BUMK742: Advanced Marketing Analytics

Memo Project 1: Pricing Tropicana

Group section 2.7

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Honor Pledge:

We pledge on our honor that we have not given or received any unauthorized assistance on this assignment.

Executive Summary

In order to determine the optimal retail price of Tropicana 64 oz., and maximize the gross profit for Nick's, a regional grocery retailer, we use a two-year dataset to run three models. There are 11 main variables that exist or are created: Price, Quant, Store, Week, Quarter1, Quarter2, Quarter3, Pricing Ending in 9, Holiday, BeforeHoliday, and Deal(**Table 1**). After running three models: linear regression, log-log and semi-log model, we choose the semi-log model because of its greatest adjusted-R square value. According to this model, the optimal price we calculated is $3.22. However, based on Mantissa Pricing Strategy, especially the effect of pricing ending in 9 on consumer purchasing, we narrow the price down to $3.19 or $3.29 and ultimately recommend $3.19 as the retail price(**Table 11**).

Introduction and Background

Nick's, a regional grocery retailer with 15 stores in a mid-west market, constantly promises to provide fresh, organic, highest quality products. Given that it is trendy for the drink category to focus on innovation and the functionality of ingredients, e.g. vitamin C (Goel-lal, 2010), the focus on Tropicana, a third of the U.S. refrigerated orange juice market reported by Goel-lal (2011), comes as part of Nick's strategy to emphasize nutrition and health as well as increase sales revenue. However, its sales performance is not steady from store to store because of free retail price strategy among stores. To standardize the price of Tropicana 64 oz. and to maximize its gross profit, we analyze sales data to optimize the retail price by figuring out the effects of price, deals, and other relevant variables on sales.

Data and Methodology

The data used for analysis is from recording sales of orange juice category: Tropicana 64 ounces from grocery retailer Nick's. To recognize the best retail price for Tropicana 64 oz, we run three models: linear regression, log-log, and semi-log in SAS.

Firstly, by comparing Q-Q plots and histograms of three models, we reject the linear regression model because its Q-Q plot doesn't follow the normal distribution. Secondly, to consider the other two models, we compare adjusted R-square values and find that the latter has a higher adjusted R-square value of 0.4810(**Table 9**), while the adjusted R-square of the log-log is 0.4682. Lastly, we analyze the independent variables of the semi-log model. Additionally, for variables in the semi-log model, we find that the p-value of Holiday is larger than 0.05, so we can't reject the null hypothesis that Holiday has no influence on Quant. As a result, we move this variable to get the optimized semi-log model, then use the estimated parameters to create optimal retail price and make profit analysis in excel.

Key Findings

The following is the functional form of the optimized semi-log model (without Holiday variable):

lq = 15.839 - 1.531price + 0.087deal + 0.0034week + 0.246qrt1 + 0.210qrt2 + 0.188qrt3 + 0.182end9 - 0.842store2 -0.609store14 - 0.326store32 - 0.440store52 - 0.546store62 -

0.636store68 - 0.681store71 - 0.556store72 - 0.546store93 - 0.909store95 - 0.613store111 - 0.480store123 - 0.667store124 - 0.628store130 + 0.186BeforeHoliday

In total, we consider seven main variables and list our key findings below：

Ⅰ. Price

The correlation coefficient test(**Table 8**) shows that the correlation coefficient between price and quant is -0.38243, which means that quant and price are negatively correlated at medium level. By using the semi-log model(**Table 10**), we find that for every increase in price, weekly sales volume decreases exp(-1.53145) ounces.

Ⅱ. Deal

By calculating means of quant(**Table 4**), we can see, on average, quant has a higher value with deal. From the semi-log Model(**Table 10**), we concluded that if the deal increases by 1 unit, weekly sales volume will increase by exp(0.08727) ounces. In addition, although deal means item was on display and/or feature ads, the Pearson Correlation Coefficient(**Table 8**) between deal and price is -0.34247. We can speculate some situations that the company may provide coupons for consumers through ads, the whole store is on sale, or stores use some other marketing strategies.

Ⅲ. Week

The week is the basic unit of time. According to the Pearson Correlation Coefficient(**Table 8**), week is significantly correlated with quant and price, and is negatively correlated with deal, which is consistent with the fact that retailers reduced the deals in 2010(**Table 7**). From the semi-log Model(**Table 10**), we could see that for every increase in the week, weekly sales volume increases exp(0.00340) ounces.

