

Price, Promotion and Profits

Moving pricing and promotion decisions from 'back of envelope' guesses to quantifiable metrics allows wineries to compete more effectively.

Steven S. Cuellar and Dan Karnowsky

ON THE BUSINESS side of the wine industry, wineries are often consumed with three issues: distribution, pricing and promotion. While these may appear to be three very different concerns, they are inextricably connected. For example, distributors will tell you that price is one of the single most important factors in achieving the widest possible distribution. Once on the shelves, however, each wine must fight for consumers. This is when questions regarding promotion arise. How much should you spend on promotion? When is the best time to promote? What is the best price promotion combination? These are a few of the questions wineries must ask themselves when deciding how best to allocate resources towards the marketing of their wines. Like all investments, wineries want to maximize their return on promotion.

These issues are especially important in the wine industry where domestic wine producers face competition from an increasing number of foreign and domestic producers. This point was emphasized at a recent wine industry seminar in early 2008, where a panel member stated that a new winery opens in California each day. Likewise, at another symposium in 2007 on wine industry trends, a representative from **The Nielsen Company** showed that much of the proliferation of SKUs in the wine industry comes from existing brands creating new SKUs in an

attempt to attract new consumers. More wineries producing more SKUs underscores the fact that each brand must fight to differentiate itself from its competitors. While pricing is vital in such highly competitive markets, firms also rely on promotional activities to differentiate their products from competitors.

Because of the importance and prevalence of promotion in the wine industry, measuring its impact is a main concern. There are a variety of ways in which this is attempted. One way to measure the effect of promotion on sales and revenue is to compare sales and revenue before promotion with sales and revenue after promotion. Alternatively, you could compare sales and revenue in one market where promotion occurred with sales and revenue in another market where no promotion occurred. Neither of these methods, however, properly accounts for any change in price that may have occurred.

PROMOTED VERSUS NON-PROMOTED WINE SALES

To illustrate the importance of accurately measuring the effect of promotion, we examine promoted and non-promoted price and cases sold of a high volume California Cabernet Sauvignon in the \$7 to \$10 price point. The data used is monthly scan data, where promotion is defined as one of four types: (1) Features, which include

such things as mailers and newspaper advertisements, (2) In-store displays, (3) A combination of features and displays, (4) Temporary price reductions of 5 percent or more. For the purpose of this article, we only distinguish between promoted and non-promoted price and sales.

To begin with, **TABLE 1** shows that the average monthly sales of promoted wine are 8,066 cases while the average monthly sales of non-promoted wine are 5,593 cases. A simplistic, albeit common, method of comparing promoted with non-promoted sales indicates that promotions result in a 44 percent increase in sales and revenue. However, this calculation is wrong because it fails to account for the price difference between promoted and non-promoted sales and grossly overstates the effect of promotion.

The purpose of this article is, first, to provide a brief analysis of how pricing and promotion interact to affect sales and revenue; second, to show how to accurately measure the effects of pricing and promotion; and finally, to show how wineries can use this infor-

mation to maximize the effectiveness of pricing and promotion decisions.

WHAT THE DEMAND FOR YOUR WINE REPRESENTS

The first step to understanding and analyzing the effect of promotion is to consider how promotion affects sales and revenue. The goal of promotion is to attract consumers and convince them to buy your wine over another's. Since promotion affects the demand for your wine, it is important to have a firm understanding of what the demand for your wine represents. To illustrate how promotion affects sales and revenue, we estimated the demand function for the same high volume California Cabernet Sauvignon mentioned above. A simplified representation of the demand for this wine is shown in **FIGURE 1**. The demand curve demonstrates the familiar inverse relationship between price and units sold, known in economics as the Law of Demand: The higher the price, the lower the quantity sold; the lower the price, the greater the quantity sold.

