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**The Economic Regulation of Quality in the Italian VQPRD
sector:
which perspectives?**

Giulio Malorgio ⁽¹⁾, Cristina Grazia ⁽²⁾

⁽¹⁾ Agricultural Economics and Engineering Department, University of Bologna, v.le Fanin, 50, 40127, Bologna. Tel. 051.2096145. e- mail:

giulio.malorgio@unibo.it

⁽²⁾ Agricultural Economics and Engineering Department, University of Bologna, v.le Fanin, 50, 40127, Bologna. Tel. 051.2096149. e- mail:

cristinagrazia@iperbole.bologna.it



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The Economic Regulation of Quality in the Italian VQPRD sector: which perspectives?

Giulio Malorgio ⁽¹⁾, Cristina Grazia ⁽²⁾

Abstract - The Appellation of Origin system is aimed at reducing consumers' information costs, assuring a minimum quality standard and wine typicity, as well as maintaining a diversified supply in order to satisfy consumers tastes heterogeneity. The effectiveness of the system is menaced by quantity and quality uncertainty, free riding phenomena, vertical relationships complexity and hold-up risks. The long term risk of the drop of the collective reputation of the Appellation justifies the economic regulation of the supply by the sectorial Organizations. Thus, it is necessary to evaluate their role in the construction of the competitive advantage of the quality wine system. Then, the question that we address in this paper is that of the effectiveness of the supply regulation of quantity and quality in the Italian system of Appellation of Origin. We analyze the current context of the Italian Appellation of Origin Chianti Classico and the mechanisms of the supply economic regulation. At first, we describe the structural and commercial characteristics of the Appellation, the vertical relationships among the agents, the trend of the most important economic indicators of the Appellation. Then, we provide an analysis of the current mechanisms of the economic regulation of supply, from the specific production requirements to the role of the sectorial organisation in the Appellation quality strategy. Finally, we point out the problems and the possible evolutions of the Appellation of Origin's system, in the context of the Reform of the CMO of wine.

Keywords : Appellation of Origin, collective reputation, economic regulation of supply, sectorial organizations

⁽¹⁾ Agricultural Economics and Engineering Department, University of Bologna, v.le Fanin, 50, 40127, Bologna. Tel. 051.2096145. e-mail: giulio.malorgio@unibo.it

⁽²⁾ Agricultural Economics and Engineering Department, University of Bologna, v.le Fanin, 50, 40127, Bologna. Tel. 051.2096149. e-mail: cristinagrazia@iperbole.bologna.it

1. Introduction

The Italian situation of the wine sector reflects the overall European trend of declining consumption and rising competition from new wine producing countries. The overall effect of total supply and total demand affects the wine prices, with a great instability of producers' remuneration. Moreover, the internal consumption is affected by the effectiveness of the quality signal expressed by the quality wines. It is important to preserve the internal product range, in order to meet the consumers' quality requirements (given the heterogeneity of the consumers' tastes). It is also important to strengthen the minimum quality standard, thus the homogeneity of the production systems (in terms of specific production requirements and quality characteristics) within the same Appellations, in order to *i*) increase the differentiation among different Appellations and *ii*) give an effective and clear quality signal to the consumers. Thus, we underline the necessity to define specific mechanisms of supply control and quality policy, in order to grant a stabilization of supplied quantity and quality along the time and improve the quality signal's effectiveness, thus increase the quality wines' competitiveness on the domestic and international markets.

The supply control in the wine sector is realized at two different levels. At first, the current wine Market Organization (Reg.EC 1493/1999) defines rules governing wine-production potential, market mechanisms, producer organisations and sectoral organisations, etc. The supply is regulated, in terms of quantity and quality, by a general prohibition on new vine planting through 2010, the distillation programs, the possibility to benefit of a specific fund for the conversion and restructuring vineyards, aimed at obtaining better quality wines. Second, the sectorial organizations (*Consorti di Tutela* in Italy) – recognized by the Common Market Organization for wine– can act into different ways: *i*) control the supply in order to stabilize the supplied quantity and quality and *ii*) promote the quality wine psr on the domestic and international markets. Given the demand and supply uncertainty, the increasing competition on the international markets, the risk of collective reputation loss, it is necessary to evaluate the VQPRD strategy's effectiveness and, in particular, the role of the sectorial organisation in the construction of a VQPRD wines' competitive advantage based on the collective reputation.

In the first section, we provide a review of the economic literature, which provides the arguments in favor of a supply regulation in the Designation of Origin sector and justifies a supply's control. In the second section, we provide an analysis of the characteristics of the Italian market and argument the necessity to develop specific mechanisms of supply's control and quality policy. In the third section, we analyze the current situation of the DOCG Chianti Classico and the relative mechanisms of quantity and quality regulation. In particular, we point out the positive elements and the limits of the supply regulation. We consider the Appellation of Origin Chianti Classico because *i*) the Consorzio Chianti Classico is one of the 28 italian Consortium which have been authorized to the control and quality certification activity and *ii*) it is representative as regards to the number of the associated producers.

2. The literature review

In the wine market, a very heterogeneous supply and the impossibility to observe the product quality before purchase, imply an important asymmetric information between the producers and the consumers and, therefore, strong promotional and research costs (Nelson, 1970, Darby e Karny, 1973). The risk of inefficiency in the quality signals – which do not fulfil consumers expectations on quality and typicity – is that of the reduction of the average quality level supplied in the market implying a long term demand drop (Akerlof, 1970). In this context, the objective of the Appellation of Origin system is to *i*) maintain a diversified supply and *ii*) reduce consumers' information costs. The Appellation of Origin system has important consequences on the “characteristics space” (Lancaster, 1966) providing *i*) an increase in the *inter-appellation* quality differentiation and *ii*) a decrease in the *intra-appellation* one, in order to assure the

typicity of the wine belonging to the same Appellation of Origin. The quality wines represent a good example of resolution of the problem of asymmetric information. The quality is identified from *i*) an Appellation of Origin and *ii*) an individual brand (Laporte, 2001).

