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Early Sales of Bordeaux \textit{grands crus}

By Philippe Mahenc* Valérie Meunier†

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1 Introduction

It takes time for a Bordeaux \textit{grand cru} to mature. Two years may elapse between harvesting and bottling. Most châteaux do not wait that long to sell a vintage. Between March and June after the harvest of the previous year, 80\% of the Bordeaux châteaux production is released while the wine is still ageing in barrels. This is the so-called \textit{en primeur} period, to which we refer as “early sales” in the remainder of the article. Buyers who purchase so early

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have little information on quality simply because such information is hard to extract from a wine that is not finished. Generally, they rely on information collected from experts or quality reviews. Although better informed, the château itself may not be perfectly informed about the true quality of its wine. However, it makes guesses that are likely to be more accurate than those made by buyers. When the château expects its wine to be of high quality, it has an incentive to signal it through the choice of its early sales price. Nevertheless, releasing information may entail some cost which is measured by a price distortion. In the present analysis, it is shown that early sales may be over-priced, relative to what would be the price if information between the château and buyers were symmetric. Hence, asymmetric information is a source of inefficiency with early releases, adding further to the more familiar market distortion associated with market power: Bordeaux châteaux exploit some power over early prices, due to differentiation in location, taste and quality, or barriers to entry. This is a significant departure from the economic literature on wine which assumes explicitly or implicitly that competition is perfect in the sense that agents have no market power and that there is free entry. Such an assumption may be adequate for studying markets for bottled wines to the extent that they are close substitutes and their quality can be ascertained. However, the assumption of perfect competition is not appropriate for early sales of Bordeaux grands crus.

Despite market inefficiencies, there is a presumption that buying Bor-
deaux wines at the early price is a good investment. Figure 1, borrowed from Hadj Ali and Nauges (2003)\(^1\), shows that the return to buying at the early price may exceed the return to the French stock market index (CAC 40).

Insert here Figure 1.

Hadj Ali and Nauges estimate the rate of return to buying wine at the early price over the period 1994-1998 and show that buying early the foremost châteaux, especially First-Growth Médoc and Graves, has actually been a good investment. More surprising is that this performance does not depend on the vintage quality since the period includes both a “good” vintage (1995) and a “bad” vintage (1997).

The motivation of the present chapter is to provide a basis for addressing two specific questions raised by the early sales strategy. First, does the price of an early sale signal quality? A château that knows the quality of its wine is aware that buyers revise their beliefs after observing the early sales price. This price is thus a potential instrument for influencing such beliefs and the château may reveal or conceal private information through the choice of its price. Second, what is the rationale of the commitment on early prices? A château’s promise to deliver later a given quantity of bottled wine at the

\(^1\)The empirical literature on early sales is extremely limited. To our knowledge, Hadj Ali and Nauges (2003) is the only empirical investigation using data from early releases in Bordeaux.
early sales price is closely related to a forward contract. Albeit dating back to the end of the 19th century, such contracts have been quite informal until Euronext’s attempt to inaugurate in September 2001 the world’s first-ever futures market in fine Bordeaux wines christened WineFex.

2 Early price as a signal of quality

2.1 The lemons problem

Markets in which producers know the quality of their good but buyers do not are susceptible to Akerlof’s (1970) lemons problem: a low-quality good sells at the same price as a high-quality good because it is impossible for most buyers to tell the difference between high and low quality. Figures 2 and 3 illustrate that early sales of Bordeaux grands crus are susceptible to such a problem.

Insert here Figure 2 (Médoc early prices) and Figure 3 (Parker’s scores for 4 Médoc).

The four curves that are almost superimposed in Figure 2 depict the changes in the early prices of four First-Growth Médoc. One can see that these four châteaux have been setting the same price since 1980 for almost all the vintages. Figure 2 might suggest that quality is identical, provided that the early sale price is an effective signal of quality. However, Figure 3
shows that the scores assigned in January 2002 to the four wines by Robert Parker, editor of The Wine Advocate, noticeably differ. If Parker’s opinion provides accurate estimates of quality, then early prices fail to signal quality.

