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Antitrust commission vs. consorzi di tutela: an economic evaluation

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ABSTRACT

Italian Antitrust Commission charged Prosciutto di Parma, Prosciutto di San Daniele, Parmigiano Reggiano and Grana Padano Consortia of restricting competition among their members through quotas. Charges were true, but it is argued that both quality and market stability can hold as affirmative defenses. Exemption granted to ham producers was therefore right, but its implementation is criticized, as well as the deny opposed to grana producers.

1. INTRODUCTION

Voluntary Consortia for the protection of image and production quality of typical agricultural products are important institutions of Italian agriculture since long time. Some of them successfully lobbied to obtain the "denomination of origin" and "denomination of typicity" status for the products of their interests; the law entrusted Consortia with the enforcement of respect of production methods on which that status was granted. Their role has been recently recognized by two EU regulations, Reg. 2081/92 and 2082/92.

Among them, the most famed are the Consortia for Protection of Parmigiano Reggiano Cheese (hereafter PRC), Grana Padano Cheese (hereafter GPC), Prosciutto di Parma (hereafter PPC) and Prosciutto di San Daniele (hereafter SDC). PRC and GPC were recognized by 125/1954 law, in order to "oversee production and trade of denomination-of-origin and denomination-of-typicity cheeses". PPC and SDC activity has been regulated by 26/1990 and 30/1990 laws, and by a series of regulations approved in 1993. The law stated production areas, input quality and origin, and processing, conservation and labeling methods. Consortia enforce respect of typical production methods by administering denomination seals. They also assist producers in reaching the

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standards, and take care of product promotion. Finally, Consortia can take legal actions against commercial abuses. In 1981, an Agriculture Ministry Regulation gave PRC and GPC the power to adopt production plans, in case of “situations upsetting market equilibrium”. On the contrary, laws establishing PPC and SDC explicitly mention production programming among the instruments available to reach Consortia purposes.

While “quality” is an elusive concept, there is no doubt that consumers value it enough to pay a price premium for high quality products. A much more difficult question is what instruments Consortia can lawfully use in their activity. The question arises because Consortia of Protection, by their very nature, tend to work as coordinating devices among member firms. This is of particular concern because firms producing a typical product enjoy, as a group, a monopoly. Coordination may result in a cartel acting like a monopolist. Monopoly, by itself, decreases social welfare, unless it gives back to society something which is valued more than the loss from output restrictions, such as inventions and innovations. Consortia usually claim that they give back “quality”.

The Italian Antitrust Commission (Autorità Garante per la Concorrenza ed il Mercato, hereafter AGCM) had the chance to state her position on Consortia activity in the advice given on the draft of the act who receives EU Regulations 2081/92 and 2082/92 [4]. Art. 8 gives Consortia of Protection of DOP and IGP the power “to define production programs, consisting in structural measures and technical, quantitative and qualitative modifications of productions, in order to ensure equilibrium between demand and supply”. According to the AGCM, this provision amounts to give Consortia the power to prevent and restrain competition among firms producing protected goods. The quantities of goods on the market would be determined not by free interplay of demand and supply, but by the collusive choices of producers. In her opinion, the damage to consumers resulting from higher-than-competitive prices caused by production programming is neither inevitable nor necessary to the valorization and promotion of protected products - the purpose of EU Regulations. She emphasized that EU Regulations do not allow for quantitative restraints or output predetermination. On the contrary, adequate controls and monitoring should assure valorization and promotion of protected products.

AGCM judged production programming by PRC, GPC, PPC and SDC according to these principles. She declared unlawful production planning and quota setting for individual producers, as well as an agreement between PRC and GPC fixing respective market shares and providing for information exchange, and price fixing by SDC, arguing they violated art. 2 of 287/90 law¹, the Italian Antitrust Act.

¹ Art. 2 of 287/90 law: Agreements restricting the freedom to compete

1. Are considered agreements the understandings and/or the concerted practices between undertakings, as well as decisions, of consortia, associations of firms and other similar institutions, even if adopted according to statutory or regulation dispositions.

2. They are forbidden all the agreements between undertakings which have as their object or effect to substantially prevent, restrict or distort competition within domestic market or in a relevant part of it, also through activities consisting in:

a) fixing directly or indirectly purchase or selling prices, or any other trading conditions;

b) preventing or limiting production, access to input and output markets, investments, technical development or technological progress;

c) share markets or sources of supply;

[...]

3. Forbidden understandings are voided of any effect.

Consortia defended their acts along two lines: (1) the law entrusted Consortia with overseeing typicity and product quality, giving them the power to program production; therefore, plans are not a manifestation of private will, but administrative acts, which cannot be subject to competition law; (2) a sort of "affirmative defense", arguing that quota setting and consequent reduction of competition were necessary to reduce costs and to preserve quality standards, and therefore benefited consumers.

AGCM rejected first line of defense, emphasizing wide discretionality enjoyed by Consortia in deciding when and how programming production. As to the second one, she treated Consortia differently: AGCM showed that cheese Consortia enforced plans for reasons other than quality, and so rejected their defense. She decided however to grant a two-year exemption to ham Consortia, accepting their claim that national production is insufficient to cover demand of typical ham, and therefore quota setting prevents producers from using unsuitable fresh legs.

