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A STUDY OF THE IMPACT OF TROPICANA'S MARKETING STRATEGY CHANGES ON OJ DEMAND

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In January 2009, Tropicana introduced a new package design as part of a $35 million advertising and branding campaign, with the theme "Squeeze it's a Natural," created by Arnell. After Tropicana's package redesign, its customers complained about the new package, saying they missed the orange-and-straw graphic of the original design. *Advertising Age* reported that "after its package redesign, sales of the Tropicana Pure Premium line plummeted 20% between January 1 and February 22, costing the brand tens of millions of dollars." By the end of February, Tropicana had changed its mind and went back to the earlier packaging.

To recapture its market share, Tropicana had a buy-one-get-one (BOGO) promotion for its Pure Premium line orange juice (OJ) with Publix during the period from April 2 through April 11. The purposes of this study are (1) to examine the impact of Tropicana's marketing strategy changes on the Tropicana OJ gallon sales in January and February 2009 when Tropicana used the redesigned package for its Pure Premium OJ and in April and May of 2009 when Tropicana had the BOGO promotions; and (2) to examine the impacts of Tropicana's OJ package redesign and BOGO promotion on overall OJ gallon sales.

Study Method

In this study we assume that the demand for OJ is a function of prices, income, retail promotional activities, and Tropicana's marketing strategy changes. Formally this relationship can be written as

(1) $q_t = f(p_t, inc_t, z_t)$

where q_t is the OJ gallon sales in week t, p_t is a vector of prices in week t, and z_t is a vector of promotional variables. The prices include own-price and prices of competing beverages, such as the prices of grapefruit juice (GJ), OJ blend (OJ BL), GJ blend (GJ BL), GJ cocktails (GJ CKL), OJ drinks (OJ DRK), and OJ blend drinks (OJ BL DRK). Because the study period only covers 120 weeks, we assume that income has not changed during the study period and thus deleted it from the model. The promotional variables include retail promotions and Tropicana's marketing strategy changes (package redesign in January and February and BOGO promotion in April). The actual statistical model used is

(2) $ln\ q_t = \alpha_0 + \Sigma_j \beta_j\ ln\ p_{jt} + \Sigma_k \gamma_k\ ln\ ap_{kt} + \Sigma_l \varphi_l z_l + \varepsilon_t;$

where ap_{kt} is the share of k type of OJ dollar sales under any retail promotion in week t; z_ls are dummy variables for week l, $z_1 = 1$, if t is the week ending 12/20/08; $z_2 = 1$, if t is the week ending 12/27/08, and so on; α, β, γ, and φ are parameters to be estimated; and ε_t is the error term.

Note that βs and γs are demand elasticity estimates and φs provide measures for the disturbances (in gallon sales) for the weeks ending from 12/20/08 through 05/09/09. These are catch-all terms, i.e., the disturbances during this time period can be the result of changes in price slopes, income slope, or other exogenous changes. In this study, we assume they are the impacts of Tropicana's marketing strategy changes. If φ_l is greater than zero, i.e., outside of the confidence regions, it means that there are gallon sales changes net of price and retailer promotional impacts, or in other words, it is an estimate of the impact of Tropicana's marketing strategy changes.

Data

The above model was applied to Nielsen $2MM+ grocery store OJ sales data for the period from the week ending 01/27/07 through the week ending 05/09/09, a total of 120 weeks. Table 1 shows the percent changes in Tropicana OJ gallon sales and average prices from a year ago. As shown in Table 1, total OJ gallon sales of Tropicana OJ had declined from a year ago before its introduction of redesigned package; however, during January and February of 2009, Tropicana OJ gallon sales in $2MM+ grocery stores had a solid two months declined from a year ago without abatement and the West region had the worst decline. In addition, the average prices in the U.S. for Tropicana OJ were higher during January and February than a year ago. Prices started to become lower than a year ago after February 2009. As the result of BOGO in Publix in early April 2009, average price in the Southern region declined over 15% from a year ago and the average price of Tropicana OJ declined over 9% in $2MM+ grocery stores across the nation during the promotion weeks.

Figure 1 depicts the gallon sales and average prices for Tropicana OJ over the study period. As shown in Figure, there is seasonality in gallon sales and price and gallon sales demonstrate an inverse relationship. Two variables were added, i.e.,

$s1 = \sin(2\pi\, wk_t/52)$, and

$s2 = \cos(2\pi\, wk_t/52)$

to take care of the seasonal pattern in gallon sales. Where $\pi = 3.1416$ and wk_t is the week of the season – there are 52 weeks in a season. Two models were estimated, a model for brands (i.e., Florida's Natural, Minute Maid, Tropicana, other brands, and private label) and the other for all OJ sold in $2MM+ grocery stores; results are presented in Tables 2 and 3.

Results

As shown in Table 2, all own-price elasticity estimates are negative and consistent with our expectation. Results show that the demand for Florida's Natural OJ had the highest price, followed by other brands of OJ, Tropicana OJ, Minute Maid OJ, and generic OJ had the lowest price response. Cross-price elasticity estimates show that most brand OJs do not have close substitutes. Demand elasticity estimates for retail promotions show that retailers' promotions

increased the demand for the OJ that was promoted and decreased the demand for the OJs that were not promoted. The coefficients of the sine and cosine variables show that there were seasonal patterns for the five types of OJ studied.

The coefficients of the week dummy variables, as mentioned previously, measures the changes in demand after taken out the retail promotion, price, and seasonal effects; what is left, could be considered Tropicana's marketing strategy effect. As shown in Table 2, under the heading of Tropicana, these coefficient estimates changed from either positive and/or statistically not different from zero to negative and statistically different from zero after the week ending 01/17/09 and stayed negative until the week ending 05/02/09; an indication that after Tropicana introduced its new Pure Premium package the demand for Tropicana OJ had decreased and the demand had not recovered during the study period. The coefficient estimates for other brands and private label OJ show that the demand for non-Tropicana OJ had increased, especially for Florida's Natural OJ, in January and February.

For the weeks when Tropicana had the BOGO promotion with Publix in the Southern region, Tropicana OJ gallons sales recovered – the coefficient estimate for the week ending 04/11/09 dummy is negative, small, and statistically not different from zero. The coefficient estimates of the dummy variable for the week ending 04/11/09 are positive and statistically different from zero indicating that Tropicana's BOGO actually helped the sales of non-Tropicana-brand OJ.

To examine the impact of Tropicana's marketing strategy changes on the demand for OJ in general, we estimated two additional models using equation (2) and sales data for $2MM+ grocery stores provided by Nielsen. Results are presented in Table 3. The first model includes the "any promo" variable and the result shows that the own-price coefficient estimate is positive but statistically not different from zero; there are signs that multicollinearity could be the problem (the simple correlation coefficient between own-price and "Any Promo" is -0.7985). Therefore, we deleted the "Any Promo" variable and re-estimated the model. This time, the own-price coefficient is negative; however, it is still statistically not different from zero. Generally speaking, the results are very similar in these two models. The coefficient estimates for dummy variables are mostly not statistically different except for the week ending 04/11/09, i.e., when Tropicana had its BOGO promotion. This result indicates that when Tropicana had its redesigned package, total OJ gallon sales did not decrease; however, when Tropicana had its BOGO promotion, total OJ demand increased; or in other words, the OJ category benefited from Tropicana's BOGO promotion.

Similar results are found in the regional models. The results for the four regions are presented in Table 4 through 9; and the regional gallon sales and price data are depicted in Figures 2 and 5. Since the regional results are so similar to those found the U.S., no further discussion is provided. Another model specification using dollar share as dependent variable was also estimated and similar result was found, i.e., Tropicana's market share (in term of dollar

share) had not recovered as of 05/09/09. Therefore, the parameter estimates obtained from using dollar shares as dependent variables were not reported in this study.