Ⅳ. Quarter

According to the Means Procedure(**Table 6**), which is classified by quarter, we find stores may have used different marketing strategies in different quarters, leading to the sales differences. Specifically, Quarter1 had the lowest price with the highest sales volume, while Quarter2 was totally inverse. Therefore, perhaps, stores assumed the high demand for orange juice in summer due to temperature increased, thus they adjusted the price to make more profits, leading to a decrease in sales volume. Based on these assumptions, we create dummy variables Quarter 1-3 and find that sales will increase by exp(0.24557) in Quarter1, exp(0.20957) in Quarter2, and exp(0.18794) in Quarter3(**Table 10**).

Ⅴ. Stores

Because each store has its own strategy, Store variables are taken into consideration to figure out the difference among 15 stores. The parameters of 14 stores are negative(**Table 10**), indicating that the baseline store137 contributed the highest sales volume, which is consistent with the means plot that store137 had the highest weekly sales volume 64680 ounces(**Table 5**). To figure out some factors that contribute to high sales, we focus on the price and deal strategies of store137. The means of the deal and price by stores(**Table 5**) show that store137 has neither the most frequent deals nor the lowest price. Therefore, the highest sale volume of store137 might be attributed to other factors such as location.

Ⅵ.Price ending in 9

According to parameter estimates of the semi-log model(**Table 10**), the dummy variable end9 has the parameter 0.18177, meaning that products in prices ending with 9 have higher sales volume than others. If the product's price ends with 9, weekly sales volume will increase exp(0.18177) ounces.

Ⅶ. Holiday & BeforeHoliday

Assuming that sales will increase during holidays, we searched for U.S. federal statutory holidays and created a new dummy variable(**Table 2**). Meanwhile, we also set another dummy variable called BeforeHoliday, which includes the weeks before the holidays week, based on our assumption that customers are more likely to buy things before holidays thus stores may adjust the prices of products.

However, by running the semi-log model, it shows that the p-value of Holiday is 0.0930, so we cannot reject the null hypothesis that Holiday has no effect on weekly sales. As a result, we removed Holiday from variables and created a new semi-log model. In the optimized model(**Table 10**), the parameter of BeforeHoliday is 0.18646 and the p-value is smaller than 0.05, indicating sales will additionally increase by exp(0.18646) in the week before holiday.

Ⅷ. Other

We assume that week influences the price due to the main holidays such as Thanksgiving and Christmas concentrated at the end of the year. Thus, companies may adjust prices because of the higher demand than other times. So we create an interaction variable called week*price. However, after running the semi-log model(**Table 9**), the p-value is larger than 0.05, so we dropped this variable in the final model.

Conclusions and Recommendations

According to our research on linear regression, log-log, and semi-log models, we find that the semi-log model fits our data best. By using this model, we choose $3.22 as the optimal retail price for Tropicana Juice(P=C-1/b). In addition, the price end9 has a positive effect on sales, so the best price of Week 105 might be $3.19 or $3.29, which is close to $3.22. In further research, we conclude that $3.19 performs best because through putting all these three possibilities of optimal retail price into the formula and calculating the expected profits, it shows that $3.19 gains the most increase on profits(32.2%) than $3.22(10.4%) and $3.29(31.7%)(**Table 11**). Therefore, we choose $3.19 as the recommended retail price for Tropicana Juice in Week 105.

However, there are also some deficiencies in our research. Although we try our best to screen out the elements which influence final profits, we only have data on time, store, price, quant, and deal. There might be some elements we could not conclude, such as the geographical position of stores, the taste and package of juice at different times, and so on. If we have more data from different aspects, we might get a more reasonable result.