Table 1:

	Average Price	Average Monthly Cases
Non-Promoted	\$9.73	5,593
Promoted	\$8.63	8,066

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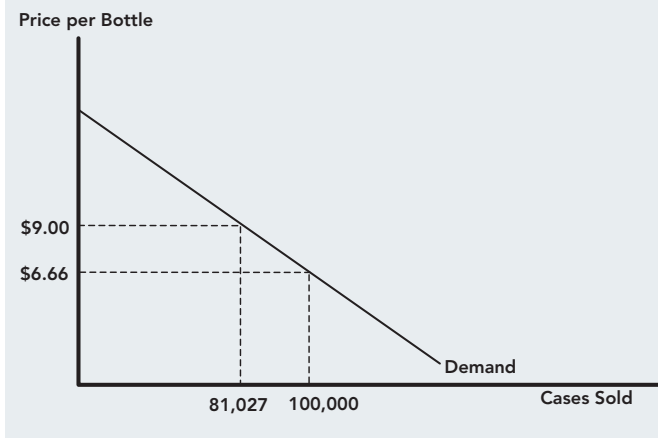
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Figure 1:



PRICING DECISIONS: HOW MUCH SHOULD YOU CHARGE?

While the law of demand may seem like nothing more than common sense, the real value of a demand curve is the ability to answer two vital questions: The first question directly relates to pricing by answering the question, "What is the maximum price I can charge?" More specifically, for any given quantity, the demand curve tells you the maximum price you can charge and still sell all units.

For example, suppose this winery wanted to sell 100,000 cases of wine per year. According to the demand function, the maximum price it could charge is \$6.66 per bottle.

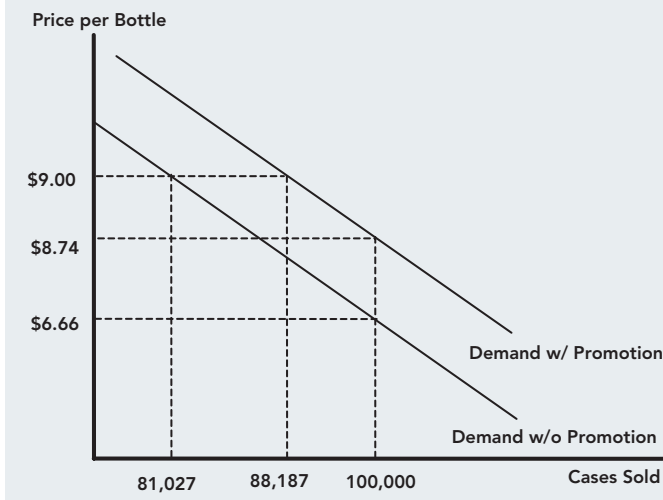
Clearly meeting a sales target of

100,000 will require this winery to lower price below its desired price point. This example illustrates the importance of having a quantifiable estimate of the relationship between price and quantity in the wine industry where, once grapes are picked and wines are produced, wineries are left with a fixed quantity of wine and thus face the question of not how much to produce but how much to charge.

PRICING DECISIONS: HOW MUCH WILL YOU SELL?

The second, equally important question answered by the demand function is: "How many units will I sell?" More specifically, once price is set, the demand curve will tell you how many

Figure 2:



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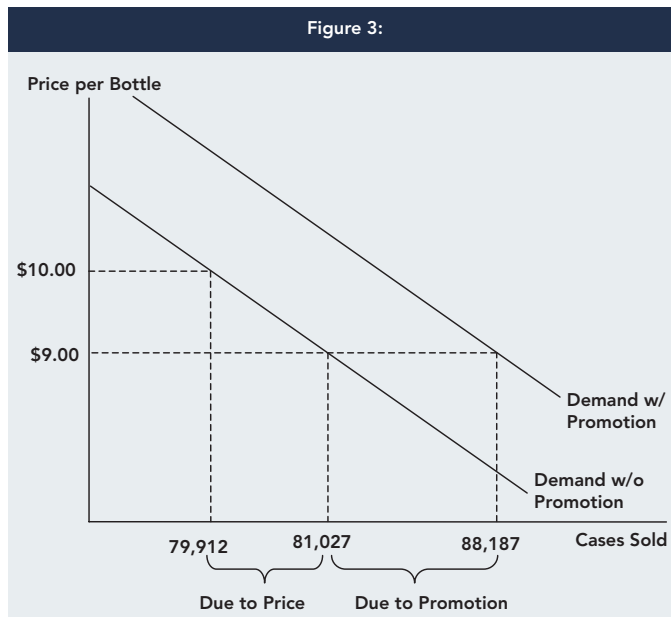
units you can expect to sell at that price. Again, using this same Cabernet Sauvignon, if the winery instead wanted to maintain a price point of \$9 per bottle, the estimated demand function predicts that approximately 81,027 cases of wine would be sold. This again is extremely important in the wine industry where wineries generally have a target price point from which they expect to sell.