We shall present the cases in sections 2, 3, 4. Section 5 discusses ham producers exemption, casting some doubt both on exemption granted to ham producers and on the deny opposed to grana producers. In section 6 we show that Consortia's claim that quotas are needed to preserve quality may be theoretically correct. Section 7 shows how quotas effectiveness is jeopardized by the absence of control on the whole production chain. Section 8 illustrates how quotas may be used to reduce inefficiencies caused by inaccurate forecasts brought about by long production runs. Conclusions draw some indication on the role of any *Consorzio di Tutela* of typical products.

2. THE SAN DANIELE HAM AND PARMA HAM CASE [3]

On October 3, 1994, a notice from Farmers Association of the Modena Province drew AGCM's attention on a SDC regulation, giving Consortium the power to impose to its members limitations of the purchases of fresh pork legs; the limitations, consisting in a 30-50% reduction of the assigned individual quota, are applied when the price of fresh pork legs, suitable for San Daniele ham, quoted at Modena Board of Trade, exceeds by 5% or more a reference price fixed by the Consortium.

Preliminary investigations revealed that this regulation was just a part of "programming measures" contained in a production plan prepared by SDC, and that production plans were prepared by Prosciutto di Parma Consortium (PPC) too. These plans provide for a detailed distribution of production quota among Consortia members. Therefore AGCM opened a proceedings for suspected violation of art. 2 of competition law, as the plans could have been agreements restricting competition among each Consortium members.

Interestingly enough, the day after the proceeding was opened, 10 members of the PPC denounced Consortium plan, complaining an unjustified limitation of their economic freedom.

2.1 Production process and relevant markets

Production is organized over four main stages: (1) raising of heavy hogs; (2) slaughtering; (3) salting and ripening of hams; (4) marketing.

First stage requires about one year; suitable hogs weight at least 145 kg, and have been fed in specific areas in particular ways. The farms producing suitable hogs must be recognized and coded by PPC and SDC. Each farm must mark its production with its own code and hog's birth month. After slaughtering and a first salting, fresh legs must ripe for a period from 6-8 months (non-protected ham) to 10-12 months. Production cycle takes about 2 years. Traditionally, preparation and ripening of legs destined to become Parma ham is externalized to specialized small-sized establishments (the so called *baliatori*). Recently larger firms began to manage directly ripening stage in new plants. Consortia monitor all stages, and put their fire mark after 12 months from first salting, only on hams satisfying the standards set by law.

Uncooked ham is perceived as a high quality product, different from other pork products. Among uncooked hams, there is substitutability between protected and non-protected ham, because of the wide price differential and of the comparable quality - often the same firm produces both. Therefore, the relevant market is the domestic market of uncooked ham. 1994 production shares were the following: 43% PP, 12% SD, 2% other protected production, 43% non-protected production.

2.2 The production plans

PPC has adopted production plans for the following year since 1993. Both in 1993 and 1994 Some members made petitions to TAR² to have 1994 and 1995 plans suspended. Both TAR and Consiglio di Stato rejected petitions against 1995 plan. 1995 plan fixes the maximum number of seals to be put on legs at the beginning of the ripening period. This amount was by 5.8% below the number of seals put in 1994. Each producer receives a certain number of seals, that may be given to another producer if unused.

PPC justified the plan for 1995 on the basis of Nielsen's data indicating a lower rate of increase of ham consumption. PPC was afraid that maintaining previous year's production level would have resulted in an excess supply, lower prices and less profits. As to 1996, PPC has decided a 3% increase over the number of seals given in 1995.

SDC prepares a plan fixing the maximum production of San Daniele ham, and its distribution in individual quotas. When total planned production increases, only members who produced ham of above average quality enjoy a quota increase. Individual quotas are not transferable. New members are assigned quotas not larger than 3% of Consortium capacity. Ancillary programming measures, as the one who started the case, have been suspended since 21/8/95. 1995 planned production was slightly greater than 1994 level, while for 1996 SDC has programmed a 3.5% increase over 1995 level. In 1994 the level was reduced by 5.9% with respect to 1993.

According to AGCM, the fact that production plans prepared by Consortia planned output reductions makes clear that these plans are directed to limit global production and to impose quotas on individual firms. A major element of proof should have been PPC members petitions, but AGCM did not emphasized them. Consortia substituted their decisions to competition, violating art. 2 of competition law. SDC ancillary measures also violate it, since they are directed to impose to pig-raisers the prices the consortium

² TAR means Regional Administrative Court. Consiglio di Stato acts as Court of Appeal against TAR's decisions

desires, by using its monopsonistic power on the market for fresh heavy hog legs. According to fresh legs producers, when applied these measures were effective in reducing prices.

PPC tried to argue that restrictions to competition were not substantial: first, market shares should be computed on consumption, where PPC covers 33% of the market, not on production (where SDC and PPC make up 65% of the market); second, Consortia members can produce as much non-protected ham as they want. AGCM replied that either way the restriction was substantial.