In general, the Appellation of Origin System is effective if *i*) it provides the quality differentiation (without proliferation in the number of Appellation), *ii*) it maintains the quality range within every Appellation and *iii*) it provides a remuneration which meets both producers and consumers requirements (Giraud- Héraud, Soler, Steinmetz, Tanguy, 1998). The respect of these effectiveness conditions is menaced by *i*) the quantity and the quality uncertainty (agricultural revenues variability, problems in long term quality investments), *ii*) the *free riding* phenomenon (Holmström, 1982), *iii*) the vertical relationships' complexity and the *hold – up* risk (Williamson, 1985). The risk is that of a drop of the Appellation's collective reputation and consumers' satisfaction. The stabilization of the supply, relatively to the demand (thus the stabilization of the producers' remuneration) is important to grant the maintain of the quality level in the long term, especially in the case of *experience goods*. This aspect is analyzed in the models of Shapiro (1982, 1983). The author consider a model of perfect competition and imperfect information, in which the producers' reputation results from the consumers' expected quality, and show how the premium price (*i.e.* the return on investments concerning the reputation initial construction) is a necessary condition to avoid short-term opportunist behaviours. In fact, in the absence of a premium price for the high quality good, the firm are incentivated to develop the *fly-by-night* strategy of reducing the quality level (instead of the *faithful* strategy of maintaining the quality level) and take advantage of the products' reputation (Klein and Leffler, 1981).

The risks associated to the remuneration uncertainty can justify the economic regulation of the system by the sectorial Organizations, in order to *i*) reduce the quantity and quality uncertainty and *ii*) develop long term contractual relationships between agents and effective informative systems. A wide number of papers analyze the arguments in favor of a supply regulation in the Designation of Origin sector, from different economic theory's perspectives. Bovet and Chappuis (2001) analyze the role of the Interprofessional Organizations in the case of the PDO *Gruyère*. At first, it is important to adapt the supply to the demand, in order to stabilize the producers' remuneration (and cover the quality costs). Otherwise, the quality maintainance in the long term can be compromised. In fact, some producers can be incentivated to reduce the supplied quality and take advantage of the collective reputation. Secondly, a reference intermediate price could be useful to assure the producers' remuneration, give a clear expected quality signal and strengthen the producers' negotiation power. The authors demonstrate that a reference intermediate price does not necessarily have a negative impact on the final price. Moreover, they show the negative effects of the vertical integration, in the specific case of *Gruyère* (*i.e.* the standardization and the decrease in the number of producers, thus a decrease in the *inter-brand* and *intra-brand* differentiation). Réviron, Chappuis and Barjolle (2003) show that the Interprofessional Organization, in the specific case of *Gruyère*, can *i*) assure the maintain of a product differentiation, *ii*) define specific production requirements, *iii*) develop a marketing strategy for the collective brand and increase its notoriety, in order to stabilize the volumes and the prices in the long term, *iv*) reduce the informational asymmetries and *v*) reduce the uncertainty in quality thanks to a product's certification. Raynaud and Valceschini (1997) develop some arguments concerning the necessity of a control organization, in the specific case of *Label Rouge*. The use of the collective brand and the common production requirements imply a strong interaction among the economic agents' decisions, thus a problem of negative externality and opportunist behaviours arise. Marette, Crespi and Schiavina (1999) consider an adverse selection framework using cartel theory with Cournot competition, where a third-party certification may provide information about product quality for imperfectly informed buyers. Individual sellers can choose whether or not they wish to certify the quality of

their products independently or join a cartel in which they share the certification costs and/or collude in quantities. The authors show that a cartel in which the high-quality sellers share the certification cost and collude in quantities emerges. Moreover, given a high cost of labelling, a cartel of high quality sellers can improve overall welfare. Arnaud, Giraud-Héraud, Mathurin (1999) analyze the conditions at which the monopolist's quality policy is optimal for consumers in a context such that there exists an inverse relation between quantity and quality. They show how, at well defined conditions, the gains associated to a quality improvement can compensate for the losses associated to an increase in prices.

Let us consider the specific characteristics of the wine sector. A quantity restriction can have a positive impact on the supplied quality (Giraud-Héraud, Soler, Steinmetz, Tanguy, 1998). The authors analyze the reasons why the possible negative effects of a supply's control are quite limited. At first, the level of competition on the market is high (competition among different Designations, competition between Designations and brands, competition from the substitutes). Moreover, the international competition has a strong impact on the prices. Secondly, the strong negotiation power of the retailers avoids the risk of monopolization by the producers in some specific market segments. Finally, in spite of the quantity and quality regulation's possibilities, the producers have a continuous trade-off between the Designation of Origin and the brand, thus they have the flexibility to produce and sell outside the Designation of Origin and they are constantly menaced by potential entrants. Nevertheless, any form of coordination among producers is legitimized if the market is characterized by a high level of competition and if it is not aimed at creating long term entry barriers and eliminate the potential competition.

3. A delicate demand – supply equilibrium

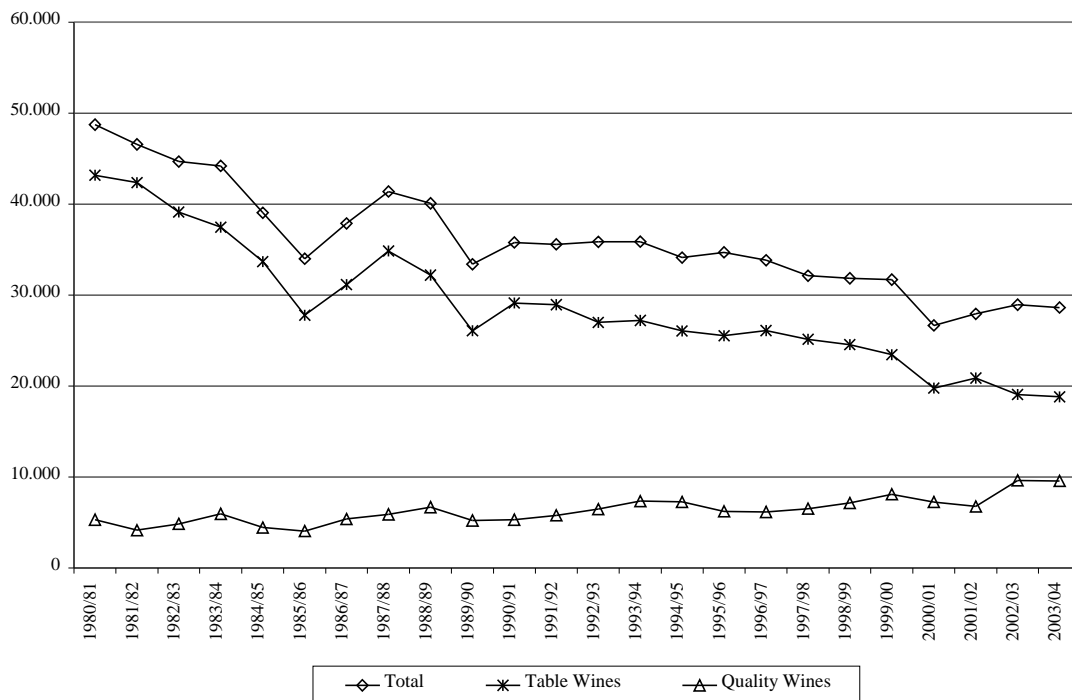
The Italian situation reflects the overall European trend of declining consumption and rising competition from new wine producing countries. Why does Italian wine consumption decrease? From 1961 to 2004, the per-capita wine's consumption in Italy declines more than half (-54%)¹. Forty years ago, it was over 100 liters. Wine consumption in 2004 fell below 50 liters for the first time. During the 90's, the decreasing wine consumption was, at least partially, offset by a growth in beer consumption. In fact, this latter increases from 6.1 liters in 1961 to 29,4 liters in 2004. Moreover, in the most recent years Italian consumers have exhibited an increasing preference for soft drinks (+31%) and mineral water, this latter increasing from 131.7 liters in 1996 to 178 liters in 2004². The retail price is an important factor affecting consumers' behaviour. In particular, the strong increase in retail prices of quality wines (especially concerning the traditional retailer and wine shops), together with the decrease in the consumers' purchase power, has encouraged many traditional consumers to either buy cheaper table wines or switch beverages. According to the ISMEA's survey concerning the domestic consumption, in 2004 the quality wine domestic purchase in volume average 5% more than in 2000, while the quality wine domestic purchase in value average 22 percent more than in 2000. The price of quality wines has increased 5.2 percent each year on average. In 2004, quality wine prices average 6.6% more than in 2003, while the table wines' prices are 0.1% higher than in the previous year. Moreover, wines bought for home consumption by families are purchased mainly at supermarkets (with a market share rising from 58% in 2000 to 68% in 2004). The market share of traditional retailer and wine shops has declined from 10% to 6%. An important volume is purchased in the restaurants (2.979.219 hl in 2005, *i.e.* 940.725.168 euros). The restaurants' share in 2005 is 4.3% lower than in 2004, in terms of volume

