SAS Program for CRAC Design-HOUSE_PRICES

Obs	GRADE	FLOORS	BEDROOMS	SQFT_LIVING	PRICE
1	7	1	2	1160	468000
2	7	1	2	1200	189000
3	7	1	2	1070	252700
4	7	1	2	1980	585000
5	7	1	2	2020	355000
6	7	1	3	1180	221900
7	7	1	3	1060	291850
8	7	1	3	1780	229500
9	7	1	3	1370	400000
10	7	1	3	1250	230000
11	7	1	4	1960	604000
12	7	1	4	1620	385000
13	7	1	4	2060	322500
14	7	1	4	1220	240000
15	7	1	4	1760	380000
16	7	1.5	2	1430	455000
17	7	1.5	2	1420	592500
18	7	1.5	2	1490	625000
19	7	1.5	2	2130	730000
20	7	1.5	2	1100	450000
21	7	1.5	3	1430	310000
22	7	1.5	3	2770	317625
23	7	1.5	3	1980	555000
24	7	1.5	3	1670	460000
25	7	1.5	3	1110	560000
26	7	1.5	4	1600	485000
27	7	1.5	4	2330	687500
28	7	1.5	4	2750	571000
29	7	1.5	4	1610	535000
30	7	1.5	4	2100	445000
31	7	2	2	1610	215000
32	7	2	2	1030	335000
33	7	2	2	2420	430000
34	7	2	2	1050	163500
35	7	2	2	1450	655000
36	7	2	3	2570	538000
37	7	2	3	1715	257500

SAS Program for CRAC Design-HOUSE_PRICES

Obs	GRADE	FLOORS	BEDROOMS	SQFT_LIVING	PRICE
38	7	2	3	1890	323000
39	7	2	3	1890	395000
40	7	2	3	1570	685000
41	7	2	4	2250	292500
42	7	2	4	2240	287000
43	7	2	4	1900	360000
44	7	2	4	1980	243500
45	7	2	4	2070	430000
46	8	1	2	1240	188500
47	8	1	2	3900	1072000
48	8	1	2	1320	467000
49	8	1	2	1510	479950
50	8	1	2	1420	641000
51	8	1	3	1680	510000
52	8	1	3	3560	662500
53	8	1	3	2150	650000
54	8	1	3	1680	356000
55	8	1	3	1580	430000
56	8	1	4	4220	775000
57	8	1	4	2160	260000
58	8	1	4	2010	660500
59	8	1	4	2590	452000
60	8	1	4	2030	500000
61	8	1.5	2	1410	439900
62	8	1.5	2	1600	672324
63	8	1.5	2	2700	1260000
64	8	1.5	2	1750	575000
65	8	1.5	2	1700	710000
66	8	1.5	3	1400	667000
67	8	1.5	3	1090	535000
68	8	1.5	3	2300	696000
69	8	1.5	3	1660	780000
70	8	1.5	3	1180	610000
71	8	1.5	4	2750	1450000
72	8	1.5	4	2370	834000
73	8	1.5	4	2610	1000000
74	8	1.5	4	1820	1010000

SAS Program for CRAC Design-HOUSE_PRICES

Obs	GRADE	FLOORS	BEDROOMS	SQFT_LIVING	PRICE
75	8	1.5	4	2440	780000
76	8	2	2	1230	490000
77	8	2	2	1400	372500
78	8	2	2	1270	531000
79	8	2	2	1180	419000
80	8	2	2	1370	359000
81	8	2	3	2450	329000
82	8	2	3	2450	937000
83	8	2	3	2320	580500
84	8	2	3	3160	488000
85	8	2	3	2420	301000
86	8	2	4	2570	719000
87	8	2	4	2360	640000
88	8	2	4	2620	605000
89	8	2	4	1850	430000
90	8	2	4	2380	360000
91	9	1	2	2680	775000
92	9	1	2	1880	460000
93	9	1	2	3570	835000
94	9	1	2	1670	539950
95	9	1	2	1910	435000
96	9	1	3	3050	2000000
97	9	1	3	2753	1350000
98	9	1	3	2370	790000
99	9	1	3	2930	559900
100	9	1	3	2500	662000
101	9	1	4	2480	840000
102	9	1	4	2240	592500
103	9	1	4	3650	2400000
104	9	1	4	1710	749000
105	9	1	4	3140	578000
106	9	1.5	2	2360	1087500
107	9	1.5	2	2460	1370000
108	9	1.5	2	1590	850000
109	9	1.5	2	2320	1150000
110	9	1.5	2	1410	399900
111	9	1.5	3	2070	850830

SAS Program for CRAC Design-HOUSE_PRICES

Obs	GRADE	FLOORS	BEDROOMS	SQFT_LIVING	PRICE
112	9	1.5	3	3950	784000
113	9	1.5	3	2170	876650
114	9	1.5	3	2730	1338750
115	9	1.5	3	2350	339000
116	9	1.5	4	2050	740000
117	9	1.5	4	5450	610000
118	9	1.5	4	3190	1249000
119	9	1.5	4	3040	870000
120	9	1.5	4	3160	1280000
121	9	2	2	1070	259950
122	9	2	2	1780	935000
123	9	2	2	1590	409900
124	9	2	2	2540	945000
125	9	2	2	1295	487028
126	9	2	3	2140	940000
127	9	2	3	2770	461000
128	9	2	3	2320	437500
129	9	2	3	2910	770000
130	9	2	3	2714	465000
131	9	2	4	2950	650000
132	9	2	4	2570	625000
133	9	2	4	2290	785000
134	9	2	4	2830	885000
135	9	2	4	3230	480000

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Number of Observations Read	135
Number of Observations Used	135

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Dependent Variable: PRICE PRICE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	3.6802706E12	3.6802706E12	42.25	<.0001
Error	133	1.1585063E13	87105736271		
Corrected Total	134	1.5265333E13			

R-Square	Coeff Var	Root MSE	PRICE Mean
0.241087	47.93193	295136.8	615741.5

Source	DF	Type I SS	Mean Square	F Value	Pr > F
SQFT_LIVING	1	3.6802706E12	3.6802706E12	42.25	<.0001