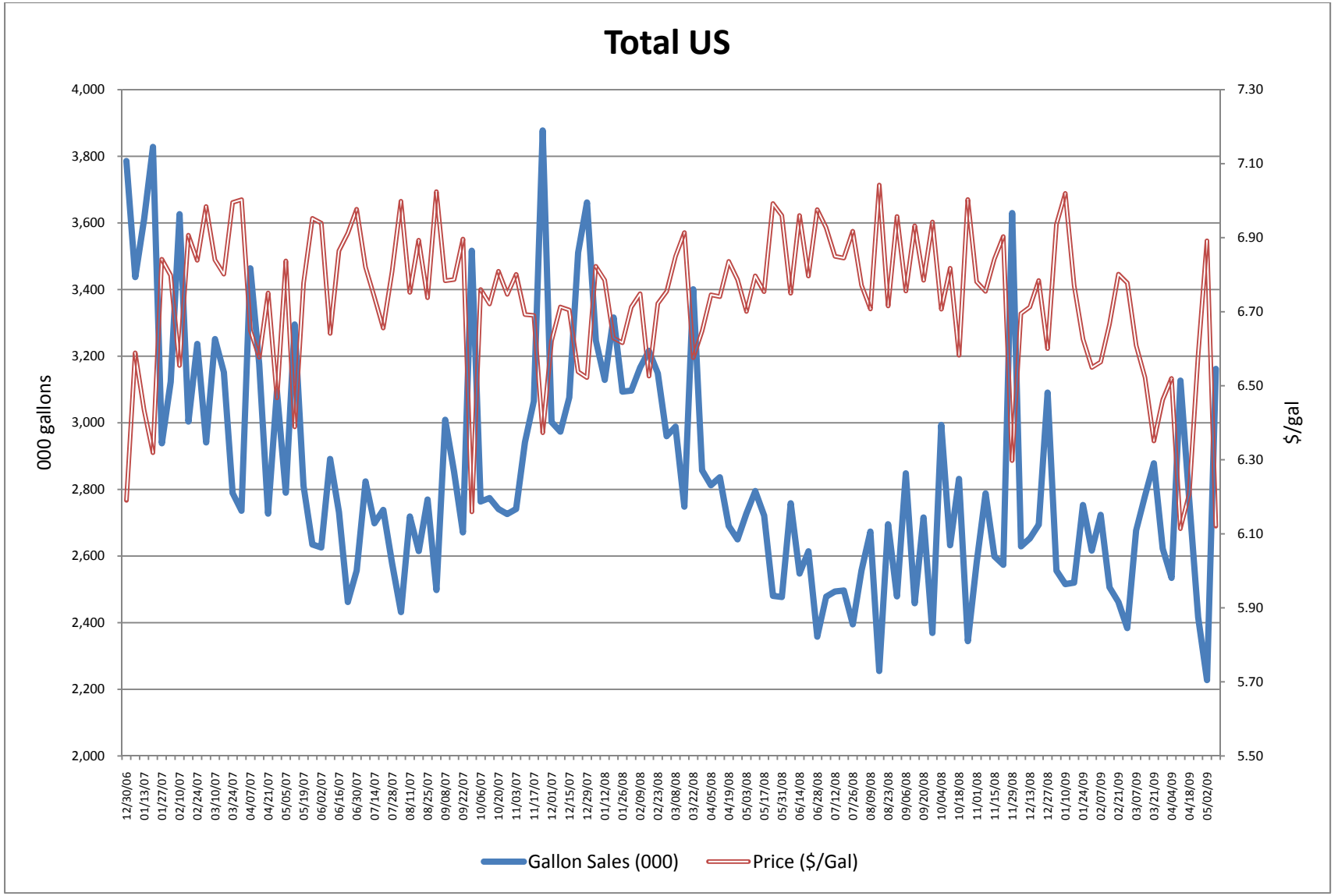

Figure 1. Tropicana price and gallon sales statistics in 2MM+ grocery stores

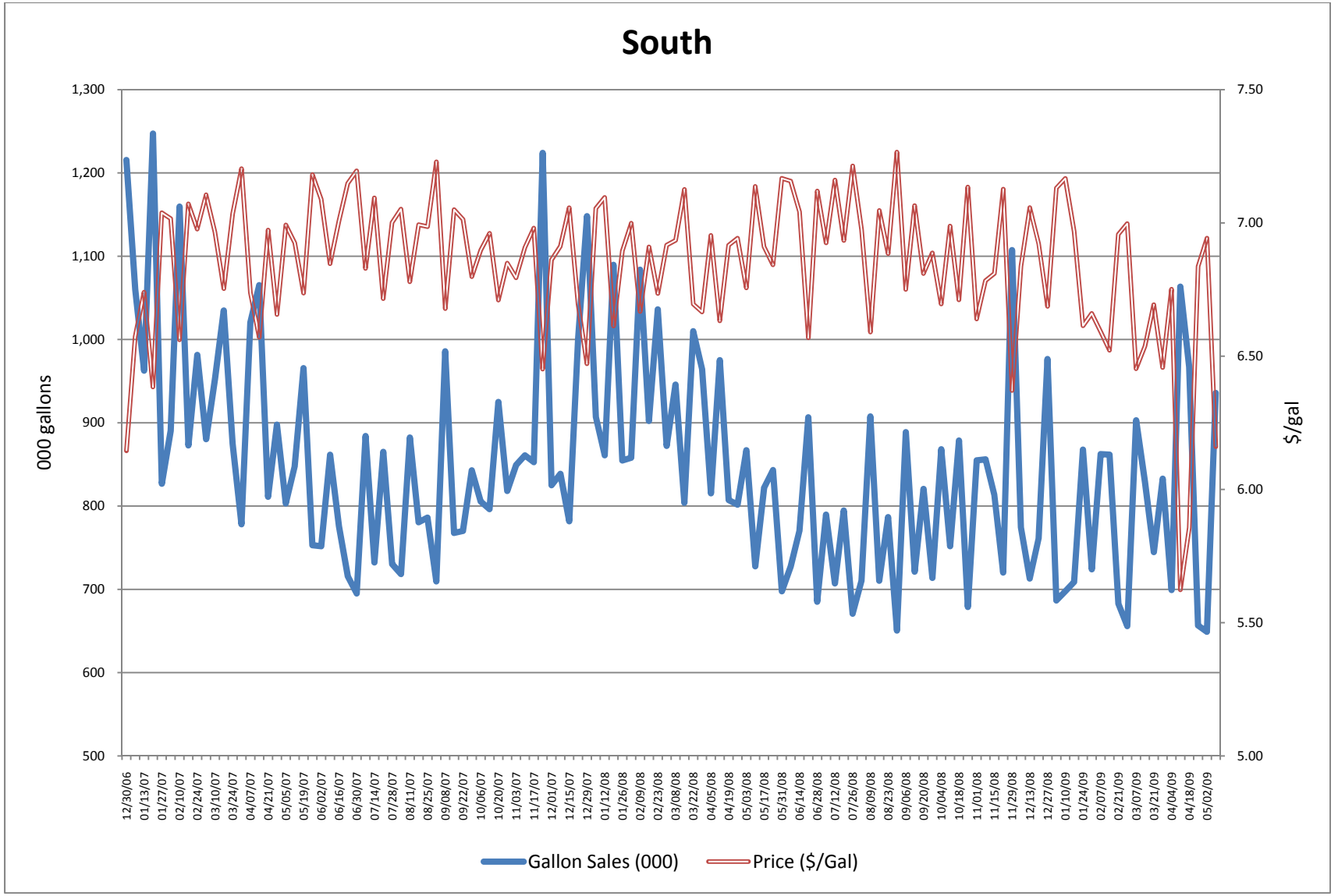

Figure 2. Tropicana price and gallon sales statistics in the Southern region

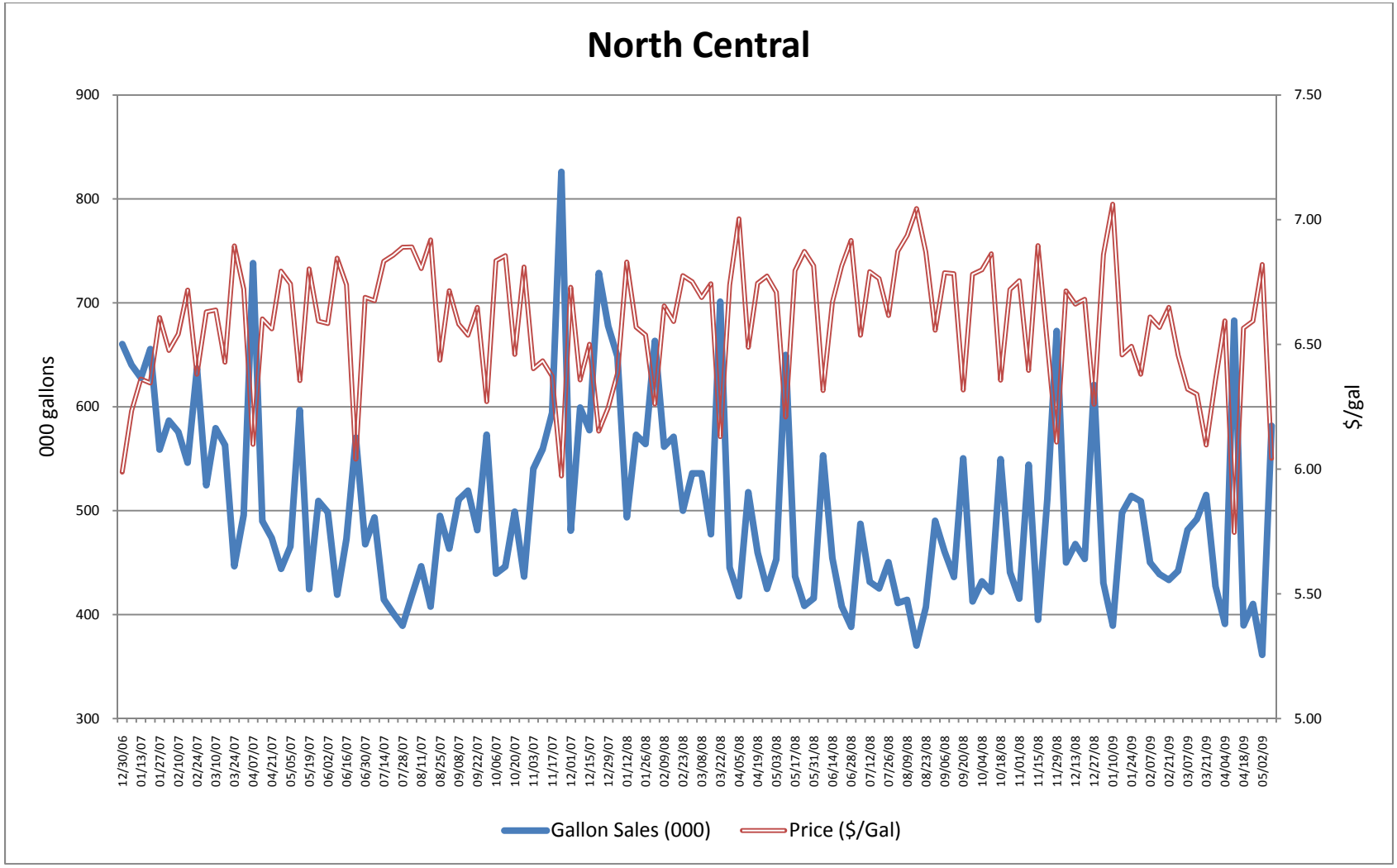

Figure 3. Tropicana price and gallon sales statistics in the North Central region

