The SUMMARY Procedure

Variable	Minimum	Maximum	Mean	Std Dev
Formulary_Status	3.5000000	8.8000000	5.9604167	1.8290492
Comp_DTC_TV	5.0106353	6.6200732	5.7053761	0.6076668
TV	0	200.0000000	68.7500000	62.3178196
PDEs	1.6486586	3.2657594	2.7527093	0.4352299
DTC_Display	−0.7041281	0.6159903	0.1370887	0.3428086
UR	3.1000000	6.8000000	4.9562500	0.9935764
Sales	1764.90	2969.70	2223.53	327.6274436
Nov_Ind	0	1.0000000	0.0833333	0.2793102
Dec_Ind	0	1.0000000	0.0833333	0.2793102

The REG Procedure
Model: MODEL1
Dependent Variable: Sales

Number of Observations Read	48
Number of Observations Used	48

Analysis of Variance					
Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	8	4705856	588232	67.65	<.0001
Error	39	339112	8695.16970		
Corrected Total	47	5044968			

Root MSE	93.24789	R-Square	0.9328
Dependent Mean	2223.53125	Adj R-Sq	0.9190
Coeff Var	4.19368		

Parameter Estimates						
Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|	Variance Inflation
Intercept	1	1735.07917	272.14336	6.38	<.0001	0
Formulary_Status	1	43.41011	7.89109	5.50	<.0001	1.12602
Comp_DTC_TV	1	-96.46661	39.97491	-2.41	0.0206	3.18952
TV	1	3.95358	0.37443	10.56	<.0001	2.94292
PDEs	1	157.11785	33.19648	4.73	<.0001	1.12834
DTC_Display	1	87.65513	42.54492	2.06	0.0461	1.14979
UR	1	1.23409	14.29780	0.09	0.9317	1.09084
Nov_Ind	1	346.13174	54.96620	6.30	<.0001	1.27405
Dec_Ind	1	345.62408	53.71579	6.43	<.0001	1.21674

The REG Procedure
Model: MODEL1
Dependent Variable: Sales

Durbin-Watson D	1.412
Number of Observations	48
1st Order Autocorrelation	0.264

The REG Procedure
Model: MODEL1
Dependent Variable: Sales

Fit Diagnostics for Sales
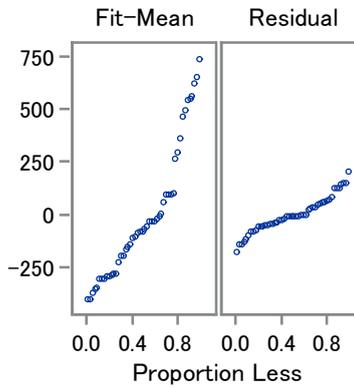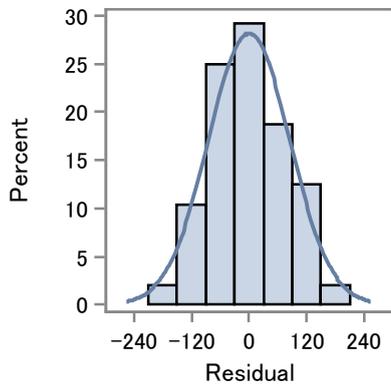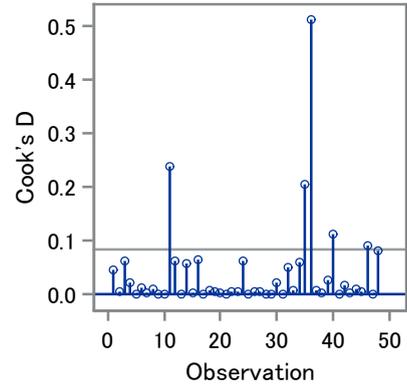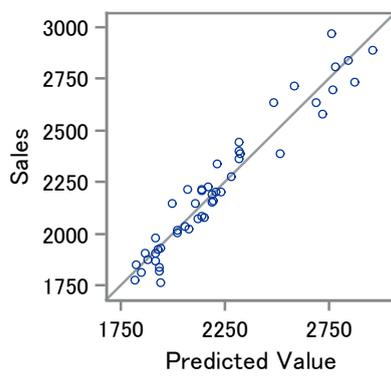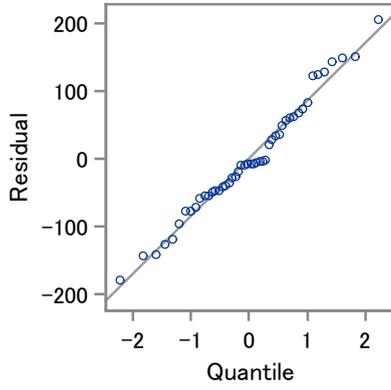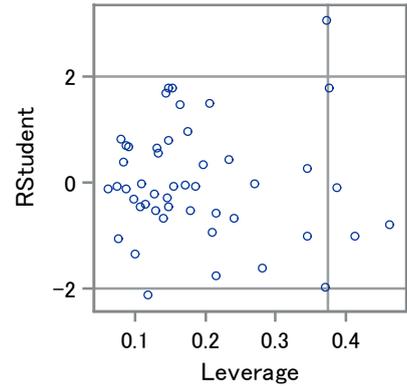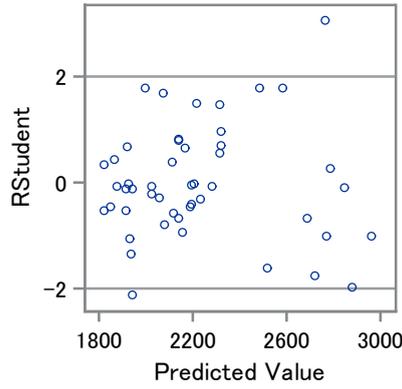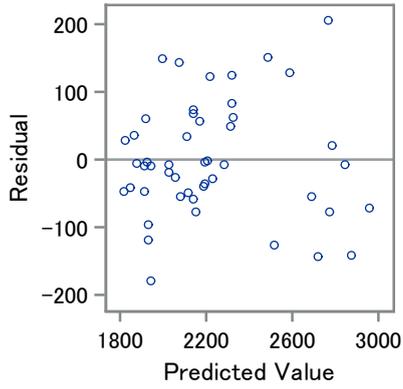
Observations	48
Parameters	9
Error DF	39
MSE	8695.2
R-Square	0.9328
Adj R-Square	0.919