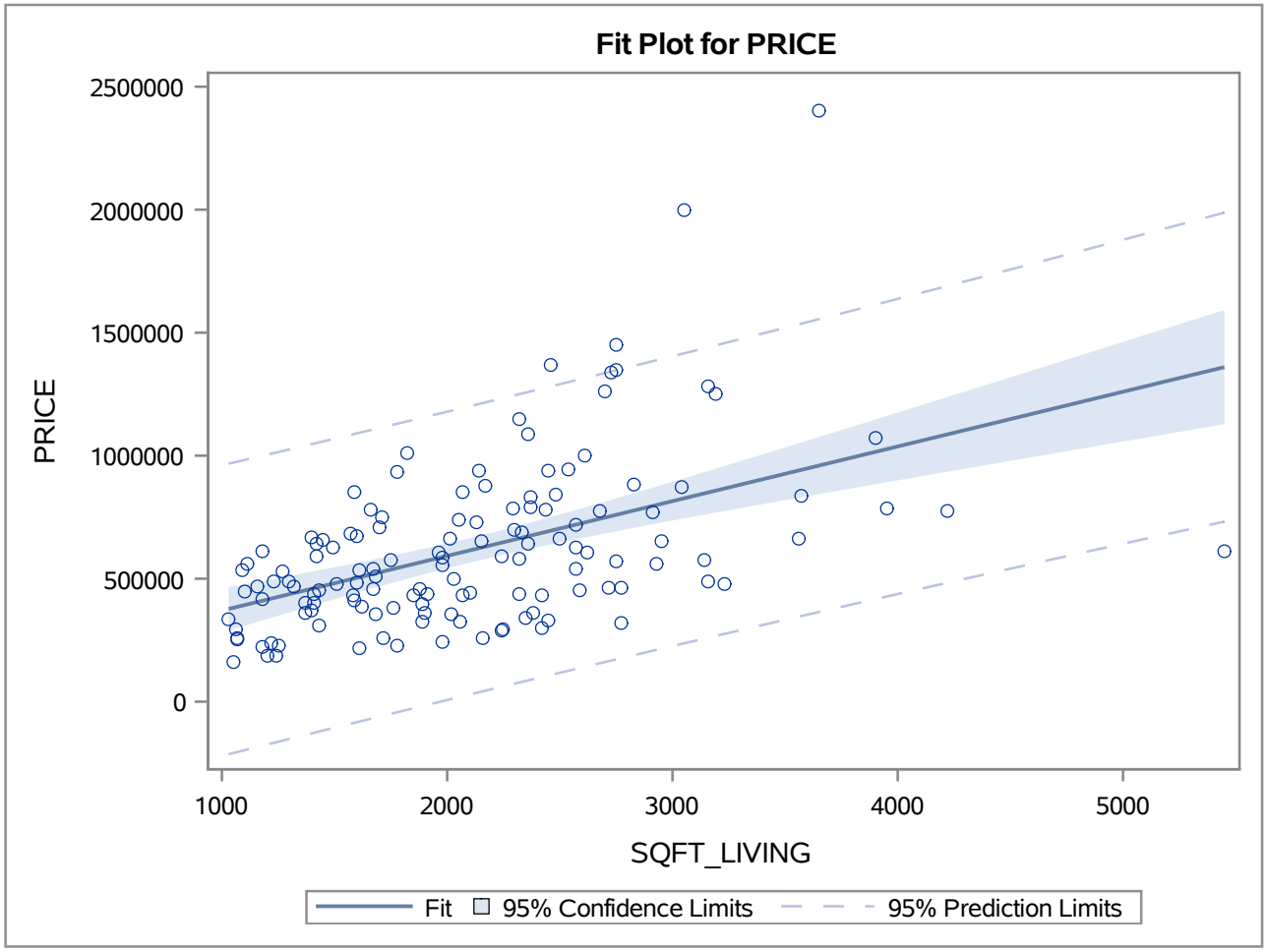
Source	DF	Type III SS	Mean Square	F Value	Pr > F
SQFT_LIVING	1	3.6802706E12	3.6802706E12	42.25	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	148022.6608	76308.10346	1.94	0.0545
SQFT_LIVING	222.3805	34.21214	6.50	<.0001

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Dependent Variable: PRICE PRICE



SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

FLOORS=1

Number of Observations Read	45
Number of Observations Used	45

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Dependent Variable: PRICE PRICE

FLOORS=1

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	3.3024859E12	3.3024859E12	30.55	<.0001
Error	43	4.6486853E12	108108960653		
Corrected Total	44	7.9511712E12			

R-Square	Coeff Var	Root MSE	PRICE Mean
0.415346	55.15687	328799.3	596116.7

Source	DF	Type I SS	Mean Square	F Value	Pr > F
SQFT_LIVING	1	3.3024859E12	3.3024859E12	30.55	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
SQFT_LIVING	1	3.3024859E12	3.3024859E12	30.55	<.0001

Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	-111748.6444	137132.6803	-0.81	0.4196
SQFT_LIVING	337.8904	61.1345	5.53	<.0001

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Dependent Variable: PRICE PRICE

FLOORS=1

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

FLOORS=1.5

Number of Observations Read	45
Number of Observations Used	45

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Dependent Variable: PRICE PRICE

FLOORS=1.5

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	647655585486	647655585486	8.31	0.0061
Error	43	3.3507459E12	77924324226		
Corrected Total	44	3.9984015E12			

R-Square	Coeff Var	Root MSE	PRICE Mean
0.161979	37.39332	279149.3	746521.8

Source	DF	Type I SS	Mean Square	F Value	Pr > F
SQFT_LIVING	1	647655585486	647655585486	8.31	0.0061

Source	DF	Type III SS	Mean Square	F Value	Pr > F
SQFT_LIVING	1	647655585486	647655585486	8.31	0.0061

