Agricultural and Resource Economics
ARE UPDATE

Giannini Foundation of Agricultural Economics, University of California Vol. 22, No. 4 Mar/Apr 2019

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The Soaring Eagles: California's Flagship Wines on Global Secondary Markets

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California's flagship wines have been ascendant: accounting for inflation, prices on the world market for super premium wines have doubled over the past 15 years. Nearly half of the growth occurred within the last two years. A combination of climbing expert scores and surging exports, especially to China, have led to an extended period of demand outstripping supply. These conditions look likely to persist.

The cornerstone varietal of the flagship wines, and arguably California as a whole, is cabernet sauvignon.

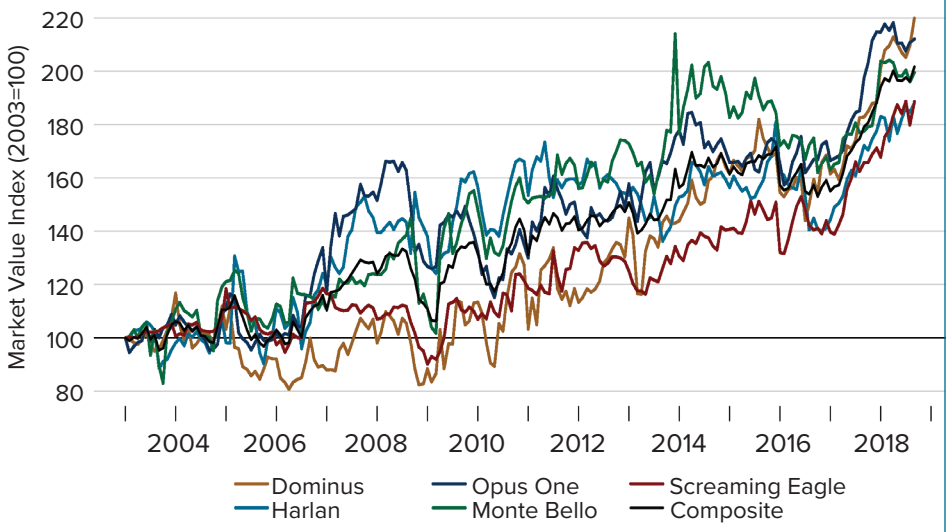
For $1,050 per bottle, the fortunate few who received an invitation to buy the 2016 Screaming Eagle release will soon have much *heavier* wallets: one month later it trades for over $3,000. The inaugural 1992 vintage, then released as one of California's most expensive wines at $75, now trades for over $6,300.

When Jean Phillips named the wine from her 1-acre plot of 80 cabernet sauvignon vines, "Screaming Eagle," she could hardly have imagined how high its prices would soar. The name might also apply to California's flagship wines more generally. Their market value has soared, more than doubling in real terms since 2003. Almost half of that ascent has occurred in the last 18 months.

Wine is one of California's most important agricultural products. Retail sales of California wines in the U.S. were worth an estimated $35.2 billion in 2017. There are 600,000 acres planted to wine grapes, with production in 49 of the state's 58 counties. Wine is one of the state's top-three agricultural export products to the European Union, China/Hong Kong, and Canada—California's three largest destination markets. California exported $1.4 billion of wine to over 130 countries in 2017, accounting for 91.5% of the total U.S. wine export value.

Flagships exert immense influence on a wine region's collective reputation. California is a leading example of their heft. Wines from the New World were second-class citizens until two (then unheralded) California wines outperformed their French counterparts in the 1976 Judgment of Paris tasting. Reputation is paramount because wine is an experience good—the consumer is uncertain about a wine's characteristics, quality, and ultimate utility until it is consumed—and the wine shopper faces a multitude of readily available options, many of which appear indistinguishable. Collective reputation generates regional price premiums and spillovers, such as tourism. According to the Wine Institute, wine attracted as many as 23.6 million visitors to California and $7.2 billion in expenditures in 2017.

Figure 1. Market Value Index of California's Flagship Red Wines



Source: Author calculations based on data provided by Liv-Ex, www.liv-ex.com.