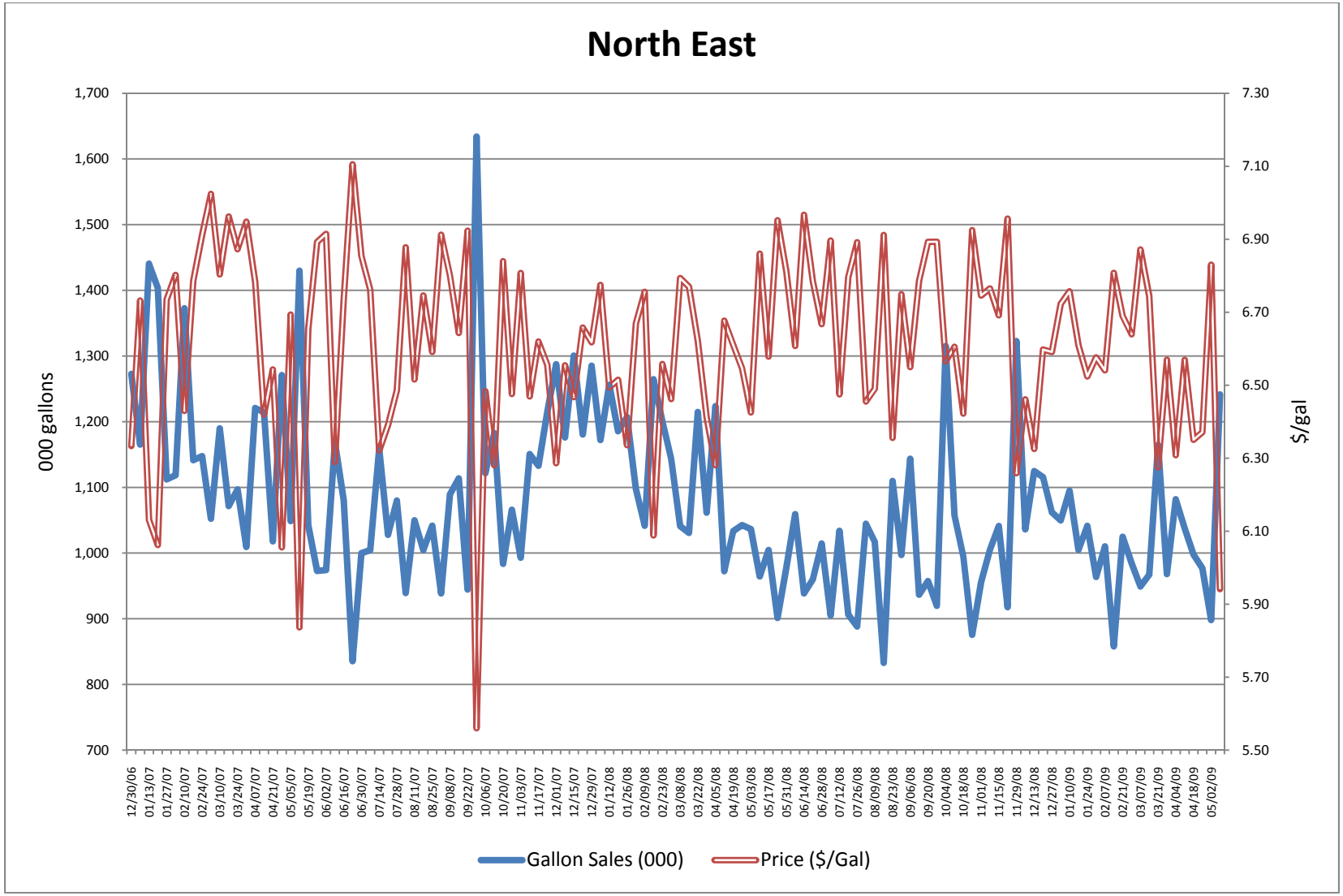

Figure 4. Tropicana price and gallon sales statistics in the North Eastern region

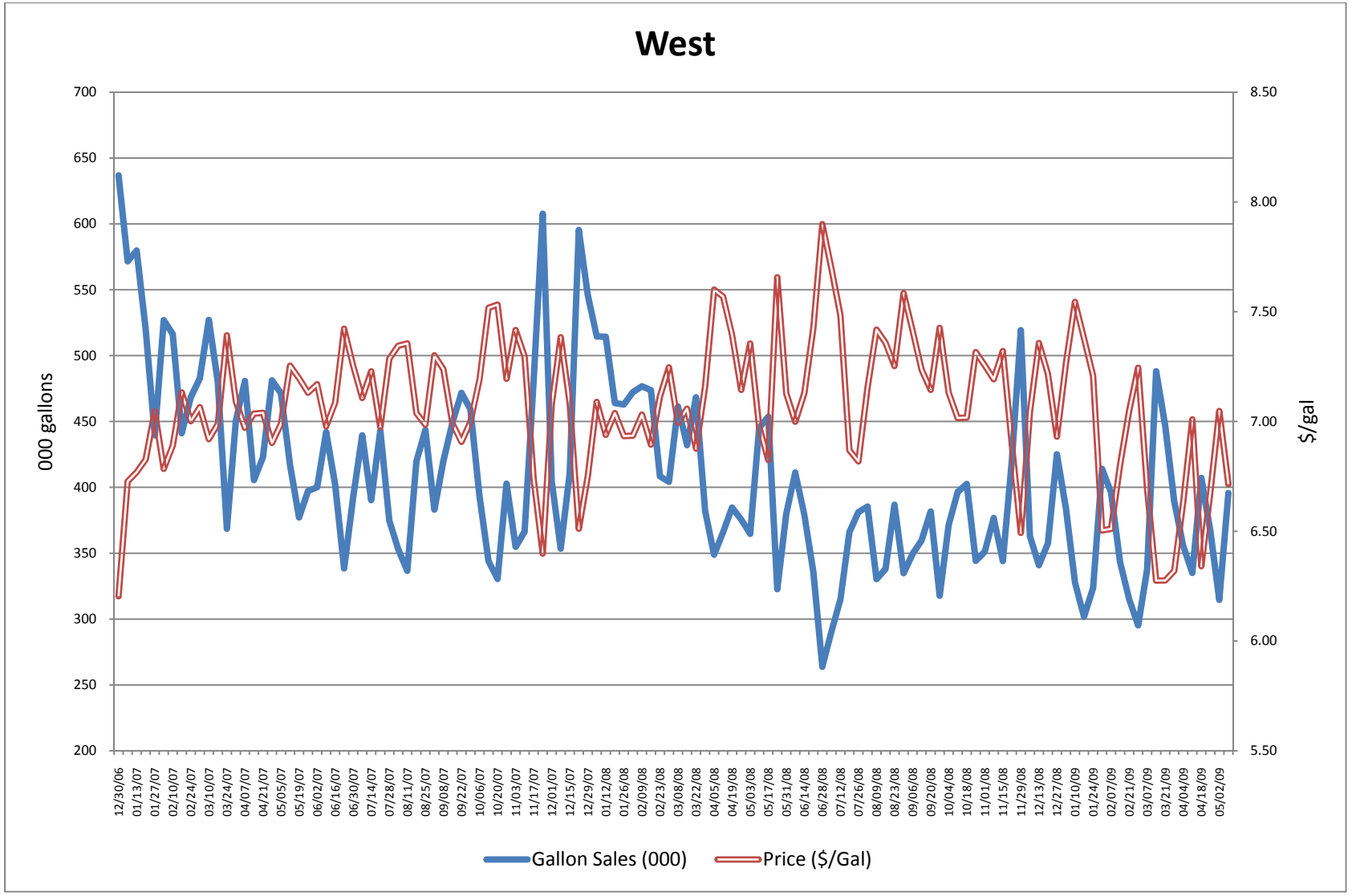

Figure 5. Tropicana price and gallon sales statistics in the Western region

Table 1. Tropicana OJ gallon sales and price statistics -- % change from a year ago

