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# **Wine Economics**

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# Notes

## Chapter 1

1. See <https://data.worldbank.org/indicator/sp.pop.totl>.
2. The Russian Federation has been arbitrarily classified as a country of the New World because of its historical preference for vodka, even though geographically and historically (also as far as wine production is concerned) it could be considered, to all intents and purposes, as belonging to the Old World.
3. This figure has been omitted but is available on request.
4. The averages have not been weighted for the resident population.
5. In Argentina, Chile, and Uruguay, 85 percent of the population are considered to be of European descent as opposed to 55 percent in Brazil and less than 15 percent in Mexico and Peru (Aizenman and Brooks, 2008).
6. It is important to distinguish consumption expressed in money terms (euro, dollars, etc.) from that expressed in quantity. The latter, in turn, can be expressed in liters of drink or in liters of pure alcohol consumed. The results can change significantly, because beer is on average the least alcoholic of the three types of drinks mentioned (generally between 4.5 and 6 degrees, or percentage alcohol by volume) and the least expensive, while distillates are generally the most expensive with an alcohol content of around 40 degrees.
7. Australia, Canada, New Zealand, and the United States signed a trade agreement to reduce customs duties and barriers and to recognize each other's wine-making techniques, practices, and labeling and bottling systems (Castaldi, Cholette, and Hussain, 2006).
8. The lack of comparable data on the costs of transporting wine by road, rail, and sea means it is not possible to verify Bartlett's (2009, p. 7) statement that the decline in shipping costs and the simultaneous increase in costs on the road have made the cost of trading wine from Australia or the south of France to Great Britain very similar.
9. Data downloaded in September 2013 from [www.fao.org](http://www.fao.org).
10. Author's calculations using data downloaded in September 2013 from [www.fao.org](http://www.fao.org).
11. A similar shift in consumer preferences from white wine to red wine as a result of medical information was recorded in Ontario in the 1990s (Dyack and Goddard, 2001).
12. Author's calculations using data downloaded in September 2013 from [www.fao.org](http://www.fao.org).
13. Even though in many states it is theoretically possible to buy alcohol from a producer either at its facility or by arranging a shipment, the majority of US states impose a number of

restrictions which make it very difficult to do so, and therefore around 90 percent of wine is sold through retailers who buy from distributors. See chapter 8 for a detailed explanation of the US distribution system.

14. Freedom of entry is largely limited by EU community law on planting rights and limits on the entry of new producers within an appellation.
15. Vines native to other countries and those used for the production of table grapes have been omitted from the list of vines entered in the national registers.
16. To draw an analogy with finance, it conceptually recalls the capital asset pricing model.
17. For a literature review of the causes for the introduction of the geographic appellations and for changes in their delineation, see Meloni and Swinnen (2018a).
18. For a more in-depth discussion of individual and collective reputation, see chapter 6.

## Chapter 2

1. For example, in Muslim countries (see chapter 1).
2. Other possible physical reasons reported in French et al. (2010, p. 86) are metabolism, the pharmacokinetics of alcoholism, and the effect of alcoholism on the volume of the brain.
3. See Castriota (2015, p. 57) for Italian data on alcohol consumption by age.
4. Spirits, on the other hand, are mainly made up of water and alcohol while the contribution of other nutrients is minimal.
5. These variables are not considered as separate determinants in this discussion since they affect wine consumption by way of age.
6. For a broad overview of psychology studies, see the National Institute on Alcohol Abuse and Alcoholism (2005).
7. Psychoactive substances act on mechanisms and processes of the brain. This category includes alcohol, hallucinogens, amphetamines, hemp (hashish and marijuana), cocaine, ecstasy, opioids (heroin and morphine), and tobacco.
8. The influence of friends through imitation also applies to smoking, the use of cigarettes and drugs, church attendance, and the dropping out of school (Gaviria and Raphael, 2001; Lundborg, 2006) but may also work in the opposite way. Christakis and Fowler (2008), in fact, found imitation phenomena among individuals belonging to groups or networks where other people had stopped, rather than started, smoking.
9. A series of scientific studies has shown that level of education influences cigarette consumption, food quality, and frequency of physical activity in a decisive way (Huerta and Borgonovi, 2010).
10. See Tiziano Terzani's accounts (2008) from Japan in the 1980s about the army of "salary men" that were working for multinationals and that were forced to attend frequent and exhausting alcoholic evenings with managers, colleagues, and customers.
11. Di Tella, MacCulloch, and Oswald (2001) and Becchetti, Castriota, and Giuntella (2010) used Eurobarometer data to measure, net of income, the social costs of unemployment, distinguishing between unemployed status (a binary variable that assumes value one if the respondent is unemployed and zero otherwise) and the unemployment rate (the percentage of the workforce that claims to be looking for a job).

