

Stepwise Model Selection for SalePrice - SL 0.05

The GLMSELECT Procedure

Data Set	STAT1.AMESHOUSING3
Dependent Variable	SalePrice
Selection Method	Stepwise
Select Criterion	Significance Level
Stop Criterion	Significance Level
Entry Significance Level (SLE)	0.05
Stay Significance Level (SLS)	0.05
Effect Hierarchy Enforced	None

Number of Observations Read	300
Number of Observations Used	300

Dimensions	
Number of Effects	9
Number of Parameters	9

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The GLMSELECT Procedure Stepwise Selection: Step 0

Effect Entered: Intercept

Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	0	0	.	.
Error	299	4.232235E11	1415463276	
Corrected Total	299	4.232235E11		

Root MSE	37623
Dependent Mean	137525
R-Square	0.0000
Adj R-Sq	0.0000
AIC	6624.21515
AICC	6624.25555
SBC	6325.91893

Parameter Estimates				
Parameter	DF	Estimate	Standard Error	t Value
Intercept	1	137525	2172.144314	63.31

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The GLMSELECT Procedure Stepwise Selection: Step 1

Effect Entered: Basement_Area

Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	1	2.012418E11	2.012418E11	270.16
Error	298	2.219817E11	744904950	
Corrected Total	299	4.232235E11		

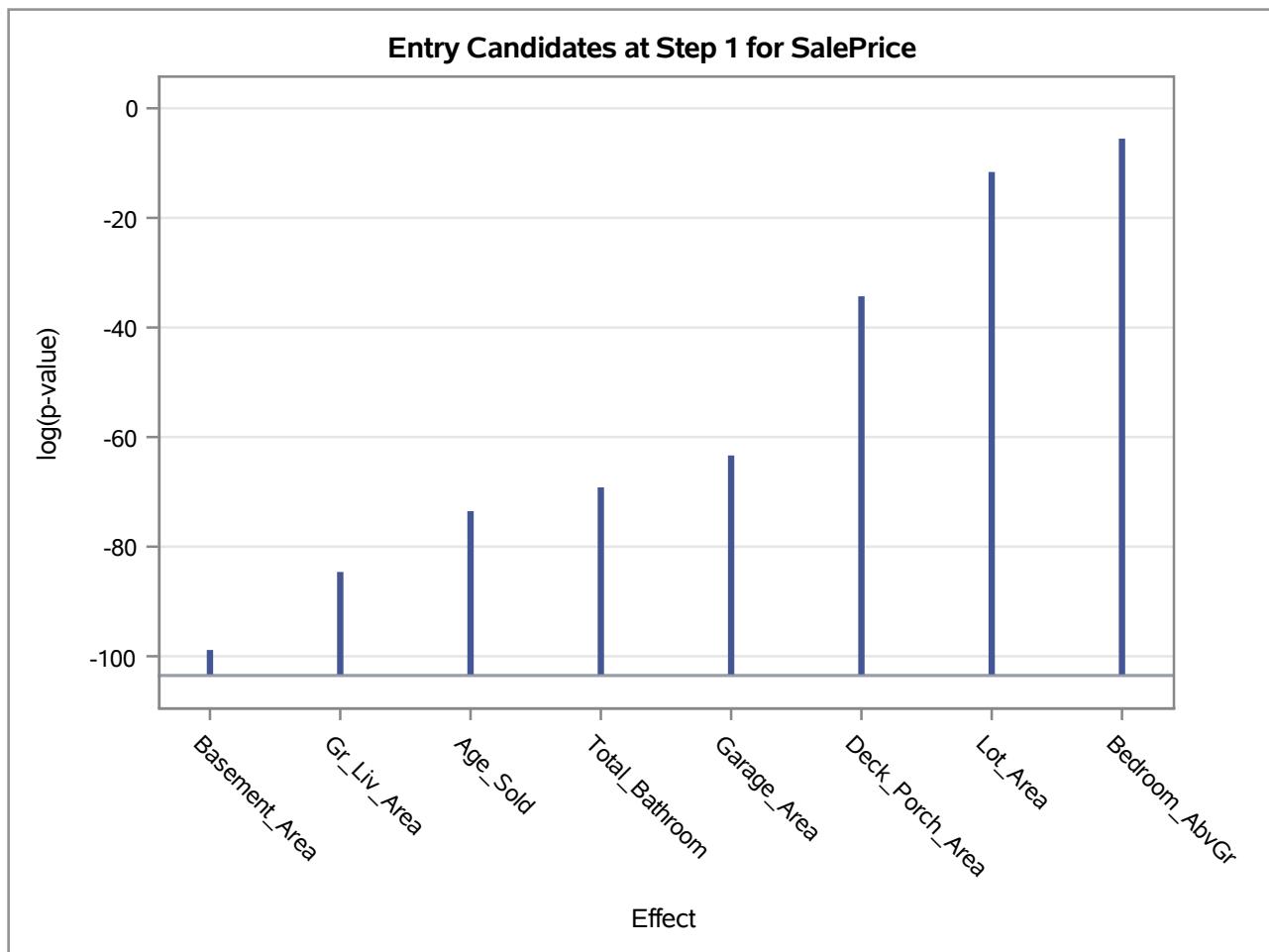
Root MSE	27293
Dependent Mean	137525
R-Square	0.4755
Adj R-Sq	0.4737
AIC	6432.62346
AICC	6432.70454
SBC	6138.03102

Parameter Estimates				
Parameter	DF	Estimate	Standard Error	t Value
Intercept	1	73904	4179.193780	17.68
Basement_Area	1	72.107717	4.387055	16.44

Entry Candidates				
Rank	Effect	Log pValue	Pr > F	
1	Basement_Area	-98.8577	<.0001	
2	Gr_Liv_Area	-84.6132	<.0001	
3	Age_Sold	-73.5219	<.0001	
4	Total_Bathroom	-69.1880	<.0001	
5	Garage_Area	-63.3558	<.0001	
6	Deck_Porch_Area	-34.3105	<.0001	
7	Lot_Area	-11.6303	<.0001	
8	Bedroom_AbvGr	-5.5339	0.0040	

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The GLMSELECT Procedure
Stepwise Selection: Step 1
Effect Entered: Basement_Area



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The GLMSELECT Procedure Stepwise Selection: Step 2

Effect Entered: Gr_Liv_Area

Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	2	2.64483E11	1.322415E11	247.42
Error	297	1.587405E11	534479711	
Corrected Total	299	4.232235E11		