3. THE PARMIGIANO REGGIANO CASE [2]

Parmigiano Reggiano price increased by 23% between march 1994 and june 1995. A hearing with PRC drew the attention on the fact that Parmigiano Reggiano production declined by 15% between 1990 and 1994, apparently thanks to a series of yearly self-control plans prepared by PRC. The Ministry of Industry asked AGCM to investigate whether there were violations of competition law. Preliminary investigation revealed that GPC too adopted similar plans, as well as the existence of a market sharing agreement affecting 1995 production quotas signed in 1994 between PRC and GPC.

On this basis, AGCM opened a proceeding against the Consortia, for suspected violation of article 2 of 287/90 law. After one year of investigations and hearings, AGCM found the Consortia guilty to have restricted competition among their members through a system of quotas.

3.1 Relevant markets

Relevant market was defined as the domestic market of grana cheese; 90% of this market is covered by PR and GP production. GPC had asked for the inclusion of pecorino cheese, but the AGCM opposed that consumption substitutability with grana cheese is low and specific to limited areas of Italy. GPC request can be interpreted as an attempt to widen the relevant market in order to make GP and PR market shares smaller, gaining the possibility to argue, if the plans were found unlawful, that they do not restrict significantly the amount of trade.

3.2 Structural characteristics

Grana production process is well-known, and it has not known relevant innovations since a long time. It includes three stages: (1) milk production; (2) milk processing to get fresh grana cheese; (3) ripening of fresh cheese (12-24 months for PR, 9-18 months for GP).

PR production rules emphasizes traditional process rigidity. Milk must come from cows fed with fresh forage only, raised in four Emilia provinces and in a small portion of Lombardia. The use of anti-fermentation additives and antibiotics is prohibited. Milk quality and the ability of casaro - the guy who takes crucial production process decisions

- are therefore crucial to get good cheese, and this makes Parmigiano's "intrinsic quality" [11]. Technology exhibits weak economies of scale; production is traditionally organized in cooperative dairies. All these features contributed to make PR firms small and specialized, and traditionally managed.

On the contrary, Grana Padano production is more amenable to modern industrial techniques. There is a larger supply of milk: it can come from the whole Pianura Padana. Silage is admitted, and therefore antibiotics and antifermentation additives too. This allows larger plants on average (1/3 of firms engaged in PR production are needed to make the same amount of fresh cheese)

Ripening of fresh PR is completely separated from production. Dairies usually sell the whole year lot to dealers, who let cheese ripening at their own or at third parties storehouses. In 1991 only 12.6% of ripening occurred in second degree cooperatives [6]. No private ripener belongs to the Consortium. On the contrary, about 60% of grana is ripened under fresh producer control.

Consortia put a mark of origin on fresh wheels. Later, when ripening is complete, experts check whether the wheel conforms to standards; if it does, it is fire marked with Consortium seal. This seal should be viewed as an assurance that the wheel has a quality not inferior to a given standard.

Entry in GP production appears relatively easy, while cooperative structure of milk processing may be an entry barrier in PR production. Currently, however, entry is limited by EU milk quotas: entry is possible only by acquiring another firm's quota.

3.3 The plans

GPC and PRC production plans determined both total quantity of cheese to be produced and individual quotas for member firms, but in a different way. AGCM restricted her attention only to programs decided after 287/90 law came into force.

Table 1 shows production, inventories and prices for Parmigiano Reggiano cheese from 1990 to 1995 and production and prices for selected years before 1990. Since 1990, fresh PR production has decreased by 2% per year.

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Tab. 1: Fresh cheese production, stocks and prices of Parmigiano Reggiano

Year	Planned prod.*	Sum of individual quotas*	Effective prod.*	Change in eff. prod. (%)	Change in stocks^ (%)	Producer price ^{oo}	Wholesale price ^o	Retail price ^o
1988			93,57			14700		21253
1989			104,76			12600		22739
1990	96,28	96,309	109,427	4,45	-7,06	11600	15041	24158
1991	102,52	97,953	106,264	-2,9	3,48	11300	13901	24461
1992	102,52	99,479	99,623	-6,23	-14,33	12100	13527	24422
1993	102,52	99,356	92,03	-7,6	-2,32	13800	13470	24587
1994	99,5	99,328	92,708	0,73	-7,31	16000	16880	25741
1995	96	89,899	98,52	6,3	-0,18		22439	32340

(*): thousands of tons; (^) number of forms on 31/3; (°) lire/kg (averages)

(^{oo}): price (lire/kg) from dairy to ripener (1994: forecast)

Sources: column 7: *Largo Consumo (Torelli, 1994) on Chambers of Commerce data*

1990-1995 data: *AGCM on PRC and other organizations data. 1988-1989: Messori (1994)*

The method PRC used to compute individual quotas changed over time. From 1991 to 1993, maximum production target was broken down in five provincial targets; in each province, individual quotas were determined based on individual average production of the two preceding years. This amounts to keep relative market shares constant on average. In 1994, provincial and individual quotas have been defined on the basis of EU milk quotas (67%), and average production of two preceding years (33%). Maximum production target was increased to 102,52 thousands of tons after the agreement with GPC was signed. Finally, in 1995 provincial quotas were suppressed, and individual quotas were set substantially equal to EU milk quotas. Dairies who overproduce can be fined, unless it is possible a compensation with other underproducing dairies. PRC has enforced plans by sending letters to overproducing dairies, but no one was ever fined.

