

Starting Dynare (version 2015-04-07).
 Starting preprocessing of the model file ...
 Found 43 equation(s).
 Evaluating expressions... done
 Computing static model derivatives:
 - order 1
 Computing dynamic model derivatives:
 - order 1
 - order 2
 Processing outputs ... done
 Preprocessing completed.

EIGENVALUES:

Modulus	Real	Imaginary
3.62e-16	3.62e-16	0
6.538e-15	6.538e-15	0
3.609e-07	2.285e-12	3.609e-07
3.609e-07	2.285e-12	-3.609e-07
0.3451	0.3451	0
0.3783	-0.3783	0
0.5	0.5	0
0.6893	0.6893	0
0.7	0.7	0
0.7	0.7	0
0.7	0.7	0
0.7	0.7	0
0.7	0.7	0
0.7	0.7	0
0.85	0.85	0
0.85	0.85	0
0.9	0.9	0
0.9	0.9	0
0.9877	0.9877	0
0.99	0.99	0
1.01	1.01	0
1.032	1.032	0
1.15	1.15	0
1.272e+15	-1.272e+15	0
4.028e+15	-4.028e+15	0
1.722e+17	1.722e+17	0
4.808e+17	-4.808e+17	0
5.342e+18	-5.342e+18	0

There are 8 eigenvalue(s) larger than 1 in modulus
 for 8 forward-looking variable(s)

The rank condition is verified.

STEADY-STATE RESULTS:

y	0
pi_d	0
pi_c	0
r	0
c	0
n	0
d	0
d_b	0
d_s	0
b_b	0

code. log

p_dc 0
c_b 0
c_s 0
psi 0
pi_c_h 0
s_c 0
y_c 0
y_d 0
mc_c 0
mc_d 0
n_c 0
n_d 0
wp_d 0
wp_c 0
n_c_b 0
n_d_b 0
n_c_s 0
n_d_s 0
i_d 0
yf 0
n1 0
pi_d1 0
a_c 0
a_d 0
shock_mu_c 0
shock_mu_d 0
LTV 0
shock_d 0
shock_d_stern 0
c_ast 0
d_ast 0
i_d_ast 0
pi_c_f 0

MODEL_DIAGNOSTICS: No obvious problems with this mod-file were detected.
Initial value of the log posterior (or likelihood): -1282055.5603

f at the beginning of new iteration, 1282055.5602841997
Predicted improvement: 500929436894.910890000
lambda = 1; f = 1282099.5380441
lambda = 0.33333; f = 1282058.4164105
lambda = 0.11111; f = 1282055.5914261
lambda = 0.037037; f = 1282082.9720252
lambda = 0.012346; f = 1282057.1370139
lambda = 0.0041152; f = 1282055.5677149
lambda = 0.0013717; f = 14508.5706776
lambda = 0.00045725; f = 27564.3724537
lambda = 0.00015242; f = 39373.4342536
lambda = 5.0805e-05; f = 51124.9795594
lambda = 1.6935e-05; f = 90303.7369259
lambda = 5.645e-06; f = 225765.5991619
lambda = 1.8817e-06; f = 494702.2605238
Norm of dx 10009

Improvement on iteration 1 = 1267546.989606648

f at the beginning of new iteration, 14508.5706775516
Predicted improvement: 662603.448811043
lambda = 1; f = 14508.5708850
lambda = 0.33333; f = 1781.3227736
lambda = 0.11111; f = 2068.6047536
lambda = 0.037037; f = 3286.4378575

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                                code.log
lambda = 0.012346; f =          6498.2309319
Norm of dx      11.512
-----
Improvement on iteration 2 =    12727.247903966
-----
f at the beginning of new iteration,      1781.3227735859
Predicted improvement:      118.119080036
lambda =          1; f =      1590.7538273
lambda =      1.9332; f =      1475.4084346
Norm of dx      0.15372
-----
Improvement on iteration 3 =      305.914338937
-----
f at the beginning of new iteration,      1475.4084346491
Predicted improvement:      170.286099187
lambda =          1; f =      1256.8241338
Norm of dx      0.37437
-----
Improvement on iteration 4 =      218.584300819
-----
f at the beginning of new iteration,      1256.8241338302
Predicted improvement:      31.976233722
lambda =          1; f =      1210.8592913
lambda =      1.9332; f =      1195.6535705
Norm of dx      0.1514
-----
Improvement on iteration 5 =      61.170563329
-----
f at the beginning of new iteration,      1195.6535705015
Predicted improvement:      8.821343690
lambda =          1; f =      1186.2628250
Norm of dx      0.049251
-----
Improvement on iteration 6 =      9.390745471
-----
f at the beginning of new iteration,      1186.2628250306
Predicted improvement:      4.687302839
lambda =          1; f =      1178.1320205
lambda =      1.9332; f =      1172.3921795
lambda =      3.7372; f =      1164.9351421
Norm of dx      0.043632
-----
Improvement on iteration 7 =      21.327682944
-----
f at the beginning of new iteration,      1164.9351420871
Predicted improvement:      5.839965922
lambda =          1; f =      1158.0541265
Norm of dx      0.11816
-----
Improvement on iteration 8 =      6.881015615
-----
f at the beginning of new iteration,      1158.0541264724
Predicted improvement:      1.920552678
lambda =          1; f =      1155.9074981
Norm of dx      0.028259
-----

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code.log
Improvement on iteration 9 =      2.146628353
-----
f at the beginning of new iteration,      1155.9074981194
Predicted improvement:      2.960117062
lambda =      1; f =      1152.5087401
Norm of dx      0.047521
----
Improvement on iteration 10 =      3.398758020
-----
f at the beginning of new iteration,      1152.5087400992
Predicted improvement:      0.610902017
lambda =      1; f =      1151.4390489
lambda =      1.9332; f =      1150.7085326
lambda =      3.7372; f =      1150.0118681
Norm of dx      0.018287
----
Improvement on iteration 11 =      2.496872015
-----
f at the beginning of new iteration,      1150.0118680846
Predicted improvement:      0.885329753
lambda =      1; f =      1148.6846827
lambda =      1.9332; f =      1148.3653093
Norm of dx      0.035933
----
Improvement on iteration 12 =      1.646558759
-----
f at the beginning of new iteration,      1148.3653093256
Predicted improvement:      0.768498925
lambda =      1; f =      1147.2887060
lambda =      1.9332; f =      1147.2827118
Norm of dx      0.022465
----
Improvement on iteration 13 =      1.082597531
-----
f at the beginning of new iteration,      1147.2827117951
Predicted improvement:      0.665356081
lambda =      1; f =      1146.3440076
lambda =      1.9332; f =      1146.0997675
Norm of dx      0.011579
----
Improvement on iteration 14 =      1.182944325
-----
f at the beginning of new iteration,      1146.0997674700
Predicted improvement:      0.645436336
lambda =      1; f =      1144.9529950
lambda =      1.9332; f =      1144.1721499
lambda =      3.7372; f =      1143.6544928
Norm of dx      0.033919
----
Improvement on iteration 15 =      2.445274693
-----
f at the beginning of new iteration,      1143.6544927768
Predicted improvement:      1.237187611
lambda =      1; f =      1141.7046239
lambda =      1.9332; f =      1140.7816763
Norm of dx      0.036592

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code. log

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-----
Improvement on iteration 16 =          2.872816493
-----
f at the beginning of new iteration,      1140.7816762838
Predicted improvement:          1.449583660
lambda =          1; f =          1138.5624153
lambda =    1.9332; f =          1137.6170283
Norm of dx    0.078331
-----
Improvement on iteration 17 =          3.164647960
-----
f at the beginning of new iteration,      1137.6170283242
Predicted improvement:          0.749528855
lambda =          1; f =          1136.4224186
lambda =    1.9332; f =          1135.8321813
Norm of dx    0.037201
-----
Improvement on iteration 18 =          1.784847049
-----
f at the beginning of new iteration,      1135.8321812747
Predicted improvement:          1.205327624
lambda =          1; f =          1133.9254899
lambda =    1.9332; f =          1133.2029659
Norm of dx    0.093422
-----
Improvement on iteration 19 =          2.629215370
-----
f at the beginning of new iteration,      1133.2029659047
Predicted improvement:          1.909912715
lambda =          1; f =          1130.2386899
lambda =    1.9332; f =          1133.2029721
lambda =    1.3017; f =          1130.3657250
Norm of dx    0.09173
-----
Improvement on iteration 20 =          2.964276018
-----
f at the beginning of new iteration,      1130.2386898863
Predicted improvement:          4.714731197
lambda =          1; f =          1127.6712787
lambda =    0.33333; f =          1127.9247754
lambda =    0.64439; f =          1127.1292964
Norm of dx    0.13801
-----
Improvement on iteration 21 =          3.109393485
-----
f at the beginning of new iteration,      1127.1292964015
Predicted improvement:          0.970961810
lambda =          1; f =          1126.4223891
Norm of dx    0.064634
-----
Improvement on iteration 22 =          0.706907290
-----
f at the beginning of new iteration,      1126.4223891118
Predicted improvement:          1.358910982
lambda =          1; f =          1124.9371902
Norm of dx    0.032631
```

code.log

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-----
Improvement on iteration 23 =          1.485198944
-----
f at the beginning of new iteration,      1124.9371901674
Predicted improvement:          0.749102092
lambda =          1; f =          1123.7740584
lambda =    1.9332; f =          1123.7228246
Norm of dx    0.039179
-----
Improvement on iteration 24 =          1.214365554
-----
f at the beginning of new iteration,      1123.7228246134
Predicted improvement:          2.277685601
lambda =          1; f =          1120.8917079
Norm of dx    0.069252
-----
Improvement on iteration 25 =          2.831116736
-----
f at the beginning of new iteration,      1120.8917078779
Predicted improvement:          1.555231577
lambda =          1; f =          1119.1379093
Norm of dx    0.1128
-----
Improvement on iteration 26 =          1.753798623
-----
f at the beginning of new iteration,      1119.1379092545
Predicted improvement:          2.423930060
lambda =          1; f =          1117.6878201
lambda =    0.33333; f =          1117.9296732
lambda =    0.64439; f =          1117.4756491
Norm of dx    0.15157
-----
Improvement on iteration 27 =          1.662260156
-----
f at the beginning of new iteration,      1117.4756490983
Predicted improvement:          1.357180168
lambda =          1; f =          1115.2903911
lambda =    1.9332; f =          1114.8279801
Norm of dx    0.14471
-----
Improvement on iteration 28 =          2.647668956
-----
f at the beginning of new iteration,      1114.8279801420
Predicted improvement:          2.594917775
lambda =          1; f =          1114.8280120
lambda =    0.33333; f =          1113.8364099
Norm of dx    0.10319
-----
Improvement on iteration 29 =          0.991570272
-----
f at the beginning of new iteration,      1113.8364098696
Predicted improvement:          7.464855768
lambda =          1; f =          1122.9233576
lambda =    0.33333; f =          1113.6282606
lambda =    0.11111; f =          1112.9578168
Norm of dx    0.3037
```

code. log

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-----
Improvement on iteration 30 =          0.878593049
-----
f at the beginning of new iteration,      1112.9578168207
Predicted improvement:          0.798937249
lambda =          1; f =          1111.8911743
Norm of dx    0.027403
-----
Improvement on iteration 31 =          1.066642522
-----
f at the beginning of new iteration,      1111.8911742987
Predicted improvement:          0.438195162
lambda =          1; f =          1111.1884865
lambda =    1.9332; f =          1110.7937863
Norm of dx    0.021885
-----
Improvement on iteration 32 =          1.097387973
-----
f at the beginning of new iteration,      1110.7937863256
Predicted improvement:          0.406807534
lambda =          1; f =          1110.2082308
lambda =    1.9332; f =          1110.0857470
Norm of dx    0.030556
-----
Improvement on iteration 33 =          0.708039288
-----
f at the beginning of new iteration,      1110.0857470377
Predicted improvement:          0.139602125
lambda =          1; f =          1109.8427101
lambda =    1.9332; f =          1109.6774264
lambda =    3.7372; f =          1109.5158307
Norm of dx    0.0091202
-----
Improvement on iteration 34 =          0.569916331
-----
f at the beginning of new iteration,      1109.5158307069
Predicted improvement:          0.352416227
lambda =          1; f =          1108.9148044
lambda =    1.9332; f =          1108.5442739
lambda =    3.7372; f =          1108.3870476
Norm of dx    0.035087
-----
Improvement on iteration 35 =          1.128783067
-----
f at the beginning of new iteration,      1108.3870476404
Predicted improvement:          0.290278883
lambda =          1; f =          1107.9570985
lambda =    1.9332; f =          1107.8118769
Norm of dx    0.022084
-----
Improvement on iteration 36 =          0.575170786
-----
f at the beginning of new iteration,      1107.8118768539
Predicted improvement:          0.187458777
lambda =          1; f =          1107.4828404
lambda =    1.9332; f =          1107.2599797
```

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                                code. log
lambda =      3. 7372; f =      1107. 0719571
Norm of dx    0. 027272
-----
Improvement on iteration 37 =      0. 739919730
-----
f at the beginning of new iteration,      1107. 0719571242
Predicted improvement:      0. 314553385
lambda =      1; f =      1106. 4768481
lambda =      1. 9332; f =      1106. 0117312
lambda =      3. 7372; f =      1105. 9001748
Norm of dx    0. 023492
-----
Improvement on iteration 38 =      1. 171782351
-----
f at the beginning of new iteration,      1105. 9001747731
Predicted improvement:      0. 920247536
lambda =      1; f =      1105. 5162419
lambda =      0. 33333; f =      1105. 5162783
Norm of dx    0. 040026
-----
Improvement on iteration 39 =      0. 383932902
-----
f at the beginning of new iteration,      1105. 5162418713
Predicted improvement:      0. 348286063
lambda =      1; f =      1104. 9055314
lambda =      1. 9332; f =      1104. 5330209
lambda =      3. 7372; f =      1104. 9108243
lambda =      2. 5164; f =      1104. 4432676
Norm of dx    0. 035083
-----
Improvement on iteration 40 =      1. 072974289
-----
f at the beginning of new iteration,      1104. 4432675827
Predicted improvement:      0. 167516227
lambda =      1; f =      1104. 1645426
lambda =      1. 9332; f =      1104. 0015463
Norm of dx    0. 030111
-----
Improvement on iteration 41 =      0. 441721299
-----
f at the beginning of new iteration,      1104. 0015462837
Predicted improvement:      0. 333089300
lambda =      1; f =      1103. 4502750
lambda =      1. 9332; f =      1103. 1403748
Norm of dx    0. 068879
-----
Improvement on iteration 42 =      0. 861171480
-----
f at the beginning of new iteration,      1103. 1403748033
Predicted improvement:      0. 565892017
lambda =      1; f =      1102. 1615442
lambda =      1. 9332; f =      1107. 9163727
lambda =      1. 3017; f =      1101. 9746453
lambda =      1. 6503; f =      1102. 3379101
Norm of dx    0. 11634
-----
Improvement on iteration 43 =      1. 165729524

```


code. log

f at the beginning of new iteration, 1101.9746452789
Predicted improvement: 0.786907543
lambda = 1; f = 1101.9748040
lambda = 0.33333; f = 1101.7514568
Norm of dx 0.09878

Improvement on iteration 44 = 0.223188495

f at the beginning of new iteration, 1101.7514567836
Predicted improvement: 2.573557247
lambda = 1; f = 1101.3359985
lambda = 0.33333; f = 1100.6162895
Norm of dx 0.19

Improvement on iteration 45 = 1.135167327

f at the beginning of new iteration, 1100.6162894562
Predicted improvement: 0.492760987
lambda = 1; f = 1099.9232860
lambda = 1.9332; f = 1099.8432613
Norm of dx 0.05736

Improvement on iteration 46 = 0.773028142

f at the beginning of new iteration, 1099.8432613145
Predicted improvement: 0.341074690
lambda = 1; f = 1099.2802199
lambda = 1.9332; f = 1098.9892707
Norm of dx 0.037031

Improvement on iteration 47 = 0.853990567

f at the beginning of new iteration, 1098.9892707473
Predicted improvement: 0.354476877
lambda = 1; f = 1098.5502924
Norm of dx 0.054774

Improvement on iteration 48 = 0.438978359

f at the beginning of new iteration, 1098.5502923887
Predicted improvement: 0.180485597
lambda = 1; f = 1098.3197770
Norm of dx 0.027519

Improvement on iteration 49 = 0.230515373

f at the beginning of new iteration, 1098.3197770155
Predicted improvement: 0.100159566
lambda = 1; f = 1098.1676757
lambda = 1.9332; f = 1098.1108206
Norm of dx 0.018504

Improvement on iteration 50 = 0.208956452

code.log
f at the beginning of new iteration, 1098.1108205635
Predicted improvement: 0.112318400
lambda = 1; f = 1097.9176665
lambda = 1.9332; f = 1097.7947697
lambda = 3.7372; f = 1097.7235795
Norm of dx 0.01631

Improvement on iteration 51 = 0.387241101

f at the beginning of new iteration, 1097.7235794620
Predicted improvement: 0.189372034
lambda = 1; f = 1097.4109684
lambda = 1.9332; f = 1097.2183883
Norm of dx 0.0144

Improvement on iteration 52 = 0.505191156

f at the beginning of new iteration, 1097.2183883060
Predicted improvement: 0.471264696
lambda = 1; f = 1096.4931233
lambda = 1.9332; f = 1096.2192747
Norm of dx 0.058456

Improvement on iteration 53 = 0.999113639

f at the beginning of new iteration, 1096.2192746672
Predicted improvement: 0.286620289
lambda = 1; f = 1095.7510769
lambda = 1.9332; f = 1095.5010445
Norm of dx 0.051324

Improvement on iteration 54 = 0.718230178

f at the beginning of new iteration, 1095.5010444889
Predicted improvement: 0.226885218
lambda = 1; f = 1095.2056118
Norm of dx 0.046986

Improvement on iteration 55 = 0.295432669

f at the beginning of new iteration, 1095.2056118200
Predicted improvement: 0.148423267
lambda = 1; f = 1094.9695537
lambda = 1.9332; f = 1094.8811165
Norm of dx 0.027577

Improvement on iteration 56 = 0.324495337

f at the beginning of new iteration, 1094.8811164831
Predicted improvement: 0.116296473
lambda = 1; f = 1094.6808541
lambda = 1.9332; f = 1094.5498374
lambda = 3.7372; f = 1094.4418030
Norm of dx 0.011967

Improvement on iteration 57 = 0.439313472

code. log

f at the beginning of new iteration, 1094.4418030109
Predicted improvement: 0.289333690
lambda = 1; f = 1093.9856771
lambda = 1.9332; f = 1093.7457959
Norm of dx 0.03691

Improvement on iteration 58 = 0.696007100

f at the beginning of new iteration, 1093.7457959114
Predicted improvement: 0.928986479
lambda = 1; f = 1091.8031773
lambda = 1.9332; f = 1100.9388600
lambda = 1.3017; f = 1091.1140782
lambda = 1.6503; f = 1090.5333177
lambda = 2.0923; f = 1093.7460187
lambda = 1.8146; f = 1091.7849902
Norm of dx 0.19387

Improvement on iteration 59 = 3.212478175
warning: possible inaccuracy in H matrix

f at the beginning of new iteration, 1090.5333177366
Predicted improvement: 1.015639701
lambda = 1; f = 1089.5689349
Norm of dx 0.095822

Improvement on iteration 60 = 0.964382872

f at the beginning of new iteration, 1089.5689348647
Predicted improvement: 4.107164488
lambda = 1; f = 1089.5728171
lambda = 0.33333; f = 1088.4671308
Norm of dx 0.33086

Improvement on iteration 61 = 1.101804072

f at the beginning of new iteration, 1088.4671307930
Predicted improvement: 1.419898302
lambda = 1; f = 1088.2573237
lambda = 0.33333; f = 1088.0080549
Norm of dx 0.078443

Improvement on iteration 62 = 0.459075898

f at the beginning of new iteration, 1088.0080548951
Predicted improvement: 0.251915839
lambda = 1; f = 1087.7165235
Norm of dx 0.022599

Improvement on iteration 63 = 0.291531439

f at the beginning of new iteration, 1087.7165234561
Predicted improvement: 0.112090097
lambda = 1; f = 1087.5426626
lambda = 1.9332; f = 1087.4913281
Norm of dx 0.023071

code. log

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-----
Improvement on iteration 64 =          0.225195356
-----
f at the beginning of new iteration,      1087.4913281001
Predicted improvement:          0.079661629
lambda =          1; f =          1087.3701937
lambda =    1.9332; f =          1087.3300035
Norm of dx    0.014376
-----
Improvement on iteration 65 =          0.161324569
-----
f at the beginning of new iteration,      1087.3300035311
Predicted improvement:          0.089751284
lambda =          1; f =          1087.2347859
Norm of dx    0.012774
-----
Improvement on iteration 66 =          0.095217585
-----
f at the beginning of new iteration,      1087.2347859458
Predicted improvement:          0.078705228
lambda =          1; f =          1087.0981711
lambda =    1.9332; f =          1087.0115659
lambda =    3.7372; f =          1086.9787185
Norm of dx    0.014683
-----
Improvement on iteration 67 =          0.256067446
-----
f at the beginning of new iteration,      1086.9787184996
Predicted improvement:          0.198225487
lambda =          1; f =          1086.6570693
lambda =    1.9332; f =          1086.4688641
Norm of dx    0.012853
-----
Improvement on iteration 68 =          0.509854448
-----
f at the beginning of new iteration,      1086.4688640515
Predicted improvement:          0.300974641
lambda =          1; f =          1086.0608682
Norm of dx    0.052168
-----
Improvement on iteration 69 =          0.407995897
-----
f at the beginning of new iteration,      1086.0608681542
Predicted improvement:          0.102818465
lambda =          1; f =          1085.9392992
Norm of dx    0.034039
-----
Improvement on iteration 70 =          0.121568924
-----
f at the beginning of new iteration,      1085.9392992306
Predicted improvement:          0.027503942
lambda =          1; f =          1085.8928271
lambda =    1.9332; f =          1085.8647847
lambda =    3.7372; f =          1085.8523271
Norm of dx    0.0075904
-----
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code.log
Improvement on iteration 71 = 0.086972090
-----
f at the beginning of new iteration, 1085.8523271403
Predicted improvement: 0.053558417
lambda = 1; f = 1085.7522461
lambda = 1.9332; f = 1085.6716722
lambda = 3.7372; f = 1085.5518796
lambda = 7.2247; f = 1085.4624471
Norm of dx 0.0077544
----
Improvement on iteration 72 = 0.389880048
-----
f at the beginning of new iteration, 1085.4624470918
Predicted improvement: 0.249705821
lambda = 1; f = 1085.0087148
lambda = 1.9332; f = 1084.6694909
lambda = 3.7372; f = 1084.2560075
Norm of dx 0.059147
----
Improvement on iteration 73 = 1.206439634
-----
f at the beginning of new iteration, 1084.2560074582
Predicted improvement: 0.898759771
lambda = 1; f = 1083.2862467
Norm of dx 0.26228
----
Improvement on iteration 74 = 0.969760792
-----
f at the beginning of new iteration, 1083.2862466659
Predicted improvement: 0.220722852
lambda = 1; f = 1083.0045739
Norm of dx 0.057705
----
Improvement on iteration 75 = 0.281672776
-----
f at the beginning of new iteration, 1083.0045738897
Predicted improvement: 0.080805363
lambda = 1; f = 1082.9003962
Norm of dx 0.015552
----
Improvement on iteration 76 = 0.104177729
-----
f at the beginning of new iteration, 1082.9003961604
Predicted improvement: 0.027529971
lambda = 1; f = 1082.8629459
Norm of dx 0.011544
----
Improvement on iteration 77 = 0.037450216
-----
f at the beginning of new iteration, 1082.8629459446
Predicted improvement: 0.013668380
lambda = 1; f = 1082.8447794
Norm of dx 0.0060914
----
Improvement on iteration 78 = 0.018166513
-----

```

code. log

f at the beginning of new iteration, 1082.8447794320
Predicted improvement: 0.008109623
lambda = 1; f = 1082.8320765
lambda = 1.9332; f = 1082.8267634
Norm of dx 0.0049001

Improvement on iteration 79 = 0.018016000

f at the beginning of new iteration, 1082.8267634321
Predicted improvement: 0.009282948
lambda = 1; f = 1082.8101390
lambda = 1.9332; f = 1082.7981630
lambda = 3.7372; f = 1082.7848657
Norm of dx 0.0042694

Improvement on iteration 80 = 0.041897693

f at the beginning of new iteration, 1082.7848657395
Predicted improvement: 0.025462426
lambda = 1; f = 1082.7399050
lambda = 1.9332; f = 1082.7087165
lambda = 3.7372; f = 1082.6779732
Norm of dx 0.011295

Improvement on iteration 81 = 0.106892490

f at the beginning of new iteration, 1082.6779732497
Predicted improvement: 0.050112629
lambda = 1; f = 1082.5930337
lambda = 1.9332; f = 1082.5406428
lambda = 3.7372; f = 1082.5100292
Norm of dx 0.024565

Improvement on iteration 82 = 0.167944077

f at the beginning of new iteration, 1082.5100291732
Predicted improvement: 0.041890161
lambda = 1; f = 1082.4446736
lambda = 1.9332; f = 1082.4175140
Norm of dx 0.023685

Improvement on iteration 83 = 0.092515162

f at the beginning of new iteration, 1082.4175140117
Predicted improvement: 0.025899950
lambda = 1; f = 1082.3842592
Norm of dx 0.023415

Improvement on iteration 84 = 0.033254847

f at the beginning of new iteration, 1082.3842591648
Predicted improvement: 0.009610039
lambda = 1; f = 1082.3717896
Norm of dx 0.014926

Improvement on iteration 85 = 0.012469549

code. log

f at the beginning of new iteration, 1082.3717896159
Predicted improvement: 0.004089027
lambda = 1; f = 1082.3654035
lambda = 1.9332; f = 1082.3626970
Norm of dx 0.0054825

Improvement on iteration 86 = 0.009092580

f at the beginning of new iteration, 1082.3626970355
Predicted improvement: 0.005142557
lambda = 1; f = 1082.3527945
lambda = 1.9332; f = 1082.3442471
lambda = 3.7372; f = 1082.3296291
lambda = 7.2247; f = 1082.3085422
lambda = 13.967; f = 1082.2950530
Norm of dx 0.0028865

Improvement on iteration 87 = 0.067644022

f at the beginning of new iteration, 1082.2950530132
Predicted improvement: 0.048884893
lambda = 1; f = 1082.2095949
lambda = 1.9332; f = 1082.1519334
lambda = 3.7372; f = 1082.1009566
Norm of dx 0.021372

Improvement on iteration 88 = 0.194096375

f at the beginning of new iteration, 1082.1009566385
Predicted improvement: 0.016712465
lambda = 1; f = 1082.0784729
Norm of dx 0.017642

Improvement on iteration 89 = 0.022483718

f at the beginning of new iteration, 1082.0784729205
Predicted improvement: 0.008104616
lambda = 1; f = 1082.0670619
lambda = 1.9332; f = 1082.0649764
Norm of dx 0.009864

Improvement on iteration 90 = 0.013496507

f at the beginning of new iteration, 1082.0649764130
Predicted improvement: 0.005727588
lambda = 1; f = 1082.0545661
lambda = 1.9332; f = 1082.0467213
lambda = 3.7372; f = 1082.0365800
Norm of dx 0.0027548

Improvement on iteration 91 = 0.028396430

f at the beginning of new iteration, 1082.0365799826
Predicted improvement: 0.029033530
lambda = 1; f = 1081.9891535

```

                                code.log
lambda = 1.9332; f = 1081.9641214
Norm of dx 0.012088
-----
Improvement on iteration 92 = 0.072458620
-----
f at the beginning of new iteration, 1081.9641213624
Predicted improvement: 0.045598979
lambda = 1; f = 1081.8967740
lambda = 1.9332; f = 1081.8793563
Norm of dx 0.048751
-----
Improvement on iteration 93 = 0.084765096
-----
f at the beginning of new iteration, 1081.8793562660
Predicted improvement: 0.029750530
lambda = 1; f = 1081.8382612
Norm of dx 0.013664
-----
Improvement on iteration 94 = 0.041095080
-----
f at the beginning of new iteration, 1081.8382611857
Predicted improvement: 0.016625216
lambda = 1; f = 1081.8231525
Norm of dx 0.015775
-----
Improvement on iteration 95 = 0.015108710
-----
f at the beginning of new iteration, 1081.8231524756
Predicted improvement: 0.001847009
lambda = 1; f = 1081.8204502
lambda = 1.9332; f = 1081.8197002
Norm of dx 0.00262
-----
Improvement on iteration 96 = 0.003452241
-----
f at the beginning of new iteration, 1081.8197002351
Predicted improvement: 0.001581867
lambda = 1; f = 1081.8167252
lambda = 1.9332; f = 1081.8142915
lambda = 3.7372; f = 1081.8105269
lambda = 7.2247; f = 1081.8067813
Norm of dx 0.0020899
-----
Improvement on iteration 97 = 0.012918955
-----
f at the beginning of new iteration, 1081.8067812798
Predicted improvement: 0.011880692
lambda = 1; f = 1081.7843062
lambda = 1.9332; f = 1081.7656479
lambda = 3.7372; f = 1081.7358997
lambda = 7.2247; f = 1081.7019609
Norm of dx 0.012152
-----
Improvement on iteration 98 = 0.104820377
-----
f at the beginning of new iteration, 1081.7019609032

```



```

code. log
Predicted improvement:      0.073994648
lambda =      1; f =      1081.5878529
lambda =      1.9332; f =      1081.5415458
Norm of dx    0.079926
-----
Improvement on iteration 99 =      0.160415128
-----
f at the beginning of new iteration,      1081.5415457754
Predicted improvement:      0.024737381
lambda =      1; f =      1081.5105923
Norm of dx    0.020627
-----
Improvement on iteration 100 =      0.030953444
-----
f at the beginning of new iteration,      1081.5105923315
Predicted improvement:      0.005236791
lambda =      1; f =      1081.5028848
lambda =      1.9332; f =      1081.5008588
Norm of dx    0.0057785
-----
Improvement on iteration 101 =      0.009733528
-----
f at the beginning of new iteration,      1081.5008588033
Predicted improvement:      0.005502023
lambda =      1; f =      1081.4901749
lambda =      1.9332; f =      1081.4807773
lambda =      3.7372; f =      1081.4641434
lambda =      7.2247; f =      1081.4375211
lambda =      13.967; f =      1081.4054840
Norm of dx    0.0037458
-----
Improvement on iteration 102 =      0.095374793
-----
f at the beginning of new iteration,      1081.4054840103
Predicted improvement:      0.058556470
lambda =      1; f =      1081.3095708
lambda =      1.9332; f =      1081.2580546
Norm of dx    0.074929
-----
Improvement on iteration 103 =      0.147429396
-----
f at the beginning of new iteration,      1081.2580546143
Predicted improvement:      0.052542086
lambda =      1; f =      1081.1869809
Norm of dx    0.10033
-----
Improvement on iteration 104 =      0.071073713
-----
f at the beginning of new iteration,      1081.1869809016
Predicted improvement:      0.017084163
lambda =      1; f =      1081.1691720
Norm of dx    0.040682
-----
Improvement on iteration 105 =      0.017808854
-----
f at the beginning of new iteration,      1081.1691720477

```

```

code. log
Predicted improvement: 0.000657777
lambda = 1; f = 1081.1680160
lambda = 1.9332; f = 1081.1672200
lambda = 3.7372; f = 1081.1664544
Norm of dx 0.0030903
-----
Improvement on iteration 106 = 0.002717606
-----
f at the beginning of new iteration, 1081.1664544420
Predicted improvement: 0.001638004
lambda = 1; f = 1081.1632826
lambda = 1.9332; f = 1081.1605102
lambda = 3.7372; f = 1081.1556641
lambda = 7.2247; f = 1081.1482113
lambda = 13.967; f = 1081.1409500
Norm of dx 0.0016189
-----
Improvement on iteration 107 = 0.025504454
-----
f at the beginning of new iteration, 1081.1409499878
Predicted improvement: 0.018536014
lambda = 1; f = 1081.1086575
lambda = 1.9332; f = 1081.0871296
lambda = 3.7372; f = 1081.0691017
Norm of dx 0.036898
-----
Improvement on iteration 108 = 0.071848310
-----
f at the beginning of new iteration, 1081.0691016783
Predicted improvement: 0.007706724
lambda = 1; f = 1081.0594340
Norm of dx 0.0072134
-----
Improvement on iteration 109 = 0.009667654
-----
f at the beginning of new iteration, 1081.0594340245
Predicted improvement: 0.001312641
lambda = 1; f = 1081.0576862
Norm of dx 0.0074303
-----
Improvement on iteration 110 = 0.001747785
-----
f at the beginning of new iteration, 1081.0576862397
Predicted improvement: 0.000824484
lambda = 1; f = 1081.0562676
lambda = 1.9332; f = 1081.0553638
lambda = 3.7372; f = 1081.0547748
Norm of dx 0.0043911
-----
Improvement on iteration 111 = 0.002911475
-----
f at the beginning of new iteration, 1081.0547747646
Predicted improvement: 0.002076884
lambda = 1; f = 1081.0506623
lambda = 1.9332; f = 1081.0469037
lambda = 3.7372; f = 1081.0398538
lambda = 7.2247; f = 1081.0270284

```

```

                                code. log
lambda =    13.967; f =          1081.0052088
lambda =     27; f =          1080.9739476
lambda =    52.196; f =          1080.9530306
Norm of dx  0.0032563
-----
Improvement on iteration 112 =          0.101744120
-----
f at the beginning of new iteration,          1080.9530306446
Predicted improvement:          0.035648489
lambda =     1; f =          1080.9005306
lambda =    1.9332; f =          1080.8861365
Norm of dx  0.055598
-----
Improvement on iteration 113 =          0.066894177
-----
f at the beginning of new iteration,          1080.8861364679
Predicted improvement:          0.002236288
lambda =     1; f =          1080.8833902
Norm of dx  0.012871
-----
Improvement on iteration 114 =          0.002746292
-----
f at the beginning of new iteration,          1080.8833901757
Predicted improvement:          0.000235804
lambda =     1; f =          1080.8831533
Norm of dx  0.0061441
-----
Improvement on iteration 115 =          0.000236828
-----
f at the beginning of new iteration,          1080.8831533477
Correct for low angle: 0.00355131
Predicted improvement:          0.000007375
lambda =     1; f =          1080.8831407
lambda =    1.9332; f =          1080.8831330
lambda =    3.7372; f =          1080.8831292
Norm of dx  0.00047978
-----
Improvement on iteration 116 =          0.000024150
-----
f at the beginning of new iteration,          1080.8831291981
Predicted improvement:          0.000013157
lambda =     1; f =          1080.8831041
lambda =    1.9332; f =          1080.8830824
lambda =    3.7372; f =          1080.8830448
lambda =    7.2247; f =          1080.8829889
lambda =   13.967; f =          1080.8829434
Norm of dx  0.00041692
-----
Improvement on iteration 117 =          0.000185827
-----
f at the beginning of new iteration,          1080.8829433716
Predicted improvement:          0.000167603
lambda =     1; f =          1080.8826103
lambda =    1.9332; f =          1080.8823036
lambda =    3.7372; f =          1080.8817223
lambda =    7.2247; f =          1080.8806414
lambda =   13.967; f =          1080.8787122

```

```

code.log
lambda =      27; f =      1080.8755821
lambda =     52.196; f =      1080.8717749
Norm of dx 0.00065637
-----
Improvement on iteration 118 =      0.011168444
-----
f at the beginning of new iteration,      1080.8717749274
Predicted improvement:      0.010411779
lambda =      1; f =      1080.8525221
lambda =     1.9332; f =      1080.8374067
lambda =     3.7372; f =      1080.8160131
lambda =     7.2247; f =      1080.8041725
Norm of dx  0.01841
-----
Improvement on iteration 119 =      0.067602379
-----
f at the beginning of new iteration,      1080.8041725479
Predicted improvement:      0.045933724
lambda =      1; f =      1080.7253319
lambda =     1.9332; f =      1080.6743989
lambda =     3.7372; f =      1080.6350707
Norm of dx  0.047372
-----
Improvement on iteration 120 =      0.169101898
-----
f at the beginning of new iteration,      1080.6350706504
Predicted improvement:      0.010203362
lambda =      1; f =      1080.6233668
Norm of dx  0.030902
-----
Improvement on iteration 121 =      0.011703891
-----
f at the beginning of new iteration,      1080.6233667598
Predicted improvement:      0.001204037
lambda =      1; f =      1080.6216743
lambda =     1.9332; f =      1080.6214090
Norm of dx  0.0063029
-----
Improvement on iteration 122 =      0.001957731
-----
f at the beginning of new iteration,      1080.6214090292
Predicted improvement:      0.000711813
lambda =      1; f =      1080.6201169
lambda =     1.9332; f =      1080.6191505
lambda =     3.7372; f =      1080.6179305
Norm of dx  0.0032582
-----
Improvement on iteration 123 =      0.003478492
-----
f at the beginning of new iteration,      1080.6179305375
Predicted improvement:      0.003232210
lambda =      1; f =      1080.6118927
lambda =     1.9332; f =      1080.6070189
lambda =     3.7372; f =      1080.5996480
lambda =     7.2247; f =      1080.5928863
Norm of dx  0.006037
-----

```

code.log
Improvement on iteration 124 = 0.025044225

f at the beginning of new iteration, 1080.5928863127
Predicted improvement: 0.021070735
lambda = 1; f = 1080.5510283
lambda = 1.9332; f = 1080.5124669
lambda = 3.7372; f = 1080.4392336
lambda = 7.2247; f = 1080.3022570
lambda = 13.967; f = 1080.0527110
lambda = 27; f = 1079.6168868
lambda = 52.196; f = 1078.9042124
lambda = 100.9; f = 1077.9003211
Norm of dx 0.0075235

Improvement on iteration 125 = 2.692565169

f at the beginning of new iteration, 1077.9003211437
Predicted improvement: 3.572382395
lambda = 1; f = 1071.2641081
lambda = 1.9332; f = 1067.0882168
lambda = 3.7372; f = 1077.9702439
lambda = 2.5164; f = 1077.9030946
lambda = 1.9848; f = 1067.0820679
lambda = 2.2885; f = 1077.9004937
lambda = 2.1012; f = 1067.4927993
Norm of dx 1.5412

Improvement on iteration 126 = 10.818253257
warning: possible inaccuracy in H matrix

f at the beginning of new iteration, 1067.0820678871
Predicted improvement: 11.452783805
lambda = 1; f = 1067.6659578
lambda = 0.33333; f = 1065.1139834
lambda = 0.11111; f = 1064.8218116
lambda = 0.2148; f = 1063.4726177
lambda = 0.41524; f = 1067.0853436
lambda = 0.2796; f = 1063.4597835
Norm of dx 4.4994

Improvement on iteration 127 = 3.622284348

f at the beginning of new iteration, 1063.4597835394
Predicted improvement: 5.351856273
lambda = 1; f = 1063.4830529
lambda = 0.33333; f = 1064.1840653
lambda = 0.11111; f = 1062.5845592
lambda = 0.2148; f = 1062.3681769
Norm of dx 1.0283

Improvement on iteration 128 = 1.091606607

f at the beginning of new iteration, 1062.3681769319
Predicted improvement: 18.376850016
lambda = 1; f = 1062.4636241
lambda = 0.33333; f = 1066.5457620
lambda = 0.11111; f = 1060.0428212
Norm of dx 2.7153

code. log

Improvement on iteration 129 = 2.325355756

f at the beginning of new iteration, 1060.0428211761
Predicted improvement: 1.156648306
lambda = 1; f = 1059.7702726
lambda = 0.33333; f = 1059.4986865
lambda = 0.64439; f = 1059.3871462
Norm of dx 0.17931

Improvement on iteration 130 = 0.655674947

f at the beginning of new iteration, 1059.3871462290
Predicted improvement: 0.862357049
lambda = 1; f = 1063.1708836
lambda = 0.33333; f = 1059.0730302
Norm of dx 0.77828

Improvement on iteration 131 = 0.314115997

f at the beginning of new iteration, 1059.0730302316
Predicted improvement: 0.411231083
lambda = 1; f = 1058.8639129
lambda = 0.33333; f = 1058.8781896
lambda = 0.64439; f = 1058.8178207
Norm of dx 0.18671

Improvement on iteration 132 = 0.255209523

f at the beginning of new iteration, 1058.8178207088
Predicted improvement: 0.247298882
lambda = 1; f = 1058.4550176
lambda = 1.9332; f = 1058.4100837
Norm of dx 0.092103

Improvement on iteration 133 = 0.407736984

f at the beginning of new iteration, 1058.4100837250
Predicted improvement: 0.462080602
lambda = 1; f = 1057.6604571
lambda = 1.9332; f = 1057.1993498
Norm of dx 0.055729

Improvement on iteration 134 = 1.210733885

f at the beginning of new iteration, 1057.1993498401
Predicted improvement: 1.743760800
lambda = 1; f = 1054.0852804
lambda = 1.9332; f = 1051.7601643
lambda = 3.7372; f = 1048.9811440
Norm of dx 0.33975

Improvement on iteration 135 = 8.218205861

f at the beginning of new iteration, 1048.9811439794
Predicted improvement: 16.749791114

```

code. log
lambda =      1; f =      1049.0925497
lambda = 0.33333; f =      1048.9816901
lambda = 0.11111; f =      1045.7614637
lambda = 0.2148; f =      1043.7562152
lambda = 0.41524; f =      1048.9849272
lambda = 0.2796; f =      1055.9774156
lambda = 0.22054; f =      1043.7558366
lambda = 0.25428; f =      1045.2469889
Norm of dx      3.286
-----
Improvement on iteration 136 =      5.225307376
warning: possible inaccuracy in H matrix
-----
f at the beginning of new iteration,      1043.7558366032
Predicted improvement:      2.572926585
lambda =      1; f =      1040.5905419
Norm of dx      0.29731
-----
Improvement on iteration 137 =      3.165294666
-----
f at the beginning of new iteration,      1040.5905419374
Predicted improvement:      4.871605415
lambda =      1; f =      1049.2443763
lambda = 0.33333; f =      1041.3357466
lambda = 0.11111; f =      1040.3011224
lambda = 0.037037; f =      1040.3498440
Norm of dx      0.79797
-----
Improvement on iteration 138 =      0.289419488
-----
f at the beginning of new iteration,      1040.3011224495
Predicted improvement:      0.939937977
lambda =      1; f =      1039.1298569
Norm of dx      0.29164
-----
Improvement on iteration 139 =      1.171265596
-----
f at the beginning of new iteration,      1039.1298568538
Predicted improvement:      0.505204195
lambda =      1; f =      1038.4079109
lambda = 1.9332; f =      1038.3403958
Norm of dx      0.20338
-----
Improvement on iteration 140 =      0.789461087
-----
f at the beginning of new iteration,      1038.3403957664
Predicted improvement:      0.661102801
lambda =      1; f =      1037.5197403
Norm of dx      0.10297
-----
Improvement on iteration 141 =      0.820655420
-----
f at the beginning of new iteration,      1037.5197403461
Predicted improvement:      0.451016309
lambda =      1; f =      1037.1046634
Norm of dx      0.11362
-----

```

```

code.log
Improvement on iteration 142 =      0.415076918
-----
f at the beginning of new iteration,      1037.1046634285
Predicted improvement:      0.178795951
lambda =      1; f =      1036.8928981
Norm of dx      0.064207
-----
Improvement on iteration 143 =      0.211765375
-----
f at the beginning of new iteration,      1036.8928980532
Predicted improvement:      0.191984094
lambda =      1; f =      1036.5777760
lambda =      1.9332; f =      1036.4083607
Norm of dx      0.050893
-----
Improvement on iteration 144 =      0.484537354
-----
f at the beginning of new iteration,      1036.4083606991
Predicted improvement:      0.342231041
lambda =      1; f =      1035.9571700
Norm of dx      0.12396
-----
Improvement on iteration 145 =      0.451190745
-----
f at the beginning of new iteration,      1035.9571699541
Predicted improvement:      0.524345919
lambda =      1; f =      1035.2719678
Norm of dx      0.20507
-----
Improvement on iteration 146 =      0.685202173
-----
f at the beginning of new iteration,      1035.2719677806
Predicted improvement:      0.496877301
lambda =      1; f =      1034.6412103
Norm of dx      0.2042
-----
Improvement on iteration 147 =      0.630757523
-----
f at the beginning of new iteration,      1034.6412102575
Predicted improvement:      0.266209531
lambda =      1; f =      1034.2890066
Norm of dx      0.14093
-----
Improvement on iteration 148 =      0.352203616
-----
f at the beginning of new iteration,      1034.2890066415
Predicted improvement:      0.106625325
lambda =      1; f =      1034.1469810
Norm of dx      0.079676
-----
Improvement on iteration 149 =      0.142025650
-----
f at the beginning of new iteration,      1034.1469809917
Predicted improvement:      0.048630714
lambda =      1; f =      1034.0787346

```



```

                                code. log
lambda = 1.9332; f = 1034.0632052
Norm of dx 0.043835
-----
Improvement on iteration 150 = 0.083775816
-----
f at the beginning of new iteration, 1034.0632051753
Predicted improvement: 0.016284966
lambda = 1; f = 1034.0359732
lambda = 1.9332; f = 1034.0202675
Norm of dx 0.031098
-----
Improvement on iteration 151 = 0.042937664
-----
f at the beginning of new iteration, 1034.0202675117
Predicted improvement: 0.025410083
lambda = 1; f = 1033.9843718
lambda = 1.9332; f = 1033.9787799
Norm of dx 0.03697
-----
Improvement on iteration 152 = 0.041487587
-----
f at the beginning of new iteration, 1033.9787799248
Predicted improvement: 0.012673909
lambda = 1; f = 1033.9587770
lambda = 1.9332; f = 1033.9497491
Norm of dx 0.032827
-----
Improvement on iteration 153 = 0.029030784
-----
f at the beginning of new iteration, 1033.9497491410
Predicted improvement: 0.012103632
lambda = 1; f = 1033.9295137
lambda = 1.9332; f = 1033.9178285
Norm of dx 0.026224
-----
Improvement on iteration 154 = 0.031920640
-----
f at the beginning of new iteration, 1033.9178285011
Predicted improvement: 0.020537466
lambda = 1; f = 1033.8863271
lambda = 1.9332; f = 1033.8747623
Norm of dx 0.02972
-----
Improvement on iteration 155 = 0.043066213
-----
f at the beginning of new iteration, 1033.8747622878
Predicted improvement: 0.016540752
lambda = 1; f = 1033.8464064
lambda = 1.9332; f = 1033.8283053
lambda = 3.7372; f = 1033.8155992
Norm of dx 0.030509
-----
Improvement on iteration 156 = 0.059163062
-----
f at the beginning of new iteration, 1033.8155992260
Predicted improvement: 0.016421725

```

```

                                code.log
lambda =          1; f =          1033.7896286
lambda =    1.9332; f =          1033.7777844
Norm of dx    0.023018
-----
Improvement on iteration 157 =          0.037814791
-----
f at the beginning of new iteration,          1033.7777844355
Predicted improvement:          0.010380261
lambda =          1; f =          1033.7631272
lambda =    1.9332; f =          1033.7603662
Norm of dx    0.028138
-----
Improvement on iteration 158 =          0.017418217
-----
f at the beginning of new iteration,          1033.7603662180
Predicted improvement:          0.004963664
lambda =          1; f =          1033.7513038
lambda =    1.9332; f =          1033.7444060
lambda =    3.7372; f =          1033.7353571
Norm of dx    0.0073263
-----
Improvement on iteration 159 =          0.025009107
-----
f at the beginning of new iteration,          1033.7353571115
Predicted improvement:          0.018736698
lambda =          1; f =          1033.7035790
lambda =    1.9332; f =          1033.6844061
lambda =    3.7372; f =          1033.6773999
Norm of dx    0.01706
-----
Improvement on iteration 160 =          0.057957190
-----
f at the beginning of new iteration,          1033.6773999210
Predicted improvement:          0.035419793
lambda =          1; f =          1033.6144906
lambda =    1.9332; f =          1033.5698719
lambda =    3.7372; f =          1033.5211722
Norm of dx    0.018358
-----
Improvement on iteration 161 =          0.156227749
-----
f at the beginning of new iteration,          1033.5211721723
Predicted improvement:          0.075924899
lambda =          1; f =          1033.3968883
lambda =    1.9332; f =          1033.3291907
Norm of dx    0.052909
-----
Improvement on iteration 162 =          0.191981499
-----
f at the beginning of new iteration,          1033.3291906737
Predicted improvement:          0.067105828
lambda =          1; f =          1033.2355468
Norm of dx    0.071004
-----
Improvement on iteration 163 =          0.093643871
-----

```

code.log
f at the beginning of new iteration, 1033.2355468023
Predicted improvement: 0.031723488
lambda = 1; f = 1033.1990338
Norm of dx 0.051068

Improvement on iteration 164 = 0.036512967

f at the beginning of new iteration, 1033.1990338351
Predicted improvement: 0.003125112
lambda = 1; f = 1033.1950748
Norm of dx 0.012174

Improvement on iteration 165 = 0.003959064

f at the beginning of new iteration, 1033.1950747712
Predicted improvement: 0.000538547
lambda = 1; f = 1033.1944394
Norm of dx 0.0057414

Improvement on iteration 166 = 0.000635398

f at the beginning of new iteration, 1033.1944393731
Predicted improvement: 0.000089551
lambda = 1; f = 1033.1942877
lambda = 1.9332; f = 1033.1941952
lambda = 3.7372; f = 1033.1941495
Norm of dx 0.00093583

Improvement on iteration 167 = 0.000289834

f at the beginning of new iteration, 1033.1941495388
Predicted improvement: 0.000195074
lambda = 1; f = 1033.1937673
lambda = 1.9332; f = 1033.1934250
lambda = 3.7372; f = 1033.1928031
lambda = 7.2247; f = 1033.1917494
lambda = 13.967; f = 1033.1902713
lambda = 27; f = 1033.1895273
Norm of dx 0.00065524

Improvement on iteration 168 = 0.004622195

f at the beginning of new iteration, 1033.1895273436
Predicted improvement: 0.003564551
lambda = 1; f = 1033.1831705
lambda = 1.9332; f = 1033.1786151
lambda = 3.7372; f = 1033.1735124
Norm of dx 0.0071913

Improvement on iteration 169 = 0.016014976

f at the beginning of new iteration, 1033.1735123672
Predicted improvement: 0.003358280
lambda = 1; f = 1033.1690578
Norm of dx 0.014944

Improvement on iteration 170 = 0.004454533

code.log

```

-----
f at the beginning of new iteration,      1033.1690578346
Predicted improvement:      0.001036435
lambda =      1; f =      1033.1678464
Norm of dx  0.0076629

```

Improvement on iteration 171 = 0.001211443

```

-----
f at the beginning of new iteration,      1033.1678463918
Predicted improvement:      0.000092016
lambda =      1; f =      1033.1677394
Norm of dx  0.0014718

```

Improvement on iteration 172 = 0.000107033

```

-----
f at the beginning of new iteration,      1033.1677393584
Predicted improvement:      0.000005701
lambda =      1; f =      1033.1677331
Norm of dx  0.00070623

```

Improvement on iteration 173 = 0.000006227

```

-----
f at the beginning of new iteration,      1033.1677331316
Predicted improvement:      0.000000187
lambda =      1; f =      1033.1677331
lambda = 0.33333; f =      1033.1677331
Norm of dx  0.00026135

```

Improvement on iteration 174 = 0.000000051
improvement < crit termination

Final value of minus the log posterior (or likelihood): 1033.167733

RESULTS FROM POSTERIOR ESTIMATION

parameters

	prior	mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2066	0.0784	beta	0.2000	
rho_a_d	0.500	0.5004	0.2774	beta	0.2000	
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000	
rho_mu_d	0.500	0.4995	0.2774	beta	0.2000	
rho_LTV	0.500	0.4958	0.2750	beta	0.2000	
rho_d	0.500	0.5113	0.2766	beta	0.2000	
rho_d_stern	0.500	0.8976	0.0170	beta	0.2000	
rho_c_ast	0.500	0.6421	0.2485	beta	0.2000	
rho_d_ast	0.500	0.4996	0.2773	beta	0.2000	
rho_s_c	0.500	0.4235	0.0992	beta	0.2000	
rho_r	0.500	0.6786	0.0919	beta	0.2000	
rho_p	-0.500	-0.4977	0.2000	norm	0.2000	
theta_c	0.750	0.2730	0.0706	beta	0.1500	
sigma	1.000	1.9134	0.1090	norm	0.3700	
phi	2.000	5.3771	0.8166	gamma	0.7000	
omega	0.200	0.1029	0.0650	beta	0.1000	
h_c	0.500	0.2920	0.0520	beta	0.1000	
alpha_c	0.500	0.3922	0.0296	beta	0.1000	

standard deviation of shocks

	prior	mean	mode	s. d.	prior	pstdev
--	-------	------	------	-------	-------	--------

```

                                code.log
epsa_c      0.100  2.3724  0.1730 invg  2.0000
epsa_d      0.100  0.0462  0.0189 invg  2.0000
epsmu_c     0.100  0.0461  0.0188 invg  2.0000
epsmu_d     0.100  0.0461  0.0188 invg  2.0000
epsLTV      0.100  0.0461  0.0188 invg  2.0000
epsd        0.100  0.0457  0.0184 invg  2.0000
epsc_ast    0.100  0.0378  0.0115 invg  2.0000
epsd_ast    0.100  0.0461  0.0188 invg  2.0000
epsd_stern  0.100  0.6024  0.1020 invg  2.0000
epss_c      0.100  1.1605  0.0961 invg  2.0000
epsr        0.100  0.6200  0.1825 invg  2.0000
epsyf       0.100  0.0460  0.0186 invg  2.0000
epsn        0.010  0.8304  0.0617 invg  0.1000
epspi_d     0.010  5.6272  0.4018 invg  0.1000

```

Log data density [Laplace approximation] is -1087.193365.

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_101/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.
 Estimation::mcmc: Total number of iterations: 200000.
 Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.6478%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi 2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val	No Taper	p-val	4%
Taper	p-val	8% Taper	p-val	15% Taper		
SE_epsa_c	0.676	0.691	0.692	0.399	0.182	0.000
SE_epsa_d	0.922	0.933	0.348	0.692	0.446	0.013
SE_epsmu_c	0.208	0.323	0.100	0.385	0.078	0.000
SE_epsmu_d	0.131	0.198	0.076	0.207	0.043	0.000
SE_epsLTV	0.025	0.084	0.108	0.108	0.093	0.000
SE_epsd	0.014	0.056	0.077	0.133	0.046	0.000
SE_epsc_ast	0.767	0.770	0.083	0.045	0.016	0.000
SE_epsd_ast	0.248	0.293	0.081	0.762	0.052	0.000
SE_epsd_stern	0.933	0.933	0.291	0.581	0.100	0.252
SE_epss_c	0.546	0.522	0.938	1.176	0.099	0.000
SE_epsr	0.630	0.576	0.478	0.745	0.243	0.000
SE_epsyf	0.354	0.373	0.520	0.079	0.046	0.000
SE_epsn	0.440	0.475	0.310	0.842	0.063	0.000
			0.501			

			code. log	
SE_epspi_d		5.711		0.000
0.682	0.699	0.698	0.412	0.000
rho_a_c		0.216	0.075	0.000
0.575	0.595	0.611		
rho_a_d		0.498	0.200	0.000
0.260	0.286	0.288		
rho_mu_c		0.500	0.200	0.000
0.029	0.024	0.013		
rho_mu_d		0.498	0.200	0.000
0.436	0.431	0.357		
rho_LTV		0.487	0.199	0.000
0.010	0.007	0.003		
rho_d		0.520	0.201	0.000
0.030	0.042	0.048		
rho_d_stern		0.896	0.018	0.000
0.148	0.136	0.122		
rho_c_ast		0.628	0.190	0.000
0.309	0.259	0.184		
rho_d_ast		0.508	0.201	0.000
0.640	0.615	0.610		
rho_s_c		0.422	0.098	0.000
0.125	0.090	0.083		
rho_r		0.619	0.120	0.296
0.946	0.936	0.928		
rho_p		-0.490	0.203	0.000
0.707	0.722	0.718		
theta_c		0.266	0.067	0.000
0.191	0.192	0.170		
sigma		1.953	0.115	0.111
0.900	0.899	0.886		
phi		5.483	0.831	0.000
0.230	0.274	0.268		
omega		0.129	0.062	0.000
0.082	0.084	0.050		
h_c		0.278	0.051	0.000
0.293	0.295	0.244		
alpha_c		0.391	0.029	0.000
0.212	0.221	0.288		

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
 Done!
 Estimation::marginal density: I'm computing the posterior log marginal density
 (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1085.786319.

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2177	0.0930	0.3399	beta	0.2000
rho_a_d	0.500	0.5021	0.1689	0.8284	beta	0.2000
rho_mu_c	0.500	0.5040	0.1703	0.8371	beta	0.2000
rho_mu_d	0.500	0.5029	0.1681	0.8225	beta	0.2000

	code. log					
rho_LTV	0.500	0.4880	0.1752	0.8247	beta	0.2000
rho_d	0.500	0.5155	0.1871	0.8431	beta	0.2000
rho_d_stern	0.500	0.8965	0.8694	0.9258	beta	0.2000
rho_c_ast	0.500	0.6273	0.3378	0.9320	beta	0.2000
rho_d_ast	0.500	0.4995	0.1687	0.8219	beta	0.2000
rho_s_c	0.500	0.4221	0.2654	0.5799	beta	0.2000
rho_r	0.500	0.6221	0.4429	0.7952	beta	0.2000
rho_p	-0.500	-0.4816	-0.8117	-0.1555	norm	0.2000
theta_c	0.750	0.2647	0.1537	0.3748	beta	0.1500
si gma	1.000	1.9556	1.7685	2.1343	norm	0.3700
phi	2.000	5.5221	4.0791	6.8080	gamma	0.7000
omega	0.200	0.1310	0.0299	0.2277	beta	0.1000
h_c	0.500	0.2813	0.1951	0.3628	beta	0.1000
al pha_c	0.500	0.3935	0.3467	0.4420	beta	0.1000

standard deviation of shocks

	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.4172	2.1195	2.7084	invg	2.0000
epsa_d	0.100	0.1040	0.0232	0.2046	invg	2.0000
epsmu_c	0.100	0.0967	0.0242	0.1734	invg	2.0000
epsmu_d	0.100	0.0748	0.0240	0.1323	invg	2.0000
epsLTV	0.100	0.1251	0.0238	0.3440	invg	2.0000
epsd	0.100	0.0755	0.0225	0.1316	invg	2.0000
eps_c_ast	0.100	0.0446	0.0225	0.0655	invg	2.0000
epsd_ast	0.100	0.0740	0.0236	0.1301	invg	2.0000
epsd_stern	0.100	0.5850	0.4182	0.7519	invg	2.0000
epss_c	0.100	1.1826	1.0228	1.3406	invg	2.0000
epsr	0.100	0.7379	0.3917	1.1007	invg	2.0000
epsyf	0.100	0.0779	0.0227	0.1473	invg	2.0000
epsn	0.010	0.8399	0.7339	0.9359	invg	0.1000
epspi_d	0.010	5.7122	5.0288	6.3717	invg	0.1000

Estimation: : mcmc: Forecasted variables (mean)
 Estimation: : mcmc: Forecasted variables (mean), done!
 Estimation: : mcmc: Forecasted variables (point)
 Estimation: : mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1042.3537

 f at the beginning of new iteration, 1042.3536666081
 Predicted improvement: 0.004423332
 lambda = 1; f = 1042.3478215
 Norm of dx 0.00094057

Improvement on iteration 1 = 0.005845116

f at the beginning of new iteration, 1042.3478214923
 Predicted improvement: 0.001642940
 lambda = 1; f = 1042.3455151
 lambda = 1.9332; f = 1042.3451305
 Norm of dx 0.00078612

Improvement on iteration 2 = 0.002691033

f at the beginning of new iteration, 1042.3451304594
 Predicted improvement: 0.000670646
 lambda = 1; f = 1042.3440884
 lambda = 1.9332; f = 1042.3436509
 Norm of dx 0.00031534