Since the wine is not yet mature at the time of its early release, it is really only the château that knows its true quality. Buyers can hardly ascertain this quality by tasting samples which are drawn from barrels before racking (soutirage), fining (collage) and filtering (filtrage).\(^2\) The unfinished wine does not possess the same sensory characteristics as the bottled wine sold two years later. Furthermore, samples may be drawn from a particular barrel that has been blended and set aside on purpose. This practice is well acknowledged by experts as the following statement from the Wine Enthusiast shows: “the sample itself might have been prepared for the tasting with a judicious touch of oxygen to give it a little maturity – hence, drinkability”.\(^3\) Even famous wine experts such as Robert Parker are not immune to manipulations. Some wine producers in Bordeaux boast of “parkerising” the taste of the samples that they intend Parker to have.\(^4\) Bruno Prats, the owner of Château Cos d’Estournel, claims that “there exist not only Parker barrels, but also Parker harvests”.\(^5\)

\(^2\)See Gergaud and Ginsburgh (2001) for a thorough description of the wine production process.

\(^3\)Roger Voss, Wine Enthusiast (July 2001).

\(^4\)Le Monde, 16-17 september 2001.

\(^5\)“Il y a non seulement des “barriques Parker”, mais aussi des récoltes Parker” (60 Millions de Consommateurs, October-November 2000, n°65).
The information asymmetry between the château and buyers makes the wine an “experience” good in the sense of Nelson (1970), that is, a good whose quality cannot be determined prior to purchase. As the price of an experience good has a role to play in conveying information on quality, market inefficiency may arise in the form of price distortions regardless of the degree of competition. These distortions would not appear were buyers fully informed on quality. They reflect some signaling cost and add further to the inefficiency associated with the exercise of market power. This raises the question whether, at the time of early sales, Bordeaux wines are over-priced or under-priced relative to what would prevail under symmetric information of sellers and buyers. In the absence of empirical work on this question, we propose a theoretical survey leading to the conclusion that early releases are over-priced.

2.2 Are early released wines under- or over-priced?

2.2.1 Underpricing

Exploiting its power, a Bordeaux château might set early prices at low levels (i. e., lower than under symmetric information) to signal quality. The argument follows the logic of Nelson (1974) and hinges on the assumption that future profits obtained from repeat purchases are relatively more important for a high quality good than for a lower quality one. In the case of early
sales, repeat purchases occur on the market for bottled wine. If the price
of early sales is sufficiently low, then buyers will infer that quality is high
and will subsequently purchase bottled wine. “Sufficiently low” means that a
high-quality wine must be sold at a price so low that any château providing a
wine of lower quality should be worse off duplicating. However, “sufficiently
low” may be too low. This will be the case when the profits foregone from
charging low early prices are larger than the profits expected from subsequent
purchases on the market for bottled wine. Then, a low early price cannot be
an effective signal of high quality.

Schmalensee (1978) contradicts Nelson’s argument on the grounds that
high quality is more costly to produce than low quality. This is actually the
case for Bordeaux grands crus, and so, for a given early price, the lower the
quality, the higher the château’s profit per buyer. A low-quality château has
an incentive to pretend that the quality of its wine is high, and a natural
way to do this, under asymmetric information, is to charge the same early
price as a high-quality château. Revealing the true quality is necessarily
costly for a high-quality château willing to deter a lower-quality château
from mimicking (see Spence, 1973). To prove to buyers that its wine is of
high quality, the château must behave in a way that low-quality châteaux do
not find worth emulating. For instance, the high-quality château can openly
use a helicopter to dry vineyards before harvesting or, more simply, it can
distort the early price relative to the price that it would have chosen under
symmetric information.

