Producer cooperatives, institutional change and politics in the wine industry, 1880-1980.[1]

Eva Fernández and James Simpson (Universidad Carlos III de Madrid)

Producer cooperatives in most branches of agriculture were still rare in the 1930s, but relatively common by the end of the twentieth century.[2] In the wine industry there were virtually none in France, Italy and Spain in 1900, but a century later they accounted for at least half of the national production in the first two countries, and 70 per cent in Spain. This paper looks at two very different explanations for this change. In the first instance we look at cooperatives from an organizational perspective, where they combined the low supervision and monitoring costs associated with the family farm with the growing economies of scale found in the new food processing technologies, and their considerably greater market power in their negotiations with up and downstream trading partners. The second approach looks at cooperatives as marketing associations used by the state to help stabilize markets by storing surplus produce. This paper argues that the initial slow diffusion of wine cooperatives was caused by a lack of cheap credit and high transaction costs which both limited the potential for improving product quality and selling wine collectively. The movement only become widespread from the 1930s in France, and the 1950s in Spain, when the state offered cooperatives incentives to store surplus wine which helped compensate for the high costs associated with collective action.

European wine producers faced considerable income variability across years. This in part was the result of significant fluctuations in the yield and quality of grapes on each plot of land, caused by a large number of uncontrollable variables, such as weather (rainfall, mean daily temperatures, hail, frosts, etc.), pests and vine diseases. Traditionally, growers responded by planting different grape varieties, each with distinct levels of tolerance to these problems. Another factor was that supply was relatively inelastic because of the high costs in establishing vineyards, as growers were

[1] Paper prepared for IV Workshop 'Cooperación y conflicto en el mundo rural'. *Estado y agricultura en España (1920-1960): continuidad y cambios*. Please do not cite.
[2] The literature on the early European farm cooperatives is very large. See especially Beltrán-Tapia, 2012, Fernández, 2014a, 2014b, Garrido, 2014

reluctant to uproot vines during prices slumps which they believed were only temporary. Finally, local market conditions were increasingly affected by the size of harvests in other producing regions as both domestic and international markets became more integrated. Merchants bought small quantities of wine with very different characteristics from a very large number of producers to blend and sell to consumers. As per capita consumption began to stagnate and then fall in producer countries from around the Second World War and export possibilities were limited, merchants were able to push the cost of adjustment to producers.

The paper is divided into four sections. The first argues that the success of wine cooperatives was limited before 1930 in France and 1950 in Spain because of the lack of cheap credit and the high transaction costs in establishing and operating them. Incentives to join a cooperative were also low because of their inability to influence market prices. Section two looks at the problems facing cooperatives in restricting supply to raise prices, and the success of some New World producers in creating cartels. Section three shows that although the high transaction costs associated with cooperatives continued after the 1930s, incentives to join increased with the growing regulation of the industry by the state, which now granted aid to growers not only for the construction of new facilities but also for the blocking of wines in periods of low prices. Subsidies were also made available for the distillation of surplus wine, another major incentive given that it allowed growers to remove surpluses for which their wineries lacked sufficient capacity. The final section argues that while cooperatives helped reduce the cyclical problems facing the industry, they created new incentives for producers which discouraged them to adapt to the major demand changes taking place towards the end of the twentieth century. While wine cooperatives were originally conceived as a means of improving product quality and reducing merchants' market power, they now became seen as the main source of poor quality wines and governments were forced to look to other institutions to improve product quality and bring supply closer to demand.

1. The family vineyard and wine cooperative before the Second World War

Although one or two wine cooperatives existed briefly in the 1890s, the movement only began in earnest in southern France during the crisis of overproduction at the turn of the twentieth century, the so called *filles de la misère*.[3] Between 1863-75 and 1879-92 French wine output fell by 40 per cent on account of phylloxera which devastated vineyards.[4] Wine prices soared, and farmers in neighbouring countries such as Algeria, Italy and Spain increased supply by planting more vines. As French growers learnt to use phylloxera-resistant vines, domestic output recovered leading to overproduction and the *crise de mévente*, forcing producers in the important and worse hit Midi region to sell their wine at cost or below in five of the seven harvests between 1900 and 1906.[5] The massive demonstrations in this region marked a turning point for the industry for two reasons. First, the inelastic demand for wine and new production technologies now led to oversupply and the periodic collapses in prices as the industry slipped from 'one crisis to the next', namely in the periods 1900-7, 1917-25; 1928-37, etc.) (**Figure 1**).[6] The demonstrations also led to a new relationship between farm groups and the state, as the government set a precedent by granting legal powers to a producers' association (the *Confédération Générale des Vignerons du Midi* -CGV) to monitor the industry itself, in this case by guaranteeing that members respected laws on adulterated wines. This type of alliance was the model for future joint action between the state and the sector.

Faced with this collapse in wine prices, a number of influential French writers including Charles Gide, Augé-Laribé and Adrien Berget proposed the creation of wine cooperatives.[7] The rapid post-phylloxera reconstruction in the Midi had not only seen a doubling of the area of vines, but also a 'flight' away from the hills (and low yield varieties) to the fertile plains, where growers used irrigation, fertilisers, and chemicals

3 In 1890 one was established in Barberá (Tarragona) and in 1893 in the Champagne region. Clique, 1931, p.14.
4 Calculated from Lachiver, 1988, pp.582-3.
5 Warner, 1960, p.18.
6 It was made worse by the fact that growers were reluctant to uproot vines after just a few years of low prices because of the high capital costs in establishing a vineyard.
7 Berget (1902), Auge-Laribe (1907) and Gide (1926).

to produce large quantities of very poor wine. Growers in their rush to expand the area under vines had insufficient capital to also build cellars and storage capacity, and the wines therefore had to be sold immediately after crushing (*vins non-logés)*.[8] Theoretically, by combining resources, a hundred or two family grape producers could build and equip a large winery to cut production costs, pay for a skilled oenologist to improve quality, and store wines cheaply to be sold later in the year at higher prices.[9] Wine cooperatives could also process the remains of the grapes (marc) to make alcohol and tartaric acid. Finally they could act as banks, providing loans to their members.

Yet despite the considerable early interest there were still only 92 cooperatives in France in 1920. Wine prices, which fell once more by 70 per cent in real terms between 1917 and 1925, sparked a renewal of interest and numbers reached 353 by 1927, most of them located in the Midi,[10] and they continued rising during the 1930s crisis (**Table 1**). By contrast the growth of wine cooperatives in Spain before 1930 was limited. Although the government introduced important fiscal incentives for agricultural cooperatives with the law of 1906 (*Ley de Sindicatos Agrarios*),[11] and there were 88 wine cooperatives in the early 1920s, little different to the 92 found in France, but then the rate of growth slow considerably, and numbers were little different on the eve of the Civil War to those of the early 1920s.

Table 1

The fact that farm cooperatives were more widespread in some institutional settings (such as the nature of the commodity, region, and historical period) than others has produced a large literature, with economic historians citing exogenous restrictions

[8] Mandeville (1914: 43), See also Cot (1900) cited in Gervais, 1913, p.50.
[9] There was an average of 160 members in the 21 cooperatives that had been created between 1903 and 1910, and each produced on average 50 hectolitres of wine in 1913, the equivalent to about a hectare of vines. Simpson, 2011, pp.72-3, calculated from Mandeville, 1914, tables 1 and 2.
[10] Warner (1960). Between 1919 and 1929 some 108 cooperatives were created in the Midi, Galtier (1958: 338).
[11] Martínez Soto (2003: 120), Carmona y Simpson (2003: 235), Garrido (2007: 184).

to their growth such as weak capital markets; political opposition from private producers; or the lack of government commitment.[12] Endogenous factors, which increased transaction costs and made cooperatives less competitive than private companies were also frequent. In the period prior to the 1930s, there were three major factors which can help explain the slow growth of wine cooperatives in France and Spain: capital constraints for constructing the wineries; the high transaction costs in their operation; and the inability of a cooperative to influence wine prices.

