935". *Australian Economic History Review*, 50, 1 (2010): 39-61.
- Balcells, Albert. *El problema agrari a Catalunya (1890-1936). La qüestió rabassaire*. Barcelona: Nova Terra, 1968.
- Beltrán Tapia, Francisco J. "Commons, social capital, and the emergence of agricultural cooperatives in early twentieth century Spain". *European Review of Economic History*, 16, 4 (2012): 511-28.

- Berget, Adrien. *La coopération en viticulture. Les Winzervereine*. Paris: Bureaux de la "Revue de Viticulture", 1900.
- Berget, Adrien. *La Coopération dans la viticulture européenne*. Lille: A. Devos, 1902.
- Borgen, Svein Ole. "Rethinking incentive problems in cooperative organizations". *Journal of Socio-Economics*, 33 (2004): 383-93.
- Caballer, Vicente. "El comportamiento empresarial del agricultor en la dinámica de formación y desarrollo de cooperativas agrarias", *Agricultura y Sociedad*, 23 (1982): 193-216.
- Campllonch, Isidro. *Cellers cooperatius de producció i venda*. Barcelona: Fidel Giró, 1917.
- Carmona, Juan, Josep Colomé, Juan Pan-Montojo and James Simpson, eds. *Viñas, bodegas y mercados. El cambio técnico en la vitivinicultura española, 1850-1936*. Zaragoza: Prensas Universitarias de Zaragoza, 2001.
- Carmona, Juan and James Simpson. "The 'Rabassa Morta' in Catalan viticulture: the rise and decline of a long term sharecropping contract, 1670s-1920s". *The Journal of Economic History*, 59, 2 (1999): 290-315.
- Carmona, Juan and James Simpson. *El laberinto de la agricultura española. Instituciones, contratos y organización entre 1850 y 1936*. Zaragoza: Prensas Universitarias de Zaragoza, 2003.
- Carmona, Juan and James Simpson. "Explaining contract choice: vertical coordination, sharecropping, and wine in Europe, 1850-1950". *The Economic History Review*, 65, 3 (2012): 887-909.
- Casanovas, Josep. "L'acció tècnica agrària (1912-1939). La política agrària de la Mancomunitat i la Generalitat de Catalunya.", PhD diss., Universitat de Barcelona, 1996.
- Casanovas, Josep. "La Mancomunitat de Catalunya i el foment del sindicalisme agrari (1919-1923)". In *Solidaritats pageses, sindicalisme i cooperativisme*, ed. Jaume Barrull, et al., 395-415. Lleida: IEI, 1998.
- Chevet, Jean-Michel. "Cooperative cellars and the regrouping of the supply in France in the twentieth century". In *Exploring the food chain. Food production and food processing in Western Europe, 1850-1980*, ed. Yves Segers et al., 253-79. Turnhout: Brepols : 2009. p. 253-79.
- Cleary, M. C. *Peasants, politicians and producers. The organisation of agriculture in France since 1918*. Cambridge: Cambridge University Press, 1989.
- Colomé, Josep, Ricard Garcia, Jordi Planas and Francesc Valls-Junyent. "Les cycles de l'économie viticole en Catalogne. L'évolution du prix du vin 1680 – 1935". *Annales du Midi*, 281 (2013): 29-55.
- Fabbri, Fabio. "Il movimento cooperativo". In *Storia dell'agricoltura italiana in età contemporanea*, ed. Piero Bevilacqua. Venezia: Marsilio Editori, 1991.
- Farr, Ian. "Farmers' Cooperatives in Bavaria, 1880-1914: 'State-Help' and 'Self-Help' in Imperial Germany". *Rural History*, 18, 2 (2007): 163-82.