Notes: Indices use prices from exchanges on global secondary markets collected by Liv-Ex through member auction houses and distributors. Each index represents a portfolio of vintages from 1993 onwards, with vintages added to the portfolio five years after their release. Older vintages receive less weight as determined by an "S"-shaped hyperbolic transformation. The composite index is an equally weighted index of the five component indices.

Figure 1 illustrates the real market value for a composite index of California's flagship wines, which doubled from January 2003 to September 2018. The index is composed of five components: Screaming Eagle (average market value for standard 750mL bottle of the 2013 vintage: $3,012), Harlan Estate ($1,420), Dominus ($349), Opus One ($327), and Ridge Monte Bello ($209).

These five iconic wines are the most actively traded California wines on global secondary markets. So that no individual vintage dominates the index, it incorporates prices for all available vintages from 1993 to 2013, with older vintages receiving relatively less weight in the index composition to reflect their increasing scarcity (if older vintages received equal weight, returns would be higher). New vintages are added to the index five years after their release at their market price (if purchased at release, returns would be higher, much higher, for Screaming Eagle).

The composite index realized an average annualized return of 4.57%, with low volatility and weak correlation to stock markets. Over the last two years, the annualized return was 13.14%. The composite index fell below 100 for only 13 of 189 months, last in April 2006. Negative monthly returns were experienced in only 74 of 189 months. Monthly returns for the component wines are relatively weakly correlated, so pooling them into the composite index reduces the volatility of returns: the monthly return standard deviation ranged from 3.48% to 5.77% for the flagship components, compared to 2.96% for the composite index.

Strong growth in the market value of California's flagship wines raises two questions. First, what supply and demand factors have led to price increases? Second, will prices continue to rise?

Changes in Supply

The cornerstone varietal of the flagships, and arguably California as a whole, is cabernet sauvignon. In the broader context of Napa cabernet production, supply has increased substantially. Bearing cabernet vines increased from 9,294 acres in 1993 to nearly 21,000 acres in 2017; during that period, cabernet rose from less than one-third of all (red and white) vines in Napa to nearly one-half. At the same time, average yields remained relatively flat. Oenophiles often use yields as a proxy for quality, suggesting quality was not compromised by expansion. Overall, Napa cabernet production has doubled since 1993.

What about flagship production? It is harder to say conclusively because Opus One and Screaming Eagle do not disclose production information; however, indicators suggest the flagships also increased production, perhaps by even more than double. Figure 2 illustrates a production index that proxies for the production of the flagship wines. It is constructed by supplementing data from Dominus, Harlan, and Ridge with three other prestigious cabernet-based wines: Scarecrow (current market value for 2013 vintage: $944), Araujo Eisele Vineyard ($569), and Larkmead Solari ($224).

From 1993–2015, the production index more than tripled. Despite the extended drought, the 2015 vintage produced more than twice as much as 2003. Circumstantial evidence on Screaming Eagle production, based on approximate production levels published by its distributors, is largely consistent with this index: between 130–175 cases were produced in the mid-1990s, whereas current production is between 400–750 cases.

Also note the Global Wine Score (GWS) accompanying the production index in Figure 2. GWS provides an overall metric for wine quality by standardizing and aggregating reviews in publications such as *Robert Parker's The Wine Advocate* and *Wine Spectator*. The GWS suggests increasing production levels occurred without compromising quality.

The evidence is consistent with flagship supply increasing (perhaps significantly). All other things equal, increased supply implies *lower* prices. Thus, higher demand is the likely cause of the price increases in flagship wines.

