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# The Political Economy of European Wine Regulations*

**Giulia Meloni[a] and Johan Swinnen[a]**

## Abstract

The wine market in the European Union is heavily regulated. Despite the many distortions in the wine market as a consequence, reforming the regulations has proven difficult. This paper analyzes the political economy mechanism that created existing wine regulations. We document the historical origins of the regulations and relate these to political pressures that resulted from international integration, technological innovations, and economic developments. (JEL Classifications: K23, L51, N44, N54, Q13)

Keywords: appellations, European agriculture, institutions, regulation, wine history.

## I. Introduction

> They [the Germanic tribes] on no account permit wine to be imported to them, because they consider that men degenerate in their powers of enduring fatigue, and are rendered effeminate by that commodity. (Julius Caesar, De Bello Gallico, Book IV, Chap. 2)

Almost half the world's vineyards are in the European Union (EU), and the EU produces and consumes around 60% of the world's wine.[1] The EU is not only the largest global wine-producing region and the main importer and exporter of wine but also a highly regulated market.

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[a] LICOS Centre for Institutions and Economic Performance, KU Leuven, Waaistraat 6, Leuven, Belgium. Corresponding author: Giulia Meloni; e-mail: giulia.meloni@kuleuven.be.
[1] Worldwide production increased from 213 million hectoliters (hl) in 1961 to 244 million hl in 2011. France, Italy, and Spain together produced 122 million hl of wine in 1961 and about the same in 2011. Wine production in New World wine countries (Argentina, Australia, Chile, China, New Zealand, South Africa, and the United States) increased from 30 million hl in 1961 to 81 million hl in 2011 (FAO, 2012; OIV, 2007, 2012b).

Government intervention has taken many forms in EU wine markets. Regulations determine where certain wines can be produced and where not, the minimum spacing between vines, the type of vines that can be planted in certain regions, yield restrictions, and so on. In addition, EU regulations determine subsidies to EU producers and wine distillation schemes.[2] The EU also subsidizes grubbing up (i.e., uprooting) of existing vineyards and imposes a limit on the planting of new vineyards. The extent of the regulatory interventions—and the associated market interventions—is possibly best illustrated by the observation that in the past three decades every year on average 20 million to 40 million hectoliters (hl) of wine have been destroyed (through distillation), representing 13% to 22% of EU wine production or, in other words, the equivalent of 3 billion to 6 billion bottles (Eurostat, 2013).

Wine regulation in the EU has several noteworthy features. One of the most striking conclusions of economic studies on the EU's wine markets is that the policies have not been effective at solving the problems and may have caused—rather than resolved—some major distortions in the wine sector.[3] This raises some questions related to the introduction of these policies.

The objective of our paper is to explain why these regulations have been introduced. We analyze the historical origins of these regulations and relate them to various political pressures. Analyzing the historical roots and political motivations of regulations in the EU, how they were introduced, and how they have (not) continued to affect current regulations provides interesting insights on the current EU policy regime. Our paper also offers some general insights on the political economy of government regulations.[4]

More than two thousand regulations, directives, and decisions on wine have been published in the EU since 1962, and the main wine framework law of 1962 was reformed five times (Council Regulation No. 479/2008; Petit, 2000). As we argue, some of the regulations were introduced to protect existing economic rents when these were threatened by innovations or surging imports. Other regulations, however, appear to both enhance welfare (efficiency) and redistribute economic rents, which makes analysis of them more complex. Wine regulations offer

[2] Wine distillation is the process by which wine is transformed either into raw alcohol and spirits, which are sold as potable alcohol, or into industrial alcohol for later use in chemical or carburation processes (European Commission, 2006a).

[3] See various studies on the wine sector by (or commissioned by) the European Commission in 2004, 2006 and 2007. For example, the 2004 Innova et al. report asserts: "Distillation of wine measures are neither effective nor efficient in eliminating structural surpluses. Distillation measures involve fairly high EU expenditure. The short-term income support through buying-in of wines for distillation stabilises surplus production in the long-term …. Additionally, continuous implementation of distillation measures producing industrial alcohol out of wine might be an incentive for higher yields."

[4] There is an extensive literature on the political economy of government regulations and public policy. For a review see Rausser et al. (2011); and for applications to EU agricultural policy see Swinnen (2008, 2009).

particular insights because of their long history. The remainder of this paper is organized as follows: section II develops the conceptual framework for our analysis; section III describes the EU wine policy, the Common Market Organization (CMO) for wine; section IV presents a historical perspective on the political economic origins of some of the key regulatory interventions in Europe; section V explains how the process of European integration led to the creation of the EU wine policy; and section VI concludes and provides some perspective.

## II. Conceptual Framework

> That the vineyard, when properly planted and brought to perfection, was the most valuable part of the farm, seems to have been an undoubted maxim in the ancient agriculture, as it is in the modern through all the wine countries. (Smith, 1776/1904, p. 216)

European policies have tried to regulate quantities, prices, and qualities of wine. As with many government interventions in other food and agricultural markets, the quantity and price regulations can be understood only from a political perspective—that is, by analyzing how political pressures related to regulation-induced rents have influenced government decision-making.[5] Their primary purpose is to redistribute rents between different groups in society, in particular from (potential) new producers of wine and from consumers of wine to the existing producers. These interventions typically reduce overall welfare and efficiency.

In contrast, regulations to guarantee a certain quality of wine, like many products and process standards in general, may increase efficiency and overall welfare. In an environment with asymmetric information between producers and consumers, where consumers have imperfect information and high ex-ante monitoring costs about the quality of a certain product, such as wine, government regulations that guarantee a certain quality or safety level, or that reduce information costs, can enhance overall welfare. Similarly, regulations that forbid the use of unhealthy ingredients may increase consumer welfare by reducing/eliminating problems of asymmetric information. For example, some of the early regulations target the dilution of wine with water, which hurts consumer interests and producer reputations.[6]

However, quality regulations also affect income distribution. Depending on their implementation, they may create rents for certain groups of producers who face fewer costs in implementing certain quality standards for those who have access to

[5] There is an extensive literature on the political economy of agricultural and food policies (see de Gorter and Swinnen (2002), Swinnen (2010) and Anderson et al. (2013) for surveys) but there have been no applications to wine policies.

[6] More recent regulations specify that the use of certain ingredients must be indicated on the label. Since 2006, sulfites (added to preserve wine) must be disclosed on the labeling since these additives may cause allergic reactions (Article 51 of Council Regulation No. 607/2009).

key assets or skills that are required by the regulations.[7] For example, regulations that restrict the production of certain types of (expensive) wines to a certain region will benefit the owners of the fixed factors of production (such as land and vineyard) in that region and will harm the owners of land and vineyards in neighboring regions.

Some of the EU wine quality regulations have strong income distributional effects as they require access to very specific assets, such as plots of land in specific regions. In fact, the official EU regulations explicitly specify that "the concept of quality wines in the Community is based … on the specific characteristics attributable to the wine's geographical origin. Such wines are identified for consumers via protected designations of origin and geographical indications" (Council Regulation (EC) No. 479/2008, Preambles at [27]). Other examples of quality regulations with clear rent distributional effects are those in which regulations do (not) allow certain new techniques, such as the use of hybrid vines, the mixing of different wines (e.g., in rosé wine production), the use of new vine varieties.

In historical perspective, this approach to quality regulation in the EU is not the exception but the rule. In fact, throughout history, quality regulations for wine have been motivated both by efficiency considerations and in order to restrict the production of wines to certain regions (which created rents for land- and vineyard-owners in those regions) or certain technologies (again creating rents).[8] Moreover, even when regulations were primarily introduced for efficiency reasons they have invariably created rents and induced lobbying to keep these regulations in place after their efficiency effects had been mitigated (Meloni and Swinnen, 2013).

In summary, to understand the existing set of quantity and quality regulations, it is crucial to look at the interactions of political and economic aspects of the regulations.

[7] An emerging literature on the political economy of food standards focuses on the interaction between rent distribution and welfare enhancement (see, e.g., Anderson et al., 2004; Fulton and Giannakas, 2004; Moschini et al., 2008; Swinnen and Vandemoortele 2008, 2009), but none of these insights have been applied to wine policies.

[8] Throughout history, owners of vineyards and wine producers have been among the rich and powerful. Not surprisingly the profits and power of existing wine producers and vineyard owners attracted others to invest in wine production and induced innovations. These new investments and innovations threatened the rents and power of the established vineyard owners and caused protectionist reactions. There are many examples of such political economy processes which resulted in significant regulations in wine markets during Roman times, the Middle Ages, the Renaissance period and in the past few centuries. Whenever changes threatened to reduce their rents, established producers have sought to constrain or outright remove the threat of new developments through political means. They lobbied governments to constrain threats to their rents through regulatory initiatives. Because of their wealth and power they were often successful (see Meloni and Swinnen, 2013).

## III. EU Regulations and the Wine Lake[9]

Since the 1960s, the European Union (EU) has introduced a vast number of regulations in the wine sector, the Common Market Organization (CMO) for wine.[10] Appendixes 1–3 provide a detailed list of these regulations. Here we summarize some key elements. We focus first on quality regulations and later on quantity and price regulations.

### *A. Quality Regulations in the EU*

> Poured from the bottle, the ruby-colored liquid looks like wine. Swirled around a glass, it smells like wine. Sure enough, it tastes like wine, too. But, at least within the confines of the European Union, the closest it may come to be being called wine is "fruit-based alcoholic beverage." (Castle, 2012)[11]

The EU has introduced regulations with the official intention of affecting the quality and location of wine production. Such "quality regulations" include policy instruments, such as the geographical delimitation of a certain wine area, winegrowing and production rules (as regulations on grape variety, minimum and maximum alcohol content and maximum vineyard yields, the amount of sugar or the additives that can be used—i.e., "oenological practices"), and rules on labeling.

Quality regulations were part of the initial wine policy in 1962[12] and have been strengthened since.[13] They apply to both "low quality" ("wines without a Geographical Indication" [GI], previously called "table wines") and "high-quality" wines ("wines with a Geographical Indication" [GI], previously called "quality wines").[14]

[9] For a detailed review of EU wine policies, see Council Regulations of 1962, 1970, 1979, 1987, 1999, and 2008; Europa (2008) and European Commission (2008a). In 2009, the wine regulation of 2008 merged into the Single CMO Regulation (EC) No. 1234/2007, that formally integrates in one document all the CMOs of agricultural products (Council Regulation [EC] No. 491/2009).

[10] "A common market organisation is a set of measures that enables the European Union firstly to manage ... markets for agricultural products and secondly to support the incomes of farmers" (European Commission, 2008b). These common rules for agricultural markets include, for instance, public interventions and production standards.

[11] Wine produced in the EU from grapes that are not produced within the EU cannot be named "wine." This principle was already adopted in 1962 where "imported fresh grapes ... shall not be turned into wine" (see Articles 28 of the Council Regulation No. 816/70). In April 2012, English winery Chapel Down could not sell its "wine" made from grapes shipped from Argentina and had to name the beverage a "fruit-based alcoholic beverage" (Castle, 2012).

[12] "[W]hereas the common organization must aim at stabilizing markets and prices by adjusting supplies to requirements, such adjustment being directed in particular towards quality production" (Council Regulation [EEC] No. 24/1962, Preambles at [3]).

[13] Regulations of 1970, 1979, 1987, 1999, and 2008 included provisions that strengthen the requirements in order to increase quality.

[14] In the pre-2008 system, EU wines were classified into two categories: "quality wines produced in specified regions" (abbreviated to "quality wines") and "table wines" (separated into table wines

The EU heavily regulates "wines without a GI" and their quality requirements by defining the oenological practices (indicating the recommended/authorized varieties or the maximum enrichment/alcohol per volume allowed), by requiring particular methods of analysis[15] and by restructuring and converting vines.[16] For "wines with a GI," it only sets the minimum legal framework. It is up to each member state to determine its own system of classification and control.[17] For this reason, within the EU, "wines with a GI" can have different meanings among member states (Robinson, 2006, p. 678).

The EU system of geographical indications (GIs) is based on the French concept of *appellation d'origine.* Appellation of origin is "the name of the country, region or the place used in the designation of a product originating from this country, region, place or area as defined to this end, under this name and recognised by the competent authorities of the country concerned" (OIV, 2012a). A place name is thus used to identify the wine and its characteristics, which are thus defined by the delimited geographic area and specific production criteria (*cahier des charges* in France or *disciplinare di produzione* in Italy).[18] These governing rules delimit the geographic area of production, but also determine the type of grape varieties that can be used, the specific wine-making methods, the maximum yield per hectare, and the analytical traits of the respective wines (assessment of organoleptic characteristics—such as appearance, color, bouquet, and flavor—and a chemical analysis that determines the levels of acidity and alcohol). This implies that the wine's denomination can be attributed only if the grapes are grown and pressed in the

protected by geographic indications and those not protected by geographic indications). The 2008 regulation transformed the EU wine classification: wines are now divided into "wines with a GI" and "wines without a GI." Within the first category, there are two subcategories: Protected Designation of Origin (PDO) wines and Protected Geographical Indication (PGI) wines, with PDO as the highest quality level. With the 2008 regulation, certain table wines (as French VdP or Italian IGT) were elevated to the rank of wines with a GI (PGI). Even if the new classification harmonized the wine market with other EU food products that already adopted the PDO/PGI system, member states still have the possibility to use their national classifications on the labels. So far only Romania adopted the PDO/PGI system, casting doubts on the 'simplicity' of the system (Cagliero and Sardone, 2009).

[15] Grape and must analysis regards three components, sugar, acid and pH. For instance, for wines without GI, the alcoholic strength ranges between 8.5 and 15% by volume and total acidity content of not less than 3.5 grams per liter. In addition, wine analysis involves alcoholic strength, total acidity, pH, density, residual sugar, and mineral elements, such as iron, copper, sodium, and potassium (Council Regulation No. 479/2008; Robinson, 2006).