- Fernández, Eva. "Productores, comerciantes y el Estado: regulación y redistribución de rentas en el mercado de vino en España, 1890-1990.", PhD diss., Universidad Carlos III de Madrid, 2008.
- Fernández, Eva. "Selling Agricultural Products: Farmers' Co-operatives in Production and Marketing, 1880-1930". *Business History*, 56, 4 (2014): 547-68.
- Fuguet, Joan and Andreu Mayayo. *El primer celler cooperatiu de Catalunya. Centenari de la Societat de Barberà de la Conca (1894-1994)*. Barcelona: Generalitat de Catalunya, 1994.
- Garrabou, Ramon, Josep Pujol and Josep Colomé. "Salaris, ús i explotació del treball agrícola (Catalunya, 1818-1936)". *Recerques*, 24 (1991): 23-51.
- Garrido, Samuel. *Treballar en comú: El cooperativisme agrari a Espanya (1900-1936)*. València: Edicions Alfons el Magnànim, 1996.
- Garrido, Samuel. "Why Did Most Cooperatives Fail? Spanish Agricultural Cooperation in the Early Twentieth Century". *Rural History*, 18, 2 (2007): 183-200.
- Garrido, Samuel. "Plenty of trust, not much cooperation: social capital and collective action in the early twentieth century eastern Spain". *European Review of Economic History*, 4, 18 (2014): 413-32.
- Gavaldà, Antoni. *L'associacionisme agrari a Catalunya. (El model de la Societat Agrícola de Valls, 1888-1988)*. Valls: IEV, 1989.
- Gavaldà, Antoni and Josep Santesmases. *Història econòmico-social de les cooperatives agrícoles de Nulles (1917-1992)*. Valls: IEV: 1993.
- Gavignaud-Fontaine, Geneviève. "Les caves coopératives, bastions de la viticulture populaire en Roussillon au XXe siècle". *La revue de l'Economie Sociale*, 7 (1986): 11-22.
- GEHR. *Estadísticas históricas de la producción agraria española, 1859-1935*. Madrid: MAPA, 1991.
- Giralt, Emili. "El conflicto rabassaire y la cuestión agraria en Cataluña hasta 1936". *Revista de Trabajo*, 7 (1965): 278-95.
- Guinnane, Timothy W. "Cooperatives as information machines: German rural credit cooperatives, 1883-1914". *The Journal of Economic History*, 61, 2 (2001): 366-89.
- Guinnane, Timothy W. "State Support for the German Cooperative Movement, 1860-1914". *Central European History*, 45 (2012): 208-32.
- Hansmann, Henry. "Cooperative firms in theory and practice". *The Finnish Journal of Business Economics*, 4 (1999): p. 387-403.
- Henriksen, Ingrid. "Avoiding lock-in: Cooperatives creameries in Denmark, 1882-1903". *European Review of Economic History*, 3, 1 (1999): 57-78.
- Henriksen, Ingrid, Morten Hviid and Paul Sharp. "Law and peace: Contracts and the success of the Danish dairy cooperatives", *The Journal of Economic History*, 72, 1 (2012): 197-224.
- Iglésies, Josep. *La crisi agrària de 1879-1900: la fil·loxera a Catalunya*. Barcelona: Edicions 62, 1968.