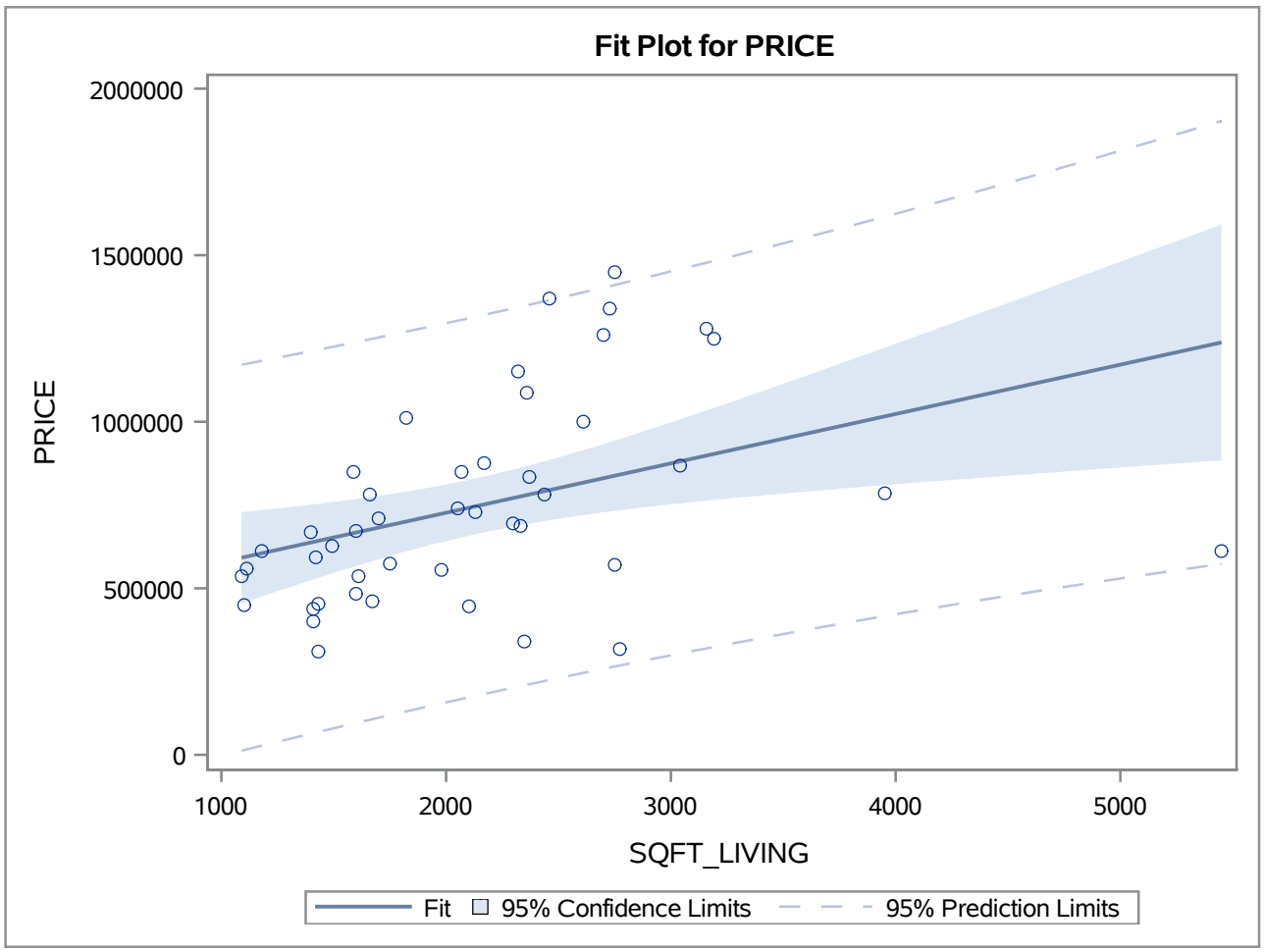
Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	430291.1716	117318.4541	3.67	0.0007
SQFT_LIVING	148.2331	51.4173	2.88	0.0061

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Dependent Variable: PRICE PRICE

FLOORS=1.5



SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

FLOORS=2

Number of Observations Read	45
Number of Observations Used	45

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Dependent Variable: PRICE PRICE

FLOORS=2

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	1	279834126518	279834126518	7.11	0.0108
Error	43	1.6929414E12	39370730757		
Corrected Total	44	1.9727755E12			

R-Square	Coeff Var	Root MSE	PRICE Mean
0.141848	39.32343	198420.6	504586.2

Source	DF	Type I SS	Mean Square	F Value	Pr > F
SQFT_LIVING	1	279834126518	279834126518	7.11	0.0108

Source	DF	Type III SS	Mean Square	F Value	Pr > F
SQFT_LIVING	1	279834126518	279834126518	7.11	0.0108

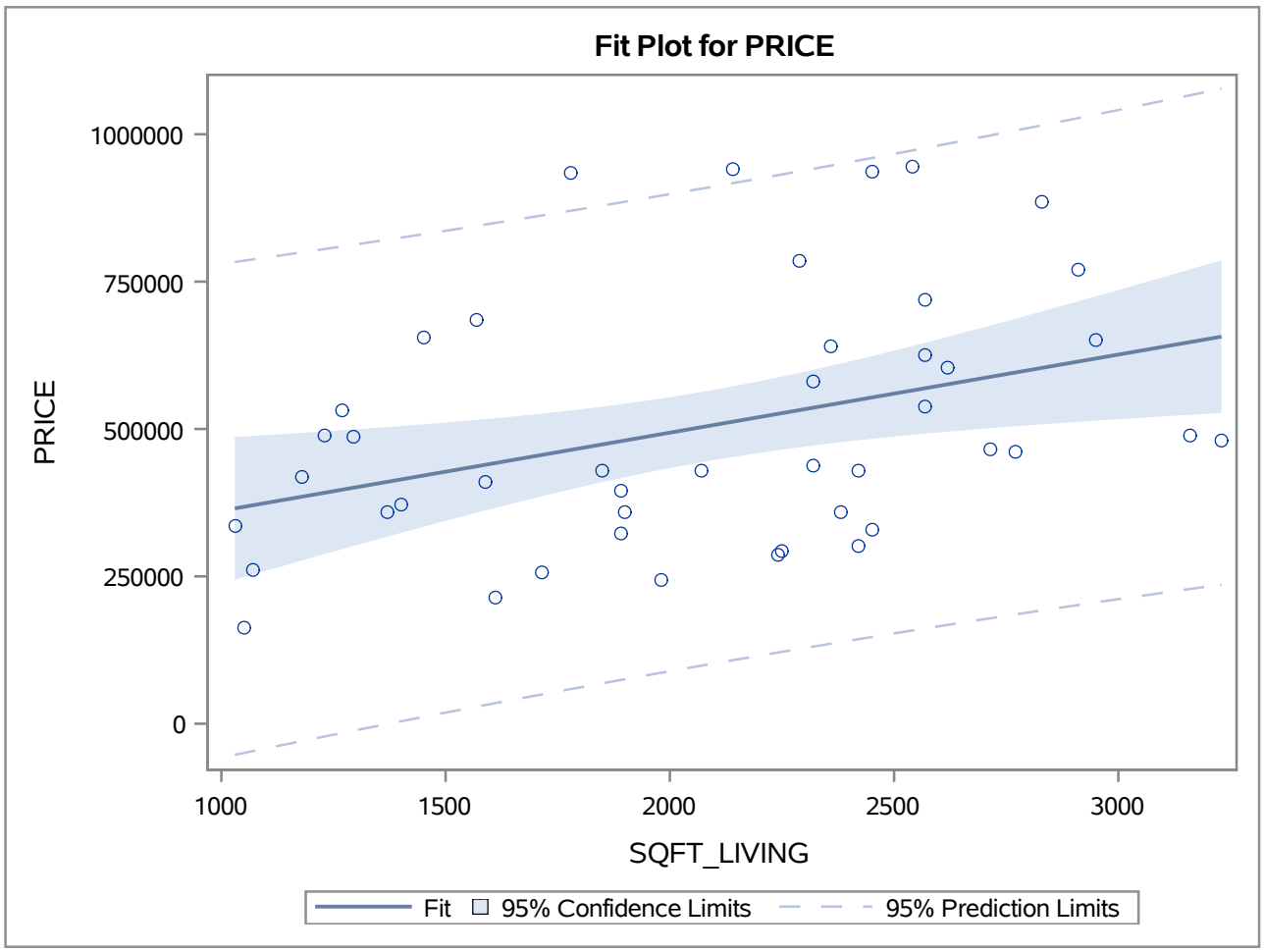
Parameter	Estimate	Standard Error	t Value	Pr > |t|
Intercept	228917.2750	107548.3346	2.13	0.0391
SQFT_LIVING	132.4426	49.6780	2.67	0.0108