Once the relationship between price and quantity is understood, you could now analyze the effect of promotion on sales and revenue. Conceptually, the goal of promotion is to increase the demand for your product. What exactly does this mean, however? We can represent the effect of promotion graphically by shifting the demand curve in **FIGURE 1**. This is shown in **FIGURE 2** and illustrates the interdependence between price and promotion. If promotion is effective, once the demand curve has shifted, the pricing decisions facing the

wineries have changed. First, they can raise the price of the current output level. For example, to sell 100,000 cases without promotion, the maximum price the winery could charge was \$6.66 per bottle. With promotion, the maximum price the winery could charge rises to \$8.74. Alternatively, they could sell more at the current price. For example, at \$9 per bottle, 81,027 cases were sold in the absence of promotion. With promotion, however, at the same price of \$9 per bottle, 88,187 cases are predicted to be sold.

Clearly, promotion has a significant impact on the price that can be charged and the number of units that can be sold. Understanding and quantifying the impact of promotion can provide wineries with valuable and actionable information. However, because most wineries engage in some combination of price change and promotion, measuring the individual effect of promotion is difficult.

Figure 3:



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MEASURING EFFECTS OF PROMOTION

To see this, **FIGURE 3** shows an effective promotional campaign combined with a price reduction. If price is initially set at \$10 per bottle, 79,912 cases will be sold. Now, if the winery effectively promotes its wine while also lowering price to \$9, the total number of cases sold will increase to 88,187. This results in a total increase in sales of 8,275 cases. However, because the price reduction occurs simultaneously with the promotion, the total increase in sales is often erroneously attributed to the promotional efforts alone. As a result, the effect of promotion on sales is overstated, which will lead to an overstatement of the return on investment from promotion. Decisions based on such metrics could be costly. To accurately measure the effect of promotion on sales and revenue, you need to disaggregate the effect of price from the effect of promotion and identify that

Table 2:


	Cases Sold		Revenue		Promotion Effect	Price Elasticity	
	Non-Promoted	Promoted	Non-Promoted	Promoted	%Change	Non-Promoted	Promoted
January	8,813	9,410	\$951,814.94	\$1,016,258.22	6.77	0.69	3.59
February	6,727	7,324	\$726,516.53	\$790,959.81	8.87	0.90	4.61
March	6,967	7,564	\$752,414.92	\$816,858.19	8.56	0.87	4.46
April	6,498	7,095	\$701,821.21	\$766,264.48	9.18	0.94	4.76
May	6,138	6,734	\$662,854.69	\$727,297.97	9.72	0.99	5.01
June	5,928	6,525	\$640,240.52	\$704,683.80	10.07	1.03	5.17
July	5,655	6,252	\$610,780.46	\$675,223.73	10.55	1.08	5.40
August	5,745	6,341	\$620,433.63	\$684,876.90	10.39	1.06	5.32
September	6,231	6,828	\$672,938.81	\$737,382.08	9.58	0.98	4.94
October	6,221	6,818	\$671,875.52	\$736,318.80	9.59	0.98	4.95
November	7,066	7,662	\$763,087.16	\$827,530.44	8.45	0.86	4.40
December	9,038	9,635	\$976,142.74	\$1,040,586.01	6.60	0.67	3.50
Annual	81,027	88,187	\$8,750,921.13	\$9,524,240.44	8.84	0.92	4.68

portion due to price (1,115 cases) and that portion due to promotion (7,160 cases).


While illustrating the correct way to analyze the effect of price and promotion on sales is easy, actually doing so

in practice is not. To quote **Steve Jannicelli**, business consultant with **Moss Adams LLP**, "Quantifying the effectiveness of marketing has been as elusive as it is important." As a result of these difficulties, wineries have had


to rely on faulty metrics or no estimates of the true effect of promotion. As the previous analysis shows, a more accurate way of measuring the impact of promotion is through demand estimation. This allows wineries to over-




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come the problems associated with the other techniques described and produce reliable pricing and promotion metrics that can be used to help wineries to make accurate and informed decisions.

To answer the question, "What is the effect of promotion on sales?" **TABLE 2** contains a summary of our econometric results at a price of \$9 per bottle. For comparison, **TABLE 2** provides estimated monthly cases sold along with the associated revenue with and without promotion as well as the percentage increase in revenue due to promotion. From **TABLE 2**, you can see that, on average, the effect of promotion at a price of \$9 is to produce an approximately 9 percent increase in annual sales. This represents the pure increase in sales and revenue due solely to promotion independent of the \$9 price and is significantly lower than the 44 percent increase in sales due to promotion calculated earlier.