The table shows that effective production always exceeded the sum of individual quotas, except in 1993 and 1994, when it was about 7% below programmed levels. It exceeded even maximum planned production in 1990, 1991 and 1995.11 EU milk quotas and incentives to herd reduction, in addition to a weak market, are likely to be the main causes behind 1991-93 output fall [13]. Planning does not seem very effective. Actually, it is easy to argue that a cartel formed by about 650 firms can hardly work. Remembering that fresh cheese arrives to retailers not less than 18 months after production, the surge in retail prices might be explained by a shortage of cheese due to 1992 and 1993 production falls, coupled with higher consumption.

AGCM accusations, up to now, do not appear very credible. But the Antitrust Commission found proofs that 53% of dairies in 1993 and 32.5% in 1994 were assigned an objective below the amount they requested. So there was a distortion of producers' decisions, and a violation of art. 2 of Competition Act.

AGCM judged 1995 plan lawful, since it is based on milk availability according to EU milk quotas. Actually, 1995 quotas give total freedom to producers about the use of their milk.

Table 2 shows production, inventories and prices of Grana Padano for 1990-1995 period and selected years before 1990. Over the years, production has increased and now exceeds PR production.

GPC has assigned individual quotas on the basis of production history. Thus, relative production shares stayed constant. There is a system of fines (used to finance advertising) to punish overproducing dairies, but none has been ever fined. More likely, the Consortium has used the power to give seals and marks in proportion to the assigned quotas to punish overproduction: cheese produced in excess of assigned quota cannot be sealed as GP and must be sold at a lower price. In 1992 the Consortium explicitly deliberated that overproduction would have not been sealed. GPC has enforced plans also through continuous monitoring and letters menacing sanctions had production not been reduced. AGCM found several letters denying quota increases for several reasons. Poor quality was never mentioned, while 1994 agreement with PRC did. These were considered proofs of limitations imposed on members' freedom, and therefore plans were declared unlawful according to art. 2.

Table 2 actually shows that GPC planned quantity reductions as wholesale prices decreased, and accommodated the tendency to increase production as price raises; effective production however adjusted more slowly than Consortium desired. Likely, GPC tried to stabilize production.

Tab. 2: production*, stocks[^] and prices^o of Grana Padano

Year	Target given to Ministry	Planned prod.	Effective prod.	Stocks on 31/3	Change in stocks (%)	Wholesale price	Retail price
1990	98,5	90,46	110	2.893.940	4,70	11219	19856
1991	98,5	98,949	98	2.940.080	1,50	10618	19875
1992	98,5	96,751	94,064	2.989.843	1,60	10459	19739
1993	98,5	96,8	92,956	2.700.196	-9,60	11755	19842
1994	98,5	99,453	96,638	2.545.946	-5,70	14758	21391
1995	100,5	99,284	115,492	2.564.169	0,70	18271	26844

(*) thousand of tons; (^) number of forms; (°): lire/kg (averages)

Source: AGCM on GPC data

We can see, however, that production falls continue after wholesale prices begin to increase, and then increase much more than prices. This pattern might be explained by entry and exit of firms, which produce GP when the price increase, but then exit and produce other cheeses when it declines

3.4 The market sharing agreement

On March 24, 1994, PRC and GPC Presidents signed an agreement fixing relative market shares of PR and GP respectively to 51% and 49%, and establishing procedures to exchange information about domestic and international demand, inventories, production, competition by foreign substitutes. Moreover, the agreement contained measures to make production plans more effective, in order to defend market prices. It was judged unlawful according to art. 2, because it limited competition among Consortia members, by itself and together with production plans.

AGCM found that a similar agreement was proposed by PRC for 1995 too, but GPC refused. It is interesting to understand why. 1994 agreement was actually an attempt to cartelize grana market, fixing relative market shares. It failed for two reasons: first, EU milk quotas limit PR production below the level needed to maintain desired market shares. Second, and more important, taste evolution points towards table cheese consumption, and Grana Padano is more suitable to this use. Price leadership remains anyway to Parmigiano Reggiano cheese because of its "intrinsic quality" due to a more difficult and traditional production process. Therefore, GPC saw the opportunity to increase its market share at expenses of PRC but under Parmigiano's price umbrella, and refused to renew the agreement.

4. THE DEFENSES

Consortia defended their acts along two lines: (1) quota setting is lawful; (2) even if unlawful, it is necessary to maintain quality standards, and therefore must be exempted according to art. 4 of 287/90 law³.

4.1 Lawfulness of quota setting

PRC argued that quantity planning is a duty imposed by 1981 Regulation in order to maintain equilibrium between demand and supply, and has its justification in monitoring activity Consortia are entrusted with by 125/1954 law. PPC and SDC argued that 1990 laws regulating their activity explicitly mention the possibility to program production among the instruments available to Consortia to reach their objectives. In both cases, therefore, Consortia are just the tools for the realization of interests determined by public authorities. Thus, planning is not the result of a private determination, and therefore it cannot be subject to competition law.

PPC further argued that agreements among agricultural firms should be exempted from application of art. 85 of the Treaty of Rome, according to EU Regulation 26/62.