	Gallon Sales					Average Price				
	2MM+	NE	SOUTH	WEST	NC	2MM+	NE	SOUTH	WEST	NC
Week Ending										
12/06/08	-11.6%	-11.9%	-7.7%	2.7%	-24.9%	-0.3%	-1.4%	-1.1%	-4.6%	5.6%
12/13/08	-13.7%	-13.5%	-8.8%	-17.0%	-19.0%	0.1%	-2.2%	0.0%	3.9%	2.5%
12/20/08	-23.3%	-5.5%	-24.0%	-40.0%	-37.7%	3.8%	-0.9%	3.4%	10.8%	8.6%
12/27/08	-15.6%	-17.4%	-14.9%	-22.2%	-8.4%	1.2%	-0.4%	3.3%	2.7%	0.2%
01/03/09	-21.3%	-10.4%	-24.3%	-25.4%	-33.6%	1.7%	-0.8%	1.1%	2.5%	7.5%
01/10/09	-19.6%	-12.8%	-19.0%	-36.3%	-21.1%	3.5%	4.1%	1.0%	8.7%	3.4%
01/17/09	-24.0%	-15.3%	-34.9%	-35.0%	-13.1%	2.1%	1.5%	5.4%	4.9%	-1.7%
01/24/09	-11.0%	-13.7%	1.5%	-30.1%	-8.9%	0.1%	3.0%	-4.1%	4.0%	-0.7%
01/31/09	-15.5%	-12.2%	-15.6%	-12.3%	-23.3%	-2.4%	-1.4%	-4.8%	-6.2%	1.9%
02/07/09	-14.0%	-3.0%	-20.4%	-16.9%	-19.9%	-2.7%	-3.2%	-1.1%	-7.4%	-0.7%
02/14/09	-22.1%	-32.2%	-4.5%	-27.5%	-23.1%	2.2%	11.8%	-5.6%	-1.4%	-0.4%
02/21/09	-21.8%	-14.7%	-34.1%	-22.8%	-13.3%	1.2%	2.0%	3.3%	-0.9%	-1.9%
02/28/09	-19.5%	-13.9%	-24.8%	-27.0%	-17.5%	0.3%	2.7%	1.2%	0.0%	-4.4%
03/07/09	-10.4%	-8.8%	-4.5%	-26.8%	-10.1%	-3.5%	1.2%	-6.9%	-4.3%	-5.5%
03/14/09	1.2%	-6.2%	3.1%	13.0%	3.0%	-5.7%	-0.4%	-8.3%	-11.1%	-6.6%
03/21/09	-15.4%	-4.1%	-26.3%	-4.6%	-26.5%	-3.4%	-5.2%	0.0%	-8.7%	-0.5%
03/28/09	-8.2%	-8.8%	-13.6%	1.9%	-4.1%	-2.8%	2.5%	-3.1%	-11.8%	-5.7%
04/04/09	-9.9%	-11.6%	-14.2%	2.0%	-6.4%	-3.3%	0.4%	-2.9%	-12.7%	-5.8%
04/11/09	10.2%	6.7%	9.1%	-8.4%	31.9%	-9.3%	-1.6%	-15.2%	-7.4%	-11.4%
04/18/09	2.8%	-3.4%	19.8%	5.8%	-15.2%	-9.2%	-3.9%	-15.3%	-14.2%	-2.7%
04/25/09	-8.8%	-6.3%	-18.1%	-2.3%	-3.4%	-3.0%	-2.7%	-1.5%	-6.5%	-2.7%
05/02/09	-18.3%	-13.4%	-25.2%	-13.7%	-20.3%	2.8%	6.3%	2.8%	-4.2%	1.7%
05/09/09	13.1%	28.7%	28.6%	-11.1%	-10.5%	-9.9%	-13.4%	-13.7%	-3.7%	-2.7%

Table 2. Coefficient estimates – by OJ brand, total US

Variable	FLNAT		MM		TROP		OTHER		PL/GEN	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	18.1378*	1.5969	15.3380	1.3260	16.0504	1.2601	16.3773	1.1828	16.5620	1.2783
Log Price										
FLNAT	-2.0340*	0.3144	-0.0346	0.2611	0.3373	0.2481	0.3216	0.2329	0.4818	0.2517
MM	0.1600	0.5356	-0.6943	0.4447	0.2261	0.4227	-0.2182	0.3967	-0.1081	0.4287
TROP	0.1844	0.4070	0.0234	0.3380	-1.0358	0.3212	0.6007	0.3015	0.3476	0.3258
OTHER	-0.7501*	0.3120	0.5830	0.2590	0.2939	0.2462	-2.2316	0.2311	-0.5754	0.2497
PL/GEN	0.0800	0.2825	0.7054	0.2346	0.0286	0.2230	0.6307	0.2093	-0.6745	0.2262
GJ	0.2166	0.4385	-0.3231	0.3641	0.6754*	0.3460	0.0045	0.3248	-0.1506	0.3510
OJ BL	-0.3531	0.2883	-0.2595	0.2394	-0.7809*	0.2275	-0.4717*	0.2136	-0.2518	0.2308
GJ BL	-0.1286	0.1301	0.0725	0.1081	-0.1404**	0.1027	-0.0721	0.0964	-0.0224	0.1042
GJ CKL	0.1565	0.1909	0.0292	0.1585	-0.1687	0.1506	0.0242	0.1414	-0.1512	0.1528
OJ DRK	-0.2357	0.2480	-0.2447	0.2059	-0.0939	0.1957	-0.1444	0.1837	-0.2494	0.1985
OJ BL DRK	0.0129	0.2396	0.0108	0.1990	0.0625	0.1891	0.0527	0.1775	0.0696	0.1918
Any Promo										
FLNAT	0.5208*	0.0834	-0.1174*	0.0693	-0.0367	0.0659	0.0286	0.0618	0.0212	0.0668
MM	-0.1121*	0.0698	0.2373*	0.0580	-0.0413	0.0551	-0.0604	0.0517	-0.0561	0.0559
TROP	-0.2059*	0.0789	-0.0300	0.0655	0.3436*	0.0623	0.0729	0.0584	-0.0028	0.0631
OTHER	-0.2112*	0.0699	0.0964*	0.0580	-0.0088	0.0551	0.0734**	0.0518	-0.1345*	0.0559
PL/GEN	-0.0885*	0.0480	-0.0012	0.0399	-0.0575*	0.0379	-0.0564**	0.0356	0.0997*	0.0385
s1	-0.0083	0.0092	0.0063	0.0076	0.0035	0.0073	0.0198	0.0068	-0.0061	0.0074
s2	0.0648	0.0143	0.0808	0.0119	0.0778	0.0113	0.0847	0.0106	0.0795	0.0115

*Statistically different from zero at $\alpha = 0.05$ level. **Statistically different from zero at $\alpha = 0.10$ level.

Table 2. Continue – total US

Variable	FLNAT		MM		TROP		OTHER		PL/GEN	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Dummy Var										
12/20/08	0.0638	0.0521	-0.0137	0.0432	-0.0229	0.0411	-0.0467	0.0386	0.0718*	0.0417
12/27/08	0.1313*	0.0514	0.1088*	0.0427	0.0252	0.0406	0.0315	0.0381	0.0868*	0.0412
01/03/09	0.1554*	0.0514	0.1108*	0.0427	0.0106	0.0406	0.0340	0.0381	0.1055*	0.0412
01/10/09	0.1896*	0.0534	0.1194*	0.0444	-0.0238	0.0421	0.0365	0.0396	0.1083*	0.0428
01/17/09	0.1544*	0.0545	0.0372	0.0453	-0.1105*	0.0430	-0.0370	0.0404	0.0212	0.0437
01/24/09	0.1180*	0.0530	0.0279	0.0440	-0.1131*	0.0418	-0.0740*	0.0393	0.0049	0.0424
01/31/09	0.1525*	0.0541	-0.0272	0.0450	-0.1406*	0.0427	-0.0554**	0.0401	-0.0068	0.0433
02/07/09	0.1089*	0.0614	0.0004	0.0509	-0.1189*	0.0484	0.0426	0.0454	0.0916*	0.0491
02/14/09	0.0602	0.0631	0.0791**	0.0524	-0.1348*	0.0498	-0.0122	0.0467	0.0073	0.0505
02/21/09	0.0827	0.0556	0.0306	0.0461	-0.1310*	0.0438	-0.0404	0.0412	0.0376	0.0445
02/28/09	0.2037*	0.0535	0.0105	0.0444	-0.1545*	0.0422	-0.0245	0.0396	-0.0078	0.0428
03/07/09	0.0905*	0.0546	0.1018*	0.0453	-0.0895*	0.0431	0.0469	0.0404	0.0604**	0.0437
03/14/09	0.0903*	0.0545	0.0397	0.0452	-0.0840*	0.0430	0.0155	0.0403	0.0572**	0.0436
03/21/09	0.1324*	0.0631	0.0305	0.0524	-0.0667**	0.0498	0.0591	0.0468	0.0510	0.0505
03/28/09	0.0180	0.0575	0.0234	0.0477	-0.0793*	0.0453	0.0470	0.0426	0.0137	0.0460
04/04/09	0.0590	0.0636	0.0449	0.0528	-0.1043*	0.0502	0.1543*	0.0471	0.1237*	0.0509
04/11/09	0.1924*	0.0676	0.0956*	0.0561	-0.0020	0.0534	0.1314*	0.0501	0.1187*	0.0541
04/18/09	-0.0206	0.0662	0.0352	0.0550	-0.0996*	0.0523	0.0502	0.0491	0.0177	0.0530
04/25/09	0.1065*	0.0755	0.0964**	0.0627	-0.0803*	0.0596	0.0655	0.0559	0.0519	0.0604
05/02/09	0.0497	0.0763	0.1033**	0.0634	-0.0726	0.0602	0.0544	0.0565	0.0956**	0.0611
05/09/09	0.0801	0.0717	0.0927**	0.0596	0.0024	0.0566	0.0919*	0.0531	0.1308*	0.0574
R^2	0.9163		0.8397		0.9283		0.9441		0.8921	

*Statistically different from zero at $\alpha = 0.05$ level. **Statistically different from zero at $\alpha = 0.10$ level.