```

code.log
Improvement on iteration 3 = 0.001479562
-----
f at the beginning of new iteration, 1042.3436508970
Predicted improvement: 0.000362910
lambda = 1; f = 1042.3430242
lambda = 1.9332; f = 1042.3426179
lambda = 3.7372; f = 1042.3423196
Norm of dx 0.00049786
----
Improvement on iteration 4 = 0.001331257
-----
f at the beginning of new iteration, 1042.3423196399
Predicted improvement: 0.000650722
lambda = 1; f = 1042.3411588
lambda = 1.9332; f = 1042.3403297
lambda = 3.7372; f = 1042.3394259
Norm of dx 0.00066752
----
Improvement on iteration 5 = 0.002893764
-----
f at the beginning of new iteration, 1042.3394258761
Predicted improvement: 0.000453297
lambda = 1; f = 1042.3386834
lambda = 1.9332; f = 1042.3382863
Norm of dx 0.0010979
----
Improvement on iteration 6 = 0.001139551
-----
f at the beginning of new iteration, 1042.3382863250
Predicted improvement: 0.000773823
lambda = 1; f = 1042.3369400
lambda = 1.9332; f = 1042.3360487
lambda = 3.7372; f = 1042.3353277
Norm of dx 0.0016739
----
Improvement on iteration 7 = 0.002958609
-----
f at the beginning of new iteration, 1042.3353277156
Predicted improvement: 0.001114132
lambda = 1; f = 1042.3336233
lambda = 1.9332; f = 1042.3329766
Norm of dx 0.00092715
----
Improvement on iteration 8 = 0.002351122
-----
f at the beginning of new iteration, 1042.3329765939
Predicted improvement: 0.000102595
lambda = 1; f = 1042.3327999
lambda = 1.9332; f = 1042.3326862
lambda = 3.7372; f = 1042.3326062
Norm of dx 0.00023467
----
Improvement on iteration 9 = 0.000370427
-----
f at the beginning of new iteration, 1042.3326061666
Predicted improvement: 0.000219804

```



```

                                code.log
lambda =          1; f =          1042.3322050
lambda =         1.9332; f =         1042.3318987
lambda =         3.7372; f =         1042.3314927
Norm of dx 0.00050954
-----
Improvement on iteration 10 =          0.001113440
-----
f at the beginning of new iteration,          1042.3314927263
Predicted improvement:          0.000203619
lambda =          1; f =          1042.3312723
Norm of dx 0.0011453
-----
Improvement on iteration 11 =          0.000220438
-----
f at the beginning of new iteration,          1042.3312722882
Predicted improvement:          0.000015588
lambda =          1; f =          1042.3312443
lambda =         1.9332; f =          1042.3312238
lambda =         3.7372; f =          1042.3312001
Norm of dx 0.0001303
-----
Improvement on iteration 12 =          0.000072191
-----
f at the beginning of new iteration,          1042.3312000968
Predicted improvement:          0.000041508
lambda =          1; f =          1042.3311312
lambda =         1.9332; f =          1042.3310923
Norm of dx 0.00022891
-----
Improvement on iteration 13 =          0.000107764
-----
f at the beginning of new iteration,          1042.3310923329
Predicted improvement:          0.000050196
lambda =          1; f =          1042.3310156
lambda =         1.9332; f =          1042.3309864
Norm of dx 0.00033821
-----
Improvement on iteration 14 =          0.000105916
-----
f at the beginning of new iteration,          1042.3309864166
Predicted improvement:          0.000041310
lambda =          1; f =          1042.3309131
lambda =         1.9332; f =          1042.3308616
lambda =         3.7372; f =          1042.3308084
Norm of dx 0.00024333
-----
Improvement on iteration 15 =          0.000178056
-----
f at the beginning of new iteration,          1042.3308083611
Predicted improvement:          0.000024171
lambda =          1; f =          1042.3307781
Norm of dx 0.00025639
-----
Improvement on iteration 16 =          0.000030241
-----
f at the beginning of new iteration,          1042.3307781197

```

```

                                code. log
Predicted improvement:          0.00006099
lambda =          1; f =        1042.3307683
lambda =          1.9332; f =    1042.3307636
Norm of dx 0.00011819
-----
Improvement on iteration 17 =          0.000014566
-----
f at the beginning of new iteration,          1042.3307635537
Predicted improvement:          0.000009901
lambda =          1; f =        1042.3307449
lambda =          1.9332; f =    1042.3307294
lambda =          3.7372; f =    1042.3307051
lambda =          7.2247; f =    1042.3306785
Norm of dx 0.00013924
-----
Improvement on iteration 18 =          0.000085075
-----
f at the beginning of new iteration,          1042.3306784785
Predicted improvement:          0.000064240
lambda =          1; f =        1042.3305661
lambda =          1.9332; f =    1042.3304902
lambda =          3.7372; f =    1042.3304224
Norm of dx 0.00074535
-----
Improvement on iteration 19 =          0.000256048
-----
f at the beginning of new iteration,          1042.3304224309
Predicted improvement:          0.000035821
lambda =          1; f =        1042.3303772
Norm of dx 0.00022798
-----
Improvement on iteration 20 =          0.000045222
-----
f at the beginning of new iteration,          1042.3303772090
Predicted improvement:          0.000008120
lambda =          1; f =        1042.3303651
lambda =          1.9332; f =    1042.3303614
Norm of dx 8.7531e-05
-----
Improvement on iteration 21 =          0.000015815
-----
f at the beginning of new iteration,          1042.3303613936
Predicted improvement:          0.000005964
lambda =          1; f =        1042.3303505
lambda =          1.9332; f =    1042.3303423
lambda =          3.7372; f =    1042.3303319
Norm of dx 0.00010002
-----
Improvement on iteration 22 =          0.000029521
-----
f at the beginning of new iteration,          1042.3303318728
Predicted improvement:          0.000009890
lambda =          1; f =        1042.3303159
lambda =          1.9332; f =    1042.3303079
Norm of dx 0.0002744
-----
Improvement on iteration 23 =          0.000024012

```

code. log

f at the beginning of new iteration, 1042.3303078603
Predicted improvement: 0.000015081
lambda = 1; f = 1042.3302817
lambda = 1.9332; f = 1042.3302644
lambda = 3.7372; f = 1042.3302500
Norm of dx 0.00031971

Improvement on iteration 24 = 0.000057909

f at the beginning of new iteration, 1042.3302499514
Predicted improvement: 0.000017070
lambda = 1; f = 1042.3302268
Norm of dx 0.00018517

Improvement on iteration 25 = 0.000023163

f at the beginning of new iteration, 1042.3302267887
Predicted improvement: 0.000004011
lambda = 1; f = 1042.3302228
Norm of dx 0.00010187

Improvement on iteration 26 = 0.000004015

f at the beginning of new iteration, 1042.3302227737
Predicted improvement: 0.000000150
lambda = 1; f = 1042.3302225
lambda = 1.9332; f = 1042.3302222
lambda = 3.7372; f = 1042.3302218
lambda = 7.2247; f = 1042.3302212
lambda = 13.967; f = 1042.3302207
Norm of dx 8.4243e-06

Improvement on iteration 27 = 0.000002036

f at the beginning of new iteration, 1042.3302207378
Predicted improvement: 0.000001693
lambda = 1; f = 1042.3302176
lambda = 1.9332; f = 1042.3302150
lambda = 3.7372; f = 1042.3302113
lambda = 7.2247; f = 1042.3302084
Norm of dx 7.109e-05

Improvement on iteration 28 = 0.000012304

f at the beginning of new iteration, 1042.3302084340
Predicted improvement: 0.000000615
lambda = 1; f = 1042.3302075
lambda = 1.9332; f = 1042.3302070
Norm of dx 6.2679e-05

Improvement on iteration 29 = 0.000001459

f at the beginning of new iteration, 1042.3302069753
Predicted improvement: 0.000000664
lambda = 1; f = 1042.3302059

```

                                code.log
lambda = 1.9332; f = 1042.3302053
Norm of dx 4.7737e-05
-----
Improvement on iteration 30 = 0.000001649
-----
f at the beginning of new iteration, 1042.3302053262
Predicted improvement: 0.000000688
lambda = 1; f = 1042.3302043
lambda = 1.9332; f = 1042.3302038
Norm of dx 6.6711e-05
-----
Improvement on iteration 31 = 0.000001537
-----
f at the beginning of new iteration, 1042.3302037896
Predicted improvement: 0.000000792
lambda = 1; f = 1042.3302023
lambda = 1.9332; f = 1042.3302009
lambda = 3.7372; f = 1042.3301987
lambda = 7.2247; f = 1042.3301954
lambda = 13.967; f = 1042.3301934
Norm of dx 4.6337e-05
-----
Improvement on iteration 32 = 0.000010403
-----
f at the beginning of new iteration, 1042.3301933869
Predicted improvement: 0.000007213
lambda = 1; f = 1042.3301804
lambda = 1.9332; f = 1042.3301710
lambda = 3.7372; f = 1042.3301601
Norm of dx 0.00035598
-----
Improvement on iteration 33 = 0.000033323
-----
f at the beginning of new iteration, 1042.3301600644
Predicted improvement: 0.000004873
lambda = 1; f = 1042.3301546
Norm of dx 0.00072618
-----
Improvement on iteration 34 = 0.000005448
-----
f at the beginning of new iteration, 1042.3301546168
Predicted improvement: 0.000000693
lambda = 1; f = 1042.3301534
lambda = 1.9332; f = 1042.3301527
lambda = 3.7372; f = 1042.3301520
Norm of dx 0.00015815
-----
Improvement on iteration 35 = 0.000002599
-----
f at the beginning of new iteration, 1042.3301520176
Predicted improvement: 0.000002050
lambda = 1; f = 1042.3301481
lambda = 1.9332; f = 1042.3301446
lambda = 3.7372; f = 1042.3301385
lambda = 7.2247; f = 1042.3301287
lambda = 13.967; f = 1042.3301179
Norm of dx 0.00013054

```

code. log

```
-----
Improvement on iteration 36 =          0.000034141
-----
-----
f at the beginning of new iteration,      1042.3301178763
Predicted improvement:          0.000009506
lambda =          1; f =          1042.3301072
Norm of dx 0.00057889
-----
Improvement on iteration 37 =          0.000010707
-----
-----
f at the beginning of new iteration,      1042.3301071688
Predicted improvement:          0.000000585
lambda =          1; f =          1042.3301064
Norm of dx 0.000109
-----
Improvement on iteration 38 =          0.000000767
-----
-----
f at the beginning of new iteration,      1042.3301064016
Predicted improvement:          0.000000162
lambda =          1; f =          1042.3301061
lambda = 1.9332; f =          1042.3301059
lambda = 3.7372; f =          1042.3301058
Norm of dx 4.47e-05
-----
Improvement on iteration 39 =          0.000000572
-----
-----
f at the beginning of new iteration,      1042.3301058291
Predicted improvement:          0.000000317
lambda =          1; f =          1042.3301053
lambda = 1.9332; f =          1042.3301050
Norm of dx 0.00011927
-----
Improvement on iteration 40 =          0.000000852
-----
-----
f at the beginning of new iteration,      1042.3301049772
Predicted improvement:          0.000000615
lambda =          1; f =          1042.3301040
lambda = 1.9332; f =          1042.3301035
Norm of dx 9.2305e-05
-----
Improvement on iteration 41 =          0.000001506
-----
-----
f at the beginning of new iteration,      1042.3301034717
Predicted improvement:          0.000000856
lambda =          1; f =          1042.3301018
lambda = 1.9332; f =          1042.3301006
lambda = 3.7372; f =          1042.3300988
lambda = 7.2247; f =          1042.3300979
Norm of dx 0.00010202
-----
Improvement on iteration 42 =          0.000005523
-----
-----
f at the beginning of new iteration,      1042.3300979485
Predicted improvement:          0.000003575
lambda =          1; f =          1042.3300918
lambda = 1.9332; f =          1042.3300880
```

```

                                code.log
lambda = 3.7372; f = 1042.3300859
Norm of dx 0.00014147
-----
Improvement on iteration 43 = 0.000012077
-----
f at the beginning of new iteration, 1042.3300858711
Predicted improvement: 0.000000973
lambda = 1; f = 1042.3300848
Norm of dx 0.00019798
-----
Improvement on iteration 44 = 0.000001110
-----
f at the beginning of new iteration, 1042.3300847613
Predicted improvement: 0.000000077
lambda = 1; f = 1042.3300846
lambda = 1.9332; f = 1042.3300845
lambda = 3.7372; f = 1042.3300843
lambda = 7.2247; f = 1042.3300841
Norm of dx 1.4514e-05
-----
Improvement on iteration 45 = 0.000000683
-----
f at the beginning of new iteration, 1042.3300840778
Predicted improvement: 0.000000707
lambda = 1; f = 1042.3300829
lambda = 1.9332; f = 1042.3300820
lambda = 3.7372; f = 1042.3300811
Norm of dx 0.00020623
-----
Improvement on iteration 46 = 0.000002985
-----
f at the beginning of new iteration, 1042.3300810933
Predicted improvement: 0.000003447
lambda = 1; f = 1042.3300747
lambda = 1.9332; f = 1042.3300694
lambda = 3.7372; f = 1042.3300614
lambda = 7.2247; f = 1042.3300538
Norm of dx 0.00044835
-----
Improvement on iteration 47 = 0.000027341
-----
f at the beginning of new iteration, 1042.3300537521
Predicted improvement: 0.000004906
lambda = 1; f = 1042.3300473
Norm of dx 0.0004232
-----
Improvement on iteration 48 = 0.000006472
-----
f at the beginning of new iteration, 1042.3300472797
Predicted improvement: 0.000001591
lambda = 1; f = 1042.3300460
Norm of dx 0.00065492
-----
Improvement on iteration 49 = 0.000001291
-----
f at the beginning of new iteration, 1042.3300459886

```

```

code. log
Predicted improvement: 0.00000202
lambda = 1; f = 1042.3300457
lambda = 1.9332; f = 1042.3300455
Norm of dx 0.00015286
-----
Improvement on iteration 50 = 0.000000481
-----
f at the beginning of new iteration, 1042.3300455079
Predicted improvement: 0.000000121
lambda = 1; f = 1042.3300454
Norm of dx 8.7071e-05
-----
Improvement on iteration 51 = 0.000000150
-----
f at the beginning of new iteration, 1042.3300453583
Predicted improvement: 0.000000346
lambda = 1; f = 1042.3300450
Norm of dx 4.8563e-05
-----
Improvement on iteration 52 = 0.000000400
-----
f at the beginning of new iteration, 1042.3300449584
Predicted improvement: 0.000000226
lambda = 1; f = 1042.3300446
lambda = 1.9332; f = 1042.3300444
Norm of dx 4.1613e-05
-----
Improvement on iteration 53 = 0.000000557
-----
f at the beginning of new iteration, 1042.3300444010
Predicted improvement: 0.000000508
lambda = 1; f = 1042.3300436
lambda = 1.9332; f = 1042.3300432
Norm of dx 8.4336e-05
-----
Improvement on iteration 54 = 0.000001231
-----
f at the beginning of new iteration, 1042.3300431703
Predicted improvement: 0.000001517
lambda = 1; f = 1042.3300409
lambda = 1.9332; f = 1042.3300399
Norm of dx 0.00024677
-----
Improvement on iteration 55 = 0.000003316
-----
f at the beginning of new iteration, 1042.3300398545
Predicted improvement: 0.000001341
lambda = 1; f = 1042.3300376
lambda = 1.9332; f = 1042.3300368
Norm of dx 0.00022831
-----
Improvement on iteration 56 = 0.000003072
-----
f at the beginning of new iteration, 1042.3300367826
Predicted improvement: 0.000000132
lambda = 1; f = 1042.3300366

```

```

                                code. log
lambda = 1.9332; f = 1042.3300365
Norm of dx 0.00013514
-----
Improvement on iteration 57 = 0.000000269
-----
f at the beginning of new iteration, 1042.3300365140
Predicted improvement: 0.000000082
lambda = 1; f = 1042.3300364
Norm of dx 5.8587e-05
-----
Improvement on iteration 58 = 0.000000103
-----
f at the beginning of new iteration, 1042.3300364111
Predicted improvement: 0.000000379
lambda = 1; f = 1042.3300363
lambda = 0.33333; f = 1042.3300363
Norm of dx 0.00019947
-----
Improvement on iteration 59 = 0.000000154
-----
f at the beginning of new iteration, 1042.3300362570
Predicted improvement: 0.000000338
lambda = 1; f = 1042.3300359
Norm of dx 0.00010893
-----
Improvement on iteration 60 = 0.000000406
-----
f at the beginning of new iteration, 1042.3300358507
Predicted improvement: 0.000000701
lambda = 1; f = 1042.3300348
lambda = 1.9332; f = 1042.3300343
Norm of dx 0.00012934
-----
Improvement on iteration 61 = 0.000001587
-----
f at the beginning of new iteration, 1042.3300342634
Predicted improvement: 0.000001275
lambda = 1; f = 1042.3300320
lambda = 1.9332; f = 1042.3300303
lambda = 3.7372; f = 1042.3300282
Norm of dx 0.00025292
-----
Improvement on iteration 62 = 0.000006044
-----
f at the beginning of new iteration, 1042.3300282194
Predicted improvement: 0.000003561
lambda = 1; f = 1042.3300225
lambda = 1.9332; f = 1042.3300202
Norm of dx 0.00077249
-----
Improvement on iteration 63 = 0.000008026
-----
f at the beginning of new iteration, 1042.3300201933
Predicted improvement: 0.000000832
lambda = 1; f = 1042.3300191
Norm of dx 0.00019635

```


code.log

```
-----
Improvement on iteration 64 =          0.000001121
-----
f at the beginning of new iteration,      1042.3300190721
Predicted improvement:          0.000000494
lambda =          1; f =          1042.3300186
Norm of dx  0.0002766
-----
Improvement on iteration 65 =          0.000000439
-----
f at the beginning of new iteration,      1042.3300186329
Predicted improvement:          0.000000305
lambda =          1; f =          1042.3300180
lambda =    1.9332; f =          1042.3300175
lambda =    3.7372; f =          1042.3300167
lambda =    7.2247; f =          1042.3300155
lambda =   13.967; f =          1042.3300148
Norm of dx  6.2188e-05
-----
Improvement on iteration 66 =          0.000003868
-----
f at the beginning of new iteration,      1042.3300147645
Predicted improvement:          0.000001347
lambda =          1; f =          1042.3300127
lambda =    1.9332; f =          1042.3300118
Norm of dx  0.0001732
-----
Improvement on iteration 67 =          0.000002965
-----
f at the beginning of new iteration,      1042.3300117990
Predicted improvement:          0.000001019
lambda =          1; f =          1042.3300104
Norm of dx  0.00034933
-----
Improvement on iteration 68 =          0.000001384
-----
f at the beginning of new iteration,      1042.3300104150
Predicted improvement:          0.000000774
lambda =          1; f =          1042.3300093
lambda =    1.9332; f =          1042.3300093
Norm of dx  0.00034005
-----
Improvement on iteration 69 =          0.000001153
-----
f at the beginning of new iteration,      1042.3300092618
Predicted improvement:          0.000000254
lambda =          1; f =          1042.3300090
Norm of dx  5.1222e-05
-----
Improvement on iteration 70 =          0.000000275
-----
f at the beginning of new iteration,      1042.3300089871
Predicted improvement:          0.000000100
lambda =          1; f =          1042.3300089
Norm of dx  0.0001744
-----
```

code.log
 Improvement on iteration 71 = 0.00000092
 improvement < crit termination

Final value of minus the log posterior (or likelihood): 1042.330009

RESULTS FROM POSTERIOR ESTIMATION

parameters	prior mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2064	0.0780	beta	0.2000
rho_a_d	0.500	0.5001	0.2774	beta	0.2000
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000
rho_mu_d	0.500	0.4998	0.2774	beta	0.2000
rho_LTV	0.500	0.4955	0.2749	beta	0.2000
rho_d	0.500	0.5114	0.2766	beta	0.2000
rho_d_stern	0.500	0.8985	0.0168	beta	0.2000
rho_c_ast	0.500	0.6433	0.2481	beta	0.2000
rho_d_ast	0.500	0.4999	0.2773	beta	0.2000
rho_s_c	0.500	0.4108	0.0980	beta	0.2000
rho_r	0.500	0.6778	0.0921	beta	0.2000
rho_p	-0.500	-0.4978	0.2000	norm	0.2000
theta_c	0.750	0.2702	0.0704	beta	0.1500
sigma	1.000	1.9094	0.1084	norm	0.3700
phi	2.000	5.3907	0.8172	gamm	0.7000
omega	0.200	0.1018	0.0644	beta	0.1000
h_c	0.500	0.2936	0.0520	beta	0.1000
alpha_c	0.500	0.3954	0.0296	beta	0.1000

standard deviation of shocks	prior mean	mode	s. d.	prior	pstdev
epsa_c	0.100	2.3608	0.1714	invg	2.0000
epsa_d	0.100	0.0462	0.0189	invg	2.0000
epsmu_c	0.100	0.0461	0.0188	invg	2.0000
epsmu_d	0.100	0.0461	0.0188	invg	2.0000
epsLTV	0.100	0.0461	0.0188	invg	2.0000
epsd	0.100	0.0457	0.0183	invg	2.0000
epsc_ast	0.100	0.0376	0.0115	invg	2.0000
epsd_ast	0.100	0.0461	0.0188	invg	2.0000
epsd_stern	0.100	0.6038	0.1016	invg	2.0000
epss_c	0.100	1.1533	0.0949	invg	2.0000
epsr	0.100	0.6226	0.1834	invg	2.0000
epsyf	0.100	0.0460	0.0186	invg	2.0000
epsn	0.010	0.8284	0.0613	invg	0.1000
epspi_d	0.010	5.6340	0.4003	invg	0.1000

Log data density [Laplace approximation] is -1096.444474.

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_102/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.
 Estimation::mcmc: Total number of iterations: 200000.
 Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.4058%

code.log

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val No Taper	p-val 4%
Taper p-val 8% Taper	p-val 15% Taper			
SE_epsa_c	2.399	0.181	0.000	
0.723	0.738			
SE_epsa_d	0.099	0.095	0.000	
0.446	0.494			
SE_epsmu_c	0.105	0.079	0.000	
0.244	0.349			
SE_epsmu_d	0.083	0.057	0.000	
0.035	0.088			
SE_epsLTV	0.098	0.083	0.000	
0.427	0.540			
SE_epsd	0.080	0.050	0.000	
0.255	0.239			
SE_epsc_ast	0.043	0.014	0.000	
0.189	0.248			
SE_epsd_ast	0.087	0.064	0.000	
0.325	0.434			
SE_epsd_stern	0.583	0.101	0.000	
0.658	0.673			
SE_epss_c	1.175	0.098	0.000	
0.513	0.544			
SE_epsr	0.734	0.240	0.000	
0.435	0.472			
SE_epsyf	0.090	0.067	0.000	
0.009	0.033			
SE_epsn	0.840	0.064	0.000	
0.620	0.613			
SE_epspi_d	5.727	0.419	0.016	
0.823	0.811			
rho_a_c	0.219	0.076	0.000	
0.691	0.688			
rho_a_d	0.500	0.202	0.012	
0.755	0.719			
rho_mu_c	0.499	0.199	0.000	
0.063	0.061			
rho_mu_d	0.507	0.200	0.000	
0.267	0.247			
rho_LTV	0.498	0.198	0.001	
0.678	0.647			
rho_d	0.524	0.198	0.276	
0.913	0.912			
rho_d_stern	0.902	0.017	0.001	
0.777	0.775			
rho_c_ast	0.628	0.188	0.000	
0.638	0.643			
rho_d_ast	0.495	0.202	0.006	
0.745	0.746			
rho_s_c	0.412	0.097	0.083	
0.887	0.887			
rho_r	0.861	0.118	0.000	
0.775	0.787			
rho_p	0.778	0.198	0.000	
0.482	0.491			
theta_c	0.494	0.066	0.000	
0.104	0.102			
si gma	0.089	0.114	0.000	
0.297	0.292			
phi	1.950	0.827	0.464	
0.949	0.944			
	0.234			
	5.544			
	0.937			

			code. log		
0.848	0.855	0.129	0.065	0.007	
		0.819			
		0.284	0.050	0.068	
0.863	0.865	0.850			
		0.396	0.030	0.000	
0.759	0.772	0.793			

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
 Done!
 Estimation::marginal density: I'm computing the posterior log marginal density
 (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1094.660750.

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2188	0.0982	0.3457	beta	0.2000
rho_a_d	0.500	0.4993	0.1763	0.8378	beta	0.2000
rho_mu_c	0.500	0.4976	0.1771	0.8294	beta	0.2000
rho_mu_d	0.500	0.5076	0.1814	0.8326	beta	0.2000
rho_LTV	0.500	0.5022	0.1696	0.8175	beta	0.2000
rho_d	0.500	0.5230	0.2166	0.8660	beta	0.2000
rho_d_stern	0.500	0.8966	0.8696	0.9242	beta	0.2000
rho_c_ast	0.500	0.6288	0.3334	0.9271	beta	0.2000
rho_d_ast	0.500	0.4945	0.1731	0.8297	beta	0.2000
rho_s_c	0.500	0.4163	0.2580	0.5765	beta	0.2000
rho_r	0.500	0.6243	0.4518	0.7937	beta	0.2000
rho_p	-0.500	-0.4960	-0.8215	-0.1712	norm	0.2000
theta_c	0.750	0.2651	0.1561	0.3748	beta	0.1500
sigma	1.000	1.9476	1.7706	2.1151	norm	0.3700
phi	2.000	5.5472	4.1647	6.8274	gamma	0.7000
omega	0.200	0.1294	0.0295	0.2273	beta	0.1000
h_c	0.500	0.2834	0.2024	0.3641	beta	0.1000
alpha_c	0.500	0.3961	0.3482	0.4467	beta	0.1000

standard deviation of shocks	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.4074	2.1065	2.6980	invg	2.0000
epsa_d	0.100	0.0841	0.0236	0.1530	invg	2.0000
epsmu_c	0.100	0.1037	0.0217	0.2150	invg	2.0000
epsmu_d	0.100	0.0795	0.0241	0.1432	invg	2.0000
epsLTV	0.100	0.1052	0.0225	0.2291	invg	2.0000
epsd	0.100	0.0793	0.0246	0.1382	invg	2.0000
epsc_ast	0.100	0.0429	0.0230	0.0627	invg	2.0000
epsd_ast	0.100	0.0744	0.0241	0.1349	invg	2.0000
epsd_stern	0.100	0.5815	0.4128	0.7371	invg	2.0000
epss_c	0.100	1.1761	1.0093	1.3279	invg	2.0000
epsr	0.100	0.7354	0.3939	1.0787	invg	2.0000
epsyf	0.100	0.0809	0.0247	0.1464	invg	2.0000
epsn	0.010	0.8368	0.7353	0.9366	invg	0.1000
epspi_d	0.010	5.7070	5.0310	6.3976	invg	0.1000

code.log

Estimation: : mcmc: Forecasted variables (mean)
Estimation: : mcmc: Forecasted variables (mean), done!
Estimation: : mcmc: Forecasted variables (point)
Estimation: : mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1051.1379

f at the beginning of new iteration, 1051.1379218022
Predicted improvement: 0.002978686
lambda = 1; f = 1051.1343451
Norm of dx 0.00077184

Improvement on iteration 1 = 0.003576706

f at the beginning of new iteration, 1051.1343450966
Predicted improvement: 0.000596565
lambda = 1; f = 1051.1333628
lambda = 1.9332; f = 1051.1328291
Norm of dx 0.00042937

Improvement on iteration 2 = 0.001515988

f at the beginning of new iteration, 1051.1328291090
Predicted improvement: 0.000942388
lambda = 1; f = 1051.1312905
lambda = 1.9332; f = 1051.1304806
Norm of dx 0.00093203

Improvement on iteration 3 = 0.002348485

f at the beginning of new iteration, 1051.1304806238
Predicted improvement: 0.001077739
lambda = 1; f = 1051.1287881
lambda = 1.9332; f = 1051.1280409
Norm of dx 0.0012785

Improvement on iteration 4 = 0.002439720

f at the beginning of new iteration, 1051.1280409037
Predicted improvement: 0.000948895
lambda = 1; f = 1051.1264356
lambda = 1.9332; f = 1051.1254647
lambda = 3.7372; f = 1051.1250283
Norm of dx 0.0010814

Improvement on iteration 5 = 0.003012642

f at the beginning of new iteration, 1051.1250282613
Predicted improvement: 0.000775398
lambda = 1; f = 1051.1239131
lambda = 1.9332; f = 1051.1236663
Norm of dx 0.00044982

Improvement on iteration 6 = 0.001361915

f at the beginning of new iteration, 1051.1236663467

```

                                code. log
Predicted improvement:          0.000180221
lambda =          1; f =      1051.1233660
lambda =      1.9332; f =      1051.1231941
Norm of dx 0.0006799
-----
Improvement on iteration 7 =          0.000472241
-----
f at the beginning of new iteration,          1051.1231941061
Predicted improvement:          0.000288619
lambda =          1; f =      1051.1227478
lambda =      1.9332; f =      1051.1225684
Norm of dx 0.00090271
-----
Improvement on iteration 8 =          0.000625663
-----
f at the beginning of new iteration,          1051.1225684431
Predicted improvement:          0.000157195
lambda =          1; f =      1051.1223356
lambda =      1.9332; f =      1051.1222660
Norm of dx 0.00045602
-----
Improvement on iteration 9 =          0.000302440
-----
f at the beginning of new iteration,          1051.1222660036
Predicted improvement:          0.000044062
lambda =          1; f =      1051.1221835
lambda =      1.9332; f =      1051.1221167
lambda =      3.7372; f =      1051.1220154
lambda =      7.2247; f =      1051.1219239
Norm of dx 0.00015178
-----
Improvement on iteration 10 =          0.000342101
-----
f at the beginning of new iteration,          1051.1219239030
Predicted improvement:          0.000194956
lambda =          1; f =      1051.1215939
lambda =      1.9332; f =      1051.1213937
lambda =      3.7372; f =      1051.1213024
Norm of dx 0.00086798
-----
Improvement on iteration 11 =          0.000621516
-----
f at the beginning of new iteration,          1051.1213023869
Predicted improvement:          0.000045163
lambda =          1; f =      1051.1212361
lambda =      1.9332; f =      1051.1212176
Norm of dx 0.00034332
-----
Improvement on iteration 12 =          0.000084830
-----
f at the beginning of new iteration,          1051.1212175571
Predicted improvement:          0.000037435
lambda =          1; f =      1051.1211446
lambda =      1.9332; f =      1051.1210797
lambda =      3.7372; f =      1051.1209633
lambda =      7.2247; f =      1051.1207717
lambda =     13.967; f =      1051.1205266

```

Norm of dx 0.00019791

Improvement on iteration 13 = 0.000691003

f at the beginning of new iteration, 1051.1205265544
Predicted improvement: 0.000132499
lambda = 1; f = 1051.1203793
Norm of dx 0.0012611

Improvement on iteration 14 = 0.000147281

f at the beginning of new iteration, 1051.1203792733
Predicted improvement: 0.000012396
lambda = 1; f = 1051.1203582
lambda = 1.9332; f = 1051.1203452
lambda = 3.7372; f = 1051.1203384
Norm of dx 0.00016646

Improvement on iteration 15 = 0.000040873

f at the beginning of new iteration, 1051.1203383999
Predicted improvement: 0.000017587
lambda = 1; f = 1051.1203085
lambda = 1.9332; f = 1051.1202904
lambda = 3.7372; f = 1051.1202821
Norm of dx 0.00014098

Improvement on iteration 16 = 0.000056259

f at the beginning of new iteration, 1051.1202821407
Predicted improvement: 0.000017106
lambda = 1; f = 1051.1202512
lambda = 1.9332; f = 1051.1202282
lambda = 3.7372; f = 1051.1201995
Norm of dx 0.00024671

Improvement on iteration 17 = 0.000082645

f at the beginning of new iteration, 1051.1201994956
Predicted improvement: 0.000062661
lambda = 1; f = 1051.1200943
lambda = 1.9332; f = 1051.1200321
Norm of dx 0.00074018

Improvement on iteration 18 = 0.000167357

f at the beginning of new iteration, 1051.1200321389
Predicted improvement: 0.000075126
lambda = 1; f = 1051.1199399
Norm of dx 0.00086244

Improvement on iteration 19 = 0.000092195

f at the beginning of new iteration, 1051.1199399435
Predicted improvement: 0.000012024
lambda = 1; f = 1051.1199236

Norm of dx 0.00022374

Improvement on iteration 20 = 0.000016329

f at the beginning of new iteration, 1051.1199236147
Predicted improvement: 0.000007841
lambda = 1; f = 1051.1199106
lambda = 1.9332; f = 1051.1199033
Norm of dx 0.0001409

Improvement on iteration 21 = 0.000020331

f at the beginning of new iteration, 1051.1199032838
Predicted improvement: 0.000017755
lambda = 1; f = 1051.1198712
lambda = 1.9332; f = 1051.1198474
lambda = 3.7372; f = 1051.1198181
Norm of dx 0.00025004

Improvement on iteration 22 = 0.000085154

f at the beginning of new iteration, 1051.1198181296
Predicted improvement: 0.000068262
lambda = 1; f = 1051.1197003
lambda = 1.9332; f = 1051.1196242
lambda = 3.7372; f = 1051.1195702
Norm of dx 0.00097478

Improvement on iteration 23 = 0.000247959

f at the beginning of new iteration, 1051.1195701709
Predicted improvement: 0.000060069
lambda = 1; f = 1051.1194874
Norm of dx 0.00054767

Improvement on iteration 24 = 0.000082742

f at the beginning of new iteration, 1051.1194874293
Predicted improvement: 0.000018508
lambda = 1; f = 1051.1194653
Norm of dx 0.00037798

Improvement on iteration 25 = 0.000022105

f at the beginning of new iteration, 1051.1194653240
Predicted improvement: 0.000004981
lambda = 1; f = 1051.1194568
lambda = 1.9332; f = 1051.1194514
lambda = 3.7372; f = 1051.1194483
Norm of dx 0.00013429

Improvement on iteration 26 = 0.000017037

f at the beginning of new iteration, 1051.1194482875
Predicted improvement: 0.000007605
lambda = 1; f = 1051.1194352


```

                                code.log
lambda = 1.9332; f = 1051.1194266
lambda = 3.7372; f = 1051.1194202
Norm of dx 0.00013819
-----
Improvement on iteration 27 = 0.000028088
-----
f at the beginning of new iteration, 1051.1194201998
Predicted improvement: 0.000008864
lambda = 1; f = 1051.1194034
lambda = 1.9332; f = 1051.1193894
lambda = 3.7372; f = 1051.1193667
lambda = 7.2247; f = 1051.1193398
Norm of dx 0.00021587
-----
Improvement on iteration 28 = 0.000080424
-----
f at the beginning of new iteration, 1051.1193397759
Predicted improvement: 0.000036416
lambda = 1; f = 1051.1192896
Norm of dx 0.0006922
-----
Improvement on iteration 29 = 0.000050217
-----
f at the beginning of new iteration, 1051.1192895593
Predicted improvement: 0.000013463
lambda = 1; f = 1051.1192746
Norm of dx 0.00028936
-----
Improvement on iteration 30 = 0.000014995
-----
f at the beginning of new iteration, 1051.1192745645
Predicted improvement: 0.000002272
lambda = 1; f = 1051.1192705
lambda = 1.9332; f = 1051.1192674
lambda = 3.7372; f = 1051.1192634
Norm of dx 6.4327e-05
-----
Improvement on iteration 31 = 0.000011209
-----
f at the beginning of new iteration, 1051.1192633556
Predicted improvement: 0.000011855
lambda = 1; f = 1051.1192418
lambda = 1.9332; f = 1051.1192251
lambda = 3.7372; f = 1051.1192025
Norm of dx 0.0002506
-----
Improvement on iteration 32 = 0.000060900
-----
f at the beginning of new iteration, 1051.1192024560
Predicted improvement: 0.000060205
lambda = 1; f = 1051.1191002
lambda = 1.9332; f = 1051.1190378
lambda = 3.7372; f = 1051.1190079
Norm of dx 0.0014439
-----
Improvement on iteration 33 = 0.000194539
-----

```

code.log

f at the beginning of new iteration, 1051.1190079168
Predicted improvement: 0.000075749
lambda = 1; f = 1051.1188884
lambda = 1.9332; f = 1051.1188349
Norm of dx 0.00079121

Improvement on iteration 34 = 0.000173034

f at the beginning of new iteration, 1051.1188348823
Predicted improvement: 0.000028293
lambda = 1; f = 1051.1187895
lambda = 1.9332; f = 1051.1187693
Norm of dx 0.0011613

Improvement on iteration 35 = 0.000065617

f at the beginning of new iteration, 1051.1187692658
Predicted improvement: 0.000019555
lambda = 1; f = 1051.1187398
lambda = 1.9332; f = 1051.1187294
Norm of dx 0.00070227

Improvement on iteration 36 = 0.000039901

f at the beginning of new iteration, 1051.1187293650
Predicted improvement: 0.000007970
lambda = 1; f = 1051.1187158
lambda = 1.9332; f = 1051.1187070
lambda = 3.7372; f = 1051.1187010
Norm of dx 0.00035077

Improvement on iteration 37 = 0.000028383

f at the beginning of new iteration, 1051.1187009817
Predicted improvement: 0.000017951
lambda = 1; f = 1051.1186655
lambda = 1.9332; f = 1051.1186337
lambda = 3.7372; f = 1051.1185754
lambda = 7.2247; f = 1051.1184755
lambda = 13.967; f = 1051.1183295
lambda = 27; f = 1051.1182236
Norm of dx 0.00033994

Improvement on iteration 38 = 0.000477409

f at the beginning of new iteration, 1051.1182235730
Predicted improvement: 0.000067124
lambda = 1; f = 1051.1181446
Norm of dx 0.0027926

Improvement on iteration 39 = 0.000078985

f at the beginning of new iteration, 1051.1181445880
Predicted improvement: 0.000004866
lambda = 1; f = 1051.1181394
Norm of dx 0.00087221

code. log

```
-----
Improvement on iteration 40 =          0.000005226
-----
f at the beginning of new iteration,      1051.1181393619
Predicted improvement:          0.000002159
lambda =          1; f =          1051.1181354
lambda =    1.9332; f =          1051.1181323
lambda =    3.7372; f =          1051.1181280
lambda =    7.2247; f =          1051.1181257
Norm of dx 0.00011458
-----
Improvement on iteration 41 =          0.000013668
-----
f at the beginning of new iteration,      1051.1181256942
Predicted improvement:          0.000011680
lambda =          1; f =          1051.1181033
lambda =    1.9332; f =          1051.1180843
lambda =    3.7372; f =          1051.1180530
lambda =    7.2247; f =          1051.1180121
Norm of dx 0.00023001
-----
Improvement on iteration 42 =          0.000113581
-----
f at the beginning of new iteration,      1051.1180121135
Predicted improvement:          0.000042110
lambda =          1; f =          1051.1179637
Norm of dx 0.0016131
-----
Improvement on iteration 43 =          0.000048422
-----
f at the beginning of new iteration,      1051.1179636911
Predicted improvement:          0.000002986
lambda =          1; f =          1051.1179600
Norm of dx 0.00020631
-----
Improvement on iteration 44 =          0.000003695
-----
f at the beginning of new iteration,      1051.1179599964
Predicted improvement:          0.000001061
lambda =          1; f =          1051.1179583
lambda =    1.9332; f =          1051.1179574
Norm of dx 9.6143e-05
-----
Improvement on iteration 45 =          0.000002573
-----
f at the beginning of new iteration,      1051.1179574231
Predicted improvement:          0.000001520
lambda =          1; f =          1051.1179552
lambda =    1.9332; f =          1051.1179542
Norm of dx 0.00013351
-----
Improvement on iteration 46 =          0.000003199
-----
f at the beginning of new iteration,      1051.1179542243
Predicted improvement:          0.000001782
lambda =          1; f =          1051.1179512
```

```

                                code.log
lambda = 1.9332; f = 1051.1179494
lambda = 3.7372; f = 1051.1179485
Norm of dx 0.00018514
-----
Improvement on iteration 47 = 0.000005768
-----
f at the beginning of new iteration, 1051.1179484559
Predicted improvement: 0.000003169
lambda = 1; f = 1051.1179425
lambda = 1.9332; f = 1051.1179376
lambda = 3.7372; f = 1051.1179301
lambda = 7.2247; f = 1051.1179228
Norm of dx 9.6557e-05
-----
Improvement on iteration 48 = 0.000025705
-----
f at the beginning of new iteration, 1051.1179227512
Predicted improvement: 0.000011617
lambda = 1; f = 1051.1179042
lambda = 1.9332; f = 1051.1178962
Norm of dx 0.00059158
-----
Improvement on iteration 49 = 0.000026601
-----
f at the beginning of new iteration, 1051.1178961502
Predicted improvement: 0.000002550
lambda = 1; f = 1051.1178925
lambda = 1.9332; f = 1051.1178919
Norm of dx 0.00061192
-----
Improvement on iteration 50 = 0.000004287
-----
f at the beginning of new iteration, 1051.1178918628
Predicted improvement: 0.000001724
lambda = 1; f = 1051.1178886
lambda = 1.9332; f = 1051.1178859
lambda = 3.7372; f = 1051.1178815
lambda = 7.2247; f = 1051.1178762
Norm of dx 4.9874e-05
-----
Improvement on iteration 51 = 0.000015650
-----
f at the beginning of new iteration, 1051.1178762132
Predicted improvement: 0.000013639
lambda = 1; f = 1051.1178508
lambda = 1.9332; f = 1051.1178307
lambda = 3.7372; f = 1051.1178018
lambda = 7.2247; f = 1051.1177831
Norm of dx 0.0007518
-----
Improvement on iteration 52 = 0.000093106
-----
f at the beginning of new iteration, 1051.1177831070
Predicted improvement: 0.000044517
lambda = 1; f = 1051.1177115
lambda = 1.9332; f = 1051.1176756
Norm of dx 0.0014663

```

code. log

```
-----
Improvement on iteration 53 =          0.000107492
-----
f at the beginning of new iteration,      1051.1176756150
Predicted improvement:          0.000010540
lambda =          1; f =          1051.1176631
Norm of dx  0.0012056
-----
Improvement on iteration 54 =          0.000012518
-----
f at the beginning of new iteration,      1051.1176630973
Predicted improvement:          0.000002367
lambda =          1; f =          1051.1176588
lambda =    1.9332; f =          1051.1176555
lambda =    3.7372; f =          1051.1176513
Norm of dx  0.00032695
-----
Improvement on iteration 55 =          0.000011758
-----
f at the beginning of new iteration,      1051.1176513394
Predicted improvement:          0.000011215
lambda =          1; f =          1051.1176302
lambda =    1.9332; f =          1051.1176134
lambda =    3.7372; f =          1051.1175888
lambda =    7.2247; f =          1051.1175707
Norm of dx  0.00065432
-----
Improvement on iteration 56 =          0.000080680
-----
f at the beginning of new iteration,      1051.1175706593
Predicted improvement:          0.000057257
lambda =          1; f =          1051.1174683
lambda =    1.9332; f =          1051.1173959
lambda =    3.7372; f =          1051.1173188
Norm of dx  0.0025649
-----
Improvement on iteration 57 =          0.000251823
-----
f at the beginning of new iteration,      1051.1173188363
Predicted improvement:          0.000030380
lambda =          1; f =          1051.1172749
lambda =    1.9332; f =          1051.1172647
Norm of dx  0.0014378
-----
Improvement on iteration 58 =          0.000054163
-----
f at the beginning of new iteration,      1051.1172646736
Predicted improvement:          0.000012414
lambda =          1; f =          1051.1172453
lambda =    1.9332; f =          1051.1172365
Norm of dx  0.00051475
-----
Improvement on iteration 59 =          0.000028219
-----
f at the beginning of new iteration,      1051.1172364542
Predicted improvement:          0.000001702
```

```

                                code.log
lambda =          1; f =          1051.1172347
Norm of dx 0.00026552
-----
Improvement on iteration 60 =          0.000001746
-----
f at the beginning of new iteration,          1051.1172347079
Predicted improvement:          0.000000174
lambda =          1; f =          1051.1172345
Norm of dx 0.00024914
-----
Improvement on iteration 61 =          0.000000226
-----
f at the beginning of new iteration,          1051.1172344819
Predicted improvement:          0.000000249
lambda =          1; f =          1051.1172340
lambda =          1.9332; f =          1051.1172336
lambda =          3.7372; f =          1051.1172330
lambda =          7.2247; f =          1051.1172326
Norm of dx 0.00014761
-----
Improvement on iteration 62 =          0.000001913
-----
f at the beginning of new iteration,          1051.1172325692
Predicted improvement:          0.000001352
lambda =          1; f =          1051.1172300
lambda =          1.9332; f =          1051.1172278
lambda =          3.7372; f =          1051.1172240
lambda =          7.2247; f =          1051.1172186
lambda =          13.967; f =          1051.1172155
Norm of dx 7.5494e-05
-----
Improvement on iteration 63 =          0.000017107
-----
f at the beginning of new iteration,          1051.1172154622
Predicted improvement:          0.000010378
lambda =          1; f =          1051.1171973
lambda =          1.9332; f =          1051.1171851
lambda =          3.7372; f =          1051.1171746
Norm of dx 0.00085218
-----
Improvement on iteration 64 =          0.000040887
-----
f at the beginning of new iteration,          1051.1171745756
Predicted improvement:          0.000002047
lambda =          1; f =          1051.1171722
Norm of dx 0.00042943
-----
Improvement on iteration 65 =          0.000002421
-----
f at the beginning of new iteration,          1051.1171721545
Predicted improvement:          0.000000139
lambda =          1; f =          1051.1171721
Norm of dx 0.00013347
-----
Improvement on iteration 66 =          0.000000091
improvement < crit termination

```

code.log

Final value of minus the log posterior (or likelihood): 1051.117172

RESULTS FROM POSTERIOR ESTIMATION

parameters

	prior mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2067	0.0778	beta	0.2000
rho_a_d	0.500	0.5000	0.2774	beta	0.2000
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000
rho_mu_d	0.500	0.4999	0.2774	beta	0.2000
rho_LTV	0.500	0.4953	0.2749	beta	0.2000
rho_d	0.500	0.5116	0.2766	beta	0.2000
rho_d_stern	0.500	0.8993	0.0165	beta	0.2000
rho_c_ast	0.500	0.6457	0.2472	beta	0.2000
rho_d_ast	0.500	0.5000	0.2773	beta	0.2000
rho_s_c	0.500	0.4164	0.0981	beta	0.2000
rho_r	0.500	0.6778	0.0920	beta	0.2000
rho_p	-0.500	-0.4975	0.2000	norm	0.2000
theta_c	0.750	0.2798	0.0703	beta	0.1500
sigma	1.000	1.9090	0.1074	norm	0.3700
phi	2.000	5.4453	0.8228	gamm	0.7000
omega	0.200	0.1025	0.0647	beta	0.1000
h_c	0.500	0.2934	0.0521	beta	0.1000
alpha_c	0.500	0.3940	0.0293	beta	0.1000

standard deviation of shocks

	prior mean	mode	s. d.	prior	pstdev
epsa_c	0.100	2.3493	0.1699	invg	2.0000
epsa_d	0.100	0.0462	0.0189	invg	2.0000
epsmu_c	0.100	0.0461	0.0188	invg	2.0000
epsmu_d	0.100	0.0461	0.0188	invg	2.0000
epsLTV	0.100	0.0461	0.0188	invg	2.0000
epsd	0.100	0.0457	0.0183	invg	2.0000
epsc_ast	0.100	0.0376	0.0114	invg	2.0000
epsd_ast	0.100	0.0461	0.0188	invg	2.0000
epsd_stern	0.100	0.6044	0.1011	invg	2.0000
epss_c	0.100	1.1547	0.0950	invg	2.0000
epsr	0.100	0.6228	0.1831	invg	2.0000
epsyf	0.100	0.0459	0.0186	invg	2.0000
epsn	0.010	0.8296	0.0612	invg	0.1000
epspi_d	0.010	5.6171	0.3971	invg	0.1000

Log data density [Laplace approximation] is -1105.303575.

Estimation::mcmc: One Chain mode.

Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!

Estimation::mcmc: Details about the MCMC are available in code_103/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.

Estimation::mcmc: Total number of generated files: 55.

Estimation::mcmc: Total number of iterations: 200000.

Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 32.9828%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi 2-test for equality of means.

Parameter		code. log		Post. Mean		Post. Std		p-val	
Taper	p-val	8% Taper	p-val	15% Taper	Post.	Std	No Taper	p-val	4%
				2.391	0.178		0.000		
0.119		0.137		0.159					
				0.146	0.173		0.000		
0.476		0.516		0.516					
				0.089	0.071		0.000		
0.032		0.069		0.093					
				0.075	0.039		0.000		
0.441		0.430		0.377					
				0.082	0.052		0.000		
0.289		0.379		0.405					
				0.077	0.047		0.000		
0.203		0.279		0.295					
				0.044	0.015		0.000		
0.496		0.473		0.457					
				0.076	0.043		0.000		
0.722		0.727		0.740					
				0.582	0.099		0.000		
0.273		0.303		0.312					
				1.176	0.097		0.000		
0.230		0.215		0.212					
				0.743	0.238		0.004		
0.821		0.819		0.813					
				0.072	0.039		0.000		
0.456		0.507		0.497					
				0.839	0.063		0.000		
0.407		0.372		0.327					
				5.711	0.416		0.000		
0.152		0.190		0.222					
				0.219	0.075		0.000		
0.067		0.041		0.035					
				0.501	0.198		0.921		
0.990		0.989		0.988					
				0.507	0.201		0.000		
0.071		0.068		0.054					
				0.501	0.198		0.000		
0.458		0.438		0.354					
				0.501	0.195		0.000		
0.320		0.306		0.278					
				0.524	0.199		0.000		
0.723		0.762		0.781					
				0.899	0.017		0.001		
0.754		0.733		0.691					
				0.639	0.183		0.263		
0.917		0.919		0.914					
				0.495	0.200		0.000		
0.203		0.206		0.186					
				0.421	0.097		0.000		
0.514		0.486		0.409					
				0.624	0.113		0.000		
0.555		0.540		0.529					
				-0.493	0.201		0.000		
0.587		0.612		0.625					
				0.275	0.066		0.000		
0.588		0.568		0.539					
				1.954	0.114		0.000		
0.153		0.151		0.158					
				5.606	0.848		0.000		
0.483		0.468		0.440					
				0.128	0.063		0.000		
0.354		0.383		0.393					
				0.283	0.051		0.000		


```

                                code. log
0. 395                0. 383                0. 284
  al pha_c                0. 393                0. 029                0. 000
0. 224                0. 189                0. 142

```

```

Estimation::mcmc: Total number of MH draws per chain: 200000.
Estimation::mcmc: Total number of generated MH files: 55.
Estimation::mcmc: I'll use mh-files 28 to 55.
Estimation::mcmc: In MH-file number 28 I'll start at line 722.
Estimation::mcmc: Finally I keep 100000 draws per chain.

```

```

Estimation::marginal density: I'm computing the posterior mean and covariance...
Done!
Estimation::marginal density: I'm computing the posterior log marginal density
(modified harmonic mean)... Done!

```

ESTIMATION RESULTS

Log data density is -1104.673443.

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2188	0.0968	0.3404	beta	0.2000
rho_a_d	0.500	0.5000	0.1689	0.8208	beta	0.2000
rho_mu_c	0.500	0.5088	0.1674	0.8302	beta	0.2000
rho_mu_d	0.500	0.5015	0.1892	0.8306	beta	0.2000
rho_LTV	0.500	0.4970	0.1793	0.8240	beta	0.2000
rho_d	0.500	0.5316	0.2193	0.8685	beta	0.2000
rho_d_stern	0.500	0.8991	0.8742	0.9276	beta	0.2000
rho_c_ast	0.500	0.6404	0.3579	0.9351	beta	0.2000
rho_d_ast	0.500	0.4941	0.1639	0.8164	beta	0.2000
rho_s_c	0.500	0.4179	0.2520	0.5782	beta	0.2000
rho_r	0.500	0.6236	0.4509	0.7896	beta	0.2000
rho_p	-0.500	-0.4869	-0.8053	-0.1636	norm	0.2000
theta_c	0.750	0.2741	0.1694	0.3849	beta	0.1500
sigma	1.000	1.9493	1.7762	2.1410	norm	0.3700
phi	2.000	5.5992	4.2015	6.9485	gamma	0.7000
omega	0.200	0.1296	0.0297	0.2307	beta	0.1000
h_c	0.500	0.2809	0.1972	0.3637	beta	0.1000
al pha_c	0.500	0.3934	0.3460	0.4431	beta	0.1000

standard deviation of shocks	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.3899	2.0896	2.6643	invg	2.0000
epsa_d	0.100	0.2074	0.0244	0.5695	invg	2.0000
epsmu_c	0.100	0.0868	0.0220	0.1691	invg	2.0000
epsmu_d	0.100	0.0779	0.0264	0.1347	invg	2.0000
epsLTV	0.100	0.0821	0.0238	0.1515	invg	2.0000
epsd	0.100	0.0844	0.0232	0.1630	invg	2.0000
epsc_ast	0.100	0.0433	0.0222	0.0640	invg	2.0000
epsd_ast	0.100	0.0782	0.0254	0.1425	invg	2.0000
epsd_stern	0.100	0.5873	0.4218	0.7475	invg	2.0000
epss_c	0.100	1.1756	1.0159	1.3379	invg	2.0000
epsr	0.100	0.7413	0.3952	1.0852	invg	2.0000
epsyf	0.100	0.0670	0.0259	0.1127	invg	2.0000
epsn	0.010	0.8384	0.7375	0.9407	invg	0.1000
epspi_d	0.010	5.6897	5.0019	6.3466	invg	0.1000

```

Estimation::mcmc: Forecasted variables (mean)
Estimation::mcmc: Forecasted variables (mean), done!
Estimation::mcmc: Forecasted variables (point)

```

Estimation: :mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1060.8561

f at the beginning of new iteration, 1060.8561308845
Predicted improvement: 0.013291757
lambda = 1; f = 1060.8366296
lambda = 1.9332; f = 1060.8313185
Norm of dx 0.0016304

Improvement on iteration 1 = 0.024812432

f at the beginning of new iteration, 1060.8313184525
Predicted improvement: 0.004722999
lambda = 1; f = 1060.8245949
lambda = 1.9332; f = 1060.8231623
Norm of dx 0.0010704

Improvement on iteration 2 = 0.008156175

f at the beginning of new iteration, 1060.8231622774
Predicted improvement: 0.000441949
lambda = 1; f = 1060.8224387
lambda = 1.9332; f = 1060.8220548
Norm of dx 0.00027937

Improvement on iteration 3 = 0.001107505

f at the beginning of new iteration, 1060.8220547722
Predicted improvement: 0.000660087
lambda = 1; f = 1060.8209414
lambda = 1.9332; f = 1060.8202762
Norm of dx 0.00071613

Improvement on iteration 4 = 0.001778603

f at the beginning of new iteration, 1060.8202761687
Predicted improvement: 0.001046800
lambda = 1; f = 1060.8188166
Norm of dx 0.0014942

Improvement on iteration 5 = 0.001459565

f at the beginning of new iteration, 1060.8188166033
Predicted improvement: 0.000590331
lambda = 1; f = 1060.8179814
lambda = 1.9332; f = 1060.8178246
Norm of dx 0.0011053

Improvement on iteration 6 = 0.000991967

f at the beginning of new iteration, 1060.8178246359
Predicted improvement: 0.000358502
lambda = 1; f = 1060.8171568
lambda = 1.9332; f = 1060.8166222
lambda = 3.7372; f = 1060.8158317

```

                                code. log
lambda = 7.2247; f = 1060.8152131
Norm of dx 0.00027966
-----
Improvement on iteration 7 = 0.002611523
-----
f at the beginning of new iteration, 1060.8152131134
Predicted improvement: 0.001008691
lambda = 1; f = 1060.8136904
lambda = 1.9332; f = 1060.8131640
Norm of dx 0.0024112
-----
Improvement on iteration 8 = 0.002049148
-----
f at the beginning of new iteration, 1060.8131639651
Predicted improvement: 0.000077911
lambda = 1; f = 1060.8130365
lambda = 1.9332; f = 1060.8129686
Norm of dx 0.00036568
-----
Improvement on iteration 9 = 0.000195394
-----
f at the beginning of new iteration, 1060.8129685710
Predicted improvement: 0.000122903
lambda = 1; f = 1060.8127487
lambda = 1.9332; f = 1060.8125900
lambda = 3.7372; f = 1060.8124108
Norm of dx 0.00044731
-----
Improvement on iteration 10 = 0.000557779
-----
f at the beginning of new iteration, 1060.8124107920
Predicted improvement: 0.000383727
lambda = 1; f = 1060.8117521
lambda = 1.9332; f = 1060.8113323
lambda = 3.7372; f = 1060.8110554
Norm of dx 0.0012083
-----
Improvement on iteration 11 = 0.001355428
-----
f at the beginning of new iteration, 1060.8110553644
Predicted improvement: 0.000265027
lambda = 1; f = 1060.8106795
lambda = 1.9332; f = 1060.8106060
Norm of dx 0.00053128
-----
Improvement on iteration 12 = 0.000449395
-----
f at the beginning of new iteration, 1060.8106059699
Predicted improvement: 0.000073550
lambda = 1; f = 1060.8104869
lambda = 1.9332; f = 1060.8104264
Norm of dx 0.00051277
-----
Improvement on iteration 13 = 0.000179522
-----
f at the beginning of new iteration, 1060.8104264476

```