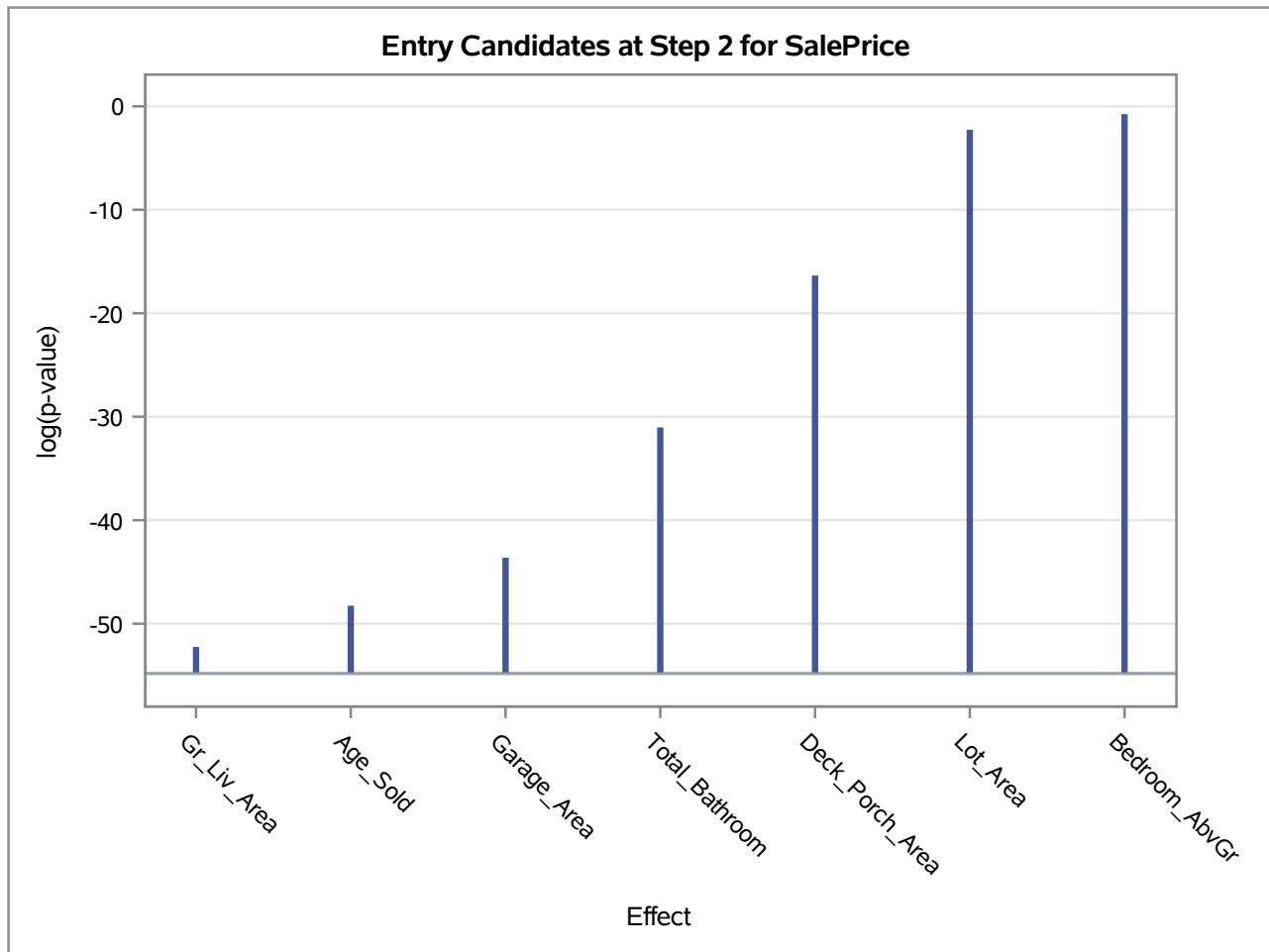
Root MSE	23119
Dependent Mean	137525
R-Square	0.6249
Adj R-Sq	0.6224
AIC	6334.02620
AICC	6334.16179
SBC	6043.13755

Parameter Estimates				
Parameter	DF	Estimate	Standard Error	t Value
Intercept	1	12664	6650.339855	1.90
Gr_Liv_Area	1	69.606974	6.399091	10.88
Basement_Area	1	52.309702	4.137885	12.64

Entry Candidates				
Rank	Effect	Log pValue	Pr > F	
1	Gr_Liv_Area	-52.2496	<.0001	
2	Age_Sold	-48.2636	<.0001	
3	Garage_Area	-43.6174	<.0001	
4	Total_Bathroom	-31.0375	<.0001	
5	Deck_Porch_Area	-16.3568	<.0001	
6	Lot_Area	-2.2708	0.1032	
7	Bedroom_AbvGr	-0.7570	0.4691	

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The GLMSELECT Procedure
Stepwise Selection: Step 2
Effect Entered: Gr_Liv_Area



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The GLMSELECT Procedure Stepwise Selection: Step 3

Effect Entered: Age_Sold

Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	3	3.207148E11	1.069049E11	308.69
Error	296	1.025087E11	346313132	
Corrected Total	299	4.232235E11		