The REG Procedure
Model: MODEL1
Dependent Variable: Sales

Residual by Regressors for Sales

Residual by Regressors for Sales
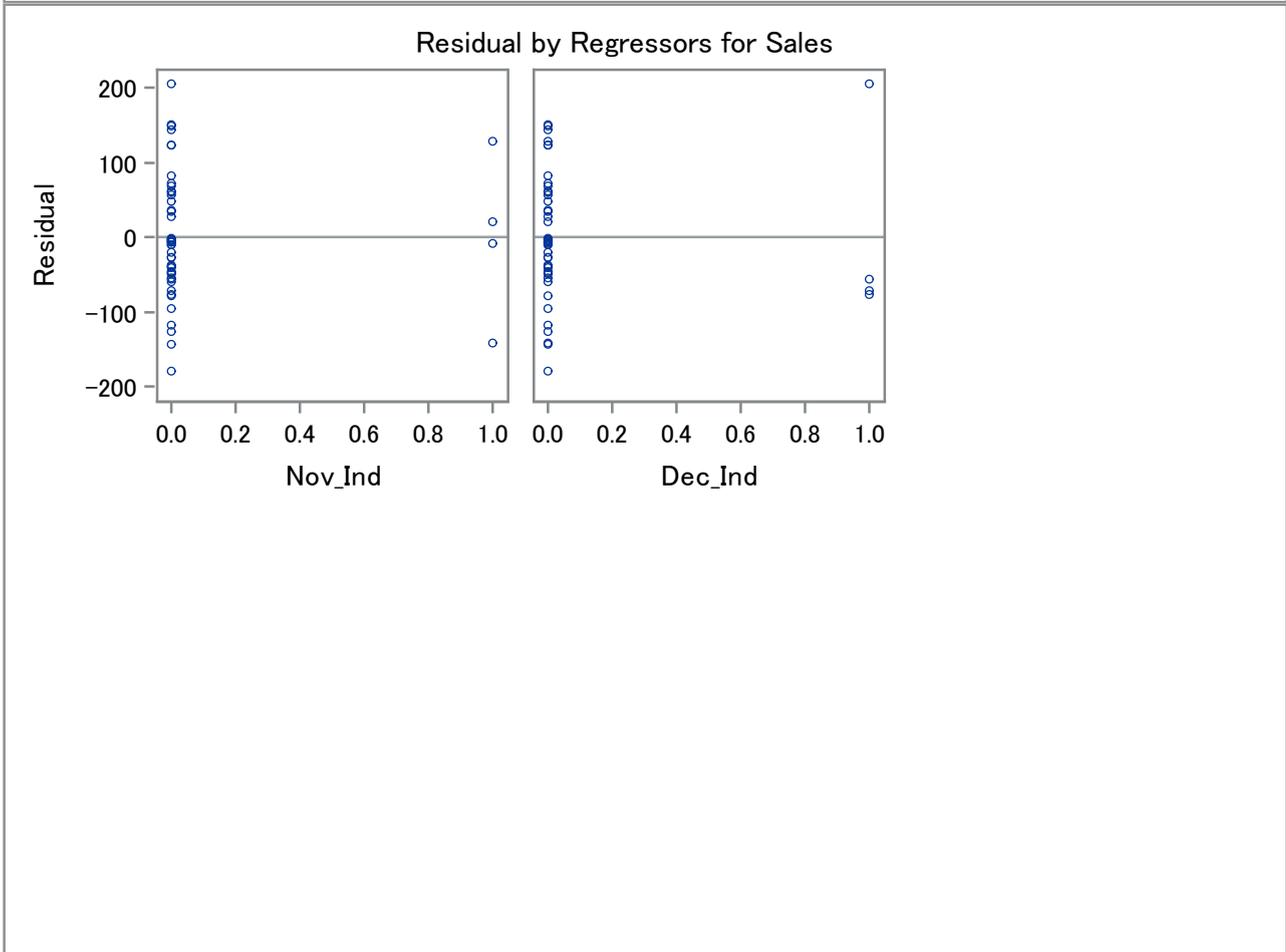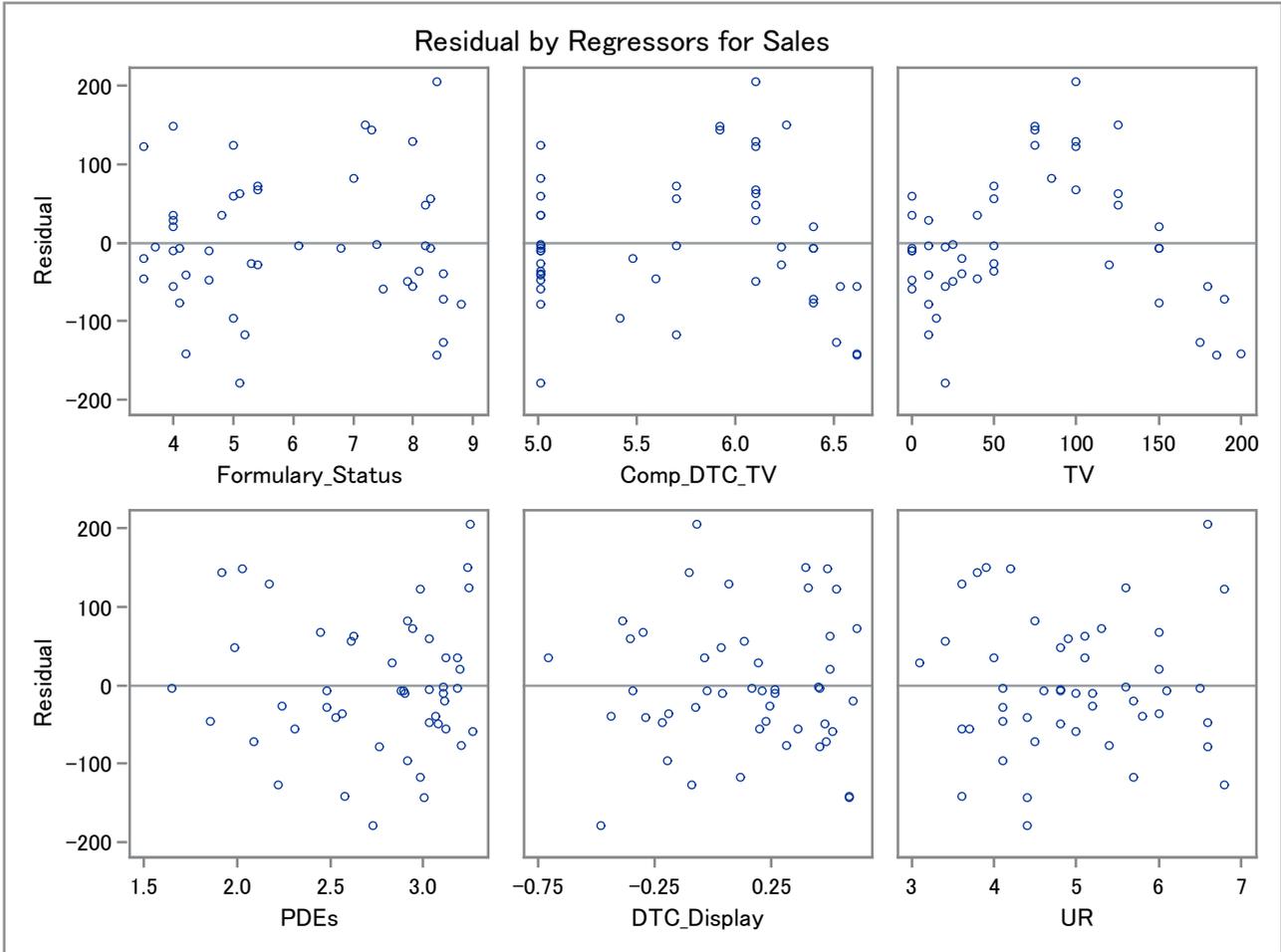
The NLIN Procedure

Listing of Compiled Program Code		
Stmt	Line:Col	Statement as Parsed
1	12722:3	MODEL.Sales = B_INT + B_Formulary_Status * Formulary_Status + B_Comp_DTC_TV * Comp_DTC_TV + B_TV * (TV + 0.01) ** P_TV + B_PDEs * PDEs + B_DTC_Display * DTC_Display + B_UR * UR + B_Nov_Ind * Nov_Ind + B_Dec_Ind * Dec_Ind;
1	12722:3	@MODEL.Sales/@B_TV = (TV + 0.01) ** P_TV;
1	12722:3	@MODEL.Sales/@P_TV = B_TV * LOG(TV + 0.01) * (TV + 0.01) ** P_TV;

The NLIN Procedure
Dependent Variable Sales

										Grid Search
B_INT	B_Formulary_Status	B_Comp_DTC_TV	B_TV	P_TV	B_PDEs	B_DTC_Display	B_UR	B_Nov_Ind	B_Dec_Ind	Sum of Squares
1863.9	43.2673	−87.6502	6.0000	0.9000	157.1	81.8786	−0.3258	344.9	335.9	1501667
1863.9	43.2673	−87.6502	6.0000	0.7000	157.1	81.8786	−0.3258	344.9	335.9	1629746
1863.9	43.2673	−87.6502	56.0000	0.3000	157.1	81.8786	−0.3258	344.9	335.9	1932582
1863.9	43.2673	−87.6502	106.0	0.1000	157.1	81.8786	−0.3258	344.9	335.9	2632888
1863.9	43.2673	−87.6502	6.0000	0.5000	157.1	81.8786	−0.3258	344.9	335.9	2739857
1863.9	43.2673	−87.6502	56.0000	0.1000	157.1	81.8786	−0.3258	344.9	335.9	2837284
1863.9	43.2673	−87.6502	156.0	0.1000	157.1	81.8786	−0.3258	344.9	335.9	2908290
1863.9	43.2673	−87.6502	106.0	0.3000	157.1	81.8786	−0.3258	344.9	335.9	3215462
1863.9	43.2673	−87.6502	6.0000	0.3000	157.1	81.8786	−0.3258	344.9	335.9	3294636
1863.9	43.2673	−87.6502	6.0000	0.1000	157.1	81.8786	−0.3258	344.9	335.9	3521477

The NLIN Procedure
Dependent Variable Sales
Method: Gauss-Newton

Iterative Phase

Iter	B_INT	B_Formulary_Status	B_Comp_DTC_TV	B_TV	P_TV	B_PDEs	B_DTC_Display	B_UR	B_Nov_Ind	B_Dec_Ind	Sum of Squares
0	1863.9	43.2673	−87.6502	6.0000	0.9000	157.1	81.8786	−0.3258	344.9	335.9	1501667
1	1758.7	42.8765	−96.6143	11.7413	0.7323	173.2	82.3008	−2.7939	354.1	346.8	520151
2	1695.7	42.3170	−106.6	17.2653	0.7205	181.2	82.6893	−3.5677	357.4	354.1	275100
3	1694.3	42.2775	−107.4	17.1735	0.7289	181.2	82.8740	−3.5632	357.2	354.4	269697
4	1692.2	42.2778	−107.4	17.5226	0.7250	181.6	82.7594	−3.6040	357.5	354.5	269687
5	1693.2	42.2774	−107.4	17.3662	0.7267	181.4	82.8121	−3.5845	357.4	354.5	269686
6	1692.7	42.2775	−107.4	17.4364	0.7260	181.5	82.7886	−3.5930	357.4	354.5	269685
7	1692.9	42.2775	−107.4	17.4059	0.7263	181.4	82.7988	−3.5892	357.4	354.5	269685
8	1692.8	42.2775	−107.4	17.4194	0.7262	181.5	82.7943	−3.5909	357.4	354.5	269685
9	1692.9	42.2775	−107.4	17.4135	0.7262	181.5	82.7963	−3.5901	357.4	354.5	269685
10	1692.9	42.2775	−107.4	17.4161	0.7262	181.5	82.7954	−3.5905	357.4	354.5	269685
11	1692.9	42.2775	−107.4	17.4149	0.7262	181.5	82.7958	−3.5903	357.4	354.5	269685
12	1692.9	42.2775	−107.4	17.4154	0.7262	181.5	82.7956	−3.5904	357.4	354.5	269685
13	1692.9	42.2775	−107.4	17.4152	0.7262	181.5	82.7957	−3.5904	357.4	354.5	269685
14	1692.9	42.2775	−107.4	17.4153	0.7262	181.5	82.7957	−3.5904	357.4	354.5	269685

NOTE: Convergence criterion met.