```

code. log
Predicted improvement:      0.000039714
lambda = 1; f =            1060.8103757
Norm of dx 0.00033496
-----
Improvement on iteration 14 =      0.000050731
-----
f at the beginning of new iteration,      1060.8103757168
Predicted improvement:      0.000013588
lambda = 1; f =            1060.8103534
lambda = 1.9332; f =        1060.8103414
Norm of dx 0.00013011
-----
Improvement on iteration 15 =      0.000034318
-----
f at the beginning of new iteration,      1060.8103413992
Predicted improvement:      0.000025715
lambda = 1; f =            1060.8102946
lambda = 1.9332; f =        1060.8102594
lambda = 3.7372; f =        1060.8102145
Norm of dx 0.00021786
-----
Improvement on iteration 16 =      0.000126869
-----
f at the beginning of new iteration,      1060.8102145307
Predicted improvement:      0.000095752
lambda = 1; f =            1060.8100592
lambda = 1.9332; f =        1060.8099797
Norm of dx 0.00079048
-----
Improvement on iteration 17 =      0.000234794
-----
f at the beginning of new iteration,      1060.8099797367
Predicted improvement:      0.000068536
lambda = 1; f =            1060.8098898
Norm of dx 0.00051224
-----
Improvement on iteration 18 =      0.000089977
-----
f at the beginning of new iteration,      1060.8098897593
Predicted improvement:      0.000023510
lambda = 1; f =            1060.8098546
lambda = 1.9332; f =        1060.8098429
Norm of dx 0.00019881
-----
Improvement on iteration 19 =      0.000046815
-----
f at the beginning of new iteration,      1060.8098429438
Predicted improvement:      0.000022497
lambda = 1; f =            1060.8097991
lambda = 1.9332; f =        1060.8097602
lambda = 3.7372; f =        1060.8096908
lambda = 7.2247; f =        1060.8095778
lambda = 13.967; f =        1060.8094391
Norm of dx 0.00015618
-----
Improvement on iteration 20 =      0.000403888
-----

```

code. log

f at the beginning of new iteration, 1060.8094390555
Predicted improvement: 0.000086396
lambda = 1; f = 1060.8093366
Norm of dx 0.0015244

Improvement on iteration 21 = 0.000102436

f at the beginning of new iteration, 1060.8093366190
Predicted improvement: 0.000015405
lambda = 1; f = 1060.8093107
lambda = 1.9332; f = 1060.8092953
Norm of dx 0.00045696

Improvement on iteration 22 = 0.000041300

f at the beginning of new iteration, 1060.8092953194
Predicted improvement: 0.000036488
lambda = 1; f = 1060.8092321
lambda = 1.9332; f = 1060.8091906
lambda = 3.7372; f = 1060.8091583
Norm of dx 0.00071637

Improvement on iteration 23 = 0.000137049

f at the beginning of new iteration, 1060.8091582700
Predicted improvement: 0.000074441
lambda = 1; f = 1060.8090250
lambda = 1.9332; f = 1060.8089286
lambda = 3.7372; f = 1060.8088190
Norm of dx 0.0003666

Improvement on iteration 24 = 0.000339296

f at the beginning of new iteration, 1060.8088189736
Predicted improvement: 0.000071504
lambda = 1; f = 1060.8087041
lambda = 1.9332; f = 1060.8086474
Norm of dx 0.00087943

Improvement on iteration 25 = 0.000171525

f at the beginning of new iteration, 1060.8086474484
Predicted improvement: 0.000070463
lambda = 1; f = 1060.8085463
lambda = 1.9332; f = 1060.8085226
Norm of dx 0.0012338

Improvement on iteration 26 = 0.000124828

f at the beginning of new iteration, 1060.8085226206
Predicted improvement: 0.000011643
lambda = 1; f = 1060.8085069
Norm of dx 0.00042474

Improvement on iteration 27 = 0.000015737

code. log

f at the beginning of new iteration, 1060.8085068833
Predicted improvement: 0.00005361
lambda = 1; f = 1060.8084981
lambda = 1.9332; f = 1060.8084935
Norm of dx 0.00015298

Improvement on iteration 28 = 0.000013384

f at the beginning of new iteration, 1060.8084934995
Predicted improvement: 0.00009838
lambda = 1; f = 1060.8084751
lambda = 1.9332; f = 1060.8084604
lambda = 3.7372; f = 1060.8084384
lambda = 7.2247; f = 1060.8084205
Norm of dx 0.00012083

Improvement on iteration 29 = 0.000073043

f at the beginning of new iteration, 1060.8084204561
Predicted improvement: 0.000053414
lambda = 1; f = 1060.8083218
lambda = 1.9332; f = 1060.8082444
lambda = 3.7372; f = 1060.8081349
lambda = 7.2247; f = 1060.8080732
Norm of dx 0.00083104

Improvement on iteration 30 = 0.000347214

f at the beginning of new iteration, 1060.8080732418
Predicted improvement: 0.000023229
lambda = 1; f = 1060.8080357
lambda = 1.9332; f = 1060.8080163
Norm of dx 0.00042229

Improvement on iteration 31 = 0.000056938

f at the beginning of new iteration, 1060.8080163034
Predicted improvement: 0.000025871
lambda = 1; f = 1060.8079776
lambda = 1.9332; f = 1060.8079647
Norm of dx 0.00052251

Improvement on iteration 32 = 0.000051609

f at the beginning of new iteration, 1060.8079646940
Predicted improvement: 0.000011483
lambda = 1; f = 1060.8079447
lambda = 1.9332; f = 1060.8079312
lambda = 3.7372; f = 1060.8079190
Norm of dx 0.00056907

Improvement on iteration 33 = 0.000045681

f at the beginning of new iteration, 1060.8079190133
Predicted improvement: 0.000025982
lambda = 1; f = 1060.8078685

```

                                code.log
lambda = 1.9332; f = 1060.8078238
lambda = 3.7372; f = 1060.8077445
lambda = 7.2247; f = 1060.8076172
lambda = 13.967; f = 1060.8074684
Norm of dx 0.00043741
-----
Improvement on iteration 34 = 0.000450600
-----
f at the beginning of new iteration, 1060.8074684134
Predicted improvement: 0.000118757
lambda = 1; f = 1060.8073285
Norm of dx 0.0017532
-----
Improvement on iteration 35 = 0.000139932
-----
f at the beginning of new iteration, 1060.8073284812
Predicted improvement: 0.000009241
lambda = 1; f = 1060.8073160
Norm of dx 0.00022577
-----
Improvement on iteration 36 = 0.000012504
-----
f at the beginning of new iteration, 1060.8073159768
Predicted improvement: 0.000006893
lambda = 1; f = 1060.8073044
lambda = 1.9332; f = 1060.8072973
lambda = 3.7372; f = 1060.8072938
Norm of dx 0.00015208
-----
Improvement on iteration 37 = 0.000022127
-----
f at the beginning of new iteration, 1060.8072938498
Predicted improvement: 0.000015082
lambda = 1; f = 1060.8072653
lambda = 1.9332; f = 1060.8072415
lambda = 3.7372; f = 1060.8072032
lambda = 7.2247; f = 1060.8071581
Norm of dx 0.00017111
-----
Improvement on iteration 38 = 0.000135746
-----
f at the beginning of new iteration, 1060.8071581034
Predicted improvement: 0.000046969
lambda = 1; f = 1060.8070941
Norm of dx 0.0015985
-----
Improvement on iteration 39 = 0.000064006
-----
f at the beginning of new iteration, 1060.8070940971
Predicted improvement: 0.000019353
lambda = 1; f = 1060.8070688
Norm of dx 0.0012146
-----
Improvement on iteration 40 = 0.000025319
-----
f at the beginning of new iteration, 1060.8070687778

```

```

code. log
Predicted improvement:      0.00008960
lambda =      1; f =      1060.8070557
lambda =      1.9332; f =      1060.8070526
Norm of dx 0.00040316
-----
Improvement on iteration 41 =      0.000016195
-----
f at the beginning of new iteration,      1060.8070525827
Predicted improvement:      0.000002966
lambda =      1; f =      1060.8070480
lambda =      1.9332; f =      1060.8070463
Norm of dx 0.00033121
-----
Improvement on iteration 42 =      0.000006279
-----
f at the beginning of new iteration,      1060.8070463038
Predicted improvement:      0.000001106
lambda =      1; f =      1060.8070442
lambda =      1.9332; f =      1060.8070423
lambda =      3.7372; f =      1060.8070391
lambda =      7.2247; f =      1060.8070346
lambda =      13.967; f =      1060.8070317
Norm of dx 3.4814e-05
-----
Improvement on iteration 43 =      0.000014621
-----
f at the beginning of new iteration,      1060.8070316829
Predicted improvement:      0.000010862
lambda =      1; f =      1060.8070118
lambda =      1.9332; f =      1060.8069965
lambda =      3.7372; f =      1060.8069758
Norm of dx 0.00031707
-----
Improvement on iteration 44 =      0.000055861
-----
f at the beginning of new iteration,      1060.8069758222
Predicted improvement:      0.000011745
lambda =      1; f =      1060.8069638
Norm of dx 0.00082174
-----
Improvement on iteration 45 =      0.000012048
-----
f at the beginning of new iteration,      1060.8069637743
Predicted improvement:      0.000000179
lambda =      1; f =      1060.8069634
lambda =      1.9332; f =      1060.8069632
lambda =      3.7372; f =      1060.8069629
Norm of dx 4.8735e-05
-----
Improvement on iteration 46 =      0.000000883
-----
f at the beginning of new iteration,      1060.8069628909
Predicted improvement:      0.000000870
lambda =      1; f =      1060.8069613
lambda =      1.9332; f =      1060.8069602
lambda =      3.7372; f =      1060.8069587
Norm of dx 9.1374e-05

```


code. log

```
-----
Improvement on iteration 47 =          0.000004143
-----
f at the beginning of new iteration,      1060.8069587484
Predicted improvement:          0.000003385
lambda =          1; f =          1060.8069527
lambda =    1.9332; f =          1060.8069488
lambda =    3.7372; f =          1060.8069455
Norm of dx 0.0001692
-----
Improvement on iteration 48 =          0.000013274
-----
f at the beginning of new iteration,      1060.8069454747
Predicted improvement:          0.000003593
lambda =          1; f =          1060.8069397
lambda =    1.9332; f =          1060.8069367
Norm of dx 0.00014574
-----
Improvement on iteration 49 =          0.000008795
-----
f at the beginning of new iteration,      1060.8069366793
Predicted improvement:          0.000003244
lambda =          1; f =          1060.8069318
lambda =    1.9332; f =          1060.8069302
Norm of dx 0.00024981
-----
Improvement on iteration 50 =          0.000006491
-----
f at the beginning of new iteration,      1060.8069301886
Predicted improvement:          0.000002013
lambda =          1; f =          1060.8069270
lambda =    1.9332; f =          1060.8069257
Norm of dx 0.00031332
-----
Improvement on iteration 51 =          0.000004453
-----
f at the beginning of new iteration,      1060.8069257357
Predicted improvement:          0.000000959
lambda =          1; f =          1060.8069239
lambda =    1.9332; f =          1060.8069225
lambda =    3.7372; f =          1060.8069204
lambda =    7.2247; f =          1060.8069188
Norm of dx 0.00010622
-----
Improvement on iteration 52 =          0.000006961
-----
f at the beginning of new iteration,      1060.8069187746
Predicted improvement:          0.000005753
lambda =          1; f =          1060.8069077
lambda =    1.9332; f =          1060.8068980
lambda =    3.7372; f =          1060.8068814
lambda =    7.2247; f =          1060.8068566
lambda =   13.967; f =          1060.8068368
Norm of dx 0.00029597
-----
Improvement on iteration 53 =          0.000081931
-----
```

code. log

f at the beginning of new iteration, 1060.8068368438
Predicted improvement: 0.00002643
lambda = 1; f = 1060.8068338
Norm of dx 0.00030744

Improvement on iteration 54 = 0.00003013

f at the beginning of new iteration, 1060.8068338311
Predicted improvement: 0.00000981
lambda = 1; f = 1060.8068321
lambda = 1.9332; f = 1060.8068309
lambda = 3.7372; f = 1060.8068298
Norm of dx 9.7085e-05

Improvement on iteration 55 = 0.00004047

f at the beginning of new iteration, 1060.8068297843
Predicted improvement: 0.00003437
lambda = 1; f = 1060.8068231
lambda = 1.9332; f = 1060.8068171
lambda = 3.7372; f = 1060.8068065
lambda = 7.2247; f = 1060.8067894
lambda = 13.967; f = 1060.8067687
Norm of dx 0.00025944

Improvement on iteration 56 = 0.000061124

f at the beginning of new iteration, 1060.8067686604
Predicted improvement: 0.000034851
lambda = 1; f = 1060.8067211
Norm of dx 0.0022184

Improvement on iteration 57 = 0.000047609

f at the beginning of new iteration, 1060.8067210509
Predicted improvement: 0.000010064
lambda = 1; f = 1060.8067105
Norm of dx 0.00099259

Improvement on iteration 58 = 0.000010513

f at the beginning of new iteration, 1060.8067105378
Predicted improvement: 0.00000332
lambda = 1; f = 1060.8067100
lambda = 1.9332; f = 1060.8067095
lambda = 3.7372; f = 1060.8067091
Norm of dx 0.00011083

Improvement on iteration 59 = 0.00001424

f at the beginning of new iteration, 1060.8067091136
Predicted improvement: 0.00001145
lambda = 1; f = 1060.8067070
lambda = 1.9332; f = 1060.8067052
lambda = 3.7372; f = 1060.8067022
lambda = 7.2247; f = 1060.8066985

code.log

Norm of dx 8.3661e-05

Improvement on iteration 60 = 0.000010618

f at the beginning of new iteration, 1060.8066984960
Predicted improvement: 0.000009546
lambda = 1; f = 1060.8066820
lambda = 1.9332; f = 1060.8066714
lambda = 3.7372; f = 1060.8066643
Norm of dx 0.00072919

Improvement on iteration 61 = 0.000034190

f at the beginning of new iteration, 1060.8066643057
Predicted improvement: 0.000015106
lambda = 1; f = 1060.8066387
lambda = 1.9332; f = 1060.8066213
lambda = 3.7372; f = 1060.8066058
Norm of dx 0.0016372

Improvement on iteration 62 = 0.000058541

f at the beginning of new iteration, 1060.8066057645
Predicted improvement: 0.000023557
lambda = 1; f = 1060.8065654
lambda = 1.9332; f = 1060.8065399
lambda = 3.7372; f = 1060.8065233
Norm of dx 0.0009501

Improvement on iteration 63 = 0.000082432

f at the beginning of new iteration, 1060.8065233328
Predicted improvement: 0.000004821
lambda = 1; f = 1060.8065184
Norm of dx 0.0006492

Improvement on iteration 64 = 0.000004941

f at the beginning of new iteration, 1060.8065183919
Predicted improvement: 0.000000344
lambda = 1; f = 1060.8065185
lambda = 0.33333; f = 1060.8065184
lambda = 0.11111; f = 1060.8065184
lambda = 0.037037; f = 1060.8065184
lambda = 0.012346; f = 1060.8065184
Norm of dx 0.00056679

Improvement on iteration 65 = 0.000000028
improvement < crit termination

Final value of minus the log posterior (or likelihood): 1060.806518

RESULTS FROM POSTERIOR ESTIMATION

parameters

	prior mean	mode	s.d.	prior pstdev
rho_a_c	0.500	0.2069	0.0775	beta 0.2000
rho_a_d	0.500	0.5000	0.2774	beta 0.2000

```

                                code. log
rho_mu_c      0.500  0.5001  0.2774 beta  0.2000
rho_mu_d      0.500  0.4999  0.2774 beta  0.2000
rho_LTV       0.500  0.4953  0.2747 beta  0.2000
rho_d         0.500  0.5116  0.2766 beta  0.2000
rho_d_stern   0.500  0.9000  0.0163 beta  0.2000
rho_c_ast     0.500  0.6453  0.2476 beta  0.2000
rho_d_ast     0.500  0.5000  0.2773 beta  0.2000
rho_s_c       0.500  0.4048  0.0980 beta  0.2000
rho_r         0.500  0.6777  0.0923 beta  0.2000
rho_p        -0.500 -0.4975  0.2000 norm  0.2000
theta_c       0.750  0.2764  0.0700 beta  0.1500
sigma         1.000  1.9101  0.1079 norm  0.3700
phi           2.000  5.4093  0.8165 gamm  0.7000
omega         0.200  0.1023  0.0646 beta  0.1000
h_c           0.500  0.2906  0.0518 beta  0.1000
alpha_c       0.500  0.3985  0.0295 beta  0.1000

```

```

standard deviation of shocks
prior mean      mode      s. d. prior pstdev
epsa_c          0.100  2.3404  0.1684 invg  2.0000
epsa_d          0.100  0.0462  0.0189 invg  2.0000
epsmu_c         0.100  0.0461  0.0188 invg  2.0000
epsmu_d         0.100  0.0461  0.0188 invg  2.0000
epsLTV          0.100  0.0461  0.0188 invg  2.0000
epsd            0.100  0.0457  0.0183 invg  2.0000
epsc_ast       0.100  0.0375  0.0114 invg  2.0000
epsd_ast       0.100  0.0461  0.0188 invg  2.0000
epsd_stern     0.100  0.6037  0.1007 invg  2.0000
epss_c         0.100  1.1503  0.0940 invg  2.0000
epsr           0.100  0.6279  0.1852 invg  2.0000
epsyf          0.100  0.0459  0.0185 invg  2.0000
epsn           0.010  0.8270  0.0608 invg  0.1000
epspi_d        0.010  5.5869  0.3930 invg  0.1000

```

Log data density [Laplace approximation] is -1115.057931.

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_104/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.
 Estimation::mcmc: Total number of iterations: 200000.
 Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.3003%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi 2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val No Taper	p-val 4%
Taper p-val 8% Taper				
SE_epsa_c	2.375	0.175	0.000	
0.213	0.140			
SE_epsa_d	0.087	0.064	0.000	
0.478	0.601			
SE_epsmu_c	0.078	0.042	0.000	
0.292	0.343			

			code. log	
SE_epsmu_d		0.098		0.000
0.825	0.833	0.839	0.090	0.000
SE_epsLTV		0.087		0.000
0.321	0.398	0.459	0.056	0.000
SE_epsd		0.066		0.036
0.925	0.929	0.937	0.031	0.036
SE_epsc_ast		0.043		0.000
0.425	0.446	0.470	0.014	0.000
SE_epsd_ast		0.247		0.000
0.000	0.001	0.011	0.303	0.000
SE_epsd_stern		0.575		0.000
0.507	0.552	0.551	0.097	0.000
SE_epss_c		1.172		0.000
0.553	0.591	0.590	0.098	0.000
SE_epsr		0.776		0.000
0.791	0.804	0.785	0.254	0.000
SE_epsyf		0.071		0.000
0.143	0.169	0.237	0.037	0.000
SE_epsn		0.838		0.000
0.211	0.216	0.252	0.063	0.000
SE_eps_pi_d		5.676		0.000
0.415	0.444	0.424	0.417	0.000
rho_a_c		0.216		0.000
0.579	0.551	0.487	0.074	0.000
rho_a_d		0.499		0.003
0.727	0.726	0.719	0.199	0.003
rho_mu_c		0.502		0.001
0.635	0.584	0.560	0.200	0.001
rho_mu_d		0.495		0.003
0.683	0.678	0.673	0.202	0.003
rho_LTV		0.484		0.000
0.374	0.350	0.296	0.199	0.000
rho_d		0.519		0.000
0.148	0.172	0.187	0.198	0.000
rho_d_stern		0.899		0.000
0.382	0.438	0.454	0.017	0.000
rho_c_ast		0.632		0.000
0.209	0.220	0.229	0.190	0.000
rho_d_ast		0.500		0.000
0.068	0.055	0.051	0.198	0.000
rho_s_c		0.408		0.000
0.567	0.556	0.497	0.097	0.000
rho_r		0.609		0.262
0.947	0.951	0.948	0.122	0.262
rho_p		-0.496		0.397
0.941	0.940	0.932	0.202	0.397
theta_c		0.269		0.044
0.841	0.836	0.828	0.066	0.044
sigma		1.953		0.000
0.395	0.402	0.431	0.113	0.000
phi		5.581		0.181
0.897	0.902	0.900	0.828	0.181
omega		0.129		0.000
0.672	0.651	0.641	0.063	0.000
h_c		0.280		0.000
0.215	0.205	0.205	0.050	0.000
alpha_c		0.398		0.000
0.677	0.693	0.668	0.030	0.000

Estimation: : mcmc: Total number of MH draws per chain: 200000.
 Estimation: : mcmc: Total number of generated MH files: 55.
 Estimation: : mcmc: I'll use mh-files 28 to 55.

code.log

Estimation::mcmc: In MH-file number 28 I'll start at line 722.
Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
Done!

Estimation::marginal density: I'm computing the posterior log marginal density
(modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1116.727679.

parameters

	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2139	0.0891	0.3319	beta	0.2000
rho_a_d	0.500	0.4978	0.1742	0.8239	beta	0.2000
rho_mu_c	0.500	0.5058	0.1829	0.8297	beta	0.2000
rho_mu_d	0.500	0.4994	0.1721	0.8304	beta	0.2000
rho_LTV	0.500	0.4818	0.1597	0.8105	beta	0.2000
rho_d	0.500	0.5236	0.1998	0.8442	beta	0.2000
rho_d_stern	0.500	0.8993	0.8738	0.9280	beta	0.2000
rho_c_ast	0.500	0.6421	0.3519	0.9352	beta	0.2000
rho_d_ast	0.500	0.4972	0.1653	0.8238	beta	0.2000
rho_s_c	0.500	0.4103	0.2524	0.5748	beta	0.2000
rho_r	0.500	0.6134	0.4364	0.7948	beta	0.2000
rho_p	-0.500	-0.4925	-0.8255	-0.1454	norm	0.2000
theta_c	0.750	0.2706	0.1608	0.3754	beta	0.1500
sigma	1.000	1.9518	1.7691	2.1231	norm	0.3700
phi	2.000	5.5849	4.2190	6.8877	gamma	0.7000
omega	0.200	0.1286	0.0321	0.2258	beta	0.1000
h_c	0.500	0.2815	0.2009	0.3646	beta	0.1000
alpha_c	0.500	0.3981	0.3491	0.4477	beta	0.1000

standard deviation of shocks

	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.3776	2.1001	2.6670	invg	2.0000
epsa_d	0.100	0.0962	0.0201	0.1974	invg	2.0000
epsmu_c	0.100	0.0821	0.0244	0.1504	invg	2.0000
epsmu_d	0.100	0.0716	0.0262	0.1227	invg	2.0000
epsLTV	0.100	0.0876	0.0241	0.1609	invg	2.0000
epsd	0.100	0.0684	0.0242	0.1132	invg	2.0000
eps_c_ast	0.100	0.0439	0.0227	0.0645	invg	2.0000
epsd_ast	0.100	0.4111	0.0214	0.9740	invg	2.0000
epsd_stern	0.100	0.5797	0.4214	0.7372	invg	2.0000
epss_c	0.100	1.1762	1.0075	1.3281	invg	2.0000
epsr	0.100	0.7655	0.4184	1.1489	invg	2.0000
epsyf	0.100	0.0696	0.0234	0.1179	invg	2.0000
epsn	0.010	0.8377	0.7383	0.9401	invg	0.1000
epspi_d	0.010	5.6873	4.9909	6.3569	invg	0.1000

Estimation::mcmc: Forecasted variables (mean)
Estimation::mcmc: Forecasted variables (mean), done!
Estimation::mcmc: Forecasted variables (point)
Estimation::mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1070.985

f at the beginning of new iteration, 1070.9849576821
Predicted improvement: 0.006586316
lambda = 1; f = 1070.9742366

```

                                code.log
lambda = 1.9332; f = 1070.9687173
Norm of dx 0.0011477
-----
Improvement on iteration 1 = 0.016240425
-----
f at the beginning of new iteration, 1070.9687172573
Predicted improvement: 0.008251099
lambda = 1; f = 1070.9560850
lambda = 1.9332; f = 1070.9512188
Norm of dx 0.0023552
-----
Improvement on iteration 2 = 0.017498466
-----
f at the beginning of new iteration, 1070.9512187910
Predicted improvement: 0.002411043
lambda = 1; f = 1070.9481016
Norm of dx 0.00091311
-----
Improvement on iteration 3 = 0.003117185
-----
f at the beginning of new iteration, 1070.9481016064
Predicted improvement: 0.000677932
lambda = 1; f = 1070.9470942
lambda = 1.9332; f = 1070.9467780
Norm of dx 0.0005356
-----
Improvement on iteration 4 = 0.001323568
-----
f at the beginning of new iteration, 1070.9467780385
Predicted improvement: 0.000523664
lambda = 1; f = 1070.9457966
lambda = 1.9332; f = 1070.9449996
lambda = 3.7372; f = 1070.9437849
lambda = 7.2247; f = 1070.9426594
Norm of dx 0.00046342
-----
Improvement on iteration 5 = 0.004118624
-----
f at the beginning of new iteration, 1070.9426594141
Predicted improvement: 0.000864895
lambda = 1; f = 1070.9410675
lambda = 1.9332; f = 1070.9398309
lambda = 3.7372; f = 1070.9381232
lambda = 7.2247; f = 1070.9373820
Norm of dx 0.0011181
-----
Improvement on iteration 6 = 0.005277390
-----
f at the beginning of new iteration, 1070.9373820238
Predicted improvement: 0.001523266
lambda = 1; f = 1070.9354082
Norm of dx 0.00084938
-----
Improvement on iteration 7 = 0.001973804
-----
f at the beginning of new iteration, 1070.9354082195

```

```

                                code. log
Predicted improvement:          0.000264094
lambda = 1; f =                1070.9350997
Norm of dx 0.00044106
-----
Improvement on iteration 8 =    0.000308497
-----
f at the beginning of new iteration, 1070.9350997221
Predicted improvement:          0.000057430
lambda = 1; f =                1070.9349961
lambda = 1.9332; f =          1070.9349192
lambda = 3.7372; f =          1070.9348246
Norm of dx 0.00020162
-----
Improvement on iteration 9 =    0.000275156
-----
f at the beginning of new iteration, 1070.9348245658
Predicted improvement:          0.000232062
lambda = 1; f =                1070.9344142
lambda = 1.9332; f =          1070.9341279
lambda = 3.7372; f =          1070.9338388
Norm of dx 0.00077171
-----
Improvement on iteration 10 =   0.000985731
-----
f at the beginning of new iteration, 1070.9338388349
Predicted improvement:          0.000335346
lambda = 1; f =                1070.9333640
lambda = 1.9332; f =          1070.9332769
Norm of dx 0.00085301
-----
Improvement on iteration 11 =   0.000561917
-----
f at the beginning of new iteration, 1070.9332769175
Predicted improvement:          0.000040476
lambda = 1; f =                1070.9332161
lambda = 1.9332; f =          1070.9331956
Norm of dx 0.00038533
-----
Improvement on iteration 12 =   0.000081332
-----
f at the beginning of new iteration, 1070.9331955855
Predicted improvement:          0.000033592
lambda = 1; f =                1070.9331334
lambda = 1.9332; f =          1070.9330841
lambda = 3.7372; f =          1070.9330129
lambda = 7.2247; f =          1070.9329650
Norm of dx 0.00017647
-----
Improvement on iteration 13 =   0.000230578
-----
f at the beginning of new iteration, 1070.9329650080
Predicted improvement:          0.000026039
lambda = 1; f =                1070.9329207
lambda = 1.9332; f =          1070.9328933
lambda = 3.7372; f =          1070.9328788
Norm of dx 0.0002041
-----

```



```

                                code.log
Improvement on iteration 14 =      0.000086229
-----
f at the beginning of new iteration,      1070.9328787787
Predicted improvement:      0.000026225
lambda =      1; f =      1070.9328412
lambda =      1.9332; f =      1070.9328329
Norm of dx 0.00025172
-----
Improvement on iteration 15 =      0.000045892
-----
f at the beginning of new iteration,      1070.9328328865
Predicted improvement:      0.000002049
lambda =      1; f =      1070.9328299
lambda =      1.9332; f =      1070.9328291
Norm of dx 7.5005e-05
-----
Improvement on iteration 16 =      0.000003817
-----
f at the beginning of new iteration,      1070.9328290691
Predicted improvement:      0.000001669
lambda =      1; f =      1070.9328258
lambda =      1.9332; f =      1070.9328228
lambda =      3.7372; f =      1070.9328173
lambda =      7.2247; f =      1070.9328077
lambda =      13.967; f =      1070.9327927
lambda =      27; f =      1070.9327777
Norm of dx 2.544e-05
-----
Improvement on iteration 17 =      0.000051336
-----
f at the beginning of new iteration,      1070.9327777327
Predicted improvement:      0.000005742
lambda =      1; f =      1070.9327708
Norm of dx 0.00024183
-----
Improvement on iteration 18 =      0.000006895
-----
f at the beginning of new iteration,      1070.9327708376
Predicted improvement:      0.000000903
lambda =      1; f =      1070.9327695
lambda =      1.9332; f =      1070.9327689
Norm of dx 6.8434e-05
-----
Improvement on iteration 19 =      0.000001950
-----
f at the beginning of new iteration,      1070.9327688877
Predicted improvement:      0.000001027
lambda =      1; f =      1070.9327670
lambda =      1.9332; f =      1070.9327657
lambda =      3.7372; f =      1070.9327641
Norm of dx 3.4249e-05
-----
Improvement on iteration 20 =      0.000004788
-----
f at the beginning of new iteration,      1070.9327640998
Predicted improvement:      0.000002198

```

```

                                code.log
lambda =          1; f =          1070.9327605
lambda =    1.9332; f =          1070.9327587
Norm of dx 7.7544e-05
-----
Improvement on iteration 21 =          0.000005399
-----
f at the beginning of new iteration,          1070.9327587007
Predicted improvement:          0.000003575
lambda =          1; f =          1070.9327523
lambda =    1.9332; f =          1070.9327477
lambda =    3.7372; f =          1070.9327425
Norm of dx 0.00012138
-----
Improvement on iteration 22 =          0.000016216
-----
f at the beginning of new iteration,          1070.9327424849
Predicted improvement:          0.000009026
lambda =          1; f =          1070.9327282
lambda =    1.9332; f =          1070.9327218
Norm of dx 0.00034345
-----
Improvement on iteration 23 =          0.000020639
-----
f at the beginning of new iteration,          1070.9327218461
Predicted improvement:          0.000002287
lambda =          1; f =          1070.9327193
Norm of dx 0.00014905
-----
Improvement on iteration 24 =          0.000002568
-----
f at the beginning of new iteration,          1070.9327192781
Predicted improvement:          0.000000312
lambda =          1; f =          1070.9327187
lambda =    1.9332; f =          1070.9327184
lambda =    3.7372; f =          1070.9327180
Norm of dx 2.0099e-05
-----
Improvement on iteration 25 =          0.000001293
-----
f at the beginning of new iteration,          1070.9327179849
Predicted improvement:          0.000000992
lambda =          1; f =          1070.9327161
lambda =    1.9332; f =          1070.9327145
lambda =    3.7372; f =          1070.9327118
lambda =    7.2247; f =          1070.9327081
Norm of dx 5.3068e-05
-----
Improvement on iteration 26 =          0.000009874
-----
f at the beginning of new iteration,          1070.9327081113
Predicted improvement:          0.000007598
lambda =          1; f =          1070.9326974
lambda =    1.9332; f =          1070.9326958
Norm of dx 0.00042901
-----
Improvement on iteration 27 =          0.000012320
-----

```

code. log

f at the beginning of new iteration, 1070.9326957917
Predicted improvement: 0.000001338
lambda = 1; f = 1070.9326939
Norm of dx 0.00015449

Improvement on iteration 28 = 0.000001846

f at the beginning of new iteration, 1070.9326939458
Predicted improvement: 0.000000572
lambda = 1; f = 1070.9326931
lambda = 1.9332; f = 1070.9326928
Norm of dx 5.5233e-05

Improvement on iteration 29 = 0.000001116

f at the beginning of new iteration, 1070.9326928295
Predicted improvement: 0.000000425
lambda = 1; f = 1070.9326921
lambda = 1.9332; f = 1070.9326916
lambda = 3.7372; f = 1070.9326910
Norm of dx 5.2039e-05

Improvement on iteration 30 = 0.000001877

f at the beginning of new iteration, 1070.9326909527
Predicted improvement: 0.000000554
lambda = 1; f = 1070.9326900
lambda = 1.9332; f = 1070.9326894
lambda = 3.7372; f = 1070.9326890
Norm of dx 8.0659e-05

Improvement on iteration 31 = 0.000001940

f at the beginning of new iteration, 1070.9326890130
Predicted improvement: 0.000001192
lambda = 1; f = 1070.9326868
lambda = 1.9332; f = 1070.9326852
lambda = 3.7372; f = 1070.9326832
Norm of dx 3.8842e-05

Improvement on iteration 32 = 0.000005818

f at the beginning of new iteration, 1070.9326831954
Predicted improvement: 0.000001016
lambda = 1; f = 1070.9326821
Norm of dx 0.00016982

Improvement on iteration 33 = 0.000001086

f at the beginning of new iteration, 1070.9326821094
Predicted improvement: 0.000000095
lambda = 1; f = 1070.9326819
lambda = 1.9332; f = 1070.9326818
lambda = 3.7372; f = 1070.9326817
Norm of dx 1.7168e-05

```

code.log
Improvement on iteration 34 = 0.000000450
-----
f at the beginning of new iteration, 1070.9326816589
Predicted improvement: 0.000000489
lambda = 1; f = 1070.9326808
lambda = 1.9332; f = 1070.9326801
lambda = 3.7372; f = 1070.9326792
Norm of dx 5.6269e-05
----
Improvement on iteration 35 = 0.000002470
-----
f at the beginning of new iteration, 1070.9326791890
Predicted improvement: 0.000001841
lambda = 1; f = 1070.9326764
lambda = 1.9332; f = 1070.9326753
Norm of dx 0.00017165
----
Improvement on iteration 36 = 0.000003857
-----
f at the beginning of new iteration, 1070.9326753319
Predicted improvement: 0.000000488
lambda = 1; f = 1070.9326747
Norm of dx 6.7017e-05
----
Improvement on iteration 37 = 0.000000594
-----
f at the beginning of new iteration, 1070.9326747377
Predicted improvement: 0.000000149
lambda = 1; f = 1070.9326746
Norm of dx 4.3328e-05
----
Improvement on iteration 38 = 0.000000160
-----
f at the beginning of new iteration, 1070.9326745779
Predicted improvement: 0.000000102
lambda = 1; f = 1070.9326744
lambda = 1.9332; f = 1070.9326743
Norm of dx 1.7459e-05
----
Improvement on iteration 39 = 0.000000238
-----
f at the beginning of new iteration, 1070.9326743398
Predicted improvement: 0.000000253
lambda = 1; f = 1070.9326739
lambda = 1.9332; f = 1070.9326737
Norm of dx 3.6052e-05
----
Improvement on iteration 40 = 0.000000668
-----
f at the beginning of new iteration, 1070.9326736718
Predicted improvement: 0.000000665
lambda = 1; f = 1070.9326728
Norm of dx 0.00014082
----
Improvement on iteration 41 = 0.000000921
-----

```

code.log

f at the beginning of new iteration, 1070.9326727511
Predicted improvement: 0.00000825
lambda = 1; f = 1070.9326714
lambda = 1.9332; f = 1070.9326708
Norm of dx 0.00012781

Improvement on iteration 42 = 0.000001931

f at the beginning of new iteration, 1070.9326708199
Predicted improvement: 0.000001430
lambda = 1; f = 1070.9326690
Norm of dx 0.00030028

Improvement on iteration 43 = 0.000001784

f at the beginning of new iteration, 1070.9326690357
Predicted improvement: 0.000001917
lambda = 1; f = 1070.9326663
lambda = 1.9332; f = 1070.9326655
Norm of dx 0.00023631

Improvement on iteration 44 = 0.000003537

f at the beginning of new iteration, 1070.9326654985
Predicted improvement: 0.000000283
lambda = 1; f = 1070.9326651
Norm of dx 8.5211e-05

Improvement on iteration 45 = 0.000000396

f at the beginning of new iteration, 1070.9326651021
Predicted improvement: 0.000000121
lambda = 1; f = 1070.9326650
Norm of dx 8.3589e-05

Improvement on iteration 46 = 0.000000143

f at the beginning of new iteration, 1070.9326649592
Predicted improvement: 0.000000041
lambda = 1; f = 1070.9326649
lambda = 1.9332; f = 1070.9326648
lambda = 3.7372; f = 1070.9326647
lambda = 7.2247; f = 1070.9326647
Norm of dx 1.3232e-05

Improvement on iteration 47 = 0.000000297

f at the beginning of new iteration, 1070.9326646621
Predicted improvement: 0.000000237
lambda = 1; f = 1070.9326642
lambda = 1.9332; f = 1070.9326639
lambda = 3.7372; f = 1070.9326634
lambda = 7.2247; f = 1070.9326629
Norm of dx 3.3963e-05

Improvement on iteration 48 = 0.000001740

code. log

f at the beginning of new iteration, 1070.9326629217
Predicted improvement: 0.000000620
lambda = 1; f = 1070.9326622
Norm of dx 0.00019354

Improvement on iteration 49 = 0.000000756

f at the beginning of new iteration, 1070.9326621655
Predicted improvement: 0.000000160
lambda = 1; f = 1070.9326620
Norm of dx 8.7307e-05

Improvement on iteration 50 = 0.000000208

f at the beginning of new iteration, 1070.9326619570
Predicted improvement: 0.000000105
lambda = 1; f = 1070.9326618
Norm of dx 9.1375e-05

Improvement on iteration 51 = 0.000000127

f at the beginning of new iteration, 1070.9326618304
Predicted improvement: 0.000000161
lambda = 1; f = 1070.9326616
Norm of dx 0.00011817

Improvement on iteration 52 = 0.000000211

f at the beginning of new iteration, 1070.9326616193
Predicted improvement: 0.000000364
lambda = 1; f = 1070.9326611
Norm of dx 0.00017649

Improvement on iteration 53 = 0.000000503

f at the beginning of new iteration, 1070.9326611162
Predicted improvement: 0.000005981
lambda = 1; f = 1070.9326928
lambda = 0.33333; f = 1070.9326631
lambda = 0.11111; f = 1070.9326608
lambda = 0.037037; f = 1070.9326609
Norm of dx 0.0031617

Improvement on iteration 54 = 0.000000276

f at the beginning of new iteration, 1070.9326608404
Predicted improvement: 0.000000663
lambda = 1; f = 1070.9326596
lambda = 1.9332; f = 1070.9326588
lambda = 3.7372; f = 1070.9326578
Norm of dx 8.724e-05

Improvement on iteration 55 = 0.000003066


```

                                code. log
f at the beginning of new iteration, 1070. 9326577749
Predicted improvement: 0. 000000502
lambda = 1; f = 1070. 9326571
lambda = 1. 9332; f = 1070. 9326569
Norm of dx 0. 00015092

```

```

-----
Improvement on iteration 56 = 0. 000000857
-----

```

```

f at the beginning of new iteration, 1070. 9326569182
Predicted improvement: 0. 000000129
lambda = 1; f = 1070. 9326567
Norm of dx 6. 0295e-05

```

```

-----
Improvement on iteration 57 = 0. 000000173
-----

```

```

f at the beginning of new iteration, 1070. 9326567450
Predicted improvement: 0. 000000182
lambda = 1; f = 1070. 9326567
lambda = 0. 33333; f = 1070. 9326567
Norm of dx 8. 2362e-05

```

```

-----
Improvement on iteration 58 = 0. 000000056
improvement < crit termination

```

Final value of minus the log posterior (or likelihood): 1070. 932657

RESULTS FROM POSTERIOR ESTIMATION

parameters

	prior mean	mode	s. d.	prior	pstdev
rho_a_c	0. 500	0. 2056	0. 0773	beta	0. 2000
rho_a_d	0. 500	0. 5000	0. 2774	beta	0. 2000
rho_mu_c	0. 500	0. 5001	0. 2774	beta	0. 2000
rho_mu_d	0. 500	0. 5000	0. 2774	beta	0. 2000
rho_LTV	0. 500	0. 4952	0. 2748	beta	0. 2000
rho_d	0. 500	0. 5124	0. 2765	beta	0. 2000
rho_d_stern	0. 500	0. 9007	0. 0161	beta	0. 2000
rho_c_ast	0. 500	0. 6496	0. 2457	beta	0. 2000
rho_d_ast	0. 500	0. 5000	0. 2773	beta	0. 2000
rho_s_c	0. 500	0. 3890	0. 0979	beta	0. 2000
rho_r	0. 500	0. 6754	0. 0928	beta	0. 2000
rho_p	-0. 500	-0. 4976	0. 2000	norm	0. 2000
theta_c	0. 750	0. 2795	0. 0693	beta	0. 1500
sigma	1. 000	1. 9113	0. 1085	norm	0. 3700
phi	2. 000	5. 4059	0. 8164	gamm	0. 7000
omega	0. 200	0. 1001	0. 0634	beta	0. 1000
h_c	0. 500	0. 2898	0. 0517	beta	0. 1000
al pha_c	0. 500	0. 4028	0. 0293	beta	0. 1000

standard deviation of shocks

	prior mean	mode	s. d.	prior	pstdev
epsa_c	0. 100	2. 3372	0. 1676	invg	2. 0000
epsa_d	0. 100	0. 0462	0. 0189	invg	2. 0000
epsmu_c	0. 100	0. 0461	0. 0188	invg	2. 0000
epsmu_d	0. 100	0. 0461	0. 0188	invg	2. 0000
epsLTV	0. 100	0. 0461	0. 0188	invg	2. 0000
epsd	0. 100	0. 0457	0. 0183	invg	2. 0000
epsc_ast	0. 100	0. 0375	0. 0113	invg	2. 0000
epsd_ast	0. 100	0. 0461	0. 0188	invg	2. 0000
epsd_stern	0. 100	0. 6014	0. 0998	invg	2. 0000

```

                                code. log
epss_c      0.100  1.1559  0.0938 invg  2.0000
epsr        0.100  0.6269  0.1845 invg  2.0000
epsyf       0.100  0.0459  0.0185 invg  2.0000
epsn        0.010  0.8279  0.0608 invg  0.1000
epspi_d     0.010  5.5890  0.3919 invg  0.1000

```

Log data density [Laplace approximation] is -1125.272397.

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_105/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.
 Estimation::mcmc: Total number of iterations: 200000.
 Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.2573%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val No Taper	p-val 4%
Taper p-val 8% Taper	p-val 15% Taper			
SE_epsa_c	2.367	0.177	0.000	
0.332	0.244			
SE_epsa_d	0.121	0.114	0.000	
0.000	0.005			
SE_epsmu_c	0.083	0.049	0.000	
0.059	0.157			
SE_epsmu_d	0.073	0.038	0.000	
0.101	0.144			
SE_epsLTV	0.074	0.039	0.000	
0.800	0.822			
SE_epsd	0.078	0.054	0.000	
0.014	0.005			
SE_epsc_ast	0.043	0.014	0.000	
0.245	0.305			
SE_epsd_ast	0.086	0.060	0.000	
0.800	0.855			
SE_epsd_stern	0.577	0.095	0.000	
0.603	0.584			
SE_epss_c	1.176	0.096	0.000	
0.197	0.255			
SE_epsr	0.747	0.234	0.000	
0.176	0.210			
SE_epsyf	0.076	0.042	0.000	
0.355	0.469			
SE_epsn	0.841	0.063	0.000	
0.203	0.238			
SE_epspi_d	5.668	0.407	0.000	
0.004	0.002			
rho_a_c	0.216	0.074	0.000	
0.132	0.115			
rho_a_d	0.501	0.202	0.337	
0.886	0.864			
rho_mu_c	0.501	0.200	0.000	
0.507	0.478			
rho_mu_d	0.500	0.198	0.000	

			code.	log	
0. 440	0. 434	0. 447			
rho_LTV		0. 496	0. 200		0. 000
0. 164	0. 187	0. 214			
rho_d		0. 528	0. 198		0. 000
0. 390	0. 411	0. 397			
rho_d_stern		0. 900	0. 017		0. 000
0. 736	0. 747	0. 726			
rho_c_ast		0. 643	0. 183		0. 000
0. 505	0. 497	0. 450			
rho_d_ast		0. 502	0. 200		0. 000
0. 530	0. 538	0. 515			
rho_s_c		0. 392	0. 097		0. 000
0. 065	0. 038	0. 024			
rho_r		0. 619	0. 114		0. 000
0. 132	0. 148	0. 146			
rho_p		-0. 497	0. 197		0. 000
0. 462	0. 469	0. 496			
theta_c		0. 271	0. 065		0. 000
0. 438	0. 417	0. 442			
sigma		1. 959	0. 120		0. 000
0. 134	0. 123	0. 078			
phi		5. 610	0. 841		0. 000
0. 629	0. 640	0. 670			
omega		0. 129	0. 063		0. 000
0. 298	0. 277	0. 247			
h_c		0. 282	0. 051		0. 000
0. 453	0. 456	0. 426			
alpha_c		0. 403	0. 030		0. 000
0. 717	0. 724	0. 711			

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
 Done!
 Estimation::marginal density: I'm computing the posterior log marginal density
 (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1125.016071.

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0. 500	0. 2141	0. 0890	0. 3320	beta	0. 2000
rho_a_d	0. 500	0. 5006	0. 1716	0. 8288	beta	0. 2000
rho_mu_c	0. 500	0. 5078	0. 1803	0. 8354	beta	0. 2000
rho_mu_d	0. 500	0. 5013	0. 1737	0. 8343	beta	0. 2000
rho_LTV	0. 500	0. 4912	0. 1703	0. 8257	beta	0. 2000
rho_d	0. 500	0. 5281	0. 2184	0. 8569	beta	0. 2000
rho_d_stern	0. 500	0. 9002	0. 8736	0. 9274	beta	0. 2000
rho_c_ast	0. 500	0. 6391	0. 3407	0. 9288	beta	0. 2000
rho_d_ast	0. 500	0. 5042	0. 1811	0. 8356	beta	0. 2000
rho_s_c	0. 500	0. 3949	0. 2331	0. 5560	beta	0. 2000
rho_r	0. 500	0. 6253	0. 4563	0. 7849	beta	0. 2000
rho_p	-0. 500	-0. 4920	-0. 8182	-0. 1696	norm	0. 2000
theta_c	0. 750	0. 2710	0. 1651	0. 3758	beta	0. 1500

			code. log			
sigma	1.000	1.9558	1.7665	2.1410	norm	0.3700
phi	2.000	5.5760	4.2803	6.8968	gamma	0.7000
omega	0.200	0.1276	0.0304	0.2273	beta	0.1000
h_c	0.500	0.2832	0.1987	0.3653	beta	0.1000
alpha_c	0.500	0.4018	0.3544	0.4520	beta	0.1000

standard deviation of shocks						
	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.3660	2.0753	2.6496	invg	2.0000
epsa_d	0.100	0.1571	0.0204	0.4024	invg	2.0000
epsmu_c	0.100	0.0808	0.0236	0.1440	invg	2.0000
epsmu_d	0.100	0.0680	0.0248	0.1161	invg	2.0000
epsLTV	0.100	0.0760	0.0232	0.1332	invg	2.0000
epsd	0.100	0.0679	0.0231	0.1150	invg	2.0000
epsc_ast	0.100	0.0432	0.0222	0.0649	invg	2.0000
epsd_ast	0.100	0.0875	0.0226	0.1779	invg	2.0000
epsd_stern	0.100	0.5816	0.4319	0.7401	invg	2.0000
epss_c	0.100	1.1792	1.0177	1.3337	invg	2.0000
epsr	0.100	0.7357	0.4064	1.0796	invg	2.0000
epsyf	0.100	0.0812	0.0252	0.1491	invg	2.0000
epsn	0.010	0.8406	0.7362	0.9362	invg	0.1000
epspi_d	0.010	5.6770	5.0097	6.3521	invg	0.1000

Estimation: : mcmc: Forecasted variables (mean)
 Estimation: : mcmc: Forecasted variables (mean), done!
 Estimation: : mcmc: Forecasted variables (point)
 Estimation: : mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1079.3022

 f at the beginning of new iteration, 1079.3021860576
 Predicted improvement: 0.002535841
 lambda = 1; f = 1079.2992971
 Norm of dx 0.00071216

 Improvement on iteration 1 = 0.002888999

 f at the beginning of new iteration, 1079.2992970585
 Predicted improvement: 0.000428652
 lambda = 1; f = 1079.2985664
 lambda = 1.9332; f = 1079.2981145
 lambda = 3.7372; f = 1079.2978727
 Norm of dx 0.00034889

 Improvement on iteration 2 = 0.001424373

 f at the beginning of new iteration, 1079.2978726858
 Predicted improvement: 0.000541151
 lambda = 1; f = 1079.2969862
 lambda = 1.9332; f = 1079.2965091
 Norm of dx 0.00037393

 Improvement on iteration 3 = 0.001363572

 f at the beginning of new iteration, 1079.2965091139
 Predicted improvement: 0.000610117
 lambda = 1; f = 1079.2954988
 lambda = 1.9332; f = 1079.2949330
 Norm of dx 0.00092398

code. log

```
-----
Improvement on iteration 4 =          0.001576111
-----
-----
f at the beginning of new iteration,      1079.2949330029
Predicted improvement:          0.001003794
lambda =          1; f =          1079.2933584
lambda =    1.9332; f =          1079.2926745
Norm of dx  0.0017463
-----
Improvement on iteration 5 =          0.002258519
-----
-----
f at the beginning of new iteration,      1079.2926744835
Predicted improvement:          0.000524929
lambda =          1; f =          1079.2919596
Norm of dx  0.00066553
-----
Improvement on iteration 6 =          0.000714871
-----
-----
f at the beginning of new iteration,      1079.2919596127
Predicted improvement:          0.000177124
lambda =          1; f =          1079.2917264
Norm of dx  0.00029296
-----
Improvement on iteration 7 =          0.000233198
-----
-----
f at the beginning of new iteration,      1079.2917264149
Predicted improvement:          0.000096937
lambda =          1; f =          1079.2915635
lambda =    1.9332; f =          1079.2914679
Norm of dx  0.00026796
-----
Improvement on iteration 8 =          0.000258465
-----
-----
f at the beginning of new iteration,      1079.2914679495
Predicted improvement:          0.000196060
lambda =          1; f =          1079.2911541
lambda =    1.9332; f =          1079.2910020
Norm of dx  0.00065894
-----
Improvement on iteration 9 =          0.000465980
-----
-----
f at the beginning of new iteration,      1079.2910019693
Predicted improvement:          0.000169592
lambda =          1; f =          1079.2907509
lambda =    1.9332; f =          1079.2906735
Norm of dx  0.00058982
-----
Improvement on iteration 10 =         0.000328426
-----
-----
f at the beginning of new iteration,      1079.2906735436
Predicted improvement:          0.000069268
lambda =          1; f =          1079.2905494
lambda =    1.9332; f =          1079.2904591
lambda =    3.7372; f =          1079.2903545
Norm of dx  0.00013896
-----
```

```

                                code.log
Improvement on iteration 11 =      0.000319028
-----
f at the beginning of new iteration,      1079.2903545156
Predicted improvement:      0.000179401
lambda =      1; f =      1079.2900539
lambda =      1.9332; f =      1079.2898793
Norm of dx 0.00074526
-----
Improvement on iteration 12 =      0.000475203
-----
f at the beginning of new iteration,      1079.2898793123
Predicted improvement:      0.000167052
lambda =      1; f =      1079.2896792
Norm of dx 0.0012666
-----
Improvement on iteration 13 =      0.000200078
-----
f at the beginning of new iteration,      1079.2896792343
Predicted improvement:      0.000025919
lambda =      1; f =      1079.2896386
lambda =      1.9332; f =      1079.2896208
Norm of dx 0.0003276
-----
Improvement on iteration 14 =      0.000058386
-----
f at the beginning of new iteration,      1079.2896208486
Predicted improvement:      0.000029922
lambda =      1; f =      1079.2895661
lambda =      1.9332; f =      1079.2895241
lambda =      3.7372; f =      1079.2894679
Norm of dx 0.00019254
-----
Improvement on iteration 15 =      0.000152997
-----
f at the beginning of new iteration,      1079.2894678511
Predicted improvement:      0.000073935
lambda =      1; f =      1079.2893784
Norm of dx 0.00049139
-----
Improvement on iteration 16 =      0.000089477
-----
f at the beginning of new iteration,      1079.2893783744
Predicted improvement:      0.000011575
lambda =      1; f =      1079.2893639
Norm of dx 0.00015462
-----
Improvement on iteration 17 =      0.000014466
-----
f at the beginning of new iteration,      1079.2893639088
Predicted improvement:      0.000003627
lambda =      1; f =      1079.2893583
lambda =      1.9332; f =      1079.2893559
Norm of dx 5.1883e-05
-----
Improvement on iteration 18 =      0.000008038
-----

```

code. log

f at the beginning of new iteration, 1079.2893558706
Predicted improvement: 0.000003031
lambda = 1; f = 1079.2893507
lambda = 1.9332; f = 1079.2893477
Norm of dx 5.2112e-05

Improvement on iteration 19 = 0.000008195

f at the beginning of new iteration, 1079.2893476761
Predicted improvement: 0.000004034
lambda = 1; f = 1079.2893412
lambda = 1.9332; f = 1079.2893384
Norm of dx 8.6648e-05

Improvement on iteration 20 = 0.000009264

f at the beginning of new iteration, 1079.2893384117
Predicted improvement: 0.000004957
lambda = 1; f = 1079.2893292
lambda = 1.9332; f = 1079.2893220
lambda = 3.7372; f = 1079.2893115
lambda = 7.2247; f = 1079.2893045
Norm of dx 0.00011378

Improvement on iteration 21 = 0.000033866

f at the beginning of new iteration, 1079.2893045459
Predicted improvement: 0.000012607
lambda = 1; f = 1079.2892866
lambda = 1.9332; f = 1079.2892828
Norm of dx 0.00016847

Improvement on iteration 22 = 0.000021726

f at the beginning of new iteration, 1079.2892828195
Predicted improvement: 0.000000918
lambda = 1; f = 1079.2892812
lambda = 1.9332; f = 1079.2892803
Norm of dx 4.4327e-05

Improvement on iteration 23 = 0.000002480

f at the beginning of new iteration, 1079.2892803398
Predicted improvement: 0.000002225
lambda = 1; f = 1079.2892767
lambda = 1.9332; f = 1079.2892746
Norm of dx 0.00012115

Improvement on iteration 24 = 0.000005762

f at the beginning of new iteration, 1079.2892745774
Predicted improvement: 0.000006663
lambda = 1; f = 1079.2892630
lambda = 1.9332; f = 1079.2892554
lambda = 3.7372; f = 1079.2892496
Norm of dx 0.00022394

code. log

```
-----
Improvement on iteration 25 =          0.000025004
-----
f at the beginning of new iteration,      1079.2892495737
Predicted improvement:          0.000009451
lambda =          1; f =          1079.2892347
lambda =    1.9332; f =          1079.2892281
Norm of dx 0.00015665
-----
Improvement on iteration 26 =          0.000021432
-----
f at the beginning of new iteration,      1079.2892281421
Predicted improvement:          0.000001909
lambda =          1; f =          1079.2892253
lambda =    1.9332; f =          1079.2892244
Norm of dx 0.00010533
-----
Improvement on iteration 27 =          0.000003699
-----
f at the beginning of new iteration,      1079.2892244431
Predicted improvement:          0.000001253
lambda =          1; f =          1079.2892222
lambda =    1.9332; f =          1079.2892208
lambda =    3.7372; f =          1079.2892196
Norm of dx 3.6439e-05
-----
Improvement on iteration 28 =          0.000004820
-----
f at the beginning of new iteration,      1079.2892196231
Predicted improvement:          0.000000889
lambda =          1; f =          1079.2892179
lambda =    1.9332; f =          1079.2892164
lambda =    3.7372; f =          1079.2892136
lambda =    7.2247; f =          1079.2892092
lambda =   13.967; f =          1079.2892040
Norm of dx 3.3827e-05
-----
Improvement on iteration 29 =          0.000015604
-----
f at the beginning of new iteration,      1079.2892040187
Predicted improvement:          0.000014168
lambda =          1; f =          1079.2891785
lambda =    1.9332; f =          1079.2891601
lambda =    3.7372; f =          1079.2891390
Norm of dx 0.00059357
-----
Improvement on iteration 30 =          0.000064970
-----
f at the beginning of new iteration,      1079.2891390483
Predicted improvement:          0.000020678
lambda =          1; f =          1079.2891122
Norm of dx 0.00096208
-----
Improvement on iteration 31 =          0.000026865
-----
f at the beginning of new iteration,      1079.2891121830
```