¹ Sources: *Global Wine Production, Consumption and Trade, 1961 to 1999*, Anderson and Norman, Centre for International Economic studies Adelaide University and USDA reports (1996- 2004).

² Sources: *USDA reports (1996- 2004) and Assobirra Reports (2001- 2005)*.

and value, as a result of the strong increase in prices in this channel. Moreover, ISMEA analyzes the «euro effect» and shows that, for example, the price of the red wine DOC/DOCG has increased 17% percent in the last two years and the price of the rose wine in 2002 averaged 30.6% higher than in 2001.

If we analyze the decline in wine consumption according to the type of wine (Fig.1), the role of the Quality wines in Italy emerges. In fact, the table wines' consumption declines (-56% from 1980/81 to 2003/04), while the Quality wines' consumption increases (+80%). Moreover, the Quality wines (DOC/DOCG and IGT) represent an increasing share of the Italian production (+172% from 1980/81 to 2004/05). In 2004/05 the quality wine's share of the wine production rises to 29.1%. In the same year, the table wine share of the total production is 66%, *i.e.* 24 percent lower than in 1980/81. According to ISMEA, the DOC/DOCG wines' share of the total production is 30 percent in 2005. Thus, *i)* the quality wines' share of the total production increases and *ii)* the consumption of quality wines increases. If we take into account the total supply (internal production and imports) and the total consumption (domestic consumption and exports), *i.e.* if we analyze the total wine stocks, an increasing trend emerges (+ 40% from 1993/94 to 2002/03)³. The increase in the total stocks reflects the overall effect of the total supply and the total consumption, thus to take into account the competitiveness of the wine on the international and internal market. In particular *i)* the consumption and the export decrease (in 2002/03, consumption and export are 18 and 7 percent lower respectively than in 1993/04) and *ii)* the imports increase (+386%). Moreover, it is important to distinguish table and quality wines. Table wines reflects more or less the total trend, in particular the stock increases (+42%) as a result of declining consumption and export (-28% and -11% respectively) and increasing imports (+585%). The production decreases (-36%) – as the total wine production (-28%) – but not enough to compensate for the overall effect of increasing stocks. The DOC and DOCG wines' stocks have a great increasing trend, which can be explained as following. Although from 1993 to 2003 the export and the consumption increase in volume (+21% and +31% respectively), this trend is not enough positive to compensate for the rising production and imports.



³ Source: Ismea.

Fig. 1: wine consumption in Italy (1980/81- 2003/04, .000 hl). Source: EU agricultural statistics.

The overall effect of total supply and total demand affects the wine prices. In particular, according to the USDA Report (2006), the growth of the unsold stocks affects the grower prices.

One of the elements which affects the internal consumption is the effectiveness of the quality signal expressed by the quality wine. Currently, in Italy there are 311 DOC wines and 32 DOCG wines. The Italian Appellations of Origin are very small, in terms of volume. In fact the 73% of the DOC/DOCG represents the 10% of the total DOC/DOCG wines' production. The same fragmentation characterizes the production at a regional level. In fact, the 85% of the DOC/DOCG represents less than 10% of the respective regional production. The raising number of DOC/DOCG wines can affect the consumers' perception of the quality and increase the informational asymmetries between the production system and the final market. Moreover, the 61 percent of the Italian Appellations has more than two «under- Appellations» (for example, the DOCG Chianti can be distinguished in Chianti *Colli Senesi*, Chianti *Colli Fiorentini*, Chianti *Montespertoli*, ecc.). The 18 percent of this 61 percent, has more than ten «under- Appellations». The heterogeneity of the internal product range (vertical product differentiation) is important in order to meet the consumers' quality requirements (given the heterogeneity of the consumers' tastes). Nevertheless, it is also important to strengthen the homogeneity of the production's systems (in terms of specific production requirements and quality characteristics) within the same Appellations, in order to *i*) increase the differentiation among different Appellations and *ii*) give an effective and clear quality signal to the consumers. The necessity to strengthen the minimum quality standard, which is granted by the quality wines psr, is confirmed by the raising importance of quality in consumers' attitudes towards the wine consumption. In 2003, the 67 percent of the Italian wine consumers consume wine each day, while the 33 percent consumes wine occasionally. The 75 percent of these occasional consumers is defined «wine-passionate» consumers, which also have a «wine- culture». As in France (INRA-ONIVINS survey 2005) and in Spain, the number of occasional wine consumers, which prefer the quality rather than the quantity is increasing.

Thus, we underline the necessity to *i*) increase the quality wine competitiveness on the domestic and international markets (so as to increase export in volume and value), and define *ii*) specific mechanisms of supply's control and *iii*) a quality policy, in order to grant a stabilization of supplied quantity and quality along the time.