³ 1. The Commission can authorize, for a limited period, agreements or categories of agreements forbidden by art. 2, causing improvements in market supply conditions able to give consumers substantial benefits. Such improvements must be selected taking into account also the need to ensure firms competitiveness on international markets, and are linked in particular to production increase, or to qualitative improvements in production or distribution, or to technological and scientific progress. The authorization cannot allow restrictions that are not strictly needed to reach the purpose of this provision, nor can allow the elimination of competition from a substantial portion of the market.

AGCM has rejected this defense. First, both the EU Court of Justice and the Commission have affirmed that institutions composed by many firms, who are given powers to control product quality, are subject to competition law, whenever their activity restricts competition. Second, she emphasized that all provisions allowing the use of quantity restrictions leave Consortia a wide discretionality about the opportunity, the extent and the ways the restrictions are to be implemented. Thus, decisions about restrictions are discretionary acts, displaying the freedom to negotiate of private parties participating the Consortium, and therefore are subject to art.2 of 287/90 Act, that, as AGCM emphasized, explicitly mentions Consortia deliberations. Third, neither Regulation 26/62 allow for quantity rationing, nor 125/1954 law include quota setting among instruments available to Consortia. 1981 regulation mentions the use of quantity restrictions, but in order to restore equilibrium between consumption and production, an additional purpose with respect to quality monitoring.

Finally, PRC and GPC claimed that 1994 agreement is lawful because production planning is lawful: since Grana Padano and Parmigiano Reggiano are substitute products belonging to the same relevant market, any meaningful programming must take into account both productions. AGCM replied that 1981 Regulation allows quantity limitations, but it does not say anything about agreements between Consortia. Therefore, such agreements are unlawful, being individual quota setting unlawful.

On a more general ground, 1994 agreement is a fairly typical cartel agreement, which is prohibited "per se" by competition law.

4.2 Quality and quotas in grana production

Both Consortia have asked to be exempted according to art. 4, because quantity planning would make quality monitoring cheaper and more effective.

PRC has argued that it is easier to base its activity on ex-ante control of production capacity, than on the control of milk quality. Analytical controls would be more expensive and oppressive. Consumers benefit from production planning because it ensures a high-quality product.

GPC has particularly emphasized the link between quotas and quality. It maintained that quotas are currently the only tool to ensure quality and good reputation of GP cheese, limiting the marketing of bad products without the quality seal, and therefore avoiding to damage product reputation. GPC reasoning was the following: grana market exhibits 5-year swings due to the fact that when market price is high production increases, depressing the prices when, almost two years later, it arrives on the market; when prices rise, producers may try to cover production increase by buying milk outside usual channels, increasing the probability that most of the overproduction be low-quality cheese. Quotas avoid it. Consortium consistently denied quota increases only when milk quality was not certain. Finally, GPC acknowledged that quality can be controlled at any time, and in particular at the sealing time; but significant sampling is currently too costly and it would take too much time.

AGCM rejected the request of exemption for the past plans, as she has not the power to regularize past situations. As to the future, any judgment can be based only on scrutiny of actual future behaviour. She refuted GPC reasoning, because: (a) planning was made

on a history basis; (b) in the letters denying quota increases, the Consortium never mentioned milk quality among the reasons; on the contrary, in a case the agreement with PRC was explicitly mentioned; (c) no structural crisis existed.

4.3 Quotas and quality in ham production

Both Consortia claimed that in case of shortage of fresh legs with the required characteristics quotas are necessary to protect the quality of the final product: in absence of enforceable quotas, fresh legs price would be bid up, tempting producers to buy cheaper national legs, or even foreign legs, instead of legs produced according to typicity rules.

PPC seemed to claim that quotas are in general useful to preserve quality levels. It emphasized that Consortium has no word in leg choice by members, and that in past two years production quality declined because of leg defects. This may signal either a decline in average hog quality, and/or low-cost choices on producer side. Then, it argued that quotas can improve the situation, as if the smaller the output, the greater the care put by producers in the choice of inputs.

SDC, on the contrary, has strongly argued that quotas may be "socially efficient", by reducing wastes. His reasoning can be stated as follows: the length of production process makes forecast very difficult both for hog raisers and ham producers: there is a 12 months lag between the decision about how many fresh legs to produce and the sale of legs, and other 12 months must pass until ripening is complete and hams can be sold; this difficulty may easily cause over-production, which will force below-cost sales (ripened hams stored for too long lose their taste characteristics); avoiding overproduction would save production and storage costs.

5. THE EXEMPTION OF HAM PRODUCERS

AGCM did not discuss PPC and SDC defenses. She noted that art. 2 punishes anti-competitive acts irrespective of their motivations. They are just unlawful. Motivations matter for the application of art. 4.

AGCM noted that data are not clear-cut, so that it is impossible to say whether PPC and SDC claim, that there are not enough fresh legs to satisfy demand, is really true. However, she decided to grant a two-year exemption, judging this time sufficient to prepare the tools needed to control quality without quotas or similar things. The exemption is conditioned on the fact that quotas must be based on the available quantity of fresh legs, allowing for the loss due to wrong ripening and leg defects, estimated at 25%.

This decision can be criticized. Fresh legs availability determines only the total quantity of protected ham that can be produced, but not individual quotas. Allowing quotas means that AGCM accepted the idea that in case of shortage of fresh legs the temptation to cheat on input quality would be too large, and quotas may avoid to damage consumers. Why? Few legs means bidding, and therefore higher prices; profit shrinks, and below some level it becomes more profitable to cheat and buy low-quality legs.