[16] Support for restructuring and conversion of vineyards includes: varietal conversion, relocation of vineyards and improvements to vineyard management techniques. It involves, for instance, uprooting existing old vines and planting new vines but also, among others, terracing, stone picking, soil disinfection and land leveling, with the aim of improving vineyard's quality (Council Regulation No. 479/2008, Article 11).

[17] For instance, wines with a GI in Italy are regulated by Governmental Legislation 164/92 and by Ministerial Decree 256/97, and three categories are defined: Controlled and Guaranteed Denomination of Origin (DOCG) and Controlled Denomination of Origin (DOC) and Typical Geographical Indication (IGT). The DOCG are subject to stricter requirements than DOC (Federdoc, 2012).

[18] See Appendix 4 for an example of such *cahier des charges* regulation applied to Bordeaux wines.

delimited region and the wine production process fulfills certain criteria. For instance in the case of Chianti Classico wine, specific varieties of grapes have to be grown in one of only nine villages in Italy.[19]

As part of these quality regulations, the EU also specifies the type of labels that can and should be used. Until 2008, labels listed the geographic areas but not the wine's varietal composition. For instance, the indication of "Burgundy" was mentioned but not that of Pinot noir (the name of the grape).[20] The 2008 wine reform introduced changes in labeling for wines without a GI. The label now allows mention of the grape variety and harvest year, thus facilitating identification of the product's characteristics.[21] This aligns European producers with wine producers in the New World (e.g., Australia and California) who document on their labels the brand and the grape variety rather than where the wine is produced (Maher, 2001).

## *B. Quantity and Price Regulations in the EU*

> The market mechanism measures have often proved mediocre in terms of cost effectiveness to the extent that they have encouraged structural surpluses without requiring structural improvements. Moreover, some of the existing regulatory measures have unduly constrained the activities of competitive producers. (Council Regulation [EC] No. 479/2008, Preamble at [3]).

In addition to the quality regulations, the EU employs policies that influence the amount and price of wine produced in Europe. Since the implementation of the EU Common Wine Policy in 1970, the EU has imposed minimum prices for EU wine, tariffs on the import of wine, and organized public intervention in wine markets to deal with surpluses. Surpluses were either stored or distilled into other products with heavy government financing. In addition to distillation and market intervention, the EU wine policy included measures to restrict production such as restricted planting rights[22] and vineyard grubbing-up programs.[23]

Figure 1 and Table 1 summarize the effect of these regulations. The Organization for Economic Cooperation and Development's (OECD's) estimate of government

[19] The area includes the villages of Barberino Val d'Elsa, Castellina in Chianti, Castelnuovo Berardenga, Gaiole in Chianti, Greve in Chianti, Poggibonsi, Radda in Chianti, San Casciano Val di Pesa and Tavarnelle Val di Pesa. In order to produce a Chianti Classico DOCG, the varieties of grapes used in the preparation of the wine are fixed: 80% of Sangiovese, plus 20% of either native varieties like Canaiolo or "foreign" types like Merlot Cabernet and Sauvignon (Consorzio Vino Chianti Classico, 2012).

[20] Germany is an exception. The classification system is based on grapes' sugar levels and ripeness of the grapes rather than only on geography (Maher, 2001).

[21] Article 50 of Council Regulation (EC) No. 479/2008.

[22] Planting rights is a system to control European wine grape production, in which the planting of new vineyards require permission ("planting rights"). See Deconinck and Swinnen (2013) for an economic analysis.

[23] The EU provides grubbing-up premiums to winegrowers who permanently (and voluntarily) abandon vineyards.

*Table 1*

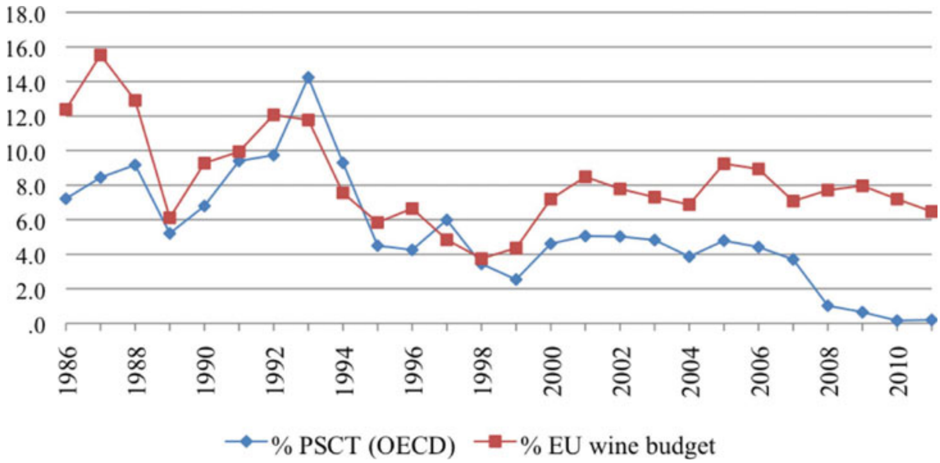
**Producer Single Commodity Transfers (PSCT) to Wine (annual average)**

| | *1985–1990* | | *1995–2000* | | *2008–2011* | |
|---|---|---|---|---|---|---|
| | *million euros* | *% of total PSCT* | *million euros* | *% of total PSCT* | *million euros* | *% of total PSCT* |
| Market price support | 749.8 | 98.8 | 533.9 | 84.0 | 55.3 | 48.0 |
| Payments based on output | 0 | 0 | 0 | 0 | 0.2 | 0.2 |
| Payments based on input use | 0.3 | 0.1 | 54.3 | 7.9 | 0.9 | 0.9 |
| Other payments for which production is required | 8.5 | 1.1 | 54.9 | 8.1 | 22.6 | 50.9 |
| Total transfers | 758.6 | 100 | 643.1 | 100 | 79.0 | 100 |
| Total transfers/Value of production (%PSCT) | 7.4 | | 4.2 | | 0.5 | |

*Source:* OECD Producer and Consumer Support Estimates database, 2012 (available at www.oecd.org/tad/agricultural-policies/E27dataPSE2012.xlsx).

*Figure 1*

**Policy Transfers (PSCT) and EU Budget Expenses on Wine as % of Production Value, 1986–2011**




*Sources*: OECD Producer and Consumer Support Estimates database, 2012 (available at www.oecd.org/tad/agricultural-policies/E27dataPSE2012.xlsx); European Commission budget: Guarantee Section of the EAGGF, various years (see EAGGF financial reports available at http://aei.pitt.edu/view/euannualreports/euann13.html and, from 2007, see EAGF financial reports available at http://ec.europa.eu/agriculture/cap-funding/budget/index_en.htm); authors' calculations.

support to wine producers, the Producer Single Commodity Transfer (PSCT) for wine, fluctuated around 7% in the late 1980s and early 1990s—meaning that government transfers to producers through these regulations were around 7% of the production value of wine. The main instrument of regulation was market

*Table 2*
**EU Budget Expenditures on Wine Policy (annual average)**

| | *1985–1990* | | *1995–2000* | | *2008–2011* | |
|---|---|---|---|---|---|---|
| | *million euros* | *% of total budget* | *million euros* | *% of total budget* | *million euros* | *% of total budget* |
| Export refunds | 41.1 | 3.8 | 37.9 | 4.8 | 4.3 | 0.3 |
| Private storage | 75.8 | 7.1 | 43.7 | 5.5 | 29.4 | 2.2 |
| Distillation | 782.5 | 73.2 | 403.3 | 50.9 | 270.6 | 20.4 |
| Aid for the use of must | 128.7 | 12.0 | 149.7 | 18.9 | 106.0 | 8.0 |
| Grubbing-up premium* | 36.7 | 3.4 | 156.4 | 19.8 | 287.3 | 21.6 |
| Vineyard restructuring and conversion | – | – | – | – | 387.2 | 29.1 |
| Single Payment Scheme support | – | – | – | – | 47.5 | 3.6 |
| Promotion | – | – | – | – | 58.5 | 4.4 |
| Investments in enterprises | – | – | – | – | 41.8 | 3.1 |
| Other measures | 3.9 | 0.4 | 0.6 | 0.1 | 96.5 | 7.3 |
| Total budget | 1,068.7 | 100.0 | 791.7 | 100.0 | 1,329.0 | 100.0 |
| % of total budget in production value | 11.2 | | 5.4 | | 7.5 | |

* The grubbing-up premium was previously called "permanent abandonment premium."
*Sources*: Guarantee Section of the EAGGF, various years (see EAGGF financial reports available at http://aei.pitt.edu/view/euannualreports/euann13.html and, from 2007, see EAGF financial reports available at http://ec.europa.eu/agriculture/cap-funding/budget/index_en.htm); National support programs, various years (see the financial executions available at http://ec.europa.eu/agriculture/markets/wine/facts/index_en.htm); and authors' calculations.

interventions (minimum price and tariffs of 10% to 20%—see below). As indicated in Table 1, market price support accounted for 99% of the PSCT from 1985 to 1990. However, the PSCT numbers do not include most of the EU budget expenses on wine (see Figure 1 and Appendix 5).[24] These budget expenditures were on average around 1 billion euros per year over the same period—with a peak in 1988 of 1.5 billion euros. This is equivalent to 11% of the production value (see Table 2). In that period, the vast majority (around 70%) of budgetary expenditures comprised subsidies for the distillation of wine. As Table 3 shows, almost one-quarter (22%) of total EU wine production was distilled in 1987 to 1993. Moreover, the share was highest for the largest producers: France (22%), Italy (23%), and Spain (28%).

Despite these regulations, the wine market in the EU has been characterized for decades by what EU Commission documents typically refer to as "structural imbalances," that is, the production of vast surpluses of low-quality wine. Surplus

[24] To some extent, this is to avoid "double counting" in the PSCT numbers; another reason is that some of the payments are not considered specific support to wine producers. For example, the OECD calculations consider distillation subsidies support to "consumers" of wine, not producers. Also measures such as grubbing-up premiums are not included in the wine PSCT.

*Table 3*

**Average Annual Distillation by Member States (in million hectoliters)**

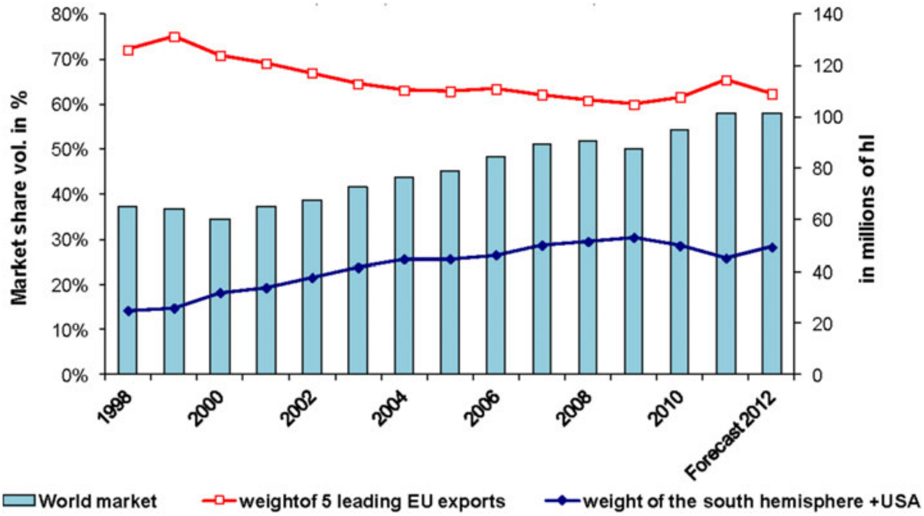
| | *Wine production* | | | | *Volume distilled* | | | | *% of annual production* | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | *1987–93* | *1994–2000* | *2001–7* | *2008–11* | *1987–93* | *1994–2000* | *2001–7* | *2008–11* | *1987–93* | *1994–2000* | *2001–7* | *2008–11* |
| Germany | 11.3 | 9.8 | 9.4 | 9.2 | 0.2 | 0.08 | 0.4 | 0.3 | 2 | 1 | 4 | 3 |
| Greece | 4.2 | 3.7 | 3.7 | 3.4 | 0.4 | 0.3 | 0.3 | 0.0 | 10 | 8 | 8 | 1 |
| Spain | 33.3 | 28.2 | 37.9 | 35.8 | 10.0 | 4.0 | 9.3 | 5.3 | 28 | 13 | 25 | 15 |
| France | 61.1 | 54.9 | 52.8 | 44.7 | 14.2 | 10.7 | 4.8 | 1.5 | 23 | 19 | 9 | 3 |
| Italy | 64.7 | 56.9 | 49.8 | 45.3 | 14.8 | 5.5 | 6.1 | 3.0 | 22 | 9 | 12 | 7 |
| Portugal | 8.6 | 6.6 | 7.3 | 6.2 | 1.1 | 0.5 | 1.0 | 0.4 | 11 | 7 | 14 | 7 |
| Total* | 183.2 | 161.9 | 167.7 | 158.2 | 40.8 | 21.1 | 21.9 | 14.5 | 22 | 13 | 13 | 8 |

* including all EU member states.

*Sources*: European Commission, 2006a, 2009; Eurostat, 2013.

*Figure 2*

**Total World Wine Exports, 1998–2012**




*Source*: OIV, 2013.

problems were reinforced by two factors. First, overall wine consumption in the EU has decreased since the 1980s. While wine consumption has grown in some North European countries, it has declined strongly in the traditional wine countries. Both French and Italian national consumption decreased from about 60 million hl per year on average in the 1960s to 45 million hl in the 1980s and less than 30 million hl in the 2000s (Eurostat, 2013). Second, since the 1990s, competition and imports have grown from New World wines, that is, those from South America, Australia, and South Africa. Agreements resulting from the 1994 Uruguay Round of the GATT resulted in lower tariffs—which is reflected in the reduction of the PSCT levels from 14% in 1993 to 5% in 1995 (see Figure 1). Even if the EU is still the leading world wine exporter in terms of volume, the share of the five leading EU exporting countries (Italy, Spain, France, Germany, and Portugal) decreased from more than 70% in the late 1990s to 62% in 2012, while the share of South Africa, Australia, New Zealand, Chile, Argentina, and the United States increased from 15% to 28% in 2012 (see Figure 2).