The current wine Market Organization (Reg.EC 1493/1999) defines rules governing wine- production potential, market mechanisms, producer organisations and sectoral organisations, oenological practices and processes, description, designation, presentation and protection, quality wine psr (*vqprd*), and trade with third countries. At first, it calls for a general prohibition on new vine planting through 2010. At the same time, it provides a special fund for the conversion and restructuring vineyards, aimed at obtaining better quality wines. In Italy, in the period 2000- 2004, the expenditure for the conversion and the restructuring of vineyards has averaged 30% of the total expenditure for the wine sector. Moreover, the wine Market Organization provides two distillation programs, *i*) optional distillation, which is automatically initiated at the beginning of each marketing year, and *ii*) crisis distillation, which aims at supporting the market in the event prices for a certain type of wine or in a delimited product region show a significant decline within a certain period of time (art.27- 33). In 2001/02 the total wine distillation is 63 percent higher than in 1999/00. In the period 2000- 2004, the expenditure for the distillation has averaged 20% of the total expenditure for the wine sector. The wine Market Organization recognises the "Producer Organisations" (art.39) and recognises that producer Member States, particularly in implementing decisions taken by sectoral organisations, may lay down marketing rules to regulate supply on

first marketing, provided that such rules relate to the retention and/or gradual release of produce, in order to improve the operation of the market in quality wines psr and table wines described by means of a geographical indication. These rules must not include any other concerted practice such as *i*) price fixing, even for guidance or by way of recommendation, *ii*) rendering unavailable an excessive proportion of the vintage that would normally be available and, in general, any abnormal operation to curtail supply or *iii*) refusing to issue the national and/or Community attestations needed for the circulation and marketing of wine products where such marketing is in accordance with those rules. Thus, the art.41 is a compromise between *i*) the Community law, in terms of free movement (Articles 28 to 31 of the Treaty), and competition (Articles 81 to 86 of the Treaty), and *ii*) the European quality policy as regards to the quality wines psr.

Thus, the sectorial organisations can act into different ways: *i*) control the supply in order to stabilize the supplied quantity and quality and *ii*) promote the quality wine psr on the domestic and international markets. Given the increasing competition on the international markets – especially coming from the “New World” wines, which are mainly based on a standardization strategy – it is necessary to evaluate the VQPRD strategy’s effectiveness and, in particular, the role of the sectorial organisation (*Consorzio di Tutelait* in Italy) in the construction of a VQPRD wines’ competitive advantage based on the collective reputation. In the next section, we analyze the mechanisms implemented by the sectorial organisations.

4. The economic regulation of quantity and quality: the case of the Chianti Classico DOCG

4.1. An analysis of the current situation

The geographical production’s area of Chianti is about 70.000 hectares, with 9.000 hectares of vineyard. The surface of Chianti Classico is about 7.000 hectares in the last two years, with 1.150 registered vine growers. The Chianti Classico production represents the 17 percent of the production of quality wines psr of the Tuscany Region and about 3% of the Italian production of quality wines psr. In 2004, the production is 270.852 hl. The vine growers are very small, thus the 27 percent of them has less than 1 hectare of surface. Moreover, the 4 percent of the total wine production is produced by the 40% of the firms. The total sales are 219.951 hl in 2004. About the 40 percent of the total sales concerns the domestic market. The principal foreign market is U.S. (29%), followed by Germany (23%), Switzerland (12%), U.K. (12%), Netherlands, Belgium, Austria, France, Japan and Canada (24% in total). The most important distribution channel, in terms of volume, in the ho.re.ca. (38%), followed by the direct sale (37%), the supermarkets (17%) and the wine shops (8%). According to ACNielsen, the 12,38% of Chianti Classico wines is sold in the restaurant channel in 2004, in terms of volume. This percentage represents about the 38% of the total sales’ value. In 2005, the percentage of sales in this channel is 8 percent lower than in 2004, in terms of volume but only 0.32% lower in terms of value. These data confirm the important increase in retail prices in the last years, especially in the ho.re.ca. channel.

Let us now consider the vertical relationships along the supply chain and the types of economic agents involved.

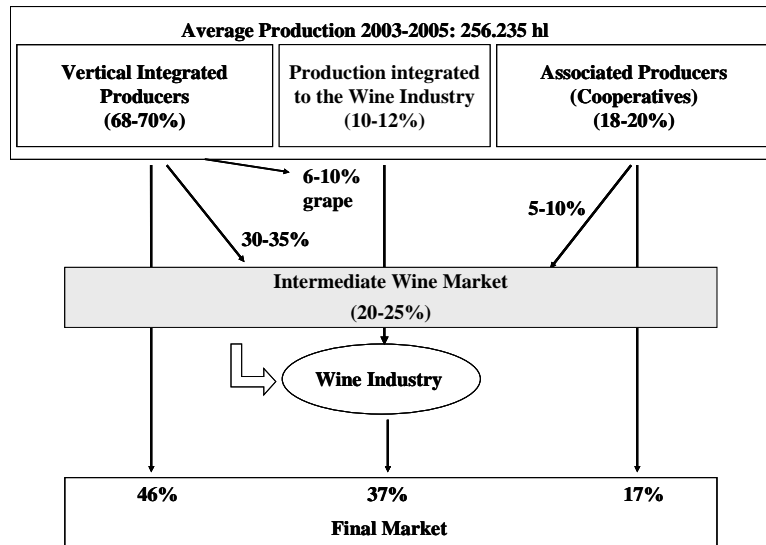


Fig. 2: the supply chain of the DOCG Chianti Classico (2003- 2005).

In general, the vertical relationships among the different economic agents can be quite complex. In particular, the vertical relationship between the vine grower and the industry can be *i*) a supplier-customer relationship, such that the vine grower sells to the industry the grape or the wine, *ii*) a cooperation relationship (promotion activity) or *iii*) a competitive relationship, such that vine grower and industry are competitors on the final market. Thus, the vine grower has the trade-off between the vertical integration and the development of a customer-supplier relationships with the industry partner. The possibility to differentiate the vertical relationships is important to assure a high level of competition on the market, but it can be also produce strategic behaviours, which affect the product range supply (breaking risk) and the maintain of a constant quality level of the Appellation. In particular, the absence of a vertical relationship control and organization can imply a risk of *i*) increasing price on the final market as a result of the intermediate stages development (Spengler, 1950) and *ii*) the reduction of the specific long-term quality investments (vineyard, machines, collective brand's promotion, ecc.) as a result of the expected loss in the case of a breaking in the relationship. As shown in Fig.2, in the specific case of the Chianti Classico DOCG, about 46 percent of the sales is realized by the vertically integrated vine growers. The wine's intermediate market represents 25% of the total transactions. The economic agents are *i*) the vertical integrated vine grower, which produce the grape and the wine and directly bottle and commercialize the wine on the final market (46% of the total sales), *ii*) the industry, which mainly buys the wine from the vine growers, bottle it and sell it on the final market, but also realizes vertical integration up-stream and often becomes vine grower itself (37% of the total sales) and *iii*) the cooperatives, which buy the grape from the associated producers and produce, bottle and sell the wine on the final market (17% of the total sales).

