



Purchasing French Oak Barrels

Fluctuating exchange rates
and dynamic discounting
drive ordering decisions

By Sarah Quintanar and Eric N. Sims

Every winery's goal is to maximize profit, which often comes in the form of minimizing cost. In some industries, it is straightforward to trim expenditures with a strong understanding of the product you are producing and its accompanying inputs and technologies.

However, in the wine industry, these decisions are increasingly complex given the choice between American oak and French oak, volatility in the exchange rate, limited resources of small wineries and the rising costs of oak barrels. This article focuses on French oak barrels and their complex purchasing options by utilizing data and systematically analyzing the choice of delivery and timing of payment for French oak barrels denominated in euros.

Though some coopers do offer invoicing in U.S. dollars at the time of commitment, euros remain the most popular method of payment. Wineries have the option to make barrel orders in advance of the industry norm with a discount from some suppliers (often called an "early delivery discount") or at a later time at full price. This purchasing choice depends not only on the early delivery discount, but since French oak barrels are purchased in euros, the timing of the purchase and exchange rate fluctuations over time also impact the real final cost.

Utilizing 15 years of price data for a specific custom-made barrel, this research analyzes purchase costs for the exact same style of barrel every year. Since 2001, winemaker Tim Mondavi of Continuum Estate in Napa, Calif., has purchased the custom Taransaud Ref 102

barrel. This barrel is specifically made for Mondavi and provides a reliable starting point for a long-term analysis to understand the cost of barrel purchasing. Using the exact same barrel style allows control of that variable and to focus only on exchange rate variation and timing of payment.

Many wineries face this decision, only with a bookkeeper

In order to consider the impact of exchange rates and early delivery discounts on costs, our analysis focuses on wineries within the United States, which produce approximately 10% of the world's wine. There are 7,496 bonded wineries in the United States and 3,062 in California, according to Wines Vines Analytics, with nearly 700 bonded wineries in Washington and 439 in Oregon.

A significant number of these wineries produce fine wines and use French oak barrels in the production process. French oak barrels represent 63% of all new barrel purchases, according to *Wine Business Monthly*, and the *Fédération des Tonneliers de France* reports that 170,000 barrels are exported annually to the United States. One almost universally agreed-upon component of fine wine is French oak barrels, which are expensive. For example, one Taransaud T5 barrel cost €1,500 in 2016.

Much of the complexity of purchasing barrels comes from staffing at a small winery. The professional staff of a 10,000-case winery typically includes a winemaker, viticulturist, salesperson and accountant. Large wineries that purchase French oak barrels could employ accountants or controllers to develop a



working knowledge of euro exchange rates and hedging strategies to be used in this annual transaction.

However, given the resource constraints regarding finance decisions for a typical winery, this level of staffing is impractical. Barrel decisions are a small part of an annual procedure where one employee or owner/wine-maker is responsible for many financial decisions. A simple and consistent tactic can be utilized by wineries without the resources to make an independent annual decision regarding when to pay for the barrels. Such a rule could be used annually to minimize costs.

Each year the *Wine Spectator* publishes an influential “Top 100 Wines of the Year” list. In 2016 the top five wines from around the world were, first: 2013 Lewis Napa Valley Cabernet (1,600 cases), second: 2014 Domaine Serene Oregon Chardonnay (2,000 cases), third: 2014 Beaux Freres Oregon Pinot Noir (2,405 cases), fourth: 2013 Chateau Climens Barsac France (1,417 cases), and fifth: Productori de Barbaresco Asili Italy (1,110 cases). These are all very small wineries, and we use these production sizes to inform our calculations below.

High-quality wines being produced at small production levels is not uncommon. A 228-liter (60 gallon) wine barrel holds 25 cases of wine. A high-end luxury cuvee of 1,000 cases of wine could require 40 new barrels per year, assuming 100% new oak. At €929 per Taransaud Ref 102 barrel (the price in 2016), 40 new barrels would cost the winery €37,160. Similarly, a larger winery producing 2,500 cases of wine could require 100 new barrels per year.