Table 3. Coefficient estimates – total US $2MM+ grocery stores

	With "Any Promo"		w/o "Any Promo"	
Variable	Estimate	SE	Estimate	SE
Intercept	17.6270*	0.8178	18.0587*	0.8151
Log price				
OJ	0.1639	0.3361	-0.2682	0.2855
GJ	0.0339	0.2670	0.0240	0.2734
OJ BL	-0.5147*	0.1650	-0.5944*	0.1652
GJ BL	-0.1036**	0.0777	-0.0696	0.0781
GJ CKL	-0.1242	0.1160	-0.1156	0.1187
OJ DRK	-0.2955*	0.1432	-0.1710	0.1358
OJ BL DRK	-0.0994	0.1404	0.0178	0.1340
Any Promo OJ	0.2038*	0.0885		
s1	0.0032	0.0057	0.0011	0.0057
s2	0.0885*	0.0082	0.0828*	0.0081
Dummy Var				
12/20/08	0.0034	0.0316	0.0031	0.0324
12/27/08	0.0849*	0.0313	0.0737*	0.0316
01/03/09	0.0636*	0.0323	0.0514**	0.0327
01/10/09	0.0533*	0.0312	0.0517**	0.0320
01/17/09	-0.0417	0.0333	-0.0191	0.0326
01/24/09	-0.0384	0.0334	-0.0160	0.0328
01/31/09	-0.0449**	0.0329	-0.0329	0.0333
02/07/09	-0.0268	0.0365	-0.0051	0.0361
02/14/09	-0.0382	0.0384	-0.0145	0.0379
02/21/09	-0.0422	0.0346	-0.0232	0.0344
02/28/09	-0.0513**	0.0335	-0.0356	0.0336
03/07/09	0.0269	0.0348	0.0385	0.0352
03/14/09	-0.0044	0.0336	0.0071	0.0340
03/21/09	0.0225	0.0356	0.0193	0.0365
03/28/09	-0.0065	0.0357	-0.0112	0.0365
04/04/09	0.0406	0.0394	0.0273	0.0399
04/11/09	0.0984*	0.0400	0.0870*	0.0406
04/18/09	-0.0042	0.0390	-0.0114	0.0398
04/25/09	0.0208	0.0437	0.0104	0.0445
05/02/09	0.0251	0.0424	0.0111	0.0430
05/09/09	0.1036*	0.0419	0.0844*	0.0421
R^2	0.822		0.8433	

*Statistically different from zero at α = 0.05 level. **Statistically different from zero at α = 0.10 level.

Table 4. Coefficient estimates – by OJ brand, Southern region

Variable	FLNAT		MM		Trop		Other B		PL/GEN	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	16.2930*	2.0782	11.6866*	1.4177	15.8866*	1.3189	12.5735*	1.1721	12.6903*	1.4222
Log Price										
FLNAT	-2.8811*	0.5613	0.4004	0.3829	1.1866*	0.3562	0.9701*	0.3166	1.3183*	0.3841
MM	-0.2286	0.5459	-0.0220	0.3724	-0.1409	0.3465	-0.5010**	0.3079	-0.0451	0.3736
TROP	0.8360	0.6036	-0.1813	0.4118	-2.0142*	0.3831	0.7418*	0.3404	0.7204**	0.4131
OTHER	0.0661	0.3222	0.7635*	0.2198	0.3521*	0.2045	-1.3367*	0.1817	-0.6248*	0.2205
PL/GEN	0.2177	0.2407	0.2832*	0.1642	0.0912	0.1527	0.2747*	0.1357	-0.5538*	0.1647
GJ	0.2144	0.3187	-0.1232	0.2174	0.1858	0.2023	0.0704	0.1797	0.0294	0.2181
OJ BL	-0.1400	0.3780	0.1600	0.2579	-0.3220**	0.2399	-0.0334	0.2132	0.2351	0.2587
GJ BL	-0.1244	0.1463	0.0764	0.0998	0.0046	0.0928	0.1251**	0.0825	0.0191	0.1001
GJ CKL	-0.0178	0.1971	-0.1020	0.1344	-0.2945*	0.1251	-0.2596*	0.1112	-0.3734*	0.1349
OJ DRK	0.2397	0.3128	0.0257	0.2134	0.1270	0.1985	0.1325	0.1764	-0.0619	0.2141
OJ BL DRK	-0.4518*	0.2440	-0.2265	0.1664	-0.3709*	0.1548	-0.2638*	0.1376	-0.4326*	0.1669
Any Promo										
FLNAT	0.3298*	0.0513	-0.0030	0.0350	0.0681*	0.0326	0.0803*	0.0290	0.0773*	0.0351
MM	-0.1497*	0.0461	0.2148*	0.0314	-0.0228	0.0292	-0.0125	0.0260	-0.0519**	0.0315
TROP	-0.1073*	0.0549	-0.0542	0.0375	0.1327*	0.0349	0.0596**	0.0310	0.0202	0.0376
OTHER	0.0017	0.0332	0.0186	0.0226	-0.0008	0.0211	0.0582*	0.0187	-0.0385**	0.0227
PL/GEN	-0.0604*	0.0305	-0.0478*	0.0208	-0.0277**	0.0194	-0.0195	0.0172	0.1003*	0.0209
s1	0.0131	0.0110	0.0021	0.0075	0.0234*	0.0070	0.0457*	0.0062	-0.0024	0.0075
s2	0.0484	0.0190	0.0537	0.0129	0.0681*	0.0120	0.0954*	0.0107	0.0692*	0.0130

*Statistically different from zero at $\alpha = 0.05$ level. **Statistically different from zero at $\alpha = 0.10$ level.

Table 4. Continue – Southern Region

Variable	FLNAT		MM		TROP		OTHER		PL/GEN	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Dummy Var										
12/20/08	0.0813	0.0709	-0.0560	0.0484	-0.0486	0.0450	-0.0582	0.0400	0.1183*	0.0486
12/27/08	0.1910*	0.0692	0.1026*	0.0472	0.0424	0.0439	0.0174	0.0390	0.1623*	0.0474
01/03/09	0.0225	0.0848	0.0878**	0.0579	0.0486	0.0538	0.0714**	0.0478	0.1754*	0.0580
01/10/09	0.2047*	0.0683	0.1208*	0.0466	-0.0409	0.0433	0.0368	0.0385	0.0946*	0.0467
01/17/09	0.1516*	0.0687	0.0894*	0.0469	-0.1324*	0.0436	-0.0716*	0.0387	0.0357	0.0470
01/24/09	0.0835	0.0673	0.0320	0.0459	-0.1440*	0.0427	-0.1158*	0.0379	-0.0358	0.0460
01/31/09	0.2143*	0.0704	-0.0052	0.0480	-0.2304*	0.0446	-0.0807*	0.0397	-0.0136	0.0481
02/07/09	0.1631*	0.0731	-0.0177	0.0499	-0.1332*	0.0464	-0.0326	0.0412	0.0564	0.0500
02/14/09	0.1515*	0.0750	0.0476	0.0512	-0.1490*	0.0476	-0.0328	0.0423	0.0838**	0.0513
02/21/09	0.0559	0.0741	0.0633	0.0506	-0.1496*	0.0470	-0.0380	0.0418	0.1238*	0.0507
02/28/09	0.3106*	0.0693	0.0847*	0.0473	-0.2108*	0.0440	-0.0709*	0.0391	-0.0269	0.0474
03/07/09	0.1653*	0.0723	0.0832*	0.0493	-0.1399*	0.0459	-0.0581	0.0408	0.0498	0.0495
03/14/09	0.1001**	0.0706	0.1197*	0.0482	-0.1703*	0.0448	-0.0652*	0.0398	0.0257	0.0483
03/21/09	0.2139*	0.0783	0.0688	0.0534	-0.1793*	0.0497	-0.0532	0.0442	0.0728**	0.0536
03/28/09	-0.0259	0.0777	-0.0085	0.0530	-0.1501*	0.0493	-0.0473	0.0438	0.0390	0.0532
04/04/09	-0.0828	0.0743	-0.0488	0.0507	-0.2031*	0.0472	0.0119	0.0419	0.0903*	0.0508
04/11/09	0.1889**	0.1313	-0.0146	0.0896	-0.1961*	0.0834	0.1496*	0.0741	0.2008*	0.0899
04/18/09	-0.0954	0.1114	-0.0374	0.0760	-0.1696*	0.0707	0.0748	0.0628	0.1239**	0.0762
04/25/09	0.0352	0.0921	0.0786	0.0628	-0.1793*	0.0584	0.0138	0.0519	0.0406	0.0630
05/02/09	-0.0070	0.0902	0.1010**	0.0616	-0.1836*	0.0573	-0.0137	0.0509	-0.0299	0.0618
05/09/09	0.0175	0.1035	0.0801	0.0706	-0.1138*	0.0657	0.0787**	0.0584	0.0820	0.0708
R^2	0.9469		0.8213		0.9486		0.9256		0.8680	

*Statistically different from zero at $\alpha = 0.05$ level. **Statistically different from zero at $\alpha = 0.10$ level.