The vertical relationship is not controlled or organized. The transaction is mainly based on informal agreements. Contracts are rarely defined *before* the vintage and there is not any form of vertical relationship such that the industry can define and control the quality characteristics of the up-stream production and the supplied quantity. Nevertheless, this type of contract could be useful to *i*) grant to the industry a supply characterized by a constant level of quality, *ii*) regulate and control the quantity's flows on the intermediate market, *iii*) stabilize the intermediate price, *i.e.* the remuneration of the quality effort up-stream and the production cost of the industry. In other words, this means a maintain of the quality investments up-stream, *i.e.* of the Appellation's collective reputation and the marketing and promotional investments down-stream, as well as the construction of industrial brands with a strong notoriety, which can produce

a positive feedback on the collective reputation. In addition, the uncertainty of the supply, in terms of quantity and quality, *i*) implies a great variability of the agricultural revenues and affects the minimum revenue level, which is a necessary condition to provide long-term quality investments and maintain the collective brand reputation, *ii*) creates a product flow instability, thus the incentive to eliminate some quality segment (also that of the Appellation) and *iii*) increases the risk of opportunism by the economic agents.

The demand – supply variability is characterized by cycles (which last about 5 years), thus by the alternation of periods characterized by surplus or scarcity. The strong scarcity from 1984 to 1987 (with a peak in 1985) is followed by a light supply surplus from 1987 to 1992 (Table 1). Then, we have a scarcity cycle from 1992 to 1997 (with a peak in 1995) and a strong surplus until the vintage years 2000- 2001. The peak of scarcity in 1995 is a result of a great sales' increase. In that period, the consumers' quality expectations had raised as a consequence of the creation of the Chianti Classico DOCG as an independent Appellation (and no more an «under- Appellation» of the Chianti wines. The scarcity period beginning in 2000 ends in the campaign 2003/2004. In the last years, we see a strong surplus of the supply relatively to the demand and a consequent strong decrease in the intermediate price. In the considered period, the sales have an increasing trend. The ratio supply/demand averages 1, thus the supply is quite adapted to the market volume requirements, on average. Moreover, we verify that the sales are characterized by a stronger variability as regards to the supply. In particular, the market reacts to the supply one or two vintage years later. For example, let us consider the scarce vintage years (1984 or 2001). In spite of a following raising production, the sales continue to decrease (1985- 1989 or 2002- 2004). This means that, *i*) the level of competition on the market is quite high and a small supply variation is able to affect it negatively and *ii*) it is difficult and costly to get back the lost market shares. An exception is the fast sales' increase in 1994- 1995.

Vintage Year	Production (hl)	Stock (hl)	Sales (hl)	Intermediate price (€)
1983	378.469	760.502		70,7899
1984	248.015	747.208	391.763	67,0207
1985	268.612	590.261	404.962	91,0359
1986	297.715	531.566	327.307	107,4214
1987	323.378	517.614	311.667	121,1812
1988	301.499	545.411	295.581	135,5170
1989	302.190	573.494	273.416	164,5425
1990	290.751	595.744	279.940	147,2885
1991	246.518	646.558	239.937	152,7426
1992	279.245	607.189	285.887	114,8912
1993	247.838	621.924	264.510	72,0553
1994	285.669	553.820	315.942	86,2051
1995	275.945	485.078	354.411	192,4254
1996	281.139	474.244	286.779	284,8169
1997	268.592	481.370	274.013	299,5337
1998	296.310	491.419	258.543	341,9933
1999	300.976	525.534	262.195	277,3527
2000	291.406	559.184	267.326	258,6235
2001	263.153	556.871	293.719	388,0414
2002	269.252	541.450	286.215	410,5910
2003	241.619	558.332	252.370	277,3720
2004	270.852	580.000	219.951	210,0000

Table 1: production, stock and sales of the DOCG Chianti Classico (1983- 2004).
Source: Consorzio di Tutela Chianti Classico.

The demand – supply variability affects the stocks’ trends. In particular, the stabilization of the commercialized quantity (*i.e.* the adaptation of the supply to the demand) is regulated through the stocks’ management. Thus, an increase in the stocks can be interpreted as a decrease of the consumption relatively to the supply. On the other hand, in the period characterized by scarcity, the utilization of the stocks can help to meet market volume requirements and avoid the supply uncertainty problem. Thus, the stocks’ management is aimed at stabilizing the demand – supply ratio, in order to avoid a strong variability of prices and assure the producers’ remuneration of the quality effort up- stream and *ii)* stabilize the quality level of the commercialized quantity, especially in vintage years, which are characterized by a low level of quality.

Let us now analyze the intermediate price trend from 1984 to 2004 and consider *i)* the price variability (from one year to another as well as within the same year) relatively to *i)* the demand- supply variability and *ii)* the production costs, *i.e.* the producer quality effort. At first, the intermediate price trend reflects the demand – supply variability (Fig.3). In particular, it reacts to the scarcity/surplus situations with a lag of one or two years. The demand – supply variability affects the intermediate price also within the same vintage year⁴.



Fig. 3: stock and intermediate price trend (1983- 2004). Source: Consorzio di Tutela Chianti Classico.

⁴ Let us analyze the intermediate monthly prices of the Chianti Classico DOCG. We verify that the difference between the minimum and the maximum monthly price averages 54 €. Moreover, the greatest intra- annual variability corresponds to the periods 1992- 1996 and 1999- 2001, thus to the periods characterized by a strong scarcity or surplus and, in general, by a strong market unbalance.

Let us compare the intermediate price and production cost trend (from 1995 to 2003). At first, the intermediate price do not always cover the costs of quality⁵ (for example, in 2003 the cost is about 83 €/hl higher than the grower price). Following Shapiro (1983), the absence of a premium price implies a risk of breaking in the wine reputation and typicity in the long term. The risk is that the quality policy is not recognized by the intermediate market, *i.e.* the production costs, associated to the quality wine production requirements, are not constantly remunerated by the intermediate market.