- Lachiver, Marcel. *Vins, vignes et vigneronns. Histoire du vignoble français*. Paris: Fayard, 1988.
- Leonardi, Andrea. *Collaborare per competere. Il percorso imprenditoriale delle Cantine Mezzacorona*. Bologna: Il Mulino, 2005.
- Martínez-Soto, Angel Pascual. “El papel del crédito y la financiación en la agricultura capitalista (1850-1970). Una primera aproximación a un campo multifactorial”. *Noticario de Historia Agraria*, 7 (1994): 39-66.
- Mayayo, Andreu. “El naixement del moviment cooperatiu a la Conca de Barberà”. *Estudis d’Història Agrària*, 5 (1984): 133-55.
- Mayayo, Andreu. *La Conca de Barberà 1890-1936: de la crisi agrària a la Guerra Civil*. Montblanc: Centre d’Estudis de la Conca de Barberà, 1986.
- Mayayo, Andreu. “El cooperativisme agrari: un moviment dual”. In *Actituds polítiques i control social a la Catalunya de la Restauració (1875-1923)*, ed. Conxita Mir, 209-32. Lleida: Virgili & Pagès - Estudi General, 1989.
- Mayayo, Andreu. *De pagesos a ciutadans. Cent anys de sindicalisme i cooperativisme agraris a Catalunya, 1893-1994*. Catarroja – Barcelona: Afers, 1995.
- Medina, Francisco J. “Cooperativismo y sector vitivinícola en España durante la segunda mitad del siglo XX.”, PhD diss., Universitat Autònoma de Barcelona, 2011.
- Medina, Francisco J. "Co-operative wineries: Temporal solution or efficient firms? The Spanish case during late Francoism, 1970-1981". *Business History*, 2015, doi: 10.1080/00076791.2014.982105.
- Mignemi, Niccolò. “Coopérer pour travailler la terre, coopérer pour exploiter la terre: Itinéraires comparés des coopératives agricoles en Italie et en France dans la première moitié du vingtième siècle.”, PhD diss., EHESS, Paris, 2013.
- Mir, Raul. M. *Cataluña agrícola. Aportación a su estudio*. Barcelona: Ediciones Técnico-publicitarias, 1943.
- Muñiz, Lorenzo. *La acción social agraria en España*. Madrid: Establecimiento Tipográfico Nieto y Compañía.
- O’Rourke, Kevin H. “Culture, conflict and cooperation: Irish dairying before the great war”, *The Economic Journal*, 117 (2007): 1357-79.
- Pan-Montojo, Juan. *La bodega del mundo. La vid y el vino en España (1800-1936)*. Madrid: Alianza Editorial, 1994.
- Piqueras, Juan. *De les plagues americanes al cooperativisme a Espanya, 1850-2007*. Vilafranca del Penedès: Vinseum, 2010.
- Planas, Jordi. *Els propietaris i l’associacionisme agrari a Catalunya (1890-1936)*. Girona: Documenta Universitaria, 2006.
- Planas, Jordi. “El cooperativismo vitivinícola en tiempos de crisis: el Sindicato de Viticultores de Igualada (1921-1936)”. *Investigaciones de Historia Económica – Economic History Research*, vol. 9, 3 (2013): 155-64.
- Planas, Jordi. “Winegrowers’ organizations and the regulation of wine markets in France and Spain in early twentieth century”, *Organisations patronales (Europe 19e-20e siècles)*, 4e colloque, Paris, 2014.