Experts argue that the EU's wine policies, instead of contributing to a solution, have exacerbated the problem. Wyn Grant's (1997) review of the EU's wine policy distortions summarized the problems well under the heading "The Wine Lake":

> The EU tries to cope with the situation by siphoning wine out of the lake for distillation (for example, into vinegar) and by grubbing up vines from the vineyards on the hills around the lake. [However,] the problem is that EU-financed distillation is a positive stimulant of over-production of largely undrinkable wine, since it maintains less efficient growers of poor

> quality wine which would have given up long since if it were not for the EU support system. . . . The EU is losing ground in the expanding middle sector of the market [to New World wines]. . . . The EU thus finds itself running a wine support policy that costs around 1.5 billion [euros] a year, involving the annual destruction of an average of 2–3 billion litres of substandard and undrinkable wine. (pp. 137–138)

The situation did not improve much over the next decade: in the mid-2000s, an average of around 24 million hl of wine was being distilled every year (see Table 3).

Over the years, the EU Commission has launched several attempts to reform its wine policy but has faced stiff resistance from wine producers and their governments. Attempts to reform the wine policy—and cut its budget—were supported by other member states, such as the UK. In 1994, the EU Commission attempted to reform the wine market but failed (Maillard, 2002).[25] In 1999, a new wine CMO was finally adopted, as part of the Agenda 2000 reforms. The reform confirmed the ban on new vineyard plantings until 2010,[26] changed the distillation policy from compulsory to voluntary distillation (i.e., "crisis" distillation in cases of serious and exceptional structural surplus) and introduced restructuring and conversion measures for vineyards (Conforti and Sardone, 2003).

The Eastern enlargement of the EU—which integrated several wine-producing countries (e.g., those in Hungary, Slovakia, and Slovenia in 2004 and Bulgaria and Romania in 2007) into the EU—created another impetus for reforms. In 2006, the EU Commission proposed a set of bold reforms, which included the immediate elimination of traditional market intervention measures (e.g., distillation, aid for private storage,[27] export refunds, and planting rights), the consolidation of previously adopted measures (e.g., restructuring and conversion of vineyards), the parallel introduction of new measures (e.g., subsidies for green harvesting,[28] investment, promotion in third countries, mutual funds, and harvest insurance), and simplified labeling rules with the intention of making EU wines more competitive with New World wines (European Commission, 2006c, 2006d, 2007a, 2007b, 2007c; Cagliero and Sardone, 2009). Surpluses would then be eliminated through ex-ante measures (green harvesting) and not through ex-post measures (aid for private storage or distillation).

[25] While all professional winegrowers' organizations are opposed to the reform, in Italy there was strong opposition from southern producers to the proposal to liberalize the concentrated grape must market. The EU Commission proposed allowing wine enrichment through sugar and not only through concentrated grape must. In southern Italy, winegrowers received subsidies for producing concentrated grape must (Maillard, 2002).

[26] The wine-producing countries had different preferences with respect to vineyard plantings. Italy was in favor of liberalizing planting rights (PR) while France wanted to maintain the PR system (Maillard, 2002).

[27] In years of overproduction, aid for private storage for their wine surplus was given to winegrowers.

[28] Green harvesting is the destruction of the grapes before harvest (Council Regulation No. 479/2008, Article 12).

Moreover, the available budget would be allocated through national support programs or envelopes (see Appendix 2), according to national priorities, thereby strengthening regional power. Producers could be compensated through decoupled farm payments (under the Single Farm Payment program, which has been implemented in reforms of other commodity market regimes since 2003).[29]

In addition to the pressure caused by the EU enlargement, the political coalitions changed in the 2006 reform debate. While in previous reforms discussions were dominated by winegrowers and their member states' governments, in the 2006 reform debate the EU wine industry and merchant organizations[30] and the Commission united and gained more power in their demand for less market intervention. Winegrowers of different member states were divided in their opposition because of different specific interests (e.g., distillation subsidies for Spain, in particular in Castilla–La Mancha; planting rights in France, in particular in AOC regions; and chaptalization (adding sugar to must) in Germany) (Smith, 2008).

The reform was approved in 2007, albeit after significant modifications. Because of strong opposition, some reform proposals were dropped (e.g., banning enrichment through the addition of sugar) or diluted (e.g., grubbing up was reduced from 400,000 to 175,000 hl)[31] or their implementation was delayed (e.g., crisis and potable alcohol distillation[32] and use of concentrate grape must were phased out in 2012 and not in 2008 as proposed) (Gaeta and Corsinovi, 2009).

The result of the reforms was a further reduction of the PSCT to 1%. However, EU budget expenditures for the wine sector did not fall. The total budgetary expenditures on the wine policy are still more than 1 billion euros per year

[29] Member states that have implemented this measure in their national support programs are: Greece, Luxembourg, Malta, Spain, and UK (European Commission, 2013).

[30] Comité Européen des Entreprises Vins (CEEV) and Federación Española del Vino (FEV).

[31] Because of oversubscription, the Commission's initial proposal proved to be right. The total EU demand for grubbing up was equal to 351.223 ha of vines, a level extremely close to the initial EU Commission proposal (400,000 ha). Only 50.4% of the areas claimed could be accepted (European Commission, 2012; European Court of Auditors, 2012).

[32] Until the 2008 CMO reform, the alcohol obtained through distillation was sold either as potable alcohol or as industrial alcohol. Four distillation schemes were used, and only the alcohol derived from the "potable alcohol" distillation was sold for the processing of potable alcohol (i.e., spirits and brandy or liqueurs wines). The other three distillation schemes ("by-product" distillation of grape marc and wine lees, "dual-purpose grape" distillation of mainly French Charentes wines and "crisis" distillation in case of "serious market disturbance") produced alcohol for industrial use (i.e., baker's yeast, fuel, or bioethanol) (European Commission, 2006a). Over the past 10 years, on average, the potable alcohol distillation accounted for half the total, while the other half was transformed for industrial use (see Appendix 6). The dual-purpose grape distillation was abolished in 2008, while potable alcohol and crisis distillation was phased out in 2012, leaving by-product distillation as the only remaining option for member states.

(around 8% of the production value; see Figure 1). However, the allocation of the wine budget to specific policies has changed significantly. As Table 2 documents, distillation subsidies are much lower (from a share of slightly more than 50% to slightly more than 20%) while grubbing-up premiums (slightly more than 20%) and subsidies to restructure and convert vineyards (about 30%) now comprise the most important budget allocations. Direct payments to wine producers—the Single Payment Scheme—account for about 4% of the budget.

The Commission also proposed that planting rights restrictions be removed by 2013, allowing producers to freely decide where to plant. However, the Council decided to allow a long transition period: the member states wishing to continue the restrictions could do so until 2018. Opposition to the liberalization has grown greatly since then. Opponents of the liberalization have organized to overturn the decision. The first countries to express their wish to do so were Germany and France in 2010. Since then, all EU member states that produce wine have joined in asking for a continuation of planting rights (Deconinck and Swinnen, 2013; EFOW, 2012).[33] This led to a decision in 2013 to extend the planting rights system until 2030 with a new program of authorizations starting in 2016.

The fact that it is difficult to impose reforms in the face of strong opposition by EU producers is an interesting yet hardly new insight. It is well known that regulations breed their own interest groups, which receive economic rents from the regulations and oppose their removal. Moreover, the particularities of the EU decision-making process tend to contribute to a preservation of the status quo (Pokrivcak et al., 2006).[34]

What is particularly interesting in this case is the historical origins of the EU wine regulations, to see when they were introduced, and why, and how they have persisted or changed since their introduction. A large part of the current EU wine regulations have their roots in French and Italian national regulations prior to their integration in the European Economic Community (EEC)—the predecessor of the EU.

[33] In France, there has always been strong opposition to the liberalization of planting rights (Blancaneaux, 2013). The winegrowers' professional organizations (the European Federation of Wines of Origin [EFOW]) and the French Confederation of Wine and Spirits Producers (CNAOC)) were united in opposition. However, in Spain the wine sector was divided (Itçaina et al., 2013). Wine merchants and large producers (Federación Española del Vino [FEV]) were in favor of liberalization, while small producers, cooperatives, and regional governments (Confederación de Organizaciones de Agricultores y Ganaderos [COAG] and Rioja) were against it. They succeeded in reversing the Spanish government's position from supporting the Commission (in 2007) to opposing it (now).

[34] Swinnen (2008) documents how radical reforms in EU agricultural policy were possible only after several external changes (economic, political, and institutional) occurred simultaneously—a "perfect storm."

## IV. The Political Economy of French Wine Regulations in the Nineteenth and Twentieth Centuries[35]

### *A. The Creation of the Appellations d'Origine Contrôlées (AOC)*[36]

By the mid-nineteenth century, viticulture played a major role in France's economic development. It created income, wealth, and employment for many citizens.[37] However, the subsequent appearance of *Phylloxera* had dramatic consequences and destroyed many vineyards. *Phylloxera,* a parasite that lives on the vines' root systems and eventually kills the plant, originated in North America and was introduced to Europe in 1863. Unlike American native vine species (e.g., *Vitis riparia* or *Vitis rupestris*), European vine species (*Vitis vinifera*) are not resistant to it.[38] One-third of the total vine area was destroyed,[39] and wine production fell from 85 million hl in 1875 to 23 million hl in 1889—a 73% decrease (Augé-Laribé, 1950; Lachiver, 1988). While potential cures for *Phylloxera* were tested,[40] France became a wine-importing country. Since the French government wanted to prevent consumers from turning to other alcoholic beverages, table wines were imported from Spain, Italy, and Algeria (which was French territory from 1830 to 1962).[41]

As we document in detail in Meloni and Swinnen (2014), Algerian wine development played a key role in French regulations. The area planted in Algeria increased from 20,000 ha in 1880 to 150,000 ha in 1900, and exports to France grew to 3.5 million hl in 1897. French imports of wine from all sources, not just Algeria, rose from 0.1 million hl in 1870 to 12 million hl in 1888 (Augé-Laribé, 1950; Isnard, 1947).

However, by the beginning of the twentieth century, French vineyards had gradually been reconstructed and production recovered thanks to the planting

[35] Some key French regulations predate the nineteenth century. For example, during the fourteenth century, Philip the Bold laid the first stone for Burgundy's delimitation. The 1395 edict can be seen as a precursor of the modern Appellation d'Origine Contrôlée system. See Meloni and Swinnen (2013) for details.

[36] Many authors analyzed in detail state intervention in the French wine market and the creation of twentieth-century French regional appellations. See, e.g., Lachiver (1988), Loubère (1978, 1990), Simpson (2011), Ulin (1996). and Warner (1960).

[37] Wine employed 1.5 million family winegrowers, contributed about one-sixth of France's revenues, and was the second-largest export after textiles (Paul, 1996, p. 9).

[38] Gale (2003, 2011), Ordish (1987), and Paul (1996) extensively analyzed the causes and cures for *Phylloxera.*

[39] Before *Phylloxera,* about 2.3 million ha were planted with vines. By 1900, vineyard surface dropped to about 1.6 million ha, with replanted vines reaching 1.2 million ha (Lachiver, 1988).

[40] The remedies included flooding vineyards, chemical treatments (using carbon disulfide), or natural brews made, for instance, with tobacco or sea salt (Paul, 1996; Tyman, 1879).

[41] Greece also witnessed a large extension of vineyards, with dried grapes used by French wine producers instead of fresh grapes (Critz et al., 1999).

of hybrid grape varieties and the use of grafting.[42] The first solution—hybrids—was the crossing-breeding of two or more varieties of different vine species. Hybrids were the result of genetic crosses either between American vine species ("American direct-production hybrids")[43] or between European and American vine species ("French hybrids"). The second solution—grafting[44]—consisted of inserting European vines on to the roots of the *Phylloxera*-resistant American vine species (Gale, 2011; Paul, 1996).

The solutions to *Phylloxera* led to two new problems. First, French domestic production recovered and cheap foreign wines now competed with French wines, thus leading to lower prices. Second, as a reaction to low prices two types of quality problems became common: imitations of brand-name wines to capture higher-value markets and adulteration to compete with cheap wine imports. Examples of imitations were false "Burgundy wines" or "Bordeaux wines," labeled and sold as Burgundy or Bordeaux but produced in other parts of France. Examples of wine adulteration include using wine by-products at the maximum capacity (e.g., by adding water and sugar to grape skins, the *piquettes*), producing wines from dried grapes instead of fresh grapes,[45] mixing Spanish or Algerian wines with French table wines in order to increase the alcoholic content, or adding plaster or coloring additives (e.g., sulfuric or muriatic acids) in order to correct flawed wines (Augé-Laribé, 1950; Stanziani, 2004).

The French government introduced a series of laws aimed at restricting wine supply and regulating quality. An 1889 law first defined wine as a beverage made from the fermented juice of grapes, thereby excluding wines made from dried grapes (Milhau, 1953). A 1905 law aimed at eliminating fraud in wine characteristics and their origins.[46] This and other laws also tried to regulate "quality" by introducing an explicit link between the "wine quality," its production region (the *terroir*), and the traditional way of producing wine. In this way, the regional boundaries of Bordeaux, Cognac, Armagnac, and Champagne wines were

[42] The initial search focused on chemical treatments. Carbon disulfide managed to halt the vines' destruction temporarily, but it was expensive. Scientists continued to search for cheaper and longer-lasting solutions (Loubère, 1978, 1990).

[43] These "American hybrids," such as Clinton, Isabelle, and Noah, were developed in the United States at the beginning of the nineteenth century. They were directly planted in the French soil as a first solution to the vine diseases. However, by 1890–1900, due to their low resistance to *Phylloxera,* they were replaced by either grafting or Euro-American hybrids (Couderc, 2005).

