

Ox Professional version 8.00 (OS\_X\_64/U/MT) (C) J.A. Doornik, 1994-2018  
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# Summary statistics

	mean	sd
nsmoid	2.1529e+05	8627.3
analysis_weight	1164.2	598.51
age_r	0.47925	0.14120
open_year	2015.0	1.3820
rate_spread	0.11998	0.45538
pmms	3.9024	0.30288
cltv	0.81226	0.17326
dti	0.37530	0.15148
cu	1.9551	0.20704
first_mort_r	1.7867	0.40966
duration	3.6513	0.72262
i_open	0.64592	0.47823
considerations	1.6881	0.81720
applications	1.2453	0.54466
score_0	7.3764	0.63666
score_1	7.3189	0.65712
score_2	7.3741	0.70821
i_close_first_year	0.11012	0.31304
i_refinance	0.40471	0.49084
i_married	0.70926	0.45410
i_FHA	0.43516	0.49578
i_large_loan	0.27313	0.44557
i_medium_loan	0.44311	0.49675
i_higher_ed	0.63400	0.48171
i_open_year2	0.20599	0.40442
i_open_year3	0.21107	0.40807
i_open_year4	0.20911	0.40667
i_open_year5	0.18080	0.38485
rate	4.0224	0.51354
rate_0	3.9024	0.18870
rate_1	3.9476	0.30975
rate_2	3.7510	0.56101
i_open_0	0.98129	0.13550
i_open_1	0.90859	0.28819
i_open_2	0.89025	0.31258

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Starting values \*/

Beta vector

i_large_loan	0.0000
i_medium_loan	0.0000
rate_spread	0.0000
i_refinance	0.0000
age_r	0.0000
cltv	0.0000
dti	0.0000
cu	0.0000
first_mort_r	0.0000
score_0	0.0000
i_FHA	0.0000
i_open_year2	0.0000

i\_open\_year3        0.0000  
i\_open\_year4        0.0000  
i\_open\_year5        0.0000

Alpha vector:  
    0.0000  
   -1.0000  
   -1.0000

rho: 0.5

gamma: 0.3

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/\* Compare predicted probabilities of observed duration \*/

Prob (Quad) :

mean	min	P25	Median	P75	max
0.57043	0.10441	0.56870	0.67192	0.71652	0.75975

Prob (GHK) :

mean	min	P25	Median	P75	max
0.57063	0.10453	0.56931	0.67225	0.71664	0.75948

Prob (A/R) :

mean	min	P25	Median	P75	max
0.56946	0.10400	0.56900	0.67400	0.71300	0.76000

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/\* Maximum likelihood (BFGS) \*/

Starting values

parameters

0.0000	-1.0000	-1.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.0000	0.0000	0.0000	0.0000	0.0000	0.30000
0.0000	0.0000	0.0000	0.0000	0.0000	0.50000

gradients

743.02	708.81	24.534	90.339	571.17	70.612
376.72	655.45	1235.3	532.80	2796.3	2300.8
504.08	-252.32	292.07	524.16	481.08	10164.
10734.	3062.5				

Initial function = -11305.3138175

Position after 1 BFGS iterations

parameters

0.0014172	-0.99865	-0.99995	0.00017231	0.0010894	0.00013468
0.00071855	0.0012502	0.0023561	0.0010162	0.0053335	0.0043884
0.00096145	-0.00048126	0.00055708	0.00099976	0.00091759	0.31939
0.50584					

gradients

586.80					
84.790	-894.01	-371.16	-189.71	-140.26	-310.91
181.11	179.84	-2258.5	5427.9		-156.43
					-150.70

function value = -11109.03655    steplen = 1.90735e-06

Position after 48 BFGS iterations

Status: Weak convergence (no improvement in line search)

parameters

4.1454	3.1078	2.5886	-0.49118	-0.34123	-0.32426	-0.067322
-0.14892	0.11993	-0.14176	-0.49079	-0.30160	0.22929	-0.36853
-0.73099	-0.13844	0.12660	0.11042	-0.067710	0.65765	

gradients

-2.4556e-05	-1.9099e-05	-8.8585e-05	-2.8012e-05	-5.5479e-05	-1.7099e-05	-4.1837e-05
-4.2382e-05	-0.00010750	-6.1846e-06	-0.00026703	-0.00022355	-0.0010268	-4.3474e-05
-3.0013e-05	-1.5825e-05	-3.0741e-05	3.8199e-06	-0.00099408	0.00088367	

function value = -9527.5029475    steplen = 7.10543e-15

	quadrature
alpha_0	4.1454
alpha_1	3.1078
alpha_2	2.5886
i_large_loan	-0.49118
i_medium_loan	-0.34123
rate_spread	-0.32426
i_refinance	-0.067322
age_r	-0.14892
cltv	0.11993
dti	-0.14176
cu	-0.49079
first_mort_r	-0.30160
score_0	0.22929
i_FHA	-0.36853
i_open_year2	-0.73099
i_open_year3	-0.13844
i_open_year4	0.12660
i_open_year5	0.11042
gamma	-0.067710
rho	0.65765