Table 3:

	Cases Sold		Revenue		Promotion Effect		Price Elasticity	
	Non-Promoted	Promoted	Non-Promoted	Promoted	%Change	Non-Promoted	Promoted	
January	9,151	11,285	\$933,424.91	\$1,151,050.63	23.31	0.63	2.82	
February	7,065	9,199	\$720,643.07	\$938,268.80	30.20	0.81	3.47	
March	7,305	9,439	\$745,102.66	\$962,728.38	29.21	0.79	3.38	
April	6,836	8,970	\$697,319.71	\$914,945.43	31.21	0.84	3.55	
May	6,476	8,609	\$660,518.00	\$878,143.72	32.95	0.89	3.70	
June	6,266	8,400	\$639,160.17	\$856,785.90	34.05	0.92	3.79	
July	5,993	8,127	\$611,336.78	\$828,962.50	35.60	0.96	3.92	
August	6,083	8,216	\$620,453.66	\$838,079.38	35.08	0.94	3.88	
September	6,569	8,703	\$670,041.89	\$887,667.61	32.48	0.88	3.66	
October	6,559	8,693	\$669,037.68	\$886,663.40	32.53	0.88	3.67	
November	7,404	9,537	\$755,182.00	\$972,807.72	28.82	0.78	3.34	
December	9,376	11,510	\$956,401.16	\$1,174,026.88	22.75	0.61	2.77	
Annual	85,085	110,688	\$8,678,621.70	\$11,290,130.35	30.68	0.83	3.50	

WHEN PROMOTION IS MOST EFFECTIVE

Consider next the question: "When should I advertise?" To answer this, we separate out the seasonal effects of wine demand and show how the effect of

promotion varies throughout the year. This allows us to see when promotion has its biggest effect. From **TABLE 2**, you can see that the effect of promotion clearly varies throughout the year, ranging from a 6.6 percent increase in

December to a 10.55 percent increase in July. To further illustrate the seasonal variation of wine demand, we provide estimates of the price elasticity of demand for both the promoted and non-promoted demand curves at the

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Table 4:

	Non-Promoted			Promoted		
	Price	Cases	Revenue	Price	Cases	Revenue
January	\$11.02	7,447	\$984,461.38	\$5.75	21,597	\$1,491,419.30
February	\$9.47	6,409	\$728,628.93	\$5.48	20,524	\$1,348,778.99
March	\$9.65	6,527	\$755,939.28	\$5.51	20,651	\$1,365,068.17
April	\$9.30	6,295	\$702,930.71	\$5.45	20,408	\$1,333,679.01
May	\$9.04	6,110	\$662,715.52	\$5.40	20,234	\$1,310,672.68
June	\$8.88	6,009	\$640,576.73	\$5.37	20,137	\$1,297,650.18
July	\$8.68	5,872	\$611,705.35	\$5.33	20,015	\$1,281,003.19
August	\$8.75	5,914	\$620,775.88	\$5.35	20,029	\$1,284,787.93
September	\$9.11	6,157	\$672,820.04	\$5.41	20,290	\$1,317,322.94
October	\$9.10	6,153	\$671,934.46	\$5.41	20,280	\$1,316,364.29
November	\$9.72	6,579	\$767,669.26	\$5.52	20,712	\$1,372,396.07
December	\$11.18	7,564	\$1,015,053.71	\$5.78	21,710	\$1,507,030.32
Annual	\$9.49	77,037	\$8,835,211.25	\$5.48	246,588	\$16,226,173

price of \$9. Interestingly, we see that the price elasticity of demand is significantly greater for the promoted demand function than for the non-promoted demand function. This makes sense since one goal of promotion is to

make consumers more aware of the product, wine in this case, and to induce the consumer to purchase the wine.

