

Costs and Benefits of Protecting Geographical Indications: Some Lessons from the French Wine Sector*

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Abstract: The current crisis in the French wine sector is partly due to the complexity and restrictiveness of the system used to protect geographical indications (GIs). On the demand side, even French consumers are confused by the three-tiered GI system with 450 *appellations d'origine contrôlées* (AOCs) and 140 *vins de pays* (VDPs); France's falling export share suggests that the rest of the world is positively baffled. Meanwhile, GI regulations restrict winemakers' ability to respond to changes in technology and consumer preferences—inciting some of them to produce VDPs on AOC-protected land, in order to have greater liberty in terms of production methods. Before extending GI protection to other sectors—or strengthening it for wines and spirits—WTO Members should undertake cost-benefit analysis on a national basis, covering both static and dynamic aspects. The French wine experience has much that can inform such a process.

Keywords: International Trade; Agriculture Trade; World Trade Organisation; Intellectual Property; Geographical Indications; Wine Sector.

JEL Codes: F13; L15; L66; Q17.

* The views expressed in this paper are purely personal and should not be attributed to any organisation or its member countries. Comments to: Benjamin.Shepherd@sciences-po.org. Unless otherwise indicated, all translations are due to the author.

1 Introduction

A national icon like wine could never be far away from politics in France. Just under 100 years ago, overproduction and low prices combined to produce an outright revolt in the wine growing country of the South of France (Berstein & Milza, 1990, p.52). Just under two weeks ago, a group of disgruntled winemakers apparently set off a small bomb in the Hérault.[†] In short, crisis times are here again—and “crisis” is exactly the term used by the latest government report on the sector (Pomel, 2006), which serves as the basis for a new 90 million Euro rescue package (Libération, 30 March 2006).[‡]

This paper puts the French wine crisis into its broader context, by assessing its links with the policy framework governing the sector. That framework is famously based on the rigorous protection of geographical indications (GIs), and indeed French wine has become the showcase sector for GIs. At the present time, it is of vital importance that analysts make greater efforts to empirically assess both the benefits and costs of GI protection, since such information should be an important input into the ongoing discussions on protection for geographical indications (GIs) in the WTO’s Doha Round.[§] The question is particularly important for developing country commodity exporters, viewed by the EU as potential allies on this front in Geneva.^{**} It turns out that there is much to be learned from the system of GI protection applied to French wines, and the aim of this paper is to present some preliminary and largely descriptive results using a new statistical dataset, and also to highlight the areas on which future cost-benefit analyses could usefully focus.

[†] <http://www.viti-net.fr/Outils/Fiches/FichesDetail.asp?idRub=54&id=30701>.

[‡] The French press has been instrumental in conveying a sense of crisis to the wider public. For instance, Le Monde recently devoted an editorial to “the wine of vanity”, arguing that: “France is failing when it comes to the globalisation of wine ... France is giving an example of what is holding her back more generally: a conservatism born of the vain belief that it is possible to dole out lessons to the whole world. France wanted to teach the rest of world to drink the way French people do, just like it wanted to build a Europe ‘à la française’. But the result in both cases has been failure” (Le Monde, 21 April 2006).

[§] The French government puts great emphasis on GIs in the WTO agriculture negotiations: “it is one of our rare ‘offensive’ subjects” (http://www.missioneco.org/omc/negociations/geographique/index_geographique.htm). For a review of the GIs debate at the WTO, see e.g. Fink & Maskus (2006).

^{**} As is well known, Europe has been working hard to “sell” GIs to developing country commodity exporters: “Extension [of GIs] can also benefit developing countries. ... Brand identification is important for developing countries because it makes them less dependent on prices and because it helps them to diversify and to reduce dependency on the production of bulk agricultural commodities” (Mandelson, 2005).

2 Why the Whining?

Before getting into details, it is useful to quickly take the pulse of the French wine sector and its links with the world market (cf. Anderson et al., 2003; and EC, 2006b). Following are some basic stylised facts:

- i. **Three level protection for GIs:** The legislative hierarchy in France establishes the *appellation d'origine contrôlée* (AOC) at the pinnacle of the GI pyramid. AOC wines are made in clearly defined areas (sometimes very small) and are subject to detailed rules regarding authorised grape varieties, maximum yield and production techniques (including even such matters as the distance between vines). Next in line are *vins délimités de qualité supérieure* (VQDS), essentially AOCs in waiting—this intermediate category seems likely to be phased out in the near future (Pomel, 2006). The third and final category of GI wine is made up of *vins de pays* (VDPs), generally drawn from a much wider geographical area than AOCs and subject to less stringent production restrictions. VDPs can include grape varieties in their names, whereas only a very small number of AOCs can (e.g., wines from Alsace). French wine that is not covered by any of the three categories of GIs is classed as *vin de table* (VDT) and can be made from grapes grown anywhere in France. It is subject to only minimal production regulations. At last count, France boasted 450 different AOCs and 140 VDPs (Pomel, 2006, p.4).
- ii. **Sluggish world market:** Total world consumption is largely static at the present time, following a decline throughout much of the 1970s and 1980s (Figure 1). Total production has essentially followed a similar path to total consumption over the same period. (The gap between the two in Figure 1 is essentially due to industrial uses; see OIV, 2003.)
- iii. **Conflicting trends in per capita consumption:** As Figure 2 shows, “traditional” wine countries such as France and Italy have witnessed falling individual consumption over the last few decades. However, in “non-traditional” wine countries such as Japan, the USA, the UK and (to a lesser extent) Germany, the per capita consumption trend is noticeably more robust, and indeed is even heading in quite the opposite direction in some cases. In other words, consumer preferences are changing both in the Old World and the New.
- iv. **Declining French shares in production and exports:** Over the period 1973-2001, France’s share of total world production declined from 23% to 20% (Figure 3). However, its export share declined more significantly, from 34% to 24% (Figure 4). By contrast, the

Americas and Oceania have both markedly increased their shares in production and exports.

- v. **Increasing share of GI wines in French production, but not in exports:** At the same time, the share of GI protected wine (known as VQPRD or quality wine PSR in Eurospeak)^{††} in total French production has substantially increased in terms of volume (Figure 5), with recent information from the French Ministry of Agriculture suggesting that by value, around 80% of French wine production now carries a VQPRD label.^{‡‡} However, on the export market (Figure 6), the opposite dynamic is apparent: the share of VQPRD wine in total French exports has declined both in terms of value (84% to 74%) and volume (55% to 48%) over the period 1977-2001.
- vi. **Falling VQPRD export price premium:** Figure 7 shows that on the world market, the VQPRD price premium over VDT and VDP fell markedly in the early 1990s, before recovering later in the decade. There is a clear downwards trend over the past few decades.
- vii. **Government turns wine into ethanol:** Over the last few decades, the wine sector has been subject to substantial interventions on the supply side as part of the EU's Common Market Organisation for wine (EC, 2006a). This has covered subsidised uprooting of vines and “restructuring” of vineyards (Figure 8), as well as distillation programmes that transform surplus production into industrial alcohol (Figure 9). In 2002, 1.65% of total wine-producing acreage was affected by uprooting or restructuring programmes—down from a peak of 4.5% in 1989. Meanwhile, the French government's latest request to Brussels for crisis distillation covers some 400 million litres of wine (roughly 8% of total 2003 production), of which 50% is VQPRD.^{§§}

To summarise, recent evolutions in consumer preferences have produced a difficult market environment on the demand side, in particular in France's traditional markets. At the same time, “New World” producers have begun to make their presence felt on the world stage,

^{††} The Euro-label *vins de qualité provenant de régions déterminées* (VQPRD) covers AOC and VDQS wines in France.

^{‡‡} See http://agriculture.gouv.fr/spip/ressources.themes.alimentationconsommation.signesdequalite_a4455.html, consulted on 26 April 2006.

^{§§} See http://www.agriculture.gouv.fr/spip/leministere.leministrelecabinet.communiquepresse_a5936.html, consulted on 2 May 2006. Crisis distillations are designed to deal with “exceptional market disruptions due to major oversupply or quality problems” (Onivins, 2005b). Such “exceptional” circumstances have arisen in 2000-01, 2001-02 and 2004-05 (EC, 2006a).

while “New World” consumers—perhaps with different preferences and substitution possibilities from their “Old World” counterparts—represent the most dynamic source of growth on the demand side. The net result has been that French wine has faced increasingly fierce competition in export markets, and has consistently lost export market share. Moreover, there is evidence to suggest that foreign consumers are attaching less and less value to VQPRD wine, as reflected in a falling premium over non-VQPRD wines. No surprise, then, that producers are unhappy—and sending their precious AOC wines off to be turned into industrial alcohol is unlikely to make them much happier.

3 Confused Consumers

What are the structural causes behind the crisis in French wine? And in particular, why does that crisis seem to extend even to the GI-protected segments of the market?

One important part of the answer to those questions can be found on the demand side of the market. In theory—i.e., assuming strict surveillance of product attributes and rigorous action against counterfeiting—GIs can potentially help consumers avoid the “market for vinegar” problem (cf. Akerlof, 1970), namely the possibility that wine with one set of attributes (“low quality”) could be passed off to consumers as having a different set of attributes (“high quality”), with the seller making a profit out of the buyer’s inability to tell into which group a particular wine actually falls prior to purchase. In other words, protection of GIs is supposed to help consumers choose wine that corresponds to their desired set of attributes. (See OECD, 2000 for a more detailed exposition.)