The lack of capital to establish the new winery was perhaps the most common complaint among contemporaries. In France, the original 1884 law on association was followed by those of 1906 and 1907, which allowed wine cooperatives access to long term credit at the almost uniform rate of 2 per cent interest over 25 years.[13] Between 1907 and 1914 around 50 cooperatives in southern France obtained loans covering an average of 47 per cent of their capital costs, and the state gave subsidies of 815 thousand francs, or an additional 14 per cent.[14] By contrast in Spain the attempts by the Marqués de Camps in 1914 to pass a law that would have seen the state advance 10 per cent of the costs of the winery failed.[15] Instead small growers in Utiel (Valencia) had to wait 22 years to build their winery, while those of neighbouring Requena built it themselves over a three year period.[16]

A second factor was the high transaction costs associated with wine production. In Europe weather conditions vary significantly from one year to the next and growers planted a number of grape varieties to reduce the risks of losing their entire crop, as the vulnerabilities of each variety differed.[17] They also mixed shy-bearers, which in general produced better quality wines, with others that increased the volume. As grapes often became diseased, damaged by inclement weather, or unripe because they had been

[12] For a theoretical description of farm cooperatives from an organizational economic perspective, see especially Valentinov, 2006.
[13] Caupert, 1921, p.111, Gervais, 1913 and Mandeville, 1914, pp.2 and 11. Capital was provided by the state, but lent through regional credit banks, which were responsible for the loans. Transaction costs were greatly reduced because cooperatives were required to establish a specific legal structure if they wished to receive loans.
[14] Mandeville, 1914, p.139.
[15] Torrejon y Bonete, 1923, p.52. The loan was to be paid over 30 years with an annual interest of 3 per cent.
[16] Piqueras, 1981, p.270.
[17] This paragraph is based on Simpson, 2011, pp.x

collected too early in an effort to reduce these problems, or overripe to maximize sugar content (and hence the alcoholic strength of the wine), it was difficult for growers to establish contracts to sell them to wineries. The result was that virtually all Europe's non-premium wines were made by the growers, and then sold to merchants who blended them to meet consumers demand in terms of price and taste. Cooperatives from the turn of the twentieth century offered the potential to make both better and cheaper wine, because of the economies of scale available with the new wine-making equipment and better designed cellars, and their ability to hire oenologists who had a greater scientific appreciation of what led to wines deteriorating. Wholesale merchants faced much lower costs when buying from one or two big wineries rather than having to collect from a large numbers of different growers scattered over a wide territory, and transportation costs were lower when wines were shipped in bulk.

Yet most early cooperatives failed to improve quality as Charles Gide in particular had hoped. This was because the cost of sorting each basket to measure grape quality was high, so cooperative could pay only by weight and sugar content, a proxy for the future wine's alcoholic strength.[18] However this failed to differentiate between good and bad grapes. To placate growers, some initially allowed their members to sell privately part of their harvest, which resulted in the cooperatives receiving only the poor grapes that could not be sold elsewhere.[19] By contrast, when cooperatives forced their members to hand over all the harvest, the economic incentive for growers was to uproot their quality shy-bearers, and plant heavy-bearers. In both cases the end result was that cooperatives received poor grapes, leading to the production of low quality wines. In this respect the combination of a hot climate and limited number of varieties, both factors which reduce grape heterogeneity, help explain why 72 per cent of French cooperatives were found in the south (Languedoc-Roussillon and the Lower Rhone) in the early 1950s.[20] Only in Burgundy did cooperatives actually improve wine quality before the Second World War. Here the considerable prices paid for a premium wine compensated the cooperative for the high monitoring costs associated with a strict

---

[18] For a contemporary discussion on how cooperatives paid for grapes, see Torrejon, 1923, pp.29-40.
[19] See Henriksen, Hviid and Sharp, 2012.
[20] B'OIV, 1954, no. 283, pp.46-7. These were not the only factors, and the region's militant tradition in particular is often cited in the literature. Loubère, 1974 and Simpson, 2000 and 2005.

control of vineyard practices and an exhaustive control of which grapes were used in wine making.[21]

Finally, the early cooperatives also had difficulties in selling directly to consumers, because market fluctuations made it difficult for cooperative members to determine whether the prices negotiated were fair, or whether those involved in the sale had cheated. The result was that some cooperatives limited themselves to making wine, and left the sale to individual members, rather than experience a poor sale which might discredit the management.[22]

2. The early cooperatives and limits to market intervention

Between 1914 and 1939 the plight of many of the world's farmers was exceptional, as world wheat production grew twice as fast as consumption, and nominal prices for US corn, French wheat, and Japanese rice declined by 50 per cent.[23] Trends in wine markets were similar, although the difficulties in measuring changes in product quality make it harder to show the extent of the downturn (**Figure 1**). While European farmers' demands in the late nineteenth century could often be met by raising tariffs, this was now insufficient as domestic production was often in excess of demand, and export opportunities were strictly limited. Instead, following the successful market intervention by some governments during the First World War, farm lobbies looked to the state once more to help resolve problems of low farm gate prices and persistent surpluses. In their study of institutional choice in US agriculture during the 1920s, Hoffman and Libecap argued that the federal government faced a choice of either supporting private cooperative organizations or intervene itself directly to limit supplies to raise prices. It chose to support private cooperatives when 'crop-specific characteristics' and the broader market conditions permitted. These they argue, required among other factors there to be relatively few producers; product quality was

[21] Clique, 1931, pp.21-60. See also a similar example with the Alella Vinicola cooperative in Barcelona. Torrejon, 1923, pp.34-40.
[22] Mandeville, 1914, pp.111-12 and Clique, 1931, p.187.
[23] Sheingate, 2001, p.16.

homogenous; new entry was difficult (both nationally and internationally); commodities were perishable, making it difficult to accumulate stocks; and prices could be raised with only small production cuts.[24]

Not one of these five conditions were to be found with European wine production, suggesting that cooperative marketing associations faced serious difficulties to restrict wine supplies (Table 3). In France in the 1930s there were around 1.5 million producers.[25] Quality varied significantly, not just between fine vintage wines and cheap blending ones, but also between common wines in neighbouring regions, or on a single plot from one year to the next. There were also abundant supplies of potentially suitable land and qualified labour to increase output by new plantings when prices recovered.[26] The effects of higher wine prices on supply might be limited in the short term as new vines took four years to become productive, but in the medium and long terms it was strong because their commercial life was around forty years. Therefore new vineyards often came into production when the market had already peaked.[27] Furthermore, given the high capital costs of planting vineyards, growers were reluctant to uproot vines during market downturns, and instead used their labour for other activities. Better wine-making processes and the extensive use of chemicals also allowed stocks to accumulate, while distilling was unprofitable by 1900 because of competition from 'industrial alcohol' produced from potatoes, sugar beet and other vegetable matter.[28] Production conditions in Europe therefore made it impossible for private companies or cooperatives, which rarely produced more than 10,000 hectolitres – the equivalent to significantly less than 0.1 per cent of national production, to limit supplies and raise prices. Furthermore, voluntary agreements between cooperatives were impossible, in part because they controlled too little wine (**Table 2**), but also because they risked failure because of the free-rider problem, given that the difficulties to monitor and

---

[24] Hoffman and Lipecap, 1991, pp-399-400. They show that private cooperatives in the US were particularly strong with citrus fruit and milk. See also Boughner and Sumner (2000).

[25] Lachiver, 582-3. The figure was still 1.3 million as late as 1963, but only 54 per cent sold their wine, and less than two out five were employed full time (or nearly full time) (Loubère, 1990), p.71.

[26] The area of vine in France in 1935 was 1.65 million hectares, against the peak of 2.47 million in 1874. In Spain it probably peaked in the 1880s. Simpson, 1985 and Pan-Montojo, 1994.

[27] By contrast the supply elasticity of artificial or chemical wines was very high, as shown by the complaints in the Midi in the early 1900s. Sempé, 1898 and Gide, 1907.

[28] Sempé, 1898.

enforce agreements would encourage members to cheat on one another, while if prices did rise, growers from *outside* the cooperative would feel free to increase output.