These legs would be chosen so that they can survive all processing phases and satisfy protected ham minimum standards, and would be sold at protected ham price. In this way, competition for high-quality legs will cause cheating, and therefore by restricting competition cheating is avoided.

This incentive problem is always present, and it is just exacerbated by shortage. It is at the heart of the relationship between quality, quotas and monitoring. Profitability of cheating can be reduced by stricter, and heavier controls over production, and AGCM gave two years to set up an adequate monitoring system. But there were alternatives to quotas. For example: firms compete for national suitable legs in auctions, and the Consortium gives each firm a number of seals equal to the legs bought. The legs are marked to avoid substitutions.

Moreover, quotas restrict competition among Consortium members: what if one of them has decided to increase its market share, through innovation or aggressive marketing ? Should he postpone his strategy until shortage ends ? Why should he be prevented from buying more suitable legs at higher prices ? Even if incentive arguments are theoretically sound, restrictions to competition have drawbacks, and it is difficult to evaluate whether there is a net benefit. From this point of view, limited duration of the exemption reduces the possible losses.

To any extent, to allow for a 25% loss due to damaged legs and hams seems really too much. Estimations on the proportion of "wastes" were divergent, and both consistency with the assumed intent to restrain competition and the acknowledged difficulty to ascertain if the shortage claim was sound, would have suggested the lower estimation of 12%.

Finally, we may wonder whether an exemption was possible for grana producers too. Ham case was decided before grana one. Exemption was granted because high input prices caused by shortage of fresh legs would have tempted producers to use low-quality legs. Could milk quotas have a similar effect ? We think so. Actually, in Parmigiano provinces more milk than allowed by quotas was produced, thus solving the problem. I do not have data on Grana Padano, but less stringent production rules - milk defects can be corrected, to a certain extent, using additives - make possible the use of low-quality milk if quotas allow less milk than necessary.

A limited exemption could have been granted to grana producers too. It is likely that letters denying quota increases, for reasons other than quality, counted very much on AGCM negative judgment.

6. QUALITY AND QUOTAS

6.1 Consortia activity and adverse selection

Entry in both industries is not difficult, apart from legal barriers. Easy entry would cause different qualities to be produced, and well-known adverse selection problems might arise. This created scope for Consortia monitoring on production quality, but also for lobbying to get limitation of entry by law, claiming quality protection. Laws regulating Consortia activity do exactly this, reducing adverse selection problems. Quotas

may serve only to solve those problems that arise from members' cheating, and that cannot be solved by Consortia monitoring. Consortia seemed to argue that monitoring is costly and unpleasant, and quotas reduce these costs; but it is trivially true that the less the production, the lower the monitoring costs. No one showed that "quota + few controls" is an arrangement welfare superior to "Consortia and market controls".

6.2 Quality and quotas in a certainty world

In a *certainty* world, *quotas reduce welfare*. Beath and Katsoulacos [5] considered an oligopoly model where the choice variables are the number of products, and their quality and quantity. Some of them can be set collusively. There is an organization of firms, say a Consortium, that is able to force the collusive outcome, and acts as a Stackelberg leader. In particular, it can control entry (as Consortia actually do). They show that when output and membership are collusively set, while quality choice is left to individual firms, consumer welfare is reduced with respect to the social optimum. Furthermore, assuming for gross consumers' surplus ϕ the functional form $\phi = A x^{\alpha(q)}$, where q is a quality index and x is the quantity consumed, quality supplied is higher than socially optimal (and also with respect monopolistic competition equilibrium) if elasticity $\alpha(q)$ increases as quality index increases.

Even if quotas would help to maintain quality, the consumers would have to pay higher prices for it. There is no reason why they should be willing to do so. Messori [11] showed that if the "intrinsic quality" component is a share of the expenditure on the product that increases with the expenditure, then if demand is elastic a price increase makes expenditure to decrease, and so the demand for intrinsic quality. Canali [7] reported own uncompensated elasticities above unity for Parmigiano Reggiano.

6.3 Quotas and quality in a Klein - Leffler setting

Quality problem must be tackled taking into account that goods like grana and ham are "experience goods", so that consumers are uncertain on good quality. Quality requires a price premium, and by restricting output price increases; but receiving a higher price does not solve in the desired direction the simple incentive problem the individual producer faces: why should I use high quality inputs, if my output cannot be distinguished from others', and the damage is spread over all firms? As PPC itself said, input choice is a responsibility of each member, and the Consortium does not intervene. A producer may well decide to buy the cheapest among the legs that, according to its experience, will be able to pass final controls.

In a standard infinite-horizon model, where buyers always expects low quality if a firm cheats once, quotas can reduce threshold discount factor that ensures that cheating is not profitable, under given demand and supply conditions.