It turns out, however, that the system of GI protection for French wine makes life a little more complicated than that. A few survey results from Onivins, the French wine sector supervisory agency, tell the story (Onivins, 2005a):

- i. **French consumers are becoming more and more familiar with AOCs:** In 1995, only 41% actually knew what the letters AOC meant; today, the figure is 58%. When asked to cite an example of an AOC wine, 56% of French people respond with a correct answer.
- ii. **French consumers are becoming less and less familiar with VDPs:** In 1995, 85% had “heard of” VDPs; today, the figure is only 79%. Only one in every five French people can respond with a correct answer when asked to name a VDP.
- iii. **French consumers are largely ignorant of varietal wines:** Only 42% say that they have “heard of” varietals, and only 15% can give a correct example when asked.

- iv. **For French consumers, wine branding is becoming essentially non-existent:** Only 20% can correctly name a brand of wine, even after five attempts! In 1995, by contrast, 32% passed the test.
- v. **Even the French find it hard to choose:** 70% say it is “difficult” to select wine (Onivins, 2003).

In other words, the French—presumably the world’s most knowledgeable set of consumers of French wine—have a tough time distinguishing between brands, AOCs, VDPs and varietals. Onivins (2003) has concluded that “Bordeaux, Côtes du Rhône, Beaujolais, Saint-Emilion and Burgundy [i.e., GIs] are the best-known *brands* in France” (emphasis added). Coincidentally, the same source shows that they are also the most commonly (and incorrectly) cited VDPs! So even the world’s most knowledgeable consumers find it “difficult” to choose from amongst the hundreds of different indications that can potentially figure on French wine labels.

This highlights two practical difficulties with the signalling role of GIs as applied to French wine. Firstly, there can easily be a crowding out effect, whereby one type of GI (in this case AOC) forces other useful signalling devices out of the market (in this case VDP, grape varieties and brands). That those other product attribute signals can be useful to consumers is amply attested to by their willingness to pay for their associated product attributes, a fact which emerges clearly from econometric work on price and product data in the New World (see below). Secondly, the benefits of GI protection could conceivably be diminishing in the number of GIs protected, at least after some critical point where consumer confusion becomes a serious issue. This would imply that governments considering enhancing GI protection might need to engage in a cost-benefit balancing act so as to arrive at an optimal solution—and that solution would necessarily preclude the number of protected GIs in a sector from expanding without bound. Indeed, the GI explosion in France over the last few decades could be argued to be quite contrary to the original intent of the 1935 legislation that established the modern GI framework: it was clearly designed to reduce, not increase, the proportion of total production carrying an appellation (Capus, 1947).***

For consumers less knowledgeable than the French when it comes to French wine—i.e., the rest of the world’s population excepting a relatively small number of cognoscenti—these

*** Joseph Capus was one of the architects of AOC protection as currently administered. In Capus (1947), he described the level of regional appellations in total production as “abusive” in 1934, when it hit 20%—compared with today’s 80% in value and 50% in volume.

problems are obviously compounded. Non-traditional wine consumers could conceivably find it easier to identify desired product attributes using branding (as in any other market) and indications as to grape variety, which is the way the New World tends to market its wine. No wonder, then, that France has been losing export market share in favour of its younger competitors.

To make the point more clearly, a simple hedonic pricing model is estimated using a sample of data from the well known French wine guide, *Meilleurs Vins de France* (MVF).^{†††} Product attributes are decomposed into three dimensions, namely wine (individual product), vineyard (brand) and region (appellation). The dependent variable is the natural logarithm of price per bottle (in Euros) of a selection of 386 wines cited in MVF, covering 44 vineyards and 8 different appellations in the Alsace, Bordeaux-Médoc and Champagne areas.^{‡‡‡} Explanatory variables include the MVF rating for each wine (a proxy for individual product attributes), the total number of MVF points awarded to the vineyard that produces it and the natural logarithm of that same vineyard's total annual production in hectolitres (proxies for vineyard level attributes) and a set of fixed effects by appellation.

In Table 1, results are presented for such a model estimated using OLS with White robust standard errors and including only each wine's individual MVF rating, with the coefficient allowed to vary across the three regions being analysed. In Table 2, results are presented for the same model but this time with the addition of the two vineyard-level variables; again, the coefficients on the MVF ratings for wines and vineyards are allowed to change across regions. Finally, Table 3 presents estimates for a model that also includes fixed effects by appellation. The model R2s show that the wine rating on its own accounts for 69% of observed variation in prices, while vineyard (brand) characteristics account for only an additional 4%. The addition of appellation fixed effects increases total R2 to just over 80%, an increase of 7 points over the model with only the rating and vineyard variables. In other words, the data are

^{†††} This kind of model views prices as dependent on a set of product attributes, and has been widely applied in the wine economics literature (e.g., Combris et al., 1997 and 2000; Anderson & Schamel, 2003; and Cardebat & Figuet, 2004). In terms of the functional form used here, the estimated parameters can be interpreted both in terms of implicit prices for the attributes in question and consumers' willingness to pay for those same attributes, under appropriate theoretical conditions.

^{‡‡‡} Results presented using these data should be treated as indicative at this stage, given that the sample is quite small and is not necessarily representative of the entire universe of French wines. In future work, it is intended to increase the size of the database and thereby ensure more robust econometric results. See Table 10 for a description of the database.

supportive of the view that GIs matter for French wine consumers—and that they appear to matter more than brand effects for explaining prices

It is also useful to analyse the estimated coefficients in Table 3. Firstly, the statistical tests reported in Table 4 suggest that product, brand and appellation characteristics are all statistically significant determinants of French wine prices. In terms of magnitudes, however, the effects are quite heterogeneous. From Table 3, it can be seen that a one point increase in a wine's MFV rating is associated with a 30%-40% increase in price, while the increase is more like 12%-18% for a one point increase in a vineyard's total MFV rating. Table 5 lists the estimated vineyard fixed effects associated with Table 3, and converts them to approximate percentage impacts on price.^{§§§} It can immediately be seen that the fact of belonging to one or another appellation can have an enormous impact on price: the Margaux appellation adds nearly 300% to the price, for given wine and brand characteristics! By contrast, the regional effects estimated for Australia and New Zealand by Anderson & Schamel (2003) or for Australia by Ling & Lockshin (2003) are considerably smaller in magnitude—and are not uniformly statistically significant. The regional effects estimated for the UK by Steiner (2001) are usually statistically significant, but still not as strong as the largest ones found here.

Bringing these results together highlights two important conclusions. Firstly, French consumers are clearly willing to pay for certain appellations—and in some cases appear to value appellations far more than the brands that produce goods carrying those same appellations. In other words, the simple hedonic model analysed here sits well with the survey data reported by Onivins (2003, 2005). Secondly, a comparison of the above results with those obtained using similar models applied to datasets from other countries suggests that foreign consumers may not value appellations to the same extent that the French do. Moreover, grape varieties clearly matter for foreign consumers—a question which can scarcely even be addressed using French data, since it is illegal for AOCs to include varietal information (except for traditional exceptions such as Alsatian wines). Such differences between French and foreign consumer preferences tend to support the interpretation of export market dynamics given at the beginning of this paper.

^{§§§} If β is an estimated fixed effect, then the percentage impact on price related to that fixed effect is approximately $e^\beta - 1$.

4 Questionable Quality

Questioning the relationship between GIs and quality is a dangerous business in France: official discourse tends to treat AOCs as a type of quality designation, even though their official definition refers to a product's *terroir*-related "quality or characteristics" (Ministère de l'Agriculture, 2005, emphasis added). Objectively, the relationship between GIs and quality is clearly a complex one, if only because of different views as to the level of quality associated with the given set of product attributes protected by a GI. In any case, the French position appears to be undergoing some subtle changes at the present time: "To date, AOCs have been a guarantee of origin. Now they must become a guarantee of quality and traceability, a label", says Christian Paly, chairman of the AOC peak group CNAOC.**** The Pomel Report (Pomel, 2006) treads most carefully in this highly sensitive area, but still refers to the "heterogeneity in quality across products carrying the same identifier [i.e., GI]" (pp.4-5) and argues that "AOC authorisation, which should guarantee the quality of wines put on the market, takes place at a stage of the wine cycle that does not necessarily reflect that quality of the finished product" (p.15).†††† Moreover, the same source (p.6) is in favour of "giving quality marks back their credibility", a step which is in part made necessary because AOCs have been subject to "falling quality".‡‡‡‡

In other words, French officialdom seems to be discretely but surely recognising that *terroir* does not always and everywhere mean quality, or alternatively that when it comes to *terroir* "quality" is always and everywhere a mercurial concept.§§§§ The data are indeed supportive of such a view. Again drawing on the MVF dataset, Table 6 presents basic descriptive statistics for wine ratings by appellation, using the same sample as above. The same information is presented graphically in Figure 10 using boxplots, while Table 7 shows the results of statistical tests of two (independent) null hypotheses, namely that the mean and variance

**** See <http://www.lepoint.fr/vins/speciaux/document.html?did=151838>. In a similar vein, Philippe Mauguin, the former president of the INAO (responsible for administering GIs), has reportedly stated: "AOC is a guarantee of origin and tradition. It does not give any gustative assurance. An AOC wine does not necessarily taste better than another wine" (<http://www.guideduvin.com/aoc>).

†††† A less well-disposed commentator might argue that the current AOC accreditation system is the equivalent of the *Guide Michelin* giving out its coveted stars based on kitchen design rather than dining experience.

‡‡‡‡ Other official pronouncements abound. Senator Jean Bizet (2005, p.5) states clearly that AOCs in the wine sector "are the only ones that have not exactly performed their role of certifying quality". Later in the same report (p.32), he concludes that "AOCs no longer constitute a 'reliable guarantee of quality'".