- Planas, Jordi and Francesc Valls-Junyent. “¿Por qué fracasaban las cooperativas agrícolas? Una respuesta a partir del análisis de un núcleo de la Cataluña rabassaire”. *Investigaciones de Historia Económica*, 7 (2011): 310-21.
- Pomés, Jordi. *La Unió de Rabassaires*. Barcelona: Publicacions de l'Abadia de Montserrat, 2000.
- Pujol, Josep. “Las crisis de sobreproducción en el sector vitivinícola catalán, 1892-1935”. In *Historia agraria de la España contemporánea, 3. El fin de la agricultura tradicional (1900-1960)*, ed. Ramon Garrabou et al., 317-46. Barcelona: Crítica, 1986.
- Pujol, Josep. “La difusión de los abonos minerales y químicos hasta 1936: El caso español en el contexto europeo”. *Historia Agraria*, 15 (1998): 143-82.
- Putnam, Robert D. *Making Democracy Work. Civic Traditions in Modern Italy*. Princeton: Princeton University Press, 1993.
- Raventós, Jaume. “Reguladors naturals del preu del vi”. In *La crisi vinícola. Conferències*, 11-22. Barcelona: Imprempta de Bayer Germans i Comp.^a, 1923.
- Riba, Joan. *Cellers cooperatius de producció i venda*. Barcelona: Imp. Viuda de J. Riera, 1917.
- Rinaudo, Yves. “La naissance de la coopérative viticole: les caves du Midi au début du XXème siècle”. *La revue de l'Economie Sociale*, 3 (1985): 17-30.
- Roche-Agussol, Maurice. *Une expérience de syndicalisme agricole (La C.G.V.)*. Montpellier: Imprimerie Roumégous et Déhan, 1924.
- Santesmases, Josep. *El cooperativisme agrari a Vila-rodona (1893-1993)*. Vila-rodona: Centre d'Estudis del Gaià, 1996.
- Saumell, Antoni. *Viticultura i associacionisme a Catalunya. Els cellers cooperatius del Penedès (1900-1936)*. Tarragona: Diputació de Tarragona, 2002.
- Sheingate, Adam D. *The rise of the agricultural welfare state. Institutions and interest group power in the United States, France and Japan*. Princeton: Princeton University Press, 2001.
- Simpson, James. *La agricultura española (1765-1965): la larga siesta*. Madrid: Alianza, 1997.
- Simpson, James. “Cooperation and Cooperatives in Southern European Wine Production”. *Advances in Agricultural Economic History*, 1 (2000): 95-126.
- Simpson, James. “Cooperation and Conflicts: Institutional Innovation in France's Wine Markets, 1870-1911”. *Business History Review*, 79 (2005): 527-58.
- Simpson, James. (2011): *Creating Wine. The Emergence of a World Industry, 1840-1914*. Princeton: Princeton University Press, 2011.
- Solà, Pere. *Història de l'associacionisme català contemporani. Barcelona i les comarques de la seva demarcació (1874-1966)*. Barcelona: Generalitat de Catalunya, 1993.
- Solà, Pere. *Itineraris per la sociabilitat meridional catalana. L'associacionisme i la cultura popular a la demarcació de Tarragona (1868-1964)*. Tarragona: Diputació provincial de Tarragona, 1998.

Toms, Steven. "Producer co-operatives and economic efficiency: Evidence from the nineteenth-century cotton textile industry". *Business History*, 54, 6 (2012): 855-82.

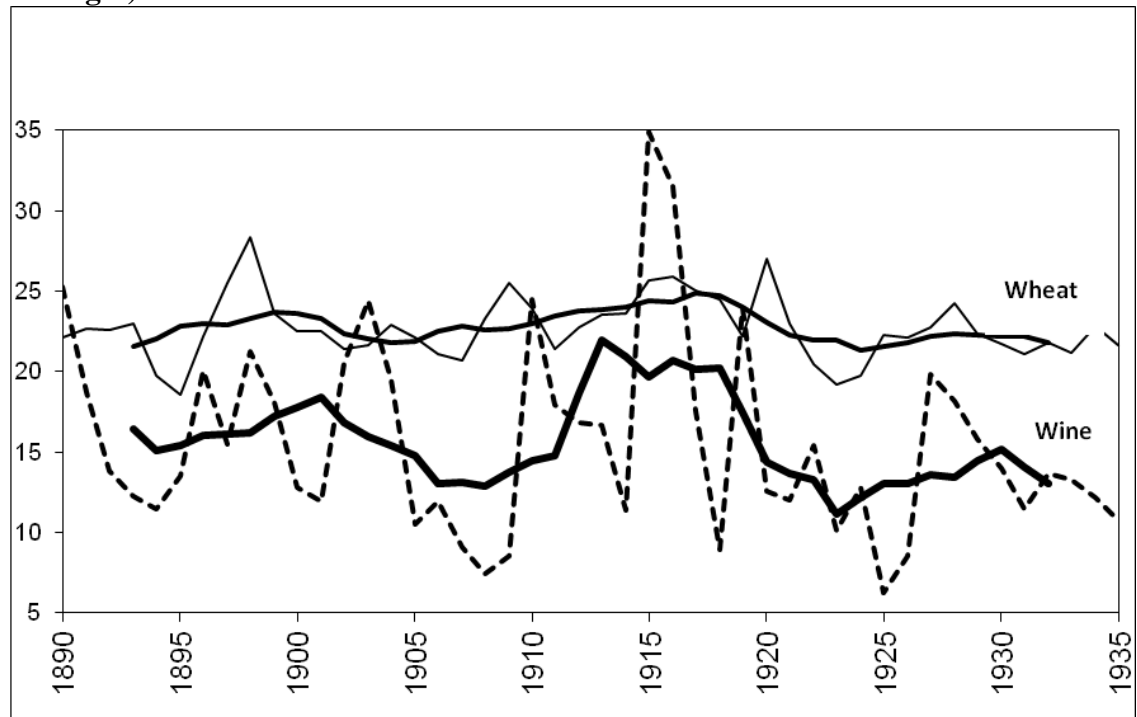
Torrejón, Ángel. *Bodegas industriales. Estudio especial relativo a la instalación y organización de bodegas cooperativas*. Madrid: Imprenta helénica, 1923.