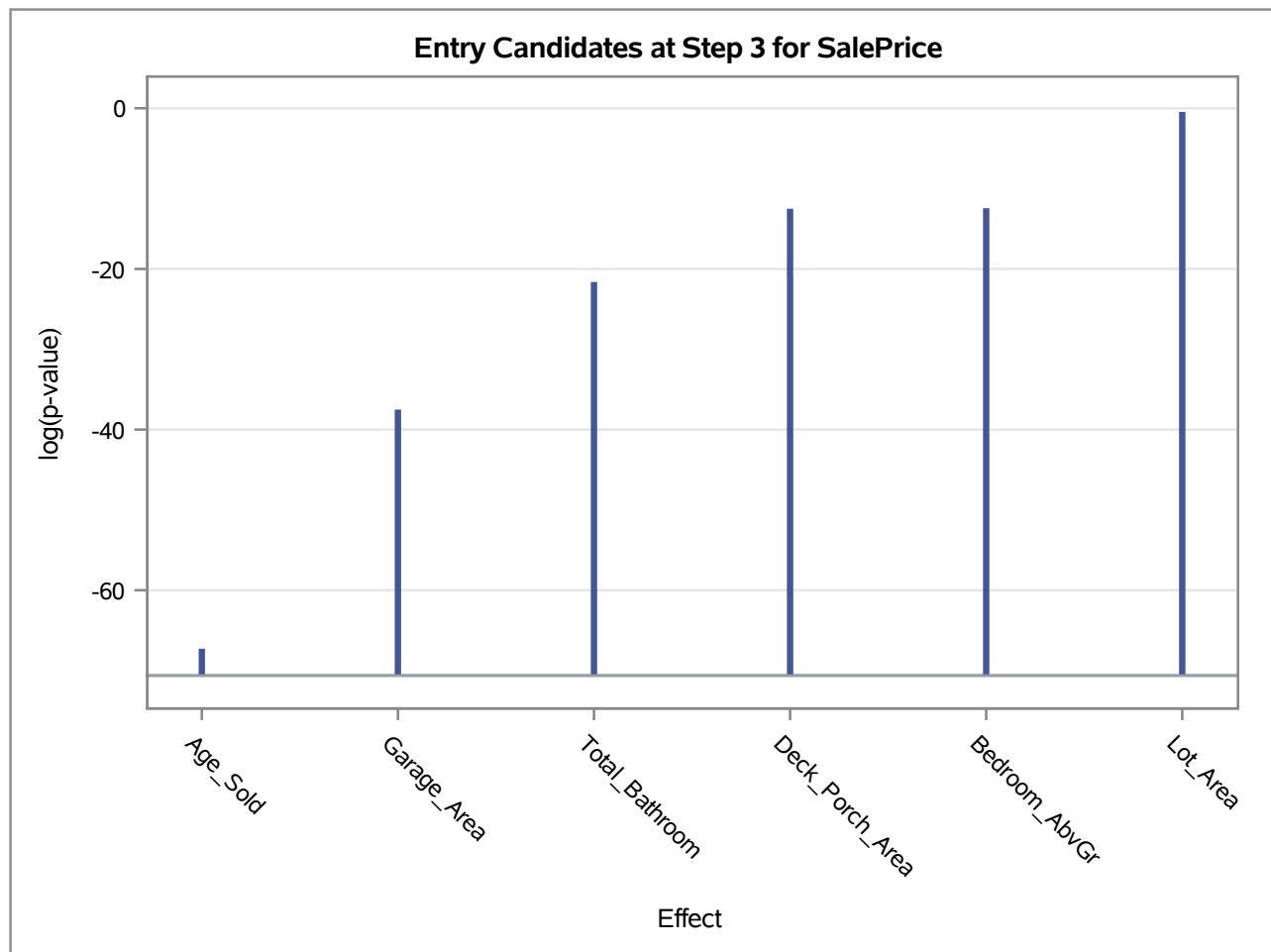
Root MSE	18609
Dependent Mean	137525
R-Square	0.7578
Adj R-Sq	0.7553
AIC	6204.82927
AICC	6205.03335
SBC	5917.64440

Parameter Estimates				
Parameter	DF	Estimate	Standard Error	t Value
Intercept	1	53400	6235.076995	8.56
Gr_Liv_Area	1	68.106646	5.152294	13.22
Basement_Area	1	36.329120	3.559067	10.21
Age_Sold	1	-543.493346	42.651840	-12.74

Entry Candidates			
Rank	Effect	Log pValue	Pr > F
1	Age_Sold	-67.2828	<.0001
2	Garage_Area	-37.5122	<.0001
3	Total_Bathroom	-21.6266	<.0001
4	Deck_Porch_Area	-12.5097	<.0001
5	Bedroom_AbvGr	-12.4446	<.0001
6	Lot_Area	-0.4524	0.6361

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The GLMSELECT Procedure
Stepwise Selection: Step 3
Effect Entered: Age_Sold



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The GLMSELECT Procedure Stepwise Selection: Step 4

Effect Entered: Garage_Area

Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	4	3.33571E11	83392754480	274.40
Error	295	89652501590	303906785	
Corrected Total	299	4.232235E11		

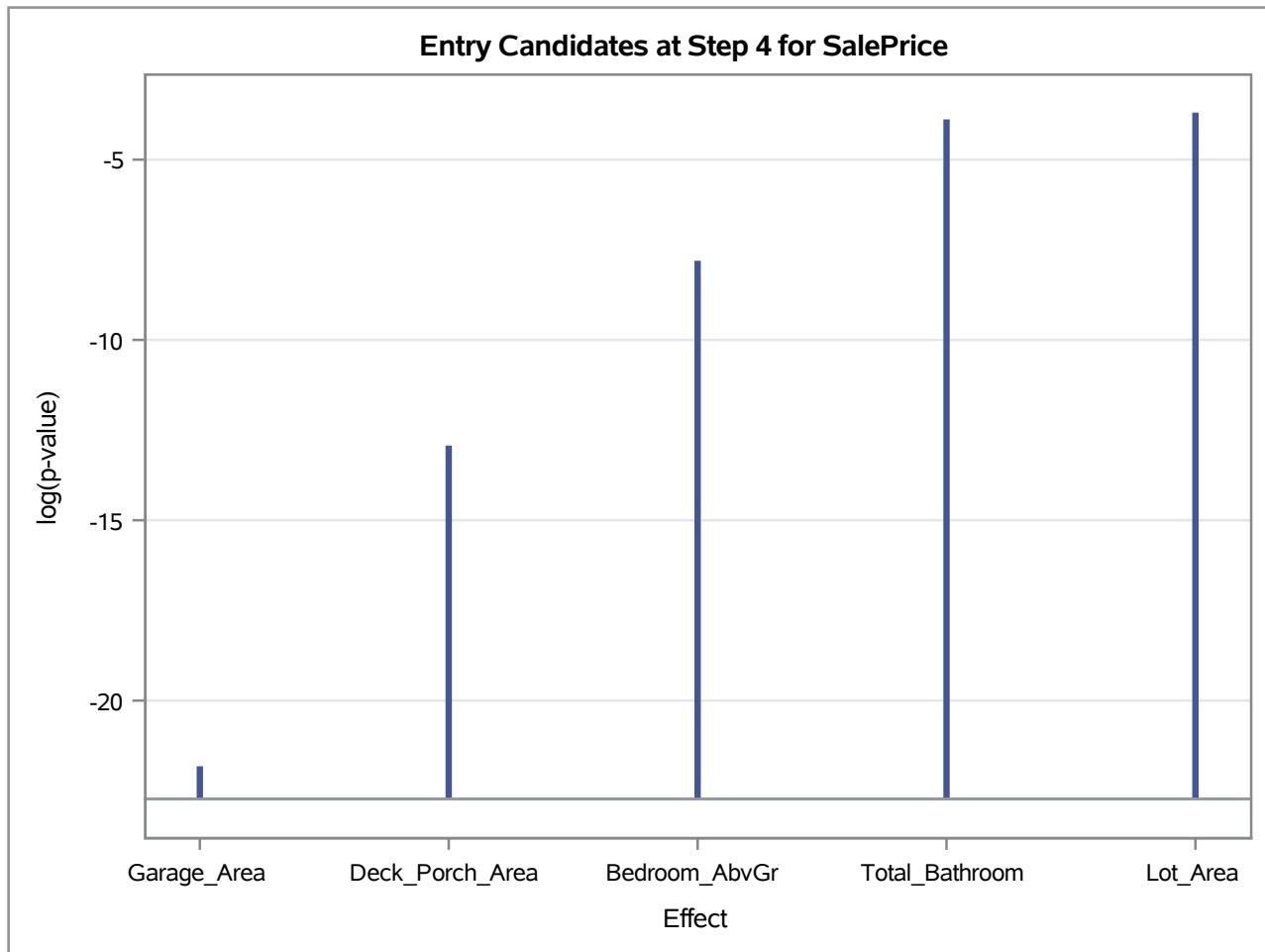
Root MSE	17433
Dependent Mean	137525
R-Square	0.7882
Adj R-Sq	0.7853
AIC	6166.62734
AICC	6166.91403
SBC	5883.14625