§§§§ Recent experimental work by Vignes & Gergaud (2003) brings out the full complexity of assessing quality: people tend to rank champagne quality differently under blind tastings and with different pieces of information (label, price, etc.). Bazoche et al. (2005) report similar findings for chardonnay.

respectively are constant across appellations. The data show clearly that the average MFV rating differs significantly across appellations—in other words, each appellation is on average associated with a different level of quality. Concretely, average quality of Margaux and Pauillac wines is noticeably higher than those from, for example, Alsace. Wine quality also appears to be more variable in some appellations than in others, although admittedly the difference in variances is much less pronounced on a statistical level than the difference in means: the test statistic is marginal at the 10% level and is sensitive to the precise test used. Comparing coefficients of variation (i.e., the standard deviation scaled by the mean) across appellations suggests that quality is least stable in Champagne and most stable in Margaux.^{*****} In other words, product quality and vineyard (brand) quality appear to differ markedly across regions, as does consistency of quality in both cases.

5 Frustrated Farmers

Recent discussions of GIs tend to take it for granted that producers are uniformly in favour of enhanced protection. Strange it is, then, that the peak industry body is only lukewarm in its support of the EU's negotiating position at the WTO, citing concerns that the proposed registry system “may prove burdensome, expensive and unworkable” (FIVS, 2006). Even stranger is the fact that when Corade & Del'Homme (2005) conducted a survey of 73 winemakers from the Bergerac and Médoc regions, over 70% of them (53/73) agreed that AOC regulations held them back in international competition.

Indeed, it is far from the case that GIs necessarily benefit producers across the board. There are difficult distributional issues that any system of GIs needs to address, and which make it far from likely that producers will unanimously favour it.^{††††} In particular, it is necessary to find some way of separating “insiders” (producers who can benefit from a given GI) from “outsiders” (those who cannot). Such tensions erupted into riots and violence in Champagne

^{*****} Similar heterogeneity can be observed in Tables 8 and 9, as well as Figures 11 and 12, which conduct a similar exercise using MFV vineyard ratings for 434 vineyards and 18 appellations. (At this stage, the full dataset captured from MFV ratings covers 568 vineyards across 76 appellations. However, to enable statistical analysis of the type conducted here, the sample was restricted to include only those appellations for which MFV provides information on at least 10 different vineyards.)

^{††††} Capus (1947) again provides useful historical insight into the divergences of opinion that existed when the AOC system was introduced: “The beginnings [of the AOC system]...were difficult. Many wine dealers were hostile to it... Some politicians waged a veritable campaign against it. A major Bordeaux daily went so far as to write that AOCs would lead to the ruin of trade and wine-growing property. ... It was not at all by a spontaneous movement that all makers of fine wines accepted or demanded the AOC regime: an elite that saw things more clearly and was more disciplined provided the example for the rest...”.

following the government's attempt to delimit appellation zones by decree in 1908 (Filhol & Châtelet, 2001). Later, insider-outsider conflicts were extensively fought out in the French courts (Capus, 1947). In 1935, however, everything changed when an administrative system of delimitation was introduced, based on a corporatist approach that closely associated producers, experts and the State throughout the whole GI recognition process (cf. Costa et al., 2005);^{****} only consumers were left out.

It is the 1935 framework that still basically governs the way in which GIs are recognised and protected in France.^{§§§§} Nowadays, the first step in GI recognition and protection is the formation of a producer syndicate (*syndicat de défense*) to act as promoter. In consultation with committees and expert missions organised by the Institut National des Appellations d'Origine (INAO), the *Syndicat de défense* effectively decides on the supply-side structure to which the new AOC will be subject, including geographical area and production techniques. Once the AOC is recognised, that structure becomes binding on all farmers seeking to use the appellation. They are then subject to regular inspections and tests by government agencies, which must be passed in order to have the right to affix the AOC seal to the final product.

From an economic point of view, it is important to highlight the fact that this approach leads to a situation in which producers are actively encouraged to collude, since the legislation requires them to choose a common production technology and set an upper limit on total production by controlling area and yield. If they manage to overcome their collective action problem, they are “rewarded” by having their collusive arrangement sanctioned and actively protected by the State, which then assumes the policing functions necessary to discourage “cheating” (i.e., deviations from the rules on delimitation or production practices).^{*****}

On a static basis—and considering just a single GI—there are good reasons to expect that such an arrangement would benefit producers (or at least the insiders): they can optimise production and most likely extract economic rents from consumers, in addition to benefiting

^{****} One of the system's architects, Capus (1947), makes clear its links to the *esprit du temps* of the 1930s: “Its [the national GI committee's] purpose was not social but moral. ... Most regions were already delimited. But each of them needed to be policed, moralised by professional discipline. Its [the committee's] action would involve no infringements on liberty, as the only restrictions to be accepted were imposed by morality”.

^{§§§§} The procedures involved are described in detail on INAO's website (consulted 3 May 2006): <http://www.inao.gouv.fr/public/textesPages/Fonctionnement121.php?inc=1> and http://www.inao.gouv.fr/public/contenu.php?mnu=232&pageInc=textesPages/Guide_AOC232.php.

^{*****} When times get tough, as recently in the Bordeaux region, some producer groups have gone further and even set up explicit price fixing arrangements (i.e., minimum purchase prices): *Libération*, 7 April 2006. The practice is illegal both under French and European law, but as in the case of meat producer unions in the 1990s (*Libération*, 25 April 2006), the French government appears reluctant to enforce the law.

from the product attribute matching that should be facilitated by GIs.^{†††††} However, in light of the demand-side considerations evoked in the previous Section—and in particular consumers’ apparent propensity for confusion—it is not at all clear that it is socially optimal to simply keep on adding to the number of GIs without limit.^{†††††} Moreover, producers’ ability to extract rents from consumers can reasonably be expected to be declining in the number of protected GIs, based on an argument along the lines of Chamberlin’s “large group” case in monopolistic competition (see Dixit & Stiglitz, 1979 for a formalisation). On the other hand, the political economy of insiders-outsiders is likely to create a dynamic towards ever greater numbers of GIs—and might well be one of the reasons behind the explosion in the number of French AOCs.^{§§§§§}

In assessing the industrial organisation impacts of GIs, it is also important to take into account dynamic factors. Two such factors immediately spring to mind.^{*****} Firstly, recognition of an AOC requires the syndicate to establish the existence of “local, fair and constant” production conditions, in the sense that they are persistent in time and uninterrupted.^{†††††} Each AOC decree therefore renders compulsory a set of “traditional” production methods, identified through a process that forces producers to look backwards and inwards.^{†††††} Presumably, those methods cannot be changed every time there is a technological change, meaning that AOC producers will be consistently unable to take advantage of new methods

^{†††††} The question of the possible supply-side impacts of GIs at the firm and sectoral levels is greatly under-researched, both theoretically and empirically. Relevant work in this area that invites extension includes: Maratte & Crespi (2003), Chambolle & Giraud Héraud (2002), Giraud Héraud et al. (2003) and Maratte & Zago (2003).

^{†††††} It may well prove useful in future theoretical work to explore the implications of treating both individual GIs and the set of all GIs in an economy in terms of club goods subject to the “congestion” problem. See Benavente (2004) for some first steps in that direction.

^{§§§§§} In an indication that this kind of logic may indeed be an important reality, Bizet (2005, p.31) states that: “AOCs are more seen as a right that ensures winemakers an income, rather than as an aim to be reached, a requirement to be satisfied”.

^{*****} Two others that could usefully be explored in future work are: the market entry incentive provided by the existence of static collusion rents (perhaps a useful way of analysing the industry’s development in the New World), balanced against the barrier to entry constituted by GI recognition; and the attraction exercised on foreign investors by rent-rich industries. For example, the French insurance company AXA recently sold one of the most prestigious vineyards in the Margaux region to an Englishman (Le Monde, 31 March 2006). The claim (e.g., Bizet, 2005, p.16, citing Philippe Mauguin of INAO) that GIs are subject to “neither takeovers nor delocalisations” should perhaps be nuanced with regard to the impacts of rent repatriation.

^{†††††} See <http://www.inao.gouv.fr/public/textesPages/frames.php?pageParam=textesPages/Missions122.php>, consulted on 29 November 2005.

^{*****} Again, this is entirely in keeping with the historical genesis of the current system in the mid-1930s, a time when much of Europe was engaging to a pathological extent in such navel-gazing. For the record, it is worth noting that the final piece of the AOC system (making the same methods compulsory for all producers using the appellation) was put into place in 1942—under the Vichy government of Maréchal Pétain (Capus, 1947).

and procedures that are available to their competitors. This prohibition on the use of new technology is not just a problem for economic efficiency or cost competitiveness, but is also a question of quality since there is now empirical evidence to the effect that technology is also an important determinant of quality (Ginsburgh & Gergaud, 2005).

The second dynamic effect is in a similar vein, but relates to changes in consumer preferences rather than to changes in technology. Again, AOC producers are hamstrung by the decrees that both protect and confine them. If, for example, consumers develop a willingness to pay for varietal wines, AOC producers are not permitted to adapt their products accordingly (except in Alsace, for reasons of tradition)—hence the Pomel Report’s conclusion (p.5) that “national production rules [for varietals] can be a handicap in confronting international competitors”. The expectation behind such a system is that it is consumers who should adapt to the requirements of the AOC decrees, and not the other way around: what Pomel (2006, p.2) refers to as “supply-based marketing”.