Appendices: Tables, Exhibits, Figures

Table 1 - Variables

Variables	Interpretation of Variables
Quant	Weekly sales volume in a store, measured in ounces
Price	Retail price for Tropicana 64 oz., measured in $/bottle.
Deal	A dummy variable for in-store display and/or feature advertising Deal = 1, items on display and/or feature ad; Deal = 0, items on neither display nor feature ad
Store	A dummy variable for 15 stores (store2, 14, 32, 52, 62, 68, 71, 72, 93, 95, 111, 123, 124, 130, 137), in which store137 is baseline
Week	Ranges from weeks 1 to 52 of 2009, and from weeks 53 to 91 of 2010
end9	A dummy variable for prices that end with number 9 (eg. Price=4.39)
Qrt1	A dummy variable represents Quarter1 (weeks 1-13 and weeks 53-65)
Qrt2	A dummy variable represents Quarter2 (weeks 14-26 and weeks 66-78)
Qrt3	A dummy variable represents Quarter3 (weeks 27-39 and weeks 79-91)
Qrt4	A dummy variable represents Quarter4 (weeks 40-52 and weeks 92-104)
Lq	Logarithm of quant: Lq= log(quant)
Lp	Logarithm of price: Lp= log(price)
Beforeholiday	A dummy variable represents the week that one week before federal holidays Beforeholiday=1, transactions in weeks 2, 6, 21, 26, 35, 40, 45, 47, 51, 52, 54, 58, 73, 78, 87, 91, 96, 98, 102, 103 Beforeholiday=0, transactions in other weeks

Table 2 - Holiday Reference

Name	Date	Holiday	BeforeHoliday
New Year's Day	01.01/12.31	W1/W52/W53/W104	W51/W52/W103
Martin Luther King Jr. Day	01.18	W3/W55	W2/W54
Presidents' Day	02.15	W7/W59	W6/W58
Memorial Day	05.31	W22/W73	W21/W72
Independence Day	07.04/07.05	W27/W79	W26/W78
Labor Day	09.06	W36/W88	W35/W87
Columbus Day	10.11	W41/W92	W40/W91
Veterans Day	11.11	W46/W97	W45/W96
Thanksgiving Day	11.25	W48/W99	W47/W98
Christmas Day	12.24/12.25	W52/W103	W51/W102

Note. Adapted from US Federal Holidays 2009. Federal Holidays 2009 - Calendar Date.https://www.calendardate.com/federal_holidays_2009.htm

Table 3 - The FREQ Procedure (Deal)

The FREQ Procedure

deal	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	475	30.45	475	30.45
1	1085	69.55	1560	100.00

Table 4 - The MEANS Procedure (Quant & Deal)

The MEANS Procedure

Analysis Variable : quant						
deal	N Obs	N	Mean	Std Dev	Minimum	Maximum
0	475	475	33131.24	62463.43	2112.00	1186496.00
1	1085	1085	44321.98	41705.84	2304.00	423040.00

Table 5 - The MEANS Procedure (Store & Quant & Price)

The MEANS Procedure

store	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
2	104	quant	104	27818.79	21659.02	5440.00	161024.00
		price	104	3.5770192	0.3409976	2.7900000	4.1300000
		deal	104	0.6730769	0.4713605	0	1.0000000
14	104	quant	104	31783.38	22349.88	2304.00	129152.00
		price	104	3.6518269	0.3663909	2.7400000	4.1800000
		deal	104	0.7211538	0.4506033	0	1.0000000
32	104	quant	104	46072.62	37474.19	11264.00	241920.00
		price	104	3.6137500	0.3462116	2.7400000	4.1300000
		deal	104	0.7211538	0.4506033	0	1.0000000
52	104	quant	104	38584.09	28021.35	8704.00	153472.00
		price	104	3.6349038	0.3522190	2.7400000	4.1300000
		deal	104	0.7115385	0.4552408	0	1.0000000
62	104	quant	104	33152.66	19671.72	10304.00	96192.00
		price	104	3.6124038	0.3458309	2.7400000	4.1300000
		deal	104	0.7115385	0.4552408	0	1.0000000
68	104	quant	104	34583.60	29465.33	6080.00	186368.00
		price	104	3.6166346	0.3469803	2.7400000	4.1300000
		deal	104	0.7019231	0.4596285	0	1.0000000
71	104	quant	104	54601.24	125736.49	2112.00	1186496.00
		price	104	3.5612500	0.3637952	2.8200000	4.1300000
		deal	104	0.6538462	0.4780468	0	1.0000000
72	104	quant	104	37563.69	32008.22	8320.00	199744.00
		price	104	3.6137500	0.3462116	2.7400000	4.1300000
		deal	104	0.7211538	0.4506033	0	1.0000000
93	104	quant	104	35760.27	37676.50	7552.00	309696.00
		price	104	3.6575962	0.3585881	2.7400000	4.1800000
		deal	104	0.7115385	0.4552408	0	1.0000000
95	104	quant	104	29345.85	31458.89	4608.00	223424.00
		price	104	3.6224038	0.3539225	2.7400000	4.1300000
		deal	104	0.7211538	0.4506033	0	1.0000000
111	104	quant	104	51078.77	63980.04	3648.00	371200.00
		price	104	3.5671154	0.3458258	2.8500000	4.1300000
		deal	104	0.6826923	0.4676822	0	1.0000000
123	104	quant	104	46139.08	45463.95	6400.00	280448.00
		price	104	3.5906731	0.3441050	2.8600000	4.1300000
		deal	104	0.6826923	0.4676822	0	1.0000000
124	104	quant	104	35575.38	33062.36	3648.00	216704.00
		price	104	3.6126923	0.3457094	2.8900000	4.1800000
		deal	104	0.6826923	0.4676822	0	1.0000000
130	104	quant	104	46978.69	49490.24	4032.00	290560.00
		price	104	3.5365385	0.3547261	2.7600000	4.1300000
		deal	104	0.6634615	0.4748137	0	1.0000000
137	104	quant	104	64680.00	42209.46	13632.00	216256.00
		price	104	3.5632692	0.3480694	2.7700000	4.1300000
		deal	104	0.6730769	0.4713605	0	1.0000000