12. The symptoms of a high correlation between regressors are (1) small changes in the data cause enormous changes in parameter estimates; (2) the coefficients present very high standard errors and low significance levels, even though they are collectively significant and  $R^2$  of the regression is high; and (3) the coefficients have the “wrong” sign or an unlikely magnitude. See Greene (2000), pp. 255–256.
13. If two groups of individuals—one educated, rich, and in employment; the other illiterate, poor, and unemployed—present different characteristics (e.g., the family context) that are not observable but influence the regressors, then a positive or negative correlation between socioeconomic status and alcohol consumption may not be due to the variables considered but to those omitted. In other words, unexpected *ex ante* differences (e.g., coming from lower socioeconomic families, with problems, etc.) can affect both alcohol consumption and socioeconomic status (education, income, and employment status), making identification and the exact quantification of the parameters difficult.
14. Economics textbooks often give the classic example of a reduction in the purchase of potatoes for meat.
15. For another review of 132 studies on the elasticity of demand for alcoholic beverages and the influence of the choice of data and methodologies on results, see Gallet (2007).
16. In his extensive meta-analysis Nelson (2014) calculated the price elasticity of beer of  $-0.20$ .
17. Scientific literature has also analyzed the cross-elasticities of beverages sold in off-trade and on-trade businesses as well as drinks belonging to the same category but with different quality segments. In fact, if the price of alcoholic drinks sold in bars and restaurants increases, people can decide to consume at home. The same applies to the consumption of average or top-of-the-line products that can be replaced with others of the same type but that is of a lower quality.
18. Price ranges should be reviewed periodically to take account of inflationary pressures and adapted to the economic context (e.g., per capita income, disposable income, tax system).
19. Robert Tinlot (2001, p. 9), former general manager of the International Organization of the Vineyard and Wine (OIV), states that “there is no wine region in our world that does not try to value its vineyards and their output without reference to the character that they inherit from the place where the wine is produced. Consumers who visit producers are particularly sensitive to the beauty of the landscape, to the architecture of the villages and to any other element that belongs to the region of production.”
20. For a quick review, see AIS (2005a), pp. 31–33.
21. For a study on the role of terroir on the price of vineyards, see Cross, Plantinga, and Stavins (2017).
22. Oak barrels increase wine quality but are expensive. Whether they increase or decrease profits is not clear. However, Sims and Quintanar (2017) showed that if over the past fifteen years US winemakers had purchased French oak barrels early (in April, with a discount) rather than in September (with no discount), even accounting for lost interest they would have decreased the costs of the winery by over \$60,000 per year.
23. For example, the use of wood chips in the fermentation phase of the must to save on the cost of barrels.

24. However, given that technological choices depend partly on the terrain, the effect of technology on quality can only be accounted for by an approach that uses instrumental variables.
25. Gergaud and Ginsburgh (2008) used wine prices as an indicator of quality implicitly assuming that there is an almost perfect correlation between quality and price. This approach, however, is questionable, since the price of wine can be influenced by many other variables in addition to quality, such as belonging to famous appellations, advertising, and sales strategies. Ginsburgh, Monzak, and Monzak (2013), however, did not discuss the determinants of quality in their econometric analysis of wine prices even though they adopted a similar approach to Gergaud and Ginsburgh (2008).
26. See Jonathan Nossiter's 2004 documentary film *Mondovino*.
27. Analysis of the chemical profile of wine, reverse osmosis, micro-oxygenation, copigmentation, and analysis of the olfactory profile of wine are just some of the new technologies on which the biggest and most innovative companies are working, especially in the New World, given the regulatory and cultural constraints existing in Europe.
28. For a review of the most important conglomerates producing alcoholic beverages around the world and the growing market concentration, see Thornton (2013), pp. 293–297.
29. Fraser (2005) examined the supply contracts for grapes used in the main Australian regions and found that in the areas that produce lower quality grapes more attention is given to the evaluation of grape quality to establish penalties and premiums. Instead, those that produce higher quality grapes tend to involve the buyer more in the definition of the rules to regulate the various phases of the production process in a more meticulous way and to carry out stricter controls on suppliers. Further, grape prices are often determined according to the selling price of the bottles of wine, thus binding the economic result of the raw material supplier to that of the wine producer.
30. New York diamond merchants, for example, informally conduct economic transactions within the community making significant savings in the fees to be paid to lawyers: failure to pay the amount due would cause irreparable damage to their reputation, which would affect any future business (Guiso, Sapienza, and Zingales, 2004).
31. See also appendix 2.1 for an application of Veronelli's data used by Castriota, Delmastro, and Curzi (2013).
32. From a more macroeconomic point of view Bukenya (2008) showed that prices are an inverse function of accumulated stocks. The author was able to reconstruct reliable historical series for Argentina, Australia, France, Germany, Italy, Spain, and the United States. In Oczkowski (2006) prices are also influenced by market imbalances. Bentzen and Smith (2002), however, analyzed the price of a sample of Californian and Australian wines sold in the country of origin and in Scandinavian countries (Sweden, Norway, Denmark, and Finland). These countries are far from the production regions and are characterized by high taxes and excise duties on alcohol to discourage alcohol abuse. Nevertheless, the price of the wine was not necessarily higher in the Scandinavian countries, and indeed, sometimes it was lower.
33. En primeur wines are those sold but not yet available in the market.
34. This topic will be dealt with in detail in chapter 6.
35. For a comparison of the role of certifications of origin in the olive oil and wine markets, see Cacchiarelli et al. (2016).

36. Organic wines are produced from organic grapes, but in some countries (e.g., Europe and Canada) they can contain sulfites while in others (e.g., the United States) they cannot. Biodynamic wines are made with organic grapes and in addition follow Rudolf Steiner's rules in the preparation of the soil and respect of the land.

37. The effect of organic production on sensory quality is, however, uncertain and limited to anecdotal evidence since there is limited empirical literature.

### Chapter 3

1. Nowadays, with falling transport costs, spatial differentiation à la Hotelling (1929) is irrelevant.

2. A similar situation arises if we consider a model of oligopolistic competition à la J.L.F. Bertrand without product differentiation. Competition becomes so fierce that profits disappear.

3. Cuttings are the vine seedlings aged between one and two years.

4. This problem, of course, does not exist for the less prestigious areas where wine production is in freefall as it is not profitable.

5. See chapter 8.

6. According to WorldAtlas, "there are about 18 million people living in the dry area of the US, which is about 10 percent of the total area of the US." <https://www.worldatlas.com/articles/dry-counties-of-the-united-states.html>.

7. In the wine sector there are no companies that dominate the industry like Microsoft, Danone, or Coca-Cola. Nevertheless, there are some multinationals (in Australia, Foster's; in the United States, American Constellation Brands, Gallo, and Mondavi; in France, LVMH; etc.) that have a significant share of some markets and many other companies that act as regional operators.