```

                                code. log
Predicted improvement:          0.00004481
lambda = 1; f =                1079.2891066
Norm of dx 0.00034046
-----
Improvement on iteration 32 =   0.000005606
-----
f at the beginning of new iteration, 1079.2891065774
Predicted improvement:          0.000001792
lambda = 1; f =                1079.2891035
lambda = 1.9332; f =          1079.2891015
lambda = 3.7372; f =          1079.2891001
Norm of dx 9.9098e-05
-----
Improvement on iteration 33 =   0.000006526
-----
f at the beginning of new iteration, 1079.2891000514
Predicted improvement:          0.000003670
lambda = 1; f =                1079.2890933
lambda = 1.9332; f =          1079.2890879
lambda = 3.7372; f =          1079.2890802
lambda = 7.2247; f =          1079.2890752
Norm of dx 0.00015646
-----
Improvement on iteration 34 =   0.000024850
-----
f at the beginning of new iteration, 1079.2890752010
Predicted improvement:          0.000006611
lambda = 1; f =                1079.2890628
lambda = 1.9332; f =          1079.2890528
lambda = 3.7372; f =          1079.2890378
lambda = 7.2247; f =          1079.2890248
Norm of dx 0.00012718
-----
Improvement on iteration 35 =   0.000050412
-----
f at the beginning of new iteration, 1079.2890247892
Predicted improvement:          0.000017844
lambda = 1; f =                1079.2889981
lambda = 1.9332; f =          1079.2889896
Norm of dx 0.0012915
-----
Improvement on iteration 36 =   0.000035211
-----
f at the beginning of new iteration, 1079.2889895782
Predicted improvement:          0.000000883
lambda = 1; f =                1079.2889883
lambda = 1.9332; f =          1079.2889879
Norm of dx 0.00010376
-----
Improvement on iteration 37 =   0.000001727
-----
f at the beginning of new iteration, 1079.2889878512
Predicted improvement:          0.000000777
lambda = 1; f =                1079.2889866
lambda = 1.9332; f =          1079.2889858
Norm of dx 0.0001833
-----

```

```

                                code.log
Improvement on iteration 38 =      0.000002070
-----
f at the beginning of new iteration,      1079.2889857815
Predicted improvement:      0.000003821
lambda =      1; f =      1079.2889795
lambda =      1.9332; f =      1079.2889761
Norm of dx 0.00029073
-----
Improvement on iteration 39 =      0.000009652
-----
f at the beginning of new iteration,      1079.2889761298
Predicted improvement:      0.000006945
lambda =      1; f =      1079.2889650
lambda =      1.9332; f =      1079.2889595
Norm of dx 0.00027441
-----
Improvement on iteration 40 =      0.000016592
-----
f at the beginning of new iteration,      1079.2889595377
Predicted improvement:      0.000006901
lambda =      1; f =      1079.2889500
Norm of dx 0.00097335
-----
Improvement on iteration 41 =      0.000009520
-----
f at the beginning of new iteration,      1079.2889500175
Predicted improvement:      0.000003554
lambda =      1; f =      1079.2889459
Norm of dx 0.00099207
-----
Improvement on iteration 42 =      0.000004131
-----
f at the beginning of new iteration,      1079.2889458865
Predicted improvement:      0.000000500
lambda =      1; f =      1079.2889450
lambda =      1.9332; f =      1079.2889445
Norm of dx 0.00021063
-----
Improvement on iteration 43 =      0.000001343
-----
f at the beginning of new iteration,      1079.2889445438
Predicted improvement:      0.000001084
lambda =      1; f =      1079.2889426
lambda =      1.9332; f =      1079.2889412
lambda =      3.7372; f =      1079.2889398
Norm of dx 0.0002561
-----
Improvement on iteration 44 =      0.000004709
-----
f at the beginning of new iteration,      1079.2889398346
Predicted improvement:      0.000003544
lambda =      1; f =      1079.2889332
lambda =      1.9332; f =      1079.2889278
lambda =      3.7372; f =      1079.2889197
lambda =      7.2247; f =      1079.2889128
Norm of dx 0.00017899

```


code. log

```
-----
Improvement on iteration 45 =          0.000027064
-----
f at the beginning of new iteration,      1079.2889127702
Predicted improvement:          0.000009737
lambda =          1; f =          1079.2888988
lambda =    1.9332; f =          1079.2888955
Norm of dx 0.00047828
-----
Improvement on iteration 46 =          0.000017315
-----
f at the beginning of new iteration,      1079.2888954549
Predicted improvement:          0.000001752
lambda =          1; f =          1079.2888926
lambda =    1.9332; f =          1079.2888912
Norm of dx 0.00020401
-----
Improvement on iteration 47 =          0.000004233
-----
f at the beginning of new iteration,      1079.2888912217
Predicted improvement:          0.000001776
lambda =          1; f =          1079.2888896
Norm of dx 0.0005207
-----
Improvement on iteration 48 =          0.000001628
-----
f at the beginning of new iteration,      1079.2888895941
Predicted improvement:          0.000000439
lambda =          1; f =          1079.2888889
lambda =    1.9332; f =          1079.2888888
Norm of dx 0.0001345
-----
Improvement on iteration 49 =          0.000000837
-----
f at the beginning of new iteration,      1079.2888887574
Predicted improvement:          0.000000288
lambda =          1; f =          1079.2888882
lambda =    1.9332; f =          1079.2888878
lambda =    3.7372; f =          1079.2888869
lambda =    7.2247; f =          1079.2888856
lambda =   13.967; f =          1079.2888839
Norm of dx 3.5346e-05
-----
Improvement on iteration 50 =          0.000004815
-----
f at the beginning of new iteration,      1079.2888839429
Predicted improvement:          0.000003994
lambda =          1; f =          1079.2888769
lambda =    1.9332; f =          1079.2888719
lambda =    3.7372; f =          1079.2888669
Norm of dx 0.00029681
-----
Improvement on iteration 51 =          0.000016996
-----
f at the beginning of new iteration,      1079.2888669468
Predicted improvement:          0.000003155
```

```

                                code.log
lambda =          1; f =          1079.2888631
Norm of dx 0.00025714
-----
Improvement on iteration 52 =          0.000003843
-----
f at the beginning of new iteration,          1079.2888631043
Predicted improvement:          0.000000432
lambda =          1; f =          1079.2888625
Norm of dx 0.0001538
-----
Improvement on iteration 53 =          0.000000570
-----
f at the beginning of new iteration,          1079.2888625348
Predicted improvement:          0.000000258
lambda =          1; f =          1079.2888621
lambda =          1.9332; f =          1079.2888619
Norm of dx 5.8839e-05
-----
Improvement on iteration 54 =          0.000000643
-----
f at the beginning of new iteration,          1079.2888618917
Predicted improvement:          0.000000944
lambda =          1; f =          1079.2888605
lambda =          1.9332; f =          1079.2888598
Norm of dx 0.00021631
-----
Improvement on iteration 55 =          0.000002042
-----
f at the beginning of new iteration,          1079.2888598498
Predicted improvement:          0.000001972
lambda =          1; f =          1079.2888563
lambda =          1.9332; f =          1079.2888535
lambda =          3.7372; f =          1079.2888495
lambda =          7.2247; f =          1079.2888472
Norm of dx 0.00012052
-----
Improvement on iteration 56 =          0.000012697
-----
f at the beginning of new iteration,          1079.2888471527
Predicted improvement:          0.000002399
lambda =          1; f =          1079.2888434
lambda =          1.9332; f =          1079.2888423
Norm of dx 0.00046089
-----
Improvement on iteration 57 =          0.000004849
-----
f at the beginning of new iteration,          1079.2888423042
Predicted improvement:          0.000000948
lambda =          1; f =          1079.2888405
lambda =          1.9332; f =          1079.2888392
lambda =          3.7372; f =          1079.2888380
Norm of dx 0.00025636
-----
Improvement on iteration 58 =          0.000004305
-----
f at the beginning of new iteration,          1079.2888379993

```

```

                                code. log
Predicted improvement:          0.00000986
lambda =          1; f =      1079.2888363
lambda =      1.9332; f =      1079.2888353
Norm of dx 0.00037726
-----
Improvement on iteration 59 =          0.000002650
-----
f at the beginning of new iteration,          1079.2888353495
Predicted improvement:          0.000003364
lambda =          1; f =      1079.2888317
Norm of dx 0.0010456
-----
Improvement on iteration 60 =          0.000003619
-----
f at the beginning of new iteration,          1079.2888317301
Predicted improvement:          0.000004446
lambda =          1; f =      1079.2888234
lambda =      1.9332; f =      1079.2888168
lambda =      3.7372; f =      1079.2888072
lambda =      7.2247; f =      1079.2888004
Norm of dx 0.00027673
-----
Improvement on iteration 61 =          0.000031339
-----
f at the beginning of new iteration,          1079.2888003906
Predicted improvement:          0.000013078
lambda =          1; f =      1079.2887800
lambda =      1.9332; f =      1079.2887715
Norm of dx 0.00084807
-----
Improvement on iteration 62 =          0.000028861
-----
f at the beginning of new iteration,          1079.2887715295
Predicted improvement:          0.000002739
lambda =          1; f =      1079.2887675
lambda =      1.9332; f =      1079.2887664
Norm of dx 0.00032303
-----
Improvement on iteration 63 =          0.000005126
-----
f at the beginning of new iteration,          1079.2887664036
Predicted improvement:          0.000000992
lambda =          1; f =      1079.2887649
lambda =      1.9332; f =      1079.2887645
Norm of dx 0.00024847
-----
Improvement on iteration 64 =          0.000001932
-----
f at the beginning of new iteration,          1079.2887644711
Predicted improvement:          0.000000246
lambda =          1; f =      1079.2887641
Norm of dx 0.00035831
-----
Improvement on iteration 65 =          0.000000332
-----
f at the beginning of new iteration,          1079.2887641387

```

```

                                code. log
Predicted improvement:          0.00000113
lambda =          1; f =          1079.2887639
lambda =          1.9332; f =          1079.2887638
lambda =          3.7372; f =          1079.2887638
Norm of dx 0.00013368
-----
Improvement on iteration 66 =          0.000000356
-----
f at the beginning of new iteration,          1079.2887637831
Predicted improvement:          0.000000259
lambda =          1; f =          1079.2887634
lambda =          1.9332; f =          1079.2887631
Norm of dx 0.00018557
-----
Improvement on iteration 67 =          0.000000677
-----
f at the beginning of new iteration,          1079.2887631060
Predicted improvement:          0.000001391
lambda =          1; f =          1079.2887615
Norm of dx 0.00026873
-----
Improvement on iteration 68 =          0.000001573
-----
f at the beginning of new iteration,          1079.2887615334
Predicted improvement:          0.000001737
lambda =          1; f =          1079.2887583
lambda =          1.9332; f =          1079.2887555
lambda =          3.7372; f =          1079.2887512
lambda =          7.2247; f =          1079.2887460
Norm of dx 0.00016549
-----
Improvement on iteration 69 =          0.000015509
-----
f at the beginning of new iteration,          1079.2887460244
Predicted improvement:          0.000011052
lambda =          1; f =          1079.2887271
lambda =          1.9332; f =          1079.2887162
Norm of dx 0.0011262
-----
Improvement on iteration 70 =          0.000029788
-----
f at the beginning of new iteration,          1079.2887162364
Predicted improvement:          0.000007391
lambda =          1; f =          1079.2887079
Norm of dx 0.0013709
-----
Improvement on iteration 71 =          0.000008324
-----
f at the beginning of new iteration,          1079.2887079124
Predicted improvement:          0.000000238
lambda =          1; f =          1079.2887075
lambda =          1.9332; f =          1079.2887073
Norm of dx 0.00025101
-----
Improvement on iteration 72 =          0.000000566
-----

```

code. log
 f at the beginning of new iteration, 1079.2887073465
 Predicted improvement: 0.00000087
 lambda = 1; f = 1079.2887072
 Norm of dx 8.5604e-05

 Improvement on iteration 73 = 0.000000122

f at the beginning of new iteration, 1079.2887072245
 Predicted improvement: 0.000000034
 lambda = 1; f = 1079.2887072
 lambda = 1.9332; f = 1079.2887072
 Norm of dx 3.6887e-05

 Improvement on iteration 74 = 0.000000054
 improvement < crit termination

Final value of minus the log posterior (or likelihood): 1079.288707

RESULTS FROM POSTERIOR ESTIMATION
 parameters

	prior mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2082	0.0773	beta	0.2000
rho_a_d	0.500	0.5000	0.2774	beta	0.2000
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000
rho_mu_d	0.500	0.5000	0.2774	beta	0.2000
rho_LTV	0.500	0.4953	0.2749	beta	0.2000
rho_d	0.500	0.5125	0.2766	beta	0.2000
rho_d_stern	0.500	0.9015	0.0158	beta	0.2000
rho_c_ast	0.500	0.6515	0.2449	beta	0.2000
rho_d_ast	0.500	0.5000	0.2774	beta	0.2000
rho_s_c	0.500	0.3947	0.0962	beta	0.2000
rho_r	0.500	0.6752	0.0925	beta	0.2000
rho_p	-0.500	-0.4977	0.2000	norm	0.2000
theta_c	0.750	0.2824	0.0692	beta	0.1500
sigma	1.000	1.9209	0.1099	norm	0.3700
phi	2.000	5.4288	0.8179	gamm	0.7000
omega	0.200	0.0979	0.0621	beta	0.1000
h_c	0.500	0.2907	0.0516	beta	0.1000
alpha_c	0.500	0.4032	0.0292	beta	0.1000

standard deviation of shocks

	prior mean	mode	s. d.	prior	pstdev
epsa_c	0.100	2.3332	0.1666	invg	2.0000
epsa_d	0.100	0.0462	0.0189	invg	2.0000
epsmu_c	0.100	0.0461	0.0188	invg	2.0000
epsmu_d	0.100	0.0461	0.0188	invg	2.0000
epsLTV	0.100	0.0461	0.0188	invg	2.0000
epsd	0.100	0.0457	0.0183	invg	2.0000
eps_c_ast	0.100	0.0373	0.0113	invg	2.0000
epsd_ast	0.100	0.0461	0.0188	invg	2.0000
epsd_stern	0.100	0.5975	0.0988	invg	2.0000
epss_c	0.100	1.1531	0.0932	invg	2.0000
epsr	0.100	0.6254	0.1834	invg	2.0000
epsyf	0.100	0.0459	0.0185	invg	2.0000
epsn	0.010	0.8268	0.0605	invg	0.1000
eps_pi_d	0.010	5.5811	0.3900	invg	0.1000

Log data density [Laplace approximation] is -1133.727911.

code.log

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_106/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.
 Estimation::mcmc: Total number of iterations: 200000.
 Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.1788%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi 2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val	No Taper	p-val	4%
Taper p-val	8% Taper p-val	15% Taper				
SE_epsa_c	2.365	0.176		0.080		
0.850	0.828					
SE_epsa_d	0.087	0.055		0.000		
0.001	0.003					
SE_epsmu_c	0.081	0.049		0.000		
0.656	0.732					
SE_epsmu_d	0.079	0.054		0.093		
0.938	0.943					
SE_epsLTV	0.096	0.079		0.000		
0.066	0.176					
SE_epsd	0.075	0.045		0.000		
0.010	0.008					
SE_epsc_ast	0.043	0.015		0.000		
0.429	0.411					
SE_epsd_ast	0.094	0.073		0.000		
0.053	0.150					
SE_epsd_stern	0.572	0.096		0.000		
0.240	0.238					
SE_epss_c	1.175	0.097		0.000		
0.565	0.588					
SE_epsr	0.749	0.238		0.000		
0.049	0.049					
SE_epsyf	0.078	0.043		0.000		
0.001	0.013					
SE_epsn	0.841	0.062		0.817		
0.984	0.984					
SE_epspi_d	5.693	0.419		0.000		
0.026	0.030					
rho_a_c	0.219	0.076		0.000		
0.576	0.585					
rho_a_d	0.498	0.199		0.347		
0.904	0.896					
rho_mu_c	0.505	0.200		0.000		
0.038	0.035					
rho_mu_d	0.492	0.201		0.072		
0.827	0.776					
rho_LTV	0.497	0.198		0.000		
0.002	0.002					
rho_d	0.523	0.197		0.007		
0.749	0.687					
rho_d_stern	0.901	0.016		0.000		
0.046	0.057					
rho_c_ast	0.639	0.187		0.000		
0.185	0.121					

			code. log	
rho_d_ast		0.496	0.199	0.000
0.057	0.048	0.048		
rho_s_c		0.399	0.095	0.000
0.245	0.253	0.201		
rho_r		0.617	0.115	0.000
0.079	0.070	0.060		
rho_p		-0.497	0.199	0.000
0.523	0.515	0.445		
theta_c		0.276	0.066	0.742
0.977	0.977	0.976		
sigma		1.963	0.118	0.000
0.122	0.135	0.110		
phi		5.551	0.828	0.128
0.888	0.883	0.877		
omega		0.123	0.061	0.000
0.681	0.686	0.698		
h_c		0.283	0.049	0.002
0.764	0.762	0.706		
alpha_c		0.402	0.029	0.000
0.430	0.408	0.379		

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
 Done!
 Estimation::marginal density: I'm computing the posterior log marginal density
 (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1132.428596.

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2166	0.0896	0.3373	beta	0.2000
rho_a_d	0.500	0.4979	0.1675	0.8174	beta	0.2000
rho_mu_c	0.500	0.5087	0.1663	0.8235	beta	0.2000
rho_mu_d	0.500	0.4933	0.1513	0.8155	beta	0.2000
rho_LTV	0.500	0.4917	0.1766	0.8232	beta	0.2000
rho_d	0.500	0.5225	0.2109	0.8602	beta	0.2000
rho_d_stern	0.500	0.9003	0.8743	0.9272	beta	0.2000
rho_c_ast	0.500	0.6401	0.3521	0.9471	beta	0.2000
rho_d_ast	0.500	0.5069	0.1863	0.8437	beta	0.2000
rho_s_c	0.500	0.3933	0.2467	0.5517	beta	0.2000
rho_r	0.500	0.6219	0.4565	0.7900	beta	0.2000
rho_p	-0.500	-0.4985	-0.8286	-0.1778	norm	0.2000
theta_c	0.750	0.2736	0.1659	0.3823	beta	0.1500
sigma	1.000	1.9633	1.7757	2.1458	norm	0.3700
phi	2.000	5.5380	4.1836	6.8350	gamma	0.7000
omega	0.200	0.1212	0.0279	0.2147	beta	0.1000
h_c	0.500	0.2830	0.2037	0.3602	beta	0.1000
alpha_c	0.500	0.4022	0.3528	0.4477	beta	0.1000

standard deviation of shocks	prior mean	post. mean	90% HPD interval		prior	pstdev
------------------------------	------------	------------	------------------	--	-------	--------

			code.	log		
epsa_c	0.100	2.3532	2.0662	2.6248	inv	2.0000
epsa_d	0.100	0.0880	0.0245	0.1669	inv	2.0000
epsmu_c	0.100	0.0860	0.0237	0.1550	inv	2.0000
epsmu_d	0.100	0.0748	0.0250	0.1318	inv	2.0000
epsLTV	0.100	0.0951	0.0240	0.1988	inv	2.0000
epsd	0.100	0.0685	0.0243	0.1151	inv	2.0000
epsc_ast	0.100	0.0433	0.0227	0.0638	inv	2.0000
epsd_ast	0.100	0.0996	0.0232	0.1987	inv	2.0000
epsd_stern	0.100	0.5748	0.4152	0.7305	inv	2.0000
epss_c	0.100	1.1782	1.0216	1.3419	inv	2.0000
epsr	0.100	0.7382	0.4129	1.0876	inv	2.0000
epsyf	0.100	0.0779	0.0244	0.1455	inv	2.0000
epsn	0.010	0.8417	0.7426	0.9442	inv	0.1000
epspi_d	0.010	5.6924	5.0201	6.3213	inv	0.1000

Estimation: : mcmc: Forecasted variables (mean)
Estimation: : mcmc: Forecasted variables (mean), done!
Estimation: : mcmc: Forecasted variables (point)
Estimation: : mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1086.9312

f at the beginning of new iteration, 1086.9312443716
Predicted improvement: 0.002327067
lambda = 1; f = 1086.9287750
Norm of dx 0.00068221

Improvement on iteration 1 = 0.002469347

f at the beginning of new iteration, 1086.9287750245
Predicted improvement: 0.000244293
lambda = 1; f = 1086.9283387
lambda = 1.9332; f = 1086.9280259
lambda = 3.7372; f = 1086.9276802
Norm of dx 0.00024355

Improvement on iteration 2 = 0.001094842

f at the beginning of new iteration, 1086.9276801823
Predicted improvement: 0.000327649
lambda = 1; f = 1086.9271726
lambda = 1.9332; f = 1086.9269636
Norm of dx 0.00052133

Improvement on iteration 3 = 0.000716563

f at the beginning of new iteration, 1086.9269636195
Predicted improvement: 0.000283211
lambda = 1; f = 1086.9264553
lambda = 1.9332; f = 1086.9260842
lambda = 3.7372; f = 1086.9256498
Norm of dx 0.00048902

Improvement on iteration 4 = 0.001313833

f at the beginning of new iteration, 1086.9256497866
Predicted improvement: 0.000462568
lambda = 1; f = 1086.9250102
Norm of dx 0.00095318

code. log

```
-----
Improvement on iteration 5 =          0.000639552
-----
f at the beginning of new iteration,      1086.9250102343
Predicted improvement:          0.000212296
lambda =          1; f =          1086.9247185
Norm of dx 0.00060802
-----
Improvement on iteration 6 =          0.000291732
-----
f at the beginning of new iteration,      1086.9247185021
Predicted improvement:          0.000150627
lambda =          1; f =          1086.9244751
lambda =          1.9332; f =          1086.9243534
Norm of dx 0.00052989
-----
Improvement on iteration 7 =          0.000365124
-----
f at the beginning of new iteration,      1086.9243533780
Predicted improvement:          0.000195438
lambda =          1; f =          1086.9240315
lambda =          1.9332; f =          1086.9238556
Norm of dx 0.00062434
-----
Improvement on iteration 8 =          0.000497756
-----
f at the beginning of new iteration,      1086.9238556224
Predicted improvement:          0.000169680
lambda =          1; f =          1086.9236332
Norm of dx 0.0004972
-----
Improvement on iteration 9 =          0.000222394
-----
f at the beginning of new iteration,      1086.9236332280
Predicted improvement:          0.000068695
lambda =          1; f =          1086.9235274
lambda =          1.9332; f =          1086.9234844
Norm of dx 0.00025337
-----
Improvement on iteration 10 =         0.000148829
-----
f at the beginning of new iteration,      1086.9234843986
Predicted improvement:          0.000073099
lambda =          1; f =          1086.9233503
lambda =          1.9332; f =          1086.9232469
lambda =          3.7372; f =          1086.9231062
Norm of dx 0.00028405
-----
Improvement on iteration 11 =         0.000378172
-----
f at the beginning of new iteration,      1086.9231062270
Predicted improvement:          0.000146407
lambda =          1; f =          1086.9229358
Norm of dx 0.00085869
-----
Improvement on iteration 12 =         0.000170428
```

code. log

f at the beginning of new iteration, 1086.9229357993
Predicted improvement: 0.000017437
lambda = 1; f = 1086.9229076
lambda = 1.9332; f = 1086.9228936
Norm of dx 0.00018398

Improvement on iteration 13 = 0.000042169

f at the beginning of new iteration, 1086.9228936298
Predicted improvement: 0.000026341
lambda = 1; f = 1086.9228447
lambda = 1.9332; f = 1086.9228061
lambda = 3.7372; f = 1086.9227509
lambda = 7.2247; f = 1086.9227165
Norm of dx 0.00021607

Improvement on iteration 14 = 0.000177174

f at the beginning of new iteration, 1086.9227164557
Predicted improvement: 0.000098883
lambda = 1; f = 1086.9225517
lambda = 1.9332; f = 1086.9224572
Norm of dx 0.00037117

Improvement on iteration 15 = 0.000259245

f at the beginning of new iteration, 1086.9224572103
Predicted improvement: 0.000054580
lambda = 1; f = 1086.9223932
Norm of dx 0.00068608

Improvement on iteration 16 = 0.000064037

f at the beginning of new iteration, 1086.9223931736
Predicted improvement: 0.000011509
lambda = 1; f = 1086.9223741
lambda = 1.9332; f = 1086.9223632
Norm of dx 0.00021027

Improvement on iteration 17 = 0.000029940

f at the beginning of new iteration, 1086.9223632333
Predicted improvement: 0.000016666
lambda = 1; f = 1086.9223382
lambda = 1.9332; f = 1086.9223298
Norm of dx 0.00019154

Improvement on iteration 18 = 0.000033438

f at the beginning of new iteration, 1086.9223297957
Predicted improvement: 0.000010536
lambda = 1; f = 1086.9223101
lambda = 1.9332; f = 1086.9222943
lambda = 3.7372; f = 1086.9222709
lambda = 7.2247; f = 1086.9222521

Norm of dx 8.8636e-05

Improvement on iteration 19 = 0.000077677

f at the beginning of new iteration, 1086.9222521185
Predicted improvement: 0.000044242
lambda = 1; f = 1086.9221690
lambda = 1.9332; f = 1086.9221012
lambda = 3.7372; f = 1086.9219970
lambda = 7.2247; f = 1086.9218958
Norm of dx 0.00045344

Improvement on iteration 20 = 0.000356333

f at the beginning of new iteration, 1086.9218957855
Predicted improvement: 0.000014945
lambda = 1; f = 1086.9218786
Norm of dx 0.00073598

Improvement on iteration 21 = 0.000017214

f at the beginning of new iteration, 1086.9218785718
Predicted improvement: 0.000003268
lambda = 1; f = 1086.9218727
lambda = 1.9332; f = 1086.9218682
lambda = 3.7372; f = 1086.9218625
Norm of dx 0.00016961

Improvement on iteration 22 = 0.000016059

f at the beginning of new iteration, 1086.9218625129
Predicted improvement: 0.000015309
lambda = 1; f = 1086.9218354
lambda = 1.9332; f = 1086.9218164
lambda = 3.7372; f = 1086.9217963
Norm of dx 0.0003812

Improvement on iteration 23 = 0.000066173

f at the beginning of new iteration, 1086.9217963403
Predicted improvement: 0.000031011
lambda = 1; f = 1086.9217479
lambda = 1.9332; f = 1086.9217267
Norm of dx 0.0003892

Improvement on iteration 24 = 0.000069613

f at the beginning of new iteration, 1086.9217267271
Predicted improvement: 0.000010580
lambda = 1; f = 1086.9217107
lambda = 1.9332; f = 1086.9217053
Norm of dx 0.00027425

Improvement on iteration 25 = 0.000021432

f at the beginning of new iteration, 1086.9217052953

```

code. log
Predicted improvement:      0.00005813
lambda =      1; f =      1086.9216956
lambda =      1.9332; f =      1086.9216902
Norm of dx 0.00020097
-----
Improvement on iteration 26 =      0.000015066
-----
f at the beginning of new iteration,      1086.9216902288
Predicted improvement:      0.000004008
lambda =      1; f =      1086.9216842
lambda =      1.9332; f =      1086.9216824
Norm of dx 0.0002985
-----
Improvement on iteration 27 =      0.000007842
-----
f at the beginning of new iteration,      1086.9216823871
Predicted improvement:      0.000003613
lambda =      1; f =      1086.9216753
lambda =      1.9332; f =      1086.9216688
lambda =      3.7372; f =      1086.9216570
lambda =      7.2247; f =      1086.9216363
lambda =      13.967; f =      1086.9216046
lambda =      27; f =      1086.9215740
Norm of dx 7.3381e-05
-----
Improvement on iteration 28 =      0.000108349
-----
f at the beginning of new iteration,      1086.9215740382
Predicted improvement:      0.000009325
lambda =      1; f =      1086.9215627
Norm of dx 0.00030617
-----
Improvement on iteration 29 =      0.000011350
-----
f at the beginning of new iteration,      1086.9215626879
Predicted improvement:      0.000002103
lambda =      1; f =      1086.9215590
lambda =      1.9332; f =      1086.9215565
lambda =      3.7372; f =      1086.9215544
Norm of dx 8.5822e-05
-----
Improvement on iteration 30 =      0.000008331
-----
f at the beginning of new iteration,      1086.9215543570
Predicted improvement:      0.000005431
lambda =      1; f =      1086.9215442
lambda =      1.9332; f =      1086.9215356
lambda =      3.7372; f =      1086.9215218
lambda =      7.2247; f =      1086.9215050
Norm of dx 0.00016744
-----
Improvement on iteration 31 =      0.000049376
-----
f at the beginning of new iteration,      1086.9215049806
Predicted improvement:      0.000019918
lambda =      1; f =      1086.9214719
lambda =      1.9332; f =      1086.9214536

```

Norm of dx 0.00059391

Improvement on iteration 32 = 0.000051411

f at the beginning of new iteration, 1086.9214535698
Predicted improvement: 0.000037968
lambda = 1; f = 1086.9213893
lambda = 1.9332; f = 1086.9213500
lambda = 3.7372; f = 1086.9213304
Norm of dx 0.0012226

Improvement on iteration 33 = 0.000123168

f at the beginning of new iteration, 1086.9213304018
Predicted improvement: 0.000048231
lambda = 1; f = 1086.9212581
lambda = 1.9332; f = 1086.9212342
Norm of dx 0.00034651

Improvement on iteration 34 = 0.000096172

f at the beginning of new iteration, 1086.9212342297
Predicted improvement: 0.000003522
lambda = 1; f = 1086.9212292
lambda = 1.9332; f = 1086.9212277
Norm of dx 0.00053655

Improvement on iteration 35 = 0.000006512

f at the beginning of new iteration, 1086.9212277176
Predicted improvement: 0.000003009
lambda = 1; f = 1086.9212218
lambda = 1.9332; f = 1086.9212165
lambda = 3.7372; f = 1086.9212067
lambda = 7.2247; f = 1086.9211895
lambda = 13.967; f = 1086.9211628
lambda = 27; f = 1086.9211358
Norm of dx 3.4373e-05

Improvement on iteration 36 = 0.000091953

f at the beginning of new iteration, 1086.9211357650
Predicted improvement: 0.000023064
lambda = 1; f = 1086.9211064
Norm of dx 0.0017361

Improvement on iteration 37 = 0.000029392

f at the beginning of new iteration, 1086.9211063731
Predicted improvement: 0.000003006
lambda = 1; f = 1086.9211027
Norm of dx 0.00074303

Improvement on iteration 38 = 0.000003697

f at the beginning of new iteration, 1086.9211026765
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```

                                code. log
Predicted improvement:          0.00000646
lambda =          1; f =      1086.9211014
lambda =    1.9332; f =      1086.9211005
lambda =    3.7372; f =      1086.9210993
lambda =    7.2247; f =      1086.9210990
Norm of dx 0.00015646
-----
Improvement on iteration 39 =          0.000003683
-----
f at the beginning of new iteration,      1086.9210989939
Predicted improvement:          0.000003186
lambda =          1; f =      1086.9210932
lambda =    1.9332; f =      1086.9210886
lambda =    3.7372; f =      1086.9210822
lambda =    7.2247; f =      1086.9210785
Norm of dx 0.00022858
-----
Improvement on iteration 40 =          0.000020451
-----
f at the beginning of new iteration,      1086.9210785432
Predicted improvement:          0.000011604
lambda =          1; f =      1086.9210604
lambda =    1.9332; f =      1086.9210518
Norm of dx 0.00087342
-----
Improvement on iteration 41 =          0.000026721
-----
f at the beginning of new iteration,      1086.9210518222
Predicted improvement:          0.000002118
lambda =          1; f =      1086.9210492
Norm of dx 0.0002638
-----
Improvement on iteration 42 =          0.000002638
-----
f at the beginning of new iteration,      1086.9210491841
Predicted improvement:          0.000000415
lambda =          1; f =      1086.9210486
lambda =    1.9332; f =      1086.9210483
Norm of dx 6.4998e-05
-----
Improvement on iteration 43 =          0.000000855
-----
f at the beginning of new iteration,      1086.9210483289
Predicted improvement:          0.000000214
lambda =          1; f =      1086.9210481
Norm of dx 6.3049e-05
-----
Improvement on iteration 44 =          0.000000269
-----
f at the beginning of new iteration,      1086.9210480598
Predicted improvement:          0.000000163
lambda =          1; f =      1086.9210479
Norm of dx 6.4926e-05
-----
Improvement on iteration 45 =          0.000000167
-----

```

code.log
f at the beginning of new iteration, 1086.9210478924
Predicted improvement: 0.00000074
lambda = 1; f = 1086.9210478
lambda = 1.9332; f = 1086.9210476
lambda = 3.7372; f = 1086.9210474
lambda = 7.2247; f = 1086.9210472
Norm of dx 2.8736e-05

Improvement on iteration 46 = 0.000000685

f at the beginning of new iteration, 1086.9210472076
Predicted improvement: 0.000000790
lambda = 1; f = 1086.9210458
lambda = 1.9332; f = 1086.9210446
lambda = 3.7372; f = 1086.9210429
lambda = 7.2247; f = 1086.9210416
Norm of dx 0.0001162

Improvement on iteration 47 = 0.000005627

f at the beginning of new iteration, 1086.9210415808
Predicted improvement: 0.000004361
lambda = 1; f = 1086.9210335
lambda = 1.9332; f = 1086.9210271
lambda = 3.7372; f = 1086.9210179
lambda = 7.2247; f = 1086.9210120
Norm of dx 0.00038529

Improvement on iteration 48 = 0.000029571

f at the beginning of new iteration, 1086.9210120099
Predicted improvement: 0.000001491
lambda = 1; f = 1086.9210101
Norm of dx 0.00018359

Improvement on iteration 49 = 0.000001888

f at the beginning of new iteration, 1086.9210101221
Predicted improvement: 0.000000800
lambda = 1; f = 1086.9210101
lambda = 0.33333; f = 1086.9210099
Norm of dx 0.00031621

Improvement on iteration 50 = 0.000000227

f at the beginning of new iteration, 1086.9210098950
Predicted improvement: 0.000000399
lambda = 1; f = 1086.9210092
lambda = 1.9332; f = 1086.9210089
Norm of dx 6.0111e-05

Improvement on iteration 51 = 0.000001005

f at the beginning of new iteration, 1086.9210088896
Predicted improvement: 0.000000949
lambda = 1; f = 1086.9210071
lambda = 1.9332; f = 1086.9210057

```

                                code. log
lambda =      3.7372; f =      1086.9210037
lambda =      7.2247; f =      1086.9210022
Norm of dx 0.00010521
-----
Improvement on iteration 52 =      0.000006692
-----
f at the beginning of new iteration,      1086.9210021978
Predicted improvement:      0.000004724
lambda =      1; f =      1086.9209934
lambda =      1.9332; f =      1086.9209866
lambda =      3.7372; f =      1086.9209770
lambda =      7.2247; f =      1086.9209721
Norm of dx 0.00040852
-----
Improvement on iteration 53 =      0.000030138
-----
f at the beginning of new iteration,      1086.9209720595
Predicted improvement:      0.000004070
lambda =      1; f =      1086.9209666
Norm of dx 0.00032107
-----
Improvement on iteration 54 =      0.000005440
-----
f at the beginning of new iteration,      1086.9209666193
Predicted improvement:      0.000002093
lambda =      1; f =      1086.9209638
Norm of dx 0.00045983
-----
Improvement on iteration 55 =      0.000002828
-----
f at the beginning of new iteration,      1086.9209637918
Predicted improvement:      0.000000909
lambda =      1; f =      1086.9209628
Norm of dx 0.00011397
-----
Improvement on iteration 56 =      0.000000985
-----
f at the beginning of new iteration,      1086.9209628067
Predicted improvement:      0.000000341
lambda =      1; f =      1086.9209623
lambda =      1.9332; f =      1086.9209622
Norm of dx 0.00016814
-----
Improvement on iteration 57 =      0.000000618
-----
f at the beginning of new iteration,      1086.9209621884
Predicted improvement:      0.000000160
lambda =      1; f =      1086.9209619
lambda =      1.9332; f =      1086.9209618
Norm of dx 2.3146e-05
-----
Improvement on iteration 58 =      0.000000339
-----
f at the beginning of new iteration,      1086.9209618490
Predicted improvement:      0.000000222
lambda =      1; f =      1086.9209618

```



```

                                code.log
lambda = 0.33333; f = 1086.9209618
lambda = 0.11111; f = 1086.9209618
Norm of dx 0.00016755

```

```

----
Improvement on iteration 59 = 0.000000043
improvement < crit termination

```

Final value of minus the log posterior (or likelihood): 1086.920962

RESULTS FROM POSTERIOR ESTIMATION

parameters	prior mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2108	0.0772	beta	0.2000
rho_a_d	0.500	0.5000	0.2774	beta	0.2000
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000
rho_mu_d	0.500	0.5000	0.2774	beta	0.2000
rho_LTV	0.500	0.4952	0.2750	beta	0.2000
rho_d	0.500	0.5126	0.2765	beta	0.2000
rho_d_stern	0.500	0.9020	0.0156	beta	0.2000
rho_c_ast	0.500	0.6523	0.2446	beta	0.2000
rho_d_ast	0.500	0.5000	0.2773	beta	0.2000
rho_s_c	0.500	0.3967	0.0951	beta	0.2000
rho_r	0.500	0.6744	0.0926	beta	0.2000
rho_p	-0.500	-0.4978	0.2000	norm	0.2000
theta_c	0.750	0.2814	0.0692	beta	0.1500
sigma	1.000	1.9180	0.1088	norm	0.3700
phi	2.000	5.4421	0.8178	gamma	0.7000
omega	0.200	0.0980	0.0621	beta	0.1000
h_c	0.500	0.2910	0.0515	beta	0.1000
alpha_c	0.500	0.4034	0.0291	beta	0.1000

standard deviation of shocks	prior mean	mode	s. d.	prior	pstdev
epsa_c	0.100	2.3249	0.1653	invg	2.0000
epsa_d	0.100	0.0462	0.0189	invg	2.0000
epsmu_c	0.100	0.0461	0.0188	invg	2.0000
epsmu_d	0.100	0.0461	0.0188	invg	2.0000
epsLTV	0.100	0.0461	0.0188	invg	2.0000
epsd	0.100	0.0457	0.0183	invg	2.0000
epsc_ast	0.100	0.0372	0.0112	invg	2.0000
epsd_ast	0.100	0.0461	0.0188	invg	2.0000
epsd_stern	0.100	0.5975	0.0981	invg	2.0000
epss_c	0.100	1.1478	0.0923	invg	2.0000
epsr	0.100	0.6261	0.1833	invg	2.0000
epsyf	0.100	0.0458	0.0185	invg	2.0000
epsn	0.010	0.8230	0.0599	invg	0.1000
epspi_d	0.010	5.5616	0.3866	invg	0.1000

Log data density [Laplace approximation] is -1141.457843.

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_107/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.

code.log

Estimation::mcmc: Total number of iterations: 200000.
Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.0238%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val No Taper	p-val 4%
Taper				
SE_epsa_c	2.361	0.166	0.000	
0.209	0.191			
SE_epsa_d	0.071	0.036	0.000	
0.392	0.389			
SE_epsmu_c	0.087	0.065	0.000	
0.591	0.647			
SE_epsmu_d	0.084	0.058	0.000	
0.175	0.274			
SE_epsLTV	0.076	0.042	0.000	
0.523	0.593			
SE_epsd	0.076	0.045	0.000	
0.709	0.779			
SE_epsc_ast	0.043	0.014	0.000	
0.689	0.667			
SE_epsd_ast	0.091	0.070	0.000	
0.000	0.017			
SE_epsd_stern	0.577	0.094	0.000	
0.205	0.241			
SE_epss_c	1.169	0.095	0.000	
0.266	0.206			
SE_epsr	0.730	0.229	0.000	
0.800	0.750			
SE_epsyf	0.087	0.065	0.000	
0.669	0.768			
SE_epsn	0.835	0.061	0.000	
0.147	0.133			
SE_epspi_d	5.646	0.389	0.000	
0.143	0.119			
rho_a_c	0.217	0.074	0.213	
0.907	0.899			
rho_a_d	0.507	0.200	0.000	
0.127	0.131			
rho_mu_c	0.498	0.199	0.002	
0.721	0.764			
rho_mu_d	0.502	0.198	0.000	
0.103	0.100			
rho_LTV	0.494	0.200	0.000	
0.360	0.412			
rho_d	0.526	0.198	0.000	
0.487	0.495			
rho_d_stern	0.902	0.016	0.000	
0.089	0.053			
rho_c_ast	0.641	0.183	0.073	
0.831	0.827			
rho_d_ast	0.499	0.204	0.824	
0.981	0.982			
rho_s_c	0.400	0.092	0.791	
0.981	0.974			
rho_r	0.625	0.112	0.000	
0.700	0.646			
rho_p	-0.491	0.197	0.000	
0.108	0.045			
theta_c	0.274	0.066	0.003	
0.798	0.801			

			code. log	
sigma		1.961		0.000
0.399	0.455	0.491	0.114	0.000
phi		5.641		0.000
0.746	0.752	0.768	0.842	0.000
omega		0.124		0.000
0.207	0.198	0.175	0.061	0.000
h_c		0.283		0.000
0.188	0.155	0.139	0.050	0.000
alpha_c		0.402		0.000
0.567	0.556	0.552	0.029	0.000

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance... Done!

Estimation::marginal density: I'm computing the posterior log marginal density (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1140.810844.

parameters

	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2197	0.0936	0.3365	beta	0.2000
rho_a_d	0.500	0.5065	0.1831	0.8315	beta	0.2000
rho_mu_c	0.500	0.4985	0.1815	0.8344	beta	0.2000
rho_mu_d	0.500	0.5041	0.1745	0.8284	beta	0.2000
rho_LTV	0.500	0.4984	0.1633	0.8177	beta	0.2000
rho_d	0.500	0.5213	0.1906	0.8360	beta	0.2000
rho_d_stern	0.500	0.9014	0.8773	0.9274	beta	0.2000
rho_c_ast	0.500	0.6454	0.3672	0.9407	beta	0.2000
rho_d_ast	0.500	0.5047	0.1632	0.8270	beta	0.2000
rho_s_c	0.500	0.3986	0.2538	0.5496	beta	0.2000
rho_r	0.500	0.6304	0.4670	0.7917	beta	0.2000
rho_p	-0.500	-0.4954	-0.8238	-0.1877	norm	0.2000
theta_c	0.750	0.2719	0.1597	0.3785	beta	0.1500
sigma	1.000	1.9629	1.7746	2.1446	norm	0.3700
phi	2.000	5.6879	4.2768	7.0798	gamma	0.7000
omega	0.200	0.1254	0.0248	0.2141	beta	0.1000
h_c	0.500	0.2844	0.1988	0.3652	beta	0.1000
alpha_c	0.500	0.4023	0.3505	0.4485	beta	0.1000

standard deviation of shocks

	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.3568	2.0937	2.6380	invg	2.0000
epsa_d	0.100	0.0694	0.0264	0.1139	invg	2.0000
epsmu_c	0.100	0.0823	0.0236	0.1367	invg	2.0000
epsmu_d	0.100	0.0770	0.0237	0.1358	invg	2.0000
epsLTV	0.100	0.0747	0.0234	0.1327	invg	2.0000
epsd	0.100	0.0761	0.0234	0.1383	invg	2.0000
epsc_ast	0.100	0.0431	0.0219	0.0631	invg	2.0000
epsd_ast	0.100	0.0747	0.0246	0.1372	invg	2.0000
epsd_stern	0.100	0.5753	0.4247	0.7209	invg	2.0000
epssc_c	0.100	1.1668	1.0182	1.3169	invg	2.0000

			code. log			
epsr	0.100	0.7175	0.3895	1.0354	inv	2.0000
epsyf	0.100	0.0897	0.0210	0.1789	inv	2.0000
epsn	0.010	0.8342	0.7373	0.9335	inv	0.1000
epspi_d	0.010	5.6590	4.9897	6.2807	inv	0.1000

Estimation: : mcmc: Forecasted variables (mean)
 Estimation: : mcmc: Forecasted variables (mean), done!
 Estimation: : mcmc: Forecasted variables (point)
 Estimation: : mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1094.2837

 f at the beginning of new iteration, 1094.2836750868
 Predicted improvement: 0.002858581
 lambda = 1; f = 1094.2802735
 Norm of dx 0.00075612

 Improvement on iteration 1 = 0.003401619

 f at the beginning of new iteration, 1094.2802734675
 Predicted improvement: 0.000749242
 lambda = 1; f = 1094.2791176
 lambda = 1.9332; f = 1094.2786585
 Norm of dx 0.00049006

 Improvement on iteration 2 = 0.001614970

 f at the beginning of new iteration, 1094.2786584975
 Predicted improvement: 0.000316941
 lambda = 1; f = 1094.2781908
 lambda = 1.9332; f = 1094.2780523
 Norm of dx 0.00033939

 Improvement on iteration 3 = 0.000606219

 f at the beginning of new iteration, 1094.2780522782
 Predicted improvement: 0.000164554
 lambda = 1; f = 1094.2777403
 lambda = 1.9332; f = 1094.2774795
 lambda = 3.7372; f = 1094.2770580
 lambda = 7.2247; f = 1094.2765526
 Norm of dx 0.00022412

 Improvement on iteration 4 = 0.001499672

 f at the beginning of new iteration, 1094.2765526058
 Predicted improvement: 0.000422593
 lambda = 1; f = 1094.2760288
 Norm of dx 0.0011969

 Improvement on iteration 5 = 0.000523770

 f at the beginning of new iteration, 1094.2760288359
 Predicted improvement: 0.000076397
 lambda = 1; f = 1094.2759161
 lambda = 1.9332; f = 1094.2758842
 Norm of dx 0.00038915

code.log
Improvement on iteration 6 = 0.000144669

f at the beginning of new iteration, 1094.2758841670
Predicted improvement: 0.000059210
lambda = 1; f = 1094.2757709
lambda = 1.9332; f = 1094.2756743
lambda = 3.7372; f = 1094.2755129
lambda = 7.2247; f = 1094.2752948
Norm of dx 0.00014574

Improvement on iteration 7 = 0.000589379

f at the beginning of new iteration, 1094.2752947884
Predicted improvement: 0.000160824
lambda = 1; f = 1094.2750988
Norm of dx 0.0010169

Improvement on iteration 8 = 0.000195940

f at the beginning of new iteration, 1094.2750988481
Predicted improvement: 0.000047256
lambda = 1; f = 1094.2750179
lambda = 1.9332; f = 1094.2749664
lambda = 3.7372; f = 1094.2749332
Norm of dx 0.00041212

Improvement on iteration 9 = 0.000165654

f at the beginning of new iteration, 1094.2749331945
Predicted improvement: 0.000086027
lambda = 1; f = 1094.2747849
lambda = 1.9332; f = 1094.2746897
lambda = 3.7372; f = 1094.2746235
Norm of dx 0.00020692

Improvement on iteration 10 = 0.000309713

f at the beginning of new iteration, 1094.2746234813
Predicted improvement: 0.000015548
lambda = 1; f = 1094.2745977
lambda = 1.9332; f = 1094.2745833
Norm of dx 0.00027149

Improvement on iteration 11 = 0.000040191

f at the beginning of new iteration, 1094.2745832902
Predicted improvement: 0.000029642
lambda = 1; f = 1094.2745321
lambda = 1.9332; f = 1094.2744989
lambda = 3.7372; f = 1094.2744748
Norm of dx 0.00034121

Improvement on iteration 12 = 0.000108512

f at the beginning of new iteration, 1094.2744747786
Predicted improvement: 0.000050360

```

                                code. log
lambda =          1; f =          1094.2743875
lambda =         1.9332; f =          1094.2743306
lambda =         3.7372; f =          1094.2742875
Norm of dx 0.00027722
-----
Improvement on iteration 13 =          0.000187315
-----
f at the beginning of new iteration,          1094.2742874638
Predicted improvement:          0.000036936
lambda =          1; f =          1094.2742206
lambda =         1.9332; f =          1094.2741708
lambda =         3.7372; f =          1094.2741087
Norm of dx 0.00034753
-----
Improvement on iteration 14 =          0.000178737
-----
f at the beginning of new iteration,          1094.2741087265
Predicted improvement:          0.000025500
lambda =          1; f =          1094.2740790
Norm of dx 0.00040473
-----
Improvement on iteration 15 =          0.000029688
-----
f at the beginning of new iteration,          1094.2740790390
Predicted improvement:          0.000005536
lambda =          1; f =          1094.2740689
lambda =         1.9332; f =          1094.2740610
lambda =         3.7372; f =          1094.2740501
Norm of dx 0.00011171
-----
Improvement on iteration 16 =          0.000028890
-----
f at the beginning of new iteration,          1094.2740501487
Predicted improvement:          0.000032228
lambda =          1; f =          1094.2739924
lambda =         1.9332; f =          1094.2739507
lambda =         3.7372; f =          1094.2739038
Norm of dx 0.00048959
-----
Improvement on iteration 17 =          0.000146313
-----
f at the beginning of new iteration,          1094.2739038360
Predicted improvement:          0.000093909
lambda =          1; f =          1094.2737459
lambda =         1.9332; f =          1094.2736526
Norm of dx 0.0011117
-----
Improvement on iteration 18 =          0.000251280
-----
f at the beginning of new iteration,          1094.2736525562
Predicted improvement:          0.000081845
lambda =          1; f =          1094.2735601
Norm of dx 0.0009146
-----
Improvement on iteration 19 =          0.000092408
-----

```

code.log
f at the beginning of new iteration, 1094.2735601482
Predicted improvement: 0.00007481
lambda = 1; f = 1094.2735480
lambda = 1.9332; f = 1094.2735413
Norm of dx 9.087e-05

Improvement on iteration 20 = 0.000018894

f at the beginning of new iteration, 1094.2735412544
Predicted improvement: 0.000013905
lambda = 1; f = 1094.2735172
lambda = 1.9332; f = 1094.2735011
lambda = 3.7372; f = 1094.2734878
Norm of dx 0.00016208

Improvement on iteration 21 = 0.000053485

f at the beginning of new iteration, 1094.2734877690
Predicted improvement: 0.000027123
lambda = 1; f = 1094.2734399
lambda = 1.9332; f = 1094.2734069
lambda = 3.7372; f = 1094.2733746
Norm of dx 0.00040395

Improvement on iteration 22 = 0.000113178

f at the beginning of new iteration, 1094.2733745913
Predicted improvement: 0.000030971
lambda = 1; f = 1094.2733191
lambda = 1.9332; f = 1094.2732791
lambda = 3.7372; f = 1094.2732339
Norm of dx 0.00056163

Improvement on iteration 23 = 0.000140687

f at the beginning of new iteration, 1094.2732339043
Predicted improvement: 0.000040131
lambda = 1; f = 1094.2731833
Norm of dx 0.00054672

Improvement on iteration 24 = 0.000050641

f at the beginning of new iteration, 1094.2731832636
Predicted improvement: 0.00007527
lambda = 1; f = 1094.2731729
Norm of dx 0.00016662

Improvement on iteration 25 = 0.000010320

f at the beginning of new iteration, 1094.2731729433
Predicted improvement: 0.000005836
lambda = 1; f = 1094.2731630
lambda = 1.9332; f = 1094.2731569
lambda = 3.7372; f = 1094.2731537
Norm of dx 0.00012474

Improvement on iteration 26 = 0.000019278

code. log

f at the beginning of new iteration, 1094.2731536654
Predicted improvement: 0.000013036
lambda = 1; f = 1094.2731286
lambda = 1.9332; f = 1094.2731070
lambda = 3.7372; f = 1094.2730702
lambda = 7.2247; f = 1094.2730176
lambda = 13.967; f = 1094.2729857
Norm of dx 0.0001734

Improvement on iteration 27 = 0.000167927

f at the beginning of new iteration, 1094.2729857385
Predicted improvement: 0.000044136
lambda = 1; f = 1094.2729252
Norm of dx 0.00088203

Improvement on iteration 28 = 0.000060565

f at the beginning of new iteration, 1094.2729251730
Predicted improvement: 0.000017942
lambda = 1; f = 1094.2729006
Norm of dx 0.00067616

Improvement on iteration 29 = 0.000024588

f at the beginning of new iteration, 1094.2729005851
Predicted improvement: 0.000010872
lambda = 1; f = 1094.2728844
lambda = 1.9332; f = 1094.2728795
Norm of dx 0.00044516

Improvement on iteration 30 = 0.000021050

f at the beginning of new iteration, 1094.2728795355
Predicted improvement: 0.000006176
lambda = 1; f = 1094.2728690
lambda = 1.9332; f = 1094.2728624
lambda = 3.7372; f = 1094.2728583
Norm of dx 0.00013057

Improvement on iteration 31 = 0.000021214

f at the beginning of new iteration, 1094.2728583218
Predicted improvement: 0.000006677
lambda = 1; f = 1094.2728452
lambda = 1.9332; f = 1094.2728335
lambda = 3.7372; f = 1094.2728119
lambda = 7.2247; f = 1094.2727747
lambda = 13.967; f = 1094.2727195
lambda = 27; f = 1094.2726753
Norm of dx 0.0001647

Improvement on iteration 32 = 0.000183059

f at the beginning of new iteration, 1094.2726752625
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```

code. log
Predicted improvement: 0.00090032
lambda = 1; f = 1094.2725370
lambda = 1.9332; f = 1094.2724844
Norm of dx 0.0014396
-----
Improvement on iteration 33 = 0.000190869
-----
f at the beginning of new iteration, 1094.2724843934
Predicted improvement: 0.000003904
lambda = 1; f = 1094.2724785
lambda = 1.9332; f = 1094.2724763
Norm of dx 0.0002442
-----
Improvement on iteration 34 = 0.000008097
-----
f at the beginning of new iteration, 1094.2724762966
Predicted improvement: 0.000004174
lambda = 1; f = 1094.2724682
lambda = 1.9332; f = 1094.2724610
lambda = 3.7372; f = 1094.2724480
lambda = 7.2247; f = 1094.2724264
lambda = 13.967; f = 1094.2723979
Norm of dx 0.00016084
-----
Improvement on iteration 35 = 0.000078404
-----
f at the beginning of new iteration, 1094.2723978926
Predicted improvement: 0.000044103
lambda = 1; f = 1094.2723412
Norm of dx 0.00084449
-----
Improvement on iteration 36 = 0.000056649
-----
f at the beginning of new iteration, 1094.2723412438
Predicted improvement: 0.000008841
lambda = 1; f = 1094.2723303
Norm of dx 0.00027969
-----
Improvement on iteration 37 = 0.000010898
-----
f at the beginning of new iteration, 1094.2723303458
Predicted improvement: 0.000002335
lambda = 1; f = 1094.2723268
lambda = 1.9332; f = 1094.2723254
Norm of dx 0.00010492
-----
Improvement on iteration 38 = 0.000004968
-----
f at the beginning of new iteration, 1094.2723253777
Predicted improvement: 0.000001536
lambda = 1; f = 1094.2723230
lambda = 1.9332; f = 1094.2723221
Norm of dx 7.4654e-05
-----
Improvement on iteration 39 = 0.000003294
-----

```

code.log
f at the beginning of new iteration, 1094.2723220835
Predicted improvement: 0.00000825
lambda = 1; f = 1094.2723206
lambda = 1.9332; f = 1094.2723196
lambda = 3.7372; f = 1094.2723185
Norm of dx 0.00011573

Improvement on iteration 40 = 0.000003542

f at the beginning of new iteration, 1094.2723185419
Predicted improvement: 0.000002889
lambda = 1; f = 1094.2723132
lambda = 1.9332; f = 1094.2723090
lambda = 3.7372; f = 1094.2723026
lambda = 7.2247; f = 1094.2722973
Norm of dx 0.00022897

Improvement on iteration 41 = 0.000021230

f at the beginning of new iteration, 1094.2722973123
Predicted improvement: 0.000010888
lambda = 1; f = 1094.2722807
lambda = 1.9332; f = 1094.2722746
Norm of dx 0.00046643

Improvement on iteration 42 = 0.000022732

f at the beginning of new iteration, 1094.2722745806
Predicted improvement: 0.000000338
lambda = 1; f = 1094.2722741
Norm of dx 0.00019292

Improvement on iteration 43 = 0.000000434

f at the beginning of new iteration, 1094.2722741465
Predicted improvement: 0.000000184
lambda = 1; f = 1094.2722739
lambda = 1.9332; f = 1094.2722737
Norm of dx 4.6789e-05

Improvement on iteration 44 = 0.000000440

f at the beginning of new iteration, 1094.2722737065
Predicted improvement: 0.000000694
lambda = 1; f = 1094.2722727
lambda = 1.9332; f = 1094.2722722
Norm of dx 0.00010257

Improvement on iteration 45 = 0.000001521

f at the beginning of new iteration, 1094.2722721857
Predicted improvement: 0.000002328
lambda = 1; f = 1094.2722678
lambda = 1.9332; f = 1094.2722643
lambda = 3.7372; f = 1094.2722588
lambda = 7.2247; f = 1094.2722535
Norm of dx 0.00016778

code. log

```
-----
Improvement on iteration 46 =          0.000018693
-----
f at the beginning of new iteration,      1094.2722534927
Predicted improvement:          0.000009185
lambda =          1; f =          1094.2722383
lambda =    1.9332; f =          1094.2722299
Norm of dx 0.00054373
-----
Improvement on iteration 47 =          0.000023577
-----
f at the beginning of new iteration,      1094.2722299152
Predicted improvement:          0.000004302
lambda =          1; f =          1094.2722249
lambda =    1.9332; f =          1094.2722249
Norm of dx 0.00053418
-----
Improvement on iteration 48 =          0.000005005
-----
f at the beginning of new iteration,      1094.2722249102
Predicted improvement:          0.000000609
lambda =          1; f =          1094.2722239
lambda =    1.9332; f =          1094.2722234
Norm of dx 0.00020303
-----
Improvement on iteration 49 =          0.000001521
-----
f at the beginning of new iteration,      1094.2722233891
Predicted improvement:          0.000000944
lambda =          1; f =          1094.2722218
lambda =    1.9332; f =          1094.2722209
Norm of dx 0.00022018
-----
Improvement on iteration 50 =          0.000002466
-----
f at the beginning of new iteration,      1094.2722209229
Predicted improvement:          0.000001812
lambda =          1; f =          1094.2722178
lambda =    1.9332; f =          1094.2722159
lambda =    3.7372; f =          1094.2722148
Norm of dx 0.00015562
-----
Improvement on iteration 51 =          0.000006127
-----
f at the beginning of new iteration,      1094.2722147960
Predicted improvement:          0.000003327
lambda =          1; f =          1094.2722087
lambda =    1.9332; f =          1094.2722041
lambda =    3.7372; f =          1094.2721978
Norm of dx 0.0002475
-----
Improvement on iteration 52 =          0.000016969
-----
f at the beginning of new iteration,      1094.2721978270
Predicted improvement:          0.000009285
lambda =          1; f =          1094.2721843
lambda =    1.9332; f =          1094.2721804
```