Parameter Estimates				
Parameter	DF	Estimate	Standard Error	t Value
Intercept	1	43815	6023.907004	7.27
Gr_Liv_Area	1	61.238136	4.940722	12.39
Basement_Area	1	33.430181	3.363709	9.94
Garage_Area	1	42.984492	6.608851	6.50
Age_Sold	1	-455.704354	42.173481	-10.81

Entry Candidates				
Rank	Effect	Log pValue	Pr > F	
1	Garage_Area	-21.8203	<.0001	
2	Deck_Porch_Area	-12.9294	<.0001	
3	Bedroom_AbvGr	-7.8057	0.0004	
4	Total_Bathroom	-3.8856	0.0205	
5	Lot_Area	-3.6980	0.0248	

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The GLMSELECT Procedure
Stepwise Selection: Step 4
Effect Entered: Garage_Area



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The GLMSELECT Procedure Stepwise Selection: Step 5

Effect Entered: Deck_Porch_Area

Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	5	3.392788E11	67855752389	237.65
Error	294	83944757568	285526386	
Corrected Total	299	4.232235E11		

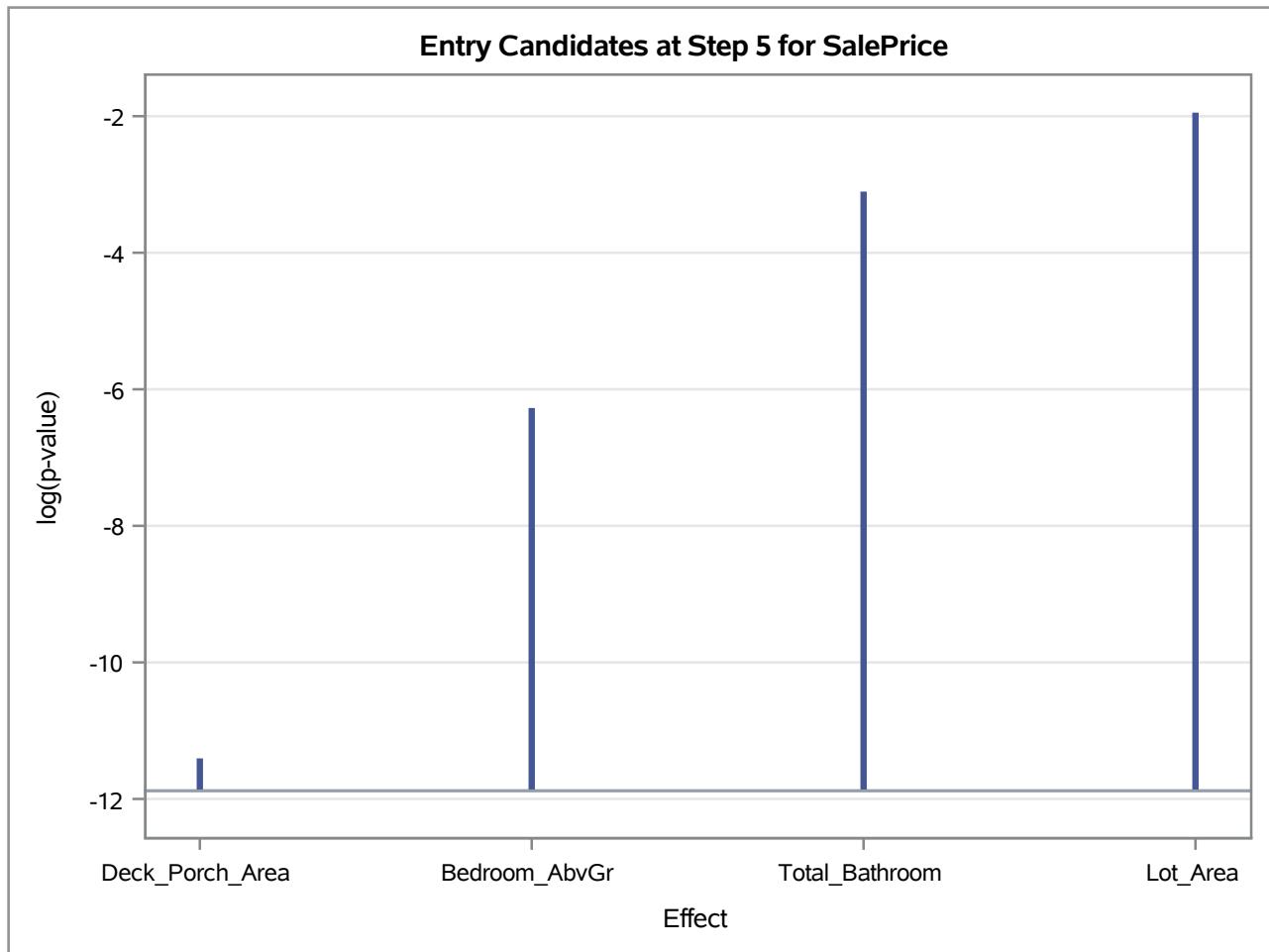
Root MSE	16898
Dependent Mean	137525
R-Square	0.8017
Adj R-Sq	0.7983
AIC	6148.89269
AICC	6149.27625
SBC	5869.11538