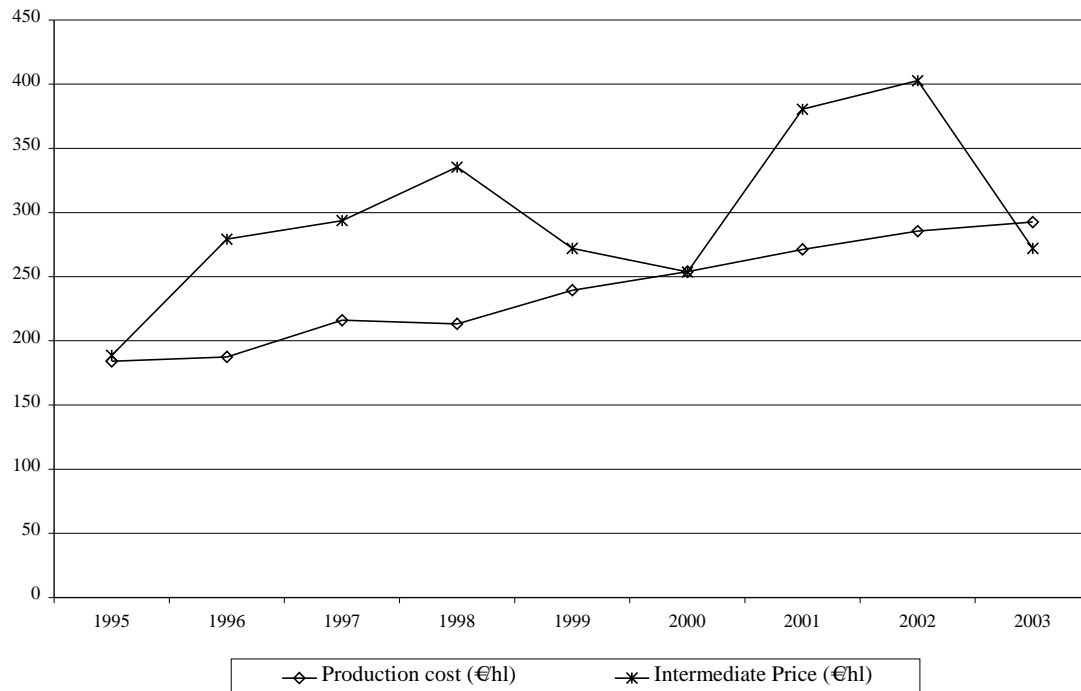


Fig. 4: The production cost and the intermediate price for an hectoliter of wine (1995- 2003). Source: *Consorzio Chianti Classico*.

Nevertheless, the long term analysis shows that on average the intermediate price is higher than the production cost. The existence of a premium price, which is not justified by the production cost points out other problem: the Appellation of Origin can be not able to resolve the asymmetric information problem (Laporte, 2001). Following Shapiro, the premium price is justified by the necessity to maintain the collective reputation in the long term. The firms which develop an Appellation of Origin strategy benefits from a “scarcity profit”, which results from the quantity delimitation of the production (Laporte, 2001). Laporte (2001) shows that the stable existence of a quality differentiation within the same Appellation of Origin cannot result from the free competition among producers. Thus, it can exist only if some producers benefit from a competitive advantage as regards to the others. At these conditions, the price can be higher than the production cost. Thus, Laporte raises the question whether the Appellation of Origin can resolve or not the problem of the asymmetric information among producers.

⁵ The production costs are mainly determined by the quality policy. In 2003, the wine production cost represents 64 percent of the total cost of a bottle of wine, while the cost to bottle and commercialize the bottle of wine represents 36%. The grape production cost is the most important cost, which affects the total wine production cost (82% from 1995 to 2003). The relative effect of the grape production cost is a direct consequence of the high cost for the development of the quality policy (long term investments concerning machines, vineyards, etc.).

Finally, the intermediate price is characterized by a strong intra-annual variability (Figure 3). The fact that the supply is constrained (see for example, the delineated production area, the specific production requirements regarding the maximum grape yields per hectare, the minimum alcohol content and other quality characteristics) strengthens the supply and the demand uncertainty (Giraud-Héraud, Soler and Tanguy, 2000). In particular, the competition among industries for the grape or wine supply and the risk of a production's rationing by the vine grower (together with the opportunist behaviour of some agents) incentive the industry to buy (and pay) more than the real need (and more than what is really feasible, in terms of financial resources) as the market is growing or positively affected by the promotional activity. As a result, the intermediate prices artificially increase. As the prices' increase arrive to the end of the supply chain, it affects the retail prices and the consumers are probably encouraged to either buy cheaper table wine or switch beverages. Thus, the demand's decrease implies a decrease in prices, which is strengthened by the grape growers' fear of accumulate stock at the eve of a new vintage.

Given *i*) the organizational difficulties, the strong variability of intermediate prices, thus the risk of breaking the collective reputation and *ii*) the recent situation of surplus, stock's accumulation and price decrease it is necessary to analyze the mechanisms implemented by the sectorial organization (*Consorzio di Tutela*) in order to assure an effective economic regulation of the Appellation. In the next section, we analyze the mechanism, which constitute the *Consorzio's* quality policy.

4.2. The mechanisms of the Appellation's quality policy: the quantity and the quality economic regulation

Given the supply and demand uncertainty, thus the low *ex-post* correlation between the volume and the quality of the vintage, the raising competition on the international markets and the possible losses of reputation and market shares, the economic regulation within an Appellation is aimed at stabilizing the quantities and the level of quality. Long term mechanism can be *ex-ante* defined (planting rights, regional reserves as planting rights' markets, ecc.), as well as short term mechanisms (maximum yield per hectare, stock's management to compensate for the scarcity/surplus on the market, producers' trade-off among vertical differentiated types of quality wine, *i.e.* DOCG/DOC/IGT).

The first level of the economic regulation of the quantity concerns the planted areas. The Common Market Organization of the wine sector⁶ is mainly based on *i*) the prohibition of new vine planting through 2010 (art.2), *ii*) the premiums granted in return for the permanent abandonment of vine-growing on a particular area (art.8) and *iii*) the allocation of newly created planting rights (art.6). Each planted area has to be registered in the inventory of production potential (art. 16), which contains *i*) the areas under vines classified as varieties for the production of wine, *ii*) the varieties concerned, *iii*) the total stock of existing planting rights. The data are collected, at a regional level, filling in of the Community vineyard register⁷, which collects the following information concerning each holding where vines are grown: *i*) its identity and situation, *ii*) the references of the parcels under vines, *iii*) its general characteristics and *iv*) the characteristics of the vines it contains and the products produced therefrom. In addition, following the Italian legislation⁸, each planted area, which is dedicated to the production of Quality wines must be registered in the vineyards' register concerning the quality wines DOC/DOCG or the IGT (typical geographical indication) wines. The Common Market Organization grant

⁶ Council Regulation (EC) No 1493/1999 of 17 May 1999 on the common organisation of the market in wine.

⁷ Council Regulation (EEC) No 2392/86 of 24 July 1986 establishing a Community vineyard register.