```

code. log
Norm of dx 0.00084736
-----
Improvement on iteration 53 =          0.000017447
-----
f at the beginning of new iteration,      1094.2721803797
Predicted improvement:          0.000005141
lambda =          1; f =          1094.2721718
lambda =      1.9332; f =          1094.2721669
Norm of dx 0.00055712
-----
Improvement on iteration 54 =          0.000013452
-----
f at the beginning of new iteration,      1094.2721669275
Predicted improvement:          0.000002875
lambda =          1; f =          1094.2721635
Norm of dx 0.00065075
-----
Improvement on iteration 55 =          0.000003439
-----
f at the beginning of new iteration,      1094.2721634886
Predicted improvement:          0.000001069
lambda =          1; f =          1094.2721624
Norm of dx 0.00045384
-----
Improvement on iteration 56 =          0.000001048
-----
f at the beginning of new iteration,      1094.2721624409
Predicted improvement:          0.000001115
lambda =          1; f =          1094.2721603
lambda =      1.9332; f =          1094.2721585
lambda =      3.7372; f =          1094.2721555
lambda =      7.2247; f =          1094.2721516
Norm of dx 4.9906e-05
-----
Improvement on iteration 57 =          0.000010794
-----
f at the beginning of new iteration,      1094.2721516471
Predicted improvement:          0.000006379
lambda =          1; f =          1094.2721422
lambda =      1.9332; f =          1094.2721393
Norm of dx 0.00048454
-----
Improvement on iteration 58 =          0.000012395
-----
f at the beginning of new iteration,      1094.2721392517
Predicted improvement:          0.000001636
lambda =          1; f =          1094.2721372
Norm of dx 0.00021872
-----
Improvement on iteration 59 =          0.000002022
-----
f at the beginning of new iteration,      1094.2721372294
Predicted improvement:          0.000000308
lambda =          1; f =          1094.2721369
Norm of dx 7.5022e-05
-----

```

```

                                code.log
Improvement on iteration 60 =      0.000000366
-----
f at the beginning of new iteration,      1094.2721368636
Predicted improvement:      0.000000314
lambda =      1; f =      1094.2721365
Norm of dx 0.00022065
----
Improvement on iteration 61 =      0.000000348
-----
f at the beginning of new iteration,      1094.2721365151
Predicted improvement:      0.000000404
lambda =      1; f =      1094.2721358
lambda =      1.9332; f =      1094.2721352
lambda =      3.7372; f =      1094.2721344
lambda =      7.2247; f =      1094.2721337
Norm of dx 0.00014796
----
Improvement on iteration 62 =      0.000002779
-----
f at the beginning of new iteration,      1094.2721337357
Predicted improvement:      0.000002481
lambda =      1; f =      1094.2721289
lambda =      1.9332; f =      1094.2721246
lambda =      3.7372; f =      1094.2721170
lambda =      7.2247; f =      1094.2721049
lambda =      13.967; f =      1094.2720910
Norm of dx 0.00027412
----
Improvement on iteration 63 =      0.000042728
-----
f at the beginning of new iteration,      1094.2720910082
Predicted improvement:      0.000023130
lambda =      1; f =      1094.2720556
lambda =      1.9332; f =      1094.2720390
Norm of dx 0.0027207
----
Improvement on iteration 64 =      0.000052009
-----
f at the beginning of new iteration,      1094.2720389990
Predicted improvement:      0.000020135
lambda =      1; f =      1094.2720112
Norm of dx 0.0013605
----
Improvement on iteration 65 =      0.000027843
-----
f at the beginning of new iteration,      1094.2720111556
Predicted improvement:      0.000007740
lambda =      1; f =      1094.2720021
Norm of dx 0.00071298
----
Improvement on iteration 66 =      0.000009027
-----
f at the beginning of new iteration,      1094.2720021287
Predicted improvement:      0.000001393
lambda =      1; f =      1094.2720002
Norm of dx 0.00037764

```

code. log

Improvement on iteration 67 = 0.000001902

f at the beginning of new iteration, 1094.2720002271
Predicted improvement: 0.000001146
lambda = 1; f = 1094.2719993
Norm of dx 0.00062473

Improvement on iteration 68 = 0.000000965

f at the beginning of new iteration, 1094.2719992620
Predicted improvement: 0.000000199
lambda = 1; f = 1094.2719994
lambda = 0.33333; f = 1094.2719993
lambda = 0.11111; f = 1094.2719993
lambda = 0.037037; f = 1094.2719993
lambda = 0.012346; f = 1094.2719993
Norm of dx 0.00034783

Improvement on iteration 69 = 0.000000011
improvement < crit termination

Final value of minus the log posterior (or likelihood): 1094.271999

RESULTS FROM POSTERIOR ESTIMATION
parameters

	prior mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2137	0.0771	beta	0.2000
rho_a_d	0.500	0.5000	0.2774	beta	0.2000
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000
rho_mu_d	0.500	0.5000	0.2774	beta	0.2000
rho_LTV	0.500	0.4954	0.2750	beta	0.2000
rho_d	0.500	0.5129	0.2765	beta	0.2000
rho_d_stern	0.500	0.9025	0.0154	beta	0.2000
rho_c_ast	0.500	0.6564	0.2428	beta	0.2000
rho_d_ast	0.500	0.5000	0.2774	beta	0.2000
rho_s_c	0.500	0.4001	0.0947	beta	0.2000
rho_r	0.500	0.6734	0.0927	beta	0.2000
rho_p	-0.500	-0.4976	0.2000	norm	0.2000
theta_c	0.750	0.2820	0.0691	beta	0.1500
sigma	1.000	1.9210	0.1087	norm	0.3700
phi	2.000	5.4690	0.8202	gamm	0.7000
omega	0.200	0.0980	0.0621	beta	0.1000
h_c	0.500	0.2920	0.0515	beta	0.1000
alpha_c	0.500	0.4030	0.0290	beta	0.1000

standard deviation of shocks

	prior mean	mode	s. d.	prior	pstdev
epsa_c	0.100	2.3177	0.1640	invg	2.0000
epsa_d	0.100	0.0462	0.0189	invg	2.0000
epsmu_c	0.100	0.0461	0.0188	invg	2.0000
epsmu_d	0.100	0.0461	0.0188	invg	2.0000
epsLTV	0.100	0.0461	0.0188	invg	2.0000
epsd	0.100	0.0456	0.0183	invg	2.0000
eps_c_ast	0.100	0.0371	0.0111	invg	2.0000
epsd_ast	0.100	0.0461	0.0188	invg	2.0000
epsd_stern	0.100	0.5952	0.0972	invg	2.0000
epss_c	0.100	1.1452	0.0917	invg	2.0000
epsr	0.100	0.6259	0.1830	invg	2.0000

```

code.log
epsyf      0.100  0.0458  0.0185  invg  2.0000
epsn       0.010  0.8192  0.0594  invg  0.1000
epspi_d    0.010  5.5389  0.3834  invg  0.1000

```

Log data density [Laplace approximation] is -1148.894724.

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_108/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.
 Estimation::mcmc: Total number of iterations: 200000.
 Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.3513%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val	No Taper	p-val	4%
Taper						
SE_epsa_c	2.349	0.166	0.046	0.041	0.000	
SE_epsa_d	0.086	0.053	0.018	0.045	0.000	
SE_epsmu_c	0.093	0.077	0.032	0.109	0.000	
SE_epsmu_d	0.081	0.045	0.112	0.208	0.000	
SE_epsLTV	0.082	0.050	0.020	0.036	0.000	
SE_epsd	0.073	0.043	0.106	0.101	0.000	
SE_epsc_ast	0.042	0.014	0.197	0.218	0.000	
SE_epsd_ast	0.138	0.134	0.165	0.259	0.000	
SE_epsd_stern	0.575	0.095	0.964	0.965	0.554	
SE_epss_c	1.168	0.096	0.953	0.955	0.451	
SE_epsr	0.737	0.219	0.618	0.646	0.000	
SE_epsyf	0.073	0.038	0.023	0.034	0.000	
SE_epsn	0.830	0.060	0.968	0.968	0.608	
SE_epspi_d	5.634	0.402	0.219	0.262	0.000	
rho_a_c	0.224	0.077	0.356	0.379	0.000	
rho_a_d	0.502	0.198	0.683	0.693	0.001	
rho_mu_c	0.499	0.199	0.456	0.503	0.000	
rho_mu_d	0.497	0.200	0.859	0.853	0.122	
rho_LTV	0.492	0.201			0.000	

		code. log			
0. 288	0. 243	0. 289			
rho_d		0. 521	0. 201	0. 870	
0. 986	0. 985	0. 983			
rho_d_stern		0. 902	0. 016	0. 004	
0. 800	0. 797	0. 803			
rho_c_ast		0. 638	0. 186	0. 000	
0. 267	0. 220	0. 123			
rho_d_ast		0. 499	0. 200	0. 000	
0. 231	0. 154	0. 104			
rho_s_c		0. 402	0. 092	0. 009	
0. 787	0. 781	0. 763			
rho_r		0. 619	0. 112	0. 000	
0. 604	0. 638	0. 659			
rho_p		-0. 500	0. 204	0. 000	
0. 512	0. 521	0. 510			
theta_c		0. 273	0. 067	0. 533	
0. 948	0. 942	0. 935			
si gma		1. 962	0. 113	0. 059	
0. 885	0. 896	0. 901			
phi		5. 634	0. 835	0. 000	
0. 134	0. 137	0. 116			
omega		0. 126	0. 061	0. 000	
0. 694	0. 715	0. 724			
h_c		0. 283	0. 050	0. 000	
0. 702	0. 730	0. 747			
al pha_c		0. 403	0. 029	0. 000	
0. 174	0. 179	0. 212			

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance... Done!
 Estimation::marginal density: I'm computing the posterior log marginal density (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1147.669364.

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0. 500	0. 2253	0. 0950	0. 3527	beta	0. 2000
rho_a_d	0. 500	0. 5007	0. 1876	0. 8323	beta	0. 2000
rho_mu_c	0. 500	0. 4977	0. 1725	0. 8277	beta	0. 2000
rho_mu_d	0. 500	0. 4976	0. 1745	0. 8376	beta	0. 2000
rho_LTV	0. 500	0. 5032	0. 1678	0. 8275	beta	0. 2000
rho_d	0. 500	0. 5176	0. 1924	0. 8465	beta	0. 2000
rho_d_stern	0. 500	0. 9016	0. 8750	0. 9278	beta	0. 2000
rho_c_ast	0. 500	0. 6339	0. 3408	0. 9386	beta	0. 2000
rho_d_ast	0. 500	0. 5028	0. 1827	0. 8351	beta	0. 2000
rho_s_c	0. 500	0. 4000	0. 2558	0. 5483	beta	0. 2000
rho_r	0. 500	0. 6197	0. 4611	0. 7868	beta	0. 2000
rho_p	-0. 500	-0. 5052	-0. 8433	-0. 1893	norm	0. 2000
theta_c	0. 750	0. 2748	0. 1611	0. 3824	beta	0. 1500
si gma	1. 000	1. 9663	1. 7836	2. 1489	norm	0. 3700
phi	2. 000	5. 6314	4. 3148	7. 0042	gamma	0. 7000

			code. log			
omega	0. 200	0. 1289	0. 0276	0. 2246	beta	0. 1000
h_c	0. 500	0. 2848	0. 2010	0. 3676	beta	0. 1000
alpha_c	0. 500	0. 4030	0. 3540	0. 4479	beta	0. 1000

standard deviation of shocks

	prior mean	post. mean	90% HPD interval		prior	pstdev
--	------------	------------	------------------	--	-------	--------

epsa_c	0. 100	2. 3445	2. 0842	2. 6133	invg	2. 0000
epsa_d	0. 100	0. 0853	0. 0232	0. 1726	invg	2. 0000
epsmu_c	0. 100	0. 1042	0. 0206	0. 2368	invg	2. 0000
epsmu_d	0. 100	0. 0847	0. 0248	0. 1552	invg	2. 0000
epsLTV	0. 100	0. 0767	0. 0250	0. 1343	invg	2. 0000
epsd	0. 100	0. 0671	0. 0248	0. 1126	invg	2. 0000
epsc_ast	0. 100	0. 0424	0. 0230	0. 0624	invg	2. 0000
epsd_ast	0. 100	0. 1089	0. 0226	0. 2367	invg	2. 0000
epsd_stern	0. 100	0. 5735	0. 4200	0. 7250	invg	2. 0000
epss_c	0. 100	1. 1687	1. 0126	1. 3212	invg	2. 0000
epsr	0. 100	0. 7353	0. 4079	1. 0550	invg	2. 0000
epsyf	0. 100	0. 0705	0. 0256	0. 1239	invg	2. 0000
epsn	0. 010	0. 8316	0. 7294	0. 9326	invg	0. 1000
epspi_d	0. 010	5. 6216	4. 9662	6. 2797	invg	0. 1000

Estimation: : mcmc: Forecasted variables (mean)
 Estimation: : mcmc: Forecasted variables (mean), done!
 Estimation: : mcmc: Forecasted variables (point)
 Estimation: : mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1101.5884

 f at the beginning of new iteration, 1101.5883568594
 Predicted improvement: 0.003083754
 lambda = 1; f = 1101.5848692
 Norm of dx 0.00078533

 Improvement on iteration 1 = 0.003487623

f at the beginning of new iteration, 1101.5848692363
 Predicted improvement: 0.000628641
 lambda = 1; f = 1101.5838597
 lambda = 1.9332; f = 1101.5833662
 Norm of dx 0.00042599

 Improvement on iteration 2 = 0.001503038

f at the beginning of new iteration, 1101.5833661985
 Predicted improvement: 0.000341109
 lambda = 1; f = 1101.5828933
 Norm of dx 0.00042767

 Improvement on iteration 3 = 0.000472914

f at the beginning of new iteration, 1101.5828932841
 Predicted improvement: 0.000243226
 lambda = 1; f = 1101.5825075
 lambda = 1.9332; f = 1101.5823277
 Norm of dx 0.00044216

 Improvement on iteration 4 = 0.000565568

code.log
f at the beginning of new iteration, 1101.5823277159
Predicted improvement: 0.000308655
lambda = 1; f = 1101.5817851
lambda = 1.9332; f = 1101.5814138
lambda = 3.7372; f = 1101.5810663
Norm of dx 0.00060973

Improvement on iteration 5 = 0.001261374

f at the beginning of new iteration, 1101.5810663421
Predicted improvement: 0.000305129
lambda = 1; f = 1101.5806481
Norm of dx 0.00040864

Improvement on iteration 6 = 0.000418276

f at the beginning of new iteration, 1101.5806480658
Predicted improvement: 0.000114781
lambda = 1; f = 1101.5804886
Norm of dx 0.00027403

Improvement on iteration 7 = 0.000159449

f at the beginning of new iteration, 1101.5804886171
Predicted improvement: 0.000091885
lambda = 1; f = 1101.5803387
lambda = 1.9332; f = 1101.5802602
Norm of dx 0.00033143

Improvement on iteration 8 = 0.000228379

f at the beginning of new iteration, 1101.5802602384
Predicted improvement: 0.000136260
lambda = 1; f = 1101.5800352
lambda = 1.9332; f = 1101.5799107
Norm of dx 0.00054769

Improvement on iteration 9 = 0.000349550

f at the beginning of new iteration, 1101.5799106881
Predicted improvement: 0.000138044
lambda = 1; f = 1101.5797234
Norm of dx 0.00056728

Improvement on iteration 10 = 0.000187249

f at the beginning of new iteration, 1101.5797234386
Predicted improvement: 0.000069335
lambda = 1; f = 1101.5796199
lambda = 1.9332; f = 1101.5795860
Norm of dx 0.00032903

Improvement on iteration 11 = 0.000137456

f at the beginning of new iteration, 1101.5795859827
Predicted improvement: 0.000058142

```

                                code.log
lambda =          1; f =          1101.5794773
lambda =    1.9332; f =          1101.5793892
lambda =    3.7372; f =          1101.5792559
lambda =    7.2247; f =          1101.5791357
Norm of dx 0.00020826
-----
Improvement on iteration 12 =          0.000450283
-----
-----
f at the beginning of new iteration,          1101.5791357000
Predicted improvement:          0.000036163
lambda =          1; f =          1101.5790836
lambda =    1.9332; f =          1101.5790720
Norm of dx 0.00035565
-----
Improvement on iteration 13 =          0.000063735
-----
-----
f at the beginning of new iteration,          1101.5790719651
Predicted improvement:          0.000020044
lambda =          1; f =          1101.5790337
lambda =    1.9332; f =          1101.5790010
lambda =    3.7372; f =          1101.5789462
lambda =    7.2247; f =          1101.5788715
Norm of dx 7.6971e-05
-----
Improvement on iteration 14 =          0.000200438
-----
-----
f at the beginning of new iteration,          1101.5788715272
Predicted improvement:          0.000150071
lambda =          1; f =          1101.5786530
lambda =    1.9332; f =          1101.5785966
Norm of dx 0.0011652
-----
Improvement on iteration 15 =          0.000274973
-----
-----
f at the beginning of new iteration,          1101.5785965541
Predicted improvement:          0.000045541
lambda =          1; f =          1101.5785269
lambda =    1.9332; f =          1101.5785011
Norm of dx 0.00017514
-----
Improvement on iteration 16 =          0.000095480
-----
-----
f at the beginning of new iteration,          1101.5785010746
Predicted improvement:          0.000018025
lambda =          1; f =          1101.5784711
lambda =    1.9332; f =          1101.5784540
Norm of dx 0.00021498
-----
Improvement on iteration 17 =          0.000047058
-----
-----
f at the beginning of new iteration,          1101.5784540168
Predicted improvement:          0.000013209
lambda =          1; f =          1101.5784363
Norm of dx 0.00017254
-----
Improvement on iteration 18 =          0.000017725
-----

```

code. log

f at the beginning of new iteration, 1101.5784362917
Predicted improvement: 0.00008712
lambda = 1; f = 1101.5784215
lambda = 1.9332; f = 1101.5784123
lambda = 3.7372; f = 1101.5784072
Norm of dx 0.00012765

Improvement on iteration 19 = 0.000029057

f at the beginning of new iteration, 1101.5784072351
Predicted improvement: 0.000019537
lambda = 1; f = 1101.5783699
lambda = 1.9332; f = 1101.5783381
lambda = 3.7372; f = 1101.5782853
lambda = 7.2247; f = 1101.5782152
Norm of dx 0.0001395

Improvement on iteration 20 = 0.000192049

f at the beginning of new iteration, 1101.5782151858
Predicted improvement: 0.000064291
lambda = 1; f = 1101.5781425
Norm of dx 0.0012678

Improvement on iteration 21 = 0.000072691

f at the beginning of new iteration, 1101.5781424945
Predicted improvement: 0.000003595
lambda = 1; f = 1101.5781371
lambda = 1.9332; f = 1101.5781352
Norm of dx 0.00021481

Improvement on iteration 22 = 0.000007279

f at the beginning of new iteration, 1101.5781352158
Predicted improvement: 0.000003270
lambda = 1; f = 1101.5781289
lambda = 1.9332; f = 1101.5781235
lambda = 3.7372; f = 1101.5781140
lambda = 7.2247; f = 1101.5780997
lambda = 13.967; f = 1101.5780873
Norm of dx 5.1608e-05

Improvement on iteration 23 = 0.000047952

f at the beginning of new iteration, 1101.5780872637
Predicted improvement: 0.000011299
lambda = 1; f = 1101.5780701
lambda = 1.9332; f = 1101.5780637
Norm of dx 0.00016213

Improvement on iteration 24 = 0.000023567

f at the beginning of new iteration, 1101.5780636970
Predicted improvement: 0.000006338
lambda = 1; f = 1101.5780531

```

                                code.log
lambda = 1.9332; f = 1101.5780469
Norm of dx 0.00014355
-----
Improvement on iteration 25 = 0.000016798
-----
f at the beginning of new iteration, 1101.5780468994
Predicted improvement: 0.000003742
lambda = 1; f = 1101.5780428
Norm of dx 0.00016994
-----
Improvement on iteration 26 = 0.000004117
-----
f at the beginning of new iteration, 1101.5780427829
Predicted improvement: 0.000000302
lambda = 1; f = 1101.5780422
lambda = 1.9332; f = 1101.5780418
lambda = 3.7372; f = 1101.5780411
lambda = 7.2247; f = 1101.5780406
Norm of dx 1.8168e-05
-----
Improvement on iteration 27 = 0.000002221
-----
f at the beginning of new iteration, 1101.5780405618
Predicted improvement: 0.000001656
lambda = 1; f = 1101.5780374
lambda = 1.9332; f = 1101.5780347
lambda = 3.7372; f = 1101.5780303
lambda = 7.2247; f = 1101.5780247
Norm of dx 4.9747e-05
-----
Improvement on iteration 28 = 0.000015869
-----
f at the beginning of new iteration, 1101.5780246932
Predicted improvement: 0.000003035
lambda = 1; f = 1101.5780207
Norm of dx 0.00023008
-----
Improvement on iteration 29 = 0.000004000
-----
f at the beginning of new iteration, 1101.5780206935
Predicted improvement: 0.000001306
lambda = 1; f = 1101.5780186
lambda = 1.9332; f = 1101.5780178
Norm of dx 0.0001201
-----
Improvement on iteration 30 = 0.000002918
-----
f at the beginning of new iteration, 1101.5780177759
Predicted improvement: 0.000001059
lambda = 1; f = 1101.5780160
lambda = 1.9332; f = 1101.5780151
Norm of dx 2.4986e-05
-----
Improvement on iteration 31 = 0.000002645
-----
f at the beginning of new iteration, 1101.5780151308

```

```

                                code. log
Predicted improvement:          0.00000914
lambda =          1; f =        1101.5780136
lambda =          1.9332; f =      1101.5780127
Norm of dx 3.4206e-05
-----
Improvement on iteration 32 =          0.00002428
-----
f at the beginning of new iteration,          1101.5780127031
Predicted improvement:          0.00002264
lambda =          1; f =        1101.5780087
lambda =          1.9332; f =      1101.5780060
lambda =          3.7372; f =      1101.5780032
Norm of dx 9.4854e-05
-----
Improvement on iteration 33 =          0.00009501
-----
f at the beginning of new iteration,          1101.5780032018
Predicted improvement:          0.00007158
lambda =          1; f =        1101.5779898
lambda =          1.9332; f =      1101.5779791
lambda =          3.7372; f =      1101.5779632
lambda =          7.2247; f =      1101.5779505
Norm of dx 0.00036032
-----
Improvement on iteration 34 =          0.000052751
-----
f at the beginning of new iteration,          1101.5779504510
Predicted improvement:          0.00008084
lambda =          1; f =        1101.5779404
Norm of dx 0.00023118
-----
Improvement on iteration 35 =          0.000010017
-----
f at the beginning of new iteration,          1101.5779404338
Predicted improvement:          0.00001048
lambda =          1; f =        1101.5779389
lambda =          1.9332; f =      1101.5779384
Norm of dx 0.00010245
-----
Improvement on iteration 36 =          0.00002067
-----
f at the beginning of new iteration,          1101.5779383666
Predicted improvement:          0.00000994
lambda =          1; f =        1101.5779364
lambda =          1.9332; f =      1101.5779347
lambda =          3.7372; f =      1101.5779314
lambda =          7.2247; f =      1101.5779254
lambda =          13.967; f =      1101.5779153
lambda =          27; f =        1101.5779013
Norm of dx 7.655e-05
-----
Improvement on iteration 37 =          0.000037034
-----
f at the beginning of new iteration,          1101.5779013327
Predicted improvement:          0.000023135
lambda =          1; f =        1101.5778723
Norm of dx 0.0012109

```

code. log

```
-----
Improvement on iteration 38 =          0.000028989
-----
f at the beginning of new iteration,      1101.5778723438
Predicted improvement:          0.000004032
lambda =          1; f =          1101.5778668
Norm of dx 0.00024122
-----
Improvement on iteration 39 =          0.000005520
-----
f at the beginning of new iteration,      1101.5778668236
Predicted improvement:          0.000001979
lambda =          1; f =          1101.5778641
Norm of dx 0.00010799
-----
Improvement on iteration 40 =          0.000002748
-----
f at the beginning of new iteration,      1101.5778640755
Predicted improvement:          0.000001519
lambda =          1; f =          1101.5778620
Norm of dx 0.00019208
-----
Improvement on iteration 41 =          0.000002060
-----
f at the beginning of new iteration,      1101.5778620154
Predicted improvement:          0.000000884
lambda =          1; f =          1101.5778607
lambda =    1.9332; f =          1101.5778604
Norm of dx 4.4111e-05
-----
Improvement on iteration 42 =          0.000001637
-----
f at the beginning of new iteration,      1101.5778603786
Predicted improvement:          0.000000673
lambda =          1; f =          1101.5778591
lambda =    1.9332; f =          1101.5778580
lambda =    3.7372; f =          1101.5778563
lambda =    7.2247; f =          1101.5778541
Norm of dx 0.00010284
-----
Improvement on iteration 43 =          0.000006261
-----
f at the beginning of new iteration,      1101.5778541178
Predicted improvement:          0.000004074
lambda =          1; f =          1101.5778470
lambda =    1.9332; f =          1101.5778424
lambda =    3.7372; f =          1101.5778390
Norm of dx 0.00031577
-----
Improvement on iteration 44 =          0.000015098
-----
f at the beginning of new iteration,      1101.5778390203
Predicted improvement:          0.000003384
lambda =          1; f =          1101.5778345
Norm of dx 0.00032662
-----
```

```

                                code.log
Improvement on iteration 45 =      0.000004555
-----
f at the beginning of new iteration,      1101.5778344650
Predicted improvement:      0.000000882
lambda =      1; f =      1101.5778337
Norm of dx 0.00026349
-----
Improvement on iteration 46 =      0.000000753
-----
f at the beginning of new iteration,      1101.5778337125
Predicted improvement:      0.000000055
lambda =      1; f =      1101.5778336
lambda =      1.9332; f =      1101.5778335
lambda =      3.7372; f =      1101.5778335
Norm of dx 3.1845e-05
-----
Improvement on iteration 47 =      0.000000249
-----
f at the beginning of new iteration,      1101.5778334633
Predicted improvement:      0.000000336
lambda =      1; f =      1101.5778331
Norm of dx 0.00024983
-----
Improvement on iteration 48 =      0.000000392
-----
f at the beginning of new iteration,      1101.5778330718
Predicted improvement:      0.000000535
lambda =      1; f =      1101.5778320
lambda =      1.9332; f =      1101.5778311
lambda =      3.7372; f =      1101.5778296
lambda =      7.2247; f =      1101.5778276
lambda =      13.967; f =      1101.5778271
Norm of dx 4.1688e-05
-----
Improvement on iteration 49 =      0.000005947
-----
f at the beginning of new iteration,      1101.5778271250
Predicted improvement:      0.000001872
lambda =      1; f =      1101.5778247
Norm of dx 0.00016871
-----
Improvement on iteration 50 =      0.000002430
-----
f at the beginning of new iteration,      1101.5778246945
Predicted improvement:      0.000000951
lambda =      1; f =      1101.5778239
Norm of dx 0.00022729
-----
Improvement on iteration 51 =      0.000000805
-----
f at the beginning of new iteration,      1101.5778238893
Predicted improvement:      0.000000302
lambda =      1; f =      1101.5778234
lambda =      1.9332; f =      1101.5778230
lambda =      3.7372; f =      1101.5778226
Norm of dx 2.6942e-05

```


code.log

```
-----
Improvement on iteration 52 =          0.000001260
-----
f at the beginning of new iteration,      1101.5778226294
Predicted improvement:          0.000000608
lambda =          1; f =          1101.5778216
lambda =    1.9332; f =          1101.5778209
lambda =    3.7372; f =          1101.5778206
Norm of dx 7.1655e-05
-----
Improvement on iteration 53 =          0.000002039
-----
f at the beginning of new iteration,      1101.5778205905
Predicted improvement:          0.000000839
lambda =          1; f =          1101.5778190
lambda =    1.9332; f =          1101.5778177
lambda =    3.7372; f =          1101.5778160
lambda =    7.2247; f =          1101.5778151
Norm of dx 0.00010078
-----
Improvement on iteration 54 =          0.000005444
-----
f at the beginning of new iteration,      1101.5778151462
Predicted improvement:          0.000002691
lambda =          1; f =          1101.5778106
lambda =    1.9332; f =          1101.5778077
lambda =    3.7372; f =          1101.5778061
Norm of dx 0.00022013
-----
Improvement on iteration 55 =          0.000009018
-----
f at the beginning of new iteration,      1101.5778061287
Predicted improvement:          0.000001639
lambda =          1; f =          1101.5778038
lambda =    1.9332; f =          1101.5778036
Norm of dx 0.00020337
-----
Improvement on iteration 56 =          0.000002493
-----
f at the beginning of new iteration,      1101.5778036353
Predicted improvement:          0.000000376
lambda =          1; f =          1101.5778031
lambda =    1.9332; f =          1101.5778030
Norm of dx 5.3305e-05
-----
Improvement on iteration 57 =          0.000000651
-----
f at the beginning of new iteration,      1101.5778029842
Predicted improvement:          0.000000279
lambda =          1; f =          1101.5778024
lambda =    1.9332; f =          1101.5778020
lambda =    3.7372; f =          1101.5778012
lambda =    7.2247; f =          1101.5778000
lambda =   13.967; f =          1101.5777991
Norm of dx 9.8343e-05
-----
Improvement on iteration 58 =          0.000003881
```

code. log

f at the beginning of new iteration, 1101.5777991036
Predicted improvement: 0.00002425
lambda = 1; f = 1101.5777946
lambda = 1.9332; f = 1101.5777912
lambda = 3.7372; f = 1101.5777865
Norm of dx 0.00020034

Improvement on iteration 59 = 0.000012566

f at the beginning of new iteration, 1101.5777865373
Predicted improvement: 0.00007264
lambda = 1; f = 1101.5777771
Norm of dx 0.0011588

Improvement on iteration 60 = 0.000009454

f at the beginning of new iteration, 1101.5777770828
Predicted improvement: 0.000003940
lambda = 1; f = 1101.5777721
Norm of dx 0.00066442

Improvement on iteration 61 = 0.000005028

f at the beginning of new iteration, 1101.5777720550
Predicted improvement: 0.000000982
lambda = 1; f = 1101.5777710
Norm of dx 0.00045146

Improvement on iteration 62 = 0.000001033

f at the beginning of new iteration, 1101.5777710222
Predicted improvement: 0.000000147
lambda = 1; f = 1101.5777709
Norm of dx 0.00017114

Improvement on iteration 63 = 0.000000153

f at the beginning of new iteration, 1101.5777708697
Predicted improvement: 0.000000117
lambda = 1; f = 1101.5777707
lambda = 1.9332; f = 1101.5777706
Norm of dx 6.8041e-05

Improvement on iteration 64 = 0.000000303

f at the beginning of new iteration, 1101.5777705667
Predicted improvement: 0.000000604
lambda = 1; f = 1101.5777700
Norm of dx 0.00038559

Improvement on iteration 65 = 0.000000583

f at the beginning of new iteration, 1101.5777699841
Predicted improvement: 0.000000717

```

                                code.log
lambda =          1; f =          1101.5777686
lambda =         1.9332; f =         1101.5777673
lambda =         3.7372; f =         1101.5777650
lambda =         7.2247; f =         1101.5777610
lambda =        13.967; f =         1101.5777554
lambda =          27; f =         1101.5777523
Norm of dx 4.9955e-05
-----
Improvement on iteration 66 =          0.000017702
-----
f at the beginning of new iteration,          1101.5777522821
Predicted improvement:          0.000005949
lambda =          1; f =          1101.5777432
lambda =         1.9332; f =          1101.5777385
Norm of dx 0.00096394
-----
Improvement on iteration 67 =          0.000013748
-----
f at the beginning of new iteration,          1101.5777385343
Predicted improvement:          0.000003692
lambda =          1; f =          1101.5777326
lambda =         1.9332; f =          1101.5777300
Norm of dx 0.0010462
-----
Improvement on iteration 68 =          0.000008521
-----
f at the beginning of new iteration,          1101.5777300130
Predicted improvement:          0.000005682
lambda =          1; f =          1101.5777350
lambda =         0.33333; f =          1101.5777295
lambda =         0.11111; f =          1101.5777296
Norm of dx 0.0030241
-----
Improvement on iteration 69 =          0.000000545
-----
f at the beginning of new iteration,          1101.5777294683
Predicted improvement:          0.000001003
lambda =          1; f =          1101.5777283
Norm of dx 0.00040011
-----
Improvement on iteration 70 =          0.000001211
-----
f at the beginning of new iteration,          1101.5777282572
Predicted improvement:          0.000000428
lambda =          1; f =          1101.5777278
Norm of dx 0.00042182
-----
Improvement on iteration 71 =          0.000000419
-----
f at the beginning of new iteration,          1101.5777278378
Predicted improvement:          0.000000058
lambda =          1; f =          1101.5777278
lambda =         1.9332; f =          1101.5777277
Norm of dx 0.00011383
-----
Improvement on iteration 72 =          0.000000101
-----

```

code.log

```
-----
f at the beginning of new iteration,      1101.5777277372
Predicted improvement:      0.000000032
lambda =      1; f =      1101.5777277
Norm of dx 9.1277e-05
-----
```

```
Improvement on iteration 73 =      0.000000033
improvement < crit termination
```

Final value of minus the log posterior (or likelihood): 1101.577728

RESULTS FROM POSTERIOR ESTIMATION

parameters

	prior mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2144	0.0767	beta	0.2000
rho_a_d	0.500	0.4999	0.2774	beta	0.2000
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000
rho_mu_d	0.500	0.5000	0.2774	beta	0.2000
rho_LTV	0.500	0.4955	0.2750	beta	0.2000
rho_d	0.500	0.5130	0.2764	beta	0.2000
rho_d_stern	0.500	0.9032	0.0152	beta	0.2000
rho_c_ast	0.500	0.6579	0.2422	beta	0.2000
rho_d_ast	0.500	0.5000	0.2773	beta	0.2000
rho_s_c	0.500	0.4003	0.0942	beta	0.2000
rho_r	0.500	0.6731	0.0926	beta	0.2000
rho_p	-0.500	-0.4978	0.2000	norm	0.2000
theta_c	0.750	0.2817	0.0691	beta	0.1500
sigma	1.000	1.9216	0.1078	norm	0.3700
phi	2.000	5.4859	0.8201	gamm	0.7000
omega	0.200	0.0981	0.0622	beta	0.1000
h_c	0.500	0.2926	0.0514	beta	0.1000
alpha_c	0.500	0.4029	0.0289	beta	0.1000

standard deviation of shocks

	prior mean	mode	s. d.	prior	pstdev
epsa_c	0.100	2.3069	0.1625	invg	2.0000
epsa_d	0.100	0.0462	0.0189	invg	2.0000
epsmu_c	0.100	0.0461	0.0188	invg	2.0000
epsmu_d	0.100	0.0461	0.0188	invg	2.0000
epsLTV	0.100	0.0461	0.0188	invg	2.0000
epsd	0.100	0.0456	0.0183	invg	2.0000
epsc_ast	0.100	0.0370	0.0111	invg	2.0000
epsd_ast	0.100	0.0461	0.0188	invg	2.0000
epsd_stern	0.100	0.5947	0.0965	invg	2.0000
epss_c	0.100	1.1403	0.0910	invg	2.0000
epsr	0.100	0.6245	0.1822	invg	2.0000
epsyf	0.100	0.0458	0.0185	invg	2.0000
epsn	0.010	0.8154	0.0588	invg	0.1000
epspi_d	0.010	5.5307	0.3810	invg	0.1000

Log data density [Laplace approximation] is -1156.295452.

Estimation::mcmc: One Chain mode.

Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!

Estimation::mcmc: Details about the MCMC are available in
code_109/metropolis\code_mh_history_0.mat

code.log

Estimation::mcmc: Number of mh files: 55 per block.
Estimation::mcmc: Total number of generated files: 55.
Estimation::mcmc: Total number of iterations: 200000.
Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 32.9608%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi 2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val No Taper	p-val 4%
Taper p-val 8% Taper	p-val 15% Taper			
SE_epsa_c	2.328	0.162	0.000	
0.323	0.273			
SE_epsa_d	0.094	0.072	0.000	
0.276	0.422			
SE_epsmu_c	0.096	0.082	0.000	
0.005	0.076			
SE_epsmu_d	0.080	0.052	0.000	
0.077	0.187			
SE_epsLTV	0.089	0.064	0.000	
0.676	0.752			
SE_epsd	0.080	0.059	0.000	
0.730	0.751			
SE_epsc_ast	0.043	0.015	0.000	
0.768	0.776			
SE_epsd_ast	0.092	0.088	0.162	
0.954	0.964			
SE_epsd_stern	0.568	0.091	0.000	
0.459	0.402			
SE_epss_c	1.164	0.094	0.000	
0.484	0.459			
SE_epsr	0.742	0.231	0.000	
0.730	0.759			
SE_epsyf	0.079	0.048	0.000	
0.237	0.376			
SE_epsn	0.827	0.061	0.036	
0.846	0.806			
SE_epspi_d	5.604	0.401	0.000	
0.669	0.675			
rho_a_c	0.222	0.073	0.017	
0.798	0.771			
rho_a_d	0.498	0.201	0.000	
0.279	0.236			
rho_mu_c	0.492	0.199	0.000	
0.070	0.079			
rho_mu_d	0.496	0.200	0.005	
0.743	0.688			
rho_LTV	0.493	0.198	0.000	
0.580	0.601			
rho_d	0.533	0.198	0.000	
0.492	0.442			
rho_d_stern	0.902	0.015	0.000	
0.034	0.051			
rho_c_ast	0.642	0.187	0.082	
0.864	0.865			
rho_d_ast	0.501	0.200	0.360	
0.912	0.922			
rho_s_c	0.404	0.094	0.000	
0.446	0.304			
rho_r	0.617	0.114	0.000	
0.807	0.827			
rho_p	-0.504	0.197	0.018	
0.833	0.766			

			code. log	
theta_c		0.272		0.000
0.637	0.621	0.592	0.065	0.000
sigma		1.961		0.000
0.036	0.028	0.014	0.112	0.000
phi		5.671		0.000
0.377	0.373	0.333	0.843	0.000
omega		0.124		0.000
0.740	0.765	0.778	0.061	0.000
h_c		0.283		0.000
0.070	0.060	0.036	0.050	0.000
alpha_c		0.403		0.000
0.435	0.409	0.437	0.029	0.000

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
 Done!
 Estimation::marginal density: I'm computing the posterior log marginal density
 (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1155.002240.

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2223	0.1001	0.3385	beta	0.2000
rho_a_d	0.500	0.4932	0.1573	0.8150	beta	0.2000
rho_mu_c	0.500	0.4994	0.1705	0.8204	beta	0.2000
rho_mu_d	0.500	0.4956	0.1601	0.8123	beta	0.2000
rho_LTV	0.500	0.4971	0.1838	0.8256	beta	0.2000
rho_d	0.500	0.5177	0.1969	0.8449	beta	0.2000
rho_d_stern	0.500	0.9020	0.8769	0.9268	beta	0.2000
rho_c_ast	0.500	0.6442	0.3558	0.9452	beta	0.2000
rho_d_ast	0.500	0.4988	0.1846	0.8368	beta	0.2000
rho_s_c	0.500	0.4063	0.2578	0.5669	beta	0.2000
rho_r	0.500	0.6154	0.4409	0.7829	beta	0.2000
rho_p	-0.500	-0.5040	-0.8302	-0.1796	norm	0.2000
theta_c	0.750	0.2727	0.1646	0.3776	beta	0.1500
sigma	1.000	1.9667	1.7867	2.1460	norm	0.3700
phi	2.000	5.7010	4.2986	7.0650	gamma	0.7000
omega	0.200	0.1259	0.0255	0.2174	beta	0.1000
h_c	0.500	0.2815	0.1976	0.3654	beta	0.1000
alpha_c	0.500	0.4018	0.3545	0.4498	beta	0.1000

standard deviation of shocks	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.3290	2.0502	2.5839	invg	2.0000
epsa_d	0.100	0.1065	0.0225	0.2243	invg	2.0000
epsmu_c	0.100	0.1059	0.0207	0.2579	invg	2.0000
epsmu_d	0.100	0.0767	0.0254	0.1381	invg	2.0000
epsLTV	0.100	0.0791	0.0233	0.1530	invg	2.0000
epsd	0.100	0.0634	0.0273	0.1022	invg	2.0000
epsc_ast	0.100	0.0434	0.0221	0.0637	invg	2.0000
epsd_ast	0.100	0.0779	0.0227	0.1461	invg	2.0000

			code.log			
epsd_stern	0.100	0.5645	0.4230	0.7074	invg	2.0000
epss_c	0.100	1.1648	1.0081	1.3157	invg	2.0000
epsr	0.100	0.7494	0.4005	1.1038	invg	2.0000
epsyf	0.100	0.0806	0.0251	0.1464	invg	2.0000
epsn	0.010	0.8256	0.7263	0.9197	invg	0.1000
epspi_d	0.010	5.5996	4.9481	6.1995	invg	0.1000

Estimati on: : mcmc: Forecasted vari ables (mean)
 Estimati on: : mcmc: Forecasted vari ables (mean), done!
 Estimati on: : mcmc: Forecasted vari ables (poi nt)
 Estimati on: : mcmc: Forecasted vari ables (poi nt), done!

Initial value of the log posterior (or likelihood): -1108.7518

 f at the beginning of new iteration, 1108.7518234865
 Predicted improvement: 0.003237635
 lambda = 1; f = 1108.7480540
 Norm of dx 0.00080469

 Improvement on iteration 1 = 0.003769445

f at the beginning of new iteration, 1108.7480540416
 Predicted improvement: 0.000841105
 lambda = 1; f = 1108.7467628
 lambda = 1.9332; f = 1108.7462638
 Norm of dx 0.00051217

 Improvement on iteration 2 = 0.001790215

f at the beginning of new iteration, 1108.7462638270
 Predicted improvement: 0.000253206
 lambda = 1; f = 1108.7458988
 lambda = 1.9332; f = 1108.7458116
 Norm of dx 0.0002812

 Improvement on iteration 3 = 0.000452272

f at the beginning of new iteration, 1108.7458115553
 Predicted improvement: 0.000139128
 lambda = 1; f = 1108.7455456
 lambda = 1.9332; f = 1108.7453198
 lambda = 3.7372; f = 1108.7449446
 lambda = 7.2247; f = 1108.7444484
 Norm of dx 0.00018952

 Improvement on iteration 4 = 0.001363202

f at the beginning of new iteration, 1108.7444483534
 Predicted improvement: 0.000608491
 lambda = 1; f = 1108.7436993
 Norm of dx 0.0016696

 Improvement on iteration 5 = 0.000749100

f at the beginning of new iteration, 1108.7436992537
 Predicted improvement: 0.000095725
 lambda = 1; f = 1108.7435675
 Norm of dx 0.00055419

code. log

```
-----
Improvement on iteration 6 =          0.000131765
-----
f at the beginning of new iteration,      1108.7435674884
Predicted improvement:          0.000071008
lambda =          1; f =          1108.7434508
lambda =      1.9332; f =          1108.7433878
Norm of dx 0.00040286
-----
Improvement on iteration 7 =          0.000179662
-----
f at the beginning of new iteration,      1108.7433878261
Predicted improvement:          0.000123444
lambda =          1; f =          1108.7431774
lambda =      1.9332; f =          1108.7430467
lambda =      3.7372; f =          1108.7429736
Norm of dx 0.00054623
-----
Improvement on iteration 8 =          0.000414273
-----
f at the beginning of new iteration,      1108.7429735531
Predicted improvement:          0.000144573
lambda =          1; f =          1108.7427534
lambda =      1.9332; f =          1108.7426729
Norm of dx 0.00042429
-----
Improvement on iteration 9 =          0.000300664
-----
f at the beginning of new iteration,      1108.7426728887
Predicted improvement:          0.000038946
lambda =          1; f =          1108.7426026
lambda =      1.9332; f =          1108.7425507
lambda =      3.7372; f =          1108.7424876
Norm of dx 0.00027758
-----
Improvement on iteration 10 =         0.000185326
-----
f at the beginning of new iteration,      1108.7424875628
Predicted improvement:          0.000111272
lambda =          1; f =          1108.7423145
lambda =      1.9332; f =          1108.7422423
Norm of dx 0.00066017
-----
Improvement on iteration 11 =         0.000245306
-----
f at the beginning of new iteration,      1108.7422422571
Predicted improvement:          0.000043751
lambda =          1; f =          1108.7421782
lambda =      1.9332; f =          1108.7421604
Norm of dx 0.00020437
-----
Improvement on iteration 12 =         0.000081820
-----
f at the beginning of new iteration,      1108.7421604368
Predicted improvement:          0.000024575
lambda =          1; f =          1108.7421137
```



```

                                code.log
lambda = 1.9332; f = 1108.7420742
lambda = 3.7372; f = 1108.7420096
lambda = 7.2247; f = 1108.7419280
Norm of dx 8.9595e-05
-----
Improvement on iteration 13 = 0.000232466
-----
f at the beginning of new iteration, 1108.7419279705
Predicted improvement: 0.000095402
lambda = 1; f = 1108.7417929
lambda = 1.9332; f = 1108.7417680
Norm of dx 0.0010644
-----
Improvement on iteration 14 = 0.000160007
-----
f at the beginning of new iteration, 1108.7417679639
Predicted improvement: 0.000040097
lambda = 1; f = 1108.7417000
lambda = 1.9332; f = 1108.7416586
lambda = 3.7372; f = 1108.7416389
Norm of dx 9.4687e-05
-----
Improvement on iteration 15 = 0.000129079
-----
f at the beginning of new iteration, 1108.7416388850
Predicted improvement: 0.000031183
lambda = 1; f = 1108.7415960
Norm of dx 0.00047719
-----
Improvement on iteration 16 = 0.000042886
-----
f at the beginning of new iteration, 1108.7415959990
Predicted improvement: 0.000011508
lambda = 1; f = 1108.7415804
Norm of dx 0.00029433
-----
Improvement on iteration 17 = 0.000015602
-----
f at the beginning of new iteration, 1108.7415803971
Predicted improvement: 0.000007625
lambda = 1; f = 1108.7415672
lambda = 1.9332; f = 1108.7415589
lambda = 3.7372; f = 1108.7415535
Norm of dx 0.00018465
-----
Improvement on iteration 18 = 0.000026889
-----
f at the beginning of new iteration, 1108.7415535082
Predicted improvement: 0.000018169
lambda = 1; f = 1108.7415184
lambda = 1.9332; f = 1108.7414880
lambda = 3.7372; f = 1108.7414353
lambda = 7.2247; f = 1108.7413566
lambda = 13.967; f = 1108.7412911
Norm of dx 0.00013419
-----
Improvement on iteration 19 = 0.000262418

```

code. log

f at the beginning of new iteration, 1108.7412910907
Predicted improvement: 0.000023273
lambda = 1; f = 1108.7412636
Norm of dx 0.00072267

Improvement on iteration 20 = 0.000027487

f at the beginning of new iteration, 1108.7412636036
Predicted improvement: 0.000003028
lambda = 1; f = 1108.7412584
lambda = 1.9332; f = 1108.7412552
lambda = 3.7372; f = 1108.7412534
Norm of dx 0.00015578

Improvement on iteration 21 = 0.000010240

f at the beginning of new iteration, 1108.7412533631
Predicted improvement: 0.000006632
lambda = 1; f = 1108.7412409
lambda = 1.9332; f = 1108.7412304
lambda = 3.7372; f = 1108.7412137
lambda = 7.2247; f = 1108.7411940
Norm of dx 6.6461e-05

Improvement on iteration 22 = 0.000059368

f at the beginning of new iteration, 1108.7411939956
Predicted improvement: 0.000016932
lambda = 1; f = 1108.7411709
Norm of dx 0.0005002

Improvement on iteration 23 = 0.000023118

f at the beginning of new iteration, 1108.7411708773
Predicted improvement: 0.000010064
lambda = 1; f = 1108.7411566
lambda = 1.9332; f = 1108.7411537
Norm of dx 0.00040488

Improvement on iteration 24 = 0.000017177

f at the beginning of new iteration, 1108.7411537004
Predicted improvement: 0.000004285
lambda = 1; f = 1108.7411471
lambda = 1.9332; f = 1108.7411446
Norm of dx 0.00014691

Improvement on iteration 25 = 0.000009129

f at the beginning of new iteration, 1108.7411445716
Predicted improvement: 0.000000733
lambda = 1; f = 1108.7411434
lambda = 1.9332; f = 1108.7411428
Norm of dx 5.5333e-05

```

                                code.log
Improvement on iteration 26 =      0.000001743
-----
f at the beginning of new iteration,      1108.7411428288
Predicted improvement:      0.000000986
lambda =      1; f =      1108.7411410
lambda =      1.9332; f =      1108.7411394
lambda =      3.7372; f =      1108.7411370
lambda =      7.2247; f =      1108.7411342
Norm of dx 6.2357e-05
-----
Improvement on iteration 27 =      0.000008612
-----
f at the beginning of new iteration,      1108.7411342172
Predicted improvement:      0.000007212
lambda =      1; f =      1108.7411214
lambda =      1.9332; f =      1108.7411124
lambda =      3.7372; f =      1108.7411034
Norm of dx 0.00023828
-----
Improvement on iteration 28 =      0.000030797
-----
f at the beginning of new iteration,      1108.7411034204
Predicted improvement:      0.000005946
lambda =      1; f =      1108.7410953
Norm of dx 0.00018917
-----
Improvement on iteration 29 =      0.000008121
-----
f at the beginning of new iteration,      1108.7410952996
Predicted improvement:      0.000002818
lambda =      1; f =      1108.7410912
lambda =      1.9332; f =      1108.7410903
Norm of dx 0.000113
-----
Improvement on iteration 30 =      0.000005000
-----
f at the beginning of new iteration,      1108.7410903000
Predicted improvement:      0.000001775
lambda =      1; f =      1108.7410871
lambda =      1.9332; f =      1108.7410849
lambda =      3.7372; f =      1108.7410824
Norm of dx 8.7236e-05
-----
Improvement on iteration 31 =      0.000007945
-----
f at the beginning of new iteration,      1108.7410823548
Predicted improvement:      0.000002515
lambda =      1; f =      1108.7410780
lambda =      1.9332; f =      1108.7410751
lambda =      3.7372; f =      1108.7410728
Norm of dx 0.00016435
-----
Improvement on iteration 32 =      0.000009587
-----
f at the beginning of new iteration,      1108.7410727677
Predicted improvement:      0.000006220

```

```

                                code. log
lambda =          1; f =          1108. 7410608
lambda =         1. 9332; f =          1108. 7410505
lambda =         3. 7372; f =          1108. 7410327
lambda =         7. 2247; f =          1108. 7410071
lambda =        13. 967; f =          1108. 7409894
Norm of dx 0. 00018392
-----
Improvement on iteration 33 =          0. 000083325
-----
f at the beginning of new iteration,          1108. 7409894424
Predicted improvement:          0. 000004906
lambda =          1; f =          1108. 7409837
Norm of dx 0. 00032246
-----
Improvement on iteration 34 =          0. 000005757
-----
f at the beginning of new iteration,          1108. 7409836859
Predicted improvement:          0. 000000730
lambda =          1; f =          1108. 7409824
lambda =         1. 9332; f =          1108. 7409815
lambda =         3. 7372; f =          1108. 7409808
Norm of dx 9. 115e-05
-----
Improvement on iteration 35 =          0. 000002887
-----
f at the beginning of new iteration,          1108. 7409807988
Predicted improvement:          0. 000002003
lambda =          1; f =          1108. 7409768
lambda =         1. 9332; f =          1108. 7409732
lambda =         3. 7372; f =          1108. 7409664
lambda =         7. 2247; f =          1108. 7409542
lambda =        13. 967; f =          1108. 7409341
lambda =          27; f =          1108. 7409084
Norm of dx 7. 8515e-05
-----
Improvement on iteration 36 =          0. 000072427
-----
f at the beginning of new iteration,          1108. 7409083720
Predicted improvement:          0. 000016544
lambda =          1; f =          1108. 7408896
Norm of dx 0. 0012942
-----
Improvement on iteration 37 =          0. 000018812
-----
f at the beginning of new iteration,          1108. 7408895599
Predicted improvement:          0. 000001629
lambda =          1; f =          1108. 7408870
lambda =         1. 9332; f =          1108. 7408860
Norm of dx 0. 00023257
-----
Improvement on iteration 38 =          0. 000003568
-----
f at the beginning of new iteration,          1108. 7408859914
Predicted improvement:          0. 000001024
lambda =          1; f =          1108. 7408846
Norm of dx 0. 00010135
-----

```

```

                                code.log
Improvement on iteration 39 =      0.000001429
-----
f at the beginning of new iteration,      1108.7408845627
Predicted improvement:      0.000000504
lambda =      1; f =      1108.7408840
Norm of dx 5.8054e-05
-----
Improvement on iteration 40 =      0.000000599
-----
f at the beginning of new iteration,      1108.7408839632
Predicted improvement:      0.000000238
lambda =      1; f =      1108.7408836
lambda =      1.9332; f =      1108.7408833
lambda =      3.7372; f =      1108.7408830
Norm of dx 5.2924e-05
-----
Improvement on iteration 41 =      0.000000920
-----
f at the beginning of new iteration,      1108.7408830432
Predicted improvement:      0.000000690
lambda =      1; f =      1108.7408818
lambda =      1.9332; f =      1108.7408808
lambda =      3.7372; f =      1108.7408794
lambda =      7.2247; f =      1108.7408787
Norm of dx 4.8372e-05
-----
Improvement on iteration 42 =      0.000004358
-----
f at the beginning of new iteration,      1108.7408786851
Predicted improvement:      0.000002032
lambda =      1; f =      1108.7408759
Norm of dx 0.00041265
-----
Improvement on iteration 43 =      0.000002828
-----
f at the beginning of new iteration,      1108.7408758569
Predicted improvement:      0.000000659
lambda =      1; f =      1108.7408749
Norm of dx 0.00026639
-----
Improvement on iteration 44 =      0.000000910
-----
f at the beginning of new iteration,      1108.7408749473
Predicted improvement:      0.000000166
lambda =      1; f =      1108.7408747
Norm of dx 0.00014892
-----
Improvement on iteration 45 =      0.000000216
-----
f at the beginning of new iteration,      1108.7408747315
Predicted improvement:      0.000000246
lambda =      1; f =      1108.7408745
Norm of dx 0.00015578
-----
Improvement on iteration 46 =      0.000000213
-----

```

code.log

f at the beginning of new iteration, 1108.7408745185
Predicted improvement: 0.00000268
lambda = 1; f = 1108.7408741
lambda = 1.9332; f = 1108.7408737
lambda = 3.7372; f = 1108.7408732
Norm of dx 8.1933e-05

Improvement on iteration 47 = 0.000001277

f at the beginning of new iteration, 1108.7408732413
Predicted improvement: 0.000001582
lambda = 1; f = 1108.7408708
lambda = 1.9332; f = 1108.7408697
Norm of dx 0.00013469

Improvement on iteration 48 = 0.000003509

f at the beginning of new iteration, 1108.7408697323
Predicted improvement: 0.000000743
lambda = 1; f = 1108.7408689
Norm of dx 0.00020247

Improvement on iteration 49 = 0.000000872

f at the beginning of new iteration, 1108.7408688604
Predicted improvement: 0.000000159
lambda = 1; f = 1108.7408686
Norm of dx 0.00014188

Improvement on iteration 50 = 0.000000221

f at the beginning of new iteration, 1108.7408686395
Predicted improvement: 0.000000098
lambda = 1; f = 1108.7408685
lambda = 1.9332; f = 1108.7408684
lambda = 3.7372; f = 1108.7408683
Norm of dx 7.4371e-05

Improvement on iteration 51 = 0.000000321

f at the beginning of new iteration, 1108.7408683186
Predicted improvement: 0.000000227
lambda = 1; f = 1108.7408679
lambda = 1.9332; f = 1108.7408675
lambda = 3.7372; f = 1108.7408670
lambda = 7.2247; f = 1108.7408664
Norm of dx 1.8855e-05

Improvement on iteration 52 = 0.000001968

f at the beginning of new iteration, 1108.7408663510
Predicted improvement: 0.000001345
lambda = 1; f = 1108.7408642
lambda = 1.9332; f = 1108.7408630
Norm of dx 0.00024112

```

                                code.log
Improvement on iteration 53 =      0.000003376
-----
f at the beginning of new iteration,      1108.7408629750
Predicted improvement:      0.000002138
lambda =      1; f =      1108.7408602
Norm of dx 0.00040098
-----
Improvement on iteration 54 =      0.000002740
-----
f at the beginning of new iteration,      1108.7408602354
Predicted improvement:      0.000000625
lambda =      1; f =      1108.7408595
Norm of dx 0.00025117
-----
Improvement on iteration 55 =      0.000000755
-----
f at the beginning of new iteration,      1108.7408594801
Predicted improvement:      0.000000137
lambda =      1; f =      1108.7408593
Norm of dx 5.124e-05
-----
Improvement on iteration 56 =      0.000000189
-----
f at the beginning of new iteration,      1108.7408592910
Predicted improvement:      0.000000523
lambda =      1; f =      1108.7408596
lambda =      0.33333; f =      1108.7408591
Norm of dx 0.00018059
-----
Improvement on iteration 57 =      0.000000154
-----
f at the beginning of new iteration,      1108.7408591371
Predicted improvement:      0.000000140
lambda =      1; f =      1108.7408589
lambda =      1.9332; f =      1108.7408587
lambda =      3.7372; f =      1108.7408585
Norm of dx 2.029e-05
-----
Improvement on iteration 58 =      0.000000639
-----
f at the beginning of new iteration,      1108.7408584978
Predicted improvement:      0.000000299
lambda =      1; f =      1108.7408580
lambda =      1.9332; f =      1108.7408577
Norm of dx 5.8197e-05
-----
Improvement on iteration 59 =      0.000000758
-----
f at the beginning of new iteration,      1108.7408577402
Predicted improvement:      0.000000571
lambda =      1; f =      1108.7408567
lambda =      1.9332; f =      1108.7408560
lambda =      3.7372; f =      1108.7408554
Norm of dx 0.00010228
-----
Improvement on iteration 60 =      0.000002378

```

code.log

```

-----
f at the beginning of new iteration,      1108.7408553622
Predicted improvement:      0.000001154
lambda =      1; f =      1108.7408536
lambda =      1.9332; f =      1108.7408527
Norm of dx 0.00015554
-----

```

Improvement on iteration 61 = 0.000002622

```

-----
f at the beginning of new iteration,      1108.7408527402
Predicted improvement:      0.000000407
lambda =      1; f =      1108.7408523
Norm of dx 8.2286e-05
-----

```

Improvement on iteration 62 = 0.000000470