8. The law prohibits the production of wine with table grapes. The sale of wine grapes as a fruit to eat is allowed but is very rare as table grapes are preferred for this purpose.

9. These companies hold a monopoly in the purchase and distribution of beverages with an alcohol content above a certain percentage that varies according to the country (e.g., 3.5 percent in Sweden, 4.7 percent in Norway, etc.). The companies in question are Systembolaget in Sweden, Vinmonopolet in Norway, Alko in Finland, Vínbúð in Iceland, Rúsdrekkasöla Landsins in the Faroe Islands, SAQ in Québec, and LCBO in Ontario.

10. This operation is very expensive and is, in fact, funded by the European Union.

11. "Return on invested capital (ROIC) is the appropriate measure of profitability for strategy formulation, not to mention for equity investors. Return on sales or the growth rate of profits fail to account for the capital required to compete in the industry. Here, we utilize earnings before interest and taxes divided by average invested capital less excess cash as the measure of ROIC. This measure controls for idiosyncratic differences in capital structure and tax rates across companies and industries," Porter (2008).

12. The ROIC of private firms and that of cooperatives cannot be compared.

13. "Intangible assets, such as a particular technology, accumulated consumer information, brand name, reputation and corporate culture, are invaluable to the firm's competitive power. In fact, these invisible assets are often the only real source of competitive edge that can be sustained over time," Itami (1987).

14. For a more systematic exposition, see basic microeconomics texts such as Krugman and Wells (2006) and Becchetti, Bruni, and Zamagni (2011). Oligopoly is not relevant since there are many companies in the wine sector.

15. The figure assumes that market price is higher than minimum average total costs and therefore the firm makes profits. If, however, the price never manages to cover even the average variable costs, then the company should stop production and exit the market. Finally, if the price manages to cover average variable—but not fixed—costs, then the firm will continue production in the short term.

## Chapter 4

1. Companies can be classified in various ways—for example, according to legal form (sole proprietorship, limited liability company, joint-stock company, cooperative, etc.)—but here it has been arbitrarily decided to proceed following the criterion of vertical integration because this influences the quality of the product and, in turn, the reputation of the company.

2. The “donative-labor hypothesis” has been studied by, among others, Hansmann (1980), Preston (1989), Frank (1996), and Rose-Ackerman (1996).

3. “That the entrepreneur aims at maximizing his profits is one of the most fundamental assumptions of economic theory. So much so that it has almost come to be regarded as equivalent to rational behavior, and as an axiom, which is self-evident and needs no proofs or justifications. Doubts have been raised by several writers whether maximising his profits is always the entrepreneur’s best policy. But such doubts were few and have died away without reverberation; mainly, I think, because it has never been made clear what exactly profit maximization implies; and perhaps also because we have a vested interest in maintaining this assumption—it makes economic analysis so much simpler” (Scitovszky, 1943, p. 57).

4. “First of all, there is the dream and the will to found a private kingdom, usually, though not necessarily, also a dynasty. ... Then there is the will to conquer: the impulse to fight, to prove oneself superior to others, to succeed for the sake, not of the fruit of success, but of success itself. From this aspect, economic action becomes akin to sport—there are financial races, or rather boxing-matches. The financial result is a secondary consideration, or, at all events, mainly valued as an index of success and as a symptom of victory, the displaying of which very often is more important as a motive of large expenditure than the wish for the consumers’ goods themselves ... Finally, there is the joy of creating, of getting things done, or simply of exercising, one’s energy and ingenuity” (Schumpeter, 1911, p. 93).

5. The commitment made by an owner who directly manages a company can also vary greatly. In fact, the objective of an entrepreneur is twofold: to maximize profits and balance work and free time. Scitovszky (1943) developed a model in which the entrepreneur’s indifference curves are a function of monetary income (given by the company’s profit and the manager’s “salary”) and leisure time (the inverse function of time dedicated to work). The commitment of an owner-manager to work in the company is influenced by his preferences regarding the two inputs of the utility function.

6. Investments in quality require, of course, availability of capital and a not too high intertemporal discount rate. In other words, the “impatient” enterprise favors short-term results, risking the chances of improving reputation and future profitability.

7. The wholesomeness of products is taken for granted.

8. As underlined by Bénabou and Tirole (2003), one of the foundations of economic science is that individuals, be they workers or children, react to incentives while psychologists and sociologists consider rewards and punishments as counterproductive because they reduce intrinsic motivation.
9. The owner's passion, however, should be kept quite distinct from his skills, which is why Delmastro (2007) considers separately—and evaluates positively—the contribution given by external consultants who bring new skills and experiences acquired in other contexts. “The fact that the owner is involved in the company by following the production phase directly appears to be a prerequisite for the inclusion of the quality of wine in the utility function. The owner-winemaker therefore represents a proxy of the owner's attitudes towards his product, and does not appear to incorporate the effect of his skills (in fact, the owner often takes care of the enological part without having particular skills and/or qualifications)” (Delmastro, 2007, p. 69).
10. Pennerstorfer and Weiss (2006, p. 12): “Assuming that the members of the cooperative are paid according to the quantity they deliver and that the quality of the inputs is non-contractible between independent actors, there is a strong incentive to free-ride and deliver low quality. This free rider problem among members of cooperatives is a well-recognized problem in the literature.”
11. In a study on the reputation of Italian wineries, Castriota and Delmastro (2012) found a null result for the cooperative type.
12. This information was found on the ICA website, last accessed in 2013 (the page is no longer available).
13. “Clearly, in most introductory textbooks, co-operative economic organizations either are entirely ignored or receive only a passing mention” (Hill, 2000, p. 283).
14. Similarly, worker cooperatives have proven to dismiss fewer people compared with competitors during periods of economic contraction, thus protecting both jobs and working conditions (Craig and Pencavel, 1992, 1994; Bonin, Jones, and Putterman, 1993; Burdin and Dean, 2009).
15. “However, as this research has shown, there is a considerable share of co-operatives that allows loose contractual relations—soft or shadow membership. Policy makers should therefore be aware that the beneficial aspects attributed to co-operatives in rural development programs may be overestimated” Pascucci et al. (2012, p. 71).
16. “Access policies therefore must strike the right balance between the protection of investment and openness” (Rey and Tirole, 2007, p. 1063). “New members free ride on the investment of established members (had we introduced uncertainty, free riding might have been even more of an issue as potential members could join the joint venture only if it turns successful). This induces underinvestment (the horizon problem) or even prevents the cooperative from getting off the ground” (p. 1084).
17. As cited in Becattini (2002), p. 84.
18. A calculation of the number of districts gives different results depending on the definition used. ISTAT (2001), in the 8° Censimento Generale dell'Industria e dei Servizi (Eighth General Census of Industry and Services), counted 156; the Osservatorio Nazionale Distretti Italiani (the Italian National Districts Observatory) (2013) in its Fourth Report counted 101; and Intesa Sanpaolo Bank (2013) in its Sixth Annual Report counted 144.