Tirole (1988) proposes a model in which a low introductory price truly signals quality provided that the “Nelson effect” dominates the “Schmalensee effect”. Otherwise the price is uninformative. Following this result, selling early at a low price, that is, underpricing relative to the symmetric information level, can signal high quality only if the current loss entailed by the cost of producing a high quality wine is small relative to the future profits expected from subsequent purchases on the market for bottled wine. On the other hand, if producing high quality is far more costly than producing low quality, then the “Schmalensee effect” dominates: the profits from early sales accruing to a low-quality wine become so attractive that a château providing such a quality can no longer bear the cost of signaling its true quality through a low early price. Then, low-quality châteaux duplicate the prices charged by high-quality châteaux and low early prices convey no information on quality. This situation seems most relevant for Bordeaux grands crus since some 80 percent of the châteaux production is released early: underpricing early sales cannot signal high quality because the stream of profits expected from releases on the market for bottled wine (20 percent of production) is low.

2.2.2 Overpricing

Let us now examine whether overpricing is a more successful strategy to signal high quality at early sales. The economic literature provides theoretical
evidence that firms may convey information on quality through high prices when introducing new experience goods. Shapiro (1983) explores conditions under which a monopolist distorts the introductory price of an experience good. As a result, the price is high (low) when buyers overestimate (underestimate) quality. However, Shapiro precludes the possibility of price signaling. Bagwell and Riordan (1991) argue that firms must set prices above their full information level to signal high-quality new products. This distortion is shown to decrease or even vanish entirely over time, as information about the product diffuses.

What about early prices? Does the producer of a high-quality wine signal this fact through his choice of early prices? Can buyers correctly infer quality from observing early prices? In a first attempt to answer these questions, consider Figures 4 and 5 that respectively show the changes in early prices and Parker’s scores for 3 Pessac-Léognan châteaux.

Figures 4 and 5 suggest that higher quality is likely to be correlated with higher prices. In this case, early prices turn out to be informative, possibly at some signaling cost. The most common argument developed for instance in Milgrom and Roberts (1986) or Bagwell and Riordan (1991) crucially hinges on the assumption that a higher quality good is more costly to
produce. Hence, buyers understand that a higher quality wine requires higher production costs. As buyers infer high quality from observing a sufficiently high early price, an efficient way for a château to signal high quality is to charge a price that is too high to mimic for a lower-quality château. As a result, a high-quality château will set the early price at a higher level than the full information price in order to separate from low-quality châteaux. The loss in profit corresponding to this upward distortion that, incidentally, also hurts buyers, represents the tribute paid by a high-quality château to prove that it actually provides a high-quality wine.

However, the assertion that early prices always reveal information on quality is clearly challenged by Figures 2 and 3. While experts detect quality differences, it is impossible for a buyer to tell the difference between a high and a low quality wine from observing early prices only.

2.3 Are early prices informative?

Why do early prices fail to fully reveal information on quality? One reason can be that the differences in quality that are observable to the château only, are exogenous to it. In other words, asymmetric information on quality would concern the part of quality that is a gift of nature, such as from weather, and not the part of quality that is due to production techniques. This is reminiscent of the assertion in Di Vittorio and Ginsburgh (1996) that weather information concerning a whole area is publicly available, while local
weather phenomena that may mar the grapes, such as hail, often remain less widely known.

Furthermore, the possible presence of some informed buyers exerts an externality on low-quality châteaux. Informed buyers are those who have the same information on quality as châteaux. Mahenc (2003) shows that informed buyers are necessary but not always sufficient for a château to use prices as signals of quality, regardless of the château’s monopoly power. The essential effect of the presence of informed buyers is to reduce the benefit accruing to low-quality châteaux from mimicking high-quality châteaux. This in turn increases the incentive for signaling high quality through price. The argument developed in the remainder of this section closely follows Mahenc (2003).