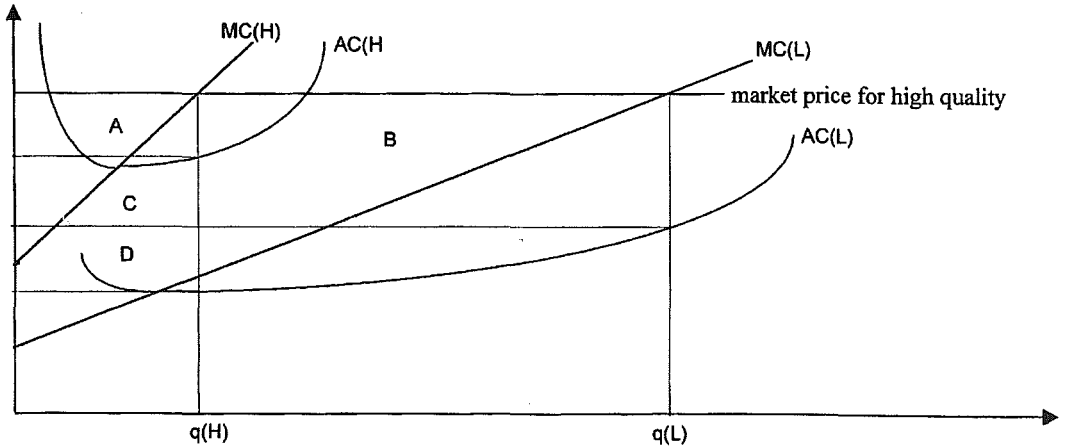


Figure 1
Quotas reducing the incentive to cheat

Let us suppose that long run equilibrium price for low quality output is equal to minimum average cost, so that profit is zero. Long run profit for a firm producing high quality output is area A, while short run profit from cheating is $A+B+C$. Consumers assume that the product is always "low quality" if they received "low quality" once. Profit from cheating is therefore $(A+B+C) + 0/(1-\delta)$; profit from producing high quality is $A/(1-\delta)$, where δ is the discount rate. For given δ and price, cheating is *not* profitable if $B+C < A(\delta/1-\delta)$. Imposing a quota equal to high quality firm output (i.e. $q(H)$) would make cheating *not* profitable if $D+C < A(\delta/1-\delta)$; then, as long as $B > D$ (as in Fig. 1), cheating is less likely to be profitable. Alternatively: without quotas a producer will not cheat if $\delta' > (B+C)/(A+B+C)$, while with quotas if $\delta' > (D+C)/(A+B+C)$; if $D < B$, threshold discount factor decreases. Quotas therefore may help to preserve quality.

It must be emphasized, however, that this result is "special": (i) quotas are exactly equal to optimal high quality production; (ii) plant size (the quantity at which average cost attains a minimum) of high quality producers is smaller than low quality ones; (iii) consumers react immediately even if just one of them got "low quality"; (iv) price has been taken as given, but quotas might well rise it; if condition (i) is satisfied, no price increase should occur. Condition (i) and (iv) are important to guarantee the quotas are directed to maintain quality standards, without damaging consumers; recent proposals by grana Consortia (each producer announce how much he can produce, and Consortium can authorize a larger output if the firm can satisfy quality standards) seem to go in this direction, but a more active role for Consortia is necessary. Condition (ii) makes

sense. Condition (iii) is unlikely to hold. Next paragraph will discuss however an attempt to circumvent this difficulty in Parmigiano Reggiano production.

As to ham producers exemption, we can argue that economic reasoning implicit in AGCM decision should be the one outlined above, with raising high-quality input costs shifting high-quality curves up, until area A becomes too small to balance the temptation to cheat (without quotas). But again: how will be set quotas by Consortia ? AGCM decision does not convince completely.

6.4 Market mechanisms can enforce high quality standards

Price premium mechanism is a reputation mechanism requiring identifiability of the cheater to work properly. Quotas do not ensure identifiability. On the contrary, there are ways to let market to enforce quality commitments. PRC's milk quality plan [1] is a very good example. It is surprising that AGCM did not even mentioned it.

Membership in the plan is voluntary, and 50% of the dairies have adopted it. It is based on an analytical scheme where each quality parameter receives a score, and the total score is milk's "quality score". Thanks to this method, each cooperative member receives a differentiated price, reflecting the quality of the milk he supplied. The score reflects milk's "technological quality". Final prices attributed to wheels, however, depend on "commercial quality", as determined by traders.

Traders evaluate the quality of every wheel, with or without Consortium seal, attributing a price which depends on market conditions and on production information - in particular the dairy and its localization (mountain is better than plain). PR wheels having apparently the same quality are therefore priced differently. Arfini [1] has constructed an alternative "milk quality price" taking into account the determinants of "commercial quality", and ranked the members of a sample of cooperative dairies according to the received computed price. The ranking is not fundamentally changed with respect to the one based on PR milk quality price, in the sense that cooperatives belong to the same groups in both rankings.

This means two things: *first*, the market is able to distinguish different cheese qualities, and pays different prices for them. *Second*, PR milk quality price rewards milk quality, but, with some improvement, it might reward also "commercial quality". But then similar systems allow to protect and reward quality *through market mechanisms*. Traders can have a very important role, because they know the producers, and could trace bad cheese and to "punish" cheaters.

The success of this plan is the most effective demonstration that milk quality can be monitored without quotas, and that producers can be incentivated through premiums to maintain high the quality of their milk.