[44] An earlier example of grafting is from sixteenth-century Spanish Mexico, where in 1524 Hernán Cortés, the Spanish *conquistador,* ordered the grafting of European vines onto American rootstocks in Mexico (Hyams, 1965).

[45] In 1887, sugar wines and dried grapes wines accounted for 11% of total wine production (INSEE, 1935, 1966).

[46] A 1907 law forbade *mouillage* (addition of water) and *sucrage* (addition of sugar) of wines (Legifrance, 2011).

established between 1908 and 1912.[47] These regional boundaries were referred to as *appellations.*

A few years later, in 1919, a new law specified that if an *appellation* was used by unauthorized producers, legal proceedings could be initiated against its use. Later, the restrictions grew further: a 1927 law placed restrictions on grape varieties and methods of viticulture used for the *appellation* wine (Loubère, 1990). Not surprisingly, these regulations were heavily supported by representatives of the *appellation* regions who held key positions in parliament.[48]

Finally, in 1935, a law created the Appellations d'Origine Contrôlées (AOC)—which formed the basis for the later EU quality regimes. This law combined several of the earlier regulations: it restricted production not only to specific regions (through areas' delimitation) but also to specific production criteria such as grape variety, minimum alcohol content, and maximum vineyard yields (adding "controlled" to the "appellation of origin" concept). Moreover, the Comité National des Appellations d'Origine (National Committee for Appellations of Origin), a government branch established to administer the AOC process for "high-quality" wines, was established (Simpson, 2011; Stanziani, 2004).[49]

Somewhat paradoxically, instead of reducing the number of *appellations,* the 1935 system encouraged the creation of more AOC regions in France. In 1931, the Statut Viticole (see below) tightly regulated French table wines while the AOC wines were exempted from it. This induced many table wines producers to ask for an upgrading to the higher wine category. The share of *appellation* wines production increased from 8% in the 1920s to 16% in the 1930s and to 50% in the 2000s (Capus, 1947; Figure 3).

## *B. The Battle over Hybrid Vines*

Underlying these increasingly tight "quality" regulations in France was a major battle over the regulation of hybrids, one of the two practices used to cure vines from *Phylloxera.* This battle continued through most of the twentieth century.[50]

[47] These laws were also the result of the winegrower's revolt in southern France and in the Champagne region. Their collective political activities consisted of pressuring politicians through through street protests and even violence. For example, in the early twentieth century, during their "revolutionary phase," winegrowers imposed their opinions with so-called *actions directes,* which included mutinies, pillaging, burning down of city halls, with deaths and injuries as a consequence (Bagnol, 2007; Bonal, 1984; Jacquet, 2009; Martin, 1998; Wolikow, 2009).

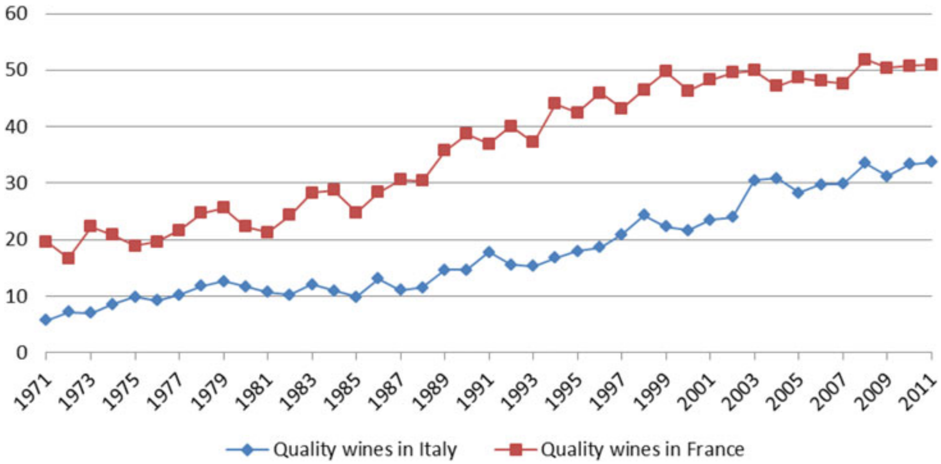
[48] In 1919, Joseph Capus was elected deputy of the Gironde (the Bordeaux wine area) and he was also the president of the parliamentary committee called *des grands crus* (great growths).

[49] In 1947, the institution was renamed Institut National des Appellations d'Origine, INAO (National Institute for Appellations of Origin), and, in 2007, Institut National de l'Origine et de la Qualité (National Institute for Origin and Quality), keeping the acronym INAO.

[50] Interestingly, the research community also held divergent views. Two schools of agriculture were in opposition: the University of Montpellier in southern France (pro grafting) and the University of

*Figure 3*

**"Quality" Wines Produced in France and Italy as a Share of their National Wine production, 1971–2011**




*Note*: "Quality" wines are defined as "Quality wines produced in specified regions" from 1971 to 2009 and as "Protected Designation of Origin (PDO) wines" from 2010 onward.
*Source*: Eurostat, 2013 (accessed February 26, 2013).

A strong division of interests existed between the Appellation d'Origine producers in Bordeaux, Champagne, or Burgundy and producers from other regions. Grafting was the preferred solution for the *appellation* regions since it permitted the grapes to retain European *Vitis vinifera* characteristics. At the same time, wine producers from other regions relied on hybrids since the new vines were more productive, easier to grow, and more resistant to disease in general. They required less winegrowing experience, pesticides, and capital (Paul, 1996).

However, these diverging interests were not equally represented. The *appellation* producers and winegrowers were grouped in associations that were very influential over the government.[51] Wine producers from other regions were not as well organized. For instance, in the Champagne AOC region, three powerful and unified lobbying groups existed: the Fédération des Syndicats de la Champagne that represented winegrowers; the Syndicat du Commerce des Vins de Champagne, which promoted exports of the Maisons de Champagne;[52] and the Association

Bordeaux (pro hybrids). By the end of the nineteenth century, the government (Ministry of Agriculture and local politicians) allied with the school of Montpellier and promoted grafting (Paul, 1996, p. 100).
[51] The creation of these associations was promoted by a 1884 French law that legalized labor unions (Simpson, 2011).
[52] Champagne houses (the *grandes marques* such as Veuve Clicquot or Moët & Chandon) were producers (*négotiants*) that acquired grapes and established long-term contracts with winegrowers throughout the Champagne region, thereby undertaking the high costs and risks of elaborating *cuvées.* Even now,

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Viticole Champenoise, which lobbied for the interests of both winegrowers, and Maisons de Champagne (Comité Interprofessionnel du Vin de Champagne, 2003; Wolikow, 2009). The greater political power of the *appellation* wine regions derived from commerce—with brand names, strong reputations, and large economic benefits[53]—and was protected by political organizations.

Under pressure from these politically powerful constituencies, the French government decided to restrict the use of the low-cost technology (hybrid vines). The first "quality law" that limited the use of hybrids was introduced in 1919 and modified in 1927, restricting *appellation* wines to nonhybrid grapes.[54] In addition, three other laws against hybrids were approved in less than ten years. First, the 1929 law forbade chaptalization for hybrids, a technique allowed for European vine varieties (*Vitis vinifera*) to increase wine alcohol content. Second, a 1934 law stated that uprooted *Vitis vinifera* could be replanted only with vines registered (authorized) by local authorities. Third, a 1935 law prohibited six vine varieties derived from hybrids (Clinton, Herbemont, Isabelle, Jacquez, Noah, and Othello). The invoked argument to support the 1935 prohibition was safety, since wines produced with American varieties were said to contain a significant level of methyl alcohol harmful for human consumption.[55]

Yet, despite these regulations, the planting of hybrids spread as many wine producers disobeyed the laws. Since hybrids could survive in a humider and cooler climate, regions that never had a strong wine tradition took advantage of it (Milhau, 1953). By the end of the 1950s, hybrids made up one-third of France's total vine area (see Figure 4) and comprised 42% of table wine production (Paul, 1996).

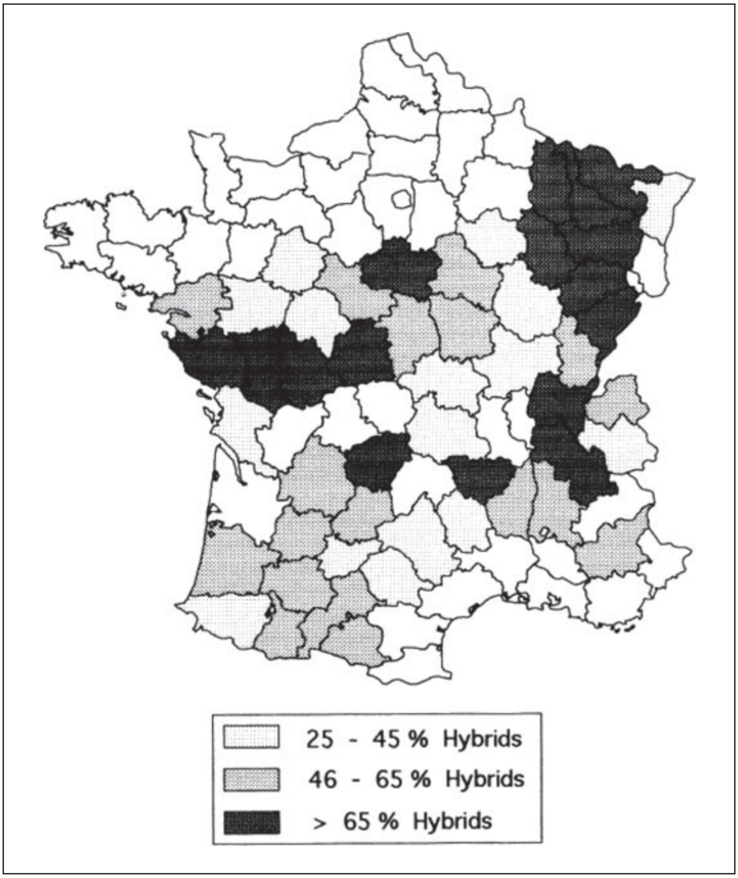
two-thirds of the sales and 90% of the exports are done by around 100 Champagne houses, which own 4,000 ha, or 12.5% of the land (Union des Maisons de Champagnes, 2012).

[53] In 1910, in the Champagne region, in Hérault and Aude, wine was sold at 25–30 francs per hl with production costs of about 12–15 francs per hl (Augé-Laribé, 1950).

[54] The 1927 law regulated the varieties of grape allowed for specific appellation of origin (e.g., Champagne wine producers could only use Pinot Noir, Pinot Meunier, or Chardonnay) and required that wines coming from hybrids could under no circumstance receive an appellation: "Les vins provenant des hybrides producteurs directs n'ont en aucun cas droit à une appellation d'origine" (Capus, 1947).

[55] Methyl alcohol was supposed to drive people mad; this view is obsolete. Moreover, the fact that the first experimental French hybrids produced undrinkable wines certainly influenced the thinking of winegrowers and consumers, thereby giving rise to suspicious reactions to the new technology. Indeed, it took almost 30 years before German researchers, at the Geilweilerhof Institute for Grape Breeding, began to breed the new cultivar *Regent.* This non-*vinifera* variety is part of a new generation of hybrids (called "disease-resistant varieties") that can compete with "high-quality" wines, with the advantage of being more resistant to disease and less polluting because chemical fertilizers are not used. Furthermore, researchers have not found essential differences in characteristics between *vinifera* and non-*vinifera* varieties (European Commission, 2003; Federal Centre for Breeding Research on Cultivated Plants, 2009).

Figure 4
**Percentage of Hybrid Vine Varietals in France, 1958**




*Source:* Crowley, 1993.

## C. The Statut Viticole

Other factors also played a role in inducing more regulations. While import restrictions had reduced imports from Spain, Italy, and Greece,[56] vineyards continued to expand in Algeria, exerting pressure on the French market. Algerian wine production doubled from 7 million hl in 1920 to 14 million hl in 1930 (Milhau, 1953). French demand was not able to absorb the extra wine, and the market faced

[56] In the late 1880s, France imposed high tariffs on Italy and, in 1892, on Spain and Greece (Critz et al., 1999; Pinilla and Ayuda, 2002; Pinilla and Serrano, 2008).

a persistent wine surplus. This resulted in new regulations in the 1930s (Meloni and Swinnen, 2014).

Between 1931 and 1935, regulations called the Statut Viticole[57] were introduced to reduce the supply of wine (Munholland, 2006; Sagnes, 2009). The Statut Viticole included an obligation to store part of the excess production (*blocage*),[58] obligatory distillation,[59] the establishment of a levy on large crops and yields,[60] a ban on planting new vines, and grubbing up overproductive vines[61] (Gavignaud, 1988; Loubère, 1990). The grubbing-up measure proved inefficient despite its substantial premium (as much as 7,000 francs[62] per hectare [ha]) because mostly old and unproductive vines were uprooted with little effect on total production (Milhau, 1953).

During War World II, French production stagnated due to massive vineyard destruction, and in 1942, in the German-occupied part of France, the Statut Viticole was repealed.

After the war, wine demand grew rapidly and supply fell still lower. This resulted in high prices, which encouraged major vineyard replantings. In the following years, wine production increased strongly, also because young vines were more productive than older ones. The increase in wine production reduced prices again and soon resulted in new pressure for political intervention. In 1953, the Statut Viticole was reintroduced throughout the country under the name Code du Vin. The law reestablished subsidies to uproot vines,[63] as well as surplus storage, compulsory distillation, and penalties for high yields. It also created the viticultural land register (Malassis, 1959; Milhau, 1953; Munsie, 2002). Again, it turned out that the grubbing-up measure was not very effective since it apparently worked only in the French départements that had already witnessed a decrease in vineyard area planted (Bartoli, 1986).[64]

[57] As the *Appellation* producers were represented by Joseph Capus in the French parliament, so the growers of "table wines" had Édouard Barthe, a pharmacist who became a powerful deputy of Hérault in the Languedoc region (from 1910 to 1942). He played an important role in the adoption of the Statut Viticole.