Table 6 - The MEANS Procedure (Quarter & Quant & Price)

The MEANS Procedure

quarter	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
1	390	quant price	390 390	55112.80 3.5015385	81337.01 0.3983058	4672.00 2.7400000	1186496.00 4.0900000
2	390	quant price	390 390	34775.21 3.7017949	29775.64 0.3817122	2432.00 2.8700000	155840.00 4.1300000
3	390	quant price	390 390	37289.96 3.6277692	28549.99 0.3286216	2112.00 3.0900000	161344.00 4.1300000
4	390	quant price	390 390	36480.19 3.5773846	33427.74 0.2437187	3648.00 2.9500000	309696.00 4.1800000

Table 7 - The MEANS Procedure (Quart & Price & Deal)

The MEANS Procedure

Year	N Obs	Variable	N	Mean	Std Dev	Minimum	Maximum
2009	780	quant price deal	780 780 780	37162.19 3.5974872 0.7769231	33270.44 0.3442289 0.4165766	2112.00 2.8700000 0	309696.00 4.0900000 1.0000000
2010	780	quant price deal	780 780 780	44666.89 3.6067564 0.6141026	60929.86 0.3573603 0.4871189	2304.00 2.7400000 0	1186496.00 4.1800000 1.0000000

Table 8 - The CORR Procedure (Quant & Price & Week & Deal)

The CORR Procedure

4 Variables:	quant price week deal

Simple Statistics

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
quant	1560	40915	49216	63826683	2112	1186496
price	1560	3.60212	0.35077	5619	2.74000	4.18000
week	1560	52.50000	30.03045	81900	1.00000	104.00000
deal	1560	0.69551	0.46034	1085	0	1.00000

Pearson Correlation Coefficients, N = 1560
Prob > |r| under H0: Rho=0

	quant	price	week	deal
quant	1.00000	-0.38243 <.0001	0.02307 0.3625	0.10467 <.0001
price	-0.38243 <.0001	1.00000	0.02946 0.2449	-0.34247 <.0001
week	0.02307 0.3625	0.02946 0.2449	1.00000	-0.19639 <.0001
deal	0.10467 <.0001	-0.34247 <.0001	-0.19639 <.0001	1.00000

Table 9 - The REG Procedure (Model 3: Semi-Log Model)

The REG Procedure
Model: MODEL3
Dependent Variable: lq

Number of Observations Read	1560
Number of Observations Used	1560

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	24	558.55998	23.27333	61.21	<.0001
Error	1535	583.61469	0.38021		
Corrected Total	1559	1142.17467			