It should be obvious that both of these forces make it more difficult for French winemakers to do one of the things they have done exceptionally well throughout history: adapt. This is because any but the most minor changes in production methods or product attributes require redrafting of the AOC decree, which in turn requires all producers—and all bureaucrats—to be in agreement. No wonder, then, that some frustrated *vignerons* make an apparently puzzling, but in fact perfectly rational, decision to produce less prestigious but also less tightly regulated VDPs on land earmarked for AOCs. In 2000, about 10% of the potential AOC harvest was in fact used for VDPs (Strohl et al., 2005, based on official figures). Even more heretical, there is anecdotal evidence that a small number of winemakers eschew VDPs in favour of the largely unregulated VDT segment—but still produce wines good enough to make the grade at Michelin-starred chef Joël Robuchon’s restaurants (Ginsburgh & Gergaud, 2005). §§§§§§§§

§§§§§§§§ The behaviour of foreign investors is also interesting in this regard. Australia’s wine giant Southcorp owns three vineyards and a winery (Herrick) in the Languedoc-Roussillon region, making only varietal VDPs aimed at the export market (see <http://www.southcorp.com.au/cps/rde/xchg/SID-53E7C3D8-A4B2AB9B/southcorp/style.xsl/wineregions.html> and <http://www.herrickwines.com/>). California’s Robert Mondavi was also interested in setting up in France, with a similar strategy in mind—until his proposal was torpedoed by a local Communist Party mayor, contrary to the wishes of some local *vignerons* (Midi Libre, 16 May 2001). In an amusing epilogue, the same communist mayor subsequently allowed French actor Gérard Depardieu to undertake a remarkably similar project (<http://www.boursorama.com/votreinvite/interview.phtml?&news=2882215>).

6 Real Reform?

To summarise, the current *crise* in French wine appears to be related to (at least) the following structural problems:

- i. **AOC Explosion:** Consumers are lost in a maze of 450 AOCs and 140 VDPs, in addition to VDQSs and VDTs.
- ii. **Quality Problems:** GI certification provides assurance as to origin and production methods, but does not directly certify the quality of the final product. Quality is variable both within and across AOC zones, a 2001 government report (Berthomeau, 2001, p.2) going so far as to claim that some AOC wines are “just average or even unfit for the appellation”. By contrast, high quality VDPs and even VDTs are now starting to be produced.
- iii. **Regulatory Straightjacket:** The rigidities introduced by AOC certification prevent producers from taking advantage of technological advances, and adapting to changing consumer tastes.

The government is clearly alive to these problems, each of which is addressed in the recent Pomel Report. Indeed, they have also been addressed in previous government reports including Berthomeau (2001), which refers to an earlier report of Booz Allen & Hamilton in 1993, and the Senate reports of César (2002) and Bizet (2005), the second of which refers to a reorganisation plan adopted in 2004...—all of which were visibly not acted upon, since they describe many of the same problems and make many of the same recommendations.

Nonetheless, the depth of the current crisis, combined with the fact that it is now well and truly in the public domain, means that there is hope that the government will this time take concrete steps to address the problem.

Pomel (2006) makes a wide range of important recommendations that focus on changing practices and mindsets so as to make production more responsive to consumers, at least for low- and mid-range wines. At the core of them is the author’s recognition that the bulk of French wine should not be subject to the regimen reserved for “exceptional products of which the personality, linked to a prestigious *terroir*, has been set for eternity” (p.5). In other words, for all but luxury products, he generally favours “demand-led production” (p.5) and “market responsiveness” (p.15), “room for innovation” (p.6) including the use of irrigation, wood chips and different grape varieties (p.20), reform of GI accreditation to bring quality

assurance closer to the final product (pp.15-16) and increased “readability” of the French product range (p.16).

Salutary as these good intentions are, Pomel (2006) is unfortunately short on concrete details—except in so far as they relate to the creation of new consultative and representative bodies. The hardest questions are discussed in somewhat elliptical terms. For instance, the report suggests that increased “readability” means “grouping together” different AOCs (and VDPs) under regional and sub-regional appellations (p.16). Does this mean that, in effect, the number of protected GIs will be reduced? In arguing that the new “grouped” AOCs should have “a stronger link to the *terroir* than is the case today” (p.17), the author gives every indication that such a reduction will indeed have to take place, because some wines that are currently recognised as AOCs are apparently not of sufficient standard. If this interpretation is correct, the sector will be faced with an enormously difficult distributional question, to which the Report does not respond: which AOCs will be abolished?

7 Conclusion: Assessing the Costs and Benefits of GIs

This paper has sought to highlight the ways in which the current *crise* in French wine is intimately linked to GI protection, both on the supply and demand sides. As such, it should make disconcerting reading for European trade negotiators who try to “sell” GIs to the rest of the world (and particularly developing countries) as a way out of the commodity market doldrums. If the system has in part provoked, rather than avoided, a crisis in French wine, what guarantee is there that its extension to Basmati rice, Darjeeling tea or Blue Mountain coffee will not have the same effect?

What this means is that WTO members considering agreeing to enhanced GI protection for wines and spirits, and/or extension of GI protection to other sectors, should carefully assess the costs and benefits of such a move from their national perspectives, taking care to include both static and dynamic aspects. While symmetry arguments (“if Europe has it for wine, we should have it for coffee”) appeal to the lawyer’s sense of balance, they mean little to the economist’s sense of interest.

The French wine experience is potentially an analytical goldmine for informing the type of cost-benefit analysis suggested here. To date, there do not appear to have been any attempts at comprehensively quantifying the economic impacts of GI protection, although a number of papers have highlighted on an intuitive level the types of considerations that might be taken into account (for instance: OECD, 2000; Maskus, 2003; Agarwal & Barone, 2005; Maratte,

2005; and Josling, 2006). But even at this early stage, it is possible to conclude the present analysis by identifying some priorities for future research in that direction, summarised in the form of a cost-benefit matrix which, with appropriate advances on a theoretical level, could provide a framework for quantification.

	Benefits	Costs
Static	<ul style="list-style-type: none"> • Signalling (consumers) • Rents (producers) 	<ul style="list-style-type: none"> • Rents (consumers) • Crowding out of brands (consumers, producers) • Administration (State) *****
Dynamic	<ul style="list-style-type: none"> • Investment • Barrier to entry 	<ul style="list-style-type: none"> • Slower technology diffusion (consumers, producers) • Development of substitutes (producers) • Shifting consumer preferences (producers) • GI “explosion” (consumers, producers)

It will be seen that the sort of cost-benefit analysis that is proposed here takes on a particular importance as regards developing countries, which may well find themselves in a completely different set of circumstances from those faced by French wine producers in the 1930s. Three aspects in particular are worth highlighting. Firstly, the balance between producer and consumer welfare is unlikely to be the same for a staple in a poor country (e.g., rice) as for wine in a rich one. Putting it another way, it is one thing to encourage producers to collude and increase prices (in the short term) for wine, but it is quite another to allow them to do it for rice. Secondly, the defence of “traditional” production methods is unlikely to be as attractive to developing countries seeking to industrialise—and thus move on from such methods—as it is to developed countries looking to renew with their “rural roots”. For instance, would GI protection of Basmati rice imply that farmers would have to use animal traction for now and evermore? Finally, for the many countries that have found it impossible to implement the TRIPS Agreement, the feasibility of protecting GIs given current administrative capacity is questionable to say the least.

***** INAO, the French government agency responsible for administering GIs, employs 260 people and has an annual budget of around 20 million euros (INAO, 2004).

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Tables

Table 1: Hedonic price model for French wine using product characteristics only. (OLS with White robust standard errors, 338 observations, dependent variable is the natural logarithm of price.)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRADE*CRU_ALSACE	0.445644	0.046200	9.646064	0.0000
GRADE*CRU_CHAMPAGNE	0.560064	0.045719	12.25024	0.0000
GRADE*CRU_BMEDOC	0.608720	0.041353	14.72006	0.0000
C	-0.825669	0.343295	-2.405128	0.0167
R-squared	0.692999	F-statistic		251.3148
Adjusted R-squared	0.690241	Prob(F-statistic)		0.000000

Table 2: Hedonic price model for French wine using product and brand characteristics only. (OLS with White robust standard errors, 338 observations, dependent variable is the natural logarithm of price.)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRADE*CRU_ALSACE	0.397414	0.044866	8.857806	0.0000
GRADE*CRU_CHAMPAGNE	0.629565	0.052285	12.04113	0.0000
GRADE*CRU_BMEDOC	0.399262	0.083597	4.776018	0.0000
ALLPOINTS*CRU_ALSACE	0.116755	0.020933	5.577550	0.0000
ALLPOINTS*CRU_CHAMPAGNE	-0.010641	0.034118	-0.311894	0.7553
ALLPOINTS*CRU_BMEDOC	0.200232	0.055757	3.591177	0.0004
LOG(PROD_HL)	0.075333	0.059785	1.260060	0.2085
C	-2.070458	0.725470	-2.853952	0.0046
R-squared	0.729119	F-statistic		126.8922
Adjusted R-squared	0.723373	Prob(F-statistic)		0.000000

Table 3: Hedonic price model for French wine using product, brand and GI characteristics. (OLS and appellation fixed effects with White robust standard errors, 338 observations, dependent variable is the natural logarithm of price.)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GRADE*CRU_ALSACE	0.378388	0.058500	6.468176	0.0000
GRADE*CRU_CHAMPAGNE	0.377909	0.072623	5.203726	0.0000
GRADE*CRU_BMEDOC	0.296823	0.085433	3.474322	0.0006
ALLPOINTS*CRU_ALSACE	0.120265	0.020591	5.840725	0.0000
ALLPOINTS*CRU_CHAMPAGNE	0.000570	0.029227	0.019515	0.9844
ALLPOINTS*CRU_BMEDOC	0.179995	0.040105	4.488137	0.0000
LOG(PROD_HL)	0.091924	0.058388	1.574371	0.1164
C	-1.475636	0.682241	-2.162925	0.0313
R-squared	0.803880	F-statistic		94.56801
Adjusted R-squared	0.795380	Prob(F-statistic)		0.000000

Table 4: Wald tests using the model in Table 3.