Table 2

However conditions in the New World wine industry were very different and attempts were made by producers to control the significant market volatility that the industry experienced from the end of the nineteenth century.[29] They also provided important lessons for European producers, not just to understand the obstacles to creating an effective cartel, but also how the state could resolve many of the problems.

New World growers enjoyed excellent climatic conditions allowing them to produce both high quality and homogenous grapes from over large areas of vines, and from one year to the next. Unlike Europe, where the diversity of vine varieties and grape quality required that the viticulture and viniculture activities be integrated on the family farm (and needing thousands of independent merchants to blend the wines), in the New World the two occupations were often carried out by separate businesses, so that producers could benefit from the growing economies of scale found in wine-making. In Mendoza for example, as early as 1903 ten wineries accounted for a third of Argentina's output, with the largest having production facilities of over 90,000 hectolitres, compared to an average capacity of between 11 and 13 hectolitres in the Midi's cooperatives a decade later.[30] The market power of the large producers in Mendoza and California was strengthened by import tariffs and the considerable distances separating them from their major markets, encouraging them to integrate forwards into wholesaling, and to create cartels.

In California the leading San Francisco merchants created the California Wine Association (CWA) in 1894 which sold around 80 per cent of the State's wine. It owned large wine making and storage facilities, and from the turn of the century sold wines under its own brand names. The CWA was a trust rather than a cooperative, and

[29] For a more detailed description, see (Simpson, 2011) and (Simpson, 2011b).
[30] Simpson, 2011, pp.48, 72-3. The dry atmosphere of Mendoza allowed ripe grapes to remain on the vines for as long as three months, so that the fixed costs of the winery were spread over a much larger quantity of fruit. Denis, 1922, pp.86-7 and Pacottet, 1911, pp.78 and 82.

successfully restricted supplies to raise prices, especially in the early 1900s.[31] In Mendoza the leading producers also attempted to organize collectively and created what they described as a 'cooperative'.[32] Product quality was notoriously low, and the cartel faced the classic free-rider problem of outside producers increasing output in response to higher prices. As the leading producers had close ties with local politicians, these passed a State law in 1916 that not only allowed public funds to be used to support prices by distilling surpluses, but also levied a punitive tax on the production of those growers who remained outside the scheme and were potential free-riders.[33] In Mendoza and California the political climate at the turn of the twentieth century was relatively permissive to big business and trusts, and both regions produced around 95 per cent of domestic wine output, but had less than 5 per cent of their nation's population. By while annual per capita wine consumption in the US was just 2.4 litres in Argentina it was 50 litres, and the political costs in terms of consumer discontent and lost votes for national politicians in Argentina from allowing a small group of producers' a monopoly and forcing consumers to pay high prices for a basic necessity were considerably greater. In the event the Argentina's Supreme Court declared that provincial governments could not create private monopolies. [34]

These two New World experiences were followed with interest in France, and a couple of ambitious attempts were made in 1905 and 1907 in the Midi to create marketing boards. The aim was to attract sufficient members so that at times of overproduction, they would be able to absorb the costs of removing surplus wine from the market to support prices.[35] The proposals failed, in part because banks were unwilling to back the schemes, but also because many growers would have remained outside the associations, and would have benefited from any price rises without having to contribute to the costs of market support.

---

[31] For the CWA see especially Peninou and Unzelman , 2000, and Simpson, 2011, pp.204-19.

[32] Attempts by family grape growers to create cooperatives had limited success, not because of the 'excessive individualism' of growers as the director of the Social Museum in Paris believed, but rather the opposition of large wine makers. Mateu, 2007, p.15 and Simpson, 2011, p.253

[33] Mateu 2007 p.16

[34] If this had failed it seems likely that politicians in Buenos Aires would have flooded the market with cheap imports.

[35] Atger, 1907, pp. 116-22, Degrully 1910, pp.375-85, Postal-Vinay, 1989, pp.180-1 and Simpson, 2011, pp. 74-5.

3. Cooperatives and market intervention: from the 1930s to 1980s

The growing weakness of farmers' bargaining power in the market by the turn of the twentieth century was accompanied by a significant increase in their organizational strength and political influence. The farm sector in the 1930s still accounted for around a third of the active population in industrial economies such as Germany and France, and half in Italy and Spain. Politicians both in democratic and authoritarian regimes could not ignore the sector. Yet there were limits to the extent that agriculture could 'capture' the state. The sector is highly diverse, and demands from different groups might be diametrically opposed to each other (livestock producers, unlike cereal farmers, wanted cheap not expensive feed, etc.). In the wine sector there were important divisions between the interests of producers, merchants, and consumers, as well as opposition from sugar and industrial alcohol producers who, if numerically very small, were an important source of taxation for governments.[36]

The combination of falling demand and supply volatility caused widespread social unrest and increasing demands for state intervention in wine regions during the 1920s and early 1930s. The characteristics of the sector determined how the state responded. Policies that just raised farm prices would simply encourage growers to increase output by planting more vines, or increasing yields by using more labour, fertilizers, or irrigation. By contrast, schemes to subsidize the grubbing up of surplus vineyards, or encouraged producers to shift towards quality (and lower yields), faced major difficulties because of limited information available to governments to ensure compliance.[37] Instead governments tried to move towards a corporatist system, whereby in exchange for providing favourable legislation to producers it also delegated the monitoring and enforcement of production controls to local growers associations.[38] This was essentially the system first used in the Midi in 1907 to control product adulteration, and it was slowly refined from the 1930s in an attempt to control supply volatility.

The French government intervened in a number of different areas in an attempt

[36] These differences before 1914 are discussed in Simpson, 2011.
[37] For a discussion of these problems, see Pasour and Rucker, 2005.
[38] Sheingate, 2001, pp.94-5.

to resolve the problems of overproduction during the 1930s. When wine prices fell sharply in 1929 following a very large harvest, an emergency fund of 250 million francs was created to purchase alcohol distilled from wine in 1930.[39] Major legislation was introduced from July 1931 under the *Statut de la Viticulture* (or *Statut du Vin*) which, among others, prohibited new plantations for ten years (although it added important exceptions for small producers); banned the planting of high yielding grape varieties (direct –producer hybrid vines), and established a tax system which discriminated against large producers and high yielding vineyards. It also introduced compulsory blocking of wine after exceptional harvests and when prices fell below cost, for growers who producers a minimum of 400 hectolitres (later lowered to 200). The alcohol produced from the distillation of blocked wines was bought by the government, a measure that was introduced in the legislation after the recommendation of the C.G.V. As Warner noted, previously there had been plenty of laws and controls passed, but 'the relative inviolability of the winegrower's plant and cellars created particular difficulties until it was finally breached in 1934.'[40] However, while it was relatively easy to monitor the small number of large estates, this was not the case with the great majority of vineyards, as two-thirds of national production came from those that produced less than 200 hectolitres.[41]

The *Statut de la Viticulture* failed in its attempt to control new plantations and the area of the vineyard increased from 1,517 thousand hectares in 1926-1930 to 1,605 in 1938 (**Figure 2**). In part this was the result of its success with its blockage and distillation programs. Between 1935 and 1954 an annual average of six million hectolitres of wine was compulsory distilled.[42] In addition, this policy was reinforced with the *Statut de l'Alcool* in 1935, which reorganized the state alcohol monopoly and extended the public purchases of wine alcohol at 2.5 times the price of industrial alcohol (made from sugar beet), thereby constituting an additional subsidy to winegrowers.[43]

For Warner, both the compulsory distilling and the quota for wine-alcohol

[39] Warner, 1960, Chapter 7.
[40] Warner, 1960, p.98.
[41] Warner, 1960, p.119.
[42] Warner (1960: cap. 7).
[43] Warner, 1960: 115

purchases by the *Service des Alcools* (the state alcohol monopoly) were the most effective part of the *Statut de la Viticulture*, and winegrowers "now had an assured and profitable annual outlet in the Service for the quantity of their wine alcohol roughly 33 percent greater than their average annual distillation from 1920 through 1930."[44] The blockage and distilling of surplus wines was less successful at stabilizing wine markets, but they now encouraged the creation of new cooperatives. More storage space for surplus wines was needed, and the government offered short-term credit to cooperatives, equivalent to 3.7 per cent of the value of national wine output in 1934, to store rather than sell surplus wines.[45] Some 566 cooperatives (95 per cent of the total) received 230 million francs to store surplus production.[46] As a consequence, a new cooperative movement emerged with almost 500 new cooperatives created in the 1930s, half of them in the Midi.[47]