```

-----
f at the beginning of new iteration,      1108.7408522701
Predicted improvement:      0.000000038
lambda =      1; f =      1108.7408522
Norm of dx 2.8876e-05
-----

```

Improvement on iteration 63 = 0.000000053
improvement < crit termination

Final value of minus the log posterior (or likelihood): 1108.740852

RESULTS FROM POSTERIOR ESTIMATION
parameters

	prior mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2139	0.0764	beta	0.2000
rho_a_d	0.500	0.5000	0.2774	beta	0.2000
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000
rho_mu_d	0.500	0.5000	0.2774	beta	0.2000
rho_LTV	0.500	0.4954	0.2750	beta	0.2000
rho_d	0.500	0.5135	0.2764	beta	0.2000
rho_d_stern	0.500	0.9037	0.0151	beta	0.2000
rho_c_ast	0.500	0.6601	0.2413	beta	0.2000
rho_d_ast	0.500	0.5000	0.2773	beta	0.2000
rho_s_c	0.500	0.3998	0.0938	beta	0.2000
rho_r	0.500	0.6725	0.0927	beta	0.2000
rho_p	-0.500	-0.4977	0.2000	norm	0.2000
theta_c	0.750	0.2814	0.0690	beta	0.1500
sigma	1.000	1.9226	0.1079	norm	0.3700
phi	2.000	5.4910	0.8191	gamma	0.7000
omega	0.200	0.0977	0.0619	beta	0.1000
h_c	0.500	0.2931	0.0513	beta	0.1000
alpha_c	0.500	0.4028	0.0287	beta	0.1000

standard deviation of shocks

	prior mean	mode	s. d.	prior	pstdev
epsa_c	0.100	2.2971	0.1611	invga	2.0000
epsa_d	0.100	0.0462	0.0189	invga	2.0000
epsmu_c	0.100	0.0461	0.0188	invga	2.0000
epsmu_d	0.100	0.0461	0.0188	invga	2.0000
epsLTV	0.100	0.0461	0.0188	invga	2.0000
epsd	0.100	0.0456	0.0182	invga	2.0000
epsc_ast	0.100	0.0369	0.0110	invga	2.0000
epsd_ast	0.100	0.0461	0.0188	invga	2.0000


```

                                code. log
epsd_stern  0.100  0.5936  0.0959 invg  2.0000
epss_c      0.100  1.1354  0.0902 invg  2.0000
epsr        0.100  0.6231  0.1816 invg  2.0000
epsyf       0.100  0.0458  0.0185 invg  2.0000
epsn        0.010  0.8123  0.0583 invg  0.1000
epspi_d     0.010  5.5185  0.3785 invg  0.1000

```

Log data density [Laplace approximation] is -1163.548716.

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_110/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.
 Estimation::mcmc: Total number of iterations: 200000.
 Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.4108%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val	No Taper	p-val	4%
Taper p-val	8% Taper p-val	15% Taper p-val				
SE_epsa_c	2.327	0.169	0.010	0.011	0.000	
SE_epsa_d	0.081	0.051	0.392	0.452	0.000	
SE_epsmu_c	0.106	0.099	0.981	0.985	0.413	
SE_epsmu_d	0.080	0.049	0.093	0.162	0.000	
SE_epsLTV	0.088	0.067	0.219	0.247	0.000	
SE_epsd	0.068	0.035	0.440	0.500	0.000	
SE_epsc_ast	0.042	0.013	0.096	0.065	0.000	
SE_epsd_ast	0.080	0.043	0.021	0.021	0.000	
SE_epsd_stern	0.094	0.093	0.021	0.058	0.000	
SE_epss_c	1.157	0.093	0.282	0.309	0.001	
SE_epsr	0.771	0.219	0.788	0.784	0.000	
SE_epsyf	0.729	0.061	0.720	0.732	0.000	
SE_epsn	0.686	0.059	0.578	0.626	0.003	
SE_epspi_d	0.822	0.392	0.791	0.808	0.000	
rho_a_c	5.590	0.072	0.393	0.413	0.000	
rho_a_d	0.390	0.198	0.485	0.474	0.202	
rho_mu_c	0.223	0.201	0.867	0.855	0.080	
	0.438		0.846	0.846		
	0.495					
	0.819					
	0.494					
	0.850					

			code.	log	
rho_mu_d		0.498		0.199	0.000
0.339	0.344	0.314			
rho_LTV		0.496		0.200	0.000
0.368	0.331	0.286			
rho_d		0.518		0.199	0.000
0.532	0.537	0.502			
rho_d_stern		0.903		0.015	0.000
0.380	0.399	0.428			
rho_c_ast		0.640		0.187	0.065
0.857	0.858	0.849			
rho_d_ast		0.498		0.201	0.000
0.154	0.152	0.106			
rho_s_c		0.403		0.092	0.000
0.014	0.016	0.010			
rho_r		0.621		0.110	0.001
0.838	0.844	0.814			
rho_p		-0.490		0.199	0.000
0.394	0.369	0.354			
theta_c		0.274		0.065	0.000
0.478	0.479	0.471			
sigma		1.962		0.112	0.000
0.036	0.025	0.003			
phi		5.694		0.851	0.000
0.339	0.339	0.286			
omega		0.120		0.060	0.011
0.826	0.829	0.793			
h_c		0.286		0.050	0.000
0.216	0.282	0.317			
alpha_c		0.403		0.028	0.000
0.375	0.417	0.445			

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
 Done!
 Estimation::marginal density: I'm computing the posterior log marginal density
 (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1162.291739.

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2219	0.1042	0.3370	beta	0.2000
rho_a_d	0.500	0.5037	0.1772	0.8342	beta	0.2000
rho_mu_c	0.500	0.4920	0.1643	0.8202	beta	0.2000
rho_mu_d	0.500	0.4988	0.1720	0.8261	beta	0.2000
rho_LTV	0.500	0.4981	0.1527	0.8121	beta	0.2000
rho_d	0.500	0.5234	0.2058	0.8556	beta	0.2000
rho_d_stern	0.500	0.9033	0.8784	0.9277	beta	0.2000
rho_c_ast	0.500	0.6497	0.3641	0.9457	beta	0.2000
rho_d_ast	0.500	0.4983	0.1843	0.8440	beta	0.2000
rho_s_c	0.500	0.4033	0.2521	0.5541	beta	0.2000
rho_r	0.500	0.6145	0.4438	0.7832	beta	0.2000
rho_p	-0.500	-0.4843	-0.8012	-0.1580	norm	0.2000

			code	log		
theta_c	0.750	0.2732	0.1652	0.3787	beta	0.1500
sigma	1.000	1.9596	1.7819	2.1322	norm	0.3700
phi	2.000	5.7149	4.3361	7.1168	gamma	0.7000
omega	0.200	0.1228	0.0256	0.2165	beta	0.1000
h_c	0.500	0.2852	0.2041	0.3674	beta	0.1000
alpha_c	0.500	0.4023	0.3558	0.4474	beta	0.1000

standard deviation of shocks

	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.3227	2.0453	2.5875	invg	2.0000
epsa_d	0.100	0.0711	0.0254	0.1205	invg	2.0000
epsmu_c	0.100	0.0992	0.0220	0.2076	invg	2.0000
epsmu_d	0.100	0.0790	0.0242	0.1451	invg	2.0000
epsLTV	0.100	0.0814	0.0242	0.1462	invg	2.0000
epsd	0.100	0.0708	0.0226	0.1198	invg	2.0000
epsc_ast	0.100	0.0425	0.0226	0.0621	invg	2.0000
epsd_ast	0.100	0.0773	0.0258	0.1321	invg	2.0000
epsd_stern	0.100	0.5690	0.4171	0.7171	invg	2.0000
epss_c	0.100	1.1591	1.0026	1.3061	invg	2.0000
epsr	0.100	0.7423	0.4025	1.0723	invg	2.0000
epsyf	0.100	0.0831	0.0220	0.1583	invg	2.0000
epsn	0.010	0.8196	0.7182	0.9141	invg	0.1000
epspi_d	0.010	5.5968	4.9382	6.2194	invg	0.1000

Estimation: : mcmc: Forecasted variables (mean)
 Estimation: : mcmc: Forecasted variables (mean), done!
 Estimation: : mcmc: Forecasted variables (point)
 Estimation: : mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1116.3487

 f at the beginning of new iteration, 1116.3487029778
 Predicted improvement: 0.002948309
 lambda = 1; f = 1116.3456712
 Norm of dx 0.00076789

Improvement on iteration 1 = 0.003031786

f at the beginning of new iteration, 1116.3456711921
 Predicted improvement: 0.000460144
 lambda = 1; f = 1116.3448550
 lambda = 1.9332; f = 1116.3442813
 lambda = 3.7372; f = 1116.3436881
 Norm of dx 0.00033231

Improvement on iteration 2 = 0.001983075

f at the beginning of new iteration, 1116.3436881174
 Predicted improvement: 0.000275492
 lambda = 1; f = 1116.3432628
 lambda = 1.9332; f = 1116.3430912
 Norm of dx 0.00042413

Improvement on iteration 3 = 0.000596943

f at the beginning of new iteration, 1116.3430911748
 Predicted improvement: 0.000223306
 lambda = 1; f = 1116.3427111
 lambda = 1.9332; f = 1116.3424763

```

                                code. log
lambda = 3.7372; f = 1116.3423507
Norm of dx 0.00036493
-----
Improvement on iteration 4 = 0.000740438
-----
f at the beginning of new iteration, 1116.3423507365
Predicted improvement: 0.000126631
lambda = 1; f = 1116.3421569
lambda = 1.9332; f = 1116.3420844
Norm of dx 0.00020109
-----
Improvement on iteration 5 = 0.000266385
-----
f at the beginning of new iteration, 1116.3420843512
Predicted improvement: 0.000098766
lambda = 1; f = 1116.3419014
lambda = 1.9332; f = 1116.3417571
lambda = 3.7372; f = 1116.3415508
lambda = 7.2247; f = 1116.3414232
Norm of dx 0.00028024
-----
Improvement on iteration 6 = 0.000661113
-----
f at the beginning of new iteration, 1116.3414232377
Predicted improvement: 0.000102482
lambda = 1; f = 1116.3412917
Norm of dx 0.00015485
-----
Improvement on iteration 7 = 0.000131552
-----
f at the beginning of new iteration, 1116.3412916856
Predicted improvement: 0.000031386
lambda = 1; f = 1116.3412426
lambda = 1.9332; f = 1116.3412207
Norm of dx 0.00013346
-----
Improvement on iteration 8 = 0.000070942
-----
f at the beginning of new iteration, 1116.3412207439
Predicted improvement: 0.000042227
lambda = 1; f = 1116.3411419
lambda = 1.9332; f = 1116.3410783
lambda = 3.7372; f = 1116.3409824
lambda = 7.2247; f = 1116.3408986
Norm of dx 0.00022713
-----
Improvement on iteration 9 = 0.000322173
-----
f at the beginning of new iteration, 1116.3408985706
Predicted improvement: 0.000120624
lambda = 1; f = 1116.3407244
lambda = 1.9332; f = 1116.3406827
Norm of dx 0.00047904
-----
Improvement on iteration 10 = 0.000215861
-----

```

code.log
f at the beginning of new iteration, 1116.3406827101
Predicted improvement: 0.000012618
lambda = 1; f = 1116.3406599
lambda = 1.9332; f = 1116.3406428
lambda = 3.7372; f = 1116.3406211
Norm of dx 0.00010355

Improvement on iteration 11 = 0.000061637

f at the beginning of new iteration, 1116.3406210736
Predicted improvement: 0.000055534
lambda = 1; f = 1116.3405217
lambda = 1.9332; f = 1116.3404500
lambda = 3.7372; f = 1116.3403691
Norm of dx 0.00033067

Improvement on iteration 12 = 0.000251958

f at the beginning of new iteration, 1116.3403691153
Predicted improvement: 0.000125848
lambda = 1; f = 1116.3401738
lambda = 1.9332; f = 1116.3400934
Norm of dx 0.0013451

Improvement on iteration 13 = 0.000275705

f at the beginning of new iteration, 1116.3400934100
Predicted improvement: 0.000047385
lambda = 1; f = 1116.3400213
lambda = 1.9332; f = 1116.3399949
Norm of dx 0.00054709

Improvement on iteration 14 = 0.000098480

f at the beginning of new iteration, 1116.3399949297
Predicted improvement: 0.000023860
lambda = 1; f = 1116.3399575
lambda = 1.9332; f = 1116.3399413
Norm of dx 0.00014303

Improvement on iteration 15 = 0.000053639

f at the beginning of new iteration, 1116.3399412911
Predicted improvement: 0.000006758
lambda = 1; f = 1116.3399306
lambda = 1.9332; f = 1116.3399256
Norm of dx 0.00011898

Improvement on iteration 16 = 0.000015654

f at the beginning of new iteration, 1116.3399256367
Predicted improvement: 0.000009464
lambda = 1; f = 1116.3399077
lambda = 1.9332; f = 1116.3398929
lambda = 3.7372; f = 1116.3398695
lambda = 7.2247; f = 1116.3398437
Norm of dx 0.00012974

code. log

```
-----
Improvement on iteration 17 =          0.000081916
-----
f at the beginning of new iteration,      1116.3398437204
Predicted improvement:          0.000048748
lambda =          1; f =          1116.3397672
lambda =    1.9332; f =          1116.3397338
Norm of dx 0.00062859
-----
Improvement on iteration 18 =          0.000109920
-----
f at the beginning of new iteration,      1116.3397338007
Predicted improvement:          0.000010265
lambda =          1; f =          1116.3397218
Norm of dx 0.00019053
-----
Improvement on iteration 19 =          0.000012029
-----
f at the beginning of new iteration,      1116.3397217721
Predicted improvement:          0.000001683
lambda =          1; f =          1116.3397188
lambda =    1.9332; f =          1116.3397168
lambda =    3.7372; f =          1116.3397149
Norm of dx 4.2696e-05
-----
Improvement on iteration 20 =          0.000006869
-----
f at the beginning of new iteration,      1116.3397149027
Predicted improvement:          0.000004809
lambda =          1; f =          1116.3397058
lambda =    1.9332; f =          1116.3396981
lambda =    3.7372; f =          1116.3396854
lambda =    7.2247; f =          1116.3396694
Norm of dx 9.0144e-05
-----
Improvement on iteration 21 =          0.000045538
-----
f at the beginning of new iteration,      1116.3396693650
Predicted improvement:          0.000014018
lambda =          1; f =          1116.3396520
Norm of dx 0.00044495
-----
Improvement on iteration 22 =          0.000017379
-----
f at the beginning of new iteration,      1116.3396519860
Predicted improvement:          0.000003820
lambda =          1; f =          1116.3396462
lambda =    1.9332; f =          1116.3396442
Norm of dx 0.00015839
-----
Improvement on iteration 23 =          0.000007833
-----
f at the beginning of new iteration,      1116.3396441533
Predicted improvement:          0.000002066
lambda =          1; f =          1116.3396409
lambda =    1.9332; f =          1116.3396396
```

Norm of dx 4.1639e-05

Improvement on iteration 24 = 0.000004559

f at the beginning of new iteration, 1116.3396395940
Predicted improvement: 0.000000507
lambda = 1; f = 1116.3396387
lambda = 1.9332; f = 1116.3396380
lambda = 3.7372; f = 1116.3396373
Norm of dx 3.0526e-05

Improvement on iteration 25 = 0.000002341

f at the beginning of new iteration, 1116.3396372525
Predicted improvement: 0.000001875
lambda = 1; f = 1116.3396337
lambda = 1.9332; f = 1116.3396307
lambda = 3.7372; f = 1116.3396258
lambda = 7.2247; f = 1116.3396200
Norm of dx 6.3066e-05

Improvement on iteration 26 = 0.000017262

f at the beginning of new iteration, 1116.3396199905
Predicted improvement: 0.000009392
lambda = 1; f = 1116.3396064
lambda = 1.9332; f = 1116.3396031
Norm of dx 0.000434

Improvement on iteration 27 = 0.000016897

f at the beginning of new iteration, 1116.3396030932
Predicted improvement: 0.000001682
lambda = 1; f = 1116.3396006
lambda = 1.9332; f = 1116.3395998
Norm of dx 8.825e-05

Improvement on iteration 28 = 0.000003292

f at the beginning of new iteration, 1116.3395998014
Predicted improvement: 0.000001162
lambda = 1; f = 1116.3395976
lambda = 1.9332; f = 1116.3395957
lambda = 3.7372; f = 1116.3395925
lambda = 7.2247; f = 1116.3395885
Norm of dx 4.822e-05

Improvement on iteration 29 = 0.000011271

f at the beginning of new iteration, 1116.3395885306
Predicted improvement: 0.000004483
lambda = 1; f = 1116.3395809
lambda = 1.9332; f = 1116.3395766
Norm of dx 0.00030356

Improvement on iteration 30 = 0.000011944

code.log

f at the beginning of new iteration, 1116.3395765864
Predicted improvement: 0.00009807
lambda = 1; f = 1116.3395594
lambda = 1.9332; f = 1116.3395475
lambda = 3.7372; f = 1116.3395360
Norm of dx 0.00062026

Improvement on iteration 31 = 0.000040544

f at the beginning of new iteration, 1116.3395360421
Predicted improvement: 0.000026843
lambda = 1; f = 1116.3394889
lambda = 1.9332; f = 1116.3394564
lambda = 3.7372; f = 1116.3394251
Norm of dx 0.00097326

Improvement on iteration 32 = 0.000110971

f at the beginning of new iteration, 1116.3394250706
Predicted improvement: 0.000007427
lambda = 1; f = 1116.3394170
Norm of dx 0.000146

Improvement on iteration 33 = 0.000008045

f at the beginning of new iteration, 1116.3394170261
Predicted improvement: 0.000000608
lambda = 1; f = 1116.3394160
lambda = 1.9332; f = 1116.3394152
lambda = 3.7372; f = 1116.3394145
Norm of dx 9.027e-05

Improvement on iteration 34 = 0.000002498

f at the beginning of new iteration, 1116.3394145277
Predicted improvement: 0.000002038
lambda = 1; f = 1116.3394106
lambda = 1.9332; f = 1116.3394072
lambda = 3.7372; f = 1116.3394014
lambda = 7.2247; f = 1116.3393932
lambda = 13.967; f = 1116.3393880
Norm of dx 7.5452e-05

Improvement on iteration 35 = 0.000026561

f at the beginning of new iteration, 1116.3393879664
Predicted improvement: 0.000009865
lambda = 1; f = 1116.3393744
Norm of dx 0.0007634

Improvement on iteration 36 = 0.000013568

f at the beginning of new iteration, 1116.3393743982
Predicted improvement: 0.000002311
lambda = 1; f = 1116.3393715
Norm of dx 0.00035496

code. log

```
-----
Improvement on iteration 37 =          0.000002899
-----
f at the beginning of new iteration,      1116.3393714993
Predicted improvement:          0.000000609
lambda =          1; f =          1116.3393707
Norm of dx 0.00026403
-----
Improvement on iteration 38 =          0.000000823
-----
f at the beginning of new iteration,      1116.3393706764
Predicted improvement:          0.000000780
lambda =          1; f =          1116.3393694
lambda =    1.9332; f =          1116.3393687
Norm of dx 9.0741e-05
-----
Improvement on iteration 39 =          0.000001967
-----
f at the beginning of new iteration,      1116.3393687095
Predicted improvement:          0.000000896
lambda =          1; f =          1116.3393673
lambda =    1.9332; f =          1116.3393667
Norm of dx 5.5975e-05
-----
Improvement on iteration 40 =          0.000002016
-----
f at the beginning of new iteration,      1116.3393666932
Predicted improvement:          0.000001223
lambda =          1; f =          1116.3393647
lambda =    1.9332; f =          1116.3393634
Norm of dx 0.00016272
-----
Improvement on iteration 41 =          0.000003269
-----
f at the beginning of new iteration,      1116.3393634241
Predicted improvement:          0.000002787
lambda =          1; f =          1116.3393595
lambda =    1.9332; f =          1116.3393586
Norm of dx 0.00025204
-----
Improvement on iteration 42 =          0.000004843
-----
f at the beginning of new iteration,      1116.3393585810
Predicted improvement:          0.000001878
lambda =          1; f =          1116.3393559
lambda =    1.9332; f =          1116.3393549
Norm of dx 0.00046511
-----
Improvement on iteration 43 =          0.000003679
-----
f at the beginning of new iteration,      1116.3393549018
Predicted improvement:          0.000000165
lambda =          1; f =          1116.3393546
lambda =    1.9332; f =          1116.3393544
lambda =    3.7372; f =          1116.3393544
Norm of dx 3.8898e-05
```

code.log

```
-----
Improvement on iteration 44 =          0.000000528
-----
f at the beginning of new iteration,      1116.3393543742
Predicted improvement:          0.000000360
lambda =          1; f =          1116.3393537
lambda =    1.9332; f =          1116.3393531
lambda =    3.7372; f =          1116.3393520
lambda =    7.2247; f =          1116.3393503
lambda =   13.967; f =          1116.3393486
Norm of dx 6.2444e-05
-----
Improvement on iteration 45 =          0.000005752
-----
f at the beginning of new iteration,      1116.3393486227
Predicted improvement:          0.000003091
lambda =          1; f =          1116.3393433
lambda =    1.9332; f =          1116.3393399
lambda =    3.7372; f =          1116.3393377
Norm of dx 0.00023472
-----
Improvement on iteration 46 =          0.000010929
-----
f at the beginning of new iteration,      1116.3393376934
Predicted improvement:          0.000001889
lambda =          1; f =          1116.3393357
Norm of dx 0.00057784
-----
Improvement on iteration 47 =          0.000002010
-----
f at the beginning of new iteration,      1116.3393356832
Predicted improvement:          0.000000316
lambda =          1; f =          1116.3393352
lambda =    1.9332; f =          1116.3393350
Norm of dx 0.00011712
-----
Improvement on iteration 48 =          0.000000696
-----
f at the beginning of new iteration,      1116.3393349873
Predicted improvement:          0.000000543
lambda =          1; f =          1116.3393340
lambda =    1.9332; f =          1116.3393332
lambda =    3.7372; f =          1116.3393321
lambda =    7.2247; f =          1116.3393315
Norm of dx 9.0422e-05
-----
Improvement on iteration 49 =          0.000003500
-----
f at the beginning of new iteration,      1116.3393314873
Predicted improvement:          0.000003500
lambda =          1; f =          1116.3393248
lambda =    1.9332; f =          1116.3393194
lambda =    3.7372; f =          1116.3393110
lambda =    7.2247; f =          1116.3393023
Norm of dx 0.00016508
-----
Improvement on iteration 50 =          0.000029162
```

code. log

f at the beginning of new iteration, 1116.3393023257
Predicted improvement: 0.000011534
lambda = 1; f = 1116.3392850
lambda = 1.9332; f = 1116.3392802
Norm of dx 0.0014959

Improvement on iteration 51 = 0.000022166

f at the beginning of new iteration, 1116.3392801601
Predicted improvement: 0.000001785
lambda = 1; f = 1116.3392786
Norm of dx 0.0004954

Improvement on iteration 52 = 0.000001529

f at the beginning of new iteration, 1116.3392786311
Predicted improvement: 0.000000861
lambda = 1; f = 1116.3392773
lambda = 1.9332; f = 1116.3392770
Norm of dx 0.00020152

Improvement on iteration 53 = 0.000001646

f at the beginning of new iteration, 1116.3392769853
Predicted improvement: 0.000000649
lambda = 1; f = 1116.3392759
lambda = 1.9332; f = 1116.3392755
Norm of dx 0.00012843

Improvement on iteration 54 = 0.000001534

f at the beginning of new iteration, 1116.3392754511
Predicted improvement: 0.000000399
lambda = 1; f = 1116.3392749
lambda = 1.9332; f = 1116.3392745
Norm of dx 9.2061e-05

Improvement on iteration 55 = 0.000000930

f at the beginning of new iteration, 1116.3392745207
Predicted improvement: 0.000001319
lambda = 1; f = 1116.3392723
lambda = 1.9332; f = 1116.3392710
Norm of dx 0.0001469

Improvement on iteration 56 = 0.000003568

f at the beginning of new iteration, 1116.3392709530
Predicted improvement: 0.000004135
lambda = 1; f = 1116.3392640
lambda = 1.9332; f = 1116.3392598
Norm of dx 0.00036805

Improvement on iteration 57 = 0.000011144

code.log

f at the beginning of new iteration, 1116.3392598090
Predicted improvement: 0.000005694
lambda = 1; f = 1116.3392512
lambda = 1.9332; f = 1116.3392492
Norm of dx 0.00063689

Improvement on iteration 58 = 0.000010633

f at the beginning of new iteration, 1116.3392491758
Predicted improvement: 0.000001036
lambda = 1; f = 1116.3392478
Norm of dx 0.00021701

Improvement on iteration 59 = 0.000001410

f at the beginning of new iteration, 1116.3392477655
Predicted improvement: 0.000000251
lambda = 1; f = 1116.3392474
Norm of dx 0.00010146

Improvement on iteration 60 = 0.000000345

f at the beginning of new iteration, 1116.3392474206
Predicted improvement: 0.000000170
lambda = 1; f = 1116.3392470
lambda = 1.9332; f = 1116.3392468
lambda = 3.7372; f = 1116.3392468
Norm of dx 0.00018511

Improvement on iteration 61 = 0.000000655

f at the beginning of new iteration, 1116.3392467654
Predicted improvement: 0.000000376
lambda = 1; f = 1116.3392463
Norm of dx 0.00016755

Improvement on iteration 62 = 0.000000456

f at the beginning of new iteration, 1116.3392463094
Predicted improvement: 0.000000857
lambda = 1; f = 1116.3392467
lambda = 0.33333; f = 1116.3392461
lambda = 0.11111; f = 1116.3392462
Norm of dx 0.00062881

Improvement on iteration 63 = 0.000000160

f at the beginning of new iteration, 1116.3392461496
Predicted improvement: 0.000000538
lambda = 1; f = 1116.3392451
lambda = 1.9332; f = 1116.3392444
lambda = 3.7372; f = 1116.3392433
Norm of dx 7.6821e-05

Improvement on iteration 64 = 0.000002812

code. log

f at the beginning of new iteration, 1116. 3392433372
Predicted improvement: 0. 000002324
lambda = 1; f = 1116. 3392391
lambda = 1. 9332; f = 1116. 3392362
lambda = 3. 7372; f = 1116. 3392334
Norm of dx 0. 00049174

Improvement on iteration 65 = 0. 000009973

f at the beginning of new iteration, 1116. 3392333645
Predicted improvement: 0. 000006283
lambda = 1; f = 1116. 3392216
lambda = 1. 9332; f = 1116. 3392124
lambda = 3. 7372; f = 1116. 3391998
lambda = 7. 2247; f = 1116. 3391942
Norm of dx 0. 0010736

Improvement on iteration 66 = 0. 000039182

f at the beginning of new iteration, 1116. 3391941824
Predicted improvement: 0. 000006855
lambda = 1; f = 1116. 3391832
lambda = 1. 9332; f = 1116. 3391795
Norm of dx 0. 0013967

Improvement on iteration 67 = 0. 000014730

f at the beginning of new iteration, 1116. 3391794526
Predicted improvement: 0. 000002701
lambda = 1; f = 1116. 3391759
Norm of dx 0. 00067689

Improvement on iteration 68 = 0. 000003580

f at the beginning of new iteration, 1116. 3391758730
Predicted improvement: 0. 000002694
lambda = 1; f = 1116. 3391751
lambda = 0. 33333; f = 1116. 3391747
Norm of dx 0. 0010901

Improvement on iteration 69 = 0. 000001171

f at the beginning of new iteration, 1116. 3391747021
Predicted improvement: 0. 000001791
lambda = 1; f = 1116. 3391763
lambda = 0. 33333; f = 1116. 3391745
lambda = 0. 11111; f = 1116. 3391746
Norm of dx 0. 001566

Improvement on iteration 70 = 0. 000000209

f at the beginning of new iteration, 1116. 3391744932
Predicted improvement: 0. 000000039
lambda = 1; f = 1116. 3391744
Norm of dx 8. 6446e-05

code.log
 Improvement on iteration 71 = 0.000000047
 improvement < crit termination

Final value of minus the log posterior (or likelihood): 1116.339174

RESULTS FROM POSTERIOR ESTIMATION

parameters	prior mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2142	0.0763	beta	0.2000
rho_a_d	0.500	0.5000	0.2774	beta	0.2000
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000
rho_mu_d	0.500	0.5000	0.2774	beta	0.2000
rho_LTV	0.500	0.4954	0.2750	beta	0.2000
rho_d	0.500	0.5136	0.2764	beta	0.2000
rho_d_stern	0.500	0.9043	0.0149	beta	0.2000
rho_c_ast	0.500	0.6625	0.2404	beta	0.2000
rho_d_ast	0.500	0.5000	0.2773	beta	0.2000
rho_s_c	0.500	0.3994	0.0934	beta	0.2000
rho_r	0.500	0.6722	0.0927	beta	0.2000
rho_p	-0.500	-0.4978	0.2000	norm	0.2000
theta_c	0.750	0.2812	0.0689	beta	0.1500
sigma	1.000	1.9230	0.1078	norm	0.3700
phi	2.000	5.5126	0.8210	gamm	0.7000
omega	0.200	0.0983	0.0622	beta	0.1000
h_c	0.500	0.2939	0.0513	beta	0.1000
alpha_c	0.500	0.4018	0.0286	beta	0.1000

standard deviation of shocks	prior mean	mode	s. d.	prior	pstdev
epsa_c	0.100	2.2871	0.1597	invga	2.0000
epsa_d	0.100	0.0462	0.0189	invga	2.0000
epsmu_c	0.100	0.0461	0.0188	invga	2.0000
epsmu_d	0.100	0.0461	0.0188	invga	2.0000
epsLTV	0.100	0.0461	0.0188	invga	2.0000
epsd	0.100	0.0456	0.0182	invga	2.0000
epsc_ast	0.100	0.0368	0.0110	invga	2.0000
epsd_ast	0.100	0.0461	0.0188	invga	2.0000
epsd_stern	0.100	0.5930	0.0954	invga	2.0000
epss_c	0.100	1.1324	0.0897	invga	2.0000
epsr	0.100	0.6240	0.1817	invga	2.0000
epsyf	0.100	0.0458	0.0184	invga	2.0000
epsn	0.010	0.8084	0.0578	invga	0.1000
epspi_d	0.010	5.5094	0.3762	invga	0.1000

Log data density [Laplace approximation] is -1171.222311.

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_111/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.
 Estimation::mcmc: Total number of iterations: 200000.
 Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.2243%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val No Taper	p-val 4%
Taper p-val 8% Taper	p-val 15% Taper			
SE_epsa_c	2.309	0.163	0.000	
0.252	0.309	0.343		
SE_epsa_d	0.088	0.066	0.000	
0.029	0.077	0.087		
SE_epsmu_c	0.104	0.082	0.000	
0.215	0.275	0.254		
SE_epsmu_d	0.095	0.077	0.000	
0.746	0.751	0.713		
SE_epsLTV	0.081	0.048	0.000	
0.845	0.867	0.878		
SE_epsd	0.076	0.049	0.000	
0.419	0.493	0.511		
SE_epsc_ast	0.042	0.013	0.052	
0.895	0.894	0.892		
SE_epsd_ast	0.082	0.046	0.000	
0.843	0.852	0.844		
SE_epsd_stern	0.569	0.092	0.000	
0.489	0.486	0.486		
SE_epss_c	1.149	0.092	0.000	
0.205	0.170	0.186		
SE_epsr	0.735	0.236	0.000	
0.143	0.204	0.243		
SE_epsyf	0.085	0.066	0.000	
0.031	0.072	0.080		
SE_epsn	0.821	0.059	0.000	
0.455	0.432	0.424		
SE_epspi_d	5.587	0.383	0.000	
0.716	0.704	0.707		
rho_a_c	0.224	0.074	0.000	
0.418	0.439	0.472		
rho_a_d	0.496	0.200	0.000	
0.658	0.648	0.644		
rho_mu_c	0.501	0.200	0.000	
0.280	0.239	0.235		
rho_mu_d	0.496	0.200	0.000	
0.352	0.337	0.327		
rho_LTV	0.500	0.200	0.000	
0.064	0.087	0.097		
rho_d	0.532	0.198	0.003	
0.716	0.721	0.715		
rho_d_stern	0.903	0.016	0.000	
0.616	0.618	0.577		
rho_c_ast	0.638	0.188	0.000	
0.148	0.130	0.121		
rho_d_ast	0.502	0.200	0.000	
0.293	0.265	0.301		
rho_s_c	0.401	0.090	0.000	
0.617	0.613	0.617		
rho_r	0.618	0.117	0.000	
0.162	0.216	0.245		
rho_p	-0.492	0.199	0.000	
0.609	0.585	0.572		
theta_c	0.272	0.066	0.001	
0.752	0.744	0.711		
sigma	1.967	0.113	0.423	
0.951	0.951	0.952		
phi	5.664	0.833	0.000	
0.072	0.041	0.015		

			code. log	
omega		0.124	0.059	0.000
0.157	0.201	0.218		
h_c		0.284	0.050	0.005
0.803	0.779	0.764		
alpha_c		0.402	0.029	0.000
0.301	0.248	0.262		

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
 Done!
 Estimation::marginal density: I'm computing the posterior log marginal density
 (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1170.186300.

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2218	0.1004	0.3377	beta	0.2000
rho_a_d	0.500	0.4958	0.1647	0.8179	beta	0.2000
rho_mu_c	0.500	0.5046	0.1778	0.8289	beta	0.2000
rho_mu_d	0.500	0.4940	0.1756	0.8270	beta	0.2000
rho_LTV	0.500	0.4936	0.1526	0.8129	beta	0.2000
rho_d	0.500	0.5268	0.2013	0.8533	beta	0.2000
rho_d_stern	0.500	0.9036	0.8788	0.9286	beta	0.2000
rho_c_ast	0.500	0.6315	0.3281	0.9273	beta	0.2000
rho_d_ast	0.500	0.4990	0.1779	0.8316	beta	0.2000
rho_s_c	0.500	0.4006	0.2506	0.5493	beta	0.2000
rho_r	0.500	0.6126	0.4223	0.7906	beta	0.2000
rho_p	-0.500	-0.5003	-0.8231	-0.1847	norm	0.2000
theta_c	0.750	0.2731	0.1671	0.3806	beta	0.1500
sigma	1.000	1.9709	1.7791	2.1471	norm	0.3700
phi	2.000	5.6627	4.3613	7.0818	gamma	0.7000
omega	0.200	0.1237	0.0312	0.2185	beta	0.1000
h_c	0.500	0.2837	0.2017	0.3637	beta	0.1000
alpha_c	0.500	0.4006	0.3542	0.4465	beta	0.1000

standard deviation of shocks	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.3098	2.0419	2.5641	invg	2.0000
epsa_d	0.100	0.0912	0.0229	0.1672	invg	2.0000
epsmu_c	0.100	0.1070	0.0209	0.2381	invg	2.0000
epsmu_d	0.100	0.0827	0.0232	0.1591	invg	2.0000
epsLTV	0.100	0.0803	0.0235	0.1503	invg	2.0000
epsd	0.100	0.0701	0.0239	0.1220	invg	2.0000
epsc_ast	0.100	0.0412	0.0218	0.0605	invg	2.0000
epsd_ast	0.100	0.0809	0.0256	0.1422	invg	2.0000
epsd_stern	0.100	0.5704	0.4153	0.7134	invg	2.0000
epss_c	0.100	1.1523	1.0001	1.2998	invg	2.0000
epsr	0.100	0.7522	0.3908	1.1362	invg	2.0000
epsyf	0.100	0.0706	0.0245	0.1235	invg	2.0000
epsn	0.010	0.8232	0.7260	0.9201	invg	0.1000
epspi_d	0.010	5.5883	4.9946	6.2178	invg	0.1000

code.log

Estimation: : mcmc: Forecasted variables (mean)
Estimation: : mcmc: Forecasted variables (mean), done!
Estimation: : mcmc: Forecasted variables (point)
Estimation: : mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1125.9145

f at the beginning of new iteration, 1125.9145324828
Predicted improvement: 0.003553983
lambda = 1; f = 1125.9100504
Norm of dx 0.00084309

Improvement on iteration 1 = 0.004482068

f at the beginning of new iteration, 1125.9100504148
Predicted improvement: 0.002067774
lambda = 1; f = 1125.9066248
lambda = 1.9332; f = 1125.9047130
Norm of dx 0.00092193

Improvement on iteration 2 = 0.005337372

f at the beginning of new iteration, 1125.9047130425
Predicted improvement: 0.002189957
lambda = 1; f = 1125.9019270
Norm of dx 0.0014521

Improvement on iteration 3 = 0.002785998

f at the beginning of new iteration, 1125.9019270443
Predicted improvement: 0.000435321
lambda = 1; f = 1125.9013662
Norm of dx 0.00052334

Improvement on iteration 4 = 0.000560806

f at the beginning of new iteration, 1125.9013662381
Predicted improvement: 0.000194320
lambda = 1; f = 1125.9010393
lambda = 1.9332; f = 1125.9008448
Norm of dx 0.0003417

Improvement on iteration 5 = 0.000521416

f at the beginning of new iteration, 1125.9008448220
Predicted improvement: 0.000443259
lambda = 1; f = 1125.9001021
lambda = 1.9332; f = 1125.8996679
Norm of dx 0.00088054

Improvement on iteration 6 = 0.001176949

f at the beginning of new iteration, 1125.8996678730
Predicted improvement: 0.000731806
lambda = 1; f = 1125.8985944
lambda = 1.9332; f = 1125.8982991

Norm of dx 0.0015809

Improvement on iteration 7 = 0.001368768

f at the beginning of new iteration, 1125.8982991054
Predicted improvement: 0.000239331
lambda = 1; f = 1125.8979447
lambda = 1.9332; f = 1125.8978385
Norm of dx 0.0003279

Improvement on iteration 8 = 0.000460583

f at the beginning of new iteration, 1125.8978385228
Predicted improvement: 0.000055191
lambda = 1; f = 1125.8977454
lambda = 1.9332; f = 1125.8976892
Norm of dx 0.0002662

Improvement on iteration 9 = 0.000149274

f at the beginning of new iteration, 1125.8976892488
Predicted improvement: 0.000052585
lambda = 1; f = 1125.8976160
Norm of dx 0.00032089

Improvement on iteration 10 = 0.000073228

f at the beginning of new iteration, 1125.8976160213
Predicted improvement: 0.000046627
lambda = 1; f = 1125.8975383
lambda = 1.9332; f = 1125.8974935
Norm of dx 0.00031504

Improvement on iteration 11 = 0.000122566

f at the beginning of new iteration, 1125.8974934548
Predicted improvement: 0.000100232
lambda = 1; f = 1125.8973225
lambda = 1.9332; f = 1125.8972165
lambda = 3.7372; f = 1125.8971578
Norm of dx 0.00061758

Improvement on iteration 12 = 0.000335658

f at the beginning of new iteration, 1125.8971577969
Predicted improvement: 0.000132227
lambda = 1; f = 1125.8969540
lambda = 1.9332; f = 1125.8968740
Norm of dx 0.0002744

Improvement on iteration 13 = 0.000283778

f at the beginning of new iteration, 1125.8968740187
Predicted improvement: 0.000014987
lambda = 1; f = 1125.8968521
lambda = 1.9332; f = 1125.8968464

Norm of dx 0.00027837

Improvement on iteration 14 = 0.000027648

f at the beginning of new iteration, 1125.8968463710

Predicted improvement: 0.000010997

lambda = 1; f = 1125.8968255

lambda = 1.9332; f = 1125.8968078

lambda = 3.7372; f = 1125.8967786

lambda = 7.2247; f = 1125.8967409

Norm of dx 6.0928e-05

Improvement on iteration 15 = 0.000105461

f at the beginning of new iteration, 1125.8967409102

Predicted improvement: 0.000022655

lambda = 1; f = 1125.8967160

Norm of dx 0.00040088

Improvement on iteration 16 = 0.000024935

f at the beginning of new iteration, 1125.8967159749

Predicted improvement: 0.000001437

lambda = 1; f = 1125.8967135

lambda = 1.9332; f = 1125.8967118

lambda = 3.7372; f = 1125.8967106

Norm of dx 5.2729e-05

Improvement on iteration 17 = 0.000005395

f at the beginning of new iteration, 1125.8967105804

Predicted improvement: 0.000002299

lambda = 1; f = 1125.8967067

lambda = 1.9332; f = 1125.8967044

Norm of dx 5.0599e-05

Improvement on iteration 18 = 0.000006202

f at the beginning of new iteration, 1125.8967043787

Predicted improvement: 0.000003319

lambda = 1; f = 1125.8966994

lambda = 1.9332; f = 1125.8966975

Norm of dx 8.6739e-05

Improvement on iteration 19 = 0.000006911

f at the beginning of new iteration, 1125.8966974681

Predicted improvement: 0.000003536

lambda = 1; f = 1125.8966909

lambda = 1.9332; f = 1125.8966857

lambda = 3.7372; f = 1125.8966780

lambda = 7.2247; f = 1125.8966725

Norm of dx 8.7301e-05

Improvement on iteration 20 = 0.000024944

code.log
f at the beginning of new iteration, 1125.8966725239
Predicted improvement: 0.00004013
lambda = 1; f = 1125.8966673
Norm of dx 8.5326e-05

Improvement on iteration 21 = 0.00005231

f at the beginning of new iteration, 1125.8966672929
Predicted improvement: 0.00001247
lambda = 1; f = 1125.8966653
lambda = 1.9332; f = 1125.8966643
Norm of dx 4.0928e-05

Improvement on iteration 22 = 0.00002979

f at the beginning of new iteration, 1125.8966643143
Predicted improvement: 0.00001992
lambda = 1; f = 1125.8966605
lambda = 1.9332; f = 1125.8966573
lambda = 3.7372; f = 1125.8966519
lambda = 7.2247; f = 1125.8966447
Norm of dx 6.2805e-05

Improvement on iteration 23 = 0.000019629

f at the beginning of new iteration, 1125.8966446850
Predicted improvement: 0.000020057
lambda = 1; f = 1125.8966096
lambda = 1.9332; f = 1125.8965864
lambda = 3.7372; f = 1125.8965676
Norm of dx 0.00070146

Improvement on iteration 24 = 0.000077087

f at the beginning of new iteration, 1125.8965675982
Predicted improvement: 0.000025991
lambda = 1; f = 1125.8965288
lambda = 1.9332; f = 1125.8965163
Norm of dx 0.00051178

Improvement on iteration 25 = 0.000051294

f at the beginning of new iteration, 1125.8965163041
Predicted improvement: 0.00002549
lambda = 1; f = 1125.8965117
lambda = 1.9332; f = 1125.8965082
lambda = 3.7372; f = 1125.8965037
Norm of dx 4.9777e-05

Improvement on iteration 26 = 0.000012568

f at the beginning of new iteration, 1125.8965037357
Predicted improvement: 0.000004736
lambda = 1; f = 1125.8964969
lambda = 1.9332; f = 1125.8964955
Norm of dx 0.00031148

code.log
Improvement on iteration 27 = 0.000008232

f at the beginning of new iteration, 1125.8964955036
Predicted improvement: 0.000003025
lambda = 1; f = 1125.8964898
lambda = 1.9332; f = 1125.8964850
lambda = 3.7372; f = 1125.8964770
lambda = 7.2247; f = 1125.8964669
Norm of dx 2.9968e-05

Improvement on iteration 28 = 0.000028590

f at the beginning of new iteration, 1125.8964669134
Predicted improvement: 0.000019545
lambda = 1; f = 1125.8964377
lambda = 1.9332; f = 1125.8964284
Norm of dx 0.00083431

Improvement on iteration 29 = 0.000038557

f at the beginning of new iteration, 1125.8964283566
Predicted improvement: 0.000003957
lambda = 1; f = 1125.8964233
Norm of dx 0.0003365

Improvement on iteration 30 = 0.000005044

f at the beginning of new iteration, 1125.8964233123
Predicted improvement: 0.000000620
lambda = 1; f = 1125.8964224
lambda = 1.9332; f = 1125.8964222
Norm of dx 0.00014686

Improvement on iteration 31 = 0.000001090

f at the beginning of new iteration, 1125.8964222223
Predicted improvement: 0.000000499
lambda = 1; f = 1125.8964213
lambda = 1.9332; f = 1125.8964205
lambda = 3.7372; f = 1125.8964192
lambda = 7.2247; f = 1125.8964175
Norm of dx 5.4766e-05

Improvement on iteration 32 = 0.000004712

f at the beginning of new iteration, 1125.8964175105
Predicted improvement: 0.000004069
lambda = 1; f = 1125.8964105
lambda = 1.9332; f = 1125.8964060
lambda = 3.7372; f = 1125.8964032
Norm of dx 0.00015895

Improvement on iteration 33 = 0.000014309

f at the beginning of new iteration, 1125.8964032012
Predicted improvement: 0.000003863

```

                                code.log
lambda =          1; f =          1125.8963976
lambda =    1.9332; f =          1125.8963961
Norm of dx 0.00046944
-----
Improvement on iteration 34 =          0.000007150
-----
f at the beginning of new iteration,          1125.8963960511
Predicted improvement:          0.000000687
lambda =          1; f =          1125.8963949
lambda =    1.9332; f =          1125.8963943
Norm of dx 6.696e-05
-----
Improvement on iteration 35 =          0.000001716
-----
f at the beginning of new iteration,          1125.8963943350
Predicted improvement:          0.000000832
lambda =          1; f =          1125.8963933
Norm of dx 9.5654e-05
-----
Improvement on iteration 36 =          0.000001041
-----
f at the beginning of new iteration,          1125.8963932941
Predicted improvement:          0.000000525
lambda =          1; f =          1125.8963925
lambda =    1.9332; f =          1125.8963922
Norm of dx 3.3384e-05
-----
Improvement on iteration 37 =          0.000001113
-----
f at the beginning of new iteration,          1125.8963921812
Predicted improvement:          0.000000599
lambda =          1; f =          1125.8963910
lambda =    1.9332; f =          1125.8963901
lambda =    3.7372; f =          1125.8963884
lambda =    7.2247; f =          1125.8963860
lambda =   13.967; f =          1125.8963846
Norm of dx 3.3549e-05
-----
Improvement on iteration 38 =          0.000007622
-----
f at the beginning of new iteration,          1125.8963845596
Predicted improvement:          0.000004313
lambda =          1; f =          1125.8963778
lambda =    1.9332; f =          1125.8963746
Norm of dx 0.00018569
-----
Improvement on iteration 39 =          0.000009948
-----
f at the beginning of new iteration,          1125.8963746113
Predicted improvement:          0.000000932
lambda =          1; f =          1125.8963736
Norm of dx 0.0003054
-----
Improvement on iteration 40 =          0.000001010
-----
f at the beginning of new iteration,          1125.8963736017

```

```

                                code. log
Predicted improvement:          0.00000172
lambda =          1; f =          1125.8963733
lambda =          1.9332; f =          1125.8963731
lambda =          3.7372; f =          1125.8963728
Norm of dx 6.7316e-05
-----
Improvement on iteration 41 =          0.000000758
-----
f at the beginning of new iteration,          1125.8963728437
Predicted improvement:          0.000000686
lambda =          1; f =          1125.8963717
lambda =          1.9332; f =          1125.8963708
lambda =          3.7372; f =          1125.8963701
Norm of dx 0.00012855
-----
Improvement on iteration 42 =          0.000002770
-----
f at the beginning of new iteration,          1125.8963700737
Predicted improvement:          0.000001773
lambda =          1; f =          1125.8963672
lambda =          1.9332; f =          1125.8963658
Norm of dx 0.00015491
-----
Improvement on iteration 43 =          0.000004275
-----
f at the beginning of new iteration,          1125.8963657989
Predicted improvement:          0.000000721
lambda =          1; f =          1125.8963648
Norm of dx 0.00010101
-----
Improvement on iteration 44 =          0.000000993
-----
f at the beginning of new iteration,          1125.8963648064
Predicted improvement:          0.000000531
lambda =          1; f =          1125.8963640
lambda =          1.9332; f =          1125.8963639
Norm of dx 5.6028e-05
-----
Improvement on iteration 45 =          0.000000926
-----
f at the beginning of new iteration,          1125.8963638805
Predicted improvement:          0.000000241
lambda =          1; f =          1125.8963636
Norm of dx 0.00013623
-----
Improvement on iteration 46 =          0.000000320
-----
f at the beginning of new iteration,          1125.8963635607
Predicted improvement:          0.000000270
lambda =          1; f =          1125.8963633
Norm of dx 0.00010101
-----
Improvement on iteration 47 =          0.000000264
-----
f at the beginning of new iteration,          1125.8963632965
Predicted improvement:          0.000000151

```

```

                                code.log
lambda =          1; f =          1125.8963630
lambda =    1.9332; f =          1125.8963628
lambda =    3.7372; f =          1125.8963626
Norm of dx 3.384e-05
-----
Improvement on iteration 48 =          0.00000706
-----
f at the beginning of new iteration,          1125.8963625901
Predicted improvement:          0.00001194
lambda =          1; f =          1125.8963611
Norm of dx 0.0002552
-----
Improvement on iteration 49 =          0.00001500
-----
f at the beginning of new iteration,          1125.8963610899
Predicted improvement:          0.00001461
lambda =          1; f =          1125.8963590
lambda =    1.9332; f =          1125.8963585
Norm of dx 0.00017445
-----
Improvement on iteration 50 =          0.00002624
-----
f at the beginning of new iteration,          1125.8963584663
Predicted improvement:          0.00000359
lambda =          1; f =          1125.8963579
lambda =    1.9332; f =          1125.8963579
Norm of dx 0.00013794
-----
Improvement on iteration 51 =          0.00000571
-----
f at the beginning of new iteration,          1125.8963578950
Predicted improvement:          0.00000076
lambda =          1; f =          1125.8963578
Norm of dx 7.1682e-05
-----
Improvement on iteration 52 =          0.00000052
improvement < crit termination

```

Final value of minus the log posterior (or likelihood): 1125.896358

RESULTS FROM POSTERIOR ESTIMATION

parameters	prior mean	mode	s.d.	prior	pstdev
rho_a_c	0.500	0.2152	0.0763	beta	0.2000
rho_a_d	0.500	0.5000	0.2774	beta	0.2000
rho_mu_c	0.500	0.5002	0.2774	beta	0.2000
rho_mu_d	0.500	0.5000	0.2773	beta	0.2000
rho_LTV	0.500	0.4956	0.2751	beta	0.2000
rho_d	0.500	0.5141	0.2763	beta	0.2000
rho_d_stern	0.500	0.9049	0.0147	beta	0.2000
rho_c_ast	0.500	0.6657	0.2390	beta	0.2000
rho_d_ast	0.500	0.5000	0.2773	beta	0.2000
rho_s_c	0.500	0.4045	0.0938	beta	0.2000
rho_r	0.500	0.6705	0.0929	beta	0.2000
rho_p	-0.500	-0.4978	0.2000	norm	0.2000
theta_c	0.750	0.2864	0.0686	beta	0.1500
sigma	1.000	1.9248	0.1082	norm	0.3700
phi	2.000	5.5139	0.8214	gamm	0.7000


```

                                code. log
omega          0.200  0.0977  0.0619 beta  0.1000
h_c            0.500  0.2945  0.0514 beta  0.1000
alpha_c       0.500  0.4037  0.0285 beta  0.1000

standard deviation of shocks
prior mean      mode      s.d. prior pstdev

epsa_c         0.100  2.2861  0.1591 invg  2.0000
epsa_d         0.100  0.0462  0.0189 invg  2.0000
epsmu_c        0.100  0.0461  0.0188 invg  2.0000
epsmu_d        0.100  0.0461  0.0188 invg  2.0000
epsLTV         0.100  0.0461  0.0188 invg  2.0000
epsd           0.100  0.0456  0.0182 invg  2.0000
epsc_ast      0.100  0.0367  0.0109 invg  2.0000
epsd_ast      0.100  0.0461  0.0188 invg  2.0000
epsd_stern    0.100  0.5910  0.0946 invg  2.0000
epss_c        0.100  1.1371  0.0897 invg  2.0000
epsr          0.100  0.6231  0.1810 invg  2.0000
epsyf         0.100  0.0458  0.0184 invg  2.0000
epsn          0.010  0.8110  0.0579 invg  0.1000
epspi_d       0.010  5.4992  0.3741 invg  0.1000

```

Log data density [Laplace approximation] is -1180.835623.

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_112/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.
 Estimation::mcmc: Total number of iterations: 200000.
 Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.2453%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val	No Taper	p-val	4%
Taper						
SE_epsa_c	2.315	0.167	0.846	0.007		
SE_epsa_d	0.148	0.164	0.190	0.000		
SE_epsmu_c	0.107	0.086	0.059	0.000		
SE_epsmu_d	0.090	0.075	0.000	0.000		
SE_epsLTV	0.082	0.051	0.002	0.000		
SE_epsd	0.076	0.050	0.819	0.000		
SE_epsc_ast	0.042	0.013	0.912	0.189		
SE_epsd_ast	0.091	0.082	0.858	0.001		
SE_epsd_stern	0.566	0.092	0.306	0.000		
SE_epss_c	1.154	0.093	0.186	0.000		

			code. log	
0. 176	0. 182	0. 175		
SE_epsr		0. 731	0. 222	0. 000
0. 126	0. 113	0. 136		
SE_epsyf		0. 075	0. 041	0. 000
0. 448	0. 491	0. 485		
SE_epsn		0. 822	0. 057	0. 000
0. 575	0. 564	0. 543		
SE_epspi_d		5. 595	0. 395	0. 000
0. 430	0. 358	0. 299		
rho_a_c		0. 223	0. 073	0. 902
0. 990	0. 991	0. 990		
rho_a_d		0. 499	0. 202	0. 000
0. 190	0. 205	0. 233		
rho_mu_c		0. 497	0. 200	0. 000
0. 234	0. 225	0. 199		
rho_mu_d		0. 503	0. 201	0. 000
0. 557	0. 569	0. 566		
rho_LTV		0. 492	0. 197	0. 000
0. 071	0. 071	0. 063		
rho_d		0. 533	0. 200	0. 002
0. 735	0. 714	0. 692		
rho_d_stern		0. 903	0. 015	0. 000
0. 201	0. 162	0. 098		
rho_c_ast		0. 643	0. 188	0. 049
0. 822	0. 830	0. 836		
rho_d_ast		0. 494	0. 199	0. 000
0. 247	0. 261	0. 204		
rho_s_c		0. 406	0. 094	0. 000
0. 307	0. 291	0. 260		
rho_r		0. 618	0. 110	0. 000
0. 066	0. 052	0. 052		
rho_p		-0. 499	0. 204	0. 000
0. 641	0. 638	0. 616		
theta_c		0. 278	0. 065	0. 229
0. 903	0. 900	0. 887		
si gma		1. 969	0. 115	0. 000
0. 110	0. 102	0. 093		
phi		5. 640	0. 823	0. 000
0. 343	0. 318	0. 302		
omega		0. 125	0. 061	0. 044
0. 851	0. 848	0. 843		
h_c		0. 282	0. 051	0. 165
0. 903	0. 892	0. 886		
al pha_c		0. 404	0. 030	0. 000
0. 357	0. 362	0. 379		

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
 Done!
 Estimation::marginal density: I'm computing the posterior log marginal density
 (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1179.175504.

code. log

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2220	0.0995	0.3397	beta	0.2000
rho_a_d	0.500	0.5041	0.1800	0.8389	beta	0.2000
rho_mu_c	0.500	0.5002	0.1644	0.8275	beta	0.2000
rho_mu_d	0.500	0.5050	0.1745	0.8270	beta	0.2000
rho_LTV	0.500	0.4939	0.1743	0.8157	beta	0.2000
rho_d	0.500	0.5306	0.2035	0.8511	beta	0.2000
rho_d_stern	0.500	0.9036	0.8802	0.9282	beta	0.2000
rho_c_ast	0.500	0.6523	0.3580	0.9403	beta	0.2000
rho_d_ast	0.500	0.4927	0.1570	0.8133	beta	0.2000
rho_s_c	0.500	0.4083	0.2532	0.5674	beta	0.2000
rho_r	0.500	0.6117	0.4343	0.7870	beta	0.2000
rho_p	-0.500	-0.4944	-0.8137	-0.1401	norm	0.2000
theta_c	0.750	0.2793	0.1740	0.3861	beta	0.1500
sigma	1.000	1.9741	1.7812	2.1570	norm	0.3700
phi	2.000	5.6506	4.3463	6.9975	gamma	0.7000
omega	0.200	0.1249	0.0307	0.2172	beta	0.1000
h_c	0.500	0.2825	0.2038	0.3664	beta	0.1000
alpha_c	0.500	0.4032	0.3547	0.4509	beta	0.1000

standard deviation of shocks

	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.3152	2.0516	2.5921	invg	2.0000
epsa_d	0.100	0.0714	0.0243	0.1263	invg	2.0000
epsmu_c	0.100	0.0900	0.0252	0.1707	invg	2.0000
epsmu_d	0.100	0.1056	0.0218	0.2752	invg	2.0000
epsLTV	0.100	0.0717	0.0254	0.1222	invg	2.0000
epsd	0.100	0.0697	0.0249	0.1208	invg	2.0000
epsc_ast	0.100	0.0410	0.0232	0.0589	invg	2.0000
epsd_ast	0.100	0.1037	0.0180	0.2023	invg	2.0000
epsd_stern	0.100	0.5647	0.4130	0.7055	invg	2.0000
epss_c	0.100	1.1587	1.0041	1.3115	invg	2.0000
epsr	0.100	0.7482	0.3995	1.1062	invg	2.0000
epsyf	0.100	0.0714	0.0256	0.1204	invg	2.0000
epsn	0.010	0.8232	0.7319	0.9169	invg	0.1000
epspi_d	0.010	5.5906	4.9518	6.2144	invg	0.1000

Estimation: : mcmc: Forecasted variables (mean)
 Estimation: : mcmc: Forecasted variables (mean), done!
 Estimation: : mcmc: Forecasted variables (point)
 Estimation: : mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1134.8831

 f at the beginning of new iteration, 1134.8831486078
 Predicted improvement: 0.006630078
 lambda = 1; f = 1134.8747893
 Norm of dx 0.0011515

 Improvement on iteration 1 = 0.008359325

 f at the beginning of new iteration, 1134.8747892826
 Predicted improvement: 0.003305223
 lambda = 1; f = 1134.8699078
 lambda = 1.9332; f = 1134.8684564
 Norm of dx 0.0011403

 Improvement on iteration 2 = 0.006332839

code. log

f at the beginning of new iteration, 1134.8684564436
Predicted improvement: 0.000959354
lambda = 1; f = 1134.8669413
lambda = 1.9332; f = 1134.8662487
Norm of dx 0.00044344

Improvement on iteration 3 = 0.002207787

f at the beginning of new iteration, 1134.8662486565
Predicted improvement: 0.000866871
lambda = 1; f = 1134.8647088
lambda = 1.9332; f = 1134.8636204
lambda = 3.7372; f = 1134.8624695
Norm of dx 0.00076378

Improvement on iteration 4 = 0.003779181

f at the beginning of new iteration, 1134.8624694758
Predicted improvement: 0.001439150
lambda = 1; f = 1134.8602895
lambda = 1.9332; f = 1134.8595235
Norm of dx 0.001401

Improvement on iteration 5 = 0.002945992

f at the beginning of new iteration, 1134.8595234842
Predicted improvement: 0.000574829
lambda = 1; f = 1134.8584678
lambda = 1.9332; f = 1134.8576531
lambda = 3.7372; f = 1134.8565456
Norm of dx 0.00047272

Improvement on iteration 6 = 0.002977877

f at the beginning of new iteration, 1134.8565456067
Predicted improvement: 0.002148432
lambda = 1; f = 1134.8534175
lambda = 1.9332; f = 1134.8526131
Norm of dx 0.0029189

Improvement on iteration 7 = 0.003932517

f at the beginning of new iteration, 1134.8526130902
Predicted improvement: 0.000548079
lambda = 1; f = 1134.8518683
Norm of dx 0.00045384

Improvement on iteration 8 = 0.000744806

f at the beginning of new iteration, 1134.8518682844
Predicted improvement: 0.000199896
lambda = 1; f = 1134.8515864
lambda = 1.9332; f = 1134.8515345
Norm of dx 0.0004372

Improvement on iteration 9 = 0.000333783

code. log

f at the beginning of new iteration, 1134.8515345017
Predicted improvement: 0.000136373
lambda = 1; f = 1134.8512750
lambda = 1.9332; f = 1134.8510576
lambda = 3.7372; f = 1134.8507054
lambda = 7.2247; f = 1134.8502792
Norm of dx 0.00019903

Improvement on iteration 10 = 0.001255321

f at the beginning of new iteration, 1134.8502791808
Predicted improvement: 0.000602151
lambda = 1; f = 1134.8494575
Norm of dx 0.0019493

Improvement on iteration 11 = 0.000821639

f at the beginning of new iteration, 1134.8494575420
Predicted improvement: 0.000193048
lambda = 1; f = 1134.8492322
Norm of dx 0.0012001

Improvement on iteration 12 = 0.000225306

f at the beginning of new iteration, 1134.8492322356
Predicted improvement: 0.000038713
lambda = 1; f = 1134.8491655
lambda = 1.9332; f = 1134.8491223
lambda = 3.7372; f = 1134.8490911
Norm of dx 0.00028195

Improvement on iteration 13 = 0.000141164

f at the beginning of new iteration, 1134.8490910713
Predicted improvement: 0.000066854
lambda = 1; f = 1134.8489759
lambda = 1.9332; f = 1134.8489020
lambda = 3.7372; f = 1134.8488510
Norm of dx 0.00022781

Improvement on iteration 14 = 0.000240052

f at the beginning of new iteration, 1134.8488510196
Predicted improvement: 0.000035481
lambda = 1; f = 1134.8487868
lambda = 1.9332; f = 1134.8487386
lambda = 3.7372; f = 1134.8486780
Norm of dx 0.00024361

Improvement on iteration 15 = 0.000173003

f at the beginning of new iteration, 1134.8486780162
Predicted improvement: 0.000040378
lambda = 1; f = 1134.8486323
Norm of dx 0.0003479

code.log