Van Molle, Leen. *Chacun pour tous. Le Boerenbond belge, 1890-1990*. Louvain: Presses Universitaires de Louvain, 1990.

Warner, Charles K. *The winegrowers of France and the government since 1875*. New York: Columbia University Press, 1960.

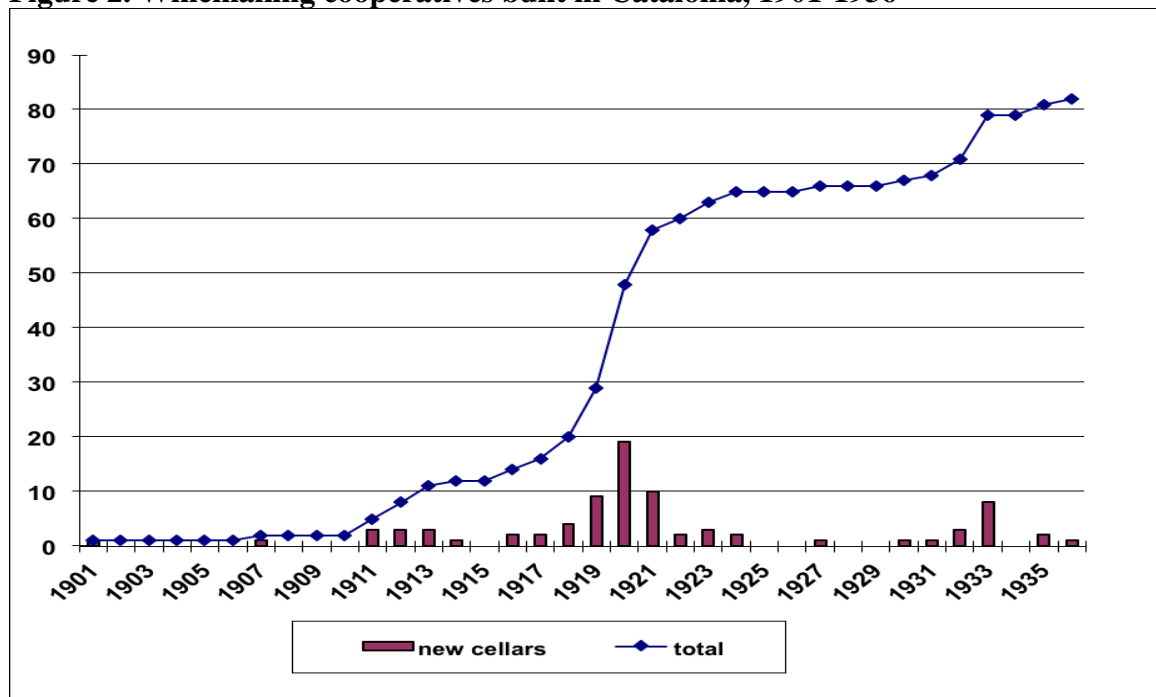
Figures:

Figure 1. Wine and wheat prices in Catalonia, 1890-1935 (ptas. 1913/hl and 7 year averages)



Sources: wine: Colomé, García, Planas & Valls-Junyent, “Les cycles de l’économie viticole”; wheat: Pujol, “La difusión de los abonos”. Own elaboration.