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Dependent Variable: PRICE PRICE

FLOORS=2



SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
FLOORS	3	1 2 1.5

Number of Observations Read	135
Number of Observations Used	135

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Dependent Variable: PRICE PRICE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	5.5729608E12	1.1145922E12	14.83	<.0001
Error	129	9.6923727E12	75134671879		
Corrected Total	134	1.5265333E13			

R-Square	Coeff Var	Root MSE	PRICE Mean
0.365073	44.51658	274107.0	615741.5

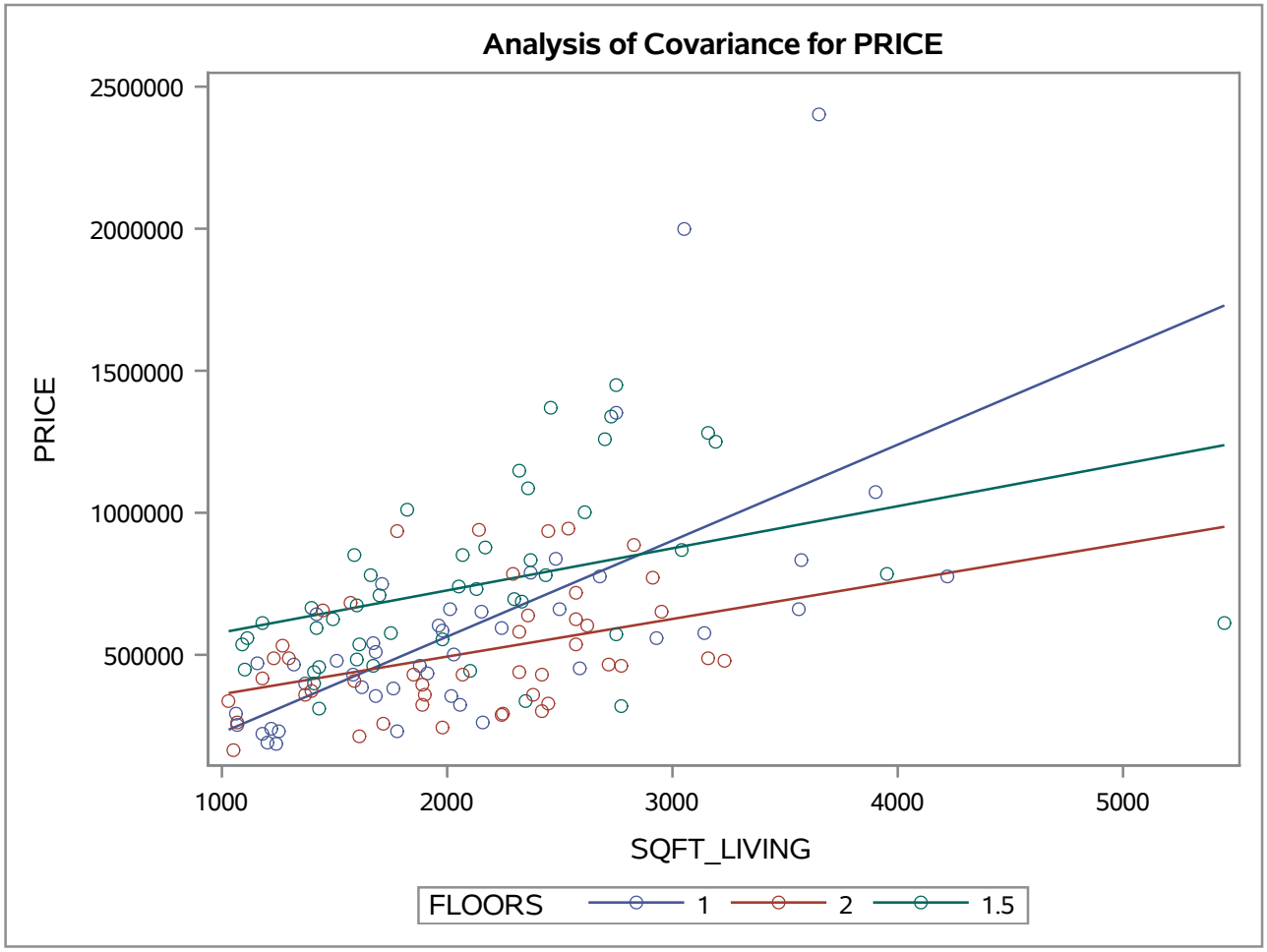
Source	DF	Type I SS	Mean Square	F Value	Pr > F
FLOORS	2	1.3429852E12	671492587159	8.94	0.0002
SQFT_LIVING	1	3.5539851E12	3.5539851E12	47.30	<.0001
SQFT_LIVING*FLOORS	2	675990564788	337995282394	4.50	0.0129

Source	DF	Type III SS	Mean Square	F Value	Pr > F
FLOORS	2	851553653694	425776826847	5.67	0.0044
SQFT_LIVING	1	2.9167491E12	2.9167491E12	38.82	<.0001
SQFT_LIVING*FLOORS	2	675990564788	337995282394	4.50	0.0129

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Dependent Variable: PRICE PRICE



SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Class Level Information		
Class	**Levels**	**Values**
FLOORS	3	1 2 1.5