⁸ L. 10 february 1992 n.164.

some derogations to the art. 2. In particular, the new vine planting can be carried out pursuant to a planting right granted from a reserve. In fact, Member States shall create a national reserve, and/or as the case may be, regional reserves, of planting rights, in order to improve the management of production potential, at a national and/or regional level (art.5). In this context, the Tuscany Region has established a specific regulation of the quality wines' production. The Chianti Classico registered planted area averages 7.000 hectares from 1990 to 2003 and has a quite increasing trend, especially from 1998 to 2003.

A second level of the economic regulation of the quantity and quality concerns the specific production requirements. The geographical area of Chianti is delimited by the interministerial decree 31 July 1932. The term «Chianti Classico» represents only the most ancient production area of the Chianti. The Chianti's first production code is defined in 1967. In 1984 the Chianti is recognized as a DOCG. Following the Italian quality wines' law (see note 8) the ministerial decree 5 August 1996 establishes a specific production code for the Chianti Classico DOCG, which has been then modified (the most recent production code is that of September 2005). It must be recognized to the *Consorzio di Tutela* the ability to maintain in the long term the specific production requirements concerning the ampelographical composition, the maximum grape yields per hectare and other quality characteristics (the maximum yield of wine from grapes, the minimum density of rootstocks per hectare, the minimum natural alcohol level by volume, the minimum total acidity, etc)⁹. These constraining rules, together with the delimited production area and the strong link with the *terroir*, have allowed to *i*) reduce the informational asymmetries between producers and consumers and *ii*) strengthen the horizontal differentiation between the Chianti Classico and the other DOC/DOCG wines, *i.e.* the wine typicity and the quality signal expressed by the collective brand.

Nevertheless, the production code provides a certain level of flexibility, in terms of quantity constraints¹⁰ and producers market strategies. The producer of the grapes or wine can renounce the right to the Classico specification. Given some well defined conditions, the producer has different possibilities concerning its brand positioning on the market. Following the Italian wine Law, a producer can choose among different quality levels, coexistent in the same production area (the DOCG Chianti Classico, the DOCG Chianti and also the DOC «Colli dell'Etruria Centrale» or the IGT Tuscany). That's why the Chianti Classico declared area (which corresponds to the declaration of the grape and wine production) is about the 88% relatively to the registered planted area. The continuous trade-off between the Designation of Origin and the brand, thus the flexibility to produce and sell outside the Designation of Origin (as well as the existence of potential entrants) is one of the elements, which reduce the possible negative effects of a supply's control in this sector.

A third level of the economic regulation of the quantity and quality concerns the functions of the sectorial organization (*Consorzio di Tutela*). Following the Italian law 2/10/92, no. 164, the *Consorzio di Tutela* is a voluntary sectorial organization, with functions of protection and valorization of the DOC/DOCG or IGT wines. In particular, the *Consorzio* has to assure *i*) the respect of the specific production requirements and *ii*) the protection of the quality wine from plagiarism or unfair competition and has the important function of valorization through promotional activities. In addition, *if* the

⁹ All the operations (vinification, preservation, bottling or bottle fining and aging) must be carried out within the delimited production zone. The Chianti Classico wine can be issued for consumption no sooner than October 1 of the year following the harvest. The production code defines also some rules concerning the labelling (the year in which the grapes were produced must appear on the bottles or other containers in which the Chianti Classico wine is issued for consumption) and the packaging.

¹⁰ Whenever the yield of wine from grapes exceeds the maximum level, but by no more than 75%, only the excess has no right to the DOCG. Beyond that percentage, all the output loses the right to the DOCG.

Consorzio *i*) represents at least 40 percent of the Appellation's production and surface and *ii*) has an interprofessional composition, the Minister can grant it the function of vigilance (relatively to its members) concerning the quality wines' law application. Moreover, the production code of Chianti Classico recognizes to the *Consorzio* the possibility to regulate the maximum grape yield per hectare. In particular, is it possible to define (each year, before the vintage) a more constraining maximum grape yield per hectare, in order to improve the vintage's quality. For example, the *Consorzio* has decided to reduce by 20% the maximum yield per hectare in the vintage 2004 to adequate the supply to the market volume requirements.

Let us now consider the *Consorzio* quality policy. An important element is given by the ability (and possibility) to provide a clear an effective quality image. The Chianti Classico DOCG is distinguished into Chianti Classico «vintage» and «Riserva»¹¹. Thus, the vertical product differentiation within the Appellation is quite clear. In both cases, the most representative price's segment in terms of volume (<5€ and <7€ respectively) is characterized by a moderate level of competition (in terms of number of firms). As a result, the Appellation *can* maintain in the long term a quite wide product range, such that the heterogeneity of consumers' preferences can be fulfilled. A sample of 312 representative companies have 210 brands (121 Chianti Classico «vintage» and 89 «Riserva»), within the Appellation (less than one brand for each company). Thus, the quality signal is clear and varied at the same time. Moreover, the *Consorzio* Chianti Classico and the *Consorzio* «Black Rooster» have recently merged, in order to increase the horizontal differentiation relatively to the other Appellations, *i.e.* strengthen the typicity, the quality policy and the link with the *terroir* and provide a clear quality signal.

Another important element is the promotional activity. The promotion is one of the most important activities of the sectorial organization (*Consorzio di Tutela*). From an economic point of view, the promotional cost distribution among the sectorial organization's members justify the collective brand creation (Beales *et alii*, 1981). Moreover, the promotional activity is aimed at reducing the informational asymmetries between producers and consumers. The promotional activity of the *Consorzio* currently represents the 2% of the total production's value (*i.e.* 635.000 euros). In 2003, the advertising concerning the domestic market represents the 57 percent of the total advertising's cost.

In order to strengthen the minimum quality standard of the Appellation, the *Consorzio* has been recognized a specific role of the *Consorzio* in the certification of quality. Following the ministerial decree 29 may 2001, if the *Consorzio* represents at least 66% of the Appellation's production, the Minister can recognize it the function of control, concerning all the supply chain stages from the grape production to the bottled wine commercialization, in order to grant the complete traceability and of the wine. Thus, in Italy the functions of certification/control and valorization are recognized to the same institution. In the grapeproduction stage, the *Consorzio* controls the vineyard registration in the specific Appellation register and the grape production declaration, in particular, the respect of the maximum grape yield per hectare. Moreover, the *Consorzio* verifies, with an inspection control, the registred surface, the respect of the specific production requirements (quality characteristics) and the maximum yield per hectare. At the end of this first stage, the *Consorzio* gives to the Chamber of Commerce a receipt of the production's declaration and the relative conformity advice for the certification of the grapes or of the wine, which *could* be recognize as Chianti Classico. In the vinification stage, the *Consorzio* controls the vinified quantities, the purchased/sold quantities and the stocked quantity. Thus, the *Consorzio* collects all the information concerning the product flows along the supply chain, for each economic agent. It also provides a sample control concerning the chemical-physical and sensory analyses and