Figure 2. Winemaking cooperatives built in Catalonia, 1901-1936



Sources: see text. Own elaboration.

Figure 3. Vineyard specialization and the spread of wine cooperatives in Catalonia

	Winemaking cooperatives					Vineyards		Ratio (1930s)
	1901-16	1917-24	1925-36	1901-36	1980	Ha (1929)	%	Coops./1000 Ha
Barcelona	2	10	3	15	20	116,097	15.02	0.129
Tarragona	10	36	11	57	118	89,820	14.25	0.635
Lleida	0	5	1	6	21	28,955	2.38	0.207
Girona	2	0	2	4	12	14,750	2.50	0.271
Catalonia	14	51	17	82	171	249,622	7.77	0.328

Sources: winemaking coops. built in Catalonia (1901-36): see text; winemaking coops. (1980): Medina, “Cooperativismo y sector vitivinícola”, 173; vineyards (1929): GEHR, *Estadísticas históricas*. Own elaboration.

Figure 4. Distribution of wine cooperatives in Spain in the 1930s



Sources: see text. Own elaboration.

Notes:

¹ Pujol, “Las crisis de sobreproducción”; Pan-Montojo, *La bodega del mundo*; Simpson, *La agricultura española*; Carmona et al., *Viñas, bodegas y mercados*; Simpson, *Creating wine*.

² Pan-Montojo, *La bodega del mundo*, 362-365; Carmona and Simpson, *El laberinto de la agricultura española*; Garrido, “Why Did Most Cooperatives Fail?”; Fernández, “Productores, comerciantes y el Estado”.

³ Cleary, *Peasants, politicians and producers*; Van Molle, *Chacun pour tous*; Fabbri, “Il movimento cooperativo”; Henriksen, “Avoiding lock-in”; Simpson, “Cooperation and cooperatives”; Guinnane, “Cooperatives as information machines”; O’Rourke, “Culture, conflict and cooperation”; Mignemi, “Coopérer pour travailler la terre”.

⁴ Martínez-Soto, “El papel del crédito”; Guinnane, “Cooperatives as information machines”.

⁵ Berget, *La Coopération dans la viticulture européenne*, 125. The first wine cooperative (*Winzerverein*) in the Ahr valley was set up in 1868, and at the end of the nineteenth century they were already twenty-five (Berget, *La coopération en viticulture. Les Winzervereine*).

⁶ Fernández, “Productores, comerciantes y el Estado”, 165-166; Piqueras, *De les plagues americanes al cooperativisme*; Medina, “Cooperativismo y sector vitivinícola”, 173 and “Co-operative wineries”.

⁷ Lachiver, *Vins, vignes et vignerons*, 498; Chevet, “Cooperative cellars”.

⁸ Gavignaud-Fontaine, “Les caves coopératives”, 126-27.

⁹ Simpson, “Cooperation and Cooperatives”.

¹⁰ Being created as wine sections of existing agricultural cooperatives, most of the wine cooperatives were not specifically registered associations. About the problems of Spanish statistics on agricultural cooperatives, see Garrido, *Treballar en comú*.

¹¹ Simpson, “Cooperation and Cooperatives”; Fernández, “Productores, comerciantes y el Estado”; Medina, “Cooperativismo y sector vitivinícola”.

¹² Farr, “Farmers’ Cooperatives in Bavaria”; Guinnane, “State Support for the German Cooperative Movement”. See also Sheingate, *The rise of the agricultural welfare state*.

¹³ Iglésies, *La crisi agrària*; Piqueras, *De les plagues americanes al cooperativisme*; Badia-Miró et al., “The grape phylloxera plague”.

¹⁴ Pujol, “Las crisis de sobreproducción”; Simpson, *La agricultura española*, 275-85.

¹⁵ Raventós, “Reguladors naturals del preu del vi”.

¹⁶ Pan-Montojo, *La bodega del mundo*, 348-73.