[58] Producers could allocate their product in the market through successive quotas.

[59] Between 1934 and 1935, 24 million hl were distilled (Lachiver, 1988).

[60] The policy was biased toward supporting smaller French winegrowers and hurting larger Algerian winegrowers. For instance, due to the hot climate, the obligation to store part of the excess production was more damaging for Algerian wine producers; the tax on large productions also hurt Algerian producers more than French (Birebent, 2007; Lachiver, 1988; Simpson, 2011).

[61] The unpopularity of the last measure forced the French government in 1934 to introduce a grubbing-up premium (Gavignaud, 1988).

[62] €5340,80 in 2012 (see http://www.insee.fr/fr/themes/calcul-pouvoir-achat.asp).

[63] The French decree 53/977 of 1953 established—on average—a premium of 2,700 francs per ha (Bartoli, 1986). Between 1953 and 1957, 5% (54,000 ha) of the total vine area benefited from this measure.

[64] The grubbing-up measure was temporarily suspended in 1957, following grape losses due to frost (Bartoli, 1986).

Finally, the pressure of the AOC producers was ultimately successful in removing the hybrid grapes from France through government regulations. However, this took another few decades and, most importantly, regulatory measures of the EEC (later EU). Through a combination of subsidized grubbing up and specific planting rights, the amount of "hybrid" vines in the country was dramatically reduced. AOC pressure groups continued to lobby the French government, and later the EU Council, to achieve the removal of hybrid grapes. Between the 1960s and the 1980s, the uprooting of "undesirable vines" was subsidized. Authorized hybrids were allowed, but planting rights were reduced by 30%[65] (Council Regulations Nos. 1160/76 and 458/80; Crowley, 1993). Ultimately, these policies were successful in largely removing hybrid wines. By subsiding the replanting of allowed varieties, 100,000 ha of hybrids were removed in the 1960s and 225,000 ha in the 1970s. Thus by the end of the 1980s, less than 3% of French vines were hybrids (Crowley, 1993).

## V. European Integration and the Creation of the EU Wine Policy[66]

> The Common Wine Policy today is, to a large extent, the legacy of France's deep rooted interventionism in wine. (Spahni, 1988, p. 9)

Among the initial six members of the EEC, four countries produced wine (France, Italy, Luxembourg, and West Germany). Wine was an important commodity, particularly for France and Italy, which were both major wine exporters. Of the total EEC wine supply, Italy produced 49% and France 47%—together they produced 96%; West Germany produced the remaining 4% (Newsletter on the Common Agricultural Policy, 1969).

The pre-EEC wine policies of France and Italy differed. While France's wine market was highly regulated through government intervention, including prohibitions on new vineyards, wine classification systems, price supports, compulsory distillation, chaptalization, and so on (Kortteinen, 1984; Niederbacher, 1983), Italy had more liberal policies: there were no price interventions or plantation restrictions, but the Italian government did provide tax advantages for distilling wine surpluses and imposed restrictions on imports from non-EEC countries (Newsletter on the Common Agricultural Policy, 1969; Smith et al., 2007, p. 80; Spahni, 1988).[67]

The different wine policies were also reflected in the different tariffs on imported foreign wines imposed by France and Italy. The process of European integration required the abolition of tariffs in intra-EEC trade and the adoption of a Common

[65] For instance, Council Regulation No. 1163/76 (Article 2) granted a conversion premium in the wine sector, including for the conversion of areas planted with varieties "obtained from direct-producer hybrids."

[66] See Table 4 for a chronology of the introduction of key French and EU wine policy measures.

[67] Germany claimed control of new planting and a liberal approach to imports from non-EEC countries (Newsletter on the Common Agricultural Policy, 1970).

*Table 4*
**Introduction of Wine Regulations in France and in the EU**

| | *Introduced in France* | *Introduced in the EU* |
|---|---|---|
| Quality policy (GIs) | 1935 (AOC) | 1970 |
| Oenological practices | 1889 | 1970 |
| Rules on labeling | 1905 | 1970 |
| Private storage | 1931 | 1970 |
| Distillation | 1931 | 1970 (1999)* |
| Planting rights | 1931 | 1976 (1984)* |
| Grubbing-up premium | 1935 | 1976 |

* The measures were extended to all wines, including "quality wines."

External Tariff (CET) by 1968. For most products, the CET was calculated as the average of pre-existing tariff rates of the six initial EEC member states. However, for wine, the CET was identical in all but one category to the French tariffs, which were 20–30% higher than the Italian ones (see Table 5).

Economic integration required the further integration of both policy regimes into one EU wine policy (the CMO for wine). An initial EEC regulatory step toward such a common market was taken in 1962.[68] It required that each member state established a viticultural land register;[69] the notification of annual production levels to a central authority (harvest and stock declarations); the annual compilation of future estimates of resources and requirements;[70] and stricter rules on "quality wines" (defined as wines with a GI).

Initially, the CMO refrained from stronger regulations.[71] However, there was strong pressure from France for a more interventionist approach. In the 1960s, French wine producers had to deal with their internal surpluses and large inflows of Algerian wine on the French market due to a French-Algerian treaty. After Algerian independence was declared in 1962, France committed to purchasing considerable quantities of Algerian wine: 39 million hl in five years (1964–1968) (Isnard, 1966).[72] Since the French wine market was already saturated and had

[68] Source: Council Regulation No. 24/62.

[69] The viticultural land register contained minimum information, as the total area under vines (Council Regulation No. 24/1962, Article 1).

[70] A forward estimate was calculated at the end of each year to count the Community's resources and forecast its needs, including anticipated imports from and exports to third countries (Council Regulation No. 24/62, Article 3).

[71] The EU's policies focused strongly on "table wines" as these represented the vast majority of the wines, and most problems were in that segment of the market. During the 1960s, table wines accounted for 95% of total EU-6 production, while in 2011 they accounted for approximately 54% if we consider "table wines" only as non-PDO wines or 27% of the total EU-6 production if we consider all wines without a GI (non-PDO and non-PGI wines) (Eurostat, 2013; Smith et al., 2007, p. 81).

[72] The agreed import was considerably lower than before independence (e.g., in 1961 Algeria exported 15 million hl to France). However, under pressure from French winegrowers, the French government did

*Table 5*
**EEC Wine Tariffs in 1966 (in dollars per hectoliter)**

| | *Common External Tariff* | *France* | *Italy* | *West Germany* | *Benelux* |
|---|---|---|---|---|---|
| Wines in containers > 2 liters | | | | | |
| up to 13% | 9 | 9 | 6.4 | 9 | 5.4 |
| from 13 to 15% | 11 | 11 | 7.6 | 11 | 6.6 |
| from 15 to 18% | 14 | 14 | 9.4 | 10.8 | 8.4 |
| from 18 to 22% | 19 | 19 | 14.7 | 15.2 | 11.4 |
| Wines in containers < 2 liters | | | | | |
| up to 13% | 12 | 12 | 10.5 | 22.6 | 13.9 |
| from 13 to 15% | 14 | 14 | 11.7 | 23.8 | 15.1 |
| from 15 to 18% | 17 | 17 | 13.5 | 20.8 | 10.8 |
| from 18 to 22% | 19 | 29.8 | 14.7 | 22 | 14 |

*Source*: GATT, 1966.

to absorb large inflows of Algerian wine, France was afraid that cheaper Italian wine would swamp the French market and cause a collapse in prices.

The final version of the EEC's Common Wine Policy, agreed upon in 1970,[73] was a compromise between the positions of Italy and France (Arnaud, 1991; Council Regulations 816/70 and 817/70; Spahni, 1988). Minimum price supports were imposed in the wine market in the form of aid for private storage and distillation of table wines.[74] Moreover, new regulations established guidelines for enrichment[75] and alcohol strength, introduced a quality classification of vine varieties,[76] and common rules on labeling and "oenological practices" (European Commission, 2006b; Petit, 2000).

However, due to pressure from the Italians, the EEC wine policy did not restrict planting rights and did not impose grubbing up—although anyone wishing to plant/replant vines had to notify the relevant authority (Council Regulation

not fulfill the agreement in the last two years of the agreement and imported only 6.2 million hl instead of the agreed 14 million hl (Isnard, 1966).

[73] Also in other agricultural commodities, such as grains, dairy, and oilseeds, there was a transition period of approximately ten years after the signing of the Treaty of Rome (in 1957) before a common market organization was fully implemented.

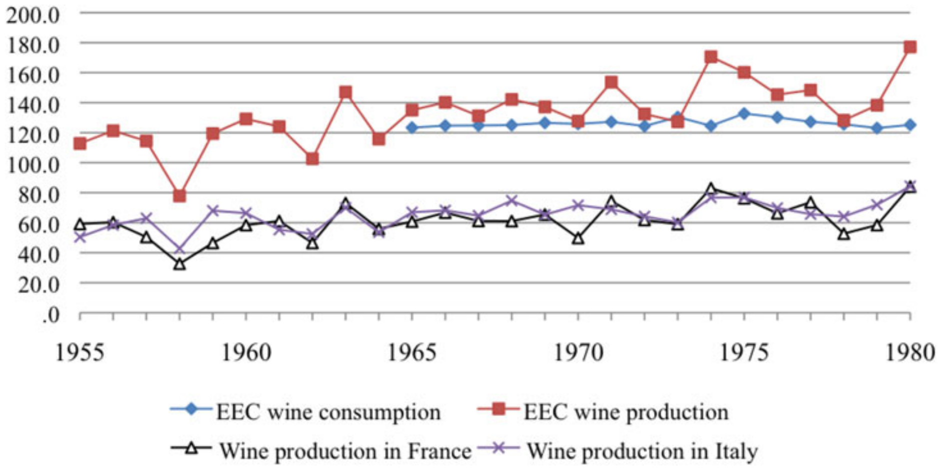
[74] Private storage aid was granted if the average price remained lower than the government-set "threshold price" for two consecutive weeks. Distillation of table wines was enacted if the aid for private storage proved insufficient for stabilizing market. In addition, the new wine policy provided government subsidies to distillers to compensate them for minimum prices paid to wine producers (which were above market prices), and subsidies for the private storage of this alcohol. Trade with third countries was also regulated through government-set minimum import prices and tariffs.

[75] Robinson (2006) defines enrichment as a "wine-making operation whereby the fermentable sugars of grape juice or must are supplemented in order to increase the alcoholic strength of the resultant wine." "Chaptalization" refers to the addition of sugar, whereas enrichment also includes other additives.

[76] Vines were classified as "recommended," "authorized," and "provisionally authorized" varieties—with "recommended" as the highest quality level.

*Figure 5*

**EEC Wine Production and Consumption and Wine Production in France and Italy 1955–1980 (in million hectoliters)**




*Source*: Eurostat, 2013.

No. 816/70).[77] This requirement closely followed the pre-EEC policies of France, Luxembourg, and West Germany, where growers had to acquire official permission in order to plant vines (Newsletter on the Common Agricultural Policy, 1970).

Hence, the final version of the EEC Common Wine Policy, agreed upon in 1970, was considerably more interventionist than the Italian wine regime, but still less regulated than the old French wine policies. However, it was only a matter of time before the EEC Wine Policy was adjusted and the French interventionist approach dominated.

As could be foreseen, the 1970 Wine Policy, with its minimum prices and intervention buying of wine, did not solve the problems. In several ways, it exacerbated the problems of oversupply of French wine. Cheaper Italian wine production grew rapidly and increasingly substituted French wine.[78] In addition, because of the price floor, total wine production increased in the EEC and surpassed EEC consumption, causing growing surpluses (see Figure 5). Under pressure

[77] In addition, national assistance for new planting and replanting (which increase wine production) were prohibited and only "recommended" or "authorized" vine varieties could be used for planting or replanting (Council Regulation No. 816/70, Article 15).

[78] French wine prices were on average 25% higher than the Italian ones. In the 1969/70 wine year, Italy exported 4 million hl of table wine to France, which represented 90% of French's wine imports by volume (Arnaud, 1991).

from French wine producers,[79] the EEC distilled 6.9 million hl of wine between 1971 and 1972 (Niederbacher, 1983). Increasing grape harvests in 1973 and 1974[80] and a devaluation of the Italian lira further lowered prices of exported Italian wines. A full-blown "wine war" exploded in 1974, when French growers physically blocked Italian wine imports at the Sète harbor entrance. In order to settle the crisis, the French government imposed a tax on imported Italian wine and the EEC again intervened in the wine markets by distilling 19.6 million hl of wine in four years (from 1973 to 1976).

Under pressure from French producers and faced with the increasing budgetary costs of its recently imposed wine policy, the EEC Council of Ministers in 1976 decided to reform the Common Wine Policy (Council Regulation Nos. 1162/76 and 1163/76). However, instead of loosening regulation, the Council decided to introduce even more regulations to control the supply of wine. New regulations introduced restrictions on planting rights[81] and subsidies for grubbing up existing vineyards.[82] In addition, three years later, new regulations now made distillation of table wine surpluses obligatory and provided subsidies for concentrated grape must used for enrichment (Council Regulation No. 337/79; Smith et al., 2007; Spahni, 1988).

In short, by 1979, just a few years after the introduction of a common wine market in the EEC, French wine policy with its extensive regulations and heavy government intervention in markets had become the official wine policy for all EEC members.

The EEC's initial system of quality regulations explicitly referred to (and integrated) the French AOC system, which has existed in France since 1935.[83] In 1963, Italy followed the French model and introduced the Denominazione di Origine Controllata (DOC) and the Denominazione di Origine Controllata e Garantita (DOCG). With the accession of other wine-producing countries into the EU—Greece in 1981, Spain and Portugal in 1986, Austria in 1995, Hungary, Slovakia, and Slovenia in 2004, and Bulgaria and Romania in 2007—these

[79] Especially "table wine" growers of the Midi region in southern France.