Estimation Summary

Method	Gauss-Newton
Iterations	14
Subiterations	1
Average Subiterations	0.071429
R	8.532E−7
PPC(B_TV)	2.442E−6
RPC(B_TV)	5.558E−6
Object	2.11E−12
Objective	269685.1
Observations Read	48
Observations Used	48
Observations Missing	0

Source	DF	Sum of Squares	Mean Square	F Value	Approx Pr > F
Model	9	4775283	530587	74.76	<.0001
Error	38	269685	7097.0		
Corrected Total	47	5044968			

The NLIN Procedure

Parameter	Estimate	Approx Std Error	Approximate 90% Confidence Limits	
B_INT	1692.9	246.6	1277.2	2108.6
B_Formulary_Status	42.2775	7.1347	30.2488	54.3062
B_Comp_DTC_TV	−107.4	36.1843	−168.4	−46.3714
B_TV	17.4153	8.2125	3.5693	31.2612
P_TV	0.7262	0.0878	0.5783	0.8742
B_PDEs	181.5	31.3844	128.5	234.4
B_DTC_Display	82.7957	38.5369	17.8242	147.8
B_UR	−3.5904	13.0118	−25.5277	18.3469
B_Nov_Ind	357.4	49.8735	273.3	441.5
B_Dec_Ind	354.5	48.6283	272.5	436.5

Approximate Correlation Matrix						
	B_INT	B_Formulary_Status	B_Comp_DTC_TV	B_TV	P_TV	B_PDEs
B_INT	1.0000000	−0.2976807	−0.8900720	−0.1096040	0.2067631	−0.4516514
B_Formulary_Status	−0.2976807	1.0000000	0.1983866	−0.0530490	−0.0023181	0.0047876
B_Comp_DTC_TV	−0.8900720	0.1983866	1.0000000	−0.0784529	−0.0438388	0.1284279
B_TV	−0.1096040	−0.0530490	−0.0784529	1.0000000	−0.9845203	0.2925616
P_TV	0.2067631	−0.0023181	−0.0438388	−0.9845203	1.0000000	−0.2780371
B_PDEs	−0.4516514	0.0047876	0.1284279	0.2925616	−0.2780371	1.0000000
B_DTC_Display	0.2396170	0.0382968	−0.2303445	−0.0723224	0.0702611	−0.1881106
B_UR	−0.3696916	−0.0296173	0.2325320	−0.1072679	0.0756693	−0.1471477
B_Nov_Ind	0.1139612	0.0442466	−0.1346252	0.1035500	−0.1404931	−0.0588898
B_Dec_Ind	0.2829867	−0.0446557	−0.3137465	0.0621438	−0.0555382	−0.0530574

Approximate Correlation Matrix				
	B_DTC_Display	B_UR	B_Nov_Ind	B_Dec_Ind
B_INT	0.2396170	−0.3696916	0.1139612	0.2829867
B_Formulary_Status	0.0382968	−0.0296173	0.0442466	−0.0446557
B_Comp_DTC_TV	−0.2303445	0.2325320	−0.1346252	−0.3137465
B_TV	−0.0723224	−0.1072679	0.1035500	0.0621438
P_TV	0.0702611	0.0756693	−0.1404931	−0.0555382
B_PDEs	−0.1881106	−0.1471477	−0.0588898	−0.0530574
B_DTC_Display	1.0000000	−0.0091451	0.0665732	0.0471912
B_UR	−0.0091451	1.0000000	−0.0019219	−0.0964850
B_Nov_Ind	0.0665732	−0.0019219	1.0000000	0.2334290
B_Dec_Ind	0.0471912	−0.0964850	0.2334290	1.0000000

Obs	Month	Formulary_Status	Comp_DTC_TV	Nov_Ind	Dec_Ind	TV	PDEs	DTC_Display	UR	Sales	yhat	resid	std_dev_r
1	01Jan201	5.0	5.01064	0	0	75	3.24649	0.40919	5.6	2442.0	2369.67	72.332	74.8548
2	01Feb201	5.1	6.10925	0	0	125	2.62467	0.49819	5.1	2385.6	2332.16	53.445	80.4229
3	01Mar201	5.1	5.01064	0	0	20	2.72785	−0.48318	4.4	1764.9	1963.07	−198.173	78.5752
4	01Apr201	5.2	5.70378	0	0	10	2.98062	0.11518	5.7	1817.7	1922.96	−105.260	79.8043
5	01May201	5.4	6.23441	0	0	120	2.48491	−0.07685	4.1	2203.8	2245.06	−41.264	79.8777
6	01Jun201	5.4	6.10925	0	0	100	2.45101	−0.29755	6.0	2210.1	2157.38	52.721	77.6473
7	01Jul201	5.3	5.01064	0	0	50	2.24071	0.24542	5.2	2033.1	2085.57	−52.468	77.3159
8	01Aug201	5.0	5.41610	0	0	15	2.91235	−0.19734	4.1	1838.7	1944.61	−105.915	80.6583
9	01Sep201	4.8	5.01064	0	0	40	3.11795	−0.03614	5.1	2145.9	2156.02	−10.120	78.7321
10	01Oct201	4.6	5.01064	0	0	0	2.90142	0.03963	5.0	1906.5	1861.74	44.759	78.3666
11	01Nov201	4.2	6.62007	1	0	200	2.58022	0.58319	3.6	2735.4	2837.14	−101.736	65.6547
12	01Dec201	4.1	6.39693	0	1	150	3.20275	0.31215	5.4	2694.6	2784.06	−89.456	68.0291
13	01Jan201	4.0	5.01064	0	0	0	3.10459	0.26390	5.2	1932.3	1891.09	41.211	77.5390
14	01Feb201	4.0	5.92693	0	0	75	2.02815	0.49160	4.2	2149.5	2019.78	129.720	77.5684
15	01Mar201	4.0	6.10925	0	0	10	2.83321	0.19346	3.1	1853.1	1817.76	35.341	75.4000
16	01Apr201	3.5	6.10925	0	0	100	2.98062	0.52908	6.8	2339.1	2238.72	100.379	74.6607
17	01May201	3.7	6.23441	0	0	20	3.03013	0.26723	4.8	1873.2	1888.02	−14.824	75.6642
18	01Jun201	3.5	5.59842	0	0	40	1.85630	0.22715	4.1	1775.4	1834.40	−59.004	76.1354
19	01Jul201	4.6	5.01064	0	0	0	3.03013	−0.21731	6.6	1868.7	1858.08	10.623	75.0402
20	01Aug201	4.2	5.01064	0	0	10	2.53370	−0.28740	4.4	1811.1	1845.35	−34.251	79.6730
21	01Sep201	4.1	6.39693	0	0	150	2.48491	−0.02742	4.6	2275.8	2274.08	1.725	77.3324
22	01Oct201	4.0	5.01064	0	0	0	3.18221	−0.70413	4.0	1903.8	1829.33	74.465	71.8838
23	01Nov201	4.0	6.39693	1	0	150	3.19867	0.49830	6.0	2805.0	2795.26	9.736	68.0036
24	01Dec201	4.0	6.62007	0	1	20	2.31254	0.19687	3.7	2024.4	2081.69	−57.294	61.6108
25	01Jan201	3.5	5.48064	0	0	30	3.11352	0.60094	5.7	2006.1	2052.55	−46.445	77.8676
26	01Feb201	5.0	5.01064	0	0	0	3.03495	−0.35383	4.9	1980.3	1870.66	109.637	77.6317
27	01Mar201	5.4	5.70378	0	0	50	2.94444	0.61599	5.3	2212.5	2173.38	39.115	79.9207
28	01Apr201	6.1	5.70378	0	0	50	1.64866	0.16666	6.5	1926.0	1926.34	−0.345	71.9957
29	01May201	6.8	5.01064	0	0	0	2.89591	0.21172	4.8	2019.0	1968.72	50.283	77.4501
30	01Jun201	7.0	5.01064	0	0	85	2.91235	−0.38815	4.5	2403.3	2369.64	33.664	74.5778
31	01Jul201	7.4	5.01064	0	0	25	3.10459	0.45159	5.6	2204.4	2228.74	−24.337	78.8678
32	01Aug201	7.3	5.92693	0	0	75	1.91692	−0.10285	3.8	2216.7	2091.33	125.368	77.8383
33	01Sep201	7.5	5.01064	0	0	0	3.26576	0.51121	5.0	2082.6	2089.50	−6.900	74.9341
34	01Oct201	7.2	6.26340	0	0	125	3.23868	0.39800	3.9	2635.8	2511.81	123.987	77.1632
35	01Nov201	8.0	6.10925	1	0	100	2.17475	0.06691	3.6	2715.0	2613.37	101.632	66.0986
36	01Dec201	8.4	6.10925	0	1	100	3.25424	−0.07056	6.6	2969.7	2801.09	168.614	65.5135
37	01Jan201	8.3	5.70378	0	0	50	2.61007	0.13293	3.4	2224.8	2202.14	22.656	77.6455
38	01Feb201	8.5	5.01064	0	0	30	3.06339	−0.43546	5.8	2150.4	2219.14	−68.736	76.6326
39	01Mar201	8.8	5.01064	0	0	10	2.76632	0.45820	6.6	2078.4	2135.87	−57.471	74.6567
40	01Apr201	8.5	6.51471	0	0	175	2.21920	−0.09101	6.8	2390.4	2464.56	−74.160	68.9572
41	01May201	8.2	5.01064	0	0	10	3.18635	0.45566	4.1	2188.8	2195.49	−6.686	76.5731
42	01Jun201	8.0	6.53669	0	0	180	3.12236	0.36384	3.6	2635.2	2669.41	−34.208	73.0390
43	01Jul201	8.1	5.01064	0	0	50	2.56495	−0.19221	6.0	2157.9	2223.67	−65.773	78.4478