While the number of wine cooperatives grew rapidly in France as a consequence of market regulation, this failed to happen in Spain, with the numbers increasing only marginally from 88 in 1921 to 100 in 1935.[48] The weakness of the movement can be explained by a combination of the high transaction costs noted above, and the absence of a similar government wine policy such as found in France.[49] The 1942 law on cooperatives granted fiscal exemptions,[50] and although numbers reached 193 by 1950, most were inoperative because of a lack of capital. In fact, wine cooperatives only amounted for 8.5 percent of total production.[51]

A new impulse to the cooperative movement occurred in France and Spain during the 1950s and 1960s. In France, after wartime shortages, there was a rapid recovery of production and a series of abundant harvests in 1950-1956 coincided with a

---

[44] Warner (1960: 121 and 148)
[45] Calculated from INSEE (1958).
[46] Tardy (1935), p.314
[47] Some 229 cooperatives were created in the Midi between 1930 and 1939, Galtier (1958: 338). Number of co-operatives increased from 353 in 1927 to 595 in 1933 and 827 in 1939 (For 1927, B'OIV (1929), no. 19: 84. For 1933, Tardy (1935: 315) and 1939 Simpson (2000: tabla 5).
[48] Pan-Montojo, 2003: 328 for 1921 and OIV, 1935 for 1935
[49] Fernández, 2008; Galtier, 1958, III: 29, 76 (**????**).
[50] *Bulletin de l'OIV* (1954: no. 275: 27; 61)
[51] The lack of financing was initially solved by the long term loans (ten years) granted by the National Service for Agricultural Credit from the early 1950s. This loans financed up to 80 per cent of the initial capital at an interest rate of 2.75 per cent Galtier (1958: 75, 78).

decline in consumption leading to surpluses and a price slump reappearing in main wine producing areas. Similar policies to those of the 1930s were now reintroduced in an attempt to remove low quality wines from the market, reduce the land under vines, and improve wine quality.[52] These measures were collected in the *Code du Vin* of 1953, which established taxes on high yields, the compulsory blocking of wines and distillation of part of the harvest (10-16%), a subsidy to uproot vines and prohibition on planting high yielding varieties.[53] These measures were complemented with a new price system to regulate the market, with production being divided in *quantum*, wines that could be only sold in markets in fixed quantities and at appointed times during the year, and *hors-quantum*, those that could only be sold in years of poor harvest.[54]

The proportion blocked after the harvest was sometimes considerable, reaching for around 60-70 percent of production in 1949 and 1951, for instance.[55] The elaboration of a cadastral survey now allowed the government to offer incentives to growers to reduce land under vines, leading to a slow decline in the productive area in France during the following decades (Figure 2). The increasing amount of wine blocked required an expansion in cellar capacity, leading to a new era of cooperatives. Although the numbers increased by only a hundred between 1953 and 1980, the capacity of existing cooperatives increased rapidly, so that 50 percent of all French wine was produced by cooperatives by 1980.

In Spain, new wine policies implemented after the sharp drop in prices of 1953 now led to a rapid growth in cooperatives. As in France, wine regulation to deal with over-production was based on the blockage and distillation of part of the harvest. The lack of facilities was a problem as the sector was dominated by small producers and cooperatives produced only 8.5 percent of wine in the early 1950s. Problems of over-production were especially important in La Mancha, a region of cheap ordinary wines, and that accounted for 25 per cent of the nation's wine output and more than 500

[52] Bardissa (1976: 42-43).
[53] In 1950-1951 the government had reinstated the tax on high yield producers and the blockage and distillation of wines. Warner (1960: 172).
[54] Branas (1957: 84-85), Spahni (1988: 16-22), Barthe (1989: 102-108), Barthe (1975: 8-11), Berger and Maurel (1980: 88).
[55] Warner, 1960: 170, 172

thousand hectares, but only 10 per cent of its winegrowers had the capacity to store wines for any length of time in 1960.[56]

In 1953 the *Comisión de Compras de Excedentes de Vino* (Commission for Purchasing Surpluses) was created to stabilize markets by storing and distilling a part of the harvest when prices fell below the reference price.[57] In 1954, coinciding with a major drop in prices, the growers' lack of wineries obliged the state to open public facilities (*bodegas de maquila*) for growers to make their own wine and to store excess production. The government also granted winegrowers in the La Mancha provinces (Ciudad Real and Albacete) subsidies, called "advances", covering the cost of storage, and in 1954 and 1955, 61 of these public cellars were opened. However, they processed only 32 million kilos of grapes (or 1 per cent of the harvest) and around 16 million pesetas (or 3 percent of the value of production in the two provinces) were paid to winegrowers.[58]

In order to avoid having to finance public cellars, the state encouraged the creation of both private and cooperative facilities so that small growers could crush their grapes and store wines. The state offered cooperatives long-term loans that covered initial capital requirements, as well as short term payments (*primas al almacenamiento*) for the blocking wines after large harvests. The number of cooperatives increased from 193 in 1950 to 357 in 1955, and 407 in 1957, when they accounted for 25 percent of output and membership reached more than 100,000.[59] The number of cooperatives that benefited from the storage subsidies increased from 19 in 1954 to 232 in 1959, while the quantity of wine temporary blocked rose sharply from 127 thousand hectolitres to more than 2 million hectolitres, or 10 percent of total production. Some 40 per cent of the subsidised storage of wines in 1958-9 was in La Mancha, and while other regions producing cheap bulk wines, such as Aragón and Levante, also benefitted (**Table 7**). In 1960, half of 600,000 hectolitres of wine removed from the market were from

[56] Data from *Primer Censo Agrario*, elaborated at the early 1960s, suggests that in Catalonia the figure was 32 per cent and in La Rioja 22 per cent?????
[57] Fernández (2008): chapter 4.
[58] Comisión de Compras de Excedentes de Vino (various years).
[59] *B'OIV* (1960, no. 358: 93), and Pan-Montojo (2003: 328). As a result only nine public facilities were needed during the following years, *Comisión de Compras de Excedentes de Vino* (varios años)

cooperatives.[60]

Cooperatives received an additional incentive to expand when the *Comisión de Compras de Excedentes de Vino* in 1967 introduced a new subsidy that was equivalent to 10 percent of the market wine price to block surpluses in cooperatives and private cellars.[61] Cooperative benefitted from a combination of cheap long term loans to build and equip facilities, state subsidies, which during the 1960s accounted for 10 percent of the value of production,[62] as well as advances granted until members could sell their blocked wines. As a result cooperatives increased rapidly to 789 in 1969, of which 197 or 35 per cent were in La Mancha. Membership per cooperative also rose from 207 growers in 1954 to 274 in 1969, while the storage capacity increased to 20 million hectolitres. As a result, the quantity of wine produced in cooperatives amounted to 12.5 million hectolitres in 1969, or 50 per cent of total production (**Table 2**).

This policy of market regulation through blocking surplus wines in cooperatives helped stabilize wine markets. Figure 3 shows that price volatility in La Mancha by the early 1960s was sharply reduced from the beginning compared to the late nineteenth century when no cooperatives existed. The standard deviation suggests volatility reached 8 per cent in 1874-1892 compared to 5 per cent in 1953-1972. However, during the period of rapid growth in cooperatives, the standard deviation decreased from 7 per cent in 1953-1960, a similar rate to the late 1800s, to only 3.6 per cent in 1961-1972

In conclusion policies that involved government intervention to remove surplus wines from the market through storage and distillation encouraged cooperatives in both France and Spain. In France, the same was also true of governmental intervention in the wheat sector when, after surpluses appeared following the abundant harvests of 1932 and 1933, the government began a policy to encourage farm storage, leading to the number of wheat co-operatives reaching 1,100 in 1939, and accounting for 85 percent of

---

60 UNACO (1961: 25).
61 AGA (Sindicatos. SIG35/65): *Normas de regulación de campañas.*This measure aimed at avoiding the high cost of massive distillations by public offices; FORPPA (1970).
62 Calculated from data from UNACO (1962: 46, 53).

output.[63]

In contrast with the remarkable expansion in France and Spain, producer wine cooperatives were much less important in Italy, a fact which can be explained by the limited intervention and incentives provided by the government. Although the Fanfani Law of 1952 gave cheap loans to Italian winegrowers covering up to 75 percent of capital requirements numbers increased only slowly, [64] from little more than 200 cooperatives accounting for only six percent of production in 1955, to around 600 by 1969. These produced only 18 percent of Italian wines, much less than the 50 percent production found in Spain's and France's cooperatives (**Tables 1 and 2**).[65] While wine policy in Italy was limited to granting tax advantages to distilling and restricting imports,[66] surpluses were less, in part because of the expanding external markets for its wines (**Table 5**).