```
-----
Improvement on iteration 16 =          0.000045734
-----
f at the beginning of new iteration,      1134.8486322825
Predicted improvement:          0.000004441
lambda =          1; f =          1134.8486247
lambda =    1.9332; f =          1134.8486197
lambda =    3.7372; f =          1134.8486163
Norm of dx 8.3588e-05
-----
Improvement on iteration 17 =          0.000016032
-----
f at the beginning of new iteration,      1134.8486162503
Predicted improvement:          0.000010677
lambda =          1; f =          1134.8485957
lambda =    1.9332; f =          1134.8485778
lambda =    3.7372; f =          1134.8485472
lambda =    7.2247; f =          1134.8485021
lambda =   13.967; f =          1134.8484682
Norm of dx 8.8838e-05
-----
Improvement on iteration 18 =          0.000148027
-----
f at the beginning of new iteration,      1134.8484682231
Predicted improvement:          0.000007609
lambda =          1; f =          1134.8484587
Norm of dx 0.00025813
-----
Improvement on iteration 19 =          0.000009552
-----
f at the beginning of new iteration,      1134.8484586708
Predicted improvement:          0.000002557
lambda =          1; f =          1134.8484543
lambda =    1.9332; f =          1134.8484517
lambda =    3.7372; f =          1134.8484507
Norm of dx 0.00010077
-----
Improvement on iteration 20 =          0.000007976
-----
f at the beginning of new iteration,      1134.8484506949
Predicted improvement:          0.000004936
lambda =          1; f =          1134.8484415
lambda =    1.9332; f =          1134.8484343
lambda =    3.7372; f =          1134.8484239
lambda =    7.2247; f =          1134.8484170
Norm of dx 6.7304e-05
-----
Improvement on iteration 21 =          0.000033722
-----
f at the beginning of new iteration,      1134.8484169728
Predicted improvement:          0.000013806
lambda =          1; f =          1134.8483936
lambda =    1.9332; f =          1134.8483793
lambda =    3.7372; f =          1134.8483721
Norm of dx 0.00030911
-----
Improvement on iteration 22 =          0.000044861
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```

code. log

f at the beginning of new iteration, 1134.8483721120
Predicted improvement: 0.000016194
lambda = 1; f = 1134.8483440
lambda = 1.9332; f = 1134.8483253
lambda = 3.7372; f = 1134.8483098
Norm of dx 0.00014305

Improvement on iteration 23 = 0.000062315

f at the beginning of new iteration, 1134.8483097967
Predicted improvement: 0.000007961
lambda = 1; f = 1134.8483002
Norm of dx 0.00046183

Improvement on iteration 24 = 0.000009572

f at the beginning of new iteration, 1134.8483002249
Predicted improvement: 0.000001126
lambda = 1; f = 1134.8482986
lambda = 1.9332; f = 1134.8482981
Norm of dx 0.0001446

Improvement on iteration 25 = 0.000002145

f at the beginning of new iteration, 1134.8482980799
Predicted improvement: 0.000001182
lambda = 1; f = 1134.8482958
lambda = 1.9332; f = 1134.8482938
lambda = 3.7372; f = 1134.8482902
lambda = 7.2247; f = 1134.8482844
lambda = 13.967; f = 1134.8482778
Norm of dx 3.9204e-05

Improvement on iteration 26 = 0.000020290

f at the beginning of new iteration, 1134.8482777903
Predicted improvement: 0.000007739
lambda = 1; f = 1134.8482677
Norm of dx 0.00023471

Improvement on iteration 27 = 0.000010050

f at the beginning of new iteration, 1134.8482677408
Predicted improvement: 0.000001686
lambda = 1; f = 1134.8482653
lambda = 1.9332; f = 1134.8482650
Norm of dx 9.7095e-05

Improvement on iteration 28 = 0.000002711

f at the beginning of new iteration, 1134.8482650298
Predicted improvement: 0.000000760
lambda = 1; f = 1134.8482639
lambda = 1.9332; f = 1134.8482633
Norm of dx 5.2402e-05

code. log

```
-----
Improvement on iteration 29 =          0.000001707
-----
f at the beginning of new iteration,      1134.8482633233
Predicted improvement:          0.000000578
lambda =          1; f =          1134.8482624
lambda =    1.9332; f =          1134.8482621
Norm of dx  5.048e-05
-----
Improvement on iteration 30 =          0.000001218
-----
f at the beginning of new iteration,      1134.8482621050
Predicted improvement:          0.000000388
lambda =          1; f =          1134.8482614
lambda =    1.9332; f =          1134.8482607
lambda =    3.7372; f =          1134.8482597
lambda =    7.2247; f =          1134.8482585
Norm of dx  2.7982e-05
-----
Improvement on iteration 31 =          0.000003600
-----
f at the beginning of new iteration,      1134.8482585052
Predicted improvement:          0.000002937
lambda =          1; f =          1134.8482536
lambda =    1.9332; f =          1134.8482504
lambda =    3.7372; f =          1134.8482484
Norm of dx  0.00017026
-----
Improvement on iteration 32 =          0.000010125
-----
f at the beginning of new iteration,      1134.8482483800
Predicted improvement:          0.000003093
lambda =          1; f =          1134.8482442
Norm of dx  0.00011361
-----
Improvement on iteration 33 =          0.000004201
-----
f at the beginning of new iteration,      1134.8482441794
Predicted improvement:          0.000000955
lambda =          1; f =          1134.8482430
Norm of dx  6.5653e-05
-----
Improvement on iteration 34 =          0.000001228
-----
f at the beginning of new iteration,      1134.8482429513
Predicted improvement:          0.000000531
lambda =          1; f =          1134.8482421
lambda =    1.9332; f =          1134.8482416
Norm of dx  5.5661e-05
-----
Improvement on iteration 35 =          0.000001317
-----
f at the beginning of new iteration,      1134.8482416343
Predicted improvement:          0.000001390
lambda =          1; f =          1134.8482392
lambda =    1.9332; f =          1134.8482373
```



```

                                code.log
lambda = 3.7372; f = 1134.8482350
Norm of dx 0.00010012
-----
Improvement on iteration 36 = 0.000006647
-----
f at the beginning of new iteration, 1134.8482349869
Predicted improvement: 0.000006782
lambda = 1; f = 1134.8482226
lambda = 1.9332; f = 1134.8482132
lambda = 3.7372; f = 1134.8482011
Norm of dx 0.00048659
-----
Improvement on iteration 37 = 0.000033891
-----
f at the beginning of new iteration, 1134.8482010956
Predicted improvement: 0.000021153
lambda = 1; f = 1134.8481709
lambda = 1.9332; f = 1134.8481645
Norm of dx 0.0015346
-----
Improvement on iteration 38 = 0.000036558
-----
f at the beginning of new iteration, 1134.8481645374
Predicted improvement: 0.000004355
lambda = 1; f = 1134.8481591
Norm of dx 0.00066788
-----
Improvement on iteration 39 = 0.000005417
-----
f at the beginning of new iteration, 1134.8481591202
Predicted improvement: 0.000000733
lambda = 1; f = 1134.8481579
lambda = 1.9332; f = 1134.8481575
Norm of dx 0.00011058
-----
Improvement on iteration 40 = 0.000001644
-----
f at the beginning of new iteration, 1134.8481574758
Predicted improvement: 0.000000765
lambda = 1; f = 1134.8481560
lambda = 1.9332; f = 1134.8481548
lambda = 3.7372; f = 1134.8481526
lambda = 7.2247; f = 1134.8481496
lambda = 13.967; f = 1134.8481477
Norm of dx 4.1081e-05
-----
Improvement on iteration 41 = 0.000009733
-----
f at the beginning of new iteration, 1134.8481477430
Predicted improvement: 0.000004457
lambda = 1; f = 1134.8481404
lambda = 1.9332; f = 1134.8481362
Norm of dx 0.00044469
-----
Improvement on iteration 42 = 0.000011545
-----

```

code.log
f at the beginning of new iteration, 1134.8481361984
Predicted improvement: 0.00007084
lambda = 1; f = 1134.8481251
lambda = 1.9332; f = 1134.8481197
Norm of dx 0.00079951

Improvement on iteration 43 = 0.000016527

f at the beginning of new iteration, 1134.8481196717
Predicted improvement: 0.000008436
lambda = 1; f = 1134.8481070
lambda = 1.9332; f = 1134.8481021
Norm of dx 0.00067821

Improvement on iteration 44 = 0.000017600

f at the beginning of new iteration, 1134.8481020720
Predicted improvement: 0.000002681
lambda = 1; f = 1134.8480986
Norm of dx 0.00043998

Improvement on iteration 45 = 0.000003501

f at the beginning of new iteration, 1134.8480985714
Predicted improvement: 0.000000629
lambda = 1; f = 1134.8480976
lambda = 1.9332; f = 1134.8480972
Norm of dx 0.00019291

Improvement on iteration 46 = 0.000001375

f at the beginning of new iteration, 1134.8480971965
Predicted improvement: 0.000000671
lambda = 1; f = 1134.8480959
lambda = 1.9332; f = 1134.8480947
lambda = 3.7372; f = 1134.8480927
lambda = 7.2247; f = 1134.8480896
lambda = 13.967; f = 1134.8480866
Norm of dx 2.8058e-05

Improvement on iteration 47 = 0.000010572

f at the beginning of new iteration, 1134.8480866245
Predicted improvement: 0.000004026
lambda = 1; f = 1134.8480818
Norm of dx 0.0010081

Improvement on iteration 48 = 0.000004837

f at the beginning of new iteration, 1134.8480817873
Predicted improvement: 0.000000680
lambda = 1; f = 1134.8480812
Norm of dx 0.00046652

Improvement on iteration 49 = 0.000000602

code.log
f at the beginning of new iteration, 1134.8480811852
Predicted improvement: 0.00000146
lambda = 1; f = 1134.8480809
lambda = 1.9332; f = 1134.8480808
lambda = 3.7372; f = 1134.8480805
Norm of dx 4.2168e-05

Improvement on iteration 50 = 0.000000663

f at the beginning of new iteration, 1134.8480805219
Predicted improvement: 0.000000725
lambda = 1; f = 1134.8480792
lambda = 1.9332; f = 1134.8480783
lambda = 3.7372; f = 1134.8480770
Norm of dx 9.5433e-05

Improvement on iteration 51 = 0.000003504

f at the beginning of new iteration, 1134.8480770177
Predicted improvement: 0.000003173
lambda = 1; f = 1134.8480715
lambda = 1.9332; f = 1134.8480682
lambda = 3.7372; f = 1134.8480667
Norm of dx 0.00025683

Improvement on iteration 52 = 0.000010300

f at the beginning of new iteration, 1134.8480667180
Predicted improvement: 0.000005249
lambda = 1; f = 1134.8480586
lambda = 1.9332; f = 1134.8480554
Norm of dx 0.0010812

Improvement on iteration 53 = 0.000011268

f at the beginning of new iteration, 1134.8480554499
Predicted improvement: 0.000000841
lambda = 1; f = 1134.8480543
Norm of dx 0.00040579

Improvement on iteration 54 = 0.000001144

f at the beginning of new iteration, 1134.8480543057
Predicted improvement: 0.000000971
lambda = 1; f = 1134.8480535
Norm of dx 0.00051439

Improvement on iteration 55 = 0.000000822

f at the beginning of new iteration, 1134.8480534834
Predicted improvement: 0.000000657
lambda = 1; f = 1134.8480525
lambda = 1.9332; f = 1134.8480519
Norm of dx 0.000234

Improvement on iteration 56 = 0.000001543

code. log

f at the beginning of new iteration, 1134.8480519408
Predicted improvement: 0.00000587
lambda = 1; f = 1134.8480509
lambda = 1.9332; f = 1134.8480503
lambda = 3.7372; f = 1134.8480499
Norm of dx 8.28e-05

Improvement on iteration 57 = 0.00002022

f at the beginning of new iteration, 1134.8480499187
Predicted improvement: 0.00001203
lambda = 1; f = 1134.8480478
lambda = 1.9332; f = 1134.8480461
lambda = 3.7372; f = 1134.8480437
Norm of dx 0.00013103

Improvement on iteration 58 = 0.00006202

f at the beginning of new iteration, 1134.8480437166
Predicted improvement: 0.00007050
lambda = 1; f = 1134.8480326
lambda = 1.9332; f = 1134.8480279
Norm of dx 0.00043421

Improvement on iteration 59 = 0.00015788

f at the beginning of new iteration, 1134.8480279287
Predicted improvement: 0.00006530
lambda = 1; f = 1134.8480170
lambda = 1.9332; f = 1134.8480109
Norm of dx 0.0011328

Improvement on iteration 60 = 0.00017057

f at the beginning of new iteration, 1134.8480108714
Predicted improvement: 0.00003186
lambda = 1; f = 1134.8480068
Norm of dx 0.0012545

Improvement on iteration 61 = 0.00004080

f at the beginning of new iteration, 1134.8480067917
Predicted improvement: 0.00003878
lambda = 1; f = 1134.8480138
lambda = 0.33333; f = 1134.8480069
lambda = 0.11111; f = 1134.8480066
lambda = 0.037037; f = 1134.8480067
Norm of dx 0.0028534

Improvement on iteration 62 = 0.00000198

f at the beginning of new iteration, 1134.8480065936
Predicted improvement: 0.00000112
lambda = 1; f = 1134.8480064
Norm of dx 9.9494e-05

```

                                code.log
Improvement on iteration 63 =      0.000000152
-----
f at the beginning of new iteration,      1134.8480064414
Predicted improvement:      0.000000201
lambda =      1; f =      1134.8480062
Norm of dx 0.00011844
----
Improvement on iteration 64 =      0.000000269
-----
f at the beginning of new iteration,      1134.8480061724
Predicted improvement:      0.000000307
lambda =      1; f =      1134.8480057
lambda =      1.9332; f =      1134.8480054
Norm of dx 0.00011454
----
Improvement on iteration 65 =      0.000000789
-----
f at the beginning of new iteration,      1134.8480053832
Predicted improvement:      0.000001229
lambda =      1; f =      1134.8480033
lambda =      1.9332; f =      1134.8480021
Norm of dx 0.00040067
----
Improvement on iteration 66 =      0.000003276
-----
f at the beginning of new iteration,      1134.8480021070
Predicted improvement:      0.000005644
lambda =      1; f =      1134.8479963
Norm of dx 0.0017883
----
Improvement on iteration 67 =      0.000005782
-----
f at the beginning of new iteration,      1134.8479963252
Predicted improvement:      0.000005303
lambda =      1; f =      1134.8479867
lambda =      1.9332; f =      1134.8479797
lambda =      3.7372; f =      1134.8479711
Norm of dx 0.0008324
----
Improvement on iteration 68 =      0.000025258
-----
f at the beginning of new iteration,      1134.8479710677
Predicted improvement:      0.000006711
lambda =      1; f =      1134.8479625
Norm of dx 0.0010011
----
Improvement on iteration 69 =      0.000008604
-----
f at the beginning of new iteration,      1134.8479624637
Predicted improvement:      0.000003042
lambda =      1; f =      1134.8479592
Norm of dx 0.0010325
----
Improvement on iteration 70 =      0.000003304
-----

```

```

code.log
f at the beginning of new iteration, 1134.8479591596
Predicted improvement: 0.000001822
lambda = 1; f = 1134.8479584
lambda = 0.33333; f = 1134.8479586
Norm of dx 0.0011373

```

```

-----
Improvement on iteration 71 = 0.000000749
-----

```

```

f at the beginning of new iteration, 1134.8479584106
Predicted improvement: 0.000000535
lambda = 1; f = 1134.8479577
Norm of dx 0.00019456

```

```

-----
Improvement on iteration 72 = 0.000000731
-----

```

```

f at the beginning of new iteration, 1134.8479576792
Predicted improvement: 0.000000954
lambda = 1; f = 1134.8479582
lambda = 0.33333; f = 1134.8479574
Norm of dx 0.0010959

```

```

-----
Improvement on iteration 73 = 0.000000271
-----

```

```

f at the beginning of new iteration, 1134.8479574081
Predicted improvement: 0.000000076
lambda = 1; f = 1134.8479574
lambda = 0.33333; f = 1134.8479574
Norm of dx 0.00017889

```

```

-----
Improvement on iteration 74 = 0.000000043
improvement < crit termination

```

Final value of minus the log posterior (or likelihood): 1134.847957

RESULTS FROM POSTERIOR ESTIMATION
parameters

	prior	mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2178	0.0760	beta	0.2000	
rho_a_d	0.500	0.5000	0.2774	beta	0.2000	
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000	
rho_mu_d	0.500	0.5000	0.2774	beta	0.2000	
rho_LTV	0.500	0.4954	0.2751	beta	0.2000	
rho_d	0.500	0.5141	0.2763	beta	0.2000	
rho_d_stern	0.500	0.9055	0.0145	beta	0.2000	
rho_c_ast	0.500	0.6657	0.2390	beta	0.2000	
rho_d_ast	0.500	0.5000	0.2773	beta	0.2000	
rho_s_c	0.500	0.3909	0.0922	beta	0.2000	
rho_r	0.500	0.6702	0.0930	beta	0.2000	
rho_p	-0.500	-0.4978	0.2000	norm	0.2000	
theta_c	0.750	0.2844	0.0685	beta	0.1500	
sigma	1.000	1.9257	0.1083	norm	0.3700	
phi	2.000	5.5333	0.8213	gamma	0.7000	
omega	0.200	0.0961	0.0610	beta	0.1000	
h_c	0.500	0.2932	0.0512	beta	0.1000	
alpha_c	0.500	0.4081	0.0285	beta	0.1000	

standard deviation of shocks
prior mean mode s. d. prior pstdev

```

                                code.log
epsa_c      0.100  2.2779  0.1579  invg  2.0000
epsa_d      0.100  0.0462  0.0189  invg  2.0000
epsmu_c     0.100  0.0461  0.0188  invg  2.0000
epsmu_d     0.100  0.0461  0.0188  invg  2.0000
epsLTV      0.100  0.0461  0.0188  invg  2.0000
epsd        0.100  0.0456  0.0182  invg  2.0000
epsc_ast    0.100  0.0367  0.0109  invg  2.0000
epsd_ast    0.100  0.0461  0.0188  invg  2.0000
epsd_stern  0.100  0.5902  0.0941  invg  2.0000
epss_c      0.100  1.1276  0.0883  invg  2.0000
epsr        0.100  0.6245  0.1813  invg  2.0000
epsyf       0.100  0.0458  0.0184  invg  2.0000
epsn        0.010  0.8079  0.0574  invg  0.1000
epspi_d     0.010  5.4940  0.3722  invg  0.1000

```

Log data density [Laplace approximation] is -1189.883784.

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_113/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.
 Estimation::mcmc: Total number of iterations: 200000.
 Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 29.3019%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi 2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val	No Taper	p-val	4%
Taper	p-val	8% Taper	p-val	15% Taper		
SE_epsa_c	0.000	0.000	2.013	0.369	0.000	
SE_epsa_d	0.000	0.000	2.414	2.484	0.000	
SE_epsmu_c	0.127	0.186	0.105	0.076	0.000	
SE_epsmu_d	0.613	0.664	0.070	0.036	0.000	
SE_epsLTV	0.096	0.122	0.071	0.036	0.000	
SE_epsd	0.664	0.672	0.071	0.041	0.000	
SE_epsc_ast	0.649	0.658	0.631	0.013	0.000	
SE_epsd_ast	0.720	0.750	0.043	0.013	0.000	
SE_epsd_stern	0.043	0.052	0.059	0.088	0.000	
SE_epss_c	0.000	0.000	0.747	0.496	0.000	
SE_epsr	0.012	0.032	0.000	0.224	0.000	
SE_epsyf	0.003	0.023	0.728	0.067	0.000	
SE_epsn	0.000	0.000	0.063	0.067	0.000	
			0.088	0.061	0.000	
			0.062			
			0.813			
			0.000			

			code. log	
SE_epspi_d		5.531		0.000
0.213	0.202	0.165	0.386	0.000
rho_a_c		0.205	0.078	0.000
0.000	0.000	0.000		
rho_a_d		0.405	0.194	0.000
0.000	0.000	0.000		
rho_mu_c		0.503	0.197	0.001
0.707	0.685	0.669		
rho_mu_d		0.503	0.203	0.117
0.862	0.864	0.865		
rho_LTV		0.494	0.199	0.000
0.425	0.389	0.350		
rho_d		0.521	0.196	0.000
0.321	0.344	0.332		
rho_d_stern		0.903	0.015	0.000
0.072	0.091	0.108		
rho_c_ast		0.638	0.183	0.000
0.025	0.024	0.007		
rho_d_ast		0.495	0.201	0.000
0.368	0.357	0.332		
rho_s_c		0.421	0.143	0.000
0.045	0.050	0.050		
rho_r		0.593	0.118	0.000
0.144	0.203	0.253		
rho_p		-0.497	0.202	0.000
0.557	0.563	0.545		
theta_c		0.338	0.095	0.000
0.000	0.000	0.000		
sigma		1.943	0.120	0.000
0.696	0.700	0.707		
phi		5.453	0.936	0.000
0.000	0.000	0.000		
omega		0.106	0.059	0.000
0.000	0.000	0.000		
h_c		0.221	0.079	0.000
0.000	0.000	0.000		
alpha_c		0.362	0.066	0.000
0.000	0.000	0.000		

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
 Done!
 Estimation::marginal density: I'm computing the posterior log marginal density
 (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1183.574287.

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.1848	0.0537	0.3041	beta	0.2000
rho_a_d	0.500	0.3118	0.0837	0.5048	beta	0.2000
rho_mu_c	0.500	0.5034	0.1806	0.8254	beta	0.2000
rho_mu_d	0.500	0.5003	0.1686	0.8266	beta	0.2000

			code.	log		
rho_LTV	0.500	0.4875	0.1642	0.8129	beta	0.2000
rho_d	0.500	0.5213	0.1992	0.8483	beta	0.2000
rho_d_stern	0.500	0.9013	0.8769	0.9242	beta	0.2000
rho_c_ast	0.500	0.6280	0.3419	0.9212	beta	0.2000
rho_d_ast	0.500	0.4917	0.1483	0.8059	beta	0.2000
rho_s_c	0.500	0.4507	0.1582	0.7300	beta	0.2000
rho_r	0.500	0.5765	0.3874	0.7532	beta	0.2000
rho_p	-0.500	-0.5035	-0.8351	-0.1582	norm	0.2000
theta_c	0.750	0.3975	0.2636	0.5262	beta	0.1500
si gma	1.000	1.9155	1.7257	2.0873	norm	0.3700
phi	2.000	5.2427	3.5660	6.7788	gamma	0.7000
omega	0.200	0.0894	0.0148	0.1647	beta	0.1000
h_c	0.500	0.1621	0.0678	0.2447	beta	0.1000
al pha_c	0.500	0.3175	0.2180	0.4199	beta	0.1000

standard deviation of shocks						
	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	1.7243	1.3222	2.2196	invg	2.0000
epsa_d	0.100	4.5957	1.9200	6.3148	invg	2.0000
epsmu_c	0.100	0.1099	0.0238	0.2417	invg	2.0000
epsmu_d	0.100	0.0730	0.0245	0.1174	invg	2.0000
epsLTV	0.100	0.0710	0.0254	0.1232	invg	2.0000
epsd	0.100	0.0694	0.0235	0.1182	invg	2.0000
epsc_ast	0.100	0.0450	0.0237	0.0658	invg	2.0000
epsd_ast	0.100	0.0767	0.0247	0.1416	invg	2.0000
epsd_stern	0.100	0.5505	0.4122	0.6857	invg	2.0000
epss_c	0.100	0.3512	0.0232	1.0474	invg	2.0000
epsr	0.100	0.7080	0.3825	1.0300	invg	2.0000
epsyf	0.100	0.1033	0.0205	0.2499	invg	2.0000
epsn	0.010	0.8052	0.7087	0.8978	invg	0.1000
epspi_d	0.010	5.4863	4.8587	6.0895	invg	0.1000

Estimation: : mcmc: Forecasted variables (mean)
 Estimation: : mcmc: Forecasted variables (mean), done!
 Estimation: : mcmc: Forecasted variables (point)
 Estimation: : mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1142.3374

 f at the beginning of new iteration, 1142.3373854167
 Predicted improvement: 0.002837304
 lambda = 1; f = 1142.3348880
 Norm of dx 0.0007533

Improvement on iteration 1 = 0.002497394

f at the beginning of new iteration, 1142.3348880223
 Predicted improvement: 0.000304917
 lambda = 1; f = 1142.3343764
 lambda = 1.9332; f = 1142.3340751
 Norm of dx 0.00023028

Improvement on iteration 2 = 0.000812939

f at the beginning of new iteration, 1142.3340750837
 Predicted improvement: 0.000434511
 lambda = 1; f = 1142.3334694
 Norm of dx 0.00061239

Improvement on iteration 3 = 0.000605726

code. log

f at the beginning of new iteration, 1142.3334693577
Predicted improvement: 0.000272011
lambda = 1; f = 1142.3330746
lambda = 1.9332; f = 1142.3329744
Norm of dx 0.00058103

Improvement on iteration 4 = 0.000494911

f at the beginning of new iteration, 1142.3329744470
Predicted improvement: 0.000172641
lambda = 1; f = 1142.3326645
lambda = 1.9332; f = 1142.3324394
lambda = 3.7372; f = 1142.3321796
Norm of dx 0.00022101

Improvement on iteration 5 = 0.000794881

f at the beginning of new iteration, 1142.3321795662
Predicted improvement: 0.000155942
lambda = 1; f = 1142.3319522
lambda = 1.9332; f = 1142.3318928
Norm of dx 0.00063511

Improvement on iteration 6 = 0.000286760

f at the beginning of new iteration, 1142.3318928061
Predicted improvement: 0.000098562
lambda = 1; f = 1142.3317111
lambda = 1.9332; f = 1142.3315692
lambda = 3.7372; f = 1142.3313710
lambda = 7.2247; f = 1142.3312718
Norm of dx 0.00018283

Improvement on iteration 7 = 0.000620976

f at the beginning of new iteration, 1142.3312718300
Predicted improvement: 0.000104106
lambda = 1; f = 1142.3311290
Norm of dx 0.00039178

Improvement on iteration 8 = 0.000142816

f at the beginning of new iteration, 1142.3311290143
Predicted improvement: 0.000050507
lambda = 1; f = 1142.3310533
lambda = 1.9332; f = 1142.3310286
Norm of dx 0.00032514

Improvement on iteration 9 = 0.000100406

f at the beginning of new iteration, 1142.3310286087
Predicted improvement: 0.000046019
lambda = 1; f = 1142.3309390
lambda = 1.9332; f = 1142.3308602
lambda = 3.7372; f = 1142.3307206

```

code.log
lambda = 7.2247; f = 1142.3304989
lambda = 13.967; f = 1142.3302507
Norm of dx 0.00019541
-----
Improvement on iteration 10 = 0.000777912
-----
f at the beginning of new iteration, 1142.3302506962
Predicted improvement: 0.000074862
lambda = 1; f = 1142.3301562
Norm of dx 0.00068025
-----
Improvement on iteration 11 = 0.000094527
-----
f at the beginning of new iteration, 1142.3301561690
Predicted improvement: 0.000031271
lambda = 1; f = 1142.3301020
lambda = 1.9332; f = 1142.3300665
lambda = 3.7372; f = 1142.3300391
Norm of dx 0.00033325
-----
Improvement on iteration 12 = 0.000117070
-----
f at the beginning of new iteration, 1142.3300390989
Predicted improvement: 0.000072060
lambda = 1; f = 1142.3299055
lambda = 1.9332; f = 1142.3298001
lambda = 3.7372; f = 1142.3296489
lambda = 7.2247; f = 1142.3295531
Norm of dx 0.00031072
-----
Improvement on iteration 13 = 0.000486048
-----
f at the beginning of new iteration, 1142.3295530509
Predicted improvement: 0.000030490
lambda = 1; f = 1142.3295004
lambda = 1.9332; f = 1142.3294663
lambda = 3.7372; f = 1142.3294416
Norm of dx 8.8843e-05
-----
Improvement on iteration 14 = 0.000111449
-----
f at the beginning of new iteration, 1142.3294416014
Predicted improvement: 0.000021560
lambda = 1; f = 1142.3294109
lambda = 1.9332; f = 1142.3294051
Norm of dx 0.00043597
-----
Improvement on iteration 15 = 0.000036498
-----
f at the beginning of new iteration, 1142.3294051036
Predicted improvement: 0.000007772
lambda = 1; f = 1142.3293902
lambda = 1.9332; f = 1142.3293776
lambda = 3.7372; f = 1142.3293567
lambda = 7.2247; f = 1142.3293293
Norm of dx 7.2334e-05
-----

```

```

                                code.log
Improvement on iteration 16 =      0.000075822
-----
f at the beginning of new iteration,      1142.3293292819
Predicted improvement:      0.000077898
lambda =      1; f =      1142.3291929
lambda =      1.9332; f =      1142.3291011
lambda =      3.7372; f =      1142.3290208
Norm of dx 0.00066536
----
Improvement on iteration 17 =      0.000308523
-----
f at the beginning of new iteration,      1142.3290207587
Predicted improvement:      0.000105934
lambda =      1; f =      1142.3288657
lambda =      1.9332; f =      1142.3288240
Norm of dx 0.001495
----
Improvement on iteration 18 =      0.000196748
-----
f at the beginning of new iteration,      1142.3288240109
Predicted improvement:      0.000004899
lambda =      1; f =      1142.3288155
lambda =      1.9332; f =      1142.3288096
lambda =      3.7372; f =      1142.3288039
Norm of dx 0.00017211
----
Improvement on iteration 19 =      0.000020140
-----
f at the beginning of new iteration,      1142.3288038711
Predicted improvement:      0.000014725
lambda =      1; f =      1142.3287760
lambda =      1.9332; f =      1142.3287524
lambda =      3.7372; f =      1142.3287139
lambda =      7.2247; f =      1142.3286654
Norm of dx 0.0001561
----
Improvement on iteration 20 =      0.000138443
-----
f at the beginning of new iteration,      1142.3286654278
Predicted improvement:      0.000051899
lambda =      1; f =      1142.3285965
Norm of dx 0.0014486
----
Improvement on iteration 21 =      0.000068963
-----
f at the beginning of new iteration,      1142.3285964653
Predicted improvement:      0.000023489
lambda =      1; f =      1142.3285618
lambda =      1.9332; f =      1142.3285517
Norm of dx 0.00084637
----
Improvement on iteration 22 =      0.000044739
-----
f at the beginning of new iteration,      1142.3285517264
Predicted improvement:      0.000012597
lambda =      1; f =      1142.3285308

```

```

                                code. log
lambda =      1. 9332; f =      1142. 3285192
Norm of dx 0.00020865
-----
Improvement on iteration 23 =      0. 000032575
-----
f at the beginning of new iteration,      1142. 3285191511
Predicted improvement:      0. 000007642
lambda =      1; f =      1142. 3285079
lambda =      1. 9332; f =      1142. 3285048
Norm of dx 0.00018429
-----
Improvement on iteration 24 =      0. 000014321
-----
f at the beginning of new iteration,      1142. 3285048304
Predicted improvement:      0. 000006515
lambda =      1; f =      1142. 3284919
lambda =      1. 9332; f =      1142. 3284801
lambda =      3. 7372; f =      1142. 3284577
lambda =      7. 2247; f =      1142. 3284169
lambda =      13. 967; f =      1142. 3283462
lambda =      27; f =      1142. 3282409
lambda =      52. 196; f =      1142. 3281543
Norm of dx 0.0001045
-----
Improvement on iteration 25 =      0. 000350550
-----
f at the beginning of new iteration,      1142. 3281542800
Predicted improvement:      0. 000074671
lambda =      1; f =      1142. 3280584
Norm of dx 0.0012517
-----
Improvement on iteration 26 =      0. 000095924
-----
f at the beginning of new iteration,      1142. 3280583563
Predicted improvement:      0. 000014930
lambda =      1; f =      1142. 3280374
lambda =      1. 9332; f =      1142. 3280341
Norm of dx 0.00054546
-----
Improvement on iteration 27 =      0. 000024243
-----
f at the beginning of new iteration,      1142. 3280341131
Predicted improvement:      0. 000009403
lambda =      1; f =      1142. 3280169
lambda =      1. 9332; f =      1142. 3280037
lambda =      3. 7372; f =      1142. 3279859
Norm of dx 0.00011019
-----
Improvement on iteration 28 =      0. 000048165
-----
f at the beginning of new iteration,      1142. 3279859483
Predicted improvement:      0. 000032806
lambda =      1; f =      1142. 3279344
lambda =      1. 9332; f =      1142. 3279120
Norm of dx 0.00060586
-----
Improvement on iteration 29 =      0. 000073988

```

code.log

f at the beginning of new iteration, 1142.3279119599
Predicted improvement: 0.000032498
lambda = 1; f = 1142.3278525
lambda = 1.9332; f = 1142.3278073
lambda = 3.7372; f = 1142.3277480
Norm of dx 0.00097083

Improvement on iteration 30 = 0.000163986

f at the beginning of new iteration, 1142.3277479739
Predicted improvement: 0.000110986
lambda = 1; f = 1142.3275769
lambda = 1.9332; f = 1142.3275098
Norm of dx 0.0026458

Improvement on iteration 31 = 0.000238140

f at the beginning of new iteration, 1142.3275098340
Predicted improvement: 0.000043852
lambda = 1; f = 1142.3274520
Norm of dx 0.00041734

Improvement on iteration 32 = 0.000057846

f at the beginning of new iteration, 1142.3274519884
Predicted improvement: 0.000010097
lambda = 1; f = 1142.3274392
Norm of dx 0.0003364

Improvement on iteration 33 = 0.000012754

f at the beginning of new iteration, 1142.3274392346
Predicted improvement: 0.000004665
lambda = 1; f = 1142.3274312
lambda = 1.9332; f = 1142.3274259
lambda = 3.7372; f = 1142.3274218
Norm of dx 0.00020174

Improvement on iteration 34 = 0.000017459

f at the beginning of new iteration, 1142.3274217758
Predicted improvement: 0.000012978
lambda = 1; f = 1142.3273967
lambda = 1.9332; f = 1142.3273749
lambda = 3.7372; f = 1142.3273370
lambda = 7.2247; f = 1142.3272797
lambda = 13.967; f = 1142.3272287
Norm of dx 0.00036556

Improvement on iteration 35 = 0.000193101

f at the beginning of new iteration, 1142.3272286750
Predicted improvement: 0.000011036
lambda = 1; f = 1142.3272152
Norm of dx 0.00057113

code. log

```
-----
Improvement on iteration 36 =          0.000013472
-----
f at the beginning of new iteration,      1142.3272152033
Predicted improvement:          0.000002427
lambda =          1; f =          1142.3272113
lambda =    1.9332; f =          1142.3272093
Norm of dx 0.00021777
-----
Improvement on iteration 37 =          0.000005939
-----
f at the beginning of new iteration,      1142.3272092644
Predicted improvement:          0.000003206
lambda =          1; f =          1142.3272041
lambda =    1.9332; f =          1142.3272014
Norm of dx 0.00020118
-----
Improvement on iteration 38 =          0.000007846
-----
f at the beginning of new iteration,      1142.3272014181
Predicted improvement:          0.000003402
lambda =          1; f =          1142.3271958
lambda =    1.9332; f =          1142.3271926
Norm of dx 0.00024641
-----
Improvement on iteration 39 =          0.000008848
-----
f at the beginning of new iteration,      1142.3271925702
Predicted improvement:          0.000006392
lambda =          1; f =          1142.3271817
lambda =    1.9332; f =          1142.3271748
lambda =    3.7372; f =          1142.3271704
Norm of dx 0.00044588
-----
Improvement on iteration 40 =          0.000022208
-----
f at the beginning of new iteration,      1142.3271703621
Predicted improvement:          0.000012694
lambda =          1; f =          1142.3271484
lambda =    1.9332; f =          1142.3271338
lambda =    3.7372; f =          1142.3271223
Norm of dx 0.00027635
-----
Improvement on iteration 41 =          0.000048092
-----
f at the beginning of new iteration,      1142.3271222697
Predicted improvement:          0.000000842
lambda =          1; f =          1142.3271211
lambda =    1.9332; f =          1142.3271207
Norm of dx 0.00016757
-----
Improvement on iteration 42 =          0.000001525
-----
f at the beginning of new iteration,      1142.3271207449
Predicted improvement:          0.000000713
lambda =          1; f =          1142.3271194
```

```

                                code. log
lambda = 1.9332; f = 1142.3271181
lambda = 3.7372; f = 1142.3271159
lambda = 7.2247; f = 1142.3271121
lambda = 13.967; f = 1142.3271068
lambda = 27; f = 1142.3271043
Norm of dx 6.8614e-05
-----
Improvement on iteration 43 = 0.000016442
-----
f at the beginning of new iteration, 1142.3271043032
Predicted improvement: 0.000011239
lambda = 1; f = 1142.3270850
lambda = 1.9332; f = 1142.3270719
lambda = 3.7372; f = 1142.3270602
Norm of dx 0.00089469
-----
Improvement on iteration 44 = 0.000044095
-----
f at the beginning of new iteration, 1142.3270602078
Predicted improvement: 0.000004522
lambda = 1; f = 1142.3270540
Norm of dx 0.00039367
-----
Improvement on iteration 45 = 0.000006177
-----
f at the beginning of new iteration, 1142.3270540306
Predicted improvement: 0.000002619
lambda = 1; f = 1142.3270498
lambda = 1.9332; f = 1142.3270475
Norm of dx 0.00026463
-----
Improvement on iteration 46 = 0.000006513
-----
f at the beginning of new iteration, 1142.3270475172
Predicted improvement: 0.000005065
lambda = 1; f = 1142.3270382
lambda = 1.9332; f = 1142.3270309
lambda = 3.7372; f = 1142.3270204
lambda = 7.2247; f = 1142.3270139
Norm of dx 0.00031408
-----
Improvement on iteration 47 = 0.000033623
-----
f at the beginning of new iteration, 1142.3270138940
Predicted improvement: 0.000023909
lambda = 1; f = 1142.3269700
lambda = 1.9332; f = 1142.3269360
lambda = 3.7372; f = 1142.3268894
Norm of dx 0.00060213
-----
Improvement on iteration 48 = 0.000124520
-----
f at the beginning of new iteration, 1142.3268893738
Predicted improvement: 0.000048727
lambda = 1; f = 1142.3268264
Norm of dx 0.0032263
-----

```



```

                                code.log
Improvement on iteration 49 =      0.000062984
-----
f at the beginning of new iteration,      1142.3268263897
Predicted improvement:      0.000023968
lambda =      1; f =      1142.3267895
lambda =      1.9332; f =      1142.3267750
Norm of dx 0.0019342
-----
Improvement on iteration 50 =      0.000051341
-----
f at the beginning of new iteration,      1142.3267750487
Predicted improvement:      0.000013551
lambda =      1; f =      1142.3267547
lambda =      1.9332; f =      1142.3267482
Norm of dx 0.00033348
-----
Improvement on iteration 51 =      0.000026865
-----
f at the beginning of new iteration,      1142.3267481835
Predicted improvement:      0.000002901
lambda =      1; f =      1142.3267434
lambda =      1.9332; f =      1142.3267403
lambda =      3.7372; f =      1142.3267384
Norm of dx 0.00055565
-----
Improvement on iteration 52 =      0.000009754
-----
f at the beginning of new iteration,      1142.3267384298
Predicted improvement:      0.000007020
lambda =      1; f =      1142.3267246
lambda =      1.9332; f =      1142.3267120
lambda =      3.7372; f =      1142.3266889
lambda =      7.2247; f =      1142.3266482
lambda =      13.967; f =      1142.3265846
lambda =      27; f =      1142.3265183
Norm of dx 0.0003842
-----
Improvement on iteration 53 =      0.000220121
-----
f at the beginning of new iteration,      1142.3265183090
Predicted improvement:      0.000045359
lambda =      1; f =      1142.3264638
Norm of dx 0.0019856
-----
Improvement on iteration 54 =      0.000054476
-----
f at the beginning of new iteration,      1142.3264638331
Predicted improvement:      0.000002535
lambda =      1; f =      1142.3264609
Norm of dx 0.0002984
-----
Improvement on iteration 55 =      0.000002960
-----
f at the beginning of new iteration,      1142.3264608733
Predicted improvement:      0.000000469
lambda =      1; f =      1142.3264600

```

```

                                code.log
lambda = 1.9332; f = 1142.3264593
lambda = 3.7372; f = 1142.3264583
lambda = 7.2247; f = 1142.3264577
Norm of dx 6.9066e-05
-----
Improvement on iteration 56 = 0.000003179
-----
f at the beginning of new iteration, 1142.3264576940
Predicted improvement: 0.000002789
lambda = 1; f = 1142.3264522
lambda = 1.9332; f = 1142.3264473
lambda = 3.7372; f = 1142.3264382
lambda = 7.2247; f = 1142.3264224
lambda = 13.967; f = 1142.3263985
lambda = 27; f = 1142.3263772
Norm of dx 0.0001284
-----
Improvement on iteration 57 = 0.000080510
-----
f at the beginning of new iteration, 1142.3263771844
Predicted improvement: 0.000042998
lambda = 1; f = 1142.3263061
lambda = 1.9332; f = 1142.3262679
Norm of dx 0.0034632
-----
Improvement on iteration 58 = 0.000109308
-----
f at the beginning of new iteration, 1142.3262678764
Predicted improvement: 0.000013028
lambda = 1; f = 1142.3262542
Norm of dx 0.0035268
-----
Improvement on iteration 59 = 0.000013632
-----
f at the beginning of new iteration, 1142.3262542441
Predicted improvement: 0.000000244
lambda = 1; f = 1142.3262541
lambda = 0.33333; f = 1142.3262542
Norm of dx 0.0003486
-----
Improvement on iteration 60 = 0.000000120
-----
f at the beginning of new iteration, 1142.3262541239
Predicted improvement: 0.000000296
lambda = 1; f = 1142.3262538
Norm of dx 0.00018908
-----
Improvement on iteration 61 = 0.000000347
-----
f at the beginning of new iteration, 1142.3262537766
Predicted improvement: 0.000000328
lambda = 1; f = 1142.3262536
lambda = 0.33333; f = 1142.3262537
Norm of dx 0.00012599
-----
Improvement on iteration 62 = 0.000000181
-----

```

code. log

f at the beginning of new iteration, 1142. 3262535955
Predicted improvement: 0. 000000086
lambda = 1; f = 1142. 3262534
lambda = 1. 9332; f = 1142. 3262533
lambda = 3. 7372; f = 1142. 3262532
Norm of dx 2. 4e-05

Improvement on iteration 63 = 0. 000000357

f at the beginning of new iteration, 1142. 3262532380
Predicted improvement: 0. 000000277
lambda = 1; f = 1142. 3262528
lambda = 1. 9332; f = 1142. 3262524
lambda = 3. 7372; f = 1142. 3262519
Norm of dx 5. 4402e-05

Improvement on iteration 64 = 0. 000001366

f at the beginning of new iteration, 1142. 3262518721
Predicted improvement: 0. 000002092
lambda = 1; f = 1142. 3262483
lambda = 1. 9332; f = 1142. 3262460
lambda = 3. 7372; f = 1142. 3262443
Norm of dx 0. 00029706

Improvement on iteration 65 = 0. 000007557

f at the beginning of new iteration, 1142. 3262443147
Predicted improvement: 0. 000003783
lambda = 1; f = 1142. 3262383
lambda = 1. 9332; f = 1142. 3262352
Norm of dx 0. 00038999

Improvement on iteration 66 = 0. 000009066

f at the beginning of new iteration, 1142. 3262352490
Predicted improvement: 0. 000001243
lambda = 1; f = 1142. 3262341
Norm of dx 0. 000374

Improvement on iteration 67 = 0. 000001107

f at the beginning of new iteration, 1142. 3262341424
Predicted improvement: 0. 000000017
lambda = 1; f = 1142. 3262341
lambda = 0. 33333; f = 1142. 3262341
lambda = 0. 11111; f = 1142. 3262341
Norm of dx 3. 4199e-05

Improvement on iteration 68 = 0. 000000002
improvement < crit termination

Final value of minus the log posterior (or likelihood): 1142. 326234

RESULTS FROM POSTERIOR ESTIMATION
parameters

prior mean mode s. d. prior pstdev
Page 195

code. log

rho_a_c	0.500	0.2190	0.0758	beta	0.2000
rho_a_d	0.500	0.5000	0.2774	beta	0.2000
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000
rho_mu_d	0.500	0.5000	0.2774	beta	0.2000
rho_LTV	0.500	0.4956	0.2751	beta	0.2000
rho_d	0.500	0.5144	0.2763	beta	0.2000
rho_d_stern	0.500	0.9060	0.0143	beta	0.2000
rho_c_ast	0.500	0.6691	0.2375	beta	0.2000
rho_d_ast	0.500	0.5000	0.2773	beta	0.2000
rho_s_c	0.500	0.3886	0.0915	beta	0.2000
rho_r	0.500	0.6703	0.0928	beta	0.2000
rho_p	-0.500	-0.4978	0.2000	norm	0.2000
theta_c	0.750	0.2834	0.0686	beta	0.1500
si_gma	1.000	1.9299	0.1086	norm	0.3700
phi	2.000	5.5839	0.8243	gamm	0.7000
omega	0.200	0.0950	0.0603	beta	0.1000
h_c	0.500	0.2948	0.0511	beta	0.1000
al pha_c	0.500	0.4078	0.0284	beta	0.1000

standard deviation of shocks
prior mean mode s. d. prior pstdev

epsa_c	0.100	2.2672	0.1565	invg	2.0000
epsa_d	0.100	0.0462	0.0189	invg	2.0000
epsmu_c	0.100	0.0461	0.0188	invg	2.0000
epsmu_d	0.100	0.0461	0.0188	invg	2.0000
epsLTV	0.100	0.0461	0.0188	invg	2.0000
epsd	0.100	0.0456	0.0182	invg	2.0000
epsc_ast	0.100	0.0366	0.0108	invg	2.0000
epsd_ast	0.100	0.0461	0.0188	invg	2.0000
epsd_stern	0.100	0.5884	0.0934	invg	2.0000
epss_c	0.100	1.1236	0.0877	invg	2.0000
epsr	0.100	0.6241	0.1809	invg	2.0000
epsyf	0.100	0.0457	0.0184	invg	2.0000
epsn	0.010	0.8050	0.0570	invg	0.1000
epspi_d	0.010	5.4730	0.3694	invg	0.1000

Log data density [Laplace approximation] is -1197.454736.

Estimation::mcmc: One Chain mode.
Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
Estimation::mcmc: Details about the MCMC are available in
code_114/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.
Estimation::mcmc: Total number of generated files: 55.
Estimation::mcmc: Total number of iterations: 200000.
Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 32.9678%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi 2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val	No Taper	p-val	4%
Taper						
SE_epsa_c	2.287	0.159		0.000		
0.346	0.359	0.288				
SE_epsa_d	0.156	0.198		0.000		

		code. log		
0. 868	0. 893	0. 899		
SE_epsmu_c		0. 078	0. 047	0. 000
0. 561	0. 587	0. 562		
SE_epsmu_d		0. 075	0. 039	0. 000
0. 682	0. 688	0. 683		
SE_epsLTV		0. 084	0. 060	0. 000
0. 009	0. 018	0. 033		
SE_epsd		0. 093	0. 091	0. 000
0. 016	0. 021	0. 018		
SE_epsc_ast		0. 041	0. 013	0. 000
0. 137	0. 138	0. 111		
SE_epsd_ast		0. 076	0. 042	0. 000
0. 480	0. 477	0. 456		
SE_epsd_stern		0. 561	0. 090	0. 534
0. 963	0. 965	0. 967		
SE_epss_c		1. 139	0. 089	0. 000
0. 586	0. 605	0. 597		
SE_epsr		0. 753	0. 249	0. 000
0. 782	0. 808	0. 819		
SE_epsyf		0. 072	0. 037	0. 010
0. 913	0. 930	0. 937		
SE_epsn		0. 817	0. 059	0. 000
0. 346	0. 327	0. 282		
SE_epspi_d		5. 554	0. 378	0. 000
0. 008	0. 002	0. 002		
rho_a_c		0. 228	0. 073	0. 026
0. 849	0. 852	0. 861		
rho_a_d		0. 496	0. 202	0. 000
0. 131	0. 124	0. 114		
rho_mu_c		0. 505	0. 199	0. 000
0. 251	0. 265	0. 265		
rho_mu_d		0. 504	0. 198	0. 001
0. 701	0. 688	0. 616		
rho_LTV		0. 495	0. 199	0. 071
0. 812	0. 809	0. 815		
rho_d		0. 542	0. 201	0. 359
0. 918	0. 918	0. 916		
rho_d_stern		0. 905	0. 015	0. 000
0. 063	0. 066	0. 052		
rho_c_ast		0. 645	0. 185	0. 000
0. 000	0. 000	0. 000		
rho_d_ast		0. 498	0. 199	0. 000
0. 565	0. 558	0. 533		
rho_s_c		0. 394	0. 092	0. 000
0. 134	0. 175	0. 228		
rho_r		0. 609	0. 120	0. 000
0. 448	0. 510	0. 541		
rho_p		-0. 488	0. 200	0. 000
0. 129	0. 121	0. 129		
theta_c		0. 274	0. 066	0. 000
0. 189	0. 224	0. 205		
sigma		1. 974	0. 118	0. 000
0. 010	0. 009	0. 009		
phi		5. 708	0. 821	0. 000
0. 134	0. 131	0. 104		
omega		0. 121	0. 060	0. 000
0. 020	0. 031	0. 035		
h_c		0. 283	0. 050	0. 000
0. 034	0. 058	0. 079		
alpha_c		0. 407	0. 028	0. 000
0. 673	0. 669	0. 670		

code.log

Estimation::mcmc: Total number of MH draws per chain: 200000.
Estimation::mcmc: Total number of generated MH files: 55.
Estimation::mcmc: I'll use mh-files 28 to 55.
Estimation::mcmc: In MH-file number 28 I'll start at line 722.
Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance... Done!

Estimation::marginal density: I'm computing the posterior log marginal density (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1196.575283.

parameters

	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2292	0.1066	0.3455	beta	0.2000
rho_a_d	0.500	0.5015	0.1790	0.8431	beta	0.2000
rho_mu_c	0.500	0.5069	0.1720	0.8244	beta	0.2000
rho_mu_d	0.500	0.5046	0.1744	0.8155	beta	0.2000
rho_LTV	0.500	0.4959	0.1721	0.8244	beta	0.2000
rho_d	0.500	0.5592	0.2446	0.8922	beta	0.2000
rho_d_stern	0.500	0.9053	0.8800	0.9291	beta	0.2000
rho_c_ast	0.500	0.6486	0.3609	0.9427	beta	0.2000
rho_d_ast	0.500	0.4939	0.1655	0.8260	beta	0.2000
rho_s_c	0.500	0.3963	0.2462	0.5596	beta	0.2000
rho_r	0.500	0.6045	0.4064	0.7882	beta	0.2000
rho_p	-0.500	-0.4903	-0.8303	-0.1637	norm	0.2000
theta_c	0.750	0.2724	0.1650	0.3806	beta	0.1500
si_gma	1.000	1.9774	1.7954	2.1567	norm	0.3700
phi	2.000	5.7025	4.4012	7.0345	gamma	0.7000
omega	0.200	0.1212	0.0228	0.2086	beta	0.1000
h_c	0.500	0.2828	0.1999	0.3619	beta	0.1000
alpha_c	0.500	0.4059	0.3603	0.4518	beta	0.1000

standard deviation of shocks

	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.2894	2.0256	2.5396	invg	2.0000
epsa_d	0.100	0.0912	0.0217	0.1908	invg	2.0000
epsmu_c	0.100	0.0729	0.0255	0.1227	invg	2.0000
epsmu_d	0.100	0.0758	0.0244	0.1356	invg	2.0000
epsLTV	0.100	0.0777	0.0244	0.1430	invg	2.0000
epsd	0.100	0.1136	0.0195	0.3009	invg	2.0000
epsc_ast	0.100	0.0414	0.0223	0.0610	invg	2.0000
epsd_ast	0.100	0.0740	0.0252	0.1285	invg	2.0000
epsd_stern	0.100	0.5567	0.4113	0.7093	invg	2.0000
epss_c	0.100	1.1446	0.9998	1.2849	invg	2.0000
epsr	0.100	0.7646	0.3775	1.1357	invg	2.0000
epsyf	0.100	0.0711	0.0247	0.1221	invg	2.0000
epsn	0.010	0.8169	0.7224	0.9102	invg	0.1000
epspi_d	0.010	5.5431	4.9495	6.1501	invg	0.1000

Estimation::mcmc: Forecasted variables (mean)
Estimation::mcmc: Forecasted variables (mean), done!
Estimation::mcmc: Forecasted variables (point)
Estimation::mcmc: Forecasted variables (point), done!