Obs	Month	Formulary_Status	Comp_DTC_TV	Nov_Ind	Dec_Ind	TV	PDEs	DTC_Display	UR	Sales	yhat	resid	std_dev_r
44	01Aug201	7.9	6.10925	0	0	25	3.08191	0.47988	4.8	2071.2	2133.01	−61.809	74.3320
45	01Sep201	8.2	6.10925	0	0	125	1.98787	0.03308	4.8	2365.2	2310.23	54.965	78.3056
46	01Oct201	8.4	6.62007	0	0	185	3.00568	0.58396	4.4	2578.5	2686.75	−108.248	73.5852
47	01Nov201	8.3	6.39693	1	0	150	2.87920	−0.34592	6.1	2839.2	2848.83	−9.632	65.8553
48	01Dec201	8.5	6.39693	0	1	190	2.09186	0.48646	4.5	2888.4	2910.26	−21.863	61.8162
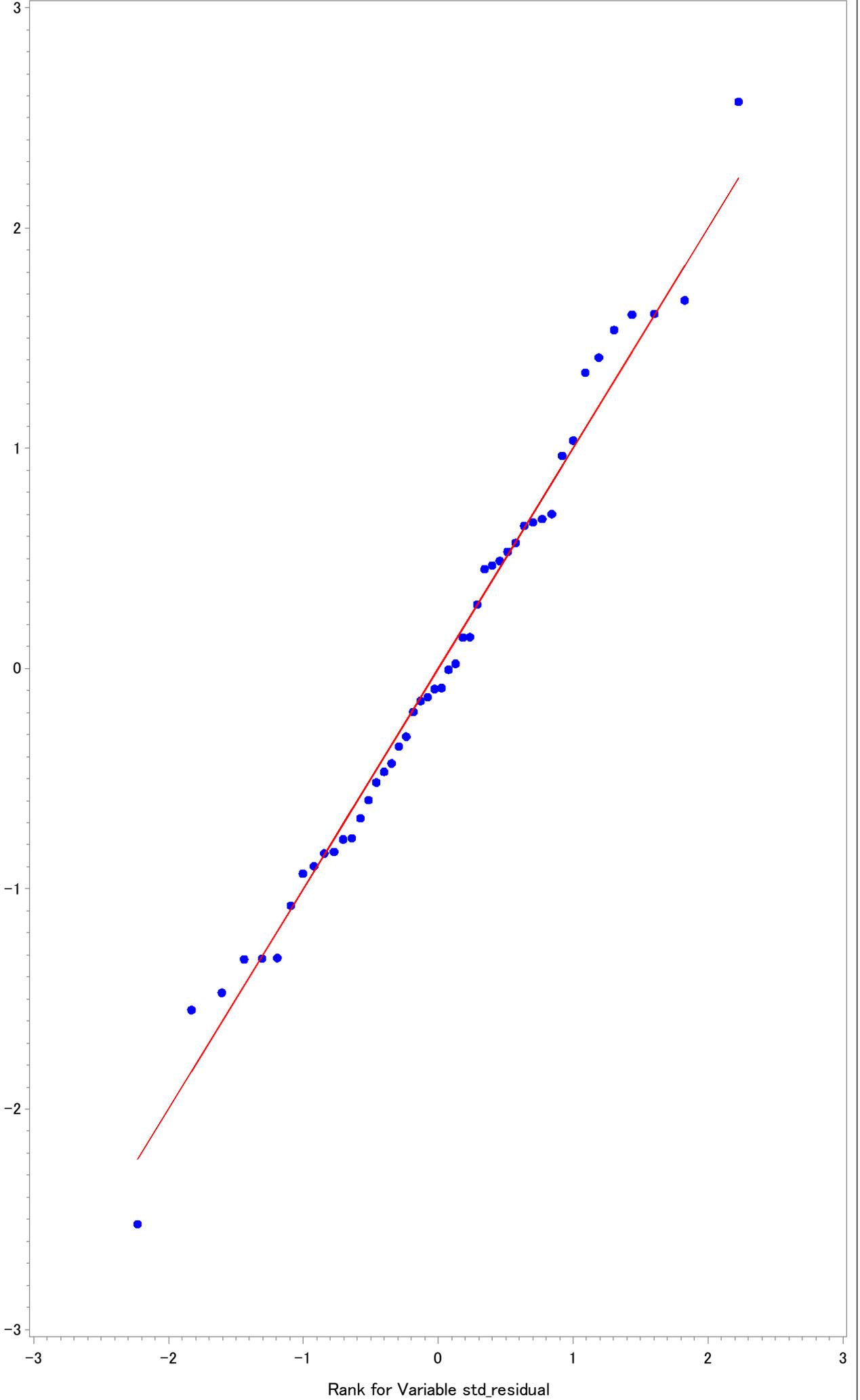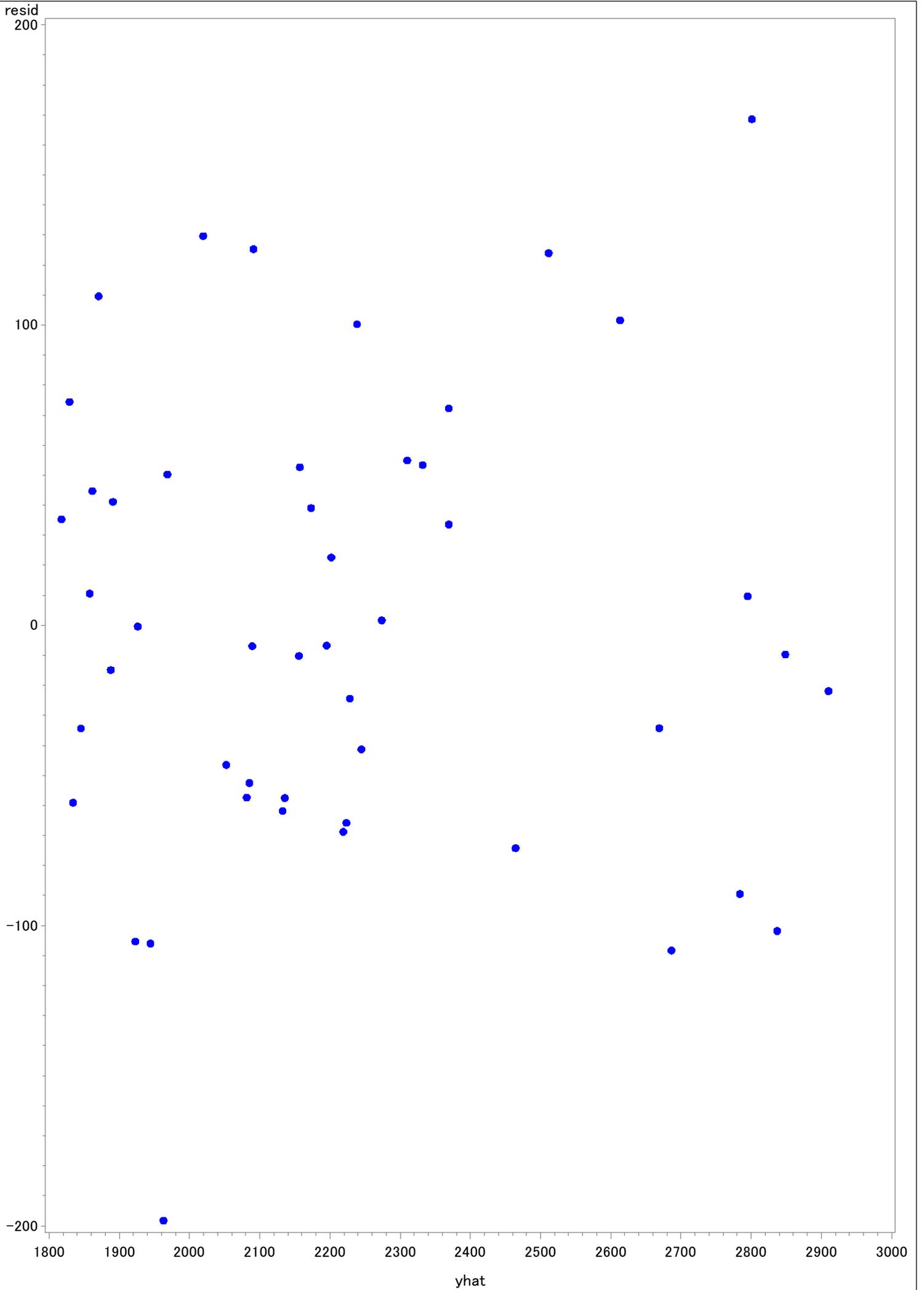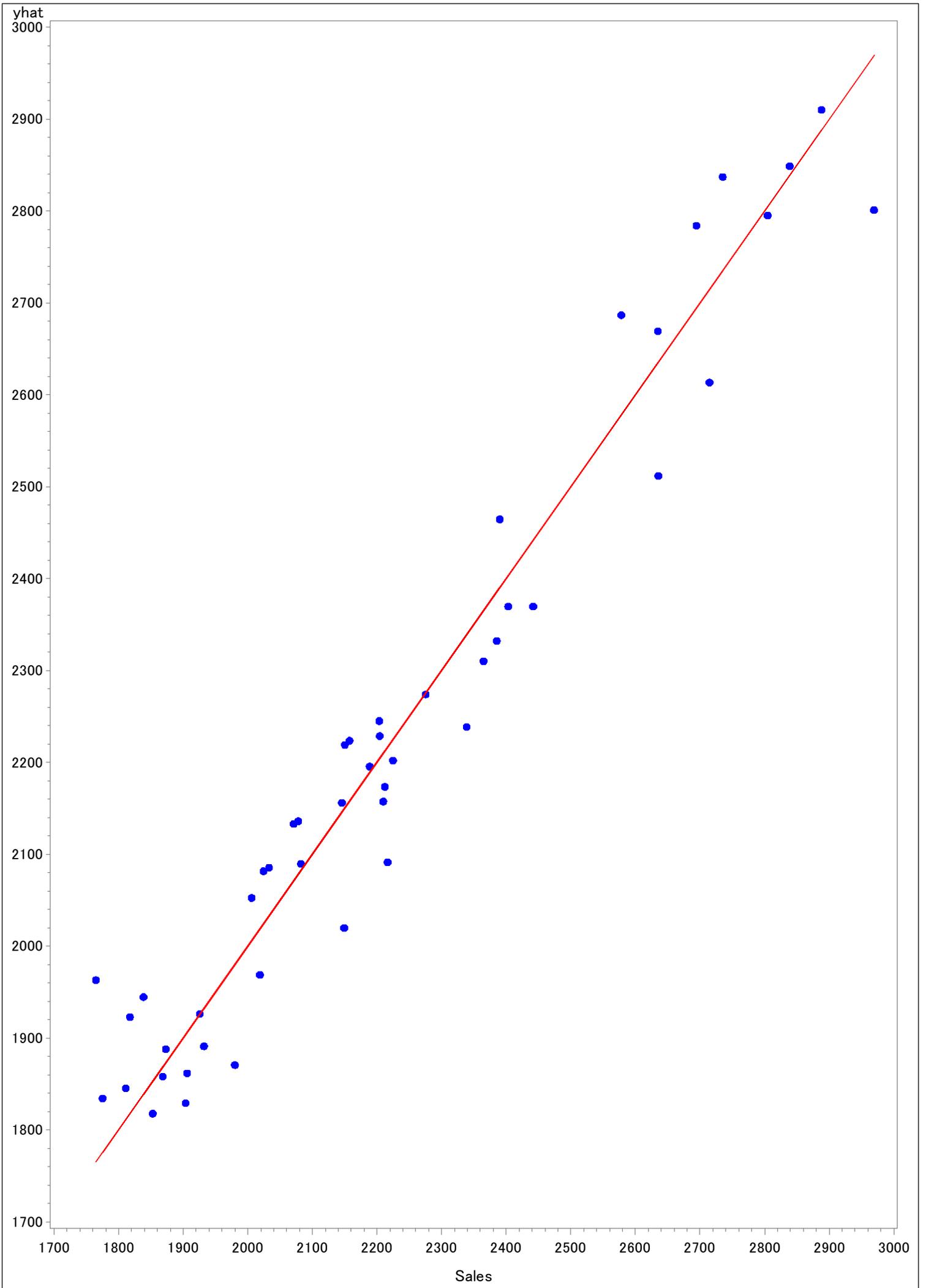
The REG Procedure
Model: MODEL1
Dependent Variable: resid