Wine policy of the European Economic Community, the world largest producer and consumer, started in the early 1970s and was influenced by the French tradition of regulation. Policy, financed by the *European Agricultural Guidance and Guarantee Fund*, aimed to "adjust supply to demand and to raise quality standards". At the same time, the EEC tried to guarantee farm incomes through market intervention.[67] In 1970, it defined two prices for table wines: a guide price (considered as being adequate for the producer) and a threshold price (below which intervention measures came into play). Besides a common tariff on imports and controls of new plantings, attempts were made to stabilize prices by granting subsidies for the short and long-term blockage of wines and, in the case of serious imbalances between supply and demand, measures "to encourage voluntary distillation of the surpluses".[68] In Italy, the introduction of French

[63] A similar share was found in the early 1950s. Hirschfield (1957), p. 24.
[64] The Fanfani Law tried to increased incentives to cooperation because the previous law of 1931 only stipulated loans that covered 20 percent of capital; Galtier (1958, III: 29).
[65] For 1955, Bulletin l'OIV (1956): no. 299; for 1969, tables 1 and 2.
[66] European Communities: Directorate General Press and Information (1969): *Newsletter on the Common Agricultural Policy*, no. 7, p. 2)
[67] EU Commission (1970) *The common organization of the market in wine. Newsletter on the Common Agricultural Policy No. 9/70, December 1970.* [EU Commission – Brochure], p.1- 2.
[68] European Communities: Directorate General Press and Information (1969): *Newsletter on the Common Agricultural Policy*, no. 7, p. 23 and EU Commission (1970) *The common organization of the market in wine. Newsletter on the Common Agricultural Policy No. 9/70, December 1970.* [EU Commission - Brochure], p. 4

style intervention into its wine markets from the 1970s through the European Common Wine Policy led to a rapid expansion in the number of cooperatives, reaching almost 800 and accounting for 38 per cent of production in 1980 (**Tables 1 and 2**).

4. Cooperatives and the problems of low quality wines

The combination of effective controls on the area of vines cultivated and their yields, together with the blocking and distilling of surpluses by cooperatives following large harvests might have given the industry long term stability if demand conditions had not changed so dramatically. As **Table 4** shows, per capita consumption fell by 45 per cent in France between 1955/59 and 1985/9, 34 percent in Italy, and 17 percent in Spain. The greatest decline occurred with cheap table wines, the market segment dominated by the cooperatives rather than better quality premium wines.[69] Rising exports could only partly offset falling domestic consumption in European producer countries (**Table 5**). In these changing market conditions, traditional cooperatives, which had developed as specialized institutions to process large quantities of poor quality grapes which were then sold in bulk to merchants for blending, were increasingly unsuitable to the new conditions.

The success of market intervention in protecting the incomes of low quality wine producers encouraged them to increase output, and in both Spain and Italy the area under vines continued to expand during the 1940s and 1950s (**Figure 2**). In Spain, the lack of a cadastre made it difficult to control plantings, explaining perhaps the absence of government subsidies to uproot vines or tax more heavily poor quality vines.[70] In particular, the area of vines in La Mancha expanded to reach 50 percent of the national wine area (table 9 rehacer), while at the same time yields substantially increased. By contrast, in France the cadastre allowed the state to monitor closely the land under vines

[69] Fernández, 2012 and 2013; Between 1987 and 2009 annual per capita consumption of cheap table wines in Spain declined from 36.4 to 8.1 litres, while premium wine consumption remained constant at 6 litres. Medina Albaladejo, 2011, p.108.

[70] A decisive shift on this policy occurred in 1983, because the cadastral survey had been concluded in 1982, and programs to subsidize uprooting were introduced after the membership of Spain into the EEC, Dubos (1992). However, because of the relative increased in prices after 1986, the area of vines only started to decline from the 1990s, Barceló (1991: 193)

and therefore offer economic incentives to uproot vines.[71] The result was a sharp fall in the area of vines, with 200.000 hectares disappearing every 10 years after the mid-1950s, and in the Midi, the decline was especially significant, falling by a third between 1950 and 1980 (**Table 9**). However, this region still accounted for 42 per cent of French domestic production in the 1980s, not so different to the 50 per cent of Spanish output originating from La Mancha.[72]

In response to changing consumption patterns, governments have encouraged the spread of appellations to new regions, including areas dominated by cooperatives producing poor quality wines. In exchange for help provided by governments to create a collective brand which would compensate growers with higher farm prices, they had to adapt to markets by installing new wine-making technologies and, in particular, restrictions on grape varieties and yields, thereby improving quality and reducing volume.

The response of cooperatives has been mixed. The possibilities of adapting to new market conditions for a small cooperative producing 10,000 hectolitres in a favourably location such as Bordeaux was very different to one producing ten or twenty times more in the Midi. Instead, growers resorted from time to time with ‘voice’, perpetuating the militant tradition of the South. Only with the turn of the new century have there been major attempts to move-up market, with the considerable new investment in facilities for maturing wines, bottling plants and brand creation that this required.

[71] Lachiver (1988: 509, 512).
[72] Lachiver, 1988 and Medina Albaladejo, 2011, 119. La Mancha refers to 1980-4.

Conclusion

Producer cooperatives became increasing important in European farming during the half century prior to the Second World War. However there were significant differences in their success, both across countries and farm products. This paper has argued that important barriers existed to their diffusion in the wine industry. There were potentially significant advantages to be gained from the economies of scale in crushing grapes, and the maturing and selling of wines, leading not just to cost savings, but also better product quality. However the diffusion of cooperatives was slow, in part because of the significant capital costs in creating modern wineries, but also because of the high transaction cost in measuring grape quality.

European cooperatives were far too small to set market prices for wine, but in both California and Mendoza production scale was much greater, and cartels were formed with the object of restricting output and raising prices. The success of the California Wine Association in particular encouraged some producers in the Midi to float similar ideas in the 1900s, but the quantity of wine required to control prices was far too great. With the 1930s Depression however, governments everywhere were forced to consider the possibilities of market intervention.

The wine cooperatives that appeared in France in the 1930s, and the rest of Europe after the Second World War, were very different to the earlier ones. Instead of ‘bottom up’ institutions, that represented a small number of producers who attempted to benefit from the economies of scale in wine-making and marketing, they now formed part of a government plan to regulate output in the sector, and avoid the periodic crisis of over production and price slumps. In this respect they resembled the California Wine Association and the Midi producers’ attempts to corner the market at the turn of the century, although now being organized and financed directly by the state. First in France in the early 1930s and then in Spain in the 1950s a reference price was established below which the state started to withdraw surpluses from the market through compulsory blockages or distillation. To be successful, market regulation needed an increase in the storage capacity of wine facilities. Most winegrowers produced low quality wines and lacked capital to invest increase the size of their cellars, encouraging the state to finance new co-operatives and increase the size of those already working.

As a result, the presence of cooperatives became an integral, rather than peripheral part of the organisation of the wine market. By 1951, 13 per cent of the French winegrowers belonged to 986 cooperatives, and their production accounted for more than 14 million hectoliters, or 27 per cent of the national total.[73] Numbers peaked at almost 1200 in 1970 (and 45 per cent of the harvest), although the amount of cooperative wine continued to increase to reach 52 per cent of the total by 2000. In Spain growth was even faster, with slightly less than 200 cooperatives accounting for under 10 per cent of the harvest as late as 1950, rising to almost 900 and half the nation's wine by 1970; and 715 cooperatives responsible for 70 per cent of output by 2000.