Hypothesis	Test Statistic	Probability (F)
All grade (wine) coefs = 0	23.34058	0.000
All points (vineyard) coefs = 0	14.26716	0.000
All appellation fixed effects = 0	17.589807	0.000

Table 5: Estimated appellation fixed effects for hedonic price model.

Appellation	Estd. Effect	Approx. Price Impact (%)
Alsace	-0.631573	-46.82456
Champagne	1.100185	200.4722
HautMedoc	-0.154937	-14.35309
Margaux	1.317481	273.4005
Moulis	-0.209095	-18.86816
Pauillac	0.761012	114.0442
SaintEstephe	-0.029788	-2.934843
SaintJulien	-0.045518	-4.449769

Table 6: MVF wine ratings (GRADE), descriptive statistics by appellation.

Appellation	Mean	Median	Max	Min	Std Dev	Coef Var	Obs
Alsace	7.515	7.500	9.000	6.000	0.643	0.086	171
Champagne	7.801	7.500	10.000	6.000	0.820	0.105	73
Haut Médoc	8.133	8.000	9.500	7.000	0.719	0.088	15
Margaux	8.833	9.000	10.000	8.000	0.651	0.074	12
Moulis	7.735	7.500	9.000	7.000	0.589	0.076	17
Pauillac	8.500	8.500	10.000	7.000	0.787	0.093	51
Saint-Estephe	8.107	8.250	9.000	7.000	0.656	0.081	14
Saint-Julien	7.891	8.000	9.500	6.500	0.606	0.077	32
All	7.827	8.000	10.000	6.000	0.789	0.101	385

Table 7: Tests of equality of mean and variance of MVF wine ratings across appellations.

Test	DF	Test Statistic	Probability
Mean			
Anova F-statistic	(7, 377)	16.02995	0
Variance			
Bartlett	7	9.928991	0.1926
Levene	(7, 377)	1.812845	0.0835
Brown-Forsythe	(7, 377)	1.696361	0.1084

Table 8: MVF vineyard ratings (ALLPOINTS), descriptive statistics by appellation.

Appellation	Mean	Median	Max	Min	Std Dev	Coef Var	Obs.
Alsace	8.403	8.000	14.000	5.000	1.954	0.233	67
Champagne	8.265	8.000	15.000	5.000	2.148	0.260	68
Chassagne-Montrachet	8.800	9.000	11.000	7.000	1.317	0.150	10
Corbières	6.600	7.000	8.000	5.000	0.843	0.128	10
Coteaux du Languedoc	6.400	6.000	11.000	5.000	1.576	0.246	35
Gevrey-Chambertin	10.190	10.000	13.000	6.000	1.965	0.193	21
Haut Médoc	7.706	8.000	13.000	5.000	2.024	0.263	17
Margaux	9.080	9.000	13.000	6.000	2.040	0.225	25
Médoc	7.500	8.000	9.000	5.000	1.314	0.175	12
Meursault	10.571	10.000	15.000	6.000	2.311	0.219	14
Minervois	6.182	6.000	8.000	5.000	0.982	0.159	11
Nuits Saint Georges	10.083	9.500	15.000	8.000	2.065	0.205	12
Pauillac	9.800	9.500	14.000	6.000	2.308	0.235	20
Saint-Emilion Gd Cru	9.145	8.000	14.000	6.000	1.991	0.218	62
Saint-Estephe	9.857	9.500	14.000	7.000	2.179	0.221	14
Saint-Julien	10.643	10.500	13.000	8.000	1.336	0.126	14
Vins de Côted'Or	12.273	12.000	15.000	10.000	1.737	0.142	11
Vosne-Romanée	10.091	10.000	13.000	6.000	1.921	0.190	11
All	8.751	8.000	15.000	5.000	2.301	0.263	434

Table 9: Tests of equality of mean and variance of MVF vineyard ratings across appellations.

Test	DF	Test Statistic	Probability
Mean			
Anova F-statistic	(17, 416)	11.72606	0
Variance			
Bartlett	17	28.02749	0.0446
Levene	(17, 416)	1.573229	0.0678
Brown-Forsythe	(17, 416)	1.300999	0.1873

Table 10: Variables used in regression analysis. (Source: MVF.)

Variable Name	Description
Price	Price of a particular wine in euros per bottle.
Grade	MfV rating for each individual wine
AllPoints	Sum of all MFV vineyard points for a given vineyard
AgeingPotential, LandPotential, ProductionStability, Puissant, Fin, Prod_HL, Stars, ValueForMoney	MfV points awarded for a given vineyard for each criterion

Figures

Figure 1: Evolution of the world wine market, 1973-2001. (Source: Onivins.)

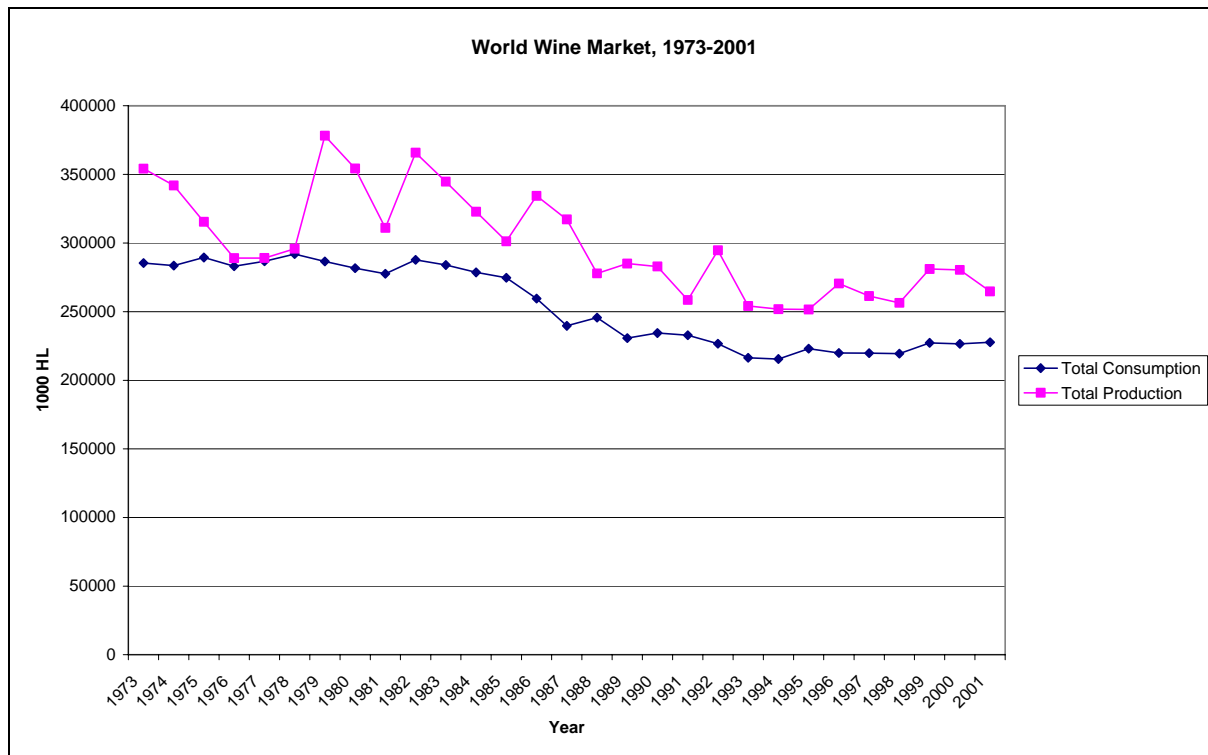


Figure 2: Evolution of per capita wine consumption in selected countries, 1967-2001. (Source: Onivins.)

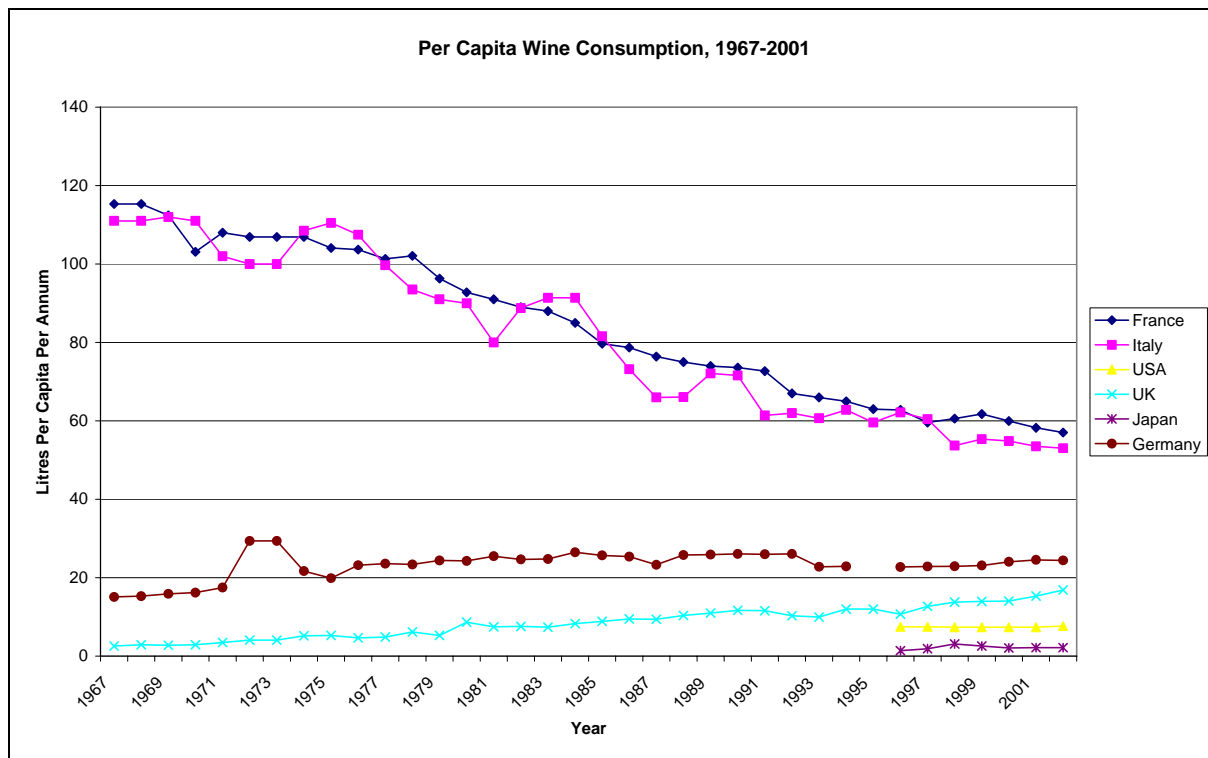


Figure 3: Breakdown of world wine production by region, 1973-2001. (Source: Onivins and own calculations.)

