

## Selection Method LASSO Using Cross Validation

### The GLMSELECT Procedure

<b>Data Set</b>	WORK.FORMODELANDPRED
<b>Dependent Variable</b>	price_doc
<b>Selection Method</b>	LASSO
<b>Stop Criterion</b>	Cross Validation
<b>Choose Criterion</b>	Cross Validation
<b>Cross Validation Method</b>	Random
<b>Cross Validation Fold</b>	5
<b>Effect Hierarchy Enforced</b>	None
<b>Random Number Seed</b>	1

<b>Number of Observations Read</b>	30446
<b>Number of Observations Used</b>	25452

<b>Dimensions</b>	
<b>Number of Effects</b>	38
<b>Number of Parameters</b>	38

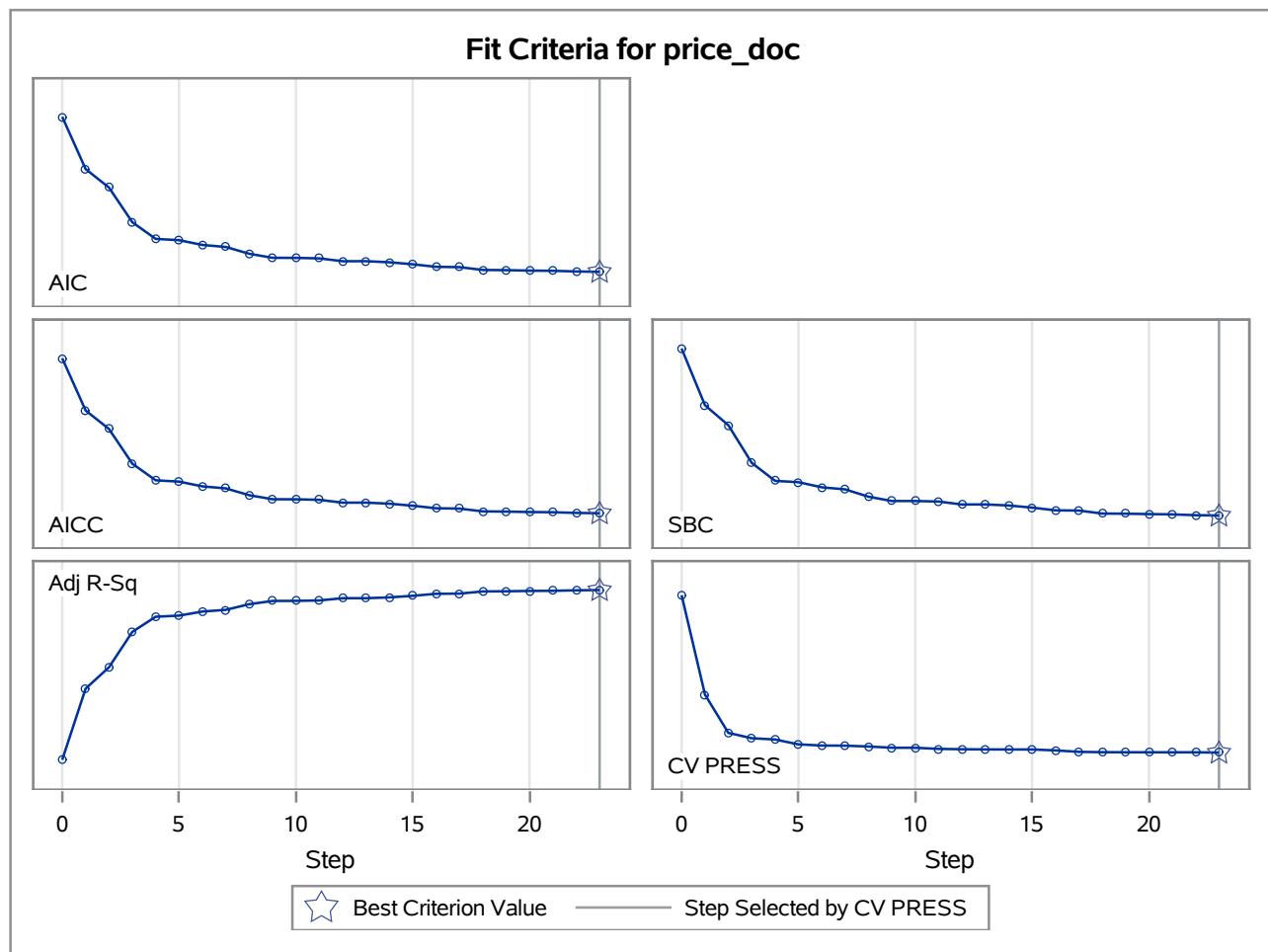
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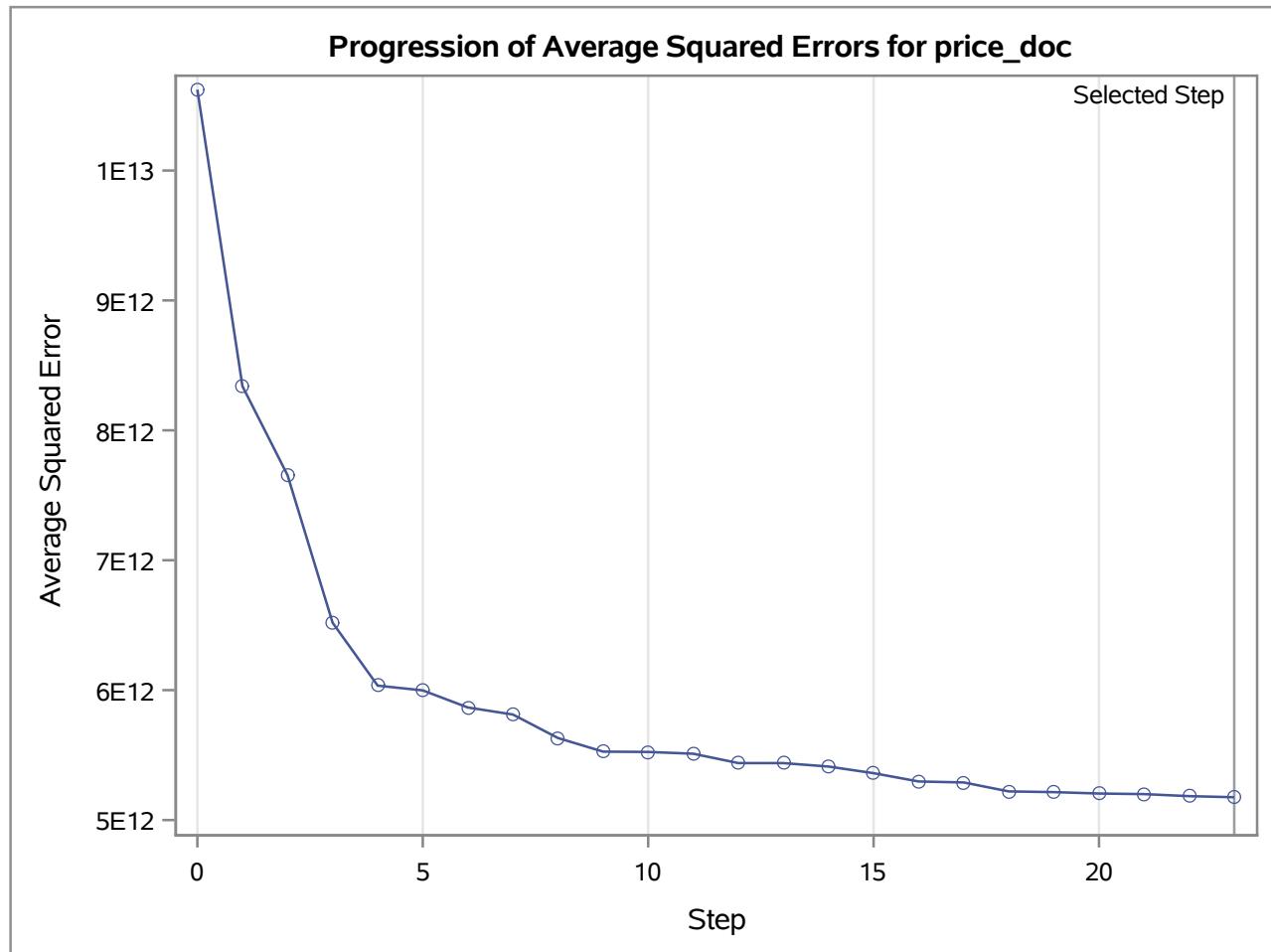
### The GLMSELECT Procedure