[80] 171 and 161 million hl were produced in the harvests of 1973 and 1974, respectively, compared to a normal 135–140 million hl (Niederbacher, 1983).

[81] At the beginning the limitation on planting was only intended for a limited period (until November 30, 1978) and for a certain type of wines (table wines). However, this regime was repeatedly extended and grew to include wines with a Geographical Indication (GI).

[82] EC Regulation 1163/76 introduced a system of subsidies for producers either to abandon vineyards for six years or to grub up vineyards and replace them with other crops.

[83] The French AO system had already influenced other countries policies through earlier international agreements. For instance, the first AO was approved in Spain (Rioja) in 1926 to protect the wines with this origin against imitations or fraud (Pan-Montojo, 1994, p. 288). Moreover, Italy and Spain integrated the notion of AO (applied as a system at national level) respectively in 1930 and 1932. However, the Italian and Spanish regulations were less interventionist than the French, guaranteeing only the origin of the product and not the production practices, as in the French system (Estatuto del Vino, 1932; Federdoc, 2012).

*Table 6*
**Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI) Wines in the European Union, 2011**

| | *Number of PDO* | *Number of PGI* | *PDO wine production as a share of total wine production (in %)* | *PGI wine production as a share of total wine production (in %)* |
|---|---|---|---|---|
| Austria | 26 | 3 | 84 | 4 |
| Belgium | 7 | 2 | 67 | – |
| Bulgaria | 52 | 2 | 3 | 31 |
| Cyprus | 7 | 4 | 1 | 45 |
| Czech Republic | 12 | 2 | 53 | 46 |
| Denmark | 0 | 4 | – | – |
| France | 396 | 158 | 51 | 27 |
| Germany | 13 | 26 | 98 | 1 |
| Greece | 33 | 123 | 11 | 17 |
| Hungary | 58 | 16 | 62 | 18 |
| Italy | 496 | 135 | 34 | 30 |
| Luxembourg | 2 | 0 | 95 | – |
| Malta | 3 | 1 | 38 | 28 |
| Netherlands | 0 | 12 | – | – |
| Portugal | 36 | 16 | 47 | 24 |
| Romania | 39 | 13 | 10 | 18 |
| Slovakia | 17 | 3 | 71 | 4 |
| Slovenia | 14 | 3 | 63 | 28 |
| Spain | 97 | 45 | 40 | 10 |
| United Kingdom | 2 | 2 | 40 | 60 |

*Sources*: Eurostat, 2013 (accessed February 26, 2013); E-Bacchus, 2012 (accessed February 27, 2013).

regulations expanded to cover a vast wine-producing region. All these countries had to adjust their national policies to join the EU. For example, Portugal introduced its Denominação de Origem Controlada (DOC) in 1986 and Spain its Denominación de Origen (DO) in 1996. The spread of Protected Designation of Origin (PDO) wines has led to some odd results (for a definition of PDO wines, see note 14). For example, Belgium, a country with very little wine production or tradition,[84] has seven PDOs, and PDO wine production as a share of total wine production is almost twice as high as in Italy (see Table 6).

Not only did the French regulations heavily influence European wine classification, but they have also influenced the definition of "quality wines." As initially in France, hybrids are now outlawed from the PDO category (the highest quality level) throughout the EU.[85] This has had important implications for some countries. For

[84] In 2011, wine production in Belgium was only 5,000 hl. In the same year, France and Italy produced 44 and 46 million hl respectively (Eurostat, 2013).
[85] The EU wine regulation states that "'designation of origin' means the name of a region, a specific place . . . that it is obtained from vine varieties belonging to Vitis vinifera" (Council Regulation No. 479/2008, Article 34).

example, upon its accession to the EU, Romania had to agree to uproot its hybrid varieties, which accounted for half its total area under vines[86] and to replace them with varieties authorized by the EU.[87] Moreover, for both Romania and Bulgaria, around 2,000 ha of new vineyards were granted exclusively for the production of "quality wines" (Treaty of Accession of Bulgaria and Romania, Annexes III and VII, 2005).

## VI. Conclusion

The EU is the largest global wine-producing region and the main global wine importer and exporter. It is also a highly regulated market. Government intervention has taken many forms. Regulations determine where certain wines can be produced and where not, the minimum spacing between vines, the type of vines that can be planted in certain regions, yield restrictions, and so on. In addition, public regulations determine subsidies to EU producers and wine distillation schemes. The EU also determines public subsidies to finance grubbing up programs to remove existing vineyards, and imposes a limit on the planting of new vineyards.

In this paper, we document these regulations and analyze the historical origins of these regulations. The introduction of many regulations followed the integration of markets and globalization, technological changes, and resulting political pressures.

Many of the current EU regulations can be traced back to French regulations of the late nineteenth and early twentieth centuries. "Quality" regulations, as the AOC system, were introduced to protect producers of "quality wines," such as wealthy landowners of Bordeaux, from imitations and adulterations. Quantity regulations, such as planting restrictions, were introduced to protect French producers from cheap wine imports.

After the accession of France into the EU, some of the policies were initially liberalized. However, surplus crises in the 1970s caused strong pressure from French producers to reimpose the regulations and extend them to the EU as a whole. For instance, just as, in 1931, wine producers in the Midi (which were threatened by the importation of Algerian wines) pressured the French government into imposing the Statut Viticole, regulating the production of wines, in 1976 French producers (threatened this time by the importation of Italian wines) pressured their government and EU leaders into introducing more wine regulation.

[86] In 2003, out of a total 233,300 ha of vines, 117,500 were planted with hybrids (Manole et al., 2008).

[87] Even if the vineyard area decreased from about 190,000 ha in 2006 to 175,000 ha in 2011, it did not fall dramatically, as Romania obtained replanting rights for 30,000 ha that could be used "exclusively for planting with Vitis vinifera" (Treaty of Accession of Bulgaria and Romania, Annex VII, 2005). However, neither the EU Commission nor Romania (through its national envelope) decided to subsidize the grubbing up of hybrids vines, leaving the cost of replacing the hybrids to the winegrowers (Itçaina et al., 2013).

As a consequence, what were initially mainly French and, to a lesser extent, Italian national regulations now apply to approximately 60% of the world's wine production. This demonstrates how inefficient institutions and regulations can grow because of a combination of economic, political, and institutional integration and the associated political pressure and influence.[88]

## References

Anderson, K., Damania, R., and Jackson, L.A. (2004). Trade, standards, and the political economy of genetically modified food. CEPR Discussion Papers 4526, Center for Economic Policy Research.

Anderson, K., Rausser, G., and Swinnen, J. (2013). Political economy of public policies: Insights from distortions to agricultural and food markets. *Journal of Economic Literature*, 51(2), 423–477.

Arnaud, C. (1991). Le vin et l'organisation commune de marché entre Paris et Bruxelles: un dialogue quelquefois difficile. *Économie rurale*, 204(204), 3–10. Available at www.persee.fr.

Augé-Laribé, M. (1950). *La Politique Agricole de la France de 1880 à 1940*. Paris: Presses Universitaires de France.

Bagnol, J.M. (2007). Les députés héraultais et la viticulture dans l'entre-deux-guerres: organes de décision, relais de pouvoir, législation. *Ruralia*. Available at http://ruralia.revues.org/document1857.html.

Bartoli, P. (1986). Les primes d'arrachage et la régression du vignoble. Une analyse d'impact de la politique viticole. *Économie rurale*, 175, 3–19. Available at www.persee.fr.

Birebent, P. (2007). *Hommes, vignes et vins de l'Algérie française: 1830–1962*. Nice: Editions Jacques Gandini.

Blancaneaux, R. (2013). Le Parlement européen post-Lisbonne, une courroie de transmission pour les opposants à la Commission européenne? Le cas de l'opposition à la libéralisation des droits de plantation viticoles. Available at www.afsp.msh-paris.fr/activite/2012/je310512.html.

Bonal, F. (1984). *Livre d'or du Champagne*. Updated by Union des Maisons de Champagnes. Available at www.maisons-champagne.com/bonal/pages/00/intro/.

Caesar, C. Julius (1869). *Caesar's Gallic War*. W.A. McDevitte and W.S. Bohn (trans.), 1st ed. New York: Harper & Brothers. Harper's New Classical Library. Available at http://www.perseus.tufts.edu/hopper/text?doc=Perseus:text:1999.02.0001.

Cagliero, R., and Sardone, R. (2009). La nuova OCM vino. In E. Pomarici and R. Sardone (eds.), *L'OCM vino. La difficile transazione verso una strategia di comparto*. Rome: INEA, pp. 25–48.

Capus, J. (1947). *L'évolution de législation sur les appellations d'origine—Genèse des appellations contrôlées*. Institut National des Appellations d'Origine. Available at www.inao.gouv.fr/public/home.php?pageFromIndex=textesPages/Les_fondements_de_l_appellation391.php~mnu=391/.

[88] There is a large body of literature on the persistence and growth of inefficient institutions (see, e.g., David 1985). Our argument, however, is not related to scale economies of transaction costs but to political and institutional integration. Meloni and Swinnen (2013) analyze in great detail other pre-EEC regulations, such as the first grubbing-up policies during Roman times, the Middle Ages, and the Renaissance period.

Castle, S. (2012). When is a wine not a wine? When European regulations say it's not. *New York Times*, May 29. Available at www.nytimes.com/2012/05/30/world/europe/when-is-a-wine-not-a-wine-when-european-regulations-say-its-not.html?_r=1/.

Comité Interprofessionnel du Vin de Champagne (2003). L'appellation Champagne, les clés des vins de Champagne. Available at www.champagne.fr/wpFichiers/1/1/Mediatheque/11/Associes/11/Fichier/appellation.pdf.

Conforti, P., and Sardone, R. (2003). Assessing the effectiveness of the EU Common Market organization for wine: A research agenda. In S. Gatti, E. Giraud-Heraud and S. Mili (eds.), *Wine in the Old World: New Risks and Opportunities*. Milano: FrancoAngeli.

Consorzio Vino Chianti Classico (2012). Production Code of Chianti Classico denominazione di origine controllata e garantita Wine. Available at www.chianticlassico.com/en/vino/disciplinare/.

Couderc, F. (2005). *Les vins mythiques de la Cévenne ardéchoise et du Bas-Vivarais*. 2d ed. Point-Saint-Esprit Cedex: La Mirandole.

Council Regulation (EEC) No. 24/1962 of 20 April 1962 on the progressive establishment of a common organisation of the market in wine. *Official Journal of the European Communities*.

Council Regulation (EEC) No. 816/70 of 28 April 1970 laying down additional provisions for the common organization of the market in wine. *Official Journal of the European Communities.*

Council Regulation (EEC) No. 817/70 of 28 April 1970 laying down special provisions relating to quality wines produced in specific regions. *Official Journal of the European Communities.*

Council Regulation (EEC) No. 1160/76 of 17 May 1976 amending Regulation (EEC) No. 816/70 laying down additional provisions for the common organization of the market in wine. *Official Journal of the European Communities.*

Council Regulation (EEC) No. 1162/76 of 17 May 1976 on measures designed to adjust wine-growing potential to market requirements. *Official Journal of the European Communities.*

Council Regulation (EEC) No. 1163/76 of 17 May 1976 on the granting of a conversion premium in the wine sector. *Official Journal of the European Communities.*

Council Regulation (EEC) No. 337/79 of 5 February 1979 on the common organization of the market in wine. *Official Journal of the European Communities.*

Council Regulation (EEC) No. 338/79 of 5 February 1979 on the common organization of the market in wine. *Official Journal of the European Communities.*

Council Regulation (EEC) No. 458/80 of 18 February 1980 on collective projects for the restructuring of vineyards. *Official Journal of the European Communities.*

Council Regulation (EEC) No. 822/87 of 16 March 1987 on the common organization of the market in wine. *Official Journal of the European Communities*.

Council Regulation (EEC) No. 823/87 of 16 March 1987 laying down special provisions relating to quality wines produced in specified regions. *Official Journal of the European Communities*.

Council Regulation (EC) No. 1493/1999 of 17 May 1999 on the common organisation of the market in wine. *Official Journal of the European Union.*

Council Regulation (EC) No. 479/2008 of 29 April 2008 on the common organisation of the market in wine, amending Regulations (EC) Nos. 1493/1999, 1782/2003, 1290/2005, and 3/2008 and repealing Regulations (EEC) Nos. 2392/86 and 1493/1999. *Official Journal of the European Union.* Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:148:0001:0061:EN:PDF/.

Council Regulation (EC) No. 491/2009 of 25 May 2009 amending Regulation (EC) No. 1234/2007 establishing a common organisation of agricultural markets and on specific provisions for certain agricultural products (Single CMO Regulation). *Official Journal of the European Union*. Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:154:0001:0056:EN:PDF/.

Council Regulation (EC) No. 607/2009 of 14 July 2009 laying down certain detailed rules for the implementation of Council Regulation (EC) No. 479/2008 as regards protected designations of origin and geographical indications, traditional terms, labelling and presentation of certain wine sector products. *Official Journal of the European Union*. Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:193:0060:0139:EN:PDF/.

Critz, J.M., Olmstead, A.L., and Rhode, P.W. (1999). "Horn of Plenty": The globalization of Mediterranean horticulture and the economic development of Southern Europe, 1880–1930. *Journal of Economic History*, 59(2), 316–352.

Crowley, W.K. (1993). Changes in the French winescape. *Geographical Review*, 83(3), 252–268.

David, P.A. (1985). Clio and the economics of QWERTY. *American Economic Review*, 75(2), 332–337.

de Gorter, H., and Swinnen, J.F.M. (2002). Political economy of agricultural policies. In B. Gardner and G. Rausser (eds.), *The Handbook of Agricultural Economics*. Amsterdam: Elsevier Science, North-Holland, 2073–2123.

Deconinck, K., and Swinnen, J. (2013). The economics of planting rights in wine production. AAWE Working Paper, No. 130.