We assume a 2,500-case example for simplicity, which assures a certain level of limited financial resources but can also easily be scaled in size as appropriate. This assumption allows us to estimate the costs of 100 new French oak barrels in seeking a simple, repeatable tactic.

Wineries have a few options for how to purchase barrels. Tonnelleries (coopers) send out order forms in January and February for standard barrel delivery in August (and September payment). All prices are denominated in euros, generally with a discount for early delivery and payment. For example, Artisan Barrels & Tanks Inc.’s 2016 Pricing Catalog offered a “3% discount for all Rousseau barrel orders placed by April 1, 2016, and delivered by June 15, 2016. Net 30 days.” These types of discounts are “early delivery” discounts, while keeping in mind there is also an early payment component since the 30-day payment window follows the earlier

delivery date. The winery will receive the discount if their order is placed and paid for within 30 days of the earlier deadline.

Bouchard Cooperages, representing the coopers Billon and DAMY, grants a €50 per barrel discount (6%) for orders placed by April 15 and delivered by July 1. The standard for payment is, again, 30 days after delivery, though some leeway is allowed. Barrels are typically delivered at the end of summer, just before the grape harvest begins.

Given individual differences across coopers, we must make some simplifying assumptions, so we present costs for four basic delivery and payment options. The first is what we call the “standard”: delivery in August and payment in September (the ordering window ranges from late April to July). Alternatively, wineries could theoretically wait and order after the standard timeframe: order in August for delivery in September and payment in October.

Due to harvest timing, ordering after this time is very uncommon, except for wineries more focused on limiting excess barrels. This is what is called the “regular delivery, late payment” option. Conversely, if taking advantage of the early delivery discount, wineries could order by April 1 and pay immediately or pay 30 days after delivery (in our context, pay in April or September). These options are “early delivery, early payment” and “early delivery, standard payment.”

Note that there are two impacts on total cost: taking advantage of the early delivery discount and exchange rate volatility at time of payment. Our estimates assume a 5% early discount rate, a mid-range estimate for savings by early delivery orders.

Benefits beyond saving money

In addition to the financial advantage to purchasing early, there are non-financial advantages to buying barrels early. In February 2015 the nine-month labor conflict at U.S. West Coast ports between the Pacific Maritime Association and the International Longshore and Warehouse Union ended. Many barrels shipped to Long Beach, Oakland, Portland and Tacoma were not available for the 2014 harvest. This impacted California, Oregon and Washington wineries. The wineries that took early delivery in 2014 avoided the port strike.

Exchange-rate movements and early payment discounts

The analysis approaches this question in a specific real-world applied framework: utilizing barrel prices for the exact same barrel paid for by Tim



Mondavi of Continuum Estate from 2001 to 2016.

Barrel prices for Mondavi's Taransaud Ref 102 barrel over 15 years (see page 57) depict the movement of actual per-barrel prices paid by Continuum Estate. This barrel price is a proxy for many French oak barrels used in the U.S. wine industry, even when other wineries choose different barrel coopers, types, sizes or styles. Prices likely moved in the same direction during that time period. Second, the euro-dollar exchange rate must be considered over time to see how the foreign currency market impacts this decision strategy.

Exchange rate fluctuations matter. For example, as the U.S. dollar increases in value, American wineries can purchase French oak barrels for less in real terms. If the exchange rate is \$1.50 per euro in April, and in September the rate is \$1 per euro, the winery would prefer to make its purchase in April because it would spend fewer real U.S. dollars for the same "price" in euros. There is uncertainty involved in this decision as well, since it is unknown how the exchange rate will change over time.