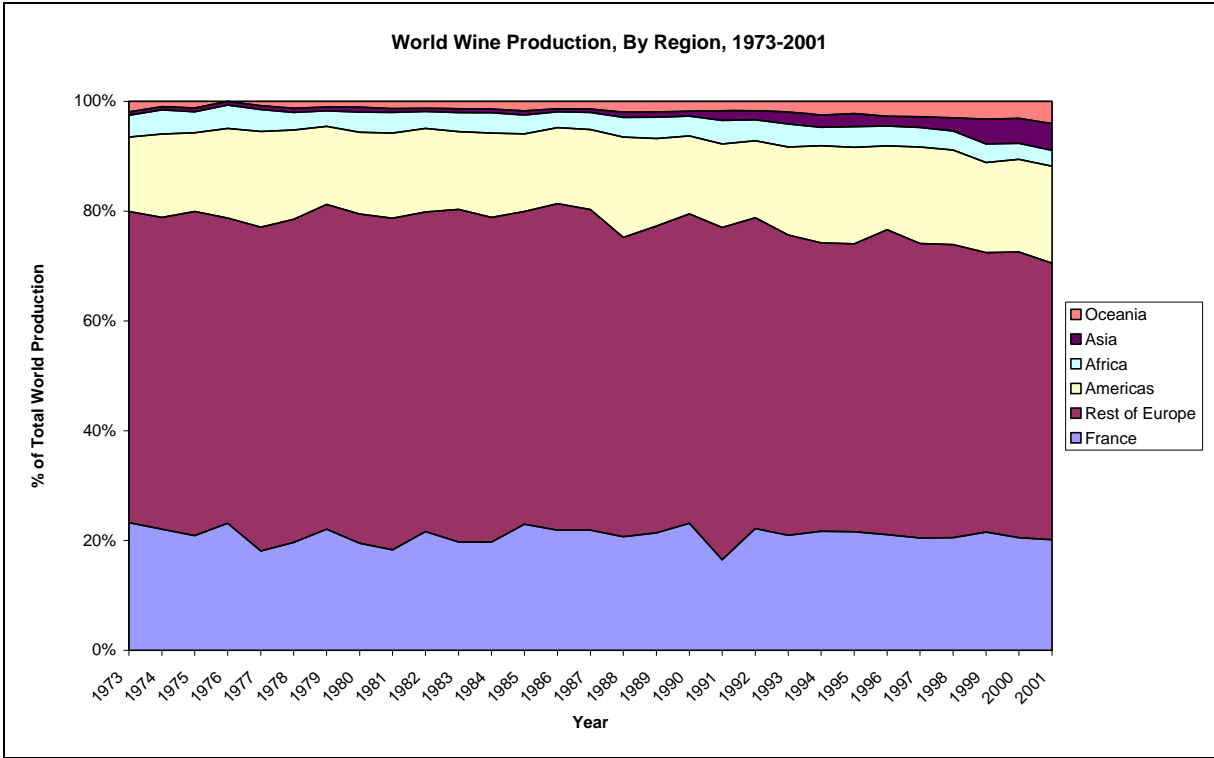


Figure 4: Breakdown of world wine exports by region, 1985-1999. (Source: Onivins and own calculations.)

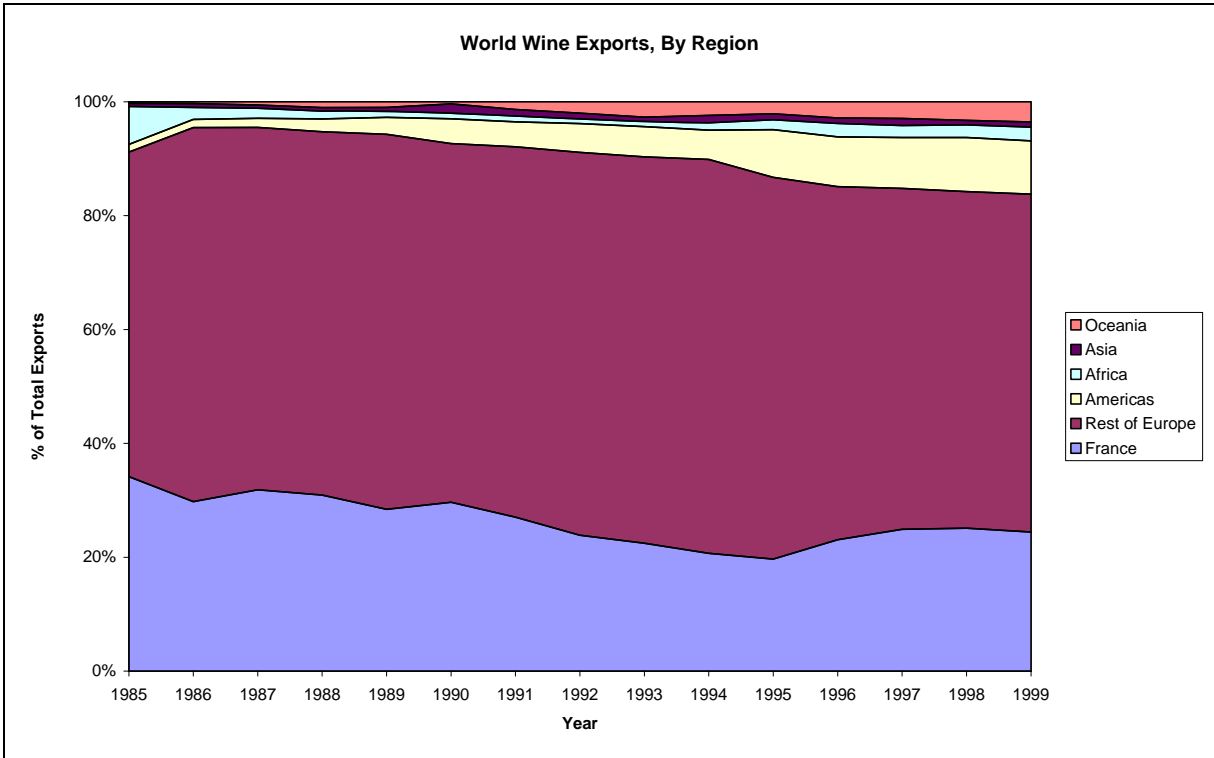


Figure 5: French VQPRD wine production as a percentage of total wine production, 1974-2003. (Source: Onivins and own calculations.)

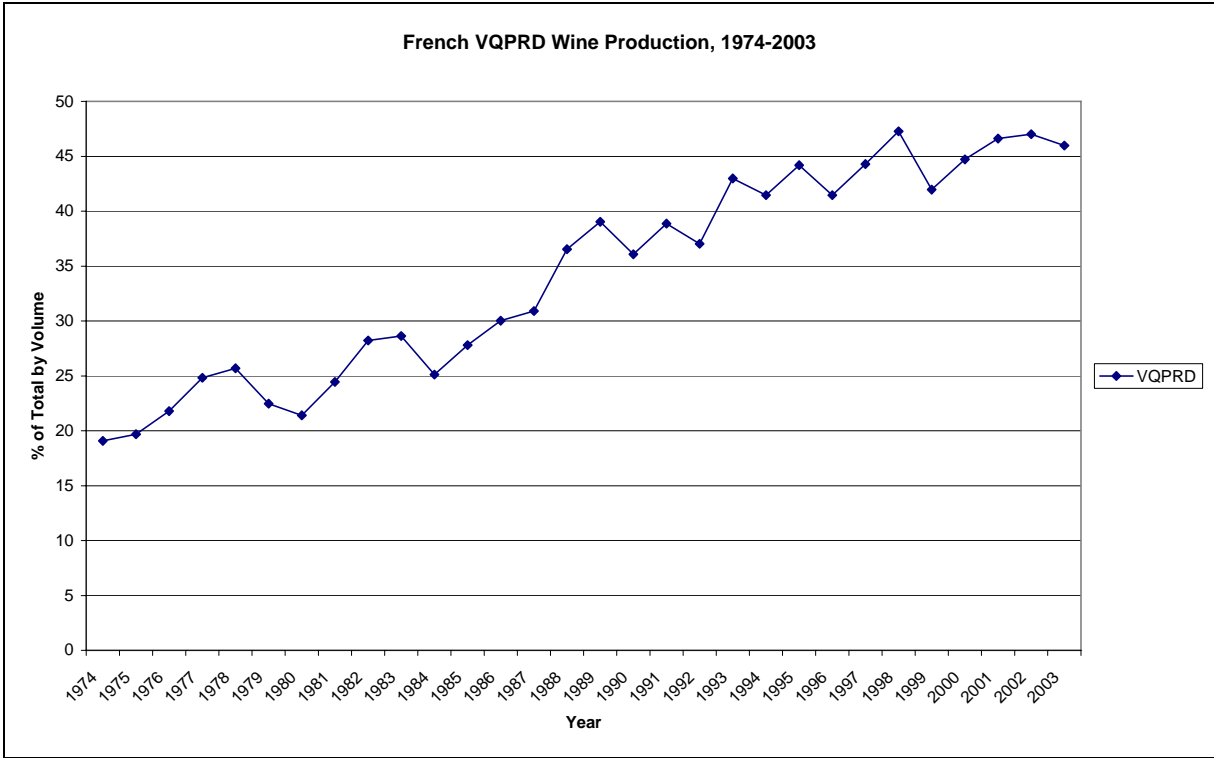


Figure 6: French exports of VQPRD wines as a percentage of total wine exports (volume and value), 1975-2002. (Source: Onivins and own calculations.)