¹¹ The Chianti Classico «Riserva» can be released for consumption only after it has been subjected to at least 24 months of aging and bottle fining of at least 3 months. And it must develop a minimum total alcohol level of at least 12.5%.

gives to the Chamber of Commerce the conformity advice for the certification of the wine as Chianti Classico DOCG. In the last stage of bottling, the *Consorzio* controls the quantities to bottle and provides a sample control to verify the correspondence between the certification of quality given by the Chamber of Commerce and the wine to bottle. Finally, the *Consorzio* distribute the official identification marks. The ministerial decree 21 march 2002 defines the costs' range of the control activity for each phase: *i*) 0.21- 1.55 €/q (vine growth), *ii*) 0.30- 2.20 €/hl (vinification), *iii*) 0.30- 2.20 €/hl (bottling). The preliminary results of the control activity are quite positive and show that the Appellation provides an effective minimum quality standard to the consumers¹². Actually, 28 organizations (and 68 Appellations) have been authorized to the control activity.

Although the *Consorzio* has been recognized as the institution providing the certification and the control of the Appellation, it is quite limited in the possibilities to define interprofessional agreements to regulate the quantities and prices on the the intermediate market. For example, as the intermediate market represent only 20- 25% of the total wine transactions, the *Consorzio* should be interesting in proposing some mechanisms of price regulation (reference price, minimum price, etc.).

5. Conclusion

The analysis of the current situation concerning the DOCG Chianti Classico has provided the following elements. In a context of demand and supply uncertainty, it is necessary to give to the sectorial organization the possibility to regulate the supply, in terms of quantity and quality, in order to stabilize the producers' remuneration for the quality effort. Otherwise, the risk is that of a decrease in quality investments and decrease in the collective reputation in the long term. At first, it is necessary to develop some mechanisms to regulate the intermediate price (for example, reference prices). Secondly, it is necessary to develop long term agreements between vine growers and industries. These regulation mechanisms are aimed at stabilizing the remuneration of vine growers and, on the other hand, the purchase cost for the buyers, thus they facilitate the development of quality investments up- stream and marketing investments down- stream.

Moreover, the quality policy (certification of quality and monitoring) is aimed at strengthening the minimum quality standard, thus the homogeneity of the production's systems (in terms of specific production requirements and quality characteristics) within the same Appellations, in order to *i*) increase the differentiation among different Appellations and *ii*) give an effective and clear quality signal to the consumers. Nevertheless, it is also important to define a level of minimum quality standard, such that the investments in brand's strategies are incentivated and the internal product range of the Designation of Origin is preserved.

In addition, it is necessary to develop a strong promotional activity of the collective brand, in order to reduce the informational asymmetries between producers and consumers, in particular the information research cost, and strengthen the quality signal of the Designation.

References

¹² As regards to the stage of the grapes' production, the conformity advice has concerned the 98% of the total grape's production. Given a sample of 62 producers, the 96.77% has respected the registration rules. All of them have respected the maximum grape yield per hectare. A total respect of the relementation has been verified both in the vinification stage (chemical- physical and sensory analyses) and in the bottling and commercialization stage.

- Akerlof, G.A. (1970). The market for “lemons”: quality uncertainty and the market mechanism. *Quarterly Journal of Economics*, 84, 1, 488- 500.
- Arnaud, C., Giraud- Héraud, E., Mathurin, E. (1999). Does quality justify scarcity? *Cahier du Laboratoire d'Econométrie de l'Ecole Polytechnique n° 498*.
- Beales, H., Craswell, R., Salop, S.C. (1981). The efficient regulation of consumer information. *Journal of Law and Economics*, XXIV, 491- 539.
- Bovet, C., Chappuis, J-M. (2001). Interprofessions et concurrence. *Agrarwirtschaft und Agrarsoziologie*, 2, 115- 130.
- Darby, M., Karny, E. (1973). Free competition and the optimal amount of fraud. *Journal of Law and Economics*, 16, 67- 88.
- Giraud- Héraud E., Soler L.G., Steinmetz S., Tanguy H. (1998). La régulation interprofessionnelle dans le secteur vitivinicole est-elle fondée économiquement? *Bulletin de l'OIV*, 71, 813- 814.
- Giraud- Héraud E., Soler L.G., Tanguy H. (2002). Concurrence internationale dans le secteur viticole : quel avenir au modèle d'Appellation d'Origine Contrôlée ? *Cahier du LORIA*, 2- 2002.
- Holmstrom, B. (1982). Moral hazard in teams. *The Bell Journal of Economics*, 13, 324- 340.
- Klein, B.,Leffler, K. (1981). The role of market forces in assuring contractual performance. *Journal of Political Economy*, 89, 615- 641.
- Lancaster, K. (1966). A new approach to consumer theory. *Journal of Political Economy*, 74, 132- 157.
- Laporte, C. (2001). L'Appellation d'Origine Contrôlée: une solution efficiente pour résoudre le problème de l'asymétrie d'information sur les marchés des vins de qualité? INRA-ESESAD working paper 2001/5
- Lee, H.L, Padmanabhan, V., Whang, S. (1997). Information Distortion in a Supply Chain: The Bullwhip Effect. *Management Science*, 43, 4, 546- 558.
- Marette, S., Crespi, J.M., Schiavina, A. (1999). The role of common labelling in a context of asymmetric information. *European Review of Agricultural Economics*, 26, 2, 167- 178.
- Nelson, P. (1970). Information and consumer behaviour. *Journal of Political Economy*, 78, 311- 329.
- Raynaud, E., Valceschini, E. (1997). Competition Regulation against quality policy: the “label rouge” in the french poultry industry. *52nd EAAE Seminar “Typical and traditional productions: rural effects and agro- industrial problems”*, Parma, June 19- 21.
- Réviron, S., Chappuis, J-M., Barjolle, D, (2003). Vertical alliances for origin labelled food products : what is the most relevant economic model of analysis ? *80th EAAE Seminar “New Policies and Institutions for European Agriculture”*, Ghent, September 24- 26.
- Shapiro, C. (1982). Consumer Information, Product Quality and Seller Reputation. *The Bell Journal of Economics*, 13, 1, 20- 35.
- Shapiro, C. (1983). Premiums for High Quality Products as Returns to Reputation. *The Quarterly Journal of Economics*, 98, 4, 659- 680.
- Spengler, J.J. (1950). Vertical Integration and Antitrust Policy. *Journal of Political Economy*, 58, 4, 347- 352.
- Williamson, O.E. (1985). *The economic institutions of capitalism*, New York, Free Press.