Table 5. Coefficient estimates – by OJ brand, North Central region

Variable	FLNAT		MM		TROP		OTHER		PL/GEN	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	19.9695*	1.2328	14.6585*	0.9710	16.9898*	0.8072	18.5694*	0.9002	12.5393*	0.9578
Log Price										
FLNAT	-2.9709*	0.3931	0.2703	0.3096	0.4660*	0.2574	0.2615	0.2870	0.7140*	0.3054
MM	0.0810	0.4826	-0.9776*	0.3801	0.5710*	0.3160	-0.6166*	0.3524	1.3170*	0.3749
TROP	-0.3774	0.3653	-0.0862	0.2877	-2.3678*	0.2392	-0.2645	0.2668	0.8236*	0.2838
OTHER	-0.0073	0.3839	-0.3872	0.3023	-0.2431	0.2514	-1.5236*	0.2803	0.4450**	0.2982
PL/GEN	0.4821*	0.2542	0.6058*	0.2002	0.2555**	0.1664	0.5074*	0.1856	-1.1266*	0.1975
GJ	-0.6647	0.5311	0.0712	0.4183	0.0155	0.3478	-0.5793**	0.3878	-1.0310*	0.4126
OJ BL	-0.6618*	0.2309	-0.0792	0.1819	-0.5029*	0.1512	-0.5602*	0.1686	-0.4663*	0.1794
GJ BL	0.0309	0.1497	-0.0680	0.1179	-0.0093	0.0980	-0.1357	0.1093	0.0224	0.1163
GJ CKL	-0.1143	0.1448	0.1330	0.1141	-0.1309**	0.0948	-0.0094	0.1058	-0.0726	0.1125
OJ DRK	-0.3040*	0.1925	-0.1918	0.1516	-0.2517*	0.1261	-0.3163*	0.1406	-0.4578*	0.1496
OJ BL DRK	-0.0144	0.1725	0.1205	0.1358	0.1459	0.1129	-0.1815**	0.1259	0.0096	0.1340
Any Promo										
FLNAT	0.3703*	0.0537	-0.0135	0.0423	0.0273	0.0351	0.0835*	0.0392	0.0334	0.0417
MM	-0.1262*	0.0613	0.2213	0.0483	-0.0052	0.0401	-0.0742*	0.0448	-0.0106	0.0476
TROP	-0.2631*	0.0585	-0.0318	0.0461	0.1913*	0.0383	-0.0325	0.0427	0.0741*	0.0454
OTHER	-0.0567	0.0801	-0.0405	0.0631	-0.0918*	0.0524	0.1727*	0.0585	0.0735	0.0622
PL/GEN	-0.0341	0.0497	0.0277	0.0391	-0.0199	0.0325	0.0335	0.0363	0.1977*	0.0386
s1	-0.0186**	0.0116	0.0154*	0.0091	-0.0035	0.0076	0.0058	0.0085	-0.0034	0.0090
s2	0.0671*	0.0175	0.0999*	0.0138	0.0945*	0.0115	0.1059*	0.0128	0.1390*	0.0136

*Statistically different from zero at $\alpha = 0.05$ level. **Statistically different from zero at $\alpha = 0.10$ level.

Table 5. Continue –North Central region

Variable	FLNAT		MM		TROP		OTHER		PL/GEN	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Dummy Var										
12/20/08	-0.0648	0.0664	0.0892*	0.0523	-0.0652**	0.0434	-0.1110*	0.0485	0.0812**	0.0516
12/27/08	0.1338*	0.0644	0.1234*	0.0507	-0.0132	0.0422	-0.0406	0.0470	0.1159*	0.0500
01/03/09	0.0855	0.0698	0.1378*	0.0550	-0.0414	0.0457	-0.0208	0.0510	0.0452	0.0542
01/10/09	0.0412	0.0731	0.1070*	0.0576	0.0122	0.0479	0.0143	0.0534	0.0712	0.0568
01/17/09	0.1024*	0.0677	0.0193	0.0533	-0.1070*	0.0443	-0.0522	0.0494	-0.0550	0.0526
01/24/09	0.0245	0.0671	-0.1015*	0.0529	-0.1148*	0.0440	-0.0874*	0.0490	-0.0480	0.0522
01/31/09	0.0829	0.0676	-0.0427	0.0533	-0.1208*	0.0443	-0.0390	0.0494	-0.0938**	0.0526
02/07/09	0.0882	0.0730	-0.0464	0.0575	-0.1579*	0.0478	-0.0206	0.0533	-0.0846	0.0567
02/14/09	0.1648*	0.0705	-0.0514	0.0555	-0.1941*	0.0462	-0.1121*	0.0515	-0.1171*	0.0548
02/21/09	0.0944	0.0773	-0.0175	0.0608	-0.1406*	0.0506	-0.0663	0.0564	-0.0324	0.0600
02/28/09	0.0699	0.0681	-0.0771**	0.0536	-0.1915*	0.0446	-0.0892*	0.0497	-0.0850	0.0529
03/07/09	0.1214*	0.0696	-0.0464	0.0548	-0.1981*	0.0456	-0.0084	0.0508	0.0103	0.0541
03/14/09	0.0811	0.0738	-0.0116	0.0582	-0.1583*	0.0484	-0.0083	0.0539	-0.0631	0.0574
03/21/09	0.1533*	0.0823	-0.0556	0.0648	-0.1890*	0.0539	-0.0041	0.0601	-0.0763	0.0639
03/28/09	0.0574	0.0761	-0.0059	0.0599	-0.2038*	0.0498	0.0164	0.0556	-0.0731	0.0591
04/04/09	-0.0008	0.0937	0.0357	0.0738	-0.1639*	0.0614	0.0547	0.0684	0.0589	0.0728
04/11/09	0.0013	0.0864	0.0455	0.0681	-0.0290	0.0566	0.0239	0.0631	0.1128*	0.0671
04/18/09	0.0098	0.0827	-0.0160	0.0652	-0.1753*	0.0542	0.0211	0.0604	-0.0069	0.0643
04/25/09	0.1156**	0.0841	0.0627	0.0663	-0.0872**	0.0551	0.0852**	0.0614	0.0479	0.0653
05/02/09	0.1285**	0.0864	0.0376	0.0681	-0.1302*	0.0566	0.0676	0.0631	0.0262	0.0671
05/09/09	0.1360**	0.0909	0.0275	0.0716	-0.0413	0.0595	0.0829	0.0664	0.0543	0.0707
R^2	0.9125		0.8661		0.9639		0.9174		0.9244	

*Statistically different from zero at $\alpha = 0.05$ level. **Statistically different from zero at $\alpha = 0.10$ level.

Table 6. Coefficient estimates – Southern and North Central regions, $2MM+ grocery stores