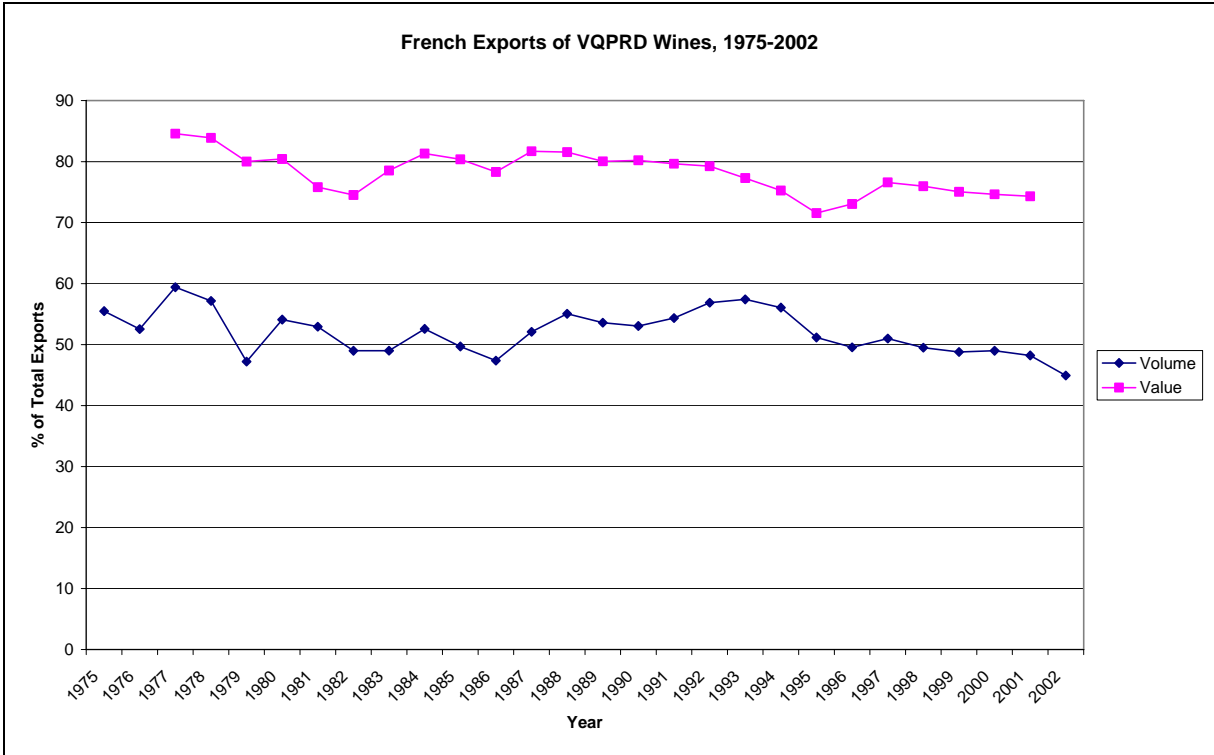


Figure 7: VQPRD unit value premium for French exports, 1977-2001. (Source: Onivins and own calculations.)

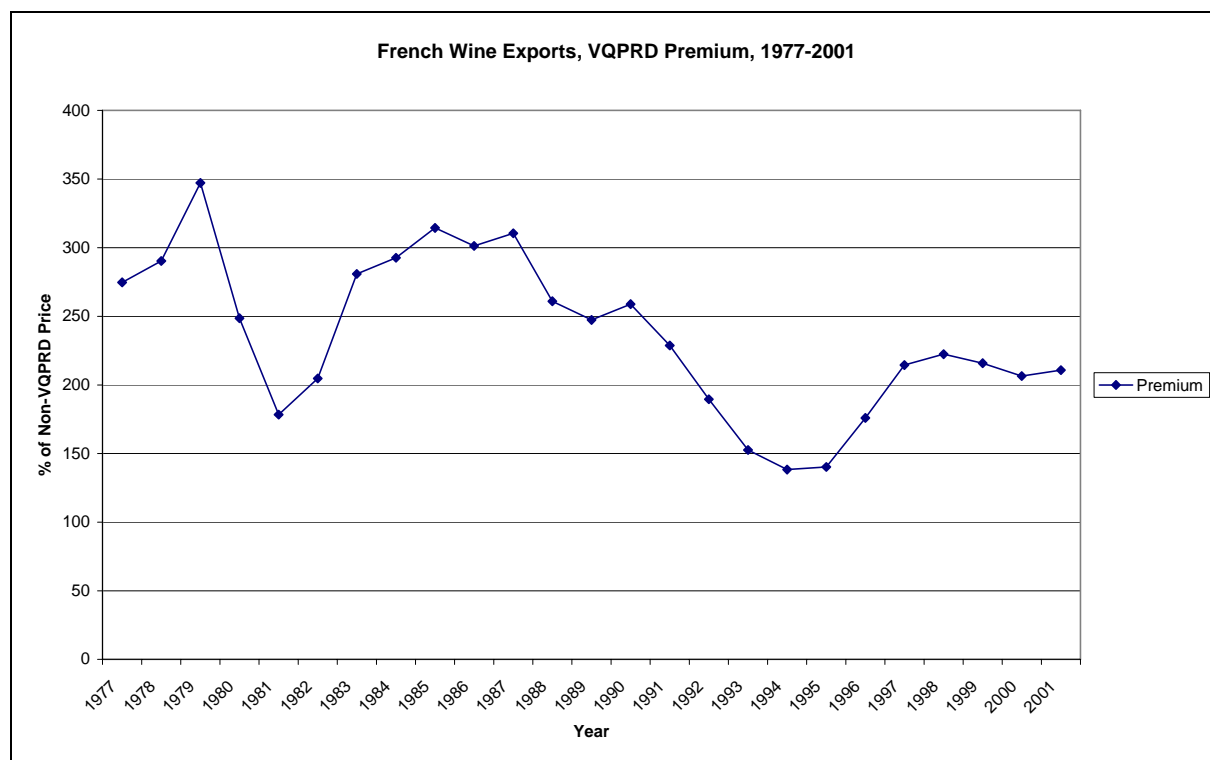


Figure 8: Wine acreage subject to government interventions, 1977-2002. (Source: Onivins.)

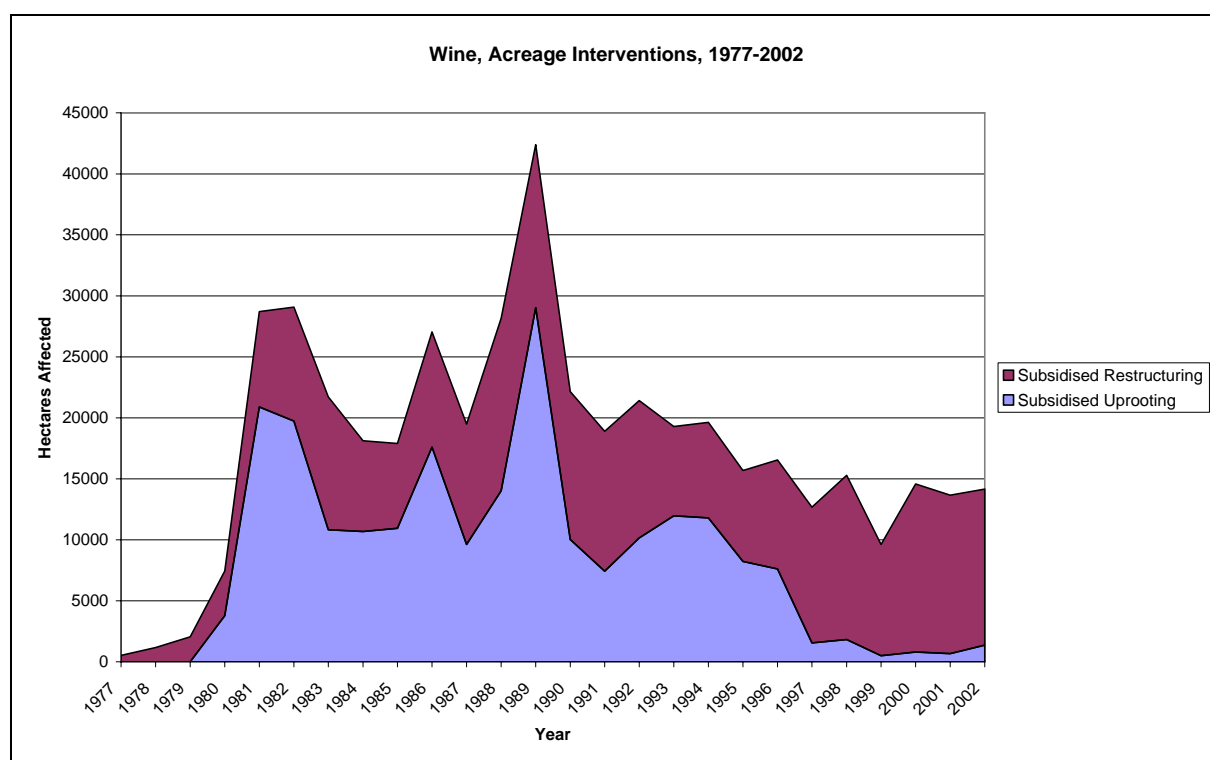


Figure 9: French support and crisis distillations, 1976-2002. (Source: Onivins and own calculations.)