19. The importance of districts extends to many areas of the world as well as China. As reported in the Fourth Report of the Italian National Districts Observatory (2013), “the Ministry of Foreign Trade in China noted that 50 percent of production in the more industrialized areas of the country is organized in specialized districts, consequently the government decided to continue investing in those areas” (pp. 27–28).

20. Porter (2000, p. 27) argued that all clusters are desirable independently of what they produce: “All clusters can be desirable, and all offer the potential to contribute to prosperity. What matters is not what a nation (location) competes in but rather how it does so. Instead of targeting, therefore, all existing and emerging clusters deserve attention.”

21. This methodology can easily be applied to other regions such as Chianti or Bordeaux. For an in-depth analysis of the input-output methodology applied to the wine sector and its mathematical properties, see Ciaschini and Socci (2005).

## Chapter 5

1. “Given the space, there is every argument for buying wine young, at its opening price, and ‘laying it down’ in cellar or cupboard until it reaches perfect maturity. Wine merchants are not slow to point out that it appreciates in monetary, as well as gastronomic, value out of all proportion to the outlay” (Johnson, 1971, p. 38).

2. The term “stylized facts” was introduced by Kaldor (1961) and refers to representations simplified by recurrent and agreed empirical cases.

3. Italy is not included because very few firms are listed on the stock exchange. The largest companies are cooperatives, and the others are closely controlled by families or are small.

4. For a more in-depth discussion of the theoretical foundations of derivative instruments, see Björk (1998).

5. Aghion et al. (2009) demonstrated the importance of the development of financial markets in neutralizing the negative effects of exchange rate volatility on the growth of productivity. But, the link between derivatives and growth is subject to some debate, especially in light of their immense growth that is not justified by the size of the real economy and the financial crisis that hit global markets in 2008. As highlighted by Blundell-Wignall and Atkinson (2011), derivatives are largely used not to cover against risk but for short-term speculation and regulatory and fiscal arbitrage. Therefore, it was the misuse of derivatives that was the real cause of the worsening of the crisis (Fink, Haiss, and Hristoforova, 2006) while the usefulness of these tools should not be put in doubt. Positive, but weak, effects of the size of the OTC derivatives markets on economic growth were found by Becchetti and Ciampoli (2012).

6. There are two approaches to identifying insurance conditions. The first is the actuarial one in which the goal is to identify the conditions that must be met so that an event is, at least in theory, insurable. The second is an approach of general equilibrium whose purpose is to identify the conditions that lead to equilibrium with Pareto-efficient solutions in which every type of risk is insured. The goals of the two approaches are different, but most of the conditions coincide. Berliner (1982), Williams (1997), Stahel (2003), and Dorfman (2004) belong to the first; Borch (1962), Arrow (1965), and Shiller (1993) to the second; and Gollier (2005) provides a general description of the two approaches.

7. This last problem is particularly relevant in many developing countries and smaller towns in advanced countries.

8. The countries are Brazil, Costa Rica, India, Japan, Mexico, the Philippines, and the United States.
9. For a detailed discussion of the weather index insurance, see IFAD (2011).
10. The country that has seen the greatest development of index insurances of both types is India. In 2006 there were over eighteen million farmers with insurance linked to the average productivity of the region (see Skees, Barnett, and Collier, 2008).
11. Futures and options, open interest, December 2019, see <https://stats.bis.org/statx/srs/table/d1?f=pdf>.
12. For data on OTC derivatives, see [https://stats.bis.org/statx/srs/tseries/OTC\\_DERIV/H:A:A:5J:A:5J:A:TO1:TO1:A:A:3:C?t=D5.1&p=20172&x=DER\\_RISK.3.CL\\_MARKET\\_RISK.T:B:D:A&o=w:19981.,s:line.nn,t:Derivatives%20risk%20category](https://stats.bis.org/statx/srs/tseries/OTC_DERIV/H:A:A:5J:A:5J:A:TO1:TO1:A:A:3:C?t=D5.1&p=20172&x=DER_RISK.3.CL_MARKET_RISK.T:B:D:A&o=w:19981.,s:line.nn,t:Derivatives%20risk%20category).
13. For a more in-depth discussion of the theoretical foundations, see Bodie, Kane, and Marcus (2005, chapters 6, 8–10, 13).
14. Empirical studies (e.g., Friend and Blume, 1975; Grossman and Shiller, 1981) have found risk aversion between two and four, which corresponds to the profile of a risk-averse person.
15. The two securities could also be one portfolio of bonds (D) and the other a portfolio of stocks (E).
16. A critique of this model is that SMB and HML are not necessarily specific risk factors—that is, the securities of these companies do not show greater yields by virtue of their greater riskiness. A possible alternative explanation may be the exaggerated reaction of investors to previous successes and failures of a security leading to excessive sales or purchases (Lakonishok, Shleifer, and Vishny, 1994).