While the above analysis shows that at a price of \$9, the effect of promotion

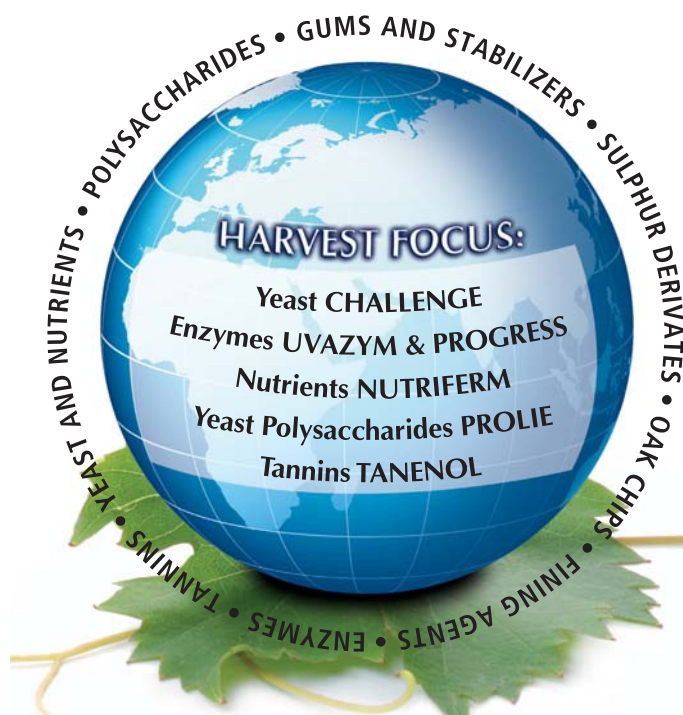
is to increase sales by approximately 9 percent, it is important to note that the effect of promotion will differ at different prices. Thus, we need to examine the effect of promotion at different prices to answer the question, "What

combination of price and promotion works best?" To illustrate this for a single price change, we replicate TABLE 2 at a price of \$8.50 in TABLE 3. As TABLE 3 indicates, the pure effect of promotion increases from an average of 9 percent at a price of \$9 to an average of 30 percent at \$8.50.

Again, this is consistent with the idea that consumers are more responsive to price changes at lower prices (indicated by the price elasticity); and as a result, promotion is likely to have a greater effect on sales and revenue at lower prices. As TABLES 2 AND 3 indicate, the effects of promotion will differ depending on price. A natural question that arises is, "What combination of price and promotion results in the greatest revenue?"

TABLE 4 shows the price that maximizes revenue, the associated case volume and revenue for this wine when promoted and non-promoted broken down by month. TABLE 4 emphasizes the point that promotion increases the

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price responsiveness of consumers at all prices. As a result, large revenue gains can be obtained when promotion is combined with a price decrease. For this wine, maximum revenue under promotion (\$16,226,173) is nearly twice as large as that without promotion (\$8,835,211). Clearly, the knowledge of when to promote and what price to combine with your promo-

solidation of small wineries into larger conglomerates means that wineries that may have been too small to have promotional budgets may now have the resources available to them for promotion.

Regardless of size, however, to compete, wineries must squeeze as much out of every dollar as possible. To again quote Jannicelli: "Most budgets that we

“The ability to analyze data to determine the optimal timing and structure of promotions that are already being planned can truly take marketing spending from an expense to an investment.”

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tional activities is of significant value and importance.

It should be clearly stated, however, that while these particular results hold for this particular wine, different brands and different varietals at different price points would behave differently. Nevertheless, the methodology we used to arrive at these results is perfectly general and can be applied to all wines captured in the data.

DATA-DRIVEN DECISIONS

Finally, although it is not shown in this article, within the category of promotion, we can identify the effects of different types of promotion. As noted above, scan data captures four types of promotional activities: Features, displays, features and displays combined and temporary price reductions. Thus, you could also measure which type of promotional activity is most effective.

It should come as no surprise that marketing great wine is at least as important as making great wine. Increased foreign competition, increased domestic competition and changing macroeconomic events make price and promotion more important than ever. Furthermore, increased con-

see have an element of promotion expense planned. However, it has been extremely difficult, not only to predict the impact of that promotion, but also to time, size and structure the promotion to maximize that impact. We consistently advise our clients to make data-driven decisions where possible. Planning promotions has been a necessary exception to this as only circumstantial evidence existed. The ability to analyze data to determine the optimal timing and structure of promotions that are already being planned can truly take marketing spending from an expense to an investment."

In this context, we hope to move pricing and promotion decisions from "back of envelope" guesses to quantifiable metrics that will allow wineries to compete more effectively and towards a more efficient use of scarce resources.

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