Initial value of the log posterior (or likelihood): -1149.3955

code.log
f at the beginning of new iteration, 1149.3954542058
Predicted improvement: 0.003175939
lambda = 1; f = 1149.3923725
Norm of dx 0.00079699

Improvement on iteration 1 = 0.003081754

f at the beginning of new iteration, 1149.3923724519
Predicted improvement: 0.000552496
lambda = 1; f = 1149.3914574
lambda = 1.9332; f = 1149.3909456
Norm of dx 0.00034866

Improvement on iteration 2 = 0.001426859

f at the beginning of new iteration, 1149.3909455934
Predicted improvement: 0.000324870
lambda = 1; f = 1149.3905118
Norm of dx 0.00048471

Improvement on iteration 3 = 0.000433812

f at the beginning of new iteration, 1149.3905117819
Predicted improvement: 0.000205777
lambda = 1; f = 1149.3901676
lambda = 1.9332; f = 1149.3899674
Norm of dx 0.00042958

Improvement on iteration 4 = 0.000544401

f at the beginning of new iteration, 1149.3899673807
Predicted improvement: 0.000417928
lambda = 1; f = 1149.3892870
lambda = 1.9332; f = 1149.3889327
Norm of dx 0.00091632

Improvement on iteration 5 = 0.001034657

f at the beginning of new iteration, 1149.3889327242
Predicted improvement: 0.000425669
lambda = 1; f = 1149.3883240
lambda = 1.9332; f = 1149.3881942
Norm of dx 0.00091448

Improvement on iteration 6 = 0.000738497

f at the beginning of new iteration, 1149.3881942274
Predicted improvement: 0.000123456
lambda = 1; f = 1149.3879938
lambda = 1.9332; f = 1149.3878904
Norm of dx 0.00035556

Improvement on iteration 7 = 0.000303797

f at the beginning of new iteration, 1149.3878904306
Predicted improvement: 0.000146255

```

code.log
lambda = 1; f = 1149.3876511
lambda = 1.9332; f = 1149.3875236
Norm of dx 0.00037314
-----
Improvement on iteration 8 = 0.000366794
-----
f at the beginning of new iteration, 1149.3875236362
Predicted improvement: 0.000139428
lambda = 1; f = 1149.3873365
Norm of dx 0.00084787
-----
Improvement on iteration 9 = 0.000187123
-----
f at the beginning of new iteration, 1149.3873365129
Predicted improvement: 0.000052375
lambda = 1; f = 1149.3872645
Norm of dx 0.00053912
-----
Improvement on iteration 10 = 0.000072057
-----
f at the beginning of new iteration, 1149.3872644563
Predicted improvement: 0.000040869
lambda = 1; f = 1149.3871962
lambda = 1.9332; f = 1149.3871566
Norm of dx 0.0003966
-----
Improvement on iteration 11 = 0.000107905
-----
f at the beginning of new iteration, 1149.3871565514
Predicted improvement: 0.000093286
lambda = 1; f = 1149.3869943
lambda = 1.9332; f = 1149.3868863
lambda = 3.7372; f = 1149.3867969
Norm of dx 0.00066335
-----
Improvement on iteration 12 = 0.000359690
-----
f at the beginning of new iteration, 1149.3867968612
Predicted improvement: 0.000176021
lambda = 1; f = 1149.3865037
lambda = 1.9332; f = 1149.3863366
Norm of dx 0.00062168
-----
Improvement on iteration 13 = 0.000460242
-----
f at the beginning of new iteration, 1149.3863366194
Predicted improvement: 0.000082342
lambda = 1; f = 1149.3862386
Norm of dx 0.00064407
-----
Improvement on iteration 14 = 0.000097999
-----
f at the beginning of new iteration, 1149.3862386200
Predicted improvement: 0.000021141
lambda = 1; f = 1149.3862007
lambda = 1.9332; f = 1149.3861732

```



```

                                code.log
lambda =      3.7372; f =      1149.3861420
Norm of dx 0.00021808
-----
Improvement on iteration 15 =      0.000096642
-----
f at the beginning of new iteration,      1149.3861419782
Predicted improvement:      0.000067383
lambda =      1; f =      1149.3860245
lambda =      1.9332; f =      1149.3859461
lambda =      3.7372; f =      1149.3858807
Norm of dx 0.0005105
-----
Improvement on iteration 16 =      0.000261285
-----
f at the beginning of new iteration,      1149.3858806930
Predicted improvement:      0.000056465
lambda =      1; f =      1149.3857988
lambda =      1.9332; f =      1149.3857783
Norm of dx 0.0003459
-----
Improvement on iteration 17 =      0.000102345
-----
f at the beginning of new iteration,      1149.3857783485
Predicted improvement:      0.000019015
lambda =      1; f =      1149.3857442
lambda =      1.9332; f =      1149.3857197
lambda =      3.7372; f =      1149.3856919
Norm of dx 0.00015299
-----
Improvement on iteration 18 =      0.000086421
-----
f at the beginning of new iteration,      1149.3856919277
Predicted improvement:      0.000020428
lambda =      1; f =      1149.3856598
lambda =      1.9332; f =      1149.3856457
Norm of dx 0.00034588
-----
Improvement on iteration 19 =      0.000046264
-----
f at the beginning of new iteration,      1149.3856456635
Predicted improvement:      0.000024954
lambda =      1; f =      1149.3855987
lambda =      1.9332; f =      1149.3855601
lambda =      3.7372; f =      1149.3854998
lambda =      7.2247; f =      1149.3854367
Norm of dx 0.00030119
-----
Improvement on iteration 20 =      0.000208948
-----
f at the beginning of new iteration,      1149.3854367151
Predicted improvement:      0.000093557
lambda =      1; f =      1149.3853000
lambda =      1.9332; f =      1149.3852635
Norm of dx 0.00067228
-----
Improvement on iteration 21 =      0.000173185
-----

```

code. log

f at the beginning of new iteration, 1149.3852635296
Predicted improvement: 0.00008246
lambda = 1; f = 1149.3852509
lambda = 1.9332; f = 1149.3852459
Norm of dx 0.0003097

Improvement on iteration 22 = 0.000017619

f at the beginning of new iteration, 1149.3852459105
Predicted improvement: 0.00008888
lambda = 1; f = 1149.3852287
lambda = 1.9332; f = 1149.3852137
lambda = 3.7372; f = 1149.3851872
lambda = 7.2247; f = 1149.3851459
lambda = 13.967; f = 1149.3851027
Norm of dx 7.0549e-05

Improvement on iteration 23 = 0.000143225

f at the beginning of new iteration, 1149.3851026853
Predicted improvement: 0.000075982
lambda = 1; f = 1149.3849853
lambda = 1.9332; f = 1149.3849382
Norm of dx 0.0014662

Improvement on iteration 24 = 0.000164491

f at the beginning of new iteration, 1149.3849381946
Predicted improvement: 0.000021837
lambda = 1; f = 1149.3849038
lambda = 1.9332; f = 1149.3848886
Norm of dx 0.00057162

Improvement on iteration 25 = 0.000049626

f at the beginning of new iteration, 1149.3848885690
Predicted improvement: 0.000015242
lambda = 1; f = 1149.3848655
lambda = 1.9332; f = 1149.3848576
Norm of dx 0.00016093

Improvement on iteration 26 = 0.000031007

f at the beginning of new iteration, 1149.3848575621
Predicted improvement: 0.000004267
lambda = 1; f = 1149.3848502
lambda = 1.9332; f = 1149.3848454
lambda = 3.7372; f = 1149.3848416
Norm of dx 0.0001649

Improvement on iteration 27 = 0.000015914

f at the beginning of new iteration, 1149.3848416481
Predicted improvement: 0.000009919
lambda = 1; f = 1149.3848222
lambda = 1.9332; f = 1149.3848047

```

                                code.log
lambda = 3.7372; f = 1149.3847730
lambda = 7.2247; f = 1149.3847190
lambda = 13.967; f = 1149.3846425
lambda = 27; f = 1149.3845981
Norm of dx 0.00015135
-----
Improvement on iteration 28 = 0.000243554
-----
f at the beginning of new iteration, 1149.3845980945
Predicted improvement: 0.000016282
lambda = 1; f = 1149.3845751
lambda = 1.9332; f = 1149.3845712
Norm of dx 0.00014866
-----
Improvement on iteration 29 = 0.000026922
-----
f at the beginning of new iteration, 1149.3845711724
Predicted improvement: 0.000009102
lambda = 1; f = 1149.3845548
lambda = 1.9332; f = 1149.3845429
lambda = 3.7372; f = 1149.3845291
Norm of dx 0.00018424
-----
Improvement on iteration 30 = 0.000042077
-----
f at the beginning of new iteration, 1149.3845290953
Predicted improvement: 0.000018154
lambda = 1; f = 1149.3845001
lambda = 1.9332; f = 1149.3844863
Norm of dx 0.00047277
-----
Improvement on iteration 31 = 0.000042765
-----
f at the beginning of new iteration, 1149.3844863299
Predicted improvement: 0.000021912
lambda = 1; f = 1149.3844462
lambda = 1.9332; f = 1149.3844154
lambda = 3.7372; f = 1149.3843739
Norm of dx 0.00051281
-----
Improvement on iteration 32 = 0.000112403
-----
f at the beginning of new iteration, 1149.3843739271
Predicted improvement: 0.000096808
lambda = 1; f = 1149.3842202
lambda = 1.9332; f = 1149.3841479
Norm of dx 0.002086
-----
Improvement on iteration 33 = 0.000225996
-----
f at the beginning of new iteration, 1149.3841479308
Predicted improvement: 0.000060157
lambda = 1; f = 1149.3840693
Norm of dx 0.00094165
-----
Improvement on iteration 34 = 0.000078582
-----

```

code.log

f at the beginning of new iteration, 1149.3840693483
Predicted improvement: 0.000011700
lambda = 1; f = 1149.3840563
Norm of dx 0.00012209

Improvement on iteration 35 = 0.000013076

f at the beginning of new iteration, 1149.3840562724
Predicted improvement: 0.000001645
lambda = 1; f = 1149.3840532
lambda = 1.9332; f = 1149.3840508
lambda = 3.7372; f = 1149.3840472
lambda = 7.2247; f = 1149.3840446
Norm of dx 3.9685e-05

Improvement on iteration 36 = 0.000011678

f at the beginning of new iteration, 1149.3840445941
Predicted improvement: 0.000009513
lambda = 1; f = 1149.3840261
lambda = 1.9332; f = 1149.3840099
lambda = 3.7372; f = 1149.3839810
lambda = 7.2247; f = 1149.3839349
lambda = 13.967; f = 1149.3838821
Norm of dx 0.00020326

Improvement on iteration 37 = 0.000162492

f at the beginning of new iteration, 1149.3838821021
Predicted improvement: 0.000012982
lambda = 1; f = 1149.3838690
Norm of dx 0.0010498

Improvement on iteration 38 = 0.000013145

f at the beginning of new iteration, 1149.3838689567
Predicted improvement: 0.000000232
lambda = 1; f = 1149.3838686
lambda = 1.9332; f = 1149.3838683
lambda = 3.7372; f = 1149.3838680
Norm of dx 3.4736e-05

Improvement on iteration 39 = 0.000000967

f at the beginning of new iteration, 1149.3838679893
Predicted improvement: 0.000000403
lambda = 1; f = 1149.3838673
lambda = 1.9332; f = 1149.3838670
Norm of dx 4.0402e-05

Improvement on iteration 40 = 0.000000994

f at the beginning of new iteration, 1149.3838669958
Predicted improvement: 0.000000443
lambda = 1; f = 1149.3838663
lambda = 1.9332; f = 1149.3838658

Norm of dx 5.7893e-05

Improvement on iteration 41 = 0.000001159

f at the beginning of new iteration, 1149.3838658367

Predicted improvement: 0.000001060

lambda = 1; f = 1149.3838640

lambda = 1.9332; f = 1149.3838628

lambda = 3.7372; f = 1149.3838620

Norm of dx 8.0916e-05

Improvement on iteration 42 = 0.000003848

f at the beginning of new iteration, 1149.3838619891

Predicted improvement: 0.000001741

lambda = 1; f = 1149.3838594

lambda = 1.9332; f = 1149.3838584

Norm of dx 0.00010022

Improvement on iteration 43 = 0.000003630

f at the beginning of new iteration, 1149.3838583593

Predicted improvement: 0.000000258

lambda = 1; f = 1149.3838581

Norm of dx 0.00015708

Improvement on iteration 44 = 0.000000287

f at the beginning of new iteration, 1149.3838580719

Predicted improvement: 0.000000162

lambda = 1; f = 1149.3838578

lambda = 1.9332; f = 1149.3838576

lambda = 3.7372; f = 1149.3838573

Norm of dx 5.9583e-05

Improvement on iteration 45 = 0.000000728

f at the beginning of new iteration, 1149.3838573435

Predicted improvement: 0.000000601

lambda = 1; f = 1149.3838562

lambda = 1.9332; f = 1149.3838553

lambda = 3.7372; f = 1149.3838539

lambda = 7.2247; f = 1149.3838526

Norm of dx 7.5153e-05

Improvement on iteration 46 = 0.000004745

f at the beginning of new iteration, 1149.3838525982

Predicted improvement: 0.000001423

lambda = 1; f = 1149.3838506

lambda = 1.9332; f = 1149.3838503

Norm of dx 0.00021111

Improvement on iteration 47 = 0.000002304

f at the beginning of new iteration, 1149.3838502944

```

code. log
Predicted improvement:      0.00000298
lambda = 1; f =            1149.3838499
Norm of dx 0.00011967
----
Improvement on iteration 48 =      0.000000393
-----
f at the beginning of new iteration,      1149.3838499015
Predicted improvement:      0.000000136
lambda = 1; f =            1149.3838496
lambda = 1.9332; f =      1149.3838495
lambda = 3.7372; f =      1149.3838492
Norm of dx 3.682e-05
----
Improvement on iteration 49 =      0.000000664
-----
f at the beginning of new iteration,      1149.3838492379
Predicted improvement:      0.000000486
lambda = 1; f =            1149.3838484
lambda = 1.9332; f =      1149.3838477
lambda = 3.7372; f =      1149.3838468
Norm of dx 9.1177e-05
----
Improvement on iteration 50 =      0.000002426
-----
f at the beginning of new iteration,      1149.3838468122
Predicted improvement:      0.000002803
lambda = 1; f =            1149.3838420
lambda = 1.9332; f =      1149.3838386
lambda = 3.7372; f =      1149.3838353
Norm of dx 0.00029837
----
Improvement on iteration 51 =      0.000011470
-----
f at the beginning of new iteration,      1149.3838353423
Predicted improvement:      0.000007005
lambda = 1; f =            1149.3838237
lambda = 1.9332; f =      1149.3838168
Norm of dx 0.00082568
----
Improvement on iteration 52 =      0.000018581
-----
f at the beginning of new iteration,      1149.3838167611
Predicted improvement:      0.000006863
lambda = 1; f =            1149.3838074
Norm of dx 0.0010942
----
Improvement on iteration 53 =      0.000009329
-----
f at the beginning of new iteration,      1149.3838074322
Predicted improvement:      0.000003338
lambda = 1; f =            1149.3838027
lambda = 1.9332; f =      1149.3838019
Norm of dx 0.00061313
----
Improvement on iteration 54 =      0.000005526
-----

```

code.log
f at the beginning of new iteration, 1149.3838019066
Predicted improvement: 0.000001571
lambda = 1; f = 1149.3838002
Norm of dx 0.00049094

Improvement on iteration 55 = 0.000001756

f at the beginning of new iteration, 1149.3838001508
Predicted improvement: 0.000000404
lambda = 1; f = 1149.3837996
Norm of dx 0.00013771

Improvement on iteration 56 = 0.000000540

f at the beginning of new iteration, 1149.3837996109
Predicted improvement: 0.000000202
lambda = 1; f = 1149.3837993
lambda = 1.9332; f = 1149.3837991
Norm of dx 8.1318e-05

Improvement on iteration 57 = 0.000000514

f at the beginning of new iteration, 1149.3837990969
Predicted improvement: 0.000000404
lambda = 1; f = 1149.3837984
lambda = 1.9332; f = 1149.3837978
lambda = 3.7372; f = 1149.3837970
Norm of dx 8.6345e-05

Improvement on iteration 58 = 0.000002111

f at the beginning of new iteration, 1149.3837969855
Predicted improvement: 0.000002782
lambda = 1; f = 1149.3837920
lambda = 1.9332; f = 1149.3837885
lambda = 3.7372; f = 1149.3837845
Norm of dx 0.00027639

Improvement on iteration 59 = 0.000012524

f at the beginning of new iteration, 1149.3837844617
Predicted improvement: 0.000007615
lambda = 1; f = 1149.3837722
lambda = 1.9332; f = 1149.3837656
Norm of dx 0.00096359

Improvement on iteration 60 = 0.000018902

f at the beginning of new iteration, 1149.3837655598
Predicted improvement: 0.000004040
lambda = 1; f = 1149.3837605
Norm of dx 0.0010962

Improvement on iteration 61 = 0.000005100

f at the beginning of new iteration, 1149.3837604603
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```

code. log
Predicted improvement: 0.00000943
lambda = 1; f = 1149.3837591
lambda = 1.9332; f = 1149.3837588
Norm of dx 0.00057617
----
Improvement on iteration 62 = 0.000001668
-----
f at the beginning of new iteration, 1149.3837587925
Predicted improvement: 0.00000805
lambda = 1; f = 1149.3837574
lambda = 1.9332; f = 1149.3837564
lambda = 3.7372; f = 1149.3837551
Norm of dx 0.00018078
----
Improvement on iteration 63 = 0.000003728
-----
f at the beginning of new iteration, 1149.3837550644
Predicted improvement: 0.000003208
lambda = 1; f = 1149.3837491
lambda = 1.9332; f = 1149.3837447
lambda = 3.7372; f = 1149.3837393
Norm of dx 0.0001999
----
Improvement on iteration 64 = 0.000015731
-----
f at the beginning of new iteration, 1149.3837393334
Predicted improvement: 0.000010780
lambda = 1; f = 1149.3837215
lambda = 1.9332; f = 1149.3837123
Norm of dx 0.001758
----
Improvement on iteration 65 = 0.000027011
-----
f at the beginning of new iteration, 1149.3837123223
Predicted improvement: 0.000007174
lambda = 1; f = 1149.3837029
Norm of dx 0.001676
----
Improvement on iteration 66 = 0.000009428
-----
f at the beginning of new iteration, 1149.3837028938
Predicted improvement: 0.000000888
lambda = 1; f = 1149.3837019
Norm of dx 0.00045277
----
Improvement on iteration 67 = 0.000000953
-----
f at the beginning of new iteration, 1149.3837019413
Predicted improvement: 0.000000067
lambda = 1; f = 1149.3837019
Norm of dx 0.00015614
----
Improvement on iteration 68 = 0.000000068
improvement < crit termination

Final value of minus the log posterior (or likelihood): 1149.383702

```


RESULTS FROM POSTERIOR ESTIMATION
parameters

	prior mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2189	0.0755	beta	0.2000
rho_a_d	0.500	0.5000	0.2774	beta	0.2000
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000
rho_mu_d	0.500	0.5000	0.2773	beta	0.2000
rho_LTV	0.500	0.4956	0.2751	beta	0.2000
rho_d	0.500	0.5145	0.2762	beta	0.2000
rho_d_stern	0.500	0.9065	0.0142	beta	0.2000
rho_c_ast	0.500	0.6708	0.2367	beta	0.2000
rho_d_ast	0.500	0.5000	0.2773	beta	0.2000
rho_s_c	0.500	0.3870	0.0913	beta	0.2000
rho_r	0.500	0.6694	0.0928	beta	0.2000
rho_p	-0.500	-0.4978	0.2000	norm	0.2000
theta_c	0.750	0.2837	0.0684	beta	0.1500
sigma	1.000	1.9326	0.1085	norm	0.3700
phi	2.000	5.6036	0.8252	gamma	0.7000
omega	0.200	0.0950	0.0603	beta	0.1000
h_c	0.500	0.2942	0.0509	beta	0.1000
alpha_c	0.500	0.4084	0.0283	beta	0.1000

standard deviation of shocks

	prior mean	mode	s. d.	prior	pstdev
epsa_c	0.100	2.2576	0.1552	invga	2.0000
epsa_d	0.100	0.0462	0.0189	invga	2.0000
epsmu_c	0.100	0.0461	0.0188	invga	2.0000
epsmu_d	0.100	0.0461	0.0188	invga	2.0000
epsLTV	0.100	0.0461	0.0188	invga	2.0000
epsd	0.100	0.0456	0.0182	invga	2.0000
epsc_ast	0.100	0.0365	0.0107	invga	2.0000
epsd_ast	0.100	0.0461	0.0188	invga	2.0000
epsd_stern	0.100	0.5864	0.0926	invga	2.0000
epss_c	0.100	1.1195	0.0871	invga	2.0000
epsr	0.100	0.6227	0.1800	invga	2.0000
epsyf	0.100	0.0457	0.0184	invga	2.0000
epsn	0.010	0.8014	0.0565	invga	0.1000
epspi_d	0.010	5.4490	0.3662	invga	0.1000

Log data density [Laplace approximation] is -1204.599411.

Estimation::mcmc: One Chain mode.

Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!

Estimation::mcmc: Details about the MCMC are available in
code_115/metropolis\code_mh_history_0.mat

Estimation::mcmc: Number of mh files: 55 per block.

Estimation::mcmc: Total number of generated files: 55.

Estimation::mcmc: Total number of iterations: 200000.

Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.3933%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val No Taper	p-val 4%
Taper	p-val 8% Taper	p-val 15% Taper		

			code. log		
SE_epsa_c		2. 288		0. 160	0. 000
0. 060	0. 065	0. 052			
SE_epsa_d		0. 092		0. 062	0. 000
0. 291	0. 354	0. 367			
SE_epsmu_c		0. 109		0. 092	0. 000
0. 709	0. 753	0. 775			
SE_epsmu_d		0. 101		0. 092	0. 000
0. 030	0. 112	0. 221			
SE_epsLTV		0. 084		0. 051	0. 000
0. 028	0. 018	0. 008			
SE_epsd		0. 066		0. 030	0. 281
0. 956	0. 960	0. 961			
SE_epsc_ast		0. 041		0. 013	0. 163
0. 929	0. 930	0. 925			
SE_epsd_ast		0. 129		0. 166	0. 000
0. 000	0. 003	0. 021			
SE_epsd_stern		0. 561		0. 088	0. 004
0. 819	0. 821	0. 789			
SE_epss_c		1. 142		0. 091	0. 000
0. 350	0. 330	0. 349			
SE_epsr		0. 750		0. 230	0. 000
0. 141	0. 172	0. 112			
SE_epsyf		0. 071		0. 036	0. 017
0. 914	0. 922	0. 923			
SE_epsn		0. 814		0. 059	0. 000
0. 462	0. 501	0. 528			
SE_epspi_d		5. 530		0. 383	0. 000
0. 172	0. 147	0. 169			
rho_a_c		0. 226		0. 072	0. 001
0. 784	0. 797	0. 787			
rho_a_d		0. 497		0. 199	0. 000
0. 554	0. 598	0. 616			
rho_mu_c		0. 507		0. 202	0. 000
0. 228	0. 205	0. 162			
rho_mu_d		0. 501		0. 199	0. 000
0. 653	0. 654	0. 642			
rho_LTV		0. 502		0. 198	0. 004
0. 755	0. 768	0. 752			
rho_d		0. 518		0. 198	0. 020
0. 779	0. 789	0. 794			
rho_d_stern		0. 906		0. 014	0. 000
0. 250	0. 213	0. 206			
rho_c_ast		0. 650		0. 183	0. 000
0. 054	0. 037	0. 018			
rho_d_ast		0. 503		0. 200	0. 239
0. 906	0. 902	0. 877			
rho_s_c		0. 391		0. 090	0. 000
0. 316	0. 341	0. 331			
rho_r		0. 607		0. 117	0. 000
0. 134	0. 162	0. 098			
rho_p		-0. 496		0. 199	0. 399
0. 937	0. 936	0. 936			
theta_c		0. 276		0. 065	0. 000
0. 270	0. 335	0. 385			
sigma		1. 975		0. 114	0. 000
0. 313	0. 325	0. 266			
phi		5. 782		0. 854	0. 046
0. 882	0. 893	0. 896			
omega		0. 119		0. 058	0. 000
0. 186	0. 201	0. 133			
h_c		0. 284		0. 050	0. 000
0. 146	0. 144	0. 139			
alpha_c		0. 408		0. 028	0. 000

0.484

0.424

0.421

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
 Done!

Estimation::marginal density: I'm computing the posterior log marginal density
 (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1204.564567.

parameters

	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2274	0.1116	0.3422	beta	0.2000
rho_a_d	0.500	0.5017	0.1768	0.8259	beta	0.2000
rho_mu_c	0.500	0.5164	0.1872	0.8518	beta	0.2000
rho_mu_d	0.500	0.4962	0.1583	0.8167	beta	0.2000
rho_LTV	0.500	0.5025	0.1811	0.8312	beta	0.2000
rho_d	0.500	0.5184	0.1901	0.8383	beta	0.2000
rho_d_stern	0.500	0.9054	0.8824	0.9296	beta	0.2000
rho_c_ast	0.500	0.6559	0.3748	0.9459	beta	0.2000
rho_d_ast	0.500	0.4952	0.1717	0.8361	beta	0.2000
rho_s_c	0.500	0.3926	0.2383	0.5374	beta	0.2000
rho_r	0.500	0.6139	0.4406	0.7853	beta	0.2000
rho_p	-0.500	-0.4990	-0.8216	-0.1782	norm	0.2000
theta_c	0.750	0.2738	0.1710	0.3872	beta	0.1500
sigma	1.000	1.9697	1.7938	2.1502	norm	0.3700
phi	2.000	5.8051	4.4165	7.2200	gamma	0.7000
omega	0.200	0.1197	0.0256	0.2084	beta	0.1000
h_c	0.500	0.2840	0.1997	0.3636	beta	0.1000
alpha_c	0.500	0.4086	0.3639	0.4559	beta	0.1000

standard deviation of shocks

	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.2844	2.0301	2.5436	invg	2.0000
epsa_d	0.100	0.0856	0.0233	0.1596	invg	2.0000
epsmu_c	0.100	0.0913	0.0247	0.1895	invg	2.0000
epsmu_d	0.100	0.1247	0.0218	0.3063	invg	2.0000
epsLTV	0.100	0.0838	0.0239	0.1512	invg	2.0000
epsd	0.100	0.0662	0.0249	0.1085	invg	2.0000
epsc_ast	0.100	0.0415	0.0228	0.0610	invg	2.0000
epsd_ast	0.100	0.1767	0.0221	0.6007	invg	2.0000
epsd_stern	0.100	0.5654	0.4199	0.7031	invg	2.0000
epss_c	0.100	1.1421	0.9917	1.2836	invg	2.0000
epsr	0.100	0.7384	0.4001	1.0777	invg	2.0000
epsyf	0.100	0.0755	0.0249	0.1320	invg	2.0000
epsn	0.010	0.8142	0.7192	0.9117	invg	0.1000
epspi_d	0.010	5.5330	4.9151	6.1526	invg	0.1000

Estimation::mcmc: Forecasted variables (mean)
 Estimation::mcmc: Forecasted variables (mean), done!
 Estimation::mcmc: Forecasted variables (point)
 Estimation::mcmc: Forecasted variables (point), done!

code.log

Initial value of the log posterior (or likelihood): -1157.687

f at the beginning of new iteration, 1157.6870457644
Predicted improvement: 0.002887402
lambda = 1; f = 1157.6841341
Norm of dx 0.00075992

Improvement on iteration 1 = 0.002911675

f at the beginning of new iteration, 1157.6841340894
Predicted improvement: 0.000658402
lambda = 1; f = 1157.6830398
lambda = 1.9332; f = 1157.6824196
Norm of dx 0.00040273

Improvement on iteration 2 = 0.001714473

f at the beginning of new iteration, 1157.6824196161
Predicted improvement: 0.000434688
lambda = 1; f = 1157.6818059
lambda = 1.9332; f = 1157.6816935
Norm of dx 0.00057134

Improvement on iteration 3 = 0.000726155

f at the beginning of new iteration, 1157.6816934608
Predicted improvement: 0.000301436
lambda = 1; f = 1157.6811211
lambda = 1.9332; f = 1157.6806422
lambda = 3.7372; f = 1157.6798678
lambda = 7.2247; f = 1157.6789356
Norm of dx 0.00026843

Improvement on iteration 4 = 0.002757851

f at the beginning of new iteration, 1157.6789356099
Predicted improvement: 0.001329313
lambda = 1; f = 1157.6771180
Norm of dx 0.002619

Improvement on iteration 5 = 0.001817612

f at the beginning of new iteration, 1157.6771179983
Predicted improvement: 0.000397118
lambda = 1; f = 1157.6766751
Norm of dx 0.001587

Improvement on iteration 6 = 0.000442908

f at the beginning of new iteration, 1157.6766750904
Predicted improvement: 0.000044017
lambda = 1; f = 1157.6765961
lambda = 1.9332; f = 1157.6765387
lambda = 3.7372; f = 1157.6764719
Norm of dx 0.00024062

```

                                code.log
Improvement on iteration 7 =      0.000203191
-----
f at the beginning of new iteration,      1157.6764718994
Predicted improvement:      0.000135308
lambda =      1; f =      1157.6762431
lambda =      1.9332; f =      1157.6761051
lambda =      3.7372; f =      1157.6760452
Norm of dx 0.00046106
-----
Improvement on iteration 8 =      0.000426654
-----
f at the beginning of new iteration,      1157.6760452458
Predicted improvement:      0.000107739
lambda =      1; f =      1157.6758807
lambda =      1.9332; f =      1157.6758196
Norm of dx 0.00044027
-----
Improvement on iteration 9 =      0.000225645
-----
f at the beginning of new iteration,      1157.6758196012
Predicted improvement:      0.000078511
lambda =      1; f =      1157.6756716
lambda =      1.9332; f =      1157.6755497
lambda =      3.7372; f =      1157.6753588
lambda =      7.2247; f =      1157.6751563
Norm of dx 0.00033332
-----
Improvement on iteration 10 =      0.000663282
-----
f at the beginning of new iteration,      1157.6751563192
Predicted improvement:      0.000209537
lambda =      1; f =      1157.6748768
Norm of dx 0.0012477
-----
Improvement on iteration 11 =      0.000279473
-----
f at the beginning of new iteration,      1157.6748768465
Predicted improvement:      0.000052313
lambda =      1; f =      1157.6748139
Norm of dx 0.00052188
-----
Improvement on iteration 12 =      0.000062952
-----
f at the beginning of new iteration,      1157.6748138949
Predicted improvement:      0.000013792
lambda =      1; f =      1157.6747908
lambda =      1.9332; f =      1157.6747774
Norm of dx 0.00015018
-----
Improvement on iteration 13 =      0.000036527
-----
f at the beginning of new iteration,      1157.6747773677
Predicted improvement:      0.000023841
lambda =      1; f =      1157.6747405
lambda =      1.9332; f =      1157.6747256
Norm of dx 0.0001981

```

code. log

```
-----
Improvement on iteration 14 =          0.000051728
-----
f at the beginning of new iteration,      1157.6747256399
Predicted improvement:          0.000017646
lambda =          1; f =          1157.6746946
lambda =      1.9332; f =          1157.6746734
lambda =      3.7372; f =          1157.6746535
Norm of dx 0.00013841
-----
Improvement on iteration 15 =          0.000072181
-----
f at the beginning of new iteration,      1157.6746534588
Predicted improvement:          0.000030535
lambda =          1; f =          1157.6746002
lambda =      1.9332; f =          1157.6745647
lambda =      3.7372; f =          1157.6745347
Norm of dx 0.00023166
-----
Improvement on iteration 16 =          0.000118712
-----
f at the beginning of new iteration,      1157.6745347467
Predicted improvement:          0.000015625
lambda =          1; f =          1157.6745137
Norm of dx 0.00029336
-----
Improvement on iteration 17 =          0.000021045
-----
f at the beginning of new iteration,      1157.6745137018
Predicted improvement:          0.000007291
lambda =          1; f =          1157.6745023
lambda =      1.9332; f =          1157.6744975
Norm of dx 0.00018638
-----
Improvement on iteration 18 =          0.000016194
-----
f at the beginning of new iteration,      1157.6744975077
Predicted improvement:          0.000008948
lambda =          1; f =          1157.6744807
lambda =      1.9332; f =          1157.6744669
lambda =      3.7372; f =          1157.6744456
lambda =      7.2247; f =          1157.6744241
Norm of dx 0.00013934
-----
Improvement on iteration 19 =          0.000073396
-----
f at the beginning of new iteration,      1157.6744241121
Predicted improvement:          0.000025847
lambda =          1; f =          1157.6743881
Norm of dx 0.00030763
-----
Improvement on iteration 20 =          0.000036046
-----
f at the beginning of new iteration,      1157.6743880658
Predicted improvement:          0.000009805
lambda =          1; f =          1157.6743755
```

Norm of dx 0.0002039

Improvement on iteration 21 = 0.000012528

f at the beginning of new iteration, 1157.6743755379
Predicted improvement: 0.000004472
lambda = 1; f = 1157.6743678
lambda = 1.9332; f = 1157.6743627
lambda = 3.7372; f = 1157.6743588
Norm of dx 9.986e-05

Improvement on iteration 22 = 0.000016748

f at the beginning of new iteration, 1157.6743587895
Predicted improvement: 0.000009892
lambda = 1; f = 1157.6743406
lambda = 1.9332; f = 1157.6743263
lambda = 3.7372; f = 1157.6743061
lambda = 7.2247; f = 1157.6742948
Norm of dx 0.00014197

Improvement on iteration 23 = 0.000064014

f at the beginning of new iteration, 1157.6742947758
Predicted improvement: 0.000010022
lambda = 1; f = 1157.6742768
lambda = 1.9332; f = 1157.6742639
lambda = 3.7372; f = 1157.6742495
Norm of dx 9.6605e-05

Improvement on iteration 24 = 0.000045289

f at the beginning of new iteration, 1157.6742494865
Predicted improvement: 0.000012697
lambda = 1; f = 1157.6742327
Norm of dx 0.00042249

Improvement on iteration 25 = 0.000016739

f at the beginning of new iteration, 1157.6742327472
Predicted improvement: 0.000003094
lambda = 1; f = 1157.6742284
Norm of dx 0.00021109

Improvement on iteration 26 = 0.000004309

f at the beginning of new iteration, 1157.6742284385
Predicted improvement: 0.000002511
lambda = 1; f = 1157.6742242
lambda = 1.9332; f = 1157.6742215
lambda = 3.7372; f = 1157.6742202
Norm of dx 0.00014786

Improvement on iteration 27 = 0.000008213

f at the beginning of new iteration, 1157.6742202258

```

                                code. log
Predicted improvement:          0.00005569
lambda =          1; f =          1157.6742096
lambda =          1.9332; f =          1157.6742007
lambda =          3.7372; f =          1157.6741861
lambda =          7.2247; f =          1157.6741675
Norm of dx 6.0595e-05
-----
Improvement on iteration 28 =          0.000052700
-----
f at the beginning of new iteration,          1157.6741675257
Predicted improvement:          0.000025288
lambda =          1; f =          1157.6741352
Norm of dx 0.00086197
-----
Improvement on iteration 29 =          0.000032322
-----
f at the beginning of new iteration,          1157.6741352042
Predicted improvement:          0.000006292
lambda =          1; f =          1157.6741266
Norm of dx 0.00047878
-----
Improvement on iteration 30 =          0.000008624
-----
f at the beginning of new iteration,          1157.6741265806
Predicted improvement:          0.000003678
lambda =          1; f =          1157.6741207
lambda =          1.9332; f =          1157.6741180
Norm of dx 0.00029427
-----
Improvement on iteration 31 =          0.000008538
-----
f at the beginning of new iteration,          1157.6741180428
Predicted improvement:          0.000004120
lambda =          1; f =          1157.6741108
lambda =          1.9332; f =          1157.6741059
lambda =          3.7372; f =          1157.6741014
Norm of dx 0.00012273
-----
Improvement on iteration 32 =          0.000016684
-----
f at the beginning of new iteration,          1157.6741013585
Predicted improvement:          0.000007578
lambda =          1; f =          1157.6740880
lambda =          1.9332; f =          1157.6740790
lambda =          3.7372; f =          1157.6740707
Norm of dx 0.00015885
-----
Improvement on iteration 33 =          0.000030670
-----
f at the beginning of new iteration,          1157.6740706885
Predicted improvement:          0.000015892
lambda =          1; f =          1157.6740410
lambda =          1.9332; f =          1157.6740171
lambda =          3.7372; f =          1157.6739813
lambda =          7.2247; f =          1157.6739515
Norm of dx 0.00039467
-----

```



```

code.log
Improvement on iteration 34 = 0.000119215
-----
f at the beginning of new iteration, 1157.6739514738
Predicted improvement: 0.000015902
lambda = 1; f = 1157.6739323
Norm of dx 0.0010815
----
Improvement on iteration 35 = 0.000019136
-----
f at the beginning of new iteration, 1157.6739323374
Predicted improvement: 0.000001761
lambda = 1; f = 1157.6739294
lambda = 1.9332; f = 1157.6739279
Norm of dx 0.00021882
----
Improvement on iteration 36 = 0.000004456
-----
f at the beginning of new iteration, 1157.6739278811
Predicted improvement: 0.000003010
lambda = 1; f = 1157.6739222
lambda = 1.9332; f = 1157.6739176
lambda = 3.7372; f = 1157.6739108
lambda = 7.2247; f = 1157.6739049
Norm of dx 0.00027512
----
Improvement on iteration 37 = 0.000022988
-----
f at the beginning of new iteration, 1157.6739048931
Predicted improvement: 0.000019748
lambda = 1; f = 1157.6738667
lambda = 1.9332; f = 1157.6738335
lambda = 3.7372; f = 1157.6737758
lambda = 7.2247; f = 1157.6736890
lambda = 13.967; f = 1157.6736132
Norm of dx 0.00051753
----
Improvement on iteration 38 = 0.000291722
-----
f at the beginning of new iteration, 1157.6736131709
Predicted improvement: 0.000021595
lambda = 1; f = 1157.6735838
Norm of dx 0.00062736
----
Improvement on iteration 39 = 0.000029338
-----
f at the beginning of new iteration, 1157.6735838334
Predicted improvement: 0.000012891
lambda = 1; f = 1157.6735644
lambda = 1.9332; f = 1157.6735577
Norm of dx 0.0004809
----
Improvement on iteration 40 = 0.000026141
-----
f at the beginning of new iteration, 1157.6735576921
Predicted improvement: 0.000009158
lambda = 1; f = 1157.6735422

```

```

                                code.log
lambda = 1.9332; f = 1157.6735325
lambda = 3.7372; f = 1157.6735265
Norm of dx 0.00051623
-----
Improvement on iteration 41 = 0.000031200
-----
f at the beginning of new iteration, 1157.6735264922
Predicted improvement: 0.000008288
lambda = 1; f = 1157.6735113
lambda = 1.9332; f = 1157.6734998
lambda = 3.7372; f = 1157.6734850
Norm of dx 0.00046398
-----
Improvement on iteration 42 = 0.000041479
-----
f at the beginning of new iteration, 1157.6734850129
Predicted improvement: 0.000032442
lambda = 1; f = 1157.6734327
lambda = 1.9332; f = 1157.6734059
Norm of dx 0.00083508
-----
Improvement on iteration 43 = 0.000079147
-----
f at the beginning of new iteration, 1157.6734058659
Predicted improvement: 0.000018892
lambda = 1; f = 1157.6733801
Norm of dx 0.0023807
-----
Improvement on iteration 44 = 0.000025719
-----
f at the beginning of new iteration, 1157.6733801465
Predicted improvement: 0.000004606
lambda = 1; f = 1157.6733751
Norm of dx 0.0014792
-----
Improvement on iteration 45 = 0.000005057
-----
f at the beginning of new iteration, 1157.6733750899
Predicted improvement: 0.000001046
lambda = 1; f = 1157.6733730
lambda = 1.9332; f = 1157.6733712
lambda = 3.7372; f = 1157.6733681
lambda = 7.2247; f = 1157.6733631
lambda = 13.967; f = 1157.6733578
Norm of dx 0.00014171
-----
Improvement on iteration 46 = 0.000017333
-----
f at the beginning of new iteration, 1157.6733577569
Predicted improvement: 0.000013901
lambda = 1; f = 1157.6733323
lambda = 1.9332; f = 1157.6733130
lambda = 3.7372; f = 1157.6732879
Norm of dx 0.00053942
-----
Improvement on iteration 47 = 0.000069892
-----

```

code.log

f at the beginning of new iteration, 1157.6732878652
Predicted improvement: 0.000019875
lambda = 1; f = 1157.6732655
Norm of dx 0.00077926

Improvement on iteration 48 = 0.000022322

f at the beginning of new iteration, 1157.6732655435
Predicted improvement: 0.000001112
lambda = 1; f = 1157.6732638
lambda = 1.9332; f = 1157.6732631
Norm of dx 0.00015617

Improvement on iteration 49 = 0.000002485

f at the beginning of new iteration, 1157.6732630585
Predicted improvement: 0.000001175
lambda = 1; f = 1157.6732609
lambda = 1.9332; f = 1157.6732593
lambda = 3.7372; f = 1157.6732569
Norm of dx 3.7693e-05

Improvement on iteration 50 = 0.000006132

f at the beginning of new iteration, 1157.6732569270
Predicted improvement: 0.000004400
lambda = 1; f = 1157.6732502
lambda = 1.9332; f = 1157.6732477
Norm of dx 0.00013949

Improvement on iteration 51 = 0.000009256

f at the beginning of new iteration, 1157.6732476710
Predicted improvement: 0.000004853
lambda = 1; f = 1157.6732383
lambda = 1.9332; f = 1157.6732304
lambda = 3.7372; f = 1157.6732175
lambda = 7.2247; f = 1157.6732015
Norm of dx 0.00055933

Improvement on iteration 52 = 0.000046213

f at the beginning of new iteration, 1157.6732014582
Predicted improvement: 0.000038125
lambda = 1; f = 1157.6731360
lambda = 1.9332; f = 1157.6730944
lambda = 3.7372; f = 1157.6730672
Norm of dx 0.0026385

Improvement on iteration 53 = 0.000134222

f at the beginning of new iteration, 1157.6730672365
Predicted improvement: 0.000040216
lambda = 1; f = 1157.6730105
lambda = 1.9332; f = 1157.6730026
Norm of dx 0.0029192

code. log

```
-----
Improvement on iteration 54 =          0.000064663
-----
f at the beginning of new iteration,          1157.6730025735
Predicted improvement:          0.000003217
lambda =          1; f =          1157.6729998
Norm of dx  0.001266
-----
Improvement on iteration 55 =          0.000002731
-----
f at the beginning of new iteration,          1157.6729998421
Predicted improvement:          0.000000486
lambda =          1; f =          1157.6729992
Norm of dx  0.00030601
-----
Improvement on iteration 56 =          0.000000614
-----
f at the beginning of new iteration,          1157.6729992281
Predicted improvement:          0.000000853
lambda =          1; f =          1157.6729975
lambda =  1.9332; f =          1157.6729960
lambda =  3.7372; f =          1157.6729932
lambda =  7.2247; f =          1157.6729887
lambda = 13.967; f =          1157.6729826
Norm of dx  5.8702e-05
-----
Improvement on iteration 57 =          0.000016632
-----
f at the beginning of new iteration,          1157.6729825959
Predicted improvement:          0.000012635
lambda =          1; f =          1157.6729622
lambda =  1.9332; f =          1157.6729530
Norm of dx  0.00070813
-----
Improvement on iteration 58 =          0.000029619
-----
f at the beginning of new iteration,          1157.6729529767
Predicted improvement:          0.000008330
lambda =          1; f =          1157.6729397
lambda =  1.9332; f =          1157.6729332
Norm of dx  0.00097458
-----
Improvement on iteration 59 =          0.000019732
-----
f at the beginning of new iteration,          1157.6729332449
Predicted improvement:          0.000006963
lambda =          1; f =          1157.6729241
Norm of dx  0.0020801
-----
Improvement on iteration 60 =          0.000009149
-----
f at the beginning of new iteration,          1157.6729240960
Predicted improvement:          0.000003618
lambda =          1; f =          1157.6729199
Norm of dx  0.0015076
-----
```

```

code.log
Improvement on iteration 61 = 0.000004207
-----
f at the beginning of new iteration, 1157.6729198894
Predicted improvement: 0.000001660
lambda = 1; f = 1157.6729176
Norm of dx 0.00072478
----
Improvement on iteration 62 = 0.000002299
-----
f at the beginning of new iteration, 1157.6729175909
Predicted improvement: 0.000004796
lambda = 1; f = 1157.6729117
Norm of dx 0.0014962
----
Improvement on iteration 63 = 0.000005895
-----
f at the beginning of new iteration, 1157.6729116963
Predicted improvement: 0.000006872
lambda = 1; f = 1157.6728995
lambda = 1.9332; f = 1157.6728909
lambda = 3.7372; f = 1157.6728815
Norm of dx 0.00071011
----
Improvement on iteration 64 = 0.000030201
-----
f at the beginning of new iteration, 1157.6728814951
Predicted improvement: 0.000018449
lambda = 1; f = 1157.6728485
lambda = 1.9332; f = 1157.6728252
lambda = 3.7372; f = 1157.6728005
Norm of dx 0.00071525
----
Improvement on iteration 65 = 0.000080958
-----
f at the beginning of new iteration, 1157.6728005368
Predicted improvement: 0.000009120
lambda = 1; f = 1157.6727895
Norm of dx 0.00069911
----
Improvement on iteration 66 = 0.000011018
-----
f at the beginning of new iteration, 1157.6727895191
Predicted improvement: 0.000000915
lambda = 1; f = 1157.6727883
Norm of dx 0.00035579
----
Improvement on iteration 67 = 0.000001244
-----
f at the beginning of new iteration, 1157.6727882756
Predicted improvement: 0.000000472
lambda = 1; f = 1157.6727878
Norm of dx 0.00035773
----
Improvement on iteration 68 = 0.000000441
-----

```

```

code.log
f at the beginning of new iteration, 1157.6727878344
Predicted improvement: 0.000000314
lambda = 1; f = 1157.6727875
Norm of dx 0.00027758
-----
Improvement on iteration 69 = 0.000000308
-----
f at the beginning of new iteration, 1157.6727875263
Predicted improvement: 0.000000112
lambda = 1; f = 1157.6727874
Norm of dx 0.00012959
-----
Improvement on iteration 70 = 0.000000150
-----
f at the beginning of new iteration, 1157.6727873767
Predicted improvement: 0.000000181
lambda = 1; f = 1157.6727873
Norm of dx 0.00030653
-----
Improvement on iteration 71 = 0.000000126
-----
f at the beginning of new iteration, 1157.6727872506
Predicted improvement: 0.000000140
lambda = 1; f = 1157.6727870
lambda = 1.9332; f = 1157.6727868
lambda = 3.7372; f = 1157.6727866
Norm of dx 8.4349e-05
-----
Improvement on iteration 72 = 0.000000653
-----
f at the beginning of new iteration, 1157.6727865976
Predicted improvement: 0.000000608
lambda = 1; f = 1157.6727855
lambda = 1.9332; f = 1157.6727848
lambda = 3.7372; f = 1157.6727840
Norm of dx 0.00012819
-----
Improvement on iteration 73 = 0.000002571
-----
f at the beginning of new iteration, 1157.6727840268
Predicted improvement: 0.000002025
lambda = 1; f = 1157.6727808
lambda = 1.9332; f = 1157.6727785
lambda = 3.7372; f = 1157.6727763
Norm of dx 0.0003329
-----
Improvement on iteration 74 = 0.000007769
-----
f at the beginning of new iteration, 1157.6727762577
Predicted improvement: 0.000005581
lambda = 1; f = 1157.6727684
lambda = 1.9332; f = 1157.6727667
Norm of dx 0.00086386
-----
Improvement on iteration 75 = 0.000009519
-----

```

code.log
 f at the beginning of new iteration, 1157.6727667384
 Predicted improvement: 0.00000576
 lambda = 1; f = 1157.6727661
 Norm of dx 0.00027627

 Improvement on iteration 76 = 0.000000649

f at the beginning of new iteration, 1157.6727660891
 Predicted improvement: 0.00000027
 lambda = 1; f = 1157.6727661
 lambda = 0.33333; f = 1157.6727661
 Norm of dx 6.7527e-05

 Improvement on iteration 77 = 0.000000014
 improvement < crit termination

Final value of minus the log posterior (or likelihood): 1157.672766

RESULTS FROM POSTERIOR ESTIMATION
 parameters

	prior mean	mode	s. d.	prior	pstdev
rho_a_c	0.500	0.2182	0.0753	beta	0.2000
rho_a_d	0.500	0.5000	0.2774	beta	0.2000
rho_mu_c	0.500	0.5001	0.2774	beta	0.2000
rho_mu_d	0.500	0.5000	0.2774	beta	0.2000
rho_LTV	0.500	0.4956	0.2752	beta	0.2000
rho_d	0.500	0.5148	0.2762	beta	0.2000
rho_d_stern	0.500	0.9069	0.0140	beta	0.2000
rho_c_ast	0.500	0.6732	0.2356	beta	0.2000
rho_d_ast	0.500	0.5000	0.2773	beta	0.2000
rho_s_c	0.500	0.3863	0.0908	beta	0.2000
rho_r	0.500	0.6687	0.0928	beta	0.2000
rho_p	-0.500	-0.4978	0.2000	norm	0.2000
theta_c	0.750	0.2802	0.0685	beta	0.1500
sigma	1.000	1.9349	0.1100	norm	0.3700
phi	2.000	5.5581	0.8197	gamm	0.7000
omega	0.200	0.0947	0.0601	beta	0.1000
h_c	0.500	0.2946	0.0509	beta	0.1000
alpha_c	0.500	0.4088	0.0282	beta	0.1000

standard deviation of shocks
 prior mean mode s. d. prior pstdev

	prior mean	mode	s. d.	prior	pstdev
epsa_c	0.100	2.2511	0.1542	invg	2.0000
epsa_d	0.100	0.0462	0.0189	invg	2.0000
epsmu_c	0.100	0.0461	0.0188	invg	2.0000
epsmu_d	0.100	0.0461	0.0188	invg	2.0000
epsLTV	0.100	0.0461	0.0188	invg	2.0000
epsd	0.100	0.0455	0.0182	invg	2.0000
eps_c_ast	0.100	0.0364	0.0107	invg	2.0000
epsd_ast	0.100	0.0461	0.0188	invg	2.0000
epsd_stern	0.100	0.5843	0.0920	invg	2.0000
epss_c	0.100	1.1143	0.0863	invg	2.0000
epsr	0.100	0.6216	0.1794	invg	2.0000
epsyf	0.100	0.0457	0.0184	invg	2.0000
epsn	0.010	0.8071	0.0565	invg	0.1000
epspi_d	0.010	5.4419	0.3642	invg	0.1000

Log data density [Laplace approximation] is -1212.950282.

code.log

Estimation::mcmc: One Chain mode.
 Estimation::mcmc: Initialization at the posterior mode.

Estimation::mcmc: Write details about the MCMC... Ok!
 Estimation::mcmc: Details about the MCMC are available in
 code_116/metropolis\code_mh_history_0.mat

[Warning: Matrix is close to singular or badly scaled. Results may be inaccurate.
 RCOND =

3.006170e-18.]

[> In [matlab:](#)

opentoline(' C:\dynare\2015-04-07\matlab\I yapunov_symm.m', 172, 1)">I yapunov_symm at 172

In [matlab:](#)

opentoline(' C:\dynare\2015-04-07\matlab\dsge_likelihood.m', 378, 1)">dsge_likelihood at 378

In [matlab:](#)

opentoline(' C:\dynare\2015-04-07\matlab\random_walk_metropolis_hastings_core.m', 168, 1)">random_walk_metropolis_hastings_core at 168

In [matlab:](#)

opentoline(' C:\dynare\2015-04-07\matlab\random_walk_metropolis_hastings.m', 118, 1)">random_walk_metropolis_hastings at 118

In [matlab:](#)

opentoline(' C:\dynare\2015-04-07\matlab\dynare_estimation_1.m', 463, 1)">dynare_estimation_1 at 463

In [matlab:](#)

opentoline(' C:\dynare\2015-04-07\matlab\dynare_estimation.m', 79, 1)">dynare_estimation at 79

In [matlab: opentoline\(' C:\Users\English\Desktop\forecasting no news shock\code.m', 523, 1\)">code at 523](#)

In [matlab:](#)

opentoline(' C:\dynare\2015-04-07\matlab\dynare.m', 214, 1)">dynare at 214]

Estimation::mcmc: Number of mh files: 55 per block.
 Estimation::mcmc: Total number of generated files: 55.
 Estimation::mcmc: Total number of iterations: 200000.
 Estimation::mcmc: Current acceptance ratio per chain:

Chain 1: 33.3373%

Geweke (1992) Convergence Tests, based on means of draws 100000 to 120000 vs 150000 to 200000.

p-values are for Chi2-test for equality of means.

Parameter	Post. Mean	Post. Std	p-val No Taper	p-val 4%
Taper SE_epsa_c	2.279	0.159	0.000	
0.731	0.724			
SE_epsa_d	0.121	0.110	0.000	
0.000	0.014			
SE_epsmu_c	0.117	0.121	0.000	
0.104	0.274			
SE_epsmu_d	0.079	0.046	0.000	
0.800	0.827			
SE_epsLTV	0.083	0.054	0.000	
0.147	0.142			
SE_epsd	0.077	0.053	0.000	
0.138	0.247			
SE_epsc_ast	0.041	0.013	0.000	
0.790	0.795			
SE_epsd_ast	0.087	0.061	0.000	
0.205	0.325			
SE_epsd_stern	0.558	0.085	0.000	
0.348	0.317			
SE_epssc_c	1.132	0.090	0.000	

			code.	log	
0. 701	0. 715	0. 709			
SE_epsr		0. 730	0. 214		0. 000
0. 347	0. 384	0. 363			
SE_epsyf		0. 076	0. 044		0. 000
0. 274	0. 378	0. 411			
SE_epsn		0. 818	0. 058		0. 000
0. 194	0. 164	0. 108			
SE_epspi_d		5. 520	0. 392		0. 000
0. 017	0. 024	0. 033			
rho_a_c		0. 222	0. 072		0. 000
0. 322	0. 251	0. 201			
rho_a_d		0. 506	0. 203		0. 111
0. 855	0. 854	0. 865			
rho_mu_c		0. 504	0. 203		0. 533
0. 934	0. 930	0. 923			
rho_mu_d		0. 493	0. 198		0. 793
0. 974	0. 974	0. 973			
rho_LTV		0. 500	0. 201		0. 000
0. 185	0. 193	0. 214			
rho_d		0. 525	0. 200		0. 000
0. 390	0. 395	0. 355			
rho_d_stern		0. 906	0. 014		0. 000
0. 704	0. 687	0. 663			
rho_c_ast		0. 649	0. 184		0. 000
0. 099	0. 121	0. 112			
rho_d_ast		0. 499	0. 201		0. 000
0. 601	0. 572	0. 590			
rho_s_c		0. 395	0. 089		0. 000
0. 668	0. 609	0. 489			
rho_r		0. 615	0. 110		0. 000
0. 222	0. 251	0. 230			
rho_p		-0. 494	0. 200		0. 345
0. 933	0. 934	0. 937			
theta_c		0. 273	0. 066		0. 010
0. 809	0. 822	0. 817			
si gma		1. 974	0. 112		0. 000
0. 626	0. 602	0. 541			
phi		5. 685	0. 833		0. 000
0. 031	0. 025	0. 021			
omega		0. 122	0. 059		0. 000
0. 306	0. 316	0. 295			
h_c		0. 283	0. 049		0. 000
0. 729	0. 741	0. 738			
al pha_c		0. 409	0. 029		0. 000
0. 781	0. 774	0. 746			

Estimation::mcmc: Total number of MH draws per chain: 200000.
 Estimation::mcmc: Total number of generated MH files: 55.
 Estimation::mcmc: I'll use mh-files 28 to 55.
 Estimation::mcmc: In MH-file number 28 I'll start at line 722.
 Estimation::mcmc: Finally I keep 100000 draws per chain.

Estimation::marginal density: I'm computing the posterior mean and covariance...
 Done!
 Estimation::marginal density: I'm computing the posterior log marginal density
 (modified harmonic mean)... Done!

ESTIMATION RESULTS

Log data density is -1211.987136.

code.log

parameters	prior mean	post. mean	90% HPD interval		prior	pstdev
rho_a_c	0.500	0.2198	0.1030	0.3357	beta	0.2000
rho_a_d	0.500	0.5110	0.1704	0.8363	beta	0.2000
rho_mu_c	0.500	0.5034	0.1826	0.8514	beta	0.2000
rho_mu_d	0.500	0.4861	0.1495	0.7970	beta	0.2000
rho_LTV	0.500	0.4982	0.1668	0.8230	beta	0.2000
rho_d	0.500	0.5340	0.2062	0.8488	beta	0.2000
rho_d_stern	0.500	0.9060	0.8840	0.9303	beta	0.2000
rho_c_ast	0.500	0.6554	0.3807	0.9463	beta	0.2000
rho_d_ast	0.500	0.5062	0.1744	0.8304	beta	0.2000
rho_s_c	0.500	0.3971	0.2490	0.5401	beta	0.2000
rho_r	0.500	0.6187	0.4549	0.7882	beta	0.2000
rho_p	-0.500	-0.4973	-0.8193	-0.1633	norm	0.2000
theta_c	0.750	0.2714	0.1586	0.3811	beta	0.1500
sigma	1.000	1.9761	1.7949	2.1515	norm	0.3700
phi	2.000	5.6925	4.2301	7.0118	gamma	0.7000
omega	0.200	0.1223	0.0250	0.2115	beta	0.1000
h_c	0.500	0.2841	0.2044	0.3648	beta	0.1000
alpha_c	0.500	0.4093	0.3625	0.4561	beta	0.1000

standard deviation of shocks

	prior mean	post. mean	90% HPD interval		prior	pstdev
epsa_c	0.100	2.2827	2.0220	2.5292	invg	2.0000
epsa_d	0.100	0.1324	0.0236	0.3502	invg	2.0000
epsmu_c	0.100	0.1476	0.0219	0.4182	invg	2.0000
epsmu_d	0.100	0.0799	0.0227	0.1438	invg	2.0000
epsLTV	0.100	0.0795	0.0237	0.1419	invg	2.0000
epsd	0.100	0.0819	0.0212	0.1496	invg	2.0000
epsc_ast	0.100	0.0415	0.0220	0.0606	invg	2.0000
epsd_ast	0.100	0.0831	0.0234	0.1524	invg	2.0000
epsd_stern	0.100	0.5588	0.4196	0.6904	invg	2.0000
epss_c	0.100	1.1314	0.9821	1.2731	invg	2.0000
epsr	0.100	0.7240	0.3997	1.0469	invg	2.0000
epsyf	0.100	0.0789	0.0245	0.1416	invg	2.0000
epsn	0.010	0.8184	0.7189	0.9106	invg	0.1000
epspi_d	0.010	5.5065	4.8539	6.1452	invg	0.1000

Estimation: : mcmc: Forecasted variables (mean)

Estimation: : mcmc: Forecasted variables (mean), done!

Estimation: : mcmc: Forecasted variables (point)

Estimation: : mcmc: Forecasted variables (point), done!

{Error using

style="font-weight: bold">error

The message must be specified as either a string or a message structure.

Error in <a href="matlab:help/utl/s_errorDocCallback('read_variables',

'C:\dynare\2015-04-07\matlab\read_variables.m', 104)>

style="font-weight: bold">read_variables (<a href="matlab:

opentoline('C:\dynare\2015-04-07\matlab\read_variables.m', 104, 0)>Line 104)

error([strtrim(var_names_01(dyn_i_01,:)) ' not found in ' fullname])

Error in <a href="matlab:help/utl/s_errorDocCallback('dynare_estimation',

'C:\dynare\2015-04-07\matlab\dynare_estimation.m', 100)>

style="font-weight: bold">dynare_estimation (<a href="matlab:

opentoline('C:\dynare\2015-04-07\matlab\dynare_estimation.m', 100, 0)>Line 100)

rawdata =

read_variables(options_. datafile, options_. varobs, [], options_. xlsheet, options_. xls_range);

Error in <a href="matlab:help/utl/s_errorDocCallback('code',

code.log

' C: \Users\English\Desktop\forecasting no news shock\code.m' , 523)"

style="font-weight: bold">code (<a href="matlab:
opentoline(' C: \Users\English\Desktop\forecasting no news shock\code.m' , 523, 0)">line
523)

oo_recursive_dynare_estimation(var_list_);

Error in <a href="matlab:helpUtils.errorDocCallback(' dynare' ,

' C: \dynare\2015-04-07\matlab\dynare.m' , 214)" style="font-weight: bold">dynare

(line
214)

evalin(' base' , fname) ;

}
█