Number of Observations Read	48
Number of Observations Used	48

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	0	0	.	.	.
Error	47	269685	5737.98187		
Corrected Total	47	269685			

Root MSE	75.74947	R-Square	0.0000
Dependent Mean	5.027407E-9	Adj R-Sq	0.0000
Coeff Var	1.50673E12		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > |t|
Intercept	1	5.027407E-9	10.93349	0.00	1.0000

The REG Procedure
Model: MODEL1
Dependent Variable: resid

Durbin-Watson D	1.461
Pr < DW	0.0279
Pr > DW	0.9721
Number of Observations	48
1st Order Autocorrelation	0.259

Note: Pr<DW is the p-value for testing positive autocorrelation, and Pr>DW is the p-value for testing negative autocorrelation.

The REG Procedure
Model: MODEL1
Dependent Variable: resid

Fit Diagnostics for resid

Observations	48
Parameters	1
Error DF	47
MSE	5738
R-Square	0
Adj R-Square	0
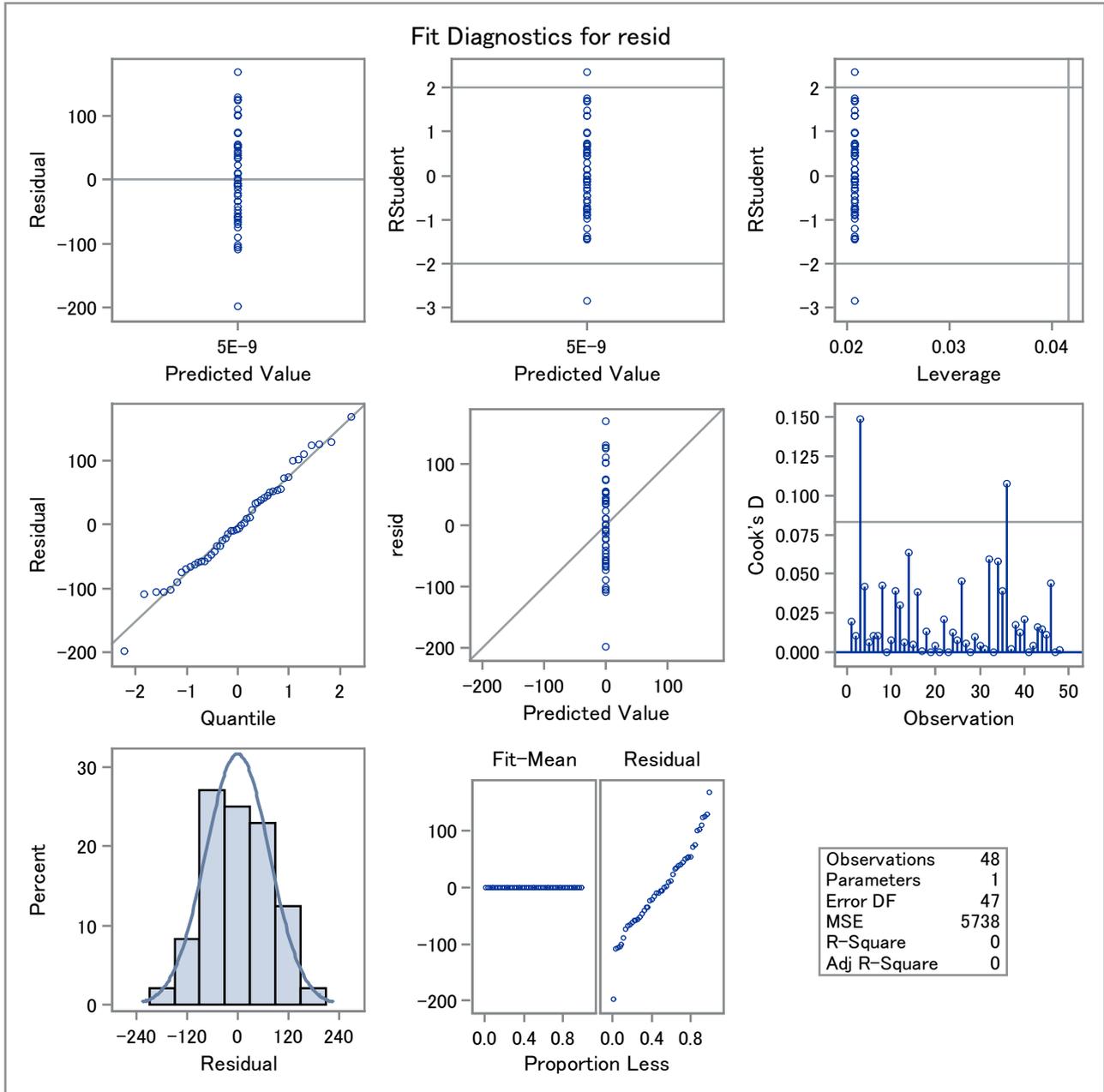
The REG Procedure
Model: MODEL1
Dependent Variable: resid