7. QUALITY, QUOTAS AND VERTICAL CHAIN CONTROL

Grana quality depends also on correct ripening. While ripeners of course have incentive to ensure correct ripening, they have total discretionality in deciding how long grana wheels have to ripen, and differentiate supply to meet distribution requests. This means that GPC and PRC, *by controlling fresh grana output, do not control quality of marketed ripened product, the only thing consumers really care for*. This is particularly true for PR, because of the separation between fresh

production and ripening. GP firms, thanks to greater vertical integration, might be able to supply consumers the range of qualities they want. But unless there are not enough spaces suitable for ripening - and no one claimed that - fresh output reduction do not imply anything on correct ripening and so on ripened cheese quality.

As to protected ham, the quality of the final product and its cost depend critically on hog raising and slaughtering, who determine the suitability of legs to production process. A long-run decline in the quality of legs is due to the tendency of farmers to speed up the growth of hogs [12]. On the other hand, selection of legs occurs at slaughtering houses, and is substantially under house's control. Quality level of lots varies randomly, making production process more difficult, and increasing waste. Thus, producers can claim at most that they do their best, given input quality. Quotas do not solve the problem of controlling inputs.

On the contrary, vertical integration and vertical contracts do. Actually, many vertical agreements have been experimenting: integration in ripening, using innovating technologies; cooperatives including slaughtering houses; price premia for lot homogeneity; long-run strict relations with suppliers; various actions to make raisers more sensitive to producers needs. Their purposes is to stabilize input quality, reducing the cost of producing high-quality hams.

Several protected ham producers are innovating to integrate all production stages, reducing the cost to get a given quality level; innovation therefore can balance the temptation to use low cost inputs. Quotas, by reducing competition, slow down innovation, and therefore they may reduce quality levels in the long run.

8. MARKET EFFICIENCY: A BETTER DEFENSE ?

SDC and GPC made an important point about cost savings from quotas. In deciding how much to produce, every producer should forecast final demand *two* periods ahead. If, on the contrary, they look to prices they are currently paid, because either they cannot access better information or they do not care, production cycles will be generated, as when two periods later production gets to the market it will cause oversupply, and a price fall; falling prices will force producers to reduce production, and two periods later there will be a shortage, and a new cycle will start. Cycles can be avoided only if demand increases more than production.

Separation between ripening and fresh grana production makes grana market particularly exposed to these fluctuations: on the one hand, fresh grana producers look at prices they receive when they sell the whole year lot; this reduces market transparency and information flow from final market to producers; on the other hand, ripeners' strategies and desired stock levels affect the prices they offer to producers. On the whole, there is less market transparency, and a reduced and distorted information flow to producers [6]. Grana Padano producers seems to add instability, because their diversification makes entry and exit relatively easy.

In ham production Consortia try to look two periods ahead, but the situation is worsened by hog-raisers behaviour: when they receive high prices, they increase production, generating well-known cobweb phenomena. It is interesting to note that this could provide a different, not harmful, explanation for SDC price fixing measures.

Thus, market instability due to incorrect forecasts seems the normal state. Less instability would reduce wastes, and it would lead to a better allocation of resources. Incorrect forecasts

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unpleasant consequences might be avoided by a system of futures markets, but it does not exist. Might quotas improve on the situation ?

Under incomplete markets, competitive equilibrium is inefficient. Were Consortia able to process better appropriate information, they might act as "central planners", helping the market to reach a better equilibrium. To the extent quotas represent the outcome of a "planned" competitive equilibrium, they should be welcome, and exempted according to art. 4. But it is difficult to say whether this was really Consortia intent. The use of historical criteria to distribute total output is very cartel-like, and so contradicts it, unless all firms had the same costs and did not innovate recently, conditions that are not met.

9. CONCLUSIONS

We showed that AGCM was substantially right on a *legal* ground in her decision against PRC and PPC, and that exemption of ham producers can be justified by economic reasoning, but it is not entirely convincing, as well as denied exemption to grana producers. We also argued that quotas can help to maintain quality standards, but only if there is a way to ensure quick and sure punishment of cheaters, and if they are set to optimal production levels of high-quality producers - in this way, quotas avoid output expansion by cheaters.

We also argued that vertical chain control problems prevent any system of quotas from ensuring quality of final product, which is what consumers care for. This weakens any argument favorable to quotas, but it emphasizes the potential benefits of vertical integration. Finally, under incomplete markets and incorrect forecasts, Consortia may use quotas to lead producers to more efficient equilibria.

Implications for Consortia activity are then clear: *first*, they should take on the task to produce and update reliable forecasts of demand and output, and promote any initiative useful to help members to make correct output decisions. This is particularly important, since most firms are small sized and unable to do it by themselves. In other words, they should try to behave like a "benevolent central planner". In the long-run, Consortia should promote formal future markets for grana and hams.

Second, they should promote vertical integration, in order to get better control of quality. In particular, vertical integration in ripening might be favored by creating a Credit Consortium, in order to lower financial costs producers have to bear to ripen wheels in their own facilities.

Third, product differentiation through producer labeling should be promoted, to the extent it helps market enforcement of quality. In the case of Parmigiano Reggiano, consumers might be helped by a differentiation between Consortium's seal as a signal of quality not below a minimum, and another quality seal for superior quality grana.

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