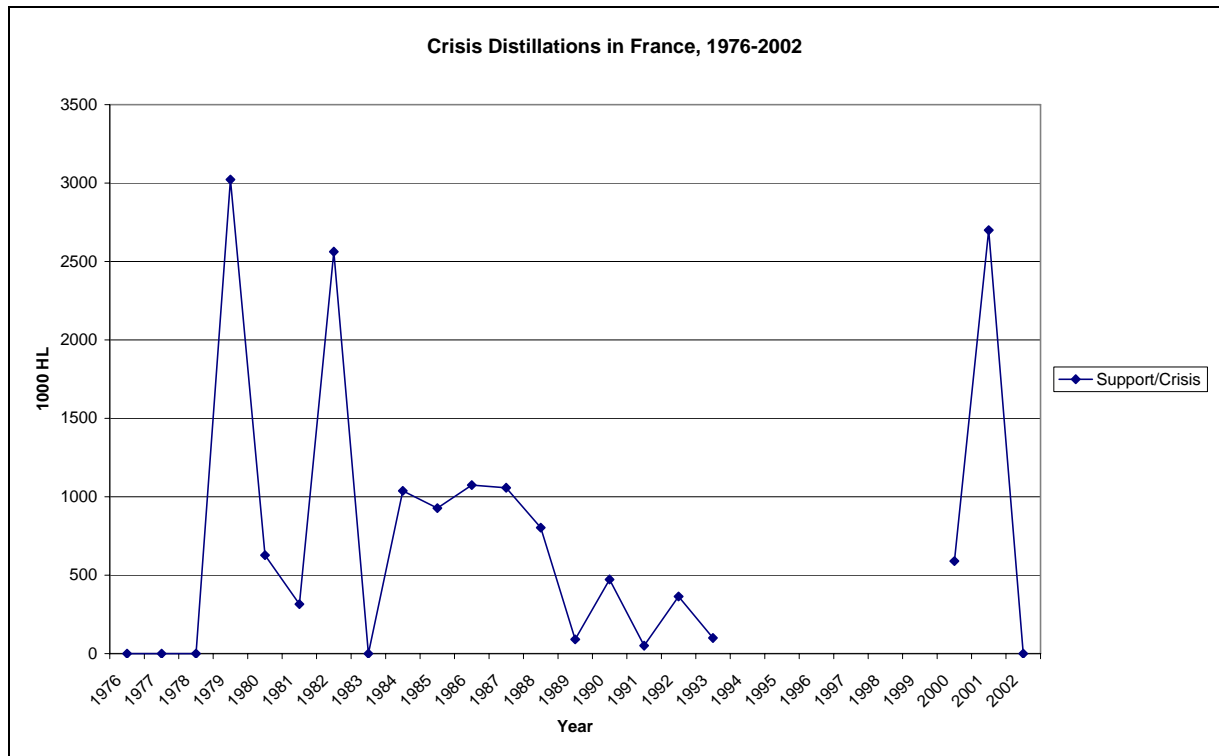


Figure 10: MVF wine ratings by appellation. (Source: MVF and own calculations.)

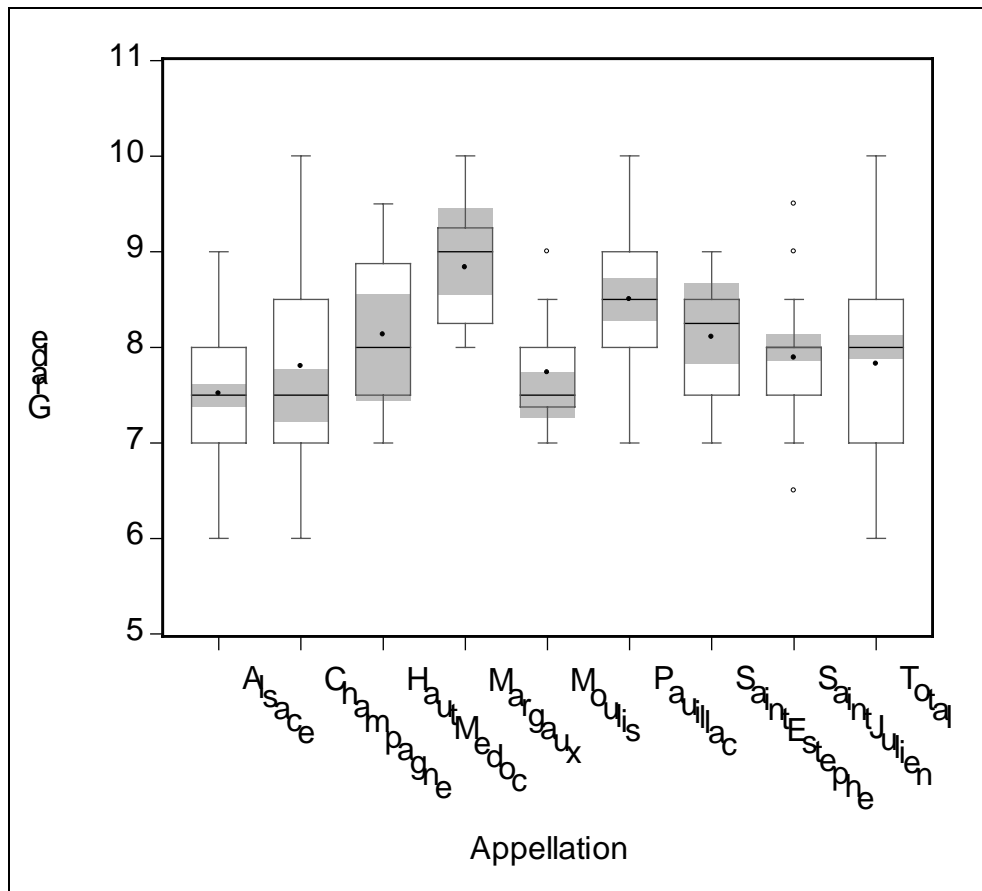


Figure 11: MVF vineyard ratings, by appellation (Part 1). (Source: MVF and own calculations.)

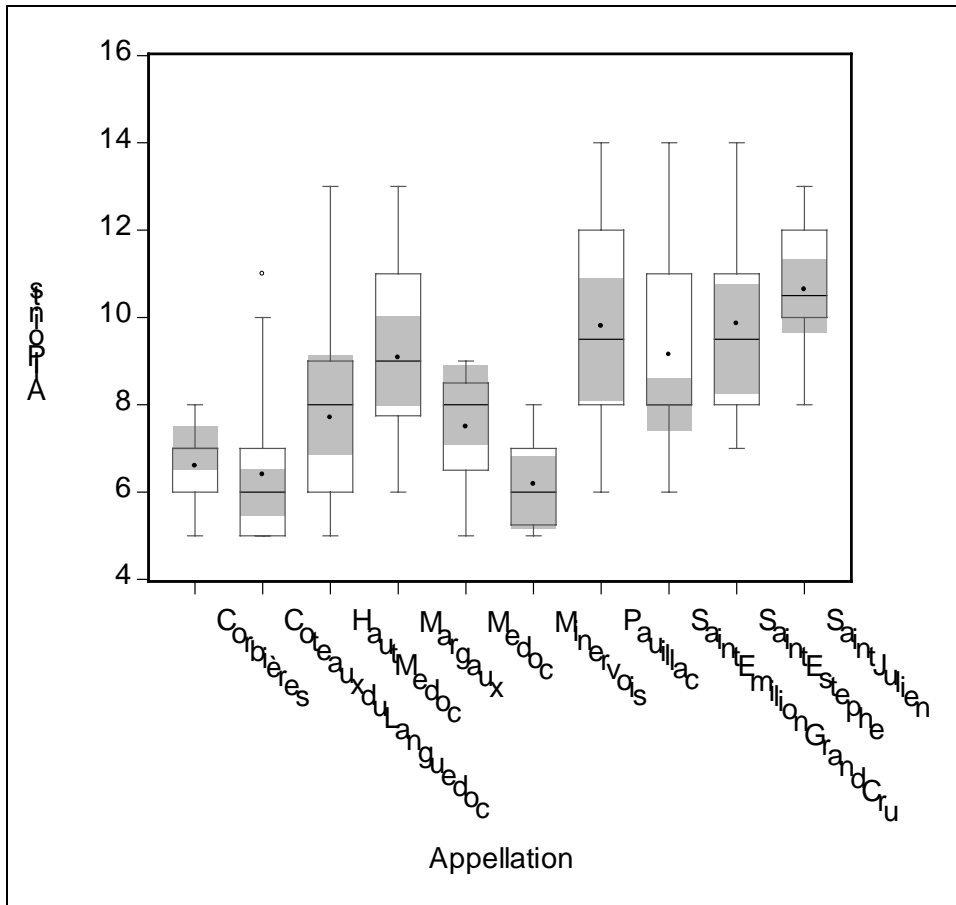


Figure 12: MVF vineyard ratings, by appellation (Part 2). (Source: MVF and own calculations.)