	Southern Region				North Central region			
	With "Any Promo"		w/o "Any Promo"		With "Any Promo"		w/o "Any Promo"	
Variable	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Intercept	16.1682*	0.7086	16.7752*	0.7403	16.8494*	0.5587	17.0956*	0.6026
Log Price								
OJ	-0.0791	0.2309	-0.4949*	0.2179	-0.1196	0.2574	-0.4984*	0.2605
GJ	0.0073	0.1580	-0.0022	0.1694	-0.2814	0.2760	-0.3971**	0.2978
OJ BL	-0.0600	0.1846	-0.2200	0.1927	-0.4674*	0.1200	-0.4503*	0.1301
GJ BL	0.0256	0.0714	0.0383	0.0765	-0.0629	0.0784	-0.0131	0.0841
GJ CKL	-0.2950*	0.0924	-0.2914*	0.0991	-0.0021	0.0770	-0.0317	0.0832
OJ DRK	0.0208	0.1453	0.1484	0.1516	-0.3057*	0.0987	-0.1420**	0.0978
OJBLDRK	-0.4290*	0.1086	-0.3246*	0.1126	-0.0039	0.0947	0.0979	0.0992
ANY PRO	0.1438*	0.0379			0.2737*	0.0669		
Seasonality								
S1	0.0132*	0.0053	0.0123*	0.0057	-0.0022	0.0058	0.0020	0.0062
S2	0.0694*	0.0080	0.0665*	0.0085	0.1107*	0.0091	0.1041*	0.0097
Dummy Var								
12/20/08	-0.0135	0.0329	-0.0112	0.0353	0.0006	0.0348	-0.0083	0.0377
12/27/08	0.0811*	0.0317	0.0829*	0.0340	0.0774*	0.0352	0.0699*	0.0381
01/03/09	0.0398	0.0334	0.0275	0.0357	0.0516**	0.0369	0.0285	0.0395
01/10/09	0.0581*	0.0330	0.0372	0.0349	0.0451	0.0369	0.0241	0.0396
01/17/09	-0.0098	0.0333	-0.0029	0.0356	-0.0294	0.0367	-0.0230	0.0398
01/24/09	-0.0532**	0.0329	-0.0372	0.0350	-0.0752*	0.0359	-0.0512**	0.0385
01/31/09	-0.0597*	0.0334	-0.0471**	0.0357	-0.0687*	0.0362	-0.0437	0.0387
02/07/09	-0.0224	0.0347	-0.0025	0.0368	-0.0755*	0.0372	-0.0528**	0.0399
02/14/09	-0.0031	0.0356	0.0068	0.0381	-0.1117*	0.0386	-0.0813*	0.0411
02/21/09	-0.0305	0.0334	-0.0168	0.0356	-0.0441	0.0412	-0.0184	0.0442
02/28/09	-0.0247	0.0338	-0.0026	0.0357	-0.0913*	0.0368	-0.0773*	0.0398
03/07/09	0.0025	0.0348	0.0174	0.0371	-0.0292	0.0376	-0.0146	0.0406
03/14/09	-0.0082	0.0345	-0.0068	0.0370	-0.0571**	0.0378	-0.0404	0.0408
03/21/09	0.0070	0.0369	-0.0051	0.0394	-0.0513	0.0420	-0.0570	0.0455
03/28/09	-0.0456	0.0384	-0.0524	0.0411	-0.0579**	0.0410	-0.0628**	0.0445
04/04/09	-0.0462	0.0376	-0.0664*	0.0399	-0.0117	0.0482	-0.0414	0.0516
04/11/09	0.0359	0.0437	0.0129	0.0464	0.0725**	0.0440	0.0693**	0.0477
04/18/09	-0.0370	0.0407	-0.0478	0.0436	-0.0505	0.0447	-0.0818*	0.0478
04/25/09	-0.0193	0.0443	-0.0494	0.0468	0.0350	0.0440	-0.0021	0.0467
05/02/09	-0.0452	0.0417	-0.0596**	0.0446	0.0085	0.0447	-0.0341	0.0472
05/09/09	0.0367	0.0427	0.0069	0.0450	0.0522	0.0439	0.0387	0.0475
R^2	0.8373		0.8107		0.8894		0.8684	

*Statistically different from zero at α = 0.05 level. **Statistically different from zero at α = 0.10 level.

Table 7. Coefficient estimates – by OJ brand, North Eastern region

Variable	FLNAT		MM		TROP		OTHER		PL/GEN	
	Estimate	SE	Estimate	SE	Estimate		Estimate	SE	Estimate	SE
Intercept	14.3661*	1.7250	14.1244*	1.0757	15.6388*	0.9140	13.2646*	1.4775	13.1229*	0.8289
Log Price										
FLNAT	-1.7954*	0.2844	0.1437	0.1774	0.0967	0.1507	0.4980*	0.2436	0.3466*	0.1367
MM	1.0831*	0.2433	-1.6244*	0.1517	0.3086*	0.1289	0.0509	0.2084	0.2709*	0.1169
TROP	0.4975**	0.3598	-0.7033*	0.2243	-1.5081*	0.1906	0.5293*	0.3081	0.2165	0.1729
OTHER	0.1276	0.2010	0.1168	0.1254	0.2278*	0.1065	-1.9553*	0.1722	0.1975*	0.0966
PL/GEN	-0.7374	0.6869	1.3236*	0.4283	-0.2370	0.3640	0.0205	0.5883	-0.9222*	0.3301
GJ	0.2962	0.3764	0.2912	0.2347	0.4051*	0.1994	-0.0388	0.3224	0.1225	0.1808
OJ BL	-0.4549	0.4565	0.3415	0.2847	0.1366	0.2419	0.0761	0.3910	-0.2719	0.2194
GJ BL	-0.1008	0.1409	-0.0985	0.0879	-0.0318	0.0747	-0.0711	0.1207	-0.0088	0.0677
GJ CKL	-0.0545	0.2391	-0.2643*	0.1491	-0.3422*	0.1267	0.3299**	0.2048	-0.0836	0.1149
OJ DRK	-0.1858	0.2696	0.0421	0.1681	0.1908	0.1428	-0.0296	0.2309	0.0498	0.1295
OJ BL DRK	0.1231	0.2235	-0.2782*	0.1394	-0.2684*	0.1184	-0.2907**	0.1914	-0.2274*	0.1074
Any Promo										
FLNAT	0.7553*	0.1283	-0.2211*	0.0800	-0.1888*	0.0680	-0.1268	0.1099	-0.0611	0.0617
MM	0.0433	0.0638	0.2720*	0.0398	-0.0470	0.0338	-0.0563	0.0546	-0.0064	0.0306
TROP	-0.2699*	0.1413	-0.3702*	0.0881	0.2293*	0.0748	-0.0624	0.1210	-0.0967	0.0679
OTHER	-0.0649	0.0659	-0.0393	0.0411	0.0183	0.0349	0.4072*	0.0565	0.0040	0.0317
PL/GEN	-0.1161*	0.0633	-0.0859*	0.0395	-0.0533**	0.0336	-0.0553	0.0542	0.0630*	0.0304
s1	-0.0097	0.0177	0.0362*	0.0111	0.0142*	0.0094	0.0205**	0.0152	0.0195	0.0085
s2	0.0723*	0.0201	0.0250*	0.0125	0.0462*	0.0106	0.0447*	0.0172	0.0817*	0.0096

*Statistically different from zero at $\alpha = 0.05$ level. **Statistically different from zero at $\alpha = 0.10$ level.

Table 7. Continue –North Eastern region

Variable	FLNAT		MM		TROP		OTHER		PL/GEN	
	Estimate	SE	Estimate	SE	Estimate		Estimate	SE	Estimate	SE
Dummy Var										
12/20/08	0.1813*	0.0941	0.0914*	0.0587	-0.0334	0.0499	-0.0416	0.0806	0.0677**	0.0452
12/27/08	0.0778	0.0961	0.1224*	0.0599	0.0187	0.0509	-0.0521	0.0823	0.0737**	0.0462
01/03/09	0.2954*	0.0958	0.0969*	0.0597	-0.0464	0.0507	-0.0670	0.0820	0.0890*	0.0460
01/10/09	0.1561*	0.0965	0.1698*	0.0602	-0.0052	0.0511	0.0318	0.0826	0.0948*	0.0464
01/17/09	0.1747*	0.0951	0.1156*	0.0593	-0.1417*	0.0504	-0.1547*	0.0815	0.0110	0.0457
01/24/09	0.2521*	0.0988	0.0070	0.0616	-0.1137*	0.0524	-0.1105**	0.0846	0.0239	0.0475
01/31/09	0.2678*	0.0981	0.0509	0.0611	-0.0857**	0.0520	-0.0559	0.0840	0.0637**	0.0471
02/07/09	0.1847*	0.1066	0.1151*	0.0665	-0.1127*	0.0565	0.0120	0.0913	0.0879*	0.0512
02/14/09	0.0673	0.1077	0.0954**	0.0672	-0.1317*	0.0571	0.0846	0.0923	0.0848**	0.0518
02/21/09	0.0995	0.1052	0.0868**	0.0656	-0.1268*	0.0557	-0.0708	0.0901	0.0241	0.0505
02/28/09	0.1843*	0.0998	0.0349	0.0622	-0.0757**	0.0529	0.0483	0.0854	0.0180	0.0479
03/07/09	0.1583*	0.0983	0.0462	0.0613	-0.0259	0.0521	0.0903	0.0842	0.0597	0.0472
03/14/09	0.0639	0.1041	0.0810	0.0649	-0.1078*	0.0552	-0.0334	0.0892	0.0232	0.0500
03/21/09	0.0523	0.1106	-0.0689	0.0689	-0.1104*	0.0586	-0.0564	0.0947	-0.0668	0.0531
03/28/09	-0.0301	0.1061	-0.0290	0.0662	-0.1448*	0.0562	-0.0101	0.0909	-0.0636	0.0510
04/04/09	0.0816	0.1121	-0.0016	0.0699	-0.0933*	0.0594	0.2729*	0.0960	0.0362	0.0539
04/11/09	0.1056	0.1074	0.0763	0.0670	-0.0697	0.0569	0.1361*	0.0920	0.0805**	0.0516
04/18/09	-0.1651	0.1273	-0.0495	0.0794	-0.2038*	0.0674	-0.0619	0.1090	-0.1381	0.0612
04/25/09	0.1035	0.1348	0.0911	0.0841	-0.1489*	0.0714	-0.0093	0.1155	0.0014	0.0648
05/02/09	-0.0057	0.1256	0.0813	0.0783	-0.1213*	0.0666	0.0402	0.1076	0.0397	0.0604
05/09/09	0.0170	0.1283	0.0168	0.0800	-0.0837	0.0680	0.0011	0.1099	0.0848**	0.0616
	0.8858		0.9450		0.8958		0.9695		0.859	

*Statistically different from zero at α = 0.05 level. **Statistically different from zero at α = 0.10 level.