The dollar-to-euro exchange rate over time depicts the exchange rate over our sample time period. Year-to-year variations in the exchange rate during the sample time period are evident: The dollar became weaker in the early 2000s, though currently it is almost nearly the same as in April 2000. As the dollar strengthens, it requires fewer dollars to buy one euro. This creates a counter-effect in terms of costs over time: Although the barrel price in euros has increased, the dollar is stronger, and thus total costs for wineries could potentially have decreased over time. The question, therefore, is does the dollar follow a predictable pattern in relation to the timing options for purchasing wine barrels?

It is important to note that, unlike other goods and services, the price of barrels does not change throughout the year: The "catalog" price and quoted discount are constant during a given year. In discussions of purchasing, especially for wine barrels, storage costs are significant. However, in some options we consider storage costs do not differ by taking the early order discount, and for simplicity we do not consider additional storage costs for the others.

The 15-year history of wine barrel costs by purchasing decision (this page) depicts the annual costs to a hypothetical winery that purchased 100 Taransaud Ref 102 oak barrels at Tim Mondavi's price. Note that no single strategy is always optimal from year to year; however, the discounted price tends to be significantly lower

than other options—sometimes with payment in September being better overall and in others early payments in April. This is likely easier to see in chart form, as presented in the table on page 60. Late payment in October provided a better outcome only one year out of the 15 years, while overall savings compared to the standard delivery and payment option for both early discount options was more than \$78,000.

It is worth recasting the entire question. When purchasing euro-denominated barrels, a winery that does not take the early discount is betting that the exchange rate will fall (it will require fewer dollars to purchase one euro) more than the cost impact of the early purchase discount. The graph "Fifteen-Year History of Winery Barrel Costs by Purchasing Decision" shows that, historically, this belief has been a bad bet. There is real value in the certainty of the early discount. One can cite the 1546 proverb: "Better one byrde in hande than 10 in the wood."

To provide a more comprehensive estimate, the table provides calculations for the total cost of each tactic over 15 years. The first row presents estimated cost differences compared to a winery that selected the standard payment option all 15 years. A winery that selected regular delivery and late payment (in October) would have spent \$6,221.31 more than a similar winery selecting regular delivery and payment in September.

The results for payment in both September and October are included because French oak barrel invoices are typically due in one of those two months. The table illustrates the huge advantage, over time, to order early and receive the benefit of the early delivery discount: Wineries would have saved either \$78,874.82 by payment in April or \$78,309.99 by payment in September.

Given the cost savings from the early delivery discount, when should a winery pay? The cost difference between payment in April or September, as shown in the first row, cumulative over 15 years of purchasing, is not significantly different, though year-to-year differences do exist. This choice likely differs by winery based on their own storage costs and cash flow. Space can be tight (as well as cash) in the spring and summer. The savings are significant for those wineries that make room for the next-vintage barrels.

In 2016, each barrel utilized by Continuum Estate cost €929. If the winery had followed our purchasing rule to order early and pay in September, based on the previous 15 years of data (assuming purchase of 100 barrels), the



winery would have saved about \$5,000 in one year alone. This is a savings of approximately 5% in barrel costs.

Additional relevance of early payment benefits

Demand for high-quality wine barrels far exceeds supply. French oak forests and tree-felling permits are limited, and the three- to five-year seasoning process disconnects current supply and demand. On top of increasing fine wine demand, use of American oak continues to increase. For example, American oak aging is becoming more common in whiskey and bourbon. As demand for American oak increases in these industries, it will drive up the price of American oak barrels, also increasing demand for French oak and making this type of analysis even more relevant.

In a perfect world, and most likely the case in large wineries, the following occurs: Winemakers submit barrel purchase orders to Accounts Payable in March or later. The winery buys a forward contract with their international bank for delivery of euros in September. The contract costs some percentage of the total amount purchased forward. Winery personnel then bird-dog the coopers to confirm the invoices all come due about the same time in September, or later.

The winery takes delivery of euros in September or later to pay the coopers with those forward-purchased funds. In reality, winemakers change their orders (a couple of times), and invoices never come due close to the same date. Thus, the payment process becomes very complex at the end.