## Chapter 6

1. “Common examples [of asymmetric information contexts] include mundane transactions in which a person buys a bottle of wine with unknown quality” (Bar-Isaac and Tadelis, 2008, p. 275).
2. For a digression on the different definitions and meanings of cultural goods, see Towse (2010, pp. 151–152).
3. “Such information and beliefs about the seller’s skill and behavior, which we refer to as the seller’s “reputation,” are a consequence of many things. These include direct observations on past performance, experience with other sellers, reports from third parties, actions that the seller may undertake outside of the transaction, and numerous other factors” (Bar-Isaac and Tadelis, 2008, p. 277). The definition provided by Cabral (2005, p. 4) is much more concise, but similar: reputation is the situation “when agents believe a particular agent *to be* something.”
4. The concept of reputation invests all fields of the economy and goes beyond its boundaries influencing the outcome of economic and noneconomic transactions between agents, which may be companies (Kreps, 1990), banks (Gorton, 1996), central banks (Barro and Gordon, 1983), public debt managers (Drudi and Prati, 2000), minority shareholders (Gomes, 2000), managers (Yermack, 2004), internal controllers (Sridhar, 1994), participants in auctions (Houser and Wooders, 2006), criminals (Lott, 1996), and governments committed to countering requests for independence in some regions (Walter, 2009). The need to defend the reputation of a state or its prime minister can even be the (con)cause of armed conflicts (Dafoe, Renshon, and Huth, 2014).

5. For a study on the effect of word of mouth on sales of books, see Chevalier and Mayzlin (2006).
6. The theoretical benefits of reputation have been debated in the literature. Ely and Välimäki (2003) build a theoretical model where a sequence of short-lived players interacts with the long-run agent. Results show that the reputational concern of the long-run player to look good in the current period results in the loss of all surplus. That is, the observability of past actions might actually lower the long-run player's payoff. In a laboratory experiment, Grosskopf and Sarin (2010) find that reputation is rarely harmful and its beneficial effects are not as strong as theory suggests.
7. Yu, Bouamra-Mechemache, and Zago (2018) developed a model to explain the rationale of nested names where collective labels are effective in reaching uninformed buyers while individual brands help firms to reach informed buyers.
8. See also Masset, Weisskopf, and Cossutta (2015) for a study examining the ratings of twelve influential wine critics on the Bordeaux en primeur market. For an application to the gastro-nomic market, see Gergaud, Smeets, and Warzynski (2010): "For most chefs, having his restaurant being awarded one or more stars in the famous Michelin Guide Rouge represents a major achievement, a recognition of their work, and also increased notoriety generating a significant stream of future revenues. In this specific industry, experts play a decisive role, and reputation of restaurants and chefs are basically established according to their opinion" (p. 1).
9. "We found a great deal of evidence that (past or present) expert scores have been found to be positively correlated with wine prices independently of the specific countries, wine magazines, or experts (e.g., Landon and Smith, 1998; Angulo et al., 2000; Schamel and Anderson, 2003; Costanigro, McCluskey, and Mittelhammer, 2007)" (Costanigro et al., 2010, p. 1344).
10. Of the sixty-seven companies that had acquired an international reputation in 2006, twenty-eight had one star, twenty-nine had two stars, and only ten had three stars. Reputation, both national and international, is measured with an ordinal scale ranging from zero to three, with the difference that zero always indicates no stars, but in the case of national reputation it means presence in the *Espresso* guide, whereas in the case of international reputation it means there is no mention in Hugh Johnson's guide.
11. For a detailed review of the theoretical literature, see Bar-Isaac and Tadelis (2008).
12. It should, however, be remembered that this positive correlation refers to a sample of companies selected on the basis of quality and, therefore, is not representative of the whole sector. If the sample were made up of both companies reviewed in wine guides (which are generally smaller and sell through the Horeca channel) and nonreviewed companies (which are generally larger and sell through mass market retailing), the correlation would, in all probability, be negative.
13. These results are in contrast with the studies on the quality of wine that have shown the negative effects of cooperatives (Frick, 2004; Dilger, 2004; Delmastro, 2007) and the relevance of a winemaker as a consultant (Delmastro, 2007).
14. Gallo Nero is the historic trademark of the Consorzio del Chianti Classico DOCG and appears on the bottle foil (capsule) or on the label.
15. Only if at least 85 percent of the grapes come from the same vintage. The indication of the vintage can have an advantage in terms of image ("vintage" wine), but it means products of different vintages (blend) cannot be mixed. Since generic wine does not lend itself to aging, the

indication of the vintage can be counterproductive if quite a long time has elapsed since the grape harvest.

16. According to the Italian Ministry Decree No. 381 of March 19, 2010, varietal wines are “wines without designations of origin or geographical indication, which show, on the label, the vintage and/or the name of one or more varieties of grapes from which they were produced, without any link to a production area. The certification is based on documentation ascertaining that the optional indications that are intended to be included on the label are truthful.” Only varieties of grapes specified by each member state are allowed. For Italy, the varieties are Cabernet, Cabernet Franc, Cabernet Sauvignon, Chardonnay, Merlot, Sauvignon, and Syrah for wine, and Moscato, Malvasia, Trebbiano, Pinot Bianco, Pinot Grigio, and Pinot Nero for sparkling wines.

17. Data downloaded from [www.istat.it](http://www.istat.it) on March 23, 2020.

18. Alternatively, it has been suggested to aim for the opposite strategy by conferring the recognition of DOCG for the largest number of wines possible because in this way the origin, traceability, and quality of the products is guaranteed, whereas other instruments should be found to indicate quality as happens with the cru or the grand cru within the same French appellation (AIS, 2005b, p. 10). In doing so, however, the proven system of pyramid classification that goes from common wines to DOCG would come to an end.