Residual by Regressors for resid
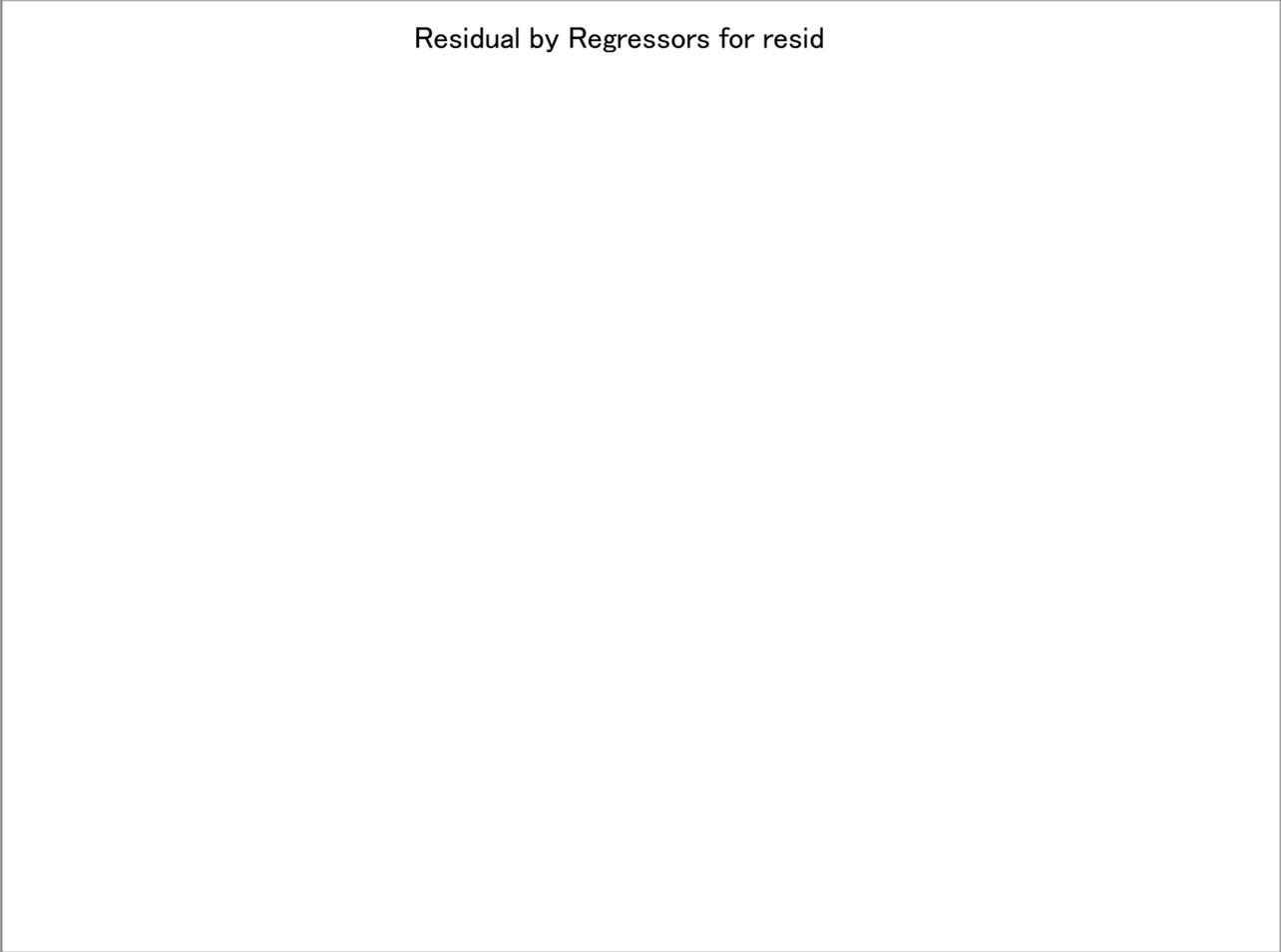
Obs	Month	Formulary_Status	Comp_DTC_TV	Nov_Ind	Dec_Ind	TV	PDEs	DTC_Display	UR	Sales
1	01Jan201	5.0	5.01064	0	0	75	3.24649	0.40919	5.6	2442.0
2	01Feb201	5.1	6.10925	0	0	125	2.62467	0.49819	5.1	2385.6
3	01Mar201	5.1	5.01064	0	0	20	2.72785	−0.48318	4.4	1764.9
4	01Apr201	5.2	5.70378	0	0	10	2.98062	0.11518	5.7	1817.7
5	01May201	5.4	6.23441	0	0	120	2.48491	−0.07685	4.1	2203.8
6	01Jun201	5.4	6.10925	0	0	100	2.45101	−0.29755	6.0	2210.1
7	01Jul201	5.3	5.01064	0	0	50	2.24071	0.24542	5.2	2033.1
8	01Aug201	5.0	5.41610	0	0	15	2.91235	−0.19734	4.1	1838.7
9	01Sep201	4.8	5.01064	0	0	40	3.11795	−0.03614	5.1	2145.9
10	01Oct201	4.6	5.01064	0	0	0	2.90142	0.03963	5.0	1906.5
11	01Nov201	4.2	6.62007	1	0	200	2.58022	0.58319	3.6	2735.4
12	01Dec201	4.1	6.39693	0	1	150	3.20275	0.31215	5.4	2694.6
13	01Jan201	4.0	5.01064	0	0	0	3.10459	0.26390	5.2	1932.3
14	01Feb201	4.0	5.92693	0	0	75	2.02815	0.49160	4.2	2149.5
15	01Mar201	4.0	6.10925	0	0	10	2.83321	0.19346	3.1	1853.1
16	01Apr201	3.5	6.10925	0	0	100	2.98062	0.52908	6.8	2339.1
17	01May201	3.7	6.23441	0	0	20	3.03013	0.26723	4.8	1873.2
18	01Jun201	3.5	5.59842	0	0	40	1.85630	0.22715	4.1	1775.4
19	01Jul201	4.6	5.01064	0	0	0	3.03013	−0.21731	6.6	1868.7
20	01Aug201	4.2	5.01064	0	0	10	2.53370	−0.28740	4.4	1811.1
21	01Sep201	4.1	6.39693	0	0	150	2.48491	−0.02742	4.6	2275.8
22	01Oct201	4.0	5.01064	0	0	0	3.18221	−0.70413	4.0	1903.8
23	01Nov201	4.0	6.39693	1	0	150	3.19867	0.49830	6.0	2805.0
24	01Dec201	4.0	6.62007	0	1	20	2.31254	0.19687	3.7	2024.4
25	01Jan201	3.5	5.48064	0	0	30	3.11352	0.60094	5.7	2006.1
26	01Feb201	5.0	5.01064	0	0	0	3.03495	−0.35383	4.9	1980.3
27	01Mar201	5.4	5.70378	0	0	50	2.94444	0.61599	5.3	2212.5
28	01Apr201	6.1	5.70378	0	0	50	1.64866	0.16666	6.5	1926.0
29	01May201	6.8	5.01064	0	0	0	2.89591	0.21172	4.8	2019.0
30	01Jun201	7.0	5.01064	0	0	85	2.91235	−0.38815	4.5	2403.3
31	01Jul201	7.4	5.01064	0	0	25	3.10459	0.45159	5.6	2204.4
32	01Aug201	7.3	5.92693	0	0	75	1.91692	−0.10285	3.8	2216.7
33	01Sep201	7.5	5.01064	0	0	0	3.26576	0.51121	5.0	2082.6
34	01Oct201	7.2	6.26340	0	0	125	3.23868	0.39800	3.9	2635.8
35	01Nov201	8.0	6.10925	1	0	100	2.17475	0.06691	3.6	2715.0
36	01Dec201	8.4	6.10925	0	1	100	3.25424	−0.07056	6.6	2969.7
37	01Jan201	8.3	5.70378	0	0	50	2.61007	0.13293	3.4	.
38	01Feb201	8.5	5.01064	0	0	30	3.06339	−0.43546	5.8	.
39	01Mar201	8.8	5.01064	0	0	10	2.76632	0.45820	6.6	.
40	01Apr201	8.5	6.51471	0	0	175	2.21920	−0.09101	6.8	.
41	01May201	8.2	5.01064	0	0	10	3.18635	0.45566	4.1	.
42	01Jun201	8.0	6.53669	0	0	180	3.12236	0.36384	3.6	.
43	01Jul201	8.1	5.01064	0	0	50	2.56495	−0.19221	6.0	.