Consider two wines differentiated in taste and quality. Taste differs across buyers, whereas all buyers agree that, all else equal, higher quality is preferable. This amounts to saying that “there are specific standards of quality that full-time wine professional recognize” (Parker, quoted in Landon and Smith, 1997). One wine, say a Bordeaux First-Growth, is sufficiently differentiated in quality to provide the château with a monopolistic position. Another interpretation could be that a few Bordeaux châteaux among the best known form a dominant cartel or achieve price collusion. In contrast, the other wine is produced by a competitive fringe of small identical producers classified for instance as Crus Bourgeois, and its quality is perfectly
known to buyers. An immediate consequence of the competition between small producers is that prices of inferior wines drop to marginal cost. High-quality wines are assumed to be more costly to produce than low-quality wines, hence production techniques determine quality. Such an assumption is consistent with the findings in Gergaud and Ginsburgh (2001). Furthermore, the superior wine is assumed to be an experience good: all buyers know that its quality is higher than that of the other wines, but some buyers cannot ascertain whether it is much higher or just a little higher. These differences are due to exogenous factors that are outside the control of the monopolist, such as weather. Hence, the quality of the superior wine is also determined by nature. Let $I$ denote the fraction of informed buyers (say, who read Parker). The quality of the superior wine takes one of two values, high ($H$) or low ($L$). In Mahenc’s framework, the early price of the superior wine could not signal quality if information between the château and buyers were symmetric. The reason is that the differences in quality that are observable to the château only, are exogenous to it.

As the actual quality $q$ of the superior wine is not observable to uninformed buyers, they must rely on their beliefs about quality when deciding to purchase. The château, in turn, will have to take into account how its choice of an early price $p$ affects these beliefs. Observing $p$, uninformed buyers draw an inference $\hat{q}$, which is either $H$ or $L$. Depending on the fraction of informed buyers, the château will choose either to fully reveal information
on quality through informative prices, or to conceal information through uninformative prices.

### 2.3.1 Revealing true quality should be profitable

Let \( \pi_q(p, \tilde{q}, I) \) denote the profit for a château selling early a wine of quality \( q \) at price \( p \), which is perceived to be of quality \( \tilde{q} \) by the fraction \( 1 - I \) of uninformed buyers. Denote by \( p_H \) and \( p_L \) the informative prices for high and low quality respectively, and by \( \pi_H \) and \( \pi_L \) the corresponding equilibrium profits. When quality is perfectly identified, the low-quality château earns more by charging its full information price, thus, it is the only candidate for \( p_L \).

Since the château selling a wine of one quality has the option to pretend to sell a wine of another quality, the informative price \( p_H \) must satisfy the following three conditions ensuring that revealing true quality is profitable.

1. The low-quality château finds more profitable to reveal true quality than to pretend to sell a wine of high quality.

2. The high-quality château finds more profitable to reveal true quality than to be perceived as a château selling a wine of low quality.

3. The high-quality château finds more profitable to reveal true quality than to conceal information.
When the low-quality château is thought to sell a wine of high quality after choosing a price $p$, it has a mimicking profit $\pi_L(p, H, I)$. To reveal its true quality, the high-quality château must set a price $p_H$ that satisfies condition 1 above, that is,

$$\pi_L(p_H^I, H, I) \leq \pi_L. \quad (1)$$

Otherwise, the low-quality château would strictly prefer to spurn $p_L$ and choose $p_H$. The mimicking profit in the left-hand side of (1) decreases with the fraction $I$ of informed buyers. In other words, the more informed the market, the more difficult it is fooling buyers.

Moreover, if the high-quality château charges a price $p$ on the basis of which it is believed to sell low quality, then it makes a profit $\pi_H(p, L, I)$. Let $\pi_H(L, I)$ denote the maximum of this profit over all possible prices. The latter can be interpreted as the opportunity cost to signal high quality, which increases with the number of informed buyers. Thus, the more informed the market, the weaker the incentive to reveal information through price. Condition 2 above is given by the following inequality:

$$\pi_H(p_H, H, I) > \pi_H(L, I). \quad (2)$$
2.3.2 Early prices fully reveal information on quality