E-Bacchus (2012). Wine register of designations of origin and geographical indications protected in the EU. European Commission, online database. Available at http://ec.europa.eu/agriculture/markets/wine/e-bacchus/.

EFOW (2012). Planting rights: Commissioner Ciolos set up a high level group. European Federation of Origin Wines (EFOW), March 22. Available at www.efow.eu/press/planting-rights-commissioner-ciolos-set-up-a-high-level-grou_id_124/.

Estatuto del Vino (1932). Estatuto del vino: regulación de su producción y venta. Decreto del Ministerio de Agricultura, Industria y Comercio de 8 de septiembre de 1932, elevado a ley por la de 26 de mayo de 1933 y disposiciones posteriores. Available at www.magrama.gob.es/es/ministerio/pags/biblioteca/fondo/40869.htm.

Europa (2008). Markets for Agricultural Products—Wine. Brussels. Available at http://europa.eu/scadplus/leg/en/lvb/l60031.htm.

European Commission (1986–2007). *Agriculture and Rural Development budget: Guarantee Section of the European Agricultural Guidance and Guarantee Fund (EAGGF) financial reports, 1986–2007*. Office for Official Publications of the European Communities, Luxembourg. Available at http://aei.pitt.edu/view/eusubjects/eagus.html.

European Commission (2003). *Study on the Use of the Varieties of Interspecific Vines*. Contract No. AGR 30881 of 30 December 2002. Available at http://ec.europa.eu/agriculture/markets/wine/studies/vine_en.pdf.

European Commission (2006a). *WINE—Common Market Organisation*. Available at http://ec.europa.eu/agriculture/markets/wine/studies/rep_cmo2006_en.pdf.

European Commission (2006b). *WINE—Economy of the Sector*. European Commission. Available at http://ec.europa.eu/agriculture/markets/wine/studies/rep_econ2006_en.pdf.

European Commission (2006c). *Communication from the Commission to the Council and the European Parliament—"Towards a Sustainable European Wine Sector."* COM(2006)

319 final. Available at http://ec.europa.eu/agriculture/capreform/wine/com2006_319_en.pdf.
European Commission (2006d). *Impact Assessment—Annex to the Communication from the Commission to the Council and the European Parliament "Towards a Sustainable European Wine Sector."* Available at http://ec.europa.eu/agriculture/capreform/wine/fullimpact_en.pdf.
European Commission (2007a). *Fact Sheet—Towards a Sustainable European Wine Sector*. Available at http://ec.europa.eu/agriculture/publi/fact/wine/072007_en.pdf.
European Commission (2007b). *Proposal for a Council Regulation on the Common Organization of the Market in Wine and Amending Certain Regulations*. COM(2007) 372 final. Available at http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2007:0372:FIN:EN:PDF/.
European Commission (2007c). *Accompanying Document to the Proposal for a Council Regulation on the Common Organisation of the Market in Wine and Amending Certain Regulations—Impact Assessment*. Available at http://ec.europa.eu/agriculture/capreform/wine/impact072007/full_en.pdf.
European Commission (2007–2012). *Agriculture and Rural Development budget: European Agricultural Guarantee Fund (EAGF) financial reports, 2007-2012*. Office for Official Publications of the European Communities, Luxembourg. Available at http://ec.europa.eu/agriculture/cap-funding/budget/index_en.htm.
European Commission (2008a). *Reform of the EU Wine Market*. Available at http://ec.europa.eu/agriculture/capreform/wine/index_en.htm.
European Commission (2008b). *The Common Agricultural Policy—A Glossary of Terms*. Available at http://ec.europa.eu/agriculture/glossary/glossary_en.pdf.
European Commission (2009). *Market Situation (History)*. Available at http://ec.europa.eu/agriculture/markets/wine/facts/winehist_fr.pdf.
European Commission (2009–2012). *Wine CMO: Financial execution of the national support programme*. Directorate-General for Agriculture and Rural Development. Available at http://ec.europa.eu/agriculture/markets/wine/facts/index_en.htm.
European Commission (2012). Grubbing-up scheme 2008–2009–2010. In *Statistics and Data. European Commission—DG AGRI*. Available at http://ec.europa.eu/agriculture/markets/wine/facts/grubbing_2008-2009-2010_en.pdf.
European Commission (2013). Execution 2012. In *Statistics and Data. European Commission—DG AGRI*. Available at http://ec.europa.eu/agriculture/markets/wine/facts/execution-2012_en.pdf.
European Court of Auditors (2012). The reform of the common organisation of the market in wine: progress to date. Special Report No. 7. Available at http://eca.europa.eu/portal/pls/portal/docs/1/14824739.PDF.
Eurostat (2013). Eurostat Statistics Database. Luxembourg: Eurostat. Available at http://epp.eurostat.ec.europa.eu/portal/page/portal/education/data/database/.
FAO (2012). Food and Agriculture Organization of the United Nations. FAOSTAT. Available at http://faostat.fao.org.
Federal Centre for Breeding Research on Cultivated Plants (2009). IRZ Institute of Grapevine Breeding Geilweilerhof. Available at www.bafz.de/baz2006V4/index.php?id=319/.
Federdoc (2012). I vini italiani a Denominazione d'Origine 2012. Available at www.federdoc.com.
Fulton, M., and Giannakis, K. (2004). Inserting GM products into the food chain: The market and welfare effects of different labelling and regulatory regimes. *American Journal of Agricultural Economics*, 86(1), 42–60.

Gaeta, D., and Corsinovi, P. (2009). Evoluzione del processo di riforma tra mutamenti del mercato, gruppi di pressione e alleanze nazionali. In E. Pomarici and R. Sardone (eds.), *L'OCM Vino. La difficile transazione verso una strategia di comparto*. Rome: INEA, 49–69.

Gale, G. (2003). Saving the vine from Phylloxera: A never-ending battle. In S. Merton and R. Pinder (ed.), *Wine: A Scientific Exploration*. London and New York: Taylor & Francis, 81–84.

Gale, G.D. (2011). *Dying on the Vine. How Phylloxera Transformed Wine*. Berkeley: University of California Press.

GATT (General Agreement on Tariffs and Trade) (1966). *World Trade Prospects for Ordinary Wine*. Trade Intelligence Paper No. 8, Geneva.

Gavignaud, G. (1988). Etat et propriété: le vignoble méridional (1880–1980). *Économie rurale*, 184(184–186), 92–99. Available at www.persee.fr.

Grant, W. (1997). *The Common Agricultural Policy*. London: Macmillan.

Hyams, E. (1965). *Dionysus: A social history of the wine vine*. Bristol: Thames & Hudson.

Innova SpA (2004). Ex-post evaluation of the Common Market Organisation for wine. Final report prepared for European Commission, DG Agriculture, Tender AGRI/EVALUATION/2002/6. Available at http://ec.europa.eu/agriculture/eval/reports/wine/fullrep_en.pdf.

INSEE (1935). *Annuaire statistique de la France. Résumé rétrospectif*. Paris: Institut National de la Statistique et des Etudes Economiques.

INSEE (1966). *Annuaire statistique de la France. Résumé rétrospectif*. Paris: Institut National de la Statistique et des Etudes Economiques.

Isnard, H. (1947). Vigne et colonisation en Algérie (1880–1947). *Annales. Économies, Sociétés, Civilisations*, 2(3), 288–300. Available at www.persee.fr.

Isnard, H. (1966). La Viticulture Nord-Africaine. In *Annuaire de l'Afrique du Nord-1865*, vol. 4. Paris: Editions du CNRS.

Itçaina, X., Roger, A., and Smith, A. (2013). Institutionalizations compared: Implementating the EU's 2008 wine reform. *Comparative European Politics*, 11(1), 119–142.

Jacquet, O. (2009). Les appellations d'origine et le débat sur la typicité dans la première moitié du XXème siècle: le rôle du syndicalisme viti-vinicole bourguignon. *Territoires du vin—Pour une redéfinition des terroirs*. Available at http://revuesshs.u-bourgogne.fr/territoiresduvin/document.php?id=125/.

Kortteinen, T. (1984). Wine production in the European Community since 1975. *British Journal of Addiction*, 79(4), 319–325.

Lachiver, M. (1988). *Vins, vignes et vignerons. Histoire du vignoble français*. Paris: Fayard.

Legifrance (2011). Loi du 29 juin 1907 tendant à prévenir le mouillage des vins et les abus de sucrage. Les textes législatifs et réglementaires, Détail d'un texte. Available at www.legifrance.gouv.fr/affichTexte.do?cidTexte=LEGITEXT000006071147&dateTexte=20110803/.

Loubère, L.A. (1978). *The Red and the White. The History of Wine in France and Italy in the Nineteenth Century*. Albany: State University of New York Press.

Loubère, L.A. (1990). *The Wine Revolution in France: The Twentieth Century*. Princeton, NJ: Princeton University Press.

Maher, M. (2001). On vino veritas? Clarifying the use of geographic references on American wine labels. *California Law Review*, 89(6), 1881–1925.

Maillard, J. de (2002). La commission, le vin et la réforme. *Politique Européenne*, 1(5), 68–84.

Malassis, L. (1959). La politique agricole de 1946 à 1958. La recherche d'une politique agricole. In *Économie rurale. N°39-40. L'économie agricole française 1938–1958*. Paris: Société Française d'économie rurale, 233–251.
Manole, V., Ion, R.A., and Ladaru, G.R. (2008). Wine chain in Romania—A marketing approach. *Annales Universitatis Apulensis Series Oeconomica*, 2(10), 52.
Martin, J.-P. (1998). Viticulture du Languedoc: une tradition syndicale en mouvement. *Pôle Sud*, 9(1), 71–87.
Meloni, G., and Swinnen, J.F.M. (2013). The political economy of quality regulations: Geographical origins, production regulations, and labelling. Unpublished mimeo.
Meloni, G., and Swinnen, J.F.M. (2014). The rise and fall of the world's largest wine exporter (and its institutional legacy). *Journal of Wine Economics*, forthcoming.
Milhau, J. (1953). L'avenir de la viticulture française. *Revue Économique*, 4(5), 700–738.
Moschini, G., Menapace, L., and Pick, D. (2008). Geographical indications and the competitive provision of quality in agricultural markets. *American Journal of Agricultural Economics*, 90, 794–812.
Munholland, K. (2006). "Mon docteur le vin": Wine and health in France, 1900–1950. In M.P. Holt (ed.), *Alcohol: a Social and Cultural History*. Oxford: Berg, 77–90.
Munsie, J. (2002). A brief history of the international regulation of wine production. Harvard Law School, Cambridge, MA.
Newsletter on the Common Agricultural Policy (1969). *A Common Wine Policy: New Moves by the Commission*. No. 7/69. European Communities—Directorate General Press and Information. Available at http://aei.pitt.edu/6530/.
Newsletter on the Common Agricultural Policy (1970). The background to the common organization of the market in wine. No. 2/70. *European Communities—Directorate General Press and Information.* Available at http://aei.pitt.edu/5482/.
Niederbacher, A. (1983). Wine in the European Community. Office for Official Publication of the European Communities, Periodical 2/3–1983, Luxembourg.
OECD (Organisation for Economic Co-operation and Development) (2012). Producer and Consumer Support Estimates database, OECD database 1986-2011, Paris. Available at www.oecd.org/tad/agricultural-policies/E27dataPSE2012.xlsx.
OIV (International Organization of Vine and Wine) (2007). World Vitivinicultural Statistics 2007—Structure of the World Vitivinicultural Industry 2007., Paris. Available at www.oiv.int/oiv/info/enstatistiquessecteurvitivinicole#secteur/.
OIV (International Organization of Vine and Wine) (2012a). International Standard for Labelling Wines. Paris. Available at www.oiv.int/oiv/info/enplubicationoiv/.
OIV (International Organization of Vine and Wine) (2012b). Statistical Report on world vitiviniculture. Paris. Available at www.oiv.int/oiv/info/enizmiroivreport/.
OIV (International Organization of Vine and Wine) (2013). State of the Vitiviniculture World Market. Paris. Available at www.oiv.int/oiv/info/enconjoncture/.
Ordish, G. (1987). *The Great Wine Blight*. 2nd ed. London: Sidgwick and Jackson.
Pan-Montojo, J. (1994). *La Bodega del Mundo. La Vid y el Vino en España (1800–1936)*. Madrid: Alianza.
Paul, H.W. (1996). *Science, Vine and Wine in Modern France*. Cambridge: Cambridge University Press.
Petit, G. (2000). Pour une histoire de la réglementation vitivinicole des Communautés européennes. *Bulletin de l'OIV,* May–June, 324–339.
Pinilla, V., and Ayuda, M.-I. (2002). The political economy of the wine trade: Spanish exports and the international market, 1890–1935. *European Review of Economic History*, 6, 51–85.

Pinilla, V., and Serrano, R. (2008). The agricultural and food trade in the first globalization: Spanish table wine exports 1871 to 1935—A case study. *Journal of Wine Economics*, 3(2), 132–148.

Pokrivcak, J., Crombez, C., and Swinnen, J.F.M. (2006). The status quo bias and reform of the common agricultural policy: Impact of voting rules, the European Commission, and external changes. *European Review of Agricultural Economics*, 33(4), 562–590.

Rausser, G., Swinnen, J.F.M., and Zusman, P. (2011). *Political Power and Economic Policy: Theory, Analysis, and Empirical Applications*. New York: Cambridge University Press.

Robinson, J. (ed.) (2006). *The Oxford Companion to Wine*. 3rd ed. Oxford: Oxford University Press.

Sagnes, J. (2009). Edouard Barthe, Député du vin, 1882–1949. In G. Gavignaud-Fontaine (ed.), *Vin et république, 1907–2007: colloque, Montpellier, October 18–19, 2007*. Paris: Pepper-L'Harmattan, 126–132.

Simpson, J. (2011). *Creating Wine: The Emergence of a World Industry, 1840–1914*. Princeton, NJ: Princeton University Press.