Number of Observations Read	135
Number of Observations Used	135

SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

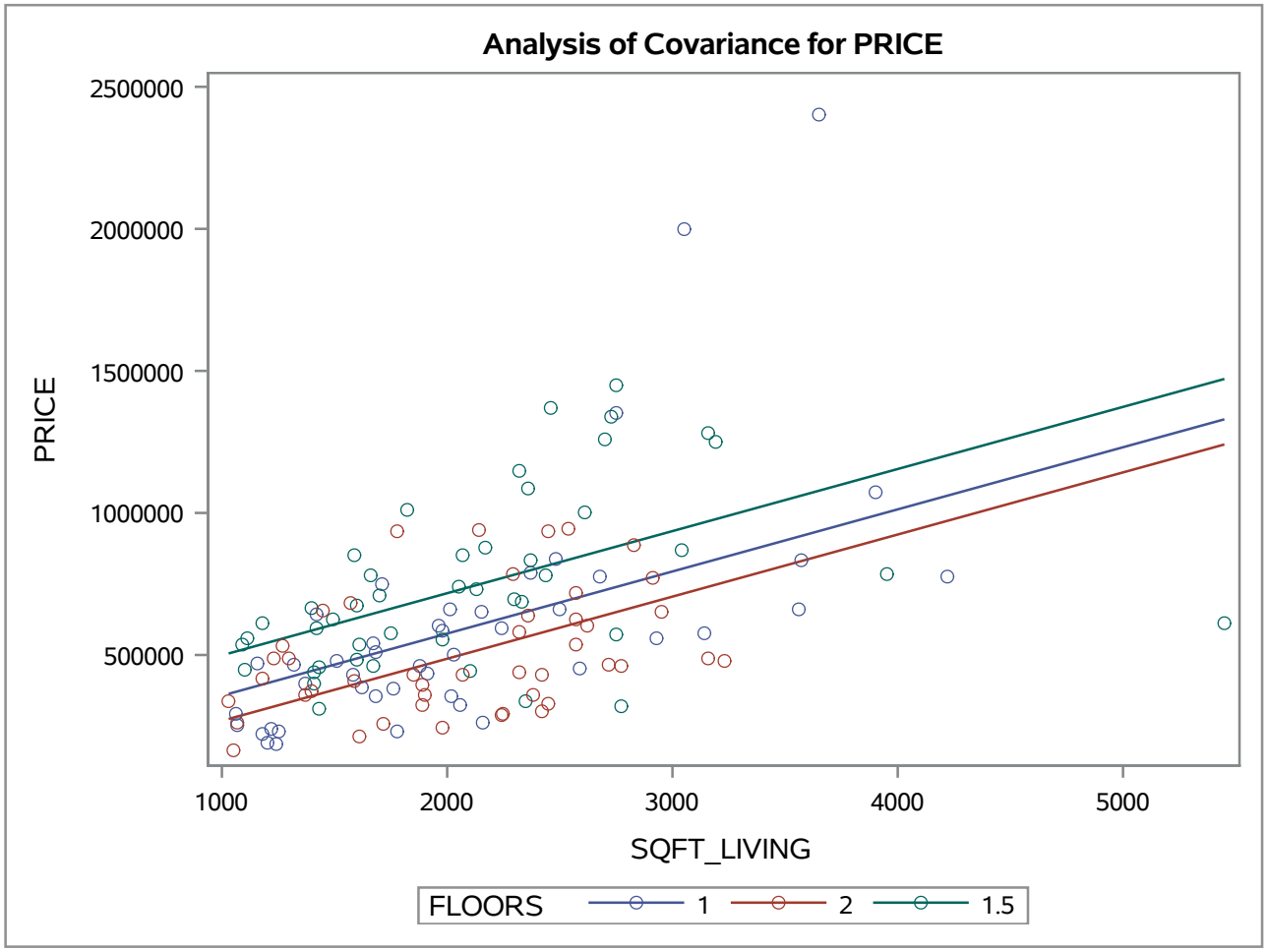
Dependent Variable: PRICE PRICE

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	3	4.8969702E12	1.6323234E12	20.62	<.0001
Error	131	1.0368363E13	79147810971		
Corrected Total	134	1.5265333E13			

R-Square	Coeff Var	Root MSE	PRICE Mean
0.320790	45.68998	281332.2	615741.5

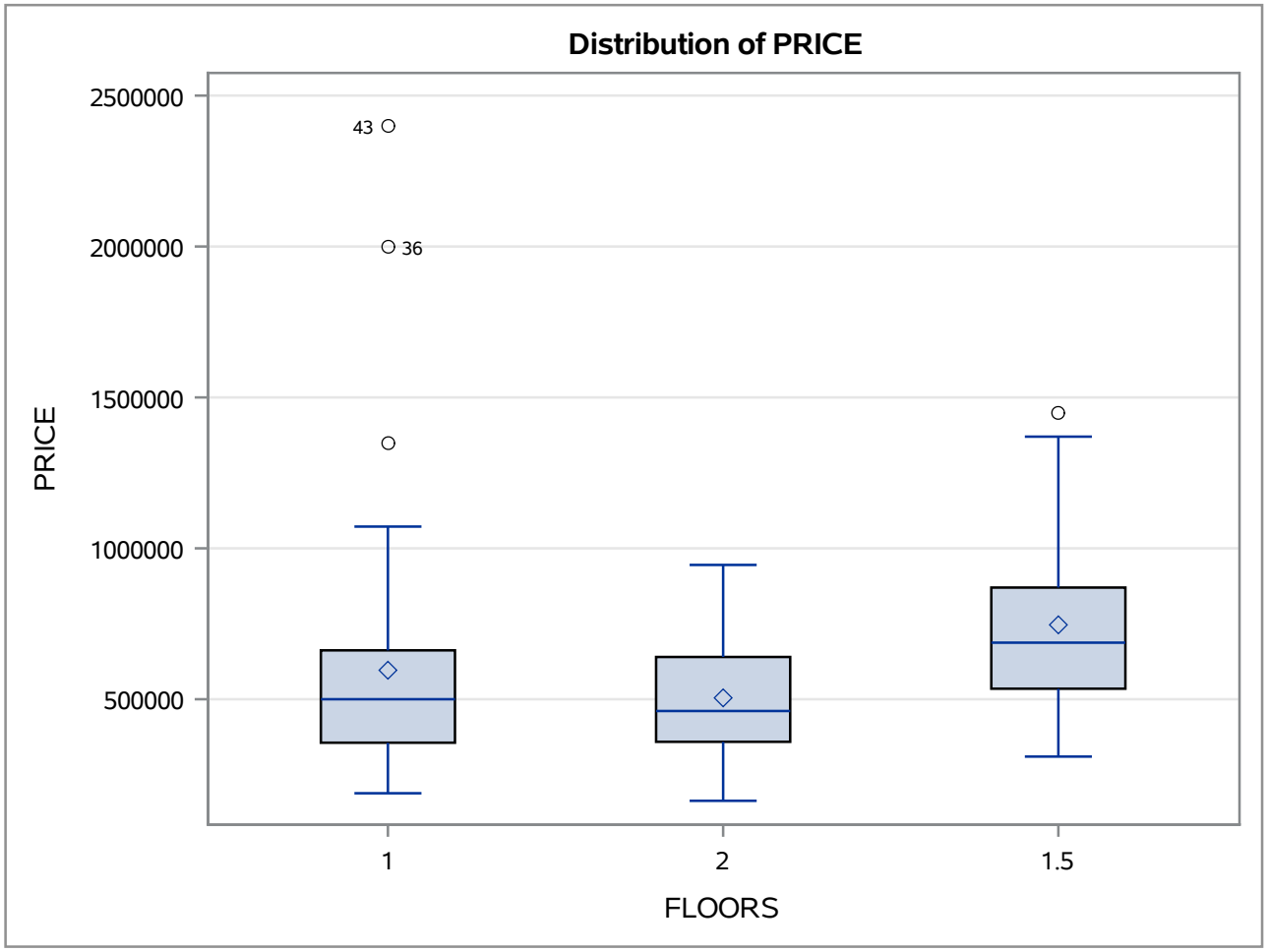
Source	DF	Type I SS	Mean Square	F Value	Pr > F
FLOORS	2	1.3429852E12	671492587159	8.48	0.0003
SQFT_LIVING	1	3.5539851E12	3.5539851E12	44.90	<.0001