Mahenc (2003) shows that there are two cases to consider, depending on the value of $I$. First, if the fraction of informed buyers is higher than a threshold $I$, the wine does not need to be over-priced to signal high-quality. Then, the château, regardless of quality, chooses the same price as if information were symmetric between the château and buyers. When the market is sufficiently well informed, signaling the true quality is possible at no cost. Second, if $I$ is lower than $I$, signaling the true quality is still possible, albeit at a positive cost for the high-quality château. Then, the high-quality château must set its price at a level $p$ above the price that would prevail under symmetric information, in order to prevent the low-quality château from mimicking. When the market is poorly informed, the high-quality wine is over-priced relative to the situation that would prevail under symmetric information. The signaling cost is shown to decrease as the fraction of informed buyers increases, until this fraction reaches the threshold $I$ above which the signaling cost vanishes and so does the lemons problem.

As a result, informed buyers are necessary for the price to be an effective signal of high quality. Moreover, a sufficiently high fraction of informed buyers eliminates the lemons problem by exerting a negative externality on the low-quality château. The above discussion identifies two conflicting effects, due to the presence of informed buyers. First, the mimicking profit, hence the temptation to mimic for the low-quality château, decreases with $I$. Sec-
ond, the opportunity cost to reveal high quality increases with \( I \). It turns out that the former effect dominates the latter. Informed buyers can ascertain the wine quality on the market and, hence, are not fooled. It follows that increasing price is more damaging to the low-quality château than to the high-quality château. This is the negative externality alluded to above. The condition emphasized by Spence (1973) for a signal to be effective is met: the high-quality château bears lower costs for signaling quality through price, due to the presence of informed buyers. The early price can now function as an effective signal of quality, and we have:

**Proposition 1.** *Early prices can signal quality provided that \( I > 0 \):

- the low-quality château charges the same price as would be chosen under symmetric information on quality;

- when \( I < I^* \), the high-quality château over-prices its wine relative to what would be the price under symmetric information; otherwise, it charges the same price as under symmetric information.*

See Mahenc (2003) for a detailed proof of this proposition. This article further investigates the impact of monopoly power on signaling activity. It shows that the more market power, the higher the price distortion to signal high quality. As market power drops, it becomes increasingly costly for the low-quality château to duplicate the high-quality price because demand is more elastic. Indeed, the more competitive the market, the more damaging
it is for the low-quality château to lose those buyers who refuse to buy at a higher price.

2.3.3 Early prices conceal information on quality

The emergence of informative prices due to the presence of informed buyers does not dismiss uninformative prices. Let $p^u$ denote an uninformative price, $\mu$ the probability assigned by buyers to the high quality and $\pi_q(p^u, \mu)$ the profit of a château selling a wine of quality $q$ at price $p^u$.

Condition 3 above imposes a further restriction on $p_H$:

$$\pi_H(p^u, \mu) < \pi_H(p_H, H, I).$$

(3)

If this inequality holds, then the high-quality château is better off with the informative price $p_H$ than with the uninformative price $p^u$. Clearly, if the market is sufficiently well informed so that $I \geq I$, then (3) is met since $H$ is the best belief consumers can hold from the château’s point of view and $\pi_H(p_H, H, I)$ is the maximum profit that the high-quality château can get given this belief. However, when $I < I$, the high-quality château incurs a positive signaling cost to reveal its true quality. As a result, the returns from signaling high quality with $p_H = \overline{p}$ may be lower than $\pi_H(p^u, \mu)$ depending on the value of $\mu$. As Mahenc (2003) shows, if $I < I$ and $\mu$ is higher than a threshold $\overline{\mu}$, then inequality (3) is violated and the château will prefer to
conceal information on quality.

**Proposition 2.** The presence of informed buyers is necessary for early prices to be effective signals of quality, but not always sufficient in the following sense:

1. when $I \geq \bar{I}$, the prices that would be chosen under symmetric information on quality fully reveal quality;

2. when $I < \bar{I}$,
   
   (a) prices fully reveal quality and the high-quality wine is over-priced relative to what would be the price under symmetric information, provided that $\mu$ is lower than $\bar{\mu}$;
   
   (b) and for values of $\mu$ higher than $\bar{\mu}$, prices fail to signal quality.