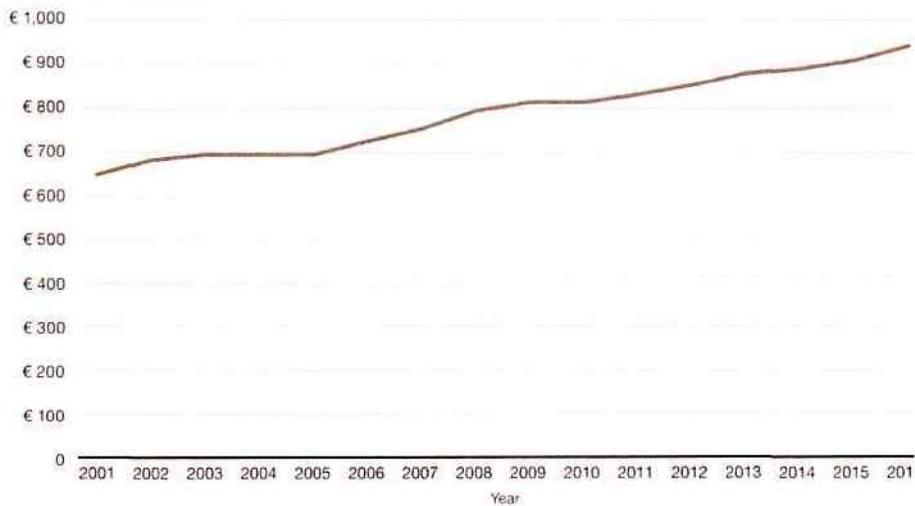
In theory, one would hypothesize the right thing to do is to manage the finances of a small winery in such a way as to imitate larger wineries. Knowing financial right from wrong led to this article. What was the hedging cost to a small winery? As it turns out, between 2001 and 2016, not hedging coupled with early payment discounts was the financially prudent strategy. It is certainly the easiest tactic to implement. 🍷

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The references for this article are available
at winesandvines.com/features.

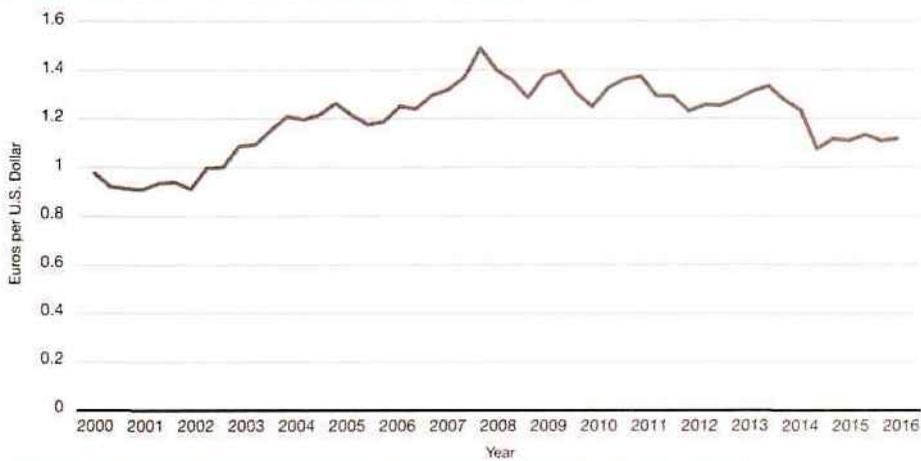


PRICE (IN EUROS) FOR TARANSAUD REF 102 BARREL OVER 15 YEARS



The price of French oak barrels, regardless of currency, has increased steadily over the past 15 years.