Source	DF	Type III SS	Mean Square	F Value	Pr > F
FLOORS	2	1.2166997E12	608349843412	7.69	0.0007
SQFT_LIVING	1	3.5539851E12	3.5539851E12	44.90	<.0001



SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure



SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Ryan-Einot-Gabriel-Welsch Multiple Range Test for PRICE

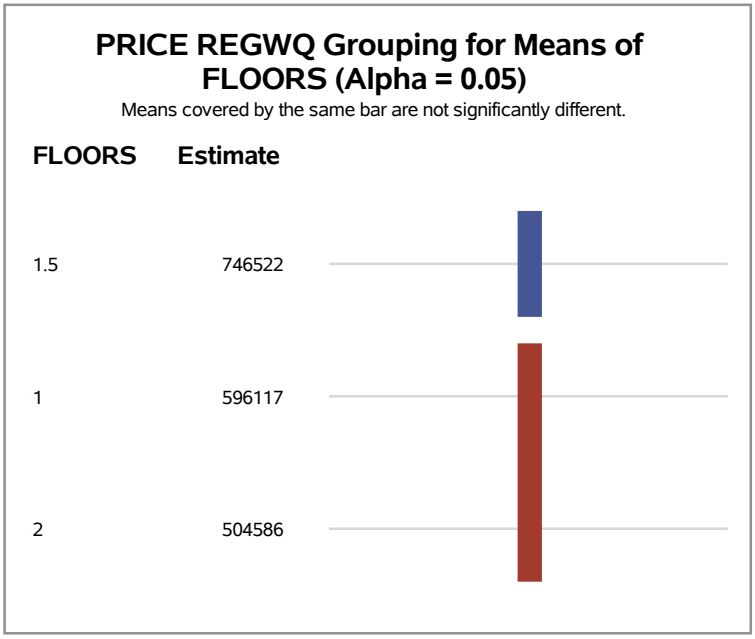
Note: This test controls the Type I experimentwise error rate.

Alpha	0.05
Error Degrees of Freedom	131
Error Mean Square	7.915E10

Number of Means	**2**	**3**
Critical Range	117329.41	140603.46

PRICE REGWQ Grouping for Means of FLOORS (Alpha = 0.05)

Means covered by the same bar are not significantly different.



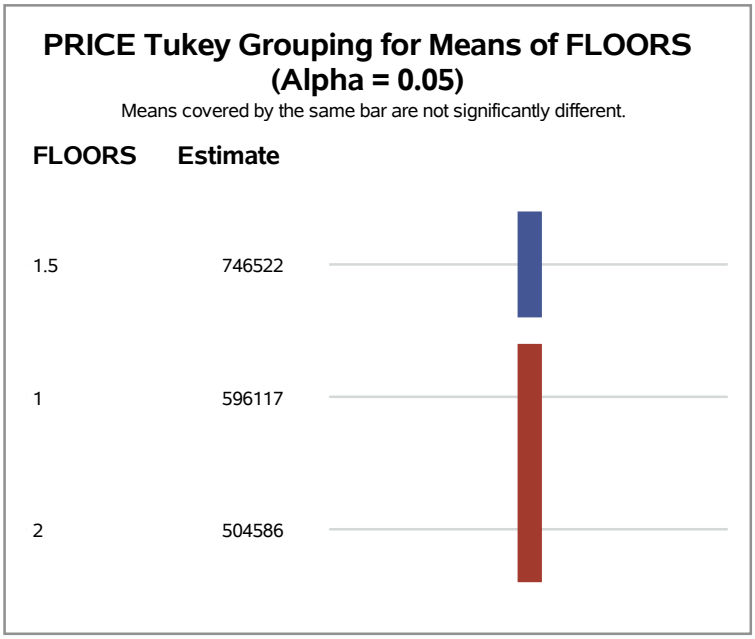
SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure

Tukey's Studentized Range (HSD) Test for PRICE

Note: This test controls the Type I experimentwise error rate, but it generally has a higher Type II error rate than REGWQ.

Alpha	0.05
Error Degrees of Freedom	131
Error Mean Square	7.915E10
Critical Value of Studentized Range	3.35261
Minimum Significant Difference	140603