Obs	Month	Formulary_Status	Comp_DTC_TV	Nov_Ind	Dec_Ind	TV	PDEs	DTC_Display	UR	Sales
44	01Aug201	7.9	6.10925	0	0	25	3.08191	0.47988	4.8	.
45	01Sep201	8.2	6.10925	0	0	125	1.98787	0.03308	4.8	.
46	01Oct201	8.4	6.62007	0	0	185	3.00568	0.58396	4.4	.
47	01Nov201	8.3	6.39693	1	0	150	2.87920	−0.34592	6.1	.
48	01Dec201	8.5	6.39693	0	1	190	2.09186	0.48646	4.5	.

Obs	Month	Formulary_Status	Comp_DTC_TV	Nov_Ind	Dec_Ind	TV	PDEs	DTC_Display	UR	Sales

The NLIN Procedure

Stmt	Line:Col	Statement as Parsed
		Listing of Compiled Program Code
1	13002:3	MODEL.Sales = B_INT + B_Formulary_Status * Formulary_Status + B_Comp_DTC_TV * Comp_DTC_TV + B_TV * (TV + 0.01) ** P_TV + B_PDEs * PDEs + B_DTC_Display * DTC_Display + B_UR * UR + B_Nov_Ind * Nov_Ind + B_Dec_Ind * Dec_Ind;
1	13002:3	@MODEL.Sales/@B_TV = (TV + 0.01) ** P_TV;
1	13002:3	@MODEL.Sales/@P_TV = B_TV * LOG(TV + 0.01) * (TV + 0.01) ** P_TV;

The NLIN Procedure
Dependent Variable Sales

Grid Search										
B_INT	B_Formulary_Status	B_Comp_DTC_TV	B_TV	P_TV	B_PDEs	B_DTC_Display	B_UR	B_Nov_Ind	B_Dec_Ind	Sum of Squares
1863.9	43.2673	−87.6502	6.0000	0.9000	157.1	81.8786	−0.3258	344.9	335.9	1059972
1863.9	43.2673	−87.6502	6.0000	0.7000	157.1	81.8786	−0.3258	344.9	335.9	1207202
1863.9	43.2673	−87.6502	56.0000	0.3000	157.1	81.8786	−0.3258	344.9	335.9	1422411
1863.9	43.2673	−87.6502	6.0000	0.5000	157.1	81.8786	−0.3258	344.9	335.9	1875522
1863.9	43.2673	−87.6502	106.0	0.1000	157.1	81.8786	−0.3258	344.9	335.9	1901090
1863.9	43.2673	−87.6502	56.0000	0.1000	157.1	81.8786	−0.3258	344.9	335.9	1961137
1863.9	43.2673	−87.6502	156.0	0.1000	157.1	81.8786	−0.3258	344.9	335.9	2180320
1863.9	43.2673	−87.6502	6.0000	0.3000	157.1	81.8786	−0.3258	344.9	335.9	2216227
1863.9	43.2673	−87.6502	6.0000	0.1000	157.1	81.8786	−0.3258	344.9	335.9	2360458
1863.9	43.2673	−87.6502	106.0	0.3000	157.1	81.8786	−0.3258	344.9	335.9	2409722

The NLIN Procedure
Dependent Variable Sales
Method: Gauss-Newton

Iter	B_INT	B_Formulary_Status	B_Comp_DTC_TV	B_TV	P_TV	B_PDEs	B_DTC_Display	B_UR	B_Nov_Ind	B_Dec_Ind	Sum of Squares
0	1863.9	43.2673	−87.6502	6.0000	0.9000	157.1	81.8786	−0.3258	344.9	335.9	1059972
1	1292.1	65.3314	−67.5979	13.0027	0.7085	194.6	81.2040	6.1501	310.7	300.6	647910
2	1327.3	66.6411	−67.6269	6.8429	0.8921	183.4	86.3912	7.3307	293.2	300.5	231222
3	1318.8	66.3409	−67.6238	8.3866	0.8521	186.1	85.1390	7.0645	297.4	300.5	223635
4	1306.3	66.0759	−67.6739	11.2055	0.7975	189.5	83.3862	6.8774	302.4	300.3	207879
5	1308.7	66.3585	−67.7777	11.6883	0.8033	188.1	83.8345	7.1884	300.2	300.1	180715
6	1307.8	66.3505	−67.7838	11.9102	0.8007	188.3	83.7186	7.1873	300.5	300.1	180548
7	1308.3	66.3682	−67.7863	11.8375	0.8019	188.2	83.7916	7.2034	300.3	300.1	180548
8	1308.1	66.3598	−67.7852	11.8742	0.8013	188.3	83.7560	7.1959	300.4	300.1	180548
9	1308.2	66.3639	−67.7858	11.8564	0.8016	188.2	83.7734	7.1996	300.3	300.1	180548
10	1308.1	66.3619	−67.7855	11.8652	0.8015	188.2	83.7649	7.1978	300.3	300.1	180548
11	1308.2	66.3629	−67.7856	11.8609	0.8016	188.2	83.7690	7.1987	300.3	300.1	180548
12	1308.1	66.3624	−67.7856	11.8630	0.8015	188.2	83.7670	7.1982	300.3	300.1	180548
13	1308.2	66.3627	−67.7856	11.8620	0.8015	188.2	83.7680	7.1984	300.3	300.1	180548
14	1308.2	66.3626	−67.7856	11.8625	0.8015	188.2	83.7675	7.1983	300.3	300.1	180548
15	1308.2	66.3626	−67.7856	11.8622	0.8015	188.2	83.7677	7.1984	300.3	300.1	180548
16	1308.2	66.3626	−67.7856	11.8623	0.8015	188.2	83.7676	7.1984	300.3	300.1	180548
17	1308.2	66.3626	−67.7856	11.8623	0.8015	188.2	83.7677	7.1984	300.3	300.1	180548

Iterative Phase

NOTE: Convergence criterion met.

Estimation Summary

Method	Gauss-Newton
Iterations	17
Subiterations	2
Average Subiterations	0.117647
R	7.23E−7
PPC(B_TV)	2.383E−6
RPC(B_TV)	4.877E−6
Object	1.12E−12
Objective	180547.6
Observations Read	48
Observations Used	36
Observations Missing	12

Source	DF	Sum of Squares	Mean Square	F Value	Approx Pr > F
Model	9	3545993	393999	56.74	<.0001
Error	26	180548	6944.1		
Corrected Total	35	3726541			

The NLIN Procedure

Parameter	Estimate	Approx Std Error	Approximate 90% Confidence Limits	
B_INT	1308.2	313.5	773.5	1842.8
B_Formulary_Status	66.3626	10.8314	47.8884	84.8368
B_Comp_DTC_TV	−67.7856	43.6319	−142.2	6.6338
B_TV	11.8623	7.7472	−1.3514	25.0760
P_TV	0.8015	0.1274	0.5843	1.0188
B_PDEs	188.2	38.3802	122.8	253.7
B_DTC_Display	83.7677	47.3727	2.9679	164.6
B_UR	7.1984	16.8383	−21.5214	35.9181
B_Nov_Ind	300.3	64.9617	189.5	411.1
B_Dec_Ind	300.1	60.8468	196.3	403.9