LASSO Selection Summary				
Step	Effect Entered	Effect Removed	Number Effects In	CV PRESS
0	Intercept		1	2.70406E17
1	full_sq		2	1.8253E17
2	kremlin_km		3	1.48771E17
3	swim_pool_km		4	1.44031E17
4	fitness_km		5	1.42929E17
5	timestamp		6	1.38614E17
6	raion_popul		7	1.37576E17
7	university_km		8	1.37472E17
8	kitch_sq		9	1.36704E17
9	big_road1_km		10	1.35648E17
10	X0_17_all		11	1.35623E17
11	floor		12	1.34608E17
12	hospital_beds_raion		13	1.34317E17
13	healthcare_centers_r		14	1.34153E17
14	public_transport_sta		15	1.34099E17
15	metro_km_walk		16	1.3409E17
16	big_market_km		17	1.3328E17
17	ice_rink_km		18	1.32011E17
18	build_count_wood		19	1.31699E17
19	university_top_20_ra		20	1.31628E17
20	big_road2_km		21	1.31606E17
21		X0_17_all	20	1.3159E17
22		public_transport_sta	19	1.31586E17
23	railroad_km		20	1.31351E17*
* Optimal Value of Criterion				

Selection stopped at a local minimum of the cross validation PRESS.

Stop Details				
Candidate For	Effect	Candidate CV PRESS		Compare CV PRESS
Entry	public_transport_sta	1.31351E17	>	1.31351E17

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## Selection Method LASSO Using Cross Validation

### The GLMSELECT Procedure Selected Model

**The selected model, based on Cross Validation, is the model at Step 23.**

<b>Effects:</b>	Intercept timestamp full_sq floor hospital_beds_raion raion_popul kitch_sq healthcare_centers_r university_top_20_ra build_count_wood kremlin_km big_road1_km big_road2_km railroad_km big_market_km metro_km_walk ice_rink_km swim_pool_km fitness_km university_km
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Analysis of Variance				
Source	DF	Sum of Squares	Mean Square	F Value
<b>Model</b>	19	1.38631E17	7.296368E15	1408.69
<b>Error</b>	25432	1.317261E17	5.179542E12	
<b>Corrected Total</b>	25451	2.703571E17		

<b>Root MSE</b>	2275861
<b>Dependent Mean</b>	6782908
<b>R-Square</b>	0.5128
<b>Adj R-Sq</b>	0.5124
<b>AIC</b>	770600
<b>AICC</b>	770600
<b>SBC</b>	745309
<b>CV PRESS</b>	1.313514E17

Cross Validation Details			
Index	Observations		CV PRESS
	Fitted	Left Out	
1	20444	5008	2.5672E16
2	20319	5133	2.58299E16
3	20473	4979	2.63066E16
4	20224	5228	2.66356E16
5	20348	5104	2.69073E16
Total			1.31351E17

## Selection Method LASSO Using Cross Validation

### The GLMSELECT Procedure Selected Model

Parameter Estimates		
Parameter	DF	Estimate
Intercept	1	-47862642
timestamp	1	1195.997367
full_sq	1	107699
floor	1	35857
hospital_beds_raion	1	59.610384
raion_popul	1	3.120163
kitch_sq	1	37357
healthcare_centers_r	1	53150
university_top_20_ra	1	119827
build_count_wood	1	-629.871244
kremlin_km	1	-70606
big_road1_km	1	-123655
big_road2_km	1	-13514
railroad_km	1	11301
big_market_km	1	28137
metro_km_walk	1	-35773
ice_rink_km	1	55985
swim_pool_km	1	-111995
fitness_km	1	-164805
university_km	1	-42403