SAS Program for CRAC Design-HOUSE_PRICES

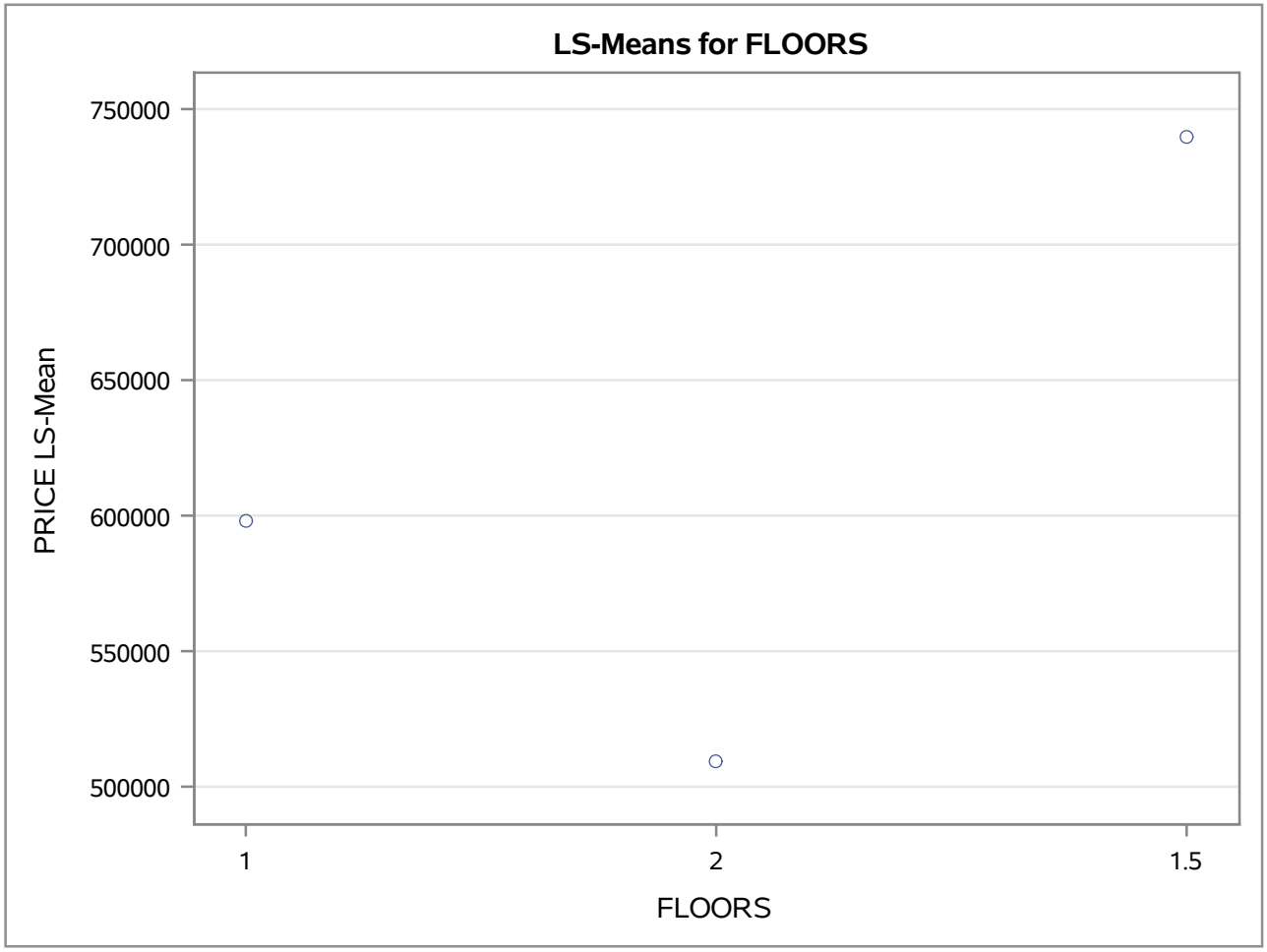
The GLM Procedure
Least Squares Means
Adjustment for Multiple Comparisons: Tukey-Kramer

FLOORS	PRICE LSMEAN	Standard Error	Pr > |t|	LSMEAN Number
1	597927.228	41939.400	<.0001	1
2	509355.500	41944.568	<.0001	2
1.5	739941.873	41950.023	<.0001	3

Least Squares Means for effect FLOORS
Pr > |t| for H0: LSMean(i)=LSMean(j)

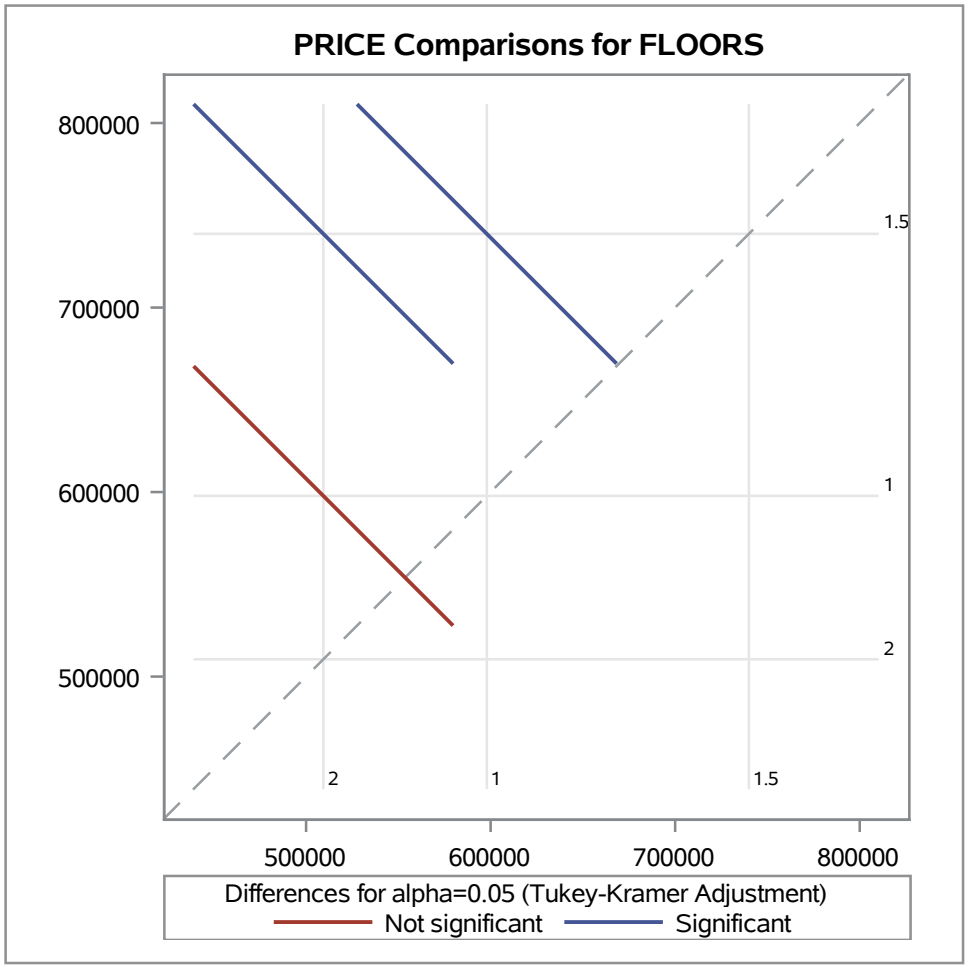
Dependent Variable: PRICE

i/j	1	2	3
1		0.2974	0.0472
2	0.2974		0.0005
3	0.0472	0.0005	



SAS Program for CRAC Design-HOUSE_PRICES

The GLM Procedure
Least Squares Means
Adjustment for Multiple Comparisons: Tukey-Kramer



SAS Program for CRAC Design-HOUSE_PRICES

The UNIVARIATE Procedure
Variable: PRICE (PRICE)

FLOORS=1

Moments			
N	45	**Sum Weights**	45
Mean	596116.667	**Sum Observations**	26825250
Std Deviation	425098.15	**Variance**	1.80708E11
Skewness	2.69040385	**Kurtosis**	8.78247089
Uncorrected SS	2.39421E13	**Corrected SS**	7.95117E12
Coeff Variation	71.3112338	**Std Error Mean**	63369.8907