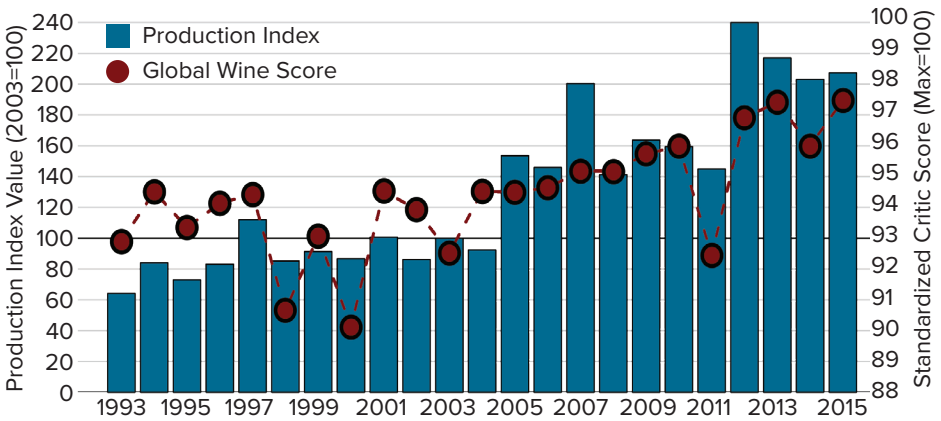
Changes in Demand

National consumption trends—wine consumption increased 31% in units of alcohol since 2002 but expenditures per unit have not kept up with inflation—provide little insight into the demand for luxury wines. Two other barometers of demand better explain the ascent in prices: quality scores and export demand.

Start with quality as measured by critic scores. Figure 2 includes the average GWS for the five flagship wines over the 1993–2015 vintages. In the first 12 vintages, one vintage was moderately poor (2003) and two vintages were exceptionally poor (1998 and 2000). Indeed, 1998 was so challenging that Harlan lost more than half its crop; similarly, Screaming Eagle did not release any wine in 2000. In contrast, none of the most recent 11 vintages were exceptionally poor. Only one (2011) was moderately poor. Overall, critic scores for the flagship wines have realized a noticeable upward trend: over the 23 vintages, average scores increased from 92.4 to 96.3, nearly four points.

Higher critic scores can significantly increase market value. GWS predicts most of the variation in prices of the flagships. All other things equal, the average score increase from 1993 to 2015 translates to a 42.7% increase in real prices. When scores are high, even small improvements rapidly increase prices: one more point would increase prices a further 44.2%. Undoubtedly the increase in critic scores has played a large role in increasing demand and doubling the real market value of the flagships since 2003.

Figure 2. Estimated Flagship Production and Quality, Vintages 1993–2015



Source: Production index is calculated by author based on data collected from corresponding winery websites. Standardized critic scores were scraped with permission from Global Wine Score (GWS), www.globalwinescore.com/.

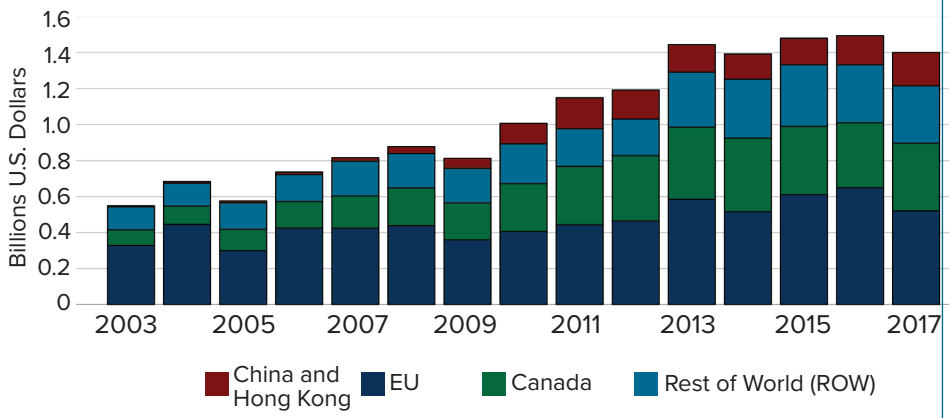
Notes: Each bar of the production index represents the volume of production relative to the 2003 vintage. Intermittent missing data were interpolated. Each GWS point is the average GWS evolution score of the five flagship wines corresponding to that vintage, excluding wine-vintage pairs which were not released (e.g., Screaming Eagle 2000).

At the same time, export demand has grown dramatically, as shown in Figure 3. Prior to 2003, the value of California wine exports was less than $500 million (M). By 2010, exports had exceeded $1.0 billion (B). Export value peaked at $1.5 B in 2016 before retreating slightly to $1.4 B in 2017. While it is hard to precisely measure the impact of export demand on flagship prices, increased export demand translates to higher total demand and hence higher prices.