Root MSE	0.61661	R-Square	0.4890
Dependent Mean	10.23790	Adj R-Sq	0.4810
Coeff Var	6.02279		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	15.81192	0.35720	44.27	<.0001
price	1	-1.53091	0.09509	-16.10	<.0001
deal	1	0.08349	0.03743	2.23	0.0259
week	1	0.00231	0.00640	0.36	0.7188
qrt1	1	0.25728	0.05125	5.02	<.0001
qrt2	1	0.22814	0.04924	4.63	<.0001
qrt3	1	0.20287	0.04713	4.30	<.0001
end9	1	0.18747	0.04019	4.66	<.0001
store2	1	-0.84233	0.08555	-9.85	<.0001
store14	1	-0.61124	0.08595	-7.11	<.0001
store32	1	-0.32721	0.08565	-3.82	0.0001
store52	1	-0.44168	0.08577	-5.15	<.0001
store62	1	-0.54694	0.08563	-6.39	<.0001
store68	1	-0.63753	0.08563	-7.45	<.0001
store71	1	-0.68163	0.08553	-7.97	<.0001
store72	1	-0.55720	0.08565	-6.51	<.0001
store93	1	-0.54803	0.08593	-6.38	<.0001
store95	1	-0.91091	0.08574	-10.62	<.0001
store111	1	-0.61265	0.08563	-7.15	<.0001
store123	1	-0.48099	0.08556	-5.62	<.0001
store124	1	-0.66868	0.08564	-7.81	<.0001
store130	1	-0.62764	0.08553	-7.34	<.0001
Holiday	1	0.07150	0.04238	1.69	0.0918
BeforeHoliday	1	0.19954	0.04150	4.81	<.0001
WP	1	0.00029973	0.00176	0.17	0.8650

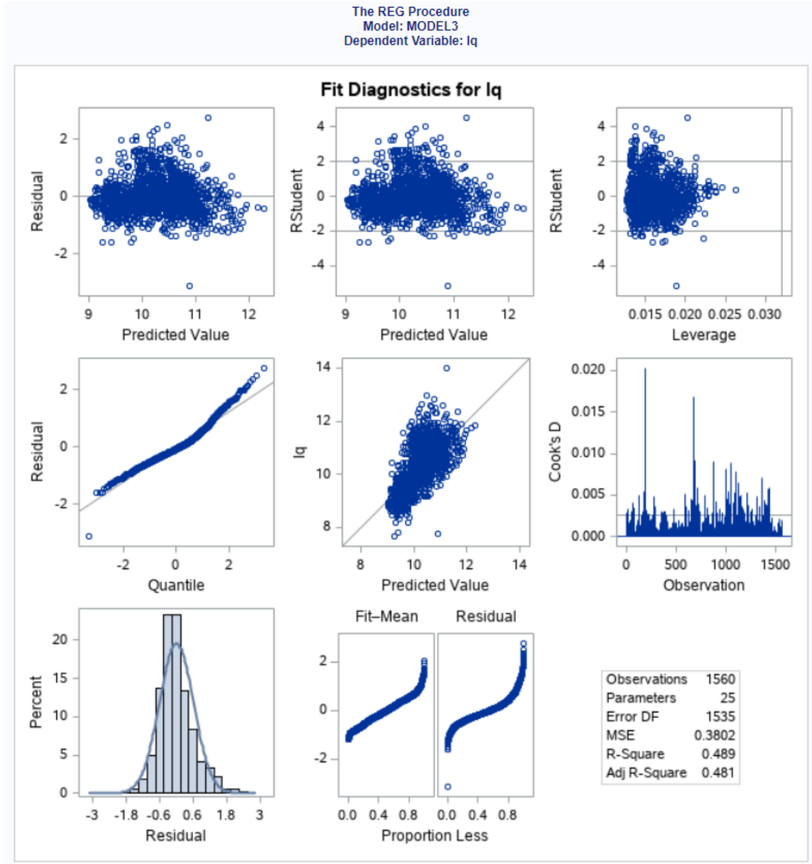

Table 10 - The REG Procedure (Model 4: Semi-Log Model)

The REG Procedure
Model: MODEL4
Dependent Variable: lq

Number of Observations Read	1560
Number of Observations Used	1560

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	22	557.47550	25.33980	66.61	<.0001
Error	1537	584.69916	0.38042		
Corrected Total	1559	1142.17467			