Parameter Estimates				
Parameter	DF	Estimate	Standard Error	t Value
Intercept	1	46009	5859.485517	7.85
Gr_Liv_Area	1	58.386514	4.831268	12.09
Basement_Area	1	30.554240	3.323249	9.19
Garage_Area	1	40.158112	6.436997	6.24
Deck_Porch_Area	1	35.720258	7.989240	4.47
Age_Sold	1	-447.254040	40.921927	-10.93

Entry Candidates			
Rank	Effect	Log pValue	Pr > F
1	Deck_Porch_Area	-11.4060	<.0001
2	Bedroom_AbvGr	-6.2737	0.0019
3	Total_Bathroom	-3.1045	0.0448
4	Lot_Area	-1.9476	0.1426

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The GLMSELECT Procedure
Stepwise Selection: Step 5
Effect Entered: Deck_Porch_Area



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The GLMSELECT Procedure Stepwise Selection: Step 6

Effect Entered: Bedroom_AbvGr

Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	6	3.410749E11	56845818595	202.75
Error	293	82148607939	280370676	
Corrected Total	299	4.232235E11		

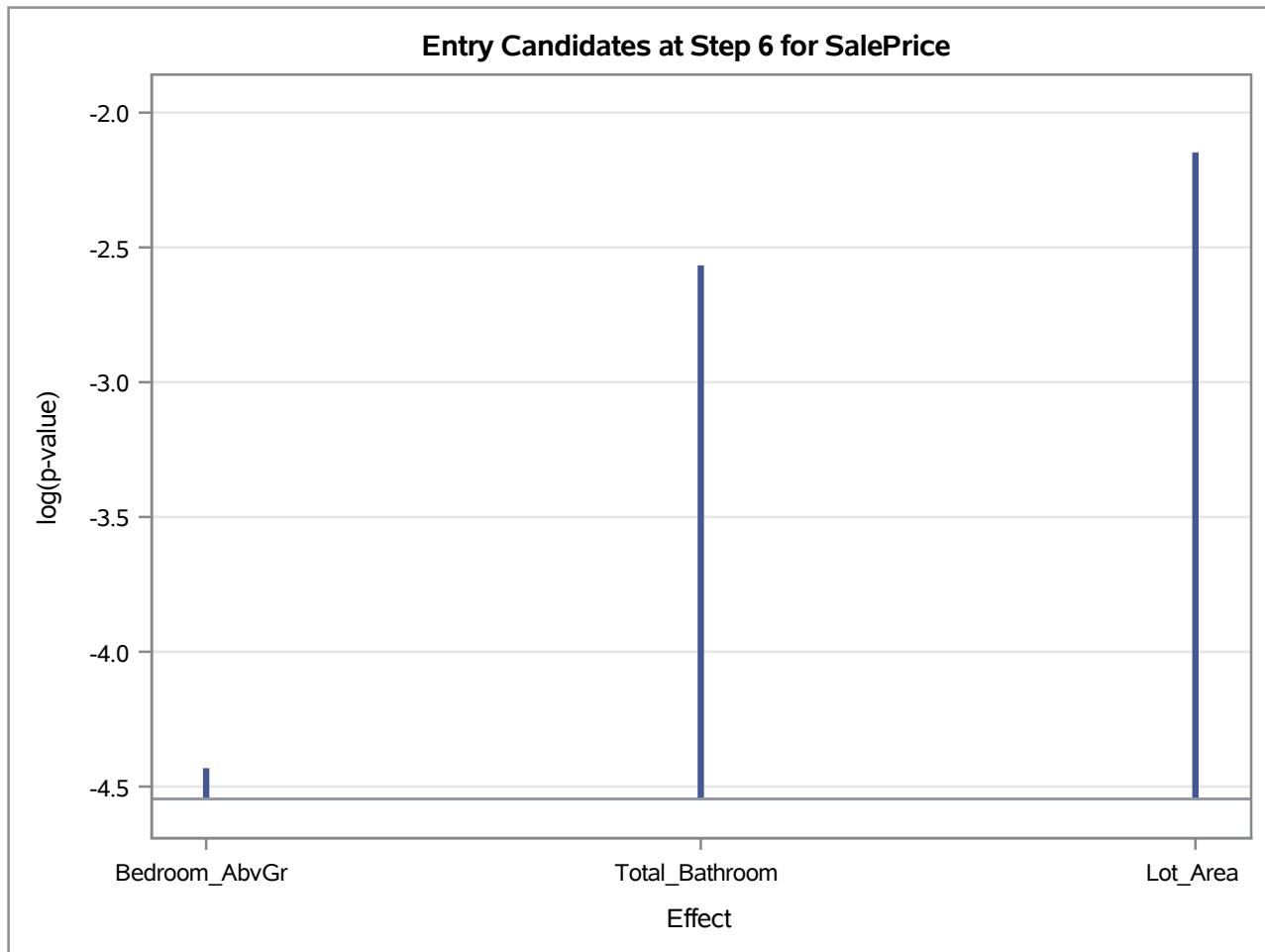
Root MSE	16744
Dependent Mean	137525
R-Square	0.8059
Adj R-Sq	0.8019
AIC	6144.40398
AICC	6144.89882
SBC	5868.33046

Parameter Estimates				
Parameter	DF	Estimate	Standard Error	t Value
Intercept	1	48620	5897.324643	8.24
Gr_Liv_Area	1	65.097413	5.472624	11.90
Basement_Area	1	31.279351	3.305546	9.46
Garage_Area	1	38.728785	6.403565	6.05
Deck_Porch_Area	1	32.487956	8.019119	4.05
Age_Sold	1	-434.199118	40.877494	-10.62
Bedroom_AbvGr	1	-4189.095026	1655.065743	-2.53

Entry Candidates			
Rank	Effect	Log pValue	Pr > F
1	Bedroom_AbvGr	-4.4317	0.0119
2	Total_Bathroom	-2.5664	0.0768
3	Lot_Area	-2.1476	0.1168