19. Defrancesco et al. (2012) found a positive effect for the geographical indication of the Argentine Malbec on consumers’ willingness to pay in the New World but not on those in the Old World.

20. “A delimited grape-growing region having distinguishing features as described in part 9 of the TTB regulations and a name and a delineated boundary as established in part 9 of the TTB regulations (27 CFR part 9)” (US Alcohol and Tobacco Tax and Trade Bureau, 2012, p. 3).

21. The Alcohol and Tobacco Tax and Trade Bureau manual speaks of “distinguishing features.” “A petition must explain, and provide substantive evidence of, the distinguishing features of the proposed AVA that differentiate the area from what surrounds it in all directions. Distinguishing features are also referred to or characterized as ‘geographical features.’ The regulations mention climate, geology, soils, and physical features as distinguishing features; these examples reflect the types of features most often mentioned in AVA petitions. They are intended to be illustrative only, and other relevant features may be relied on in AVA petitions. When comparing the distinguishing features inside the proposed AVA boundary to the different features outside that boundary, the petition should explain how the features in question affect viticulture both within and outside the proposed AVA” (US Alcohol and Tobacco Tax and Trade Bureau, 2012, p. 14).

22. The website of the US Government Publishing Office reports the data referring to November 21, 2014 (US Government Publishing Office, 2014).

23. However, empirical evidence has provided conflicting results about the impact of family management on company profitability, with Anderson and Reeb (2003) and Lee (2006) finding a positive effect; Filatotchev et al. (2005) and Westhead and Howorth (2006), a negative effect; and Daily and Dollinger (1992) and Villalonga and Amit (2006), a null effect. The only empirical evidence of the effect of ownership on the quality of products is, instead, the study by Frick (2004) on German data showing a superior quality of products of cellars managed by external managers.

24. “The availability of information may benefit large firms disproportionately by inflating audiences’ familiarity with their activities” (Fombrun and Shanley, 1990, p. 224).

25. An external oenologist is a person who provides his consulting services (e.g., by suggesting the best cuts) for a number of companies, unlike the internal oenologist “Cantiniere” (wine maker) who works exclusively for one company and actually produces the wine. The first work is purely intellectual while in the second there is a great component of manual skills.

26. “If too many firms are admitted to the brand, the incentive to free ride necessarily overrides the reputation effect and reduces the incentive to invest, relative to stand-alone firms. This is because once the brand is sufficiently large, the marginal contribution of an individual member’s investment to the brand’s visibility and reputation becomes negligible, in comparison to the payoff from free riding” (Fishman et al., 2008, p. 4).

27. The lack of producer traceability is one of the causes of excessive “extraction” of collective reputation by the individual company that deviates from virtuous behavior in Winfree and McCluskey’s (2005) model.

## Chapter 7

1. For this and other contributions, Ronald Coase was awarded the Nobel Prize for economics in 1991.

2. While wine production favors tourism, the opposite is also true. Fischer and Gil-Alana (2009) showed that German tourism to Spain influences the export flows of Spanish wines to Germany. As a result, tourism produces not only direct short-term effects on the economy but also indirect effects protracted over time.

3. The cost disease argument claims that in a typical cultural performance, the labor share of the total costs rises over time, thereby increasing the price of performances more than the overall inflation rate. Since rising prices discourage consumers and cultural goods are important for the identity of countries, public support can be a solution to avoid an “artistic deficit.” Whether the share of labor costs has been rising in the wine sector is, however, an open question. The artistic deficit can be even conceived in terms of diversity, and subsidies could encourage less popular works and products, as shown by Pierce (2000) and Heilbrun (2001) using data on US opera companies.

4. Daily consumption does not mean an average of glasses per week or month but the actual consumption on the day of reference as consumption of the same quantities of alcohol in a limited period (binge drinking) or over several days generates very different consequences.

5. “Current research and public-health perspectives on alcohol emphasize harms disproportionately relative to benefits. The major exception is research establishing beneficial effects of moderate drinking on cardiovascular health and overall mortality. In addition, much observational and experiential data suggest the widespread prevalence of positive drinking experiences” (Peele and Brodsky, 2000).

6. Sacks et al. (2015) estimate the costs of alcohol abuse in the United States and find that 76.7 percent are due to binge drinking and 9.7 percent, to underage drinking.

7. “Diseases and injuries attributed to alcohol kill millions and harm tens of millions of people each year worldwide. But the death and injury that strike at all strata of society can be reduced through prevention and treatment policies that are shown to work—if governments will adopt and enforce them (Box 15). Indeed, it is a significant shortcoming in all countries that alcohol-attributable death, disease and injury receive so little attention in public health and safety policy” (WHO, 2011, p. 40).

8. For a detailed analysis of the cost of road deaths and safety policies, see WHO's (2013) *Global Status Report on Road Safety*. For some analyses of the negative effect of alcohol on accidents, see Levitt and Porter (2001), Baughman et al. (2001), and Carpenter and Dobkin (2011). The role of speed limits as a deterrent was analyzed by Brown et al. (1990) and Baum et al. (1991) while Lave (1985) demonstrated with US data that speed variability is even more relevant than the maximum speed because it increases the number of times cars overtake one another. The importance of passive safety has been studied by, among others, Cohen and Einav (2003) and French et al. (2009).
9. As emphasized by Young and Bielinska-Kwapisz (2006), however, laws carrying an increased tax burden on alcoholic beverages may not be considered as completely exogenous since the authorities can introduce these changes because of widespread abuse.
10. Excise duty contributes to forming the value of products; hence, VAT on products subject to excise duty also weighs on excise duty itself.
11. "Generally, studies have found that wine drinkers tend to have a healthier lifestyle profile than beer or spirits drinkers, but generally, wine drinkers have shown better socioeconomic levels that can positively influence the health indicators" (Baltieri et al., 2009). People who drink wine seem, therefore, to be different (better) than those who drink beer and spirits.
12. Portugal, like all other countries in Mediterranean Europe, has been witnessing the substitution of wine with beer, and young people today tend to drink more of the second than the first (see chapters 1 and 2).
13. According to WorldAtlas, "there are about 18 million people living in the dry area of the US, which is about 10% of the total area of the US. After the repeal of the prohibition in 1933, a huge proportion of the population persistently supported the prohibition. While some states chose to maintain their prohibition, others allowed local counties to decide if they wanted to continue with prohibition within their borders." <https://www.worldatlas.com/articles/dry-counties-of-the-united-states.html>.