Root MSE	0.61678	R-Square	0.4881
Dependent Mean	10.23790	Adj R-Sq	0.4808
Coeff Var	6.02446		

Parameter Estimates					
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	15.83900	0.20340	77.87	<.0001
price	1	-1.53145	0.04922	-31.12	<.0001
deal	1	0.08727	0.03729	2.34	0.0194
week	1	0.00340	0.00062764	5.42	<.0001
qrt1	1	0.24557	0.05060	4.85	<.0001
qrt2	1	0.20957	0.04782	4.38	<.0001
qrt3	1	0.18794	0.04596	4.09	<.0001
end9	1	0.18177	0.03859	4.71	<.0001
store2	1	-0.84163	0.08554	-9.84	<.0001
store14	1	-0.60887	0.08570	-7.10	<.0001
store32	1	-0.32604	0.08561	-3.81	0.0001
store52	1	-0.43981	0.08565	-5.14	<.0001
store62	1	-0.54576	0.08560	-6.38	<.0001
store68	1	-0.63627	0.08560	-7.43	<.0001
store71	1	-0.68127	0.08554	-7.96	<.0001
store72	1	-0.55603	0.08561	-6.49	<.0001
store93	1	-0.54564	0.08570	-6.37	<.0001
store95	1	-0.90933	0.08563	-10.62	<.0001
store111	1	-0.61304	0.08565	-7.16	<.0001
store123	1	-0.48047	0.08556	-5.62	<.0001
store124	1	-0.66741	0.08558	-7.80	<.0001
store130	1	-0.62805	0.08556	-7.34	<.0001
BeforeHoliday	1	0.18646	0.04077	4.57	<.0001

The REG Procedure
Model: MODEL4
Dependent Variable: lq

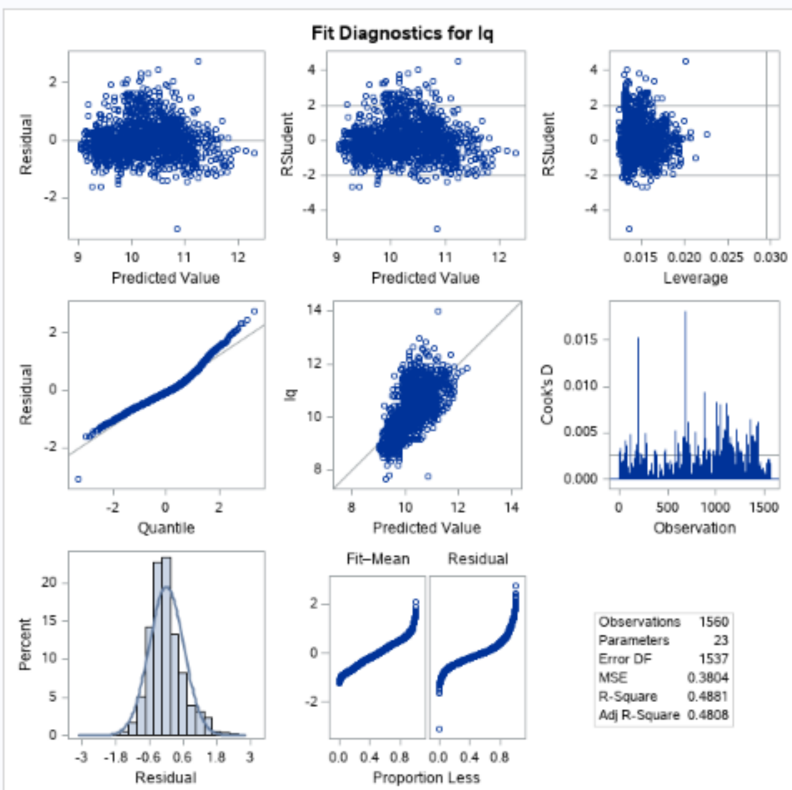

Table 11 - The Optimal Price

Project #1, Profit Analysis	
Variable	**Parameter Estimate**
Intercept	15.839
store1	-0.842
store2	-0.609
store3	-0.326
store4	-0.440
store5	-0.546
store6	-0.636
store7	-0.681
store8	-0.556
store9	-0.546
store10	-0.909
store11	-0.613
store12	-0.480
store13	-0.667
store14	-0.628
price	-1.531
deal	0.087
end9	0.182
week	0.0034
qrt1	0.246
qrt2	0.210
qrt3	0.188
BeforeHoliday	0.186
Wholesale price:	$2.57
Optimal retail price:	$3.22
Adjusted optimal price:	$3.19