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The GLMSELECT Procedure
Stepwise Selection: Step 6
Effect Entered: Bedroom_AbvGr



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The GLMSELECT Procedure Stepwise Selection: Step 7

Effect Entered: Lot_Area

Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	7	3.424508E11	48921543221	176.86
Error	292	80772716963	276618894	
Corrected Total	299	4.232235E11		

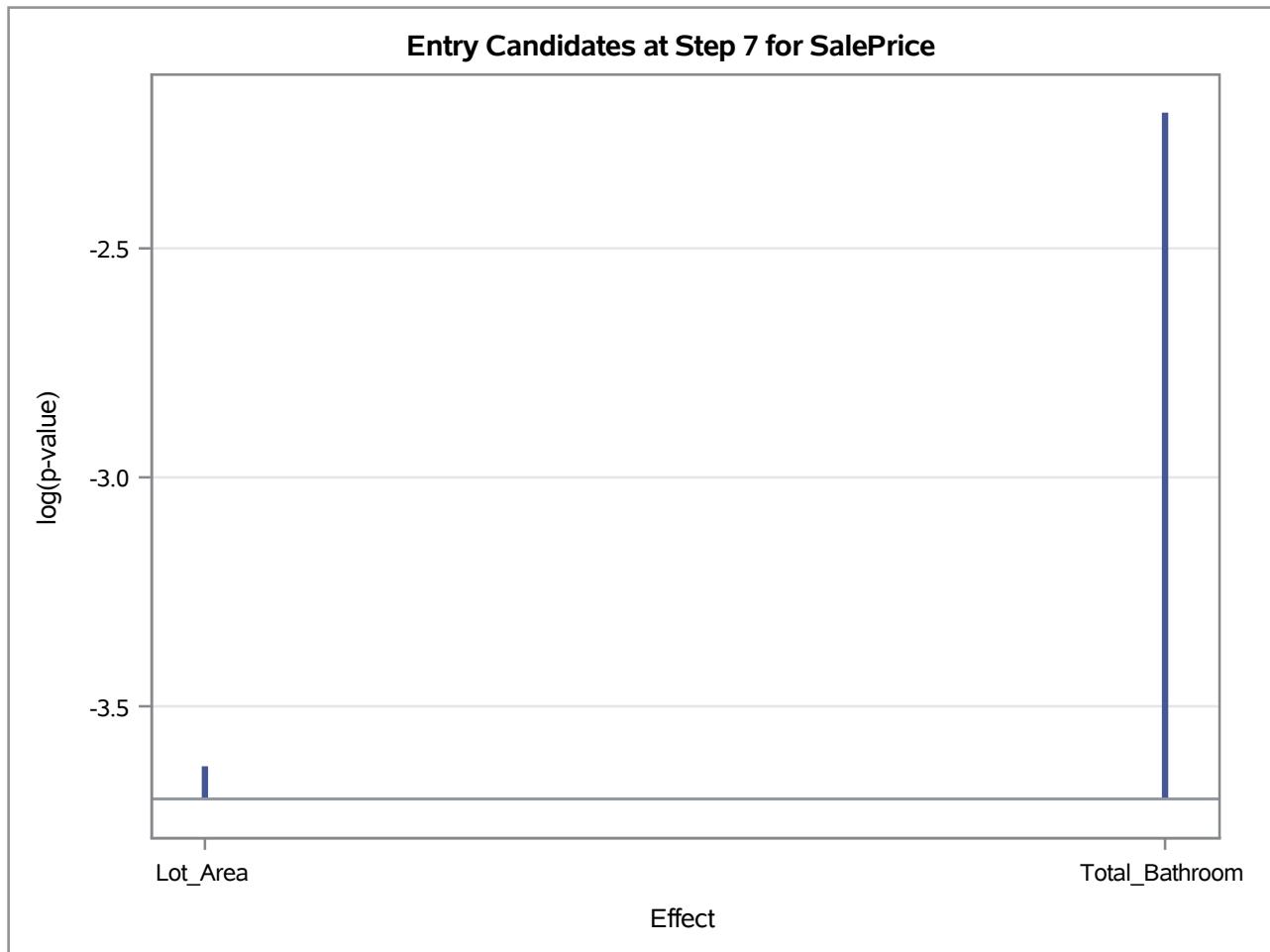
Root MSE	16632
Dependent Mean	137525
R-Square	0.8091
Adj R-Sq	0.8046
AIC	6141.33678
AICC	6141.95747
SBC	5868.96704

Parameter Estimates				
Parameter	DF	Estimate	Standard Error	t Value
Intercept	1	47463	5880.674041	8.07
Gr_Liv_Area	1	65.303724	5.436672	12.01
Basement_Area	1	29.849078	3.345400	8.92
Garage_Area	1	36.309606	6.452405	5.63
Deck_Porch_Area	1	32.052554	7.967677	4.02
Lot_Area	1	0.708127	0.317512	2.23
Age_Sold	1	-447.198682	41.019314	-10.90
Bedroom_AbvGr	1	-5042.766498	1687.928168	-2.99

Entry Candidates			
Rank	Effect	Log pValue	Pr > F
1	Lot_Area	-3.6309	0.0265
2	Total_Bathroom	-2.2036	0.1104

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The GLMSELECT Procedure
Stepwise Selection: Step 7
Effect Entered: Lot_Area