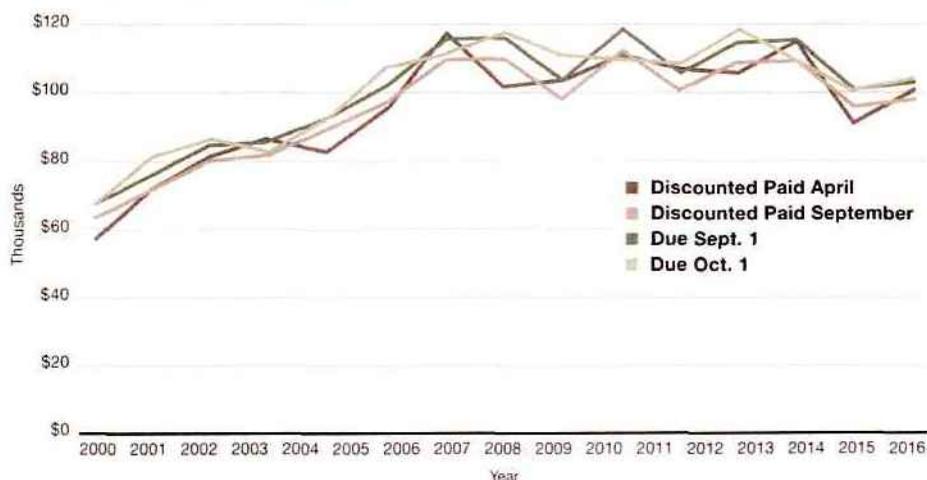
DOLLAR TO EURO EXCHANGE RATE OVER TIME



The volatility of the dollar/euro exchange leads many wineries to hedge their barrel purchases.



FIFTEEN-YEAR HISTORY OF WINE BARREL COSTS BY PURCHASING DECISION



The lines indicate each scenario for barrel ordering and payment analyzed in the text.

COSTS BY BARREL ORDERING AND PAYMENT DECISION

	Barrel Price in Euros	Regular Delivery, Standard (Sept.) Payment	Regular Delivery, Late (Oct.) Payment	Early Delivery, Early Payment (April Payment with Discount)	Early Delivery, Standard Payment (Sept. Payment with Discount)
Total savings compared to standard payment			(\$6,221.31)	\$78,874.82	\$78,309.99
2001	€ 657	\$59,603.04	\$59,951.25	\$54,750.44	\$56,622.89
2002	€ 688	\$67,568.48	\$67,843.68	\$57,425.30	\$64,190.06
2003	€ 700	\$76,755.00	\$81,697.00	\$72,425.15	\$72,917.25
2004	€ 700	\$85,176.00	\$86,891.00	\$81,928.00	\$80,917.20
2005	€ 700	\$86,716.00	\$83,531.00	\$86,177.35	\$82,380.20
2006	€ 728	\$93,307.76	\$92,346.80	\$83,427.71	\$88,642.37
2007	€ 754	\$102,785.28	\$107,309.28	\$95,740.66	\$97,646.02
2008	€ 792	\$115,798.32	\$111,521.52	\$117,825.84	\$110,008.40
2009	€ 810	\$115,943.40	\$117,765.90	\$101,927.97	\$110,146.23
2010	€ 810	\$103,680.00	\$111,180.60	\$103,636.26	\$98,496.00
2011	€ 826	\$117,994.10	\$110,081.02	\$110,964.43	\$112,094.40
2012	€ 846	\$106,418.34	\$108,939.42	\$107,044.80	\$101,097.42
2013	€ 870	\$114,596.40	\$117,919.80	\$106,122.60	\$108,866.58
2014	€ 880	\$115,412.00	\$110,906.40	\$115,284.40	\$109,641.40
2015	€ 898	\$100,899.28	\$100,153.94	\$91,750.91	\$95,854.32
2016	€ 929	\$103,546.34	\$104,382.44	\$100,893.12	\$98,369.02

Total payment in euros for each option is presented. The cheapest option for each year is shown in **bold**.

We assume wineries select one consistent method of payment for the entire time period, and the savings should be compared to the base payment option presented in the "Standard (Sept.) Payment" column.