## Chapter 8

1. "Marché viticole est un marché atomistique, assez semblable au marché idéal de la théorie classique car les producteurs et les consommateurs sont extrêmement nombreux et aucun d'eux pris individuellement ne peut par sa volonté ou par son action modifier sensiblement le marché. Même en négligeant les petits producteurs, here ne commercialisent souvent qu'une fraction infime de leur récolte les vendeurs importants se comptent par centaines de milliers qui exclut toute tentative de cartel" (Milhau, 1953, pp. 701–702). However, over the last decades market concentration has been increasing, and antitrust authorities have intervened to authorize mergers and acquisitions, provide opinions to governments, and evaluate anti-competitive agreements (see Minutorizzo, 2019).
2. As seen in chapter 7, total state control in the alcoholic beverages sector can take the form of a monopoly of production or sales, but the market may also disappear completely with the introduction of prohibition.
3. In some cases, the two concepts have been confused in public opinion. In fact, by "privatization," we mean the sale of a public company to private subjects while "liberalization" means the opening of the market to competition from new operators. Privatization, therefore, does not automatically entail liberalization. The privatization of infrastructure, such as motorways and airports, for example, is unlikely to lead to increased competition since there is usually

only one highway that joins two metropolitan areas and only one airport (especially if international) in a city. In these cases, there is usually a transition from a public monopoly to a private monopoly with little or no benefits for the consumer (or even a worsening of conditions). The case of Italian and British motorways and airports are, from this point of view, perfect examples.

4. While EU regulations are directly applicable, directives bind states to objectives that the countries will pursue by enacting laws and specifying the means by which the objectives will be achieved. Unlike regulations and directives, which apply generally, decisions concern a single country. Finally, recommendations are not binding.

5. For a detailed analysis of the role and mechanisms of lobbying in the wine sector, see chapter 3 of Gaeta and Corsinovi (2014).

6. “The EU tries to cope with the situation by siphoning wine out of the lake for distillation (for example, into vinegar) and by grubbing up vines from the vineyards on the hills around the lake. [However] the problem is that EU-financed distillation is a positive stimulant of over-production of largely undrinkable wine, since it maintains less efficient growers of poor quality wine which would have given up long since if it were not for the EU support system. ... The EU is losing ground in the expanding middle sector of the market [to New World wines]. ... The EU thus finds itself running a wine support policy that costs around 1.5 billion [euros] a year, involving the annual destruction of an average of 2–3 billion litres of substandard and undrinkable wine” (Grant, 1997, pp. 137–138).

7. “L’organisation commune du marché vitivinicole pour les vins de table s’est avérée une des plus délicates à mettre en place dès le départ, le règlement n° 24 du 4/04/1962 en jette les bases toujours d’actualité. Il s’agissait, en effet, de fusionner deux marchés, le français et l’italien, que tout séparait, entre lesquels n’existait alors pas d’échanges commerciaux réguliers et qui représentaient déjà 50 percent de la production mondiale de vin. Le faudra huit ans et les accords d’Evian pour parvenir, en 1970, à un fragile compromis. Les crises passés avaient installé en France une organisation dirigiste et centralisée du secteur. Schématiquement tout était sévèrement contrôlé par l’Etat: cadastre viticole, surface plantée, classement des cépages, déclaration de récolte, prestations viniques, quantum de commercialisation, jusqu’aux mises en marché échelonnées dans le temps. En contrepartie, l’Etat intervenait systématiquement pour soutenir les cours du vin, qui étaient en moyenne de 25 percent supérieures aux cours italiens, en octroyant des facilités de financement des stocks et en prenant en charge la distillation des excédents par le monopole des alcools. La fraude, très sévèrement réprimée, demeurait quasi impossible. En Italie où, bien au contraire, régnait le plus grand libéralisme, ce qui était interdit s’avérait souvent possible. En 1970, la doctrine italienne, plus libérale, prévalut. La plantation et la replantation de vignobles ne furent plus soumises qu’à des règles qualitatives, la commercialisation des vins ne fit l’objet d’aucune disposition obligatoire, les règles de production entérinaient même des distorsions de concurrence entre les différents pays. Brussels estimait qu’il suffirait de prévoir quelques interventions conjoncturelles de soutien du marché des vins de table (distillation, aide au stockage) and qu’il n’y avait pas interdépendance entre ce marché et celui des vins de qualité, seule une protection efficace aux frontières avec le «prix de référence», et une aide à l’exportation sous forme de restitutions complétaient l’édifice” (Arnaud, 1991, p. 6).