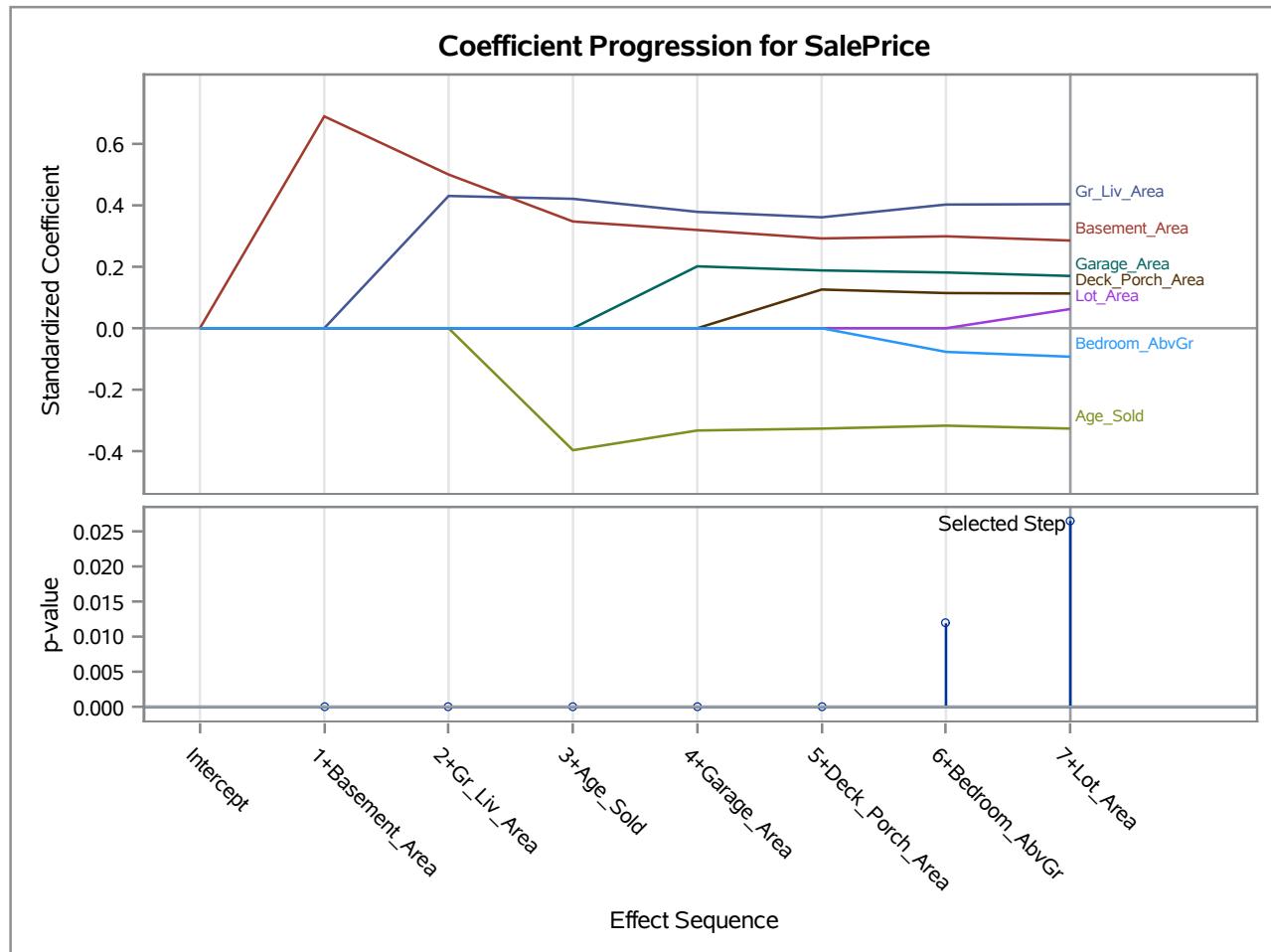
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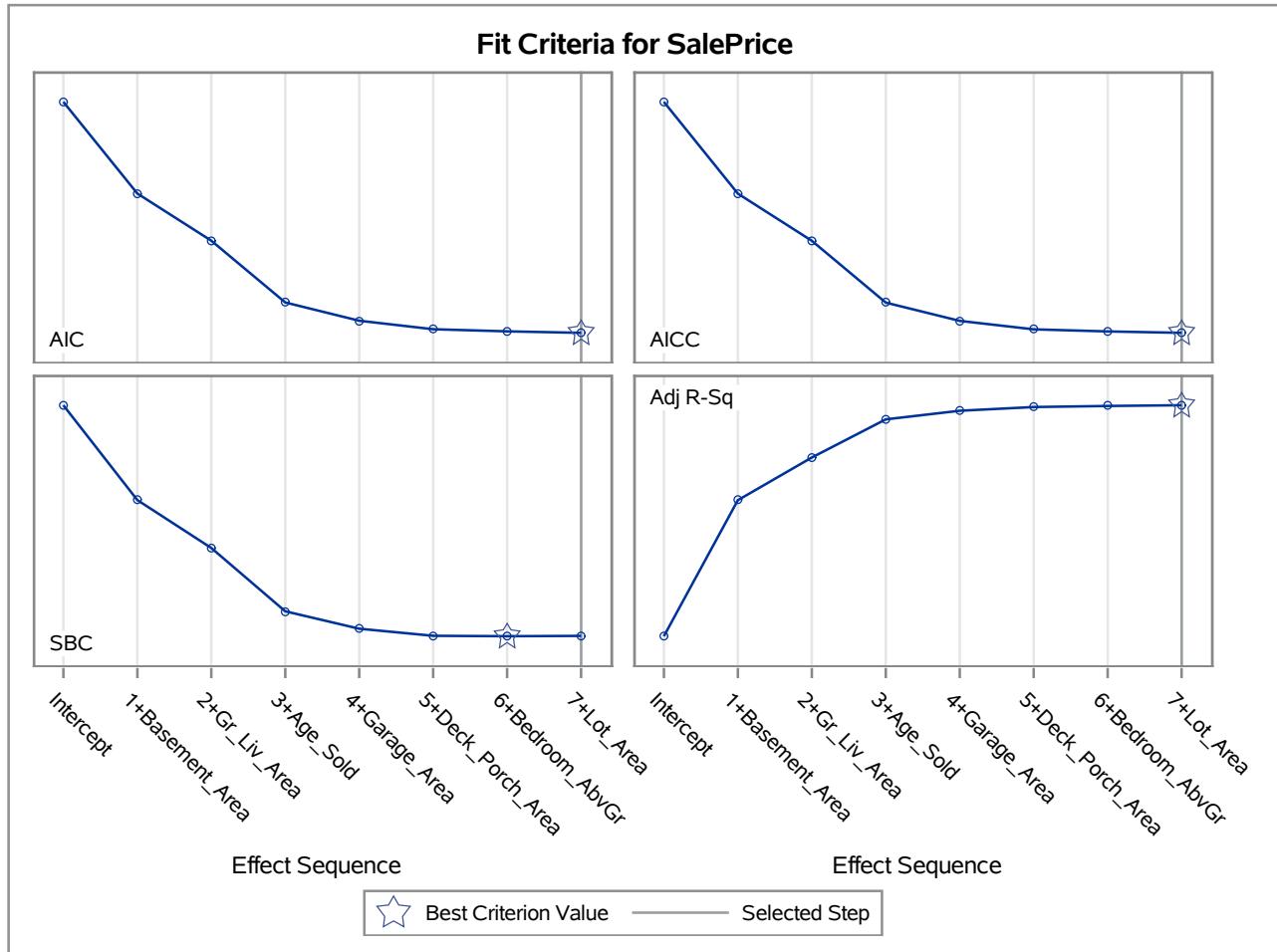
The GLMSELECT Procedure