Smith, A. (1776/1904). *An Inquiry into the Nature and Causes of the Wealth of Nations*. Edwin Cannan (ed.), 5th ed. London: Methuen. Available at www.econlib.org/library/Smith/smWN.html.

Smith, A. (2008). Globalization within the European wine industry: Commercial challenges but producer domination. In B. Jullien and A. Smith (eds.), *Industries and Globalization: The Political Causality of Difference*. Basingstoke, UK: Palgrave.

Smith, A., Maillard, J. de, and Costa, O. (2007). *Vin et Politique. Bordeaux, la France, la Mondialisation*. Paris: Presses de Sciences Po.

Spahni, P. (1988). *The Common Wine Policy and Price Stabilization*. Aldershot, UK: Avebury.

Stanziani, A. (2004). Wine reputation and quality controls: The origin of the AOCs in 19th century France. *European Journal of Law and Economics*, 18(2), 149–167.

Swinnen, J.F.M. (2008). *The Perfect Storm: The Political Economy of the Fischler Reforms of the Common Agricultural Policy*. Brussels: CEPS.

Swinnen, J.F.M. (2009). The growth of agricultural protection in Europe in the 19th and 20th centuries. *World Economy*, 32(11), 1499–1537.

Swinnen, J.F.M. (2010). The political economy of agricultural and food policies: Recent contributions, new insights, and areas for further research. *Applied Economic Perspectives and Policy*, 32(1), 33–58.

Swinnen, J.F.M., and Vandemoortele, T. (2008). The political economy of nutrition and health standards in food markets. *Review of Agricultural Economics*, 30(3), 460–468.

Swinnen, J.F.M., and Vandemoortele, T. (2009). Are food safety standards different from other food standards? A political economy perspective. *European Review of Agricultural Economics*, 36(4), 507–523.

Treaty of Accession of Bulgaria and Romania: Protocol, Luxembourg, April 25, 2005, *Official Journal of the European Union* L157. Available at http://ec.europa.eu/enlargement/archives/enlargement_process/future_prospects/negotiations/eu10_bulgaria_romania/treaty_2005_en.htm.

Tyman, R. (1879). *Le Phylloxéra*. Gand: Vanderhaegen.

Ulin, R.C. (1996). *Vintages and Traditions: An Ethnohistory of Southwest France Wine Cooperatives*. Washington, DC: Smithsonian Institution Press.

Union des Maisons de Champagnes (2012). "Organisations des vins et spiritueux en France, en Europe et dans le monde." Available at www.maisons-champagne.com/orga_prof/schema_org_prof.htm.

Unwin, T. (1991). *Wine and the Vine: An Historical Geography of Viticulture and the Wine Trade*. London: Routledge.

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

Wolikow, C. (2009). La Champagne viticole, banc d'essai de la délimitation (1903–1927). *Territoires du vin—Pour une redéfinition des terroirs*. Available at http://revuesshs.u-bourgogne.fr/territoiresduvin/document.php?id=275%20ISSN%201760–529/.

## Appendix 1: Chronology of European Wine Regulations

| | |
|---|---|
| 1962 | – establishment of a viticultural land register<br>– notification of annual production levels (harvest and stock declarations)<br>– annual compilation of future estimates of resources and requirements<br>– stricter rules on "quality wines psr"* |
| 1970 | – rules on viticulture: vines were classified into "recommended," "authorized" and "provisionally authorized" varieties<br>– definition of different types of wine: "table wine" that had to contain an alcoholic strength of between 8.5° and 15° and "quality wines psr"* that included French AOC and VDQS wines**, Italian DOC wines, German *Qualitätsweine* and *Qualitätsweine mit Prädikat* and Luxembourg *Marque Nationale* wines.<br>– rules on wine production (as the maximum amount for enrichment and alcohol strength)<br>– introduction of common rules on labeling and oenological practices<br>– rules for determining guide prices activating the intervention system<br>– introduction of distillation of excess production in times of crises and obligatory distillation of the by-products of wine-making<br>– aid for short-term and long-term storage<br>– monitoring of trade with non-member countries was established<br>– declaration of *free movement of wine* within the Community |
| 1979 | – introduction of subsidies for concentrated grape must used for enrichment<br>– compulsory distillation of wines obtained for table grapes<br>– definition of oenological practices |
| 1987 | – for table wines, the measures maintained price supports, prohibition of new planting and temporary storage of surpluses<br>– widening of compulsory distillation (see Annex 3)<br>– introduction of further subsidies for the conversion of vineyards<br>– new rules for the production of quality wines |
| 1999 | – prohibition until 2010 on the planting of vines<br>– market mechanisms are maintained: private storage, obligatory by-product distillation, distillation of table wines and voluntary crisis-distillation<br>– introduction of restructuring and conversion measures for vineyards<br>– wine-making processes and practices are laid down<br>– trade with countries outside the EU is brought in line with the Uruguay Round agreement |

*Quality wines psr stands for Quality wines produced in specified regions.

**VDQS wines stands for Delimited Wine of Superior Quality.

*Sources:* Council Regulations of 1962, 1970, 1979, 1987, 1999; Europa, 2008; Munsie, 2002; Niederbacher, 1983; Unwin, 1991.

## Appendix 2: The 2008 Reform of European Wine Policy

| | |
|---|---|
| Support measures | • National envelopes: each country is entitled with a funding budget adapted to their particular situation. Support programs contain one or more of the following measures:<br>(a) Single Payment Scheme support (Article 9);<br>(b) promotion (Article 10);<br>(c) restructuring and conversion of vineyards (Article 11);<br>(d) green harvesting (Article 12);<br>(e) mutual funds (Article 13);<br>(f) harvest insurance (Article 14);<br>(g) investments (Article 15);<br>(h) by-product distillation (Article 16);<br>(i) potable alcohol distillation (Article 17) (until July 31, 2012);<br>(j) crisis distillation (Article 18) (until July 31, 2012);<br>(k) use of concentrated grape must (Article 19) (until July 31, 2012).<br>• Chaptalization: lower limits for added sugar and must<br>• Introduction of Single Farm Payment<br>• Rural Development and environmental protection |
| Trade with third countries | The reform took into account WTO policies, i.e., the phasing-out of market intervention measures (as distillation and public storage) |
| Regulatory measures | • Oenological practices: the Commission now approves or changes wine-making practices<br>• New classification: wines are now divided into "wines with a Geographical Indication" and "wines without a Geographical Indication." Within the first category, there are two subcategories: Protected Designation of Origin (PDO) wines and Protected Geographical Indication (PGI) wines, with PDO as the highest quality level<br>• Labeling: national quality-labeling schemes are kept for PDO wines, while wines without an Geographical Indication can now be labeled with grape variety and vintage |
| Production potential | • The planting rights regime will end at EU level from January 1, 2016 (Member states can decide to extend the limit until 2018)<br>• A voluntary grubbing-up scheme was enacted (175,000 ha were uprooted) |

*Sources*: Council Regulation (EC) No. 479/2008; European Commission, 2008a.

## Appendix 3: Distillation Schemes in the EUO

| | |
|---|---|
| 1962 | No distillation scheme provided |
| 1970 | Distillation of excess production in times of crises<br>Distillation of the by-products of wine-making (compulsory) |
| 1979 | Preventive distillation (voluntary)<br>Distillation with special price maintenance for long-term storage contracts<br>Distillation of wines obtained for table grapes (compulsory) |
| 1987 | Support distillation<br>Preventive distillation (voluntary)<br>Distillation of table wines (compulsory)<br>Distillation of wines other than table wines (compulsory)<br>Distillation of by-products (compulsory) |
| 1999 | Distillation for potable alcohol (voluntary)<br>Crisis distillation (voluntary, all wines)*<br>Distillation of wine from dual-purpose grapes (compulsory)<br>Distillation of by-products (compulsory) |
| 2008 | Phasing-out of crisis distillation and potable alcohol distillation (support granted until 31 July 2012)<br>Support for (voluntary or compulsory) distillation of by-products of wine-making maintained |

* From 1999 onward, crisis distillation could also be applied to "quality wines."
*Sources*: Council Regulations (EC) Nos. 817/70, 822/87, 1493/1999, and 479/2008; and European Commission, 2006a.

## Appendix 4: An Example of an Appellation d'Origine Contrôlée Regulation (applied to Bordeaux Wines)

The *Cahier des charges de l'Appellation d'Origine Contrôlée "Bordeaux Supérieur"* is a 51-page document pages laying out the governing rules of production, vinification and bottling of the AOC. The document is available at http://agriculture.gouv.fr/IMG/pdf/AOC_DGPAAT_SOMM42–2.pdf

The main rules for local winegrowers refer to:

a) Territory: the specific area is defined in which the harvest/vinification/bottling has to be carried out. A list of approximately 500 *communes* are specified in the Gironde territory;
b) Authorized grape varieties: grapes have to grow within the specified geographical region. For example, for the red Bordeaux wines, only 6 varieties are permitted, namely, Cabernet Sauvignon—Cabernet Franc—Merlot—Cot (or Malbec)—Carmenère—Petit Verdot;
c) Growing and winemaking methods, as:
   – maximum number of vines per hectare (4,500 plants per hectare);
   – distance between rows (not more than 2.20 meters) and between vines (not less than 0.85 meter);
   – pruning methods. For instance, for the Merlot variety, the number of fruiting branches per plant cannot exceed 11 shoots per vine;
   – the fence height must be at least equal to 0.55 times the spacing between rows.
d) the minimum natural alcoholic strength (in % of volume) must be 11% for red wines;
e) the maximum yield allowed (50 hectoliters per hectare);

The bottling and labeling: wines must age for at least 12 months before they can be sold; and the label must indicate Bordeaux Supérieur together with the Appellation Contrôlée reference.

## Appendix 5: Producer Single Commodity Transfers (PSCT), Consumer Support Estimate (CSE) and General Services Support Estimate (GSSE) for Wine in 2011

| | *Currency/ unit* | |
|---|---|---|
| I. Level of production | 000 tons | 16,381.4 |
| II. Value of production (at farm gate) | ECUmn | 16,024.9 |
| III.1. Producer Single Commodity Transfers (PSCT): Includes Wine specific programs in A, B, C and D | ECUmn | 31.9 |
| *A. Support based on commodity outputs* | ECUmn | 2.1 |
| A1. Market Price Support | ECUmn | 2.1 |
| A2. Payments based on output | ECUmn | 0.1 |
| *B. Payments based on input use* | ECUmn | 3.2 |
| B1. Variable input use | ECUmn | 0.0 |
| B2. Fixed capital formation | ECUmn | 0.0 |
| B3. On-farm services | ECUmn | 3.2 |
| *C. Payments based on current A/An/R/I, production required, single commodity* | ECUmn | 26.6 |
| *D. Payments based on non-current A/An/R/I, production required* | ECUmn | 0.0 |
| III.2. % Producer Single Commodity Transfers (PSCT) | % | 0.2 |
| *F. Payments based on non-commodity criteria* | | |
| F1. Long-term resource retirement | | |
| Permanent abandonment premiums | ECUmn | 0.0 |
| Grubbing-up scheme (wine reform 2007) | ECUmn | 20.0 |
| IV. General Services Support Estimate (GSSE) | | |
| *L. Marketing and promotion* | | |
| Aid for the use of must | ECUmn | 0.0 |
| National support programs for the wine sector | ECUmn | 1,086.7 |
| *M. Public stockholding* | | |
| Buying-in of alcohol from compulsory distillation | ECUmn | 0.2 |
| V.1. Consumer Support Estimate (CSE) | | |
| *Q. Transfers to consumers from taxpayers* | | |
| Q.1. Commodity specific transfers to consumers | | |
| Distillation of wine | ECUmn | 0.0 |
| Compulsory distillation of by-products of wine making | ECUmn | 0.0 |

*Source*: OECD Producer and Consumer Support Estimates database, 2012 (available at www.oecd.org/tad/agricultural-policies/E27dataPSE2012.xlsx).

## Appendix 6: Annual Distillation Disposal, 2001–2011*

| | *By-product distillation* | | *Dual purpose grape distillation* | | *Potable alcohol distillation* | | *Crisis distillation* | | *Total Distillation* |
|---|---|---|---|---|---|---|---|---|---|
| | *(million hl)* | *%* | *(million hl)* | *%* | *(million hl)* | *%* | *(million hl)* | *%* | *(million hl)* |
| 2001 | 5.1 | 21 | 1.1 | 5 | 12.6 | 53 | 5.1 | 21 | 23.9 |
| 2002 | 5.5 | 21 | 1.2 | 4 | 11.8 | 44 | 8.1 | 30 | 26.7 |
| 2003 | 5.4 | 34 | 1.0 | 6 | 8.7 | 54 | 0.9 | 6 | 16.0 |
| 2004 | 5.5 | 33 | 0.8 | 4 | 10.2 | 60 | 0.4 | 3 | 16.9 |
| 2005 | 6.6 | 30 | 1.4 | 6 | 10.9 | 49 | 3.1 | 14 | 22.0 |
| 2006 | 6.3 | 24 | 1.2 | 4 | 12.7 | 49 | 5.9 | 23 | 26.0 |
| 2007 | 5.9 | 24 | 0.9 | 3 | 12.5 | 50 | 5.7 | 23 | 25.0 |
| 2008 | 5.1 | 42 | 0 | 0 | 6.9 | 57 | 0 | 0 | 12.1 |
| 2009 | 4.5 | 35 | 0 | 0 | 8.3 | 65 | 0 | 0 | 12.8 |
| 2010 | 4.9 | 36 | 0 | 0 | 7.6 | 55 | 1.1 | 8 | 13.6 |
| 2011 | 5.9 | 66 | 0 | 0 | 3.0 | 34 | 0.1 | 1 | 9.0 |

*The dual purpose grape distillation was abolished in 2008 and potable alcohol and crisis distillation were phased out in 2012, leaving the by-product distillation as the only remaining option for member states.
*Source*: Eurostat, 2013.