¹⁷ Fuguet and Mayayo, *El primer celler cooperatiu*; Mayayo, “El naixement del moviment cooperatiu”; Mayayo, *La Conca de Barberà*.

¹⁸ Most of the archive sources used to create Figures 2 and 3 come from the Agricultural Technical Services of the Catalan government (Arxiu Nacional de Catalunya, Fons Serveis Tècnics d’Agricultura, caixes 12, 14, 18). Among the agricultural journals, it has to be noted *Agricultura* (1917-1927) and *Agricultura i Ramaderia* (1927-1936).

¹⁹ Catalonia was the winegrowing region most affected by the mildew plague in Spain: wine production dropped to 1.25 million hl, compared with an average of 5.60 million hl in previous years: that is, around 80% of the produce was lost (Piqueras, *De les plagues americanes al cooperativisme*, 115-17).

-
- ²⁰ Mayayo, *De pagesos a ciutadans*; Garrido, *Treballar en comú*; Pomés, *La Unió de Rabassaires*.
- ²¹ Casanovas, “L’acció tècnica agrària”.
- ²² Saumell, *Viticultura i associacionisme a Catalunya*; Medina, “Cooperativismo y sector vitivinícola”.
- ²³ Simpson, “Cooperation and Cooperatives”, 119. About the relationship between sharecropping and winegrowing, see also Carmona and Simpson, “Explaining contract choice”.
- ²⁴ Rinaudo, “La naissance de la coopérative viticole”; Gavignaud-Fontaine, “Les caves cooperatives”; Lachiver, *Vins, vignes et vigneron*s; Chevet, “Cooperative cellars”; Simpson, “Cooperation and Cooperatives” and *Creating Wine*; Fernández, “Selling Agricultural Products”.
- ²⁵ Campllonch, *Cellers cooperatius*, 56 (translated into English by the author).
- ²⁶ Piqueras, *De les plagues americanes al cooperativisme*.
- ²⁷ Rinaudo, “La naissance de la coopérative viticole”; Gavignaud-Fontaine, “Les caves cooperatives”; Lachiver, *Vins, vignes et vigneron*s.
- ²⁸ Simpson, “Cooperation and Cooperatives” and *Creating Wine*.
- ²⁹ Simpson, “Cooperation and Conflicts”.
- ³⁰ *Agricultura*, 5.10.1922, 20.11.1922, 5.1.1923, 20.1.1923, 20.3.1923, 5.5.1923, 20.7.1923, 20.8.1923; Campllonch, *Cellers cooperatius*.
- ³¹ Putnam, *Making Democracy Work*. See also Garrido, “Plenty of trust”.
- ³² Beltrán, “Commons, social capital, and the emergence of agricultural cooperatives”.
- ³³ Muñiz, *La acción social agraria*. See also Gavalda, *L’associacionisme agrari a Catalunya*; Solà, *Història de l’associacionisme català* and *Itineraris per la sociabilitat*; Mayayo, *De pagesos a ciutadans*; Garrido, *Treballar en comú*; Pomés, *La Unió de Rabassaires*; Planas, *Els propietaris i l’associacionisme agrari*.
- ³⁴ Fernández, “Productores, comerciantes y el Estado”; Planas, “Winegrowers’ organizations”.
- ³⁵ Roche-Agussol, *Une expérience de syndicalisme agricole*.
- ³⁶ Warner, *The winegrowers of France*; Rinaudo, “La naissance de la coopérative viticole”; Gavignaud-Fontaine, “Les caves cooperatives”.
- ³⁷ Garrido, *Treballar en comú*.
- ³⁸ The wine cooperative founded in Alella in 1906 started to produce wine in 1907, but was unable to enjoy the benefits granted to the agricultural cooperatives by the Agricultural Syndicates Act (1906) until it appealed to the Supreme Court, and after the sentence in 1913 the Spanish government was forced to accept it.
- ³⁹ Simpson, “Cooperation and Cooperatives”; Fernández, “Productores, comerciantes y el Estado”.
- ⁴⁰ Casanovas, “L’acció tècnica agrària”.
- ⁴¹ Garrido, *Treballar en comú*.
- ⁴² Lachiver, *Vins, vignes et vigneron*s, 498.
- ⁴³ Riba, *Cellers cooperatius*.
- ⁴⁴ Torrejón, *Bodegas industriales*, 51.
- ⁴⁵ Garrabou, Pujol and Colomé, “Salaris, ús i explotació del treball”.
- ⁴⁶ Campllonch, *Cellers cooperatius*, 32-34.
- ⁴⁷ Fernández, “Productores, comerciantes y el Estado”; Medina, “Cooperativismo y sector vitivinícola”.
- ⁴⁸ Casanovas, “La Mancomunitat de Catalunya”.
- ⁴⁹ Mir, *Cataluña agrícola*; Gavalda, *L’associacionisme agrari a Catalunya*.