By stabilizing short term wine prices by financing the storage and distillation of surplus wines in years of low prices, the state effectively provided an insurance cover for cooperative members. These policies were especially important in regions producing cheap wines, such as the Midi or La Mancha, where price falls were greatest because many growers lacked storage facilities, and were forced to sell their wine immediately after it was fermented. However, the very success of the policy created major difficulties for the wine market to adapt to changes in consumer demand, especially from the 1980s. As a result, cooperatives remained, in the eyes of the consumer, synonymous with cheap, poor quality wines.

[73] *Bulletin de l'OIV* (1954: no. 275: 69)

Table 1

Estimated number of wine cooperatives in France, Italy and Spain, 1914-1980

	France	Spain	Italy
1908	13		
1920 (1)	92	88	80
1928 (2)	353		84
1933 (3)	595		128
1945	858		
1950 (4)	997	193	161
1953	1,036	263	208
1957 (5)	1,109	407	214
1969	1,202	782	624
1980 (6)	1,158	848	783
2000	870	715	607

Notes: (1) For Spain, it refers to 1921; for Italy, it refers to 1924; (2) For France it refers to 1927; (3) For Italy, it refers to 1932; (4) For Italy and France, it refers to 1951; (5) For Italy, it refers to 1955; (6) For Spain, it refers to 1981-2

Sources:

France: 1908 and 1920, Loubère (1990: 139); 1928???; 1933, Tardy (1935: 315); 1945 and 1951, Loubère (1990: 147); 1953-1962, Barthe (1966: 36); 1964-1979, ONIVINS (1992); 1980, 1983 and 1985, Loubère (1990: 147); 2000, Anderson and Norman (2004: Table 2.2).

Italy: 1928, (Cotta, 1935: 71); number of cooperatives, from Cotta (1935: 71), Simpson (2000: 110), Galtier (1958, III: 29); 1955 bulletin l'OIV (1956): no. 299: pp. ; Anderson and Norman (2004: Table 2.2). Other years: *Annuario Statistico Italiano*

Spain: 1921, Pan-Montojo (2003: 328); 1935, OIV (1935); 1950, UNACO (1961: 25); 1953, LSV (1978), no. 1657; 1957, Pan-Montojo (2003: 328); 1961, UNACO (1961: 25); 1966, AGA (Sindicatos. SIG 36/6938); 1969, AGA (Sindicatos, SIG35/40): Datos estadísticos anuales de 1969 de Junta Nacional; 1981-2 LSV (1982), no. 1893: 4565.

Anderson and Norman (2004: Table 2.2).

Table 2

Quantity of wine produced by cooperatives (% of total)

	France	Spain	Italy
1920 (1)		5	
1928 (2)			6
1945	25		
1950 (4)	27	9	
1953	26	13	
1957 (5)	35	25	6
1969	45	50	18
1980 (6)	49	63	38
2000	52	70	55

Source: see previous table

Table 3

Private cooperatives and market power

	European Producers	New World Producers
Relatively few producers	No	Yes
Product quality homogenous	No	Yes
New entry difficult	No	No
Commodity perishable	No	No
Prices recover with small production cuts	No	Yes

Source: Adapted for wine from (Hoffman & Gary D. Libecap, 1991).

Table 4

Per capita wine consumption in selected countries (litres)

	France	Italy	Spain
1900-1913	145	120	95
1920-1929	164	95	92
1930-1939	160	90	70
1945-1948	90	75	65
1950-1954	126	87	50
1955-1959	137	106	56
1960-1964	125	108	59
1965-1969	116	110	62
1970-1974	106	106	68
1975-1979	99	96	69
1980-1984	87	87	56
1985-1989	76	70	46

Sources: own elaboration from Pinilla and Ayuda (2002a: 68), OIV (1954: 282), *La Semana Vitivinícola* (1954), 6-12/06: 7, OIV (1970) and ONIVINS (1992).

Table 5

Wine Exports between 1880 and 1985, thousand hectolitres

	Italy	Spain	France
1870-9	452	2,198	3,144
1880-9	2,101	7,454	2,525
1890-9	1,957	6,536	1,822
1900-9	1,372	2,073	2,084
1910-9	1,454	3,488	1,362
1920-9	1,151	3,519	1,569
1930-9	1,267	1,323	905
1940-9	995	546	1,003
1950-9	1,435	1,273	2,178
1960-9	2,512	2,517	4,981
1970-9	12,414	5,803	6,987
1980-5	17,825	7,180	10,383

Sources: Italy: Sommario; France: Lachiver, Spain: *Anuario de Comercio Exterior* (various years)

Table 6

Wine Output between 1880 and 1985, thousand hectoliters

	Italy	Spain	France
1870-9	26,650		51,690
1880-9	31,192		29,670
1890-9	31,240	18,165	35,980
1900-9	44,524	17,680	55,650
1910-9	43,409	17,481	43,120
1920-9	45,534	23,333	59,920
1930-9	39,971	19,594	58,780
1940-9	35,718	17,525	41,660
1950-9	53,931	18,186	52,710

1960-9	64,302	25,521	60,150
1970-9	70,410	30,896	66,500
1980-5	74,489	35,126	67,733

Table 7

Storage of surplus wines in cooperatives in Spain, in 1954-1959

	Number of coop.	Wine Stored			Advance granted	
		Thousand hl.	Percentage of total output	% in La Mancha	Million ptas.	Percentage of total value
1954-55	19	127	1	100	10	0.2
1955-56	73	567	3	82	43	0.7
1956-57	124	1.073	5	46	80	1.3
1957-58	165	1.082	6	45	81	0.8
1958-59	232	2.082	10	41	208	2.8

Source: Comisión de Compras de Excedentes de Vino (various years).

Table 8

Spain's cooperatives by main producing regions

	1946-7	1954	1969
Mancha	13	58	197
Cataluña-Baleares	75	108	173
Levante	22	47	119
Aragón	1	8	60
Navarra, Rioja	31	79	102
Andalucía Occidental	6	6	36
Otras	6	18	95
España	154	324	782

Source: see tables 1 and 2

Table 9

Vineyard land in the Midi and La Mancha, 1950-1987

	Midi		La Mancha	
	Thousand hectares	1950-9=100	Thousand hectares	1950-9=100
1950-1959	512	100	523	100
1960-1969	436	85	611	117
1970-1979	430	84	713	136
1980-1987	393	77	770	147

Source: own calculations from Lachiver (1988) and *Anuario estadístico de las producciones agrícolas* (various years).