8. Planting rights were initially conceived as a temporary measure, but were constantly renewed (ten times between 1976 and 2008). “The planting rights regime was introduced at EU level in 1976 with Council Regulation (EEC) No. 1162/76 of 17 May 1976. The context

in the years before 1976 was of an excessive and growing production (especially of low quality table wines) in relation to the available outlets. Following the Commission's proposal, the Council decided to introduce a ban on any new plantings, in order to limit the production of table wines and prevent structural surpluses. This ban was initially set for the period between 1 December, 1976 and 30 November, 1978. In this first regulation three exceptions to the general ban were established: 1. new plantings aimed at the production of quality wines produced in a specified region (qwp<sub>sr</sub>) in the Member States where the respective production in recent years represented less than 50 percent of total wine production; 2. new plantings established in the context of the execution of farm development plans (Directive 72/159/EEC); 3. new plantings in Member States with an annual wine production below 5,000 hl. In the period between 1976 and 2008 the expiring date of the planting rights regime was prolonged ten times on the basis of Council regulations. The justifications were most frequently the permanent risk of 'structural surpluses affecting the sector,' 'the situation on the wine sector market' or 'tendency in the next few years for production to exceed foreseeable needs'" (European Union, 2012, p. 5).

9. Over 75 percent of the subsidies reserved for the European wine sector were earmarked for the destruction of surpluses, often produced specifically for this purpose. Every year between 12 percent and 22 percent was destroyed by distillation (European Commission, 2009).

10. "In order to provide for a satisfactory level of traceability of the products concerned, in particular in the interest of consumer protection, provision should be made for all the products covered by this Regulation to have an accompanying document when circulating within the Community" (Council of the European Union, 2008, preamble, Recital 78).

11. Articles 91 and 92 established the criteria for planting and replanting vineyards while Article 100 established criteria for eligibility for grubbing premiums. The award was divided into eight segments depending on the production ascertained. It ranged from €1,740 for one hectare with a yield of 20 hectoliters per hectare (hl/ha) to €14,760 for one hectare with a yield of 160 hl/ha. The amounts gradually decreased in the two campaigns following the 2008/2009 campaign (see Commission of the European Communities, 2008, Annex XV). The maximum limit for grubbing is equal to 10 percent of the total area under vines in the region.

12. See the article by Castriota and Delmastro (2010).

13. "The Volstead Act, the federal law that provided for the enforcement of Prohibition, also left enough loopholes and quirks that it opened the door to myriad schemes to evade the dry mandate. One of the legal exceptions to the Prohibition law was that pharmacists were allowed to dispense whiskey by prescription for any number of ailments, ranging from anxiety to influenza. Bootleggers quickly discovered that running a pharmacy was a perfect front for their trade. As a result, the number of registered pharmacists in New York State tripled during the Prohibition era. As Americans were also allowed to obtain wine for religious purposes, attendance rose at churches and synagogues, and cities saw a large increase in the number of self-professed rabbis who could obtain wine for their congregations. The law was unclear when it came to Americans making wine at home. With a wink and a nod, the American grape industry began selling kits of juice concentrate with warnings not to leave them sitting too long or else they could ferment and turn into wine. Home stills were technically illegal, but Americans found they could purchase them at many hardware stores, while instructions for distilling could be found in public libraries in pamphlets issued by the U.S. Department of Agriculture. The law that was meant to stop Americans from drinking was instead turning many of them into experts on how to make it" (Lerner, n.d.).

14. See Wine Institute and Avalara (n.d.) for an updated map of laws on direct-to-consumer shipping.
15. A 2005 Supreme Court ruling found that states permitting direct-to-consumer shipping must give the same right to both in-state and out-of-state producers. Nowadays, thirty-nine states allow interstate shipping of alcoholic beverages. For a study on how various economic and public interest factors affect the likelihood that a state adopts a change in its direct shipment regulation and the nature of that change, see Reikhof and Sykuta (2005).
16. Gruenewald et al. (2006), using Swedish data from 1984 to 1994, find that “consumers respond to price increases by altering their total consumption and by varying their brand choices. Significant reductions in sales were observed in response to price increases, but these effects were mitigated by significant substitutions between quality classes.”
17. Surprisingly, while anecdotal evidence indicates that cheap, low-quality alcoholic beverages are bad for health and can increase the severity of hangover, there is no scientific evidence of this, apart from studies on unrecorded alcohol, which is more toxic. For a systematic, computer-assisted review of the literature, see Rehm, Kanteres, and Lachenmeier (2010).
18. For the original treaties, see <https://eur-lex.europa.eu/collection/eu-law/treaties/treaties-founding.html>.
19. For a study on the positive effects of names being reported on labels for small French dairies, see Bontemps, Bouamra-Mechemache, and Simioni (2013).
20. Meloni and Swinnen (2013) concluded that “One of the most striking conclusions of economic studies on the EU’s wine markets is that the policies have caused—rather than resolved—some major distortions in the wine sector” and referred to the text of the report by the European Commission (2004): “Distillation of wine measures are neither effective nor efficient in eliminating structural surpluses. Distillation measures involve fairly high EU expenditure. The short-term income support through buying-in of wines for distillation stabilizes surplus production in the long-term. ... Additionally, continuous implementation of distillation measures producing industrial alcohol out of wine might be an incentive for higher yields.”

### Economic Policy Conclusions

1. “At some point, the AOC system was questioned, because the high number of wines with this name caused more confusion than clarity for the consumer” (AIS, 2012, p.10). When Vaseth (2011) was discussing the European system of wine classification, he spoke of *Lost in Translation* (taking up the title of the film by Sofia Coppola) and the “Da Vino Code” (jokingly changing the title of the book by Dan Brown).
2. For example, Chianti DOCG/Chianti Classico DOCG, Prosecco DOC/Prosecco di Conegliano, and Valdobbiadene DOCG. Stallcup (2005) quite rightly notes that “the traditional approach to wine education has been and continues to be too complex for non-experts. Most consumers only want to be able, from time to time, to buy a good bottle of wine without having to follow a stochastic calculation course or theoretical physics in French.”
3. The solution to Saturday night accidents caused by drunk driving cannot be the early closing time of nightclubs or restrictions on the sale of alcoholic beverages. In doing so, the state tries to cover up its failure to provide services and solutions for citizens with prohibitionist policies. It is like a doctor giving crutches to a patient who is limping because he is unable to cure the leg: it is best to change the doctor!