Expected ln(sales) in week 105:

Store	**at P = 3.22**	**at P = 3.19**	**at P = 3.29**	**week 104 prices**	**Expected ln(sales) at week 104 prices**
Store 1 (code=2)	10.669	10.896	10.743	3.27	10.592
Store 2 (code=14)	10.901	11.129	10.976	3.97	9.753
Store 3 (code=32)	11.184	11.412	11.259	3.56	10.664
Store 4 (code=52)	11.070	11.298	11.145	3.76	10.244
Store 5 (code=62)	10.965	11.192	11.039	3.56	10.444
Store 6 (code=68)	10.874	11.102	10.949	3.56	10.353
Store 7 (code=71)	10.829	11.057	10.904	3.25	10.783
Store 8 (code=72)	10.954	11.182	11.029	3.56	10.434
Store 9 (code=93)	10.965	11.192	11.039	3.97	9.816
Store 10 (code=95)	10.601	10.829	10.676	3.76	9.774
Store 11 (code=111)	10.897	11.125	10.972	3.25	10.851
Store 12 (code=123)	11.030	11.258	11.104	3.27	10.953
Store 13 (code=124)	10.843	11.071	10.917	3.37	10.613
Store 14 (code=130)	10.882	11.110	10.957	3.16	10.974
Store 15 (code=137)	11.510	11.738	11.585	3.14	11.633

Expected Sales in Week 105 (in ounces):

Store	at P = 3.22	at P = 3.19	at P = 3.29	at week 104 prices
Store 1 (code=2)	42987.8	53980.8	46315.8	39819.0
Store 2 (code=14)	54253.9	68128.1	58454.2	17203.1
Store 3 (code=32)	71988.5	90397.7	77561.7	42769.0
Store 4 (code=52)	64247.0	80676.7	69221.0	28099.5
Store 5 (code=62)	57788.3	72566.2	62262.2	34332.5
Store 6 (code=68)	52787.6	66286.7	56874.3	31361.6
Store 7 (code=71)	50464.8	63369.9	54371.7	48198.7
Store 8 (code=72)	57197.8	71824.8	61626.0	33981.7
Store 9 (code=93)	57795.2	72574.9	62269.7	18326.0
Store 10 (code=95)	40173.8	50447.3	43284.1	17570.7
Store 11 (code=111)	54028.2	67844.6	58211.0	51602.1
Store 12 (code=123)	61687.2	77462.1	66462.9	57139.9
Store 13 (code=124)	51169.1	64254.3	55130.6	40667.1
Store 14 (code=130)	53223.3	66833.8	57343.8	58345.5
Store 15 (code=137)	99737.9	125243.4	107459.5	112737.5
Total	**869530.3**	**1091891.3**	**936848.6**	**632153.7**

Expected Gross Profit in Week 105:

at P = 3.22	at P = 3.19	at P = 3.29	at week 104 prices
436.59	522.94	521.05	435.52
551.02	659.99	657.61	376.32
731.13	875.73	872.57	661.58
652.51	781.56	778.74	522.48
586.91	702.99	700.45	531.08
536.12	642.15	639.84	485.12
512.53	613.90	611.68	512.11
580.92	695.80	693.29	525.65
586.98	703.07	700.53	400.88
408.02	488.71	486.95	326.71
548.72	657.24	654.87	548.27
626.51	750.41	747.71	624.97
519.69	622.46	620.22	508.34
540.55	647.45	645.12	537.87
1012.96	1213.30	1208.92	1004.07
$8,831	**$10,578**	**$10,540**	**$8,001**

% increase over current practice:	**10.4%**	**32.2%**	**31.7%**

Reference

[1] Goel-lal Garima. (2011). Juice and Juice Drinks: The Market - US - February 2011. Mintel
[2] Goel-lal Garima. (2010). Fruit Juice and Juice Drinks: The Market - US - February 2010. Mintel
[3] US Federal Holidays 2009. https://www.public-holidays.us/US_EN_2009_Federal%20holidays