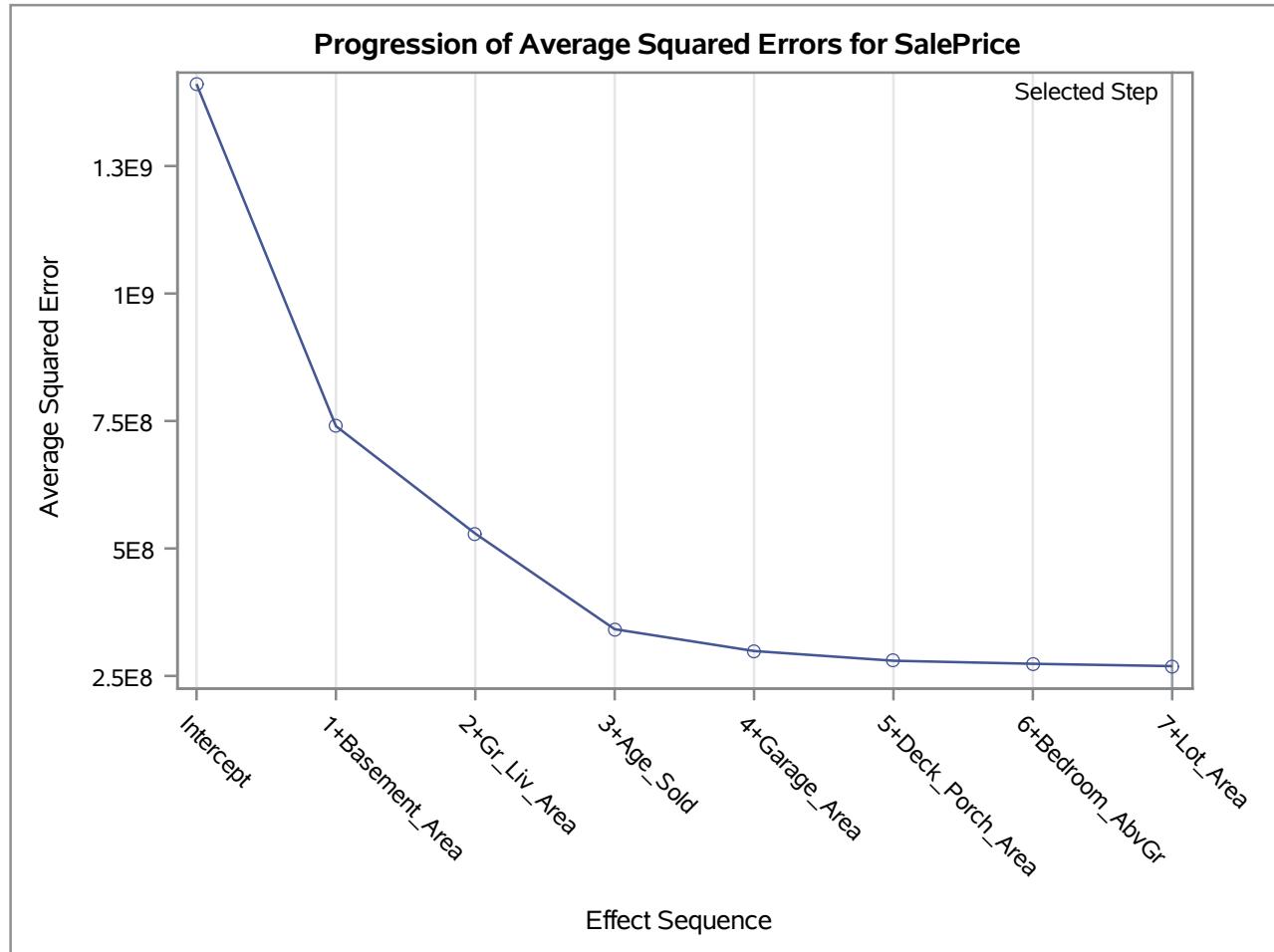
Stepwise Selection Summary					
Step	Effect Entered	Effect Removed	Number Effects In	F Value	Pr > F
0	Intercept		1	0.00	1.0000
1	Basement_Area		2	270.16	<.0001
2	Gr_Liv_Area		3	118.32	<.0001
3	Age_Sold		4	162.37	<.0001
4	Garage_Area		5	42.30	<.0001
5	Deck_Porch_Area		6	19.99	<.0001
6	Bedroom_AbvGr		7	6.41	0.0119
7	Lot_Area		8	4.97	0.0265

Selection stopped because the candidate for entry has SLE > 0.05 and the candidate for removal has SLS < 0.05.

Stop Details					
Candidate For	Effect	Candidate Significance		Compare Significance	
Entry	Total_Bathroom	0.1167	>	0.0500	(SLE)
Removal	Lot_Area	0.0265	<	0.0500	(SLS)

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The GLMSELECT Procedure Selected Model

The selected model is the model at the last step (Step 7).

Effects:	Intercept Gr_Liv_Area Basement_Area Garage_Area Deck_Porch_Area Lot_Area Age_Sold Bedroom_AbvGr
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Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
Model	7	3.424508E11	48921543221	176.86
Error	292	80772716963	276618894	
Corrected Total	299	4.232235E11		

Root MSE	16632
Dependent Mean	137525
R-Square	0.8091
Adj R-Sq	0.8046
AIC	6141.33678
AICC	6141.95747
SBC	5868.96704

Parameter Estimates				
Parameter	DF	Estimate	Standard Error	t Value
Intercept	1	47463	5880.674041	8.07
Gr_Liv_Area	1	65.303724	5.436672	12.01
Basement_Area	1	29.849078	3.345400	8.92
Garage_Area	1	36.309606	6.452405	5.63
Deck_Porch_Area	1	32.052554	7.967677	4.02
Lot_Area	1	0.708127	0.317512	2.23
Age_Sold	1	-447.198682	41.019314	-10.90
Bedroom_AbvGr	1	-5042.766498	1687.928168	-2.99