See Mahenc (2003) for a detailed proof. The results stated in Proposition 2 provide an explanation as to why early prices signal quality in some cases (Figure 4 and 5) and conceal information in other cases (Figure 2 and 3). If the market is well informed, then the lemons problem is eliminated (case 1 of Proposition 2). The presence of informed buyers increases the cost of pricing for low-quality châteaux so much that mimicking becomes unprofitable. If the market is poorly informed (case 2 of Proposition 2), the presence of informed buyers mitigates the lemons problem, provided that buyers beliefs of high quality are sufficiently pessimistic (case 2.a). This might be due
to bad weather or a bad reputation. In this case, the château must incur a signaling cost to reveal high quality and the wine is over-priced relative to the price that would be set if the château and buyers shared the same information. However, early prices are uninformative when the market is poorly informed and buyers hold optimistic beliefs about quality (case 2.b). Signaling the true quality turns out to be more costly than accepting mimicry for the high-quality château.

The very high reputation of the four Médoc châteaux in Figures 2 and 3 may explain why uninformed buyers unrealistically believe quality to be high. Such beliefs weaken the incentive to reveal information through prices, hence the Médoc châteaux are worse off signaling quality. By contrast, the three Pessac-Léognan châteaux in Figures 4 and 5 are not so famous and buyers’ beliefs about quality are likely to be less optimistic before purchase than for the Médoc châteaux. Mimicking turns out to be less profitable for lower-quality châteaux, which reduces the cost of fully revealing information on quality for higher-quality châteaux. As a result, the Pessac-Léognan châteaux spurn uninformative prices and signal quality.

That the market is poorly informed means that either few buyers rely on expert opinion or few buyers develop sufficient skill to estimate the true quality. This is consistent with two empirical studies on the Bordeaux wine industry: Landon and Smith (1997) find no evidence that buyers use expert opinion when purchasing Bordeaux wine and Ashenfelter and Jones (1998)
argue that experts neglect some useful information, such as weather data.

Now that we have reviewed how pricing strategies can reveal information, we introduce the main features that make early releases comparable to forward trading.

3 Early sale as a forward contract

Early releases present some features that are closely related to forward trading. Generally speaking, forward contracts refer to agreements between two parties in order to exchange at a particular future date. The early contract is a promise made by a château to deliver a given number of bottles, usually 12 or 18 months later, in return for payment at a certain price. Dealers⁶ take long positions by agreeing to buy the wine at the early price. The château takes the opposite short position by agreeing to sell the wine at the given price. The forward contract is settled when the château delivers the bottles to the holder of the long position. Bottles are then traded on the spot market at a price that may be different from the early price. Obviously, if the spot price is higher than the early price, then the holder of a long position makes a positive arbitrage profit. Dealers play the role of speculators in the market for Bordeaux grands crus.

Unlike the contracts traded on exchanges such as the Chicago Board

⁶According to Renvoisé (1994), there are 400 dealers in Bordeaux.
of Trade or the Chicago Mercantile Exchange, early contracts are quite informal. They do not call for delivery of a particular grade, do not allow substitutions at prearranged price differentials and sometimes are not even written. According to Renvoisé (1997, p.131),

...there is neither contract nor commitment, unless moral, between the owner of a château and the dealers. Forward trades are based on ancient business customs.

One might expect such features to develop mistrust against early release. On the contrary, the practice is now very common in Bordeaux, and has become more and more popular in many other areas such as Bourgogne, Alsace, Madiran, Crozes-Ermitage, Condrieu, Châteauneuf-du-Pape and Bandol.

Let us briefly survey the economic literature dealing with forward trading to enlighten the motivation for early trading in Bordeaux. Most studies show that it is generally beneficial for individual producers to use forward trading when it exists. One can expect the general motives of forward trading also to apply in the particular case of wines. The most widely accepted view is that forward contracts improve both risk and information sharing.