Figure 1

Constant prices of wine in France, Italy and Spain between 1921 and 1985

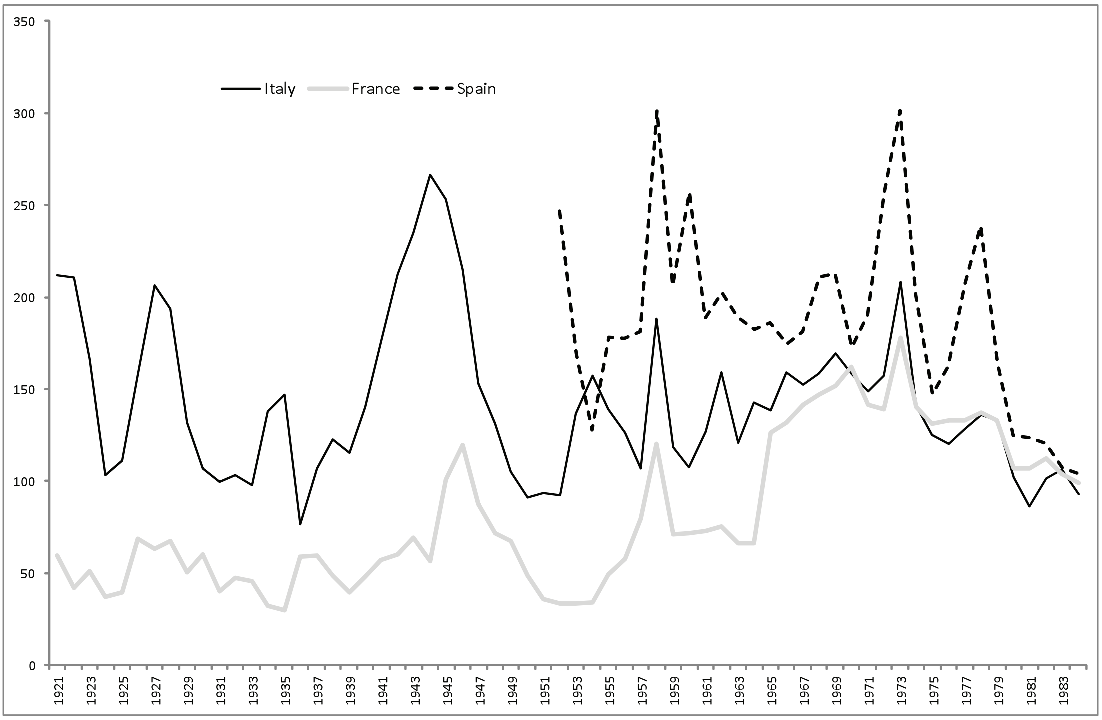


Figure 2

Area under vines in France, Italy and Spain in 1890-1985 (in thousand hectares)

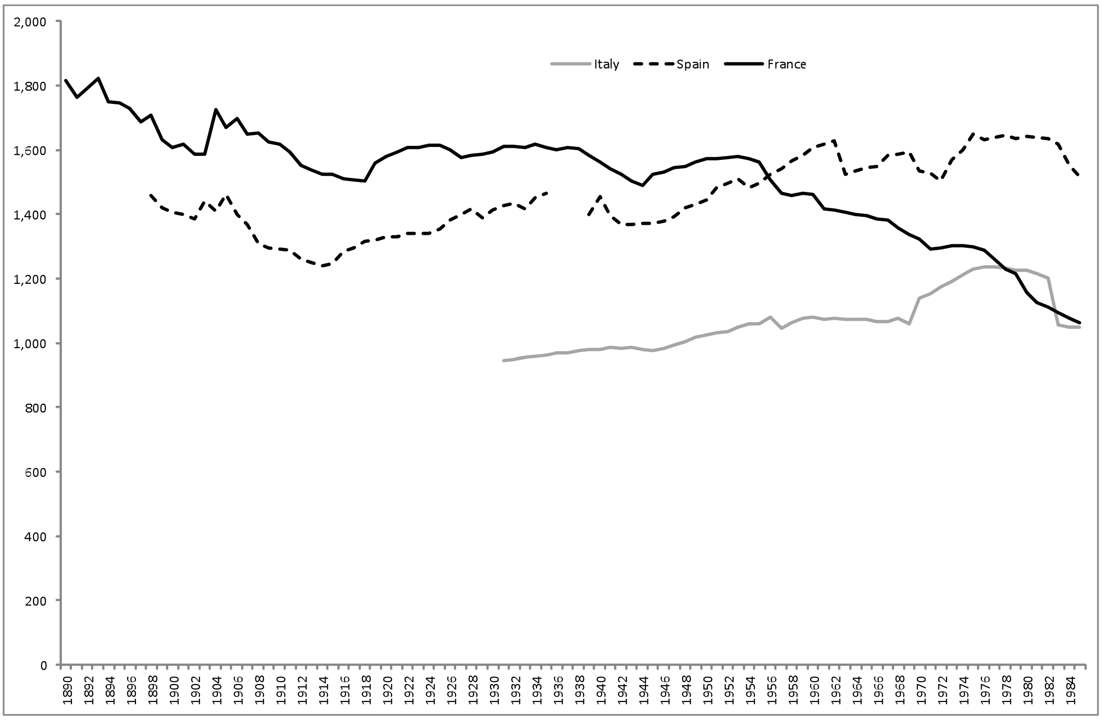
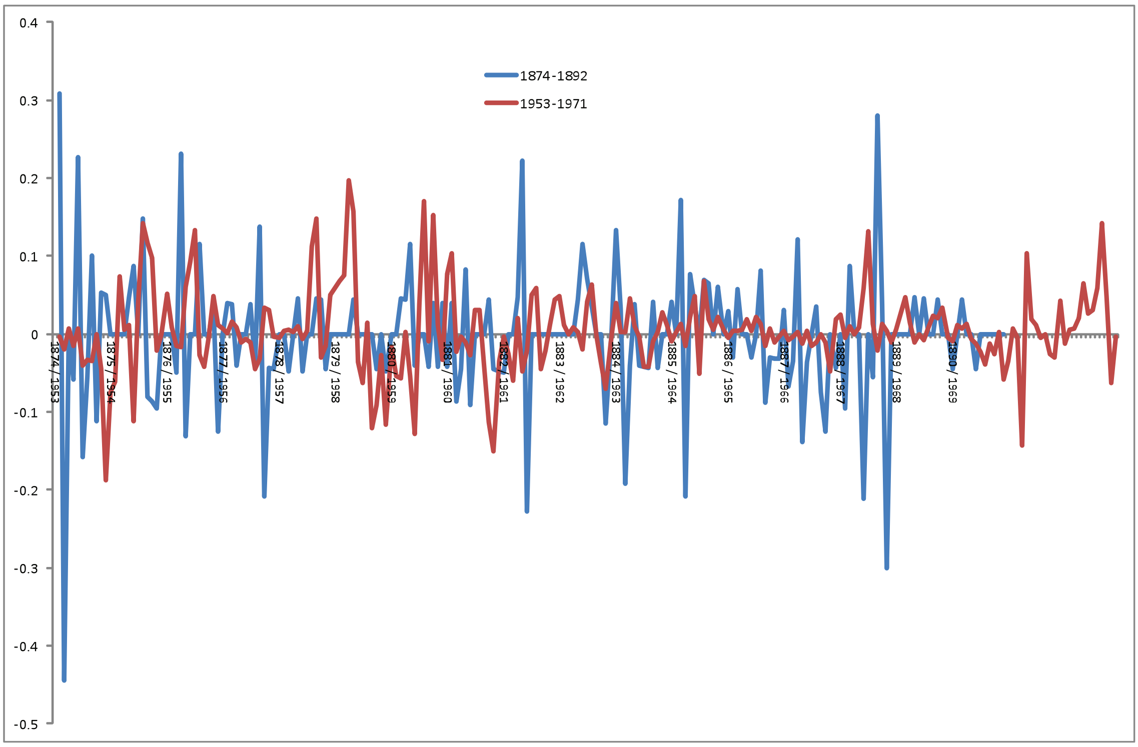


Figure 3

Monthly price change in La Mancha region in 1874-1892 and 1953-1971



Source: own calculations from GEHR (1981) and *La Semana Vitivinícola* (various years)

References

Atger, Frédéric. 1907. La crise viticole et la viticulture méridionale (1900-1907) Paris.

Augé-Laribé, M. (1907): Le problème agraire du socialisme. La viticulture industrielle du Midi de la France. Paris, V. Giard & E. Brière.

Bardissa, J. (1976): Cent ans de guerre du vin. Paris, Tema éditions.

Barthe, R. (1966): *Economie et politique viticoles de la France (1950-1965).* Thèse de Docteur et des Sciences Economiques. Université de Montpellier, Faculté de Droit et des Sciences Economiques.

Barthe, R. (1975): 25 ans d´organisation communautaire du secteur vitivinicole (1950-

75). Montpellier, École Nationale Supérieur Agronomique de Montpellier.

Barthe, R. (1989): L´Europe du vin. 25 ans d´organisation communautaire du secteur vitivinicole (1962-1987). Paris, Editions Cujas.

Beltrán-Tapia, F. (2012). Commons, social capital, and the emergence of agricultural cooperatives in early twentieth century Spain. European Review of Economic History, hes014

Berget, A. (1902): La coopération dans la viticulture européenne: étude d'économie rurale et d'histoire agronomique. Lille, A. Devos.