Table 8. Coefficient estimates – by OJ brand, Western region

Variable	FLNAT		MM		TROP		POTHER		PL/GEN	
	Estimate	SE	Estimate	SE	Estimate		Estimate	SE	Estimate	SE
Intercept	17.3168*	1.0049	14.9993*	0.9483	17.0202*	1.0846	16.5222*	0.6735	15.5302*	0.8720
Log Price										
FLNAT	-2.2766*	0.3217	0.0423	0.3035	0.6037*	0.3472	-0.0919	0.2156	0.5789*	0.2791
MM	-0.6200**	0.4232	-1.7662*	0.3994	-1.0715*	0.4568	-0.4720*	0.2837	-0.5344**	0.3673
TROP	0.0000	0.2822	0.3892**	0.2663	-2.4535*	0.3046	-0.6353*	0.1891	-0.3949**	0.2449
OTHER	-0.0917	0.1877	0.6141*	0.1771	0.0883	0.2026	-1.5846*	0.1258	-0.2490**	0.1628
PL/GEN	0.3342*	0.1756	0.1657	0.1657	0.5545*	0.1895	0.6814*	0.1177	-1.2095*	0.1524
GJ	-0.4350	0.3370	-0.2927	0.3180	0.5711**	0.3638	0.1345	0.2259	0.1018	0.2924
OJ BL	0.2449*	0.1343	-0.0280	0.1267	-0.3798*	0.1449	-0.2229*	0.0900	0.0615	0.1165
GJ BL	0.1720*	0.0784	0.1150**	0.0740	0.0841	0.0847	-0.0045	0.0526	-0.0377	0.0681
GJ CKL	0.0018	0.1202	-0.0342	0.1135	-0.1464	0.1298	0.1305**	0.0806	0.0370	0.1043
OJ DRK	-0.0700	0.1014	0.0133	0.0957	-0.0172	0.1095	-0.1462*	0.0680	-0.0060	0.0880
OJ BL DRK	0.0416	0.1369	0.1546	0.1292	0.1488	0.1478	-0.0419	0.0918	0.1263	0.1188
Any Promo										
FLNAT	0.3025	0.0477	-0.0313	0.0450	0.0015	0.0515	0.0190	0.0320	0.0734*	0.0414
MM	-0.1505*	0.0531	0.1218*	0.0501	-0.1647*	0.0573	-0.0132	0.0356	-0.0716**	0.0460
TROP	-0.1381*	0.0440	0.0330	0.0416	0.0953*	0.0475	-0.0422*	0.0295	-0.0998*	0.0382
OTHER	-0.0344	0.0323	0.0541*	0.0305	-0.0286	0.0349	0.0025	0.0217	-0.0596*	0.0280
PL/GEN	-0.0278	0.0389	-0.0016	0.0367	-0.0567	0.0419	0.0175	0.0261	0.0162	0.0337
s1	-0.0034	0.0075	-0.0106**	0.0071	0.0108**	0.0081	0.0099*	0.0050	-0.0070	0.0065
s2	0.0383*	0.0121	0.0459*	0.0114	0.0841*	0.0131	0.0913*	0.0081	0.0537*	0.0105

*Statistically different from zero at $\alpha = 0.05$ level. **Statistically different from zero at $\alpha = 0.10$ level.

Table 8. Continue –Western region

Variable	FLNAT		MM		TROP		OTHER		PL/GEN	
	Estimate	SE	Estimate	SE	Estimate		Estimate	SE	Estimate	SE
Dummy Var										
12/20/08	-0.0815**	0.0501	-0.0594	0.0473	-0.0522	0.0541	-0.0607*	0.0336	-0.0215	0.0435
12/27/08	-0.0060	0.0523	0.0743**	0.0493	-0.0533	0.0564	0.0214	0.0350	0.0198	0.0453
01/03/09	0.1202*	0.0485	0.0692**	0.0458	-0.0061	0.0524	0.0734*	0.0325	0.1003*	0.0421
01/10/09	0.2440*	0.0516	0.0836*	0.0487	-0.0349	0.0557	0.1007*	0.0346	0.0914*	0.0448
01/17/09	0.1082*	0.0510	0.0506	0.0481	-0.1210*	0.0550	-0.0060	0.0342	-0.0101	0.0442
01/24/09	0.1337*	0.0516	0.0898*	0.0487	-0.0878*	0.0557	0.0401	0.0346	0.0140	0.0448
01/31/09	-0.0052	0.0638	-0.0140	0.0602	-0.2184*	0.0689	-0.1226*	0.0428	-0.0532	0.0554
02/07/09	0.0645	0.0560	0.0254	0.0528	-0.2132*	0.0604	-0.0168	0.0375	0.0290	0.0486
02/14/09	0.1029*	0.0536	0.1102*	0.0506	-0.2385*	0.0579	0.0404	0.0360	-0.0596	0.0465
02/21/09	0.0908*	0.0531	0.0462	0.0501	-0.1506*	0.0573	0.0765*	0.0356	-0.0178	0.0461
02/28/09	0.0848*	0.0576	-0.0157	0.0543	-0.2946*	0.0621	-0.0093	0.0386	-0.0942*	0.0499
03/07/09	-0.0134	0.0605	0.1669*	0.0571	-0.2131*	0.0653	0.0738*	0.0405	-0.0015	0.0525
03/14/09	-0.0098	0.0618	0.1171*	0.0583	-0.0131	0.0667	-0.0152	0.0414	-0.0633	0.0536
03/21/09	0.0747	0.0590	0.0144	0.0557	-0.1369*	0.0637	-0.0087	0.0396	-0.0712**	0.0512
03/28/09	-0.0264	0.0605	0.0117	0.0571	-0.2474*	0.0654	-0.1045*	0.0406	-0.1503*	0.0525
04/04/09	0.1444*	0.0597	0.0091	0.0564	-0.1289*	0.0645	0.0701*	0.0400	0.0224	0.0518
04/11/09	0.1546*	0.0620	0.0470	0.0585	-0.0636	0.0670	0.0948*	0.0416	0.0585	0.0538
04/18/09	0.0295	0.0657	0.0094	0.0620	-0.0743	0.0709	-0.0293	0.0441	-0.0892**	0.0570
04/25/09	0.0710	0.0636	0.0642	0.0600	-0.0241	0.0686	0.0375	0.0426	0.0009	0.0551
05/02/09	0.1388*	0.0710	0.1254*	0.0670	-0.0153	0.0766	0.0473	0.0476	0.0540	0.0616
05/09/09	0.1495*	0.0629	0.0939*	0.0594	0.0181	0.0679	0.0765*	0.0422	0.0674	0.0546
R^2	0.9310		0.8325		0.9355		0.9405		0.9082	

*Statistically different from zero at $\alpha = 0.05$ level. **Statistically different from zero at $\alpha = 0.10$ level.

Table 9. Coefficient estimates – western and North Eastern regions, $2MM+ grocery stores

Variable	Western Region		North Eastern Region	
	Estimate	SE	Estimate	SE
Intercept	16.4448*	0.7200	16.6192*	0.5961
Log Price				
OJ	-0.6668*	0.3264	-1.0086*	0.2698
GJ	-0.0394	0.1760	0.4525*	0.1450
OJ BL	-0.2336*	0.1001	-0.1429	0.1658
GJ BL	-0.0151	0.0533	-0.1025*	0.0544
GJ CKL	-0.0011	0.0898	-0.1637*	0.0977
OJ DRK	-0.1173**	0.0718	0.0302	0.1066
OJBLDRK	-0.0391	0.0992	-0.1827*	0.0889
ANY PRO	0.0447	0.0680	0.1602*	0.1069
Seasonality				
S1	-0.0041	0.0057	0.0153*	0.0074
S2	0.0725*	0.0083	0.0590*	0.0081
Dummy Var				
12/20/08	-0.0465	0.0386	0.0394	0.0388
12/27/08	0.0573**	0.0391	0.0373	0.0390
01/03/09	0.0336	0.0376	0.0601*	0.0402
01/10/09	0.0331	0.0380	0.0205	0.0404
01/17/09	-0.0315	0.0387	-0.0590**	0.0401
01/24/09	-0.0164	0.0385	-0.0504	0.0409
01/31/09	-0.0644*	0.0386	-0.0195	0.0401
02/07/09	-0.0113	0.0402	-0.0430	0.0410
02/14/09	-0.0162	0.0400	-0.0711*	0.0442
02/21/09	-0.0412	0.0398	-0.0510	0.0400
02/28/09	-0.0864*	0.0390	-0.0062	0.0403
03/07/09	0.0276	0.0444	-0.0077	0.0391
03/14/09	0.0168	0.0410	-0.0404	0.0403
03/21/09	-0.0142	0.0414	-0.0503	0.0421
03/28/09	-0.0549	0.0410	-0.0810*	0.0424
04/04/09	-0.0131	0.0452	-0.0251	0.0437
04/11/09	0.0386	0.0466	0.0267	0.0430
04/18/09	-0.0241	0.0484	-0.1285*	0.0421
04/25/09	-0.0452	0.0449	-0.0510	0.0453
05/02/09	-0.0259	0.0519	-0.0458	0.0448
05/09/09	0.0415	0.0473	0.0044	0.0452
R^2	0.7811		0.7559	

*Statistically different from zero at $\alpha = 0.05$ level. **Statistically different from zero at $\alpha = 0.10$ level.