3.1 Risk sharing

First, as an insurance contract, early trading protects châteaux against future terms of trade. This argument, formalized by Newbery and Stiglitz
(1981) or Anderson and Danthine (1983) in a world of perfect competition, relies on the assumption that there is some heterogeneity in the risk-aversion of agents dealing with forward contracts. If this is the case in Bordeaux, then early contracts play the role of shifting risk from more risk-averse châteaux to less risk-averse dealers. Such a motivation for forward trading also holds with powerful producers. In Anderson and Sundaresan (1984), a risk-averse monopolist facing competitive speculators is better off taking short positions for the sake of hedging. Suppose this monopolist is a château in the Bordeaux area. Then early selling of wine leads to increase production, hence to lower the (spot) price of the bottled wine, and total welfare is improved. Newbery (1984) also shows that forward trading improves efficiency in a market dominated by a risk-neutral firm competing with a fringe of risk-averse firms. As a result, the fringe hedges against uncertain moves in prices or demand by selling forward contracts to the dominant firm. This result is not observed in Bordeaux despite the fact that the market structure seems very close to that in Newbery (19984): there is no evidence that top châteaux buy forward contracts on less famous châteaux.

3.2 Information sharing

Besides risk sharing, forward contracts also contribute to information sharing. Grossman (1977) addresses this point in a purely speculative model where some speculators are informed about prices in future states of the world, while
Asymmetric information among Bordeaux dealers provides incentives for uninformed speculators to collect information. Along this line, early prices can be viewed as statistics useful to reveal information about future conditions. In the same vein, Danthine (1978) analyzes forward prices as “signals” of the information available on the market. He discusses a model in which, unlike producers, speculators are never perfectly informed about future spot prices. One can consider that some dealers are given superior information about the future value of some market variables, for example demand and prices in Bordeaux spot markets, London auctions or New-York auctions. The behavior of these dealers when trading early is likely to convey information, provided that expectations are rational.

3.3 Forward trading as a signal of quality

In the same spirit, Mahenc and Meunier (2003) propose a new motivation for forward trading by emphasizing its role as a signal of quality. Dealing with an experience good that is sold first on a forward market and subsequently on a spot market, they show that forward trading improves the signaling efficiency of spot prices, although it cannot be itself an effective quality signal. They characterize an equilibrium in which forward trading is uninformative while spot prices correctly signal quality. Forward trading nevertheless contributes to lessen the signaling cost of quality through spot prices. To get this result, they consider a risk-neutral monopolist holding private information.
on quality, who is given the opportunity to make forward sales. Early release
of Bordeaux *grands crus* is the market structure that fits most closely their
model. A powerful château has private information on the quality of the
wine it is selling first to dealers and later to consumers on the spot market.
Dealers and consumers are assumed to be less informed on quality than the
château before the bottled wine is delivered. On the other hand, the early
contract and the spot price are both observable decisions, hence they both
are potential instruments for signaling quality. Therefore, châteaux have two
successive opportunities to reveal quality: through early releases when wines
are still in barrels and through spot prices when they are bottled. Having
neither insurance nor hedging motive for early trading, châteaux are nev-
ertheless better off selling early a part of their production. Early releases
cannot directly reveal true quality since an early contract provides a low-
quality château with speculative gains to the extent that it mimics the early
behavior of a higher-quality château. This in turn reduces the incentive to
mimic further on the spot market when selling the bottled wine. The intu-
ition is the following. On the forward market, contracts are sold at a price
based on buyers’ expectations of quality, which is higher than the price that
would prevail if the low-quality château were perfectly identified. On the
spot market, the low-quality château sets a price revealing its true quality
and gets a speculative profit from fulfilling the promise made on the forward
market. Indeed, it sells the quantity agreed upon at the previous stage at a

24
price higher than the fully revealing price. If the low-quality château were to mimic further on the spot market, it would lose this speculative profit. It follows that a high-quality château can reduce the price distortion necessary to fully reveal quality on the spot market. As a result, early releases play a crucial role, albeit indirect, in revealing information on the true quality of wine. This result tends to support the view that early trading should be encouraged in an industry with the aforementioned features, since it improves the efficiency of spot prices to signal quality. To sum up, early releases serve the same purposes as forward trading by allocating resources, risk and information in ways that may be socially beneficial.