Berger, A. y F. Maurel (1980): La viticulture et l'économie du Languedoc du XVIIIe siècle à nos jours. Montpellier, Les Editions du Faubourg.

Boughner, D. S., & Sumner, D. A. (2000). Producer Participation in Price Pooling Cooperatives to Smooth Income Variability: Evidence From California. San Joaquin Agric. L. Rev., 10, 27

Caupert, Maurice. 1921. Essai sur la C.G.V. Montpellier.

Clique, H. (1931): *Les caves coopératives de vinification en Bourgogne ainsi que dans les autres régions de la France et treize pays étrangers.* Paris, Recueil Sirey.

Comisión de Compras de Excedentes de Vino (1953-1965): *Memoria de la actuación de la Comisión de Compra de Excedentes de Vinos*.

Cotta, F. (1935): *Agricultural co-operation in Fascist Italy. With a full account of the General Organisation of Co-operation.* London, P.S. King & Son, Ltd.

Degrully, P. (1910): Essai historique et économique sur la production et le marché des vins en France. Paris, V. Giard et E. Brière.

Denis, Pierre. 1922. The Argentina Republic. Its development and progress. London: Fisher Unwin.

Fernández, Eva (2008): Productores, comerciantes y el estado: regulación y redistribución de rentas en el mercado de vino en España, 1890-1990, Universidad Carlos III de Madrid, Ph.D. thesis.

Fernández, Eva (2014a): "Trust, religion and co-operation in Western agriculture, 1880-1930", Economic History Review 67 (3): 678–698

Fernández, Eva (2014b): Selling agricultural products: Farmers' co-operatives in production and marketing, 1880-1930", Business History 56(4): 547-568

Garrido, S. (2007): "Why did most cooperatives fail? Spanish agricultural cooperation in the early twentieth century?" Rural History 18: 183-200.

Galtier, G. (1958): *Le Vignoble du Languedoc méditerranéen et du Roussillon. Étude comparative d'un vignoble de masse.* Paris, Université de Paris. 3 vols.

Garrido, S. (2014). Plenty of trust, not much cooperation: social capital and collective action in early twentieth century eastern Spain. European Review of Economic History, 18(4), 413-432.

Gervais, Misaël 1913. La coopération en viticulture. Paris: Bailliére et fils.

Gide, Ch. (1926): Les associations coopératives agricoles. Paris, Association pour l'enseignement de la coopération.

Grupo de Estudios de Historia Rural (1981). El vino, 1874-1907. Banco de España, no. 6.

Henriksen, I., M. Hviid and P. Sharp (2012). 'Law and Peace: Contracts and the Success of the Danish Dairy Cooperatives'. Journal of Economic History 72:1, pp. 197-224.

Hirschfield, A. (1957): La coopération agricole en France. Paris, J.B. Baillière et Fils.

Hoffman, E. y G. D. Libecap (1991): "Institutional choice and the development of U.S. agricultural policies in the 1920s." The Journal of Economic History 51 (2): 397-411.

INE (1963): Primer Censo Agrario de España, 1962. Serie B. Cuadernos Provinciales.

Madrid.

INSEE (1958-61): Recensement général de l'agriculture de 1955. Paris, Impr. nationale.

Lachiver, M. (1988): Vins, vignes et vignerons: histoire du vignoble français. [Paris], Fayard.

Loubère, L. A. (1990): *The wine revolution in France: the twentieth century*. Princeton, N.J., Oxford, Princeton University Press.

Mandeville, L. (1914): Étude sur les sociétés coopératives de vinification du midi de la France. Toulouse, Impr. Douladoure-privat.

Mateu, Ana María. 2007. Los caminos de construcción del cooperativismo vitivinícola en Mendoza, Argentina (1900-1920). In Documentos de Trabajo: Universidad de Belgrano.

Martínez Soto, A. P. (2003): "El cooperativismo de crédito en España, 1890-1934. Modelos, sistemas de gestión y balance de su actuación." Historia Agraria 30: 119-150.

Medina-Albaladejo, F. J. (2011). *Cooperativismo y sector vitivinícola en España durante la segunda mitad del siglo XX* (Doctoral dissertation).

OIV (1954): *VIIe Congrès International de la Vigne et du Vin: rapports et actes du congrès (1953. Rome-Siena).* Alençon, Imprimerie Alençonnaise.

OIV (1970): *Memento de la L'OIV*. Paris, OIV.

ONIVINS (1992): *Statistiques sur la filière viti-vinicole.* Paris, ONIVINS, Division Études et Marchés.

Pacottet, P. 1911. Vinificación en la provincia de Mendoza. Paris: Bailliere.

Pan-Montojo, J. (1994): La bodega del mundo. La vid y el vino en España (1800-1936). Madrid, Alianza-Ministerio de Agricultura.

Pan-Montojo, J. (2003): "Las industrias vinícolas españolas: desarrollo y diversificación productiva entre el siglo XVIII y 1960.” Pp. 313-334, en *Las industrias agroalimentarias en Italia y España durante los siglos XIX y XX,* editado por C. Barciela y A. Di Vittorio. Alicante, Publicaciones de la Universidad de Alicante.

Pasour, E.C. and R.R Rucker (2005): *Ploughshares and port barrels. The political economy of agriculture*. Oakland.

Peninou, E. P., & Unzelman, G. G. (2000). *The California Wine Association and its member wineries, 1894-1920.* Santa Rosa, CA: Nomis.

Pinilla, V. y M. I. Ayuda (2002a): “Pautas de consumo y comercio internacional de productos agrarios: el caso del vino, 1850-1938.” Pp. 61-77 en En torno a la Navarra del siglo XX. Veintiuna reflexiones acerca de la sociedad, economía e historia, coordinado por J. M. Lana Berasain. Pamplona, Universidad Pública de Navarra.

Piqueras, J. (1981): La vid y el vino en el País valenciano (Geografía económica: 1564-1980). Valencia, Institución Alfonso el Magnánimo.

Postel-Vinay, Gilles. (1989). Debt and agricultural performance in the Languedocian vineyard, 1870-1914. Research in Economic History (supplement 5):161-86.

Sempé, Henri 1898. Régime économique du vin. Production, consommation, échange. Bordeaux and Paris.

Sheingate, A. (2001): The rise of agricultural welfare state: Institutions and interest group power in the United States, France and Japan. Princeton, Princeton University Press.

Simpson, J. (1985): "La producción de vinos en Jerez de la Frontera, 1850-1900." Pp. 166-191, en La nueva historia económica en España, editado por P. Martín Aceña y L. Prados de La Escosura. Madrid, Tecnos.

Simpson, J. (2000): “Cooperation and cooperatives in Southern European wine production: the nature of successful institutional innovation, 1880-1950.” *Advances in Agricultural Economic History* 1: 95-126.

Simpson, J. (2011). Factor endowments, markets and vertical integration. The development of commercial wine production in Argentina, Australia and California, c1870-1914. Revista de Historia Económica. Journal of Iberian and Latin American Economic History, 29(1), 39-66.

Simpson, J. (2011b). Creating Wine: the Emergence of a World Industry, 1840-1914. Princeton: Princeton University Press.

Spahni, P. (1998): The Common Wine Policy and price stabilization. Avebury (Gower), Aldershot.

Tardy, M. (1935): "Le point de vue français." Pp. 311-316, en IVe *Congrès International de la Vigne et du Vin. Lausanne, du 26 au 31 Août 1935.* Tome I: *Rapport présentés par les Comités Nationaux de la Commission,* editado por l'OIV. Paris, Librairie Félix Alcan.

Torrejón y Bonete, A. de (1923). *Bodegas industriales*. Madrid: Helénica.

UNACO (1961-1962, 1970): Memoria que presenta la Junta rectora de la Unión Nacional de Cooperativas del Campo a la Asamblea General. Madrid, Instituto Geográfico.

Valentinov, V. (2007). Why are cooperatives important in agriculture? An organizational economics perspective. *Journal of Institutional Economics*, 3, 55-69.

Warner, Ch. K. (1960): *The Winegrowers of France and the Government since 1875.* New York, Columbia University.