The composition of export demand growth is also noteworthy. Export demand to the European Union grew at an average annual rate of 3.3% on a large base, accounting for 37.2% of all California wine exports in 2017. The second largest market, Canada (26.8% of 2017 exports), has grown at an outstanding 10.3% annual rate since 2003. However, by far the fastest rate of growth has been in exports to China and Hong Kong.

Prior to 2003, exports to Chinese markets were less than $2 million (M). From 2003 to 2017, the average annual growth rate was a staggering 25.8%. Exports to China first exceeded $100 M in 2010; in 2017, they exceeded $185 M, accounting for over 13.2% of all California wine export value. Despite the dip in exports to all destinations, exports to Chinese markets grew 14.1% from 2016 to 2017. With its fervent and growing demand for luxury wines (the basis

Figure 3. Annual Exports of California Wine by Destination, 2003–2017



Source: California Agricultural Issues Center Export Reports, 2003–2017.

Table 1. Sotheby's Auction Lots by Location and Region, 2017–2019

Region	Share of Lots	
	Hong Kong	New York
Bordeaux	37.1%	36.9%
Burgundy	41.1%	27.7%
All France	90.8%	72.7%
United States	2.1%	15.8%
Rest of World	7.1%	11.5%

Source: Sotheby's Auction Results, Hong Kong, www.sothebys.com.

Note: Calculated based on the number of lots in auctions held in Hong Kong and New York with at least one item from the respective region. Includes lots from January 2017 to April 2019.

of the *Red Obsession* documentary), Chinese markets will continue to be increasingly influential on world markets for luxury wines.

Will Prices Continue to Rise?

California's luxury wine industry faces a number of salient risks; wine is, after all, an agricultural product. Smoke contamination will prevent Screaming Eagle from releasing its 2017 vintage. Pierce's disease, which spreads quickly and can kill vines within two years, is aggravated by warmer winters. To the extent these risks are idiosyncratic, they won't hamper the long-term trajectory of prices, and systemic risks can be at least partially mitigated through innovation and resources.

The largest risk is California's tenuous standing in China, where French wines reign supreme. Table 1 demonstrates French supremacy: over 90% of lots listed for auction at Sotheby's Hong Kong included at least one French wine. In contrast, U.S. wines were included in just over 2% of lots, one-seventh of their share in auctions held in New York.

The prestige, precision, and history of French wine has always epitomized the Chinese ideal of wine more than California's maverick, opulent persona. But California has largely failed to elevate its reputation in Chinese markets above wine from other regions—Australia, Argentina, Chile, and increasingly China itself. Lower standing entails a more fragile market position.

Over and above the transitory reduction in exports, the trade war with China (unresolved at the time of writing) is straining this fragile position. As reputational dents tend to persist, damage from a trade war could have long-term repercussions on California's collective reputation in increasingly essential and influential Chinese markets. Even if California eludes these damages, more work is required to burnish its collective reputation in China.

That being said, there are many reasons to bet on a bright future for California's luxury wines. Even if the growth rate is halved, California exports to Chinese markets would exceed $300 M in four years. While it will be increasingly difficult to attain higher scores as the upper bound gets closer, even small score increases translate to large price increases. My analysis suggests that increasing from the current average score of 96.3 to 97.3 would increase prices 44.2%.

In many important markets, California remains held in the highest-esteem. This prestige partially insulates the flagships from otherwise capricious markets: wine enthusiasts prefer variety, so while the industry is competitive, it is far from winner-take-all; hard-won reputations are nearly impossible for new entrants to mimic; and the playbook for expanding production without compromising reputation via second wines (e.g., Second Flight for Screaming Eagle) or labels (Jonata and The Hilt) is well-known. The flagship wines have wide stylistic appeal, implying they are less vulnerable to the whims of changing taste and fashion.

Will prices continue to rise? As long as the flagships maintain their reputation, demand will not subside. To the extent their reputation grows in China, demand will expand. At some point, likely soon, production constraints will start to bind. The eagles look set to continue their ascent for the foreseeable future.

Suggested Citation:
Tolhurst, Tor N., "The Soaring Eagles: California's Flagship Wines on Global Secondary Markets." *ARE Update* 22(4) (2019): 1–4. University of California Giannini Foundation of Agricultural Economics.

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For additional information, the author recommends:

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