Basic Statistical Measures			
Location		**Variability**	
Mean	596116.7	**Std Deviation**	425098
Median	500000.0	**Variance**	1.80708E11
Mode	775000.0	**Range**	2211500
		Interquartile Range	306000

Tests for Location: Mu0=0				
Test	**Statistic**		**p Value**	
Student's t	**t**	9.406939	**Pr > |t|**	<.0001
Sign	**M**	22.5	**Pr >= |M|**	<.0001
Signed Rank	**S**	517.5	**Pr >= |S|**	<.0001

Tests for Normality				
Test	**Statistic**		**p Value**	
Shapiro-Wilk	**W**	0.719549	**Pr < W**	<0.0001
Kolmogorov-Smirnov	**D**	0.215731	**Pr > D**	<0.0100
Cramer-von Mises	**W-Sq**	0.542458	**Pr > W-Sq**	<0.0050
Anderson-Darling	**A-Sq**	3.327122	**Pr > A-Sq**	<0.0050

Quantiles (Definition 5)	
Level	**Quantile**
100% Max	2400000
99%	2400000
95%	1350000
90%	840000
75% Q3	662000

SAS Program for CRAC Design-HOUSE_PRICES

The UNIVARIATE Procedure
Variable: PRICE (PRICE)

FLOORS=1

Quantiles (Definition 5)	
Level	**Quantile**
50% Median	500000
25% Q1	356000
10%	230000
5%	221900
1%	188500
0% Min	188500

Extreme Observations					
Lowest			**Highest**		
Value	**FLOORS**	**Obs**	**Value**	**FLOORS**	**Obs**
188500	1	16	840000	1	41
189000	1	2	1072000	1	17
221900	1	6	1350000	1	37
229500	1	8	2000000	1	36
230000	1	10	2400000	1	43

SAS Program for CRAC Design-HOUSE_PRICES

The UNIVARIATE Procedure
Variable: PRICE (PRICE)

FLOORS=1.5

Moments			
N	45	**Sum Weights**	45
Mean	746521.756	**Sum Observations**	33593479
Std Deviation	301451.094	**Variance**	9.08728E10
Skewness	0.76813113	**Kurtosis**	-0.2234056
Uncorrected SS	2.90767E13	**Corrected SS**	3.9984E12
Coeff Variation	40.3807513	**Std Error Mean**	44937.6758

Basic Statistical Measures			
Location		**Variability**	
Mean	746521.8	**Std Deviation**	301451
Median	687500.0	**Variance**	9.08728E10
Mode	535000.0	**Range**	1140000
		Interquartile Range	335000

Note: The mode displayed is the smallest of 3 modes with a count of 2.

Tests for Location: Mu0=0				
Test	**Statistic**		**p Value**	
Student's t	**t**	16.61238	**Pr > |t|**	<.0001
Sign	**M**	22.5	**Pr >= |M|**	<.0001
Signed Rank	**S**	517.5	**Pr >= |S|**	<.0001

Tests for Normality				
Test	**Statistic**		**p Value**	
Shapiro-Wilk	**W**	0.928821	**Pr < W**	0.0085
Kolmogorov-Smirnov	**D**	0.117195	**Pr > D**	0.1218
Cramer-von Mises	**W-Sq**	0.168144	**Pr > W-Sq**	0.0140
Anderson-Darling	**A-Sq**	1.063444	**Pr > A-Sq**	0.0081

Quantiles (Definition 5)	
Level	**Quantile**
100% Max	1450000
99%	1450000
95%	1338750
90%	1260000
75% Q3	870000

SAS Program for CRAC Design-HOUSE_PRICES

The UNIVARIATE Procedure
Variable: PRICE (PRICE)

FLOORS=1.5

Quantiles (Definition 5)	
Level	**Quantile**
50% Median	687500
25% Q1	535000
10%	439900
5%	339000
1%	310000
0% Min	310000

Extreme Observations					
Lowest			**Highest**		
Value	**FLOORS**	**Obs**	**Value**	**FLOORS**	**Obs**
310000	1.5	51	1260000	1.5	63
317625	1.5	52	1280000	1.5	90
339000	1.5	85	1338750	1.5	84
399900	1.5	80	1370000	1.5	77
439900	1.5	61	1450000	1.5	71

SAS Program for CRAC Design-HOUSE_PRICES

The UNIVARIATE Procedure
Variable: PRICE (PRICE)

FLOORS=2

Moments			
N	45	**Sum Weights**	45
Mean	504586.178	**Sum Observations**	22706378
Std Deviation	211744.676	**Variance**	4.48358E10
Skewness	0.70224911	**Kurtosis**	-0.3243464
Uncorrected SS	1.34301E13	**Corrected SS**	1.97278E12
Coeff Variation	41.9640263	**Std Error Mean**	31565.0327

Basic Statistical Measures			
Location		**Variability**	
Mean	504586.2	**Std Deviation**	211745
Median	461000.0	**Variance**	4.48358E10
Mode	430000.0	**Range**	781500
		Interquartile Range	281000

Tests for Location: Mu0=0				
Test	**Statistic**		**p Value**	
Student's t	**t**	15.98561	**Pr > |t|**	<.0001
Sign	**M**	22.5	**Pr >= |M|**	<.0001
Signed Rank	**S**	517.5	**Pr >= |S|**	<.0001

Tests for Normality				
Test	**Statistic**		**p Value**	
Shapiro-Wilk	**W**	0.93207	**Pr < W**	0.0111
Kolmogorov-Smirnov	**D**	0.149682	**Pr > D**	0.0125
Cramer-von Mises	**W-Sq**	0.149721	**Pr > W-Sq**	0.0233
Anderson-Darling	**A-Sq**	0.965152	**Pr > A-Sq**	0.0149

Quantiles (Definition 5)	
Level	**Quantile**
100% Max	945000
99%	945000
95%	937000
90%	885000
75% Q3	640000

SAS Program for CRAC Design-HOUSE_PRICES

The UNIVARIATE Procedure
Variable: PRICE (PRICE)

FLOORS=2

Quantiles (Definition 5)	
Level	**Quantile**
50% Median	461000
25% Q1	359000
10%	259950
5%	243500
1%	163500
0% Min	163500

Extreme Observations					
Lowest			**Highest**		
Value	**FLOORS**	**Obs**	**Value**	**FLOORS**	**Obs**
163500	2	94	885000	2	134
215000	2	91	935000	2	122
243500	2	104	937000	2	112
257500	2	97	940000	2	126
259950	2	121	945000	2	124