-
- ⁵⁰ For example, up to 50 carts, 30 growers and 12 women took part in the construction of the wine cooperative of Gandesa, in addition to 18 masons and eight labourers who received payment (*Agricultura*, 5.6.1919).
- ⁵¹ Caballer, “El comportamiento empresarial del agricultor”.
- ⁵² Planas, “El cooperativismo vitivinícola”.
- ⁵³ Campllonch, *Cellers cooperatius*, 147-48.
- ⁵⁴ Casanovas, “L’acció tècnica agraria”.
- ⁵⁵ Planas, “El cooperativismo vitivinícola”.
- ⁵⁶ The leaders of the cooperative acknowledged the exceptional nature of the situation, when they admitted that their productive and marketing specialization in high quality wine “is very difficult in a cooperative winery. As far as we know, Alella Vinícola is the only Spanish concern to have succeeded in this endeavour; and abroad very few wine cooperatives use this sales system” (Alella Vinicola, *Cincuentenario de la Fundació de la Bodega Cooperativa Alella Vinícola, 1906-1956, Memoria leída en el acto de Homenaje a sus Fundadores*, Alella, 1956, pp. 28-29. Translated into English by the author). Another interesting example of successful winemaking cooperation based on high quality wine is the Cantine Mezzacorona in the northern Italian region Trentino-Alto Adige, which started in 1904. See Leonardi, *Cooperare per competere*.
- ⁵⁷ Saumell, *Viticultura i associacionisme a Catalunya*.
- ⁵⁸ Caballer, “El comportamiento empresarial del agricultor”.
- ⁵⁹ Hansmann, “Cooperative firms in theory and practice”; Borgen, “Rethinking incentive problems”.
- ⁶⁰ Toms, “Producer co-operatives and economic efficiency”.
- ⁶¹ Giralt, “El conflicto rabassaire”; Balcells, *El problema agrari a Catalunya*; Carmona and Simpson, “The ‘Rabassa Morta’ in Catalan viticulture”; Pomés, *La Unió de Rabassaires*.
- ⁶² O’Rourke, “Culture, conflict and cooperation”.
- ⁶³ Mayayo, “El cooperativisme agrari: un moviment dual”; Gavaldà, *L’associacionisme agrari a Catalunya*; Gavaldà and Santesmases, *Història econòmico-social de les cooperatives*; Santesmases, *El cooperativisme agrari*.
- ⁶⁴ Planas and Valls, “¿Por qué fracasaban las cooperativas agrícolas?”.
- ⁶⁵ ANC, STA: report of the Head of the Viticulture and Enology Service, Barcelona, 28.2.1934.
- ⁶⁶ Henriksen, “Avoiding lock-in”; Henriksen, Hviid and Sharp, “Law and peace”; Fernández, “Selling Agricultural Products”.
- ⁶⁷ Riba, *Cellers cooperatius*, 19.
- ⁶⁸ Fernández, “Productores, comerciantes y el Estado”; Medina, “Cooperativismo y sector vitivinícola”.