3.4 Forward trading and competition on the market for bottled wine

Furthermore, Allaz and Vila (1993) claim that forward trading may increase social welfare even though there is no risk necessitating insurance or hedging. They investigate the case of a good produced by Cournot duopolists who are risk neutral, and hence have no incentive to hedge against price or quantity uncertainty. This does not prevent both firms to sell forward contracts in equilibrium. Consequently, production increases and spot prices decrease. Following this general result, a château might act in a strategic way by selling early contracts: early transactions are meant to give a château an advantage
over its competitors on the market for bottled wine. The motivation is not
to hedge or get insurance, but to commit on a particular level of production
in order to obtain a position of Stackelberg leader on the market for bottled
wine. Since all the châteaux have the same incentive to behave in such a way,
they all sell early wine but of course none of them gets the leading position.
Châteaux are trapped in a prisoner’s dilemma by the opportunity to trade
early. As a result, wine production is larger with than without early releases.
As competition gets fiercer on the market for bottled wine, social welfare
increases.

By contrast, forward trading is shown to raise spot prices when Bertrand
duopolists take long positions (see Mahenc and Salanié (2003)). According
to this result, a few Bordeaux châteaux might have an incentive to buy a
part of their own production forward in order to soften competition on the
market for bottled wine. Obviously, this would be detrimental to welfare.

4 Concluding comments

The early release of wine is a widespread practice among Bordeaux grands
 crus, which is deeply rooted in ancient business customs. At present, early
sales do not take place in a well-defined and easily recognizable market.
Clearly, an obstacle to achieving a proper forward market for Bordeaux wines
is the difficulty of designing and enforcing contracts for goods that are dif-
differentiated in so many characteristics: taste, quality, color, aroma, balance, aging potential, and so on. In particular, verifying that wine quality conforms to expectations may be very costly to the extent that quality involves sensory characteristics that are not easy to measure (see for example Combris, Lecocq and Visser (1997)).

Not surprisingly, market problems arise due to asymmetric information about quality between châteaux and buyers. On the one hand, when high-quality châteaux do not find it more profitable to reveal true quality than to conceal information, early prices fail to signal quality, hence higher quality is not correlated with higher price. On the other hand, when high-quality châteaux are better off revealing true quality, they distort early prices upward to prevent lower-quality châteaux from mimicking. The question whether such an overpricing is likely to be the source of substantial welfare loss is an empirical matter. Besides, another source of potential market failure is associated with the exercise of market power: if châteaux compete in price rather than quantity on the markets for bottled wine, early sales soften Bertrand competition on these markets, which is detrimental to welfare.

Nevertheless, the view that early sales yield inefficiencies should be tempered by considering their beneficial role in reducing risk and protecting châteaux against future terms of trade. Furthermore, even though early sales fall short of directly signaling quality, they can improve the signaling efficiency of prices on the market for bottled wine.
Finally, there is one caveat due to the scarcity of applied works on early sales: the above conclusions on the potential inefficiencies of early sales are mainly drawn from theoretical arguments. The reader should keep in mind that, for the time being, the only available empirical result is that buying early the top châteaux, especially the five First-Growth Médoc and Graves, is presumably a good investment.
References


Figure 1: The returns to early sales and the French stock market (CAC 40)
Figure 2: Early prices for 4 Médoc châteaux
Figure 3: Parker’s scores for 4 Médoc châteaux

Scores (January 2002)

Vintages

[Graph showing scores for Lafite, Latour, Margaux, and Mouton from 1980 to 2000]
Figure 4: Early prices for 3 Pessac-Léognan châteaux
Figure 5: Parker's scores for 3 Pessac-Léognan châteaux