Approximate Correlation Matrix					
	B_INT	B_Formulary_Status	B_Comp_DTC_TV	B_TV	P_TV	B_PDEs
B_INT	1.0000000	−0.3778547	−0.9129695	−0.0875439	0.1619685	−0.4717115
B_Formulary_Status	−0.3778547	1.0000000	0.2865571	−0.1931959	0.1620287	−0.0128598
B_Comp_DTC_TV	−0.9129695	0.2865571	1.0000000	−0.0847039	−0.0053204	0.2159729
B_TV	−0.0875439	−0.1931959	−0.0847039	1.0000000	−0.9895710	0.4044361
P_TV	0.1619685	0.1620287	−0.0053204	−0.9895710	1.0000000	−0.4062811
B_PDEs	−0.4717115	−0.0128598	0.2159729	0.4044361	−0.4062811	1.0000000
B_DTC_Display	0.3187590	0.0659342	−0.2791342	−0.1554977	0.1573257	−0.1824717
B_UR	−0.3762770	0.0492155	0.2671659	−0.1266602	0.0938994	−0.2226023
B_Nov_Ind	0.0329522	−0.1342126	−0.1081575	0.3270742	−0.3688714	0.0651896
B_Dec_Ind	0.5018241	−0.1882807	−0.4970559	0.0188884	0.0004088	−0.2080716

Approximate Correlation Matrix				
	B_DTC_Display	B_UR	B_Nov_Ind	B_Dec_Ind
B_INT	0.3187590	−0.3762770	0.0329522	0.5018241
B_Formulary_Status	0.0659342	0.0492155	−0.1342126	−0.1882807
B_Comp_DTC_TV	−0.2791342	0.2671659	−0.1081575	−0.4970559
B_TV	−0.1554977	−0.1266602	0.3270742	0.0188884
P_TV	0.1573257	0.0938994	−0.3688714	0.0004088
B_PDEs	−0.1824717	−0.2226023	0.0651896	−0.2080716
B_DTC_Display	1.0000000	−0.2198885	−0.1380828	0.1684869
B_UR	−0.2198885	1.0000000	0.1235947	−0.1560690
B_Nov_Ind	−0.1380828	0.1235947	1.0000000	0.2064415
B_Dec_Ind	0.1684869	−0.1560690	0.2064415	1.0000000

Obs	Month	Formulary_Status	Comp_DTC_TV	Nov_Ind	Dec_Ind	TV	PDEs	DTC_Display	UR
1	01Jan201	5.0	5.01064	0	0	75	3.24649	0.40919	5.6
2	01Feb201	5.1	6.10925	0	0	125	2.62467	0.49819	5.1
3	01Mar201	5.1	5.01064	0	0	20	2.72785	−0.48318	4.4
4	01Apr201	5.2	5.70378	0	0	10	2.98062	0.11518	5.7
5	01May201	5.4	6.23441	0	0	120	2.48491	−0.07685	4.1
6	01Jun201	5.4	6.10925	0	0	100	2.45101	−0.29755	6.0
7	01Jul201	5.3	5.01064	0	0	50	2.24071	0.24542	5.2
8	01Aug201	5.0	5.41610	0	0	15	2.91235	−0.19734	4.1
9	01Sep201	4.8	5.01064	0	0	40	3.11795	−0.03614	5.1
10	01Oct201	4.6	5.01064	0	0	0	2.90142	0.03963	5.0
11	01Nov201	4.2	6.62007	1	0	200	2.58022	0.58319	3.6
12	01Dec201	4.1	6.39693	0	1	150	3.20275	0.31215	5.4
13	01Jan201	4.0	5.01064	0	0	0	3.10459	0.26390	5.2
14	01Feb201	4.0	5.92693	0	0	75	2.02815	0.49160	4.2
15	01Mar201	4.0	6.10925	0	0	10	2.83321	0.19346	3.1
16	01Apr201	3.5	6.10925	0	0	100	2.98062	0.52908	6.8
17	01May201	3.7	6.23441	0	0	20	3.03013	0.26723	4.8
18	01Jun201	3.5	5.59842	0	0	40	1.85630	0.22715	4.1
19	01Jul201	4.6	5.01064	0	0	0	3.03013	−0.21731	6.6
20	01Aug201	4.2	5.01064	0	0	10	2.53370	−0.28740	4.4

Obs	Sales	yhat	resid	stdresidual
1	2442.0	2363.72	78.277	72.0366
2	2385.6	2373.78	11.815	76.8002
3	1764.9	1942.61	−177.706	75.7221
4	1817.7	1953.52	−135.820	76.5760
5	2203.8	2285.22	−81.424	75.9688
6	2210.1	2207.68	2.423	71.1844
7	2033.1	2072.92	−39.820	73.9577
8	1838.7	1938.04	−99.342	78.3764
9	2145.9	2135.87	10.025	75.4760
10	1906.5	1859.54	46.963	77.1625
11	2735.4	2827.93	−92.533	57.4951
12	2694.6	2772.92	−78.320	59.7246
13	1932.3	1878.19	54.112	75.9522
14	2149.5	2002.74	146.764	74.8464
15	1853.1	1806.50	46.605	70.4513
16	2339.1	2256.28	82.815	71.9850
17	1873.2	1889.38	−16.184	70.6190
18	1775.4	1787.13	−11.726	72.7864
19	1868.7	1873.76	−5.059	71.1472
20	1811.1	1806.93	4.165	77.3869

Obs	Month	Formulary_Status	Comp_DTC_TV	Nov_Ind	Dec_Ind	TV	PDEs	DTC_Display	UR
21	01Sep201	4.1	6.39693	0	0	150	2.48491	−0.02742	4.6
22	01Oct201	4.0	5.01064	0	0	0	3.18221	−0.70413	4.0
23	01Nov201	4.0	6.39693	1	0	150	3.19867	0.49830	6.0
24	01Dec201	4.0	6.62007	0	1	20	2.31254	0.19687	3.7
25	01Jan201	3.5	5.48064	0	0	30	3.11352	0.60094	5.7
26	01Feb201	5.0	5.01064	0	0	0	3.03495	−0.35383	4.9
27	01Mar201	5.4	5.70378	0	0	50	2.94444	0.61599	5.3
28	01Apr201	6.1	5.70378	0	0	50	1.64866	0.16666	6.5
29	01May201	6.8	5.01064	0	0	0	2.89591	0.21172	4.8
30	01Jun201	7.0	5.01064	0	0	85	2.91235	−0.38815	4.5
31	01Jul201	7.4	5.01064	0	0	25	3.10459	0.45159	5.6
32	01Aug201	7.3	5.92693	0	0	75	1.91692	−0.10285	3.8
33	01Sep201	7.5	5.01064	0	0	0	3.26576	0.51121	5.0
34	01Oct201	7.2	6.26340	0	0	125	3.23868	0.39800	3.9
35	01Nov201	8.0	6.10925	1	0	100	2.17475	0.06691	3.6
36	01Dec201	8.4	6.10925	0	1	100	3.25424	−0.07056	6.6
37	01Jan201	8.3	5.70378	0	0	50	2.61007	0.13293	3.4
38	01Feb201	8.5	5.01064	0	0	30	3.06339	−0.43546	5.8
39	01Mar201	8.8	5.01064	0	0	10	2.76632	0.45820	6.6
40	01Apr201	8.5	6.51471	0	0	175	2.21920	−0.09101	6.8

Obs	Sales	yhat	resid	stdresidual
21	2275.8	2303.48	−27.681	70.9489
22	1903.8	1803.07	100.727	69.6120
23	2805.0	2785.66	19.344	59.6693
24	2024.4	2034.37	−9.970	54.4641
25	2006.1	2027.61	−21.507	74.5906
26	1980.3	1877.54	102.762	76.5725
27	2212.5	2196.80	15.699	77.2699
28	1926.0	1970.34	−44.339	63.1554
29	2019.0	2017.47	1.527	73.1799
30	2403.3	2398.69	4.606	70.5672
31	2204.4	2278.74	−74.336	74.1423
32	2216.7	2148.12	68.579	72.6847
33	2082.6	2160.07	−77.474	67.2595
34	2635.8	2601.25	34.554	66.0817
35	2715.0	2641.81	73.189	55.5279
36	2969.7	2881.41	88.291	56.1658
37	.	2272.17	.	.
38	.	2295.75	.	.
39	.	2234.28	.	.
40	.	2634.56	.	.

Obs	Month	Formulary_Status	Comp_DTC_TV	Nov_Ind	Dec_Ind	TV	PDEs	DTC_Display	UR
41	01May201	8.2	5.01064	0	0	10	3.18635	0.45566	4.1
42	01Jun201	8.0	6.53669	0	0	180	3.12236	0.36384	3.6
43	01Jul201	8.1	5.01064	0	0	50	2.56495	−0.19221	6.0
44	01Aug201	7.9	6.10925	0	0	25	3.08191	0.47988	4.8
45	01Sep201	8.2	6.10925	0	0	125	1.98787	0.03308	4.8
46	01Oct201	8.4	6.62007	0	0	185	3.00568	0.58396	4.4
47	01Nov201	8.3	6.39693	1	0	150	2.87920	−0.34592	6.1
48	01Dec201	8.5	6.39693	0	1	190	2.09186	0.48646	4.5

Obs	Sales	yhat	resid	stdresidual
41	.	2255.32	.	.
42	.	2801.97	.	.
43	.	2288.87	.	.
44	.	2229.79	.	.
45	.	2418.52	.	.
46	.	2842.01	.	.
47	.	2940.88	.	.
48	.	3001.25	.	.