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1 clear all
2 close all
3
4 % set parameter values
5 beta = 0.99;
6 alphak = 0.225;
7 alphah = 0.675;
8 delta0 = 0.025;
9 mua = 0.9957;
10 muy = 1.0045;
11 %mua = 1;
12 %muy = 1;
13 mux = muy*mua^(-alphak/(alphak-1));
14 mui = mux*mua^(1/(alphak-1));
15 gs = 0.08;
16 mus = 0.15;
17 rs = (1/beta)*mux*mua^(1/(alphak - 1)) - 1 + delta0;
18 delta1 = rs;
19 psi = 4.5353e+03; % labor disutility
20 %psi = 5;
21 %psi = 5;
22 theta = 4.75; % labor supply elasticity
23 %theta = 2;
24 %psi = 5;
25 %theta = 2;
26 gamma = 0.00; % JR parameter
27 kappa = 9.1; % investment adjustment cost
28 delta2 = 0.34*delta1; % quadratic term utilization
29 b = 0.91; % habit formation
30
31 % shock parameters
32 rhoxg = 0.72;
33 rhoz = 0.92;
34 rhomua = 0.48;
35 rhomux = 0.38;
36 rhog = 0.96;
37 rhomu = 0.98;
38 rhozeta = 0.17;
39 rhozi = 0.47;
40
41 % shock standard deviations
42 sz = 0.65/100;
43 smua = .21/100;
44 smux = .38/100;
45 smu = 0.50/100;
46 szeta = 4.03/100;
47 szi = 11.72/100;
48 sg = 0.62/100;
49
50 % four period anticipated standard deviations
51 sz4 = 0.11/100;
52 sz8 = 0.09/100;
53 smua4 = 0.16/100;
54 smua8 = 0.16/100;
55 sg4 = 0.57/100;
56 sg8 = 0.37/100;
57 smux4 = 0.08/100;
58 smux8 = 0.10/100;
59 smu4 = 4.79/100;
60 smu8 = 0.51/100;
61 szeta4 = 1.89/100;
62 szeta8 = 2.21/100;
63 szi4 = 1.93/100;
64 szi8 = 5.50/100;
65
66 save parameter_sgu beta alphak alphah delta0 mua mux gs mus delta1 psi theta gamma
kappa delta2 b rhoxg rhoz rhomua rhomux rhog rhomu rhozeta rhozi sz smua smux smu szeta
szi sg mui sz4 sz8 smua4 smua8 sg4 sg8 smux4 smux8 smu4 smu8 szeta4 szeta8 szi4 szi8
67

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68  dynare sgu_model noclearall nolog nostrict
69
70  % level responses to permanent shocks
71  Ylev_mua = cumsum(dY_emua);
72  Ylev_mux = cumsum(dY_emux);
73
74  Clev_mua = cumsum(dC_emua);
75  Clev_mux = cumsum(dC_emux);
76
77  Ilev_mua = cumsum(dI_emua);
78  Ilev_mux = cumsum(dI_emux);
79
80  wlev_mua = cumsum(dw_emua);
81  wlev_mux = cumsum(dw_emux);
82
83  qlev_mua = cumsum(dq_emua);
84  rlev_mua = cumsum(dr_emua);
85
86
87  % plot impulse responses
88  figure
89  subplot(3,3,1)
90  plot(Y_ez, '-k', 'Linewidth',1.5)
91  title('Y')
92
93  subplot(3,3,2)
94  plot(I_ez, '-k', 'Linewidth',1.5)
95  title('I')
96
97  subplot(3,3,3)
98  plot(C_ez, '-k', 'Linewidth',1.5)
99  title('C')
100
101  subplot(3,3,4)
102  plot(h_ez, '-k', 'Linewidth',1.5)
103  title('h')
104
105  subplot(3,3,5)
106  plot(r_ez, '-k', 'Linewidth',1.5)
107  title('r')
108
109  subplot(3,3,6)
110  plot(w_ez, '-k', 'Linewidth',1.5)
111  title('w')
112
113  subplot(3,3,7)
114  plot(q_ez, '-k', 'Linewidth',1.5)
115  title('q')
116  legend('Transitory Prod Shock')
117
118  figure
119  subplot(3,3,1)
120  plot(Y_ezi, '-k', 'Linewidth',1.5)
121  title('Y')
122
123  subplot(3,3,2)
124  plot(I_ezi, '-k', 'Linewidth',1.5)
125  title('I')
126
127  subplot(3,3,3)
128  plot(C_ezi, '-k', 'Linewidth',1.5)
129  title('C')
130
131  subplot(3,3,4)
132  plot(h_ezi, '-k', 'Linewidth',1.5)
133  title('h')
134
135  subplot(3,3,5)
136  plot(r_ezi, '-k', 'Linewidth',1.5)

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137 title('r')
138
139 subplot(3,3,6)
140 plot(w_ezi, '-k', 'Linewidth', 1.5)
141 title('w')
142
143 subplot(3,3,7)
144 plot(q_ezi, '-k', 'Linewidth', 1.5)
145 title('q')
146 legend('Investment Shock')
147
148 figure
149 subplot(3,3,1)
150 plot(Y_ezeta, '-k', 'Linewidth', 1.5)
151 title('Y')
152
153 subplot(3,3,2)
154 plot(I_ezeta, '-k', 'Linewidth', 1.5)
155 title('I')
156
157 subplot(3,3,3)
158 plot(C_ezeta, '-k', 'Linewidth', 1.5)
159 title('C')
160
161 subplot(3,3,4)
162 plot(h_ezeta, '-k', 'Linewidth', 1.5)
163 title('h')
164
165 subplot(3,3,5)
166 plot(r_ezeta, '-k', 'Linewidth', 1.5)
167 title('r')
168
169 subplot(3,3,6)
170 plot(w_ezeta, '-k', 'Linewidth', 1.5)
171 title('w')
172
173 subplot(3,3,7)
174 plot(q_ezeta, '-k', 'Linewidth', 1.5)
175 title('q')
176 legend('Preference Shock')
177
178 figure
179 subplot(3,3,1)
180 plot(Y_emu, '-k', 'Linewidth', 1.5)
181 title('Y')
182
183 subplot(3,3,2)
184 plot(I_emu, '-k', 'Linewidth', 1.5)
185 title('I')
186
187 subplot(3,3,3)
188 plot(C_emu, '-k', 'Linewidth', 1.5)
189 title('C')
190
191 subplot(3,3,4)
192 plot(h_emu, '-k', 'Linewidth', 1.5)
193 title('h')
194
195 subplot(3,3,5)
196 plot(r_emu, '-k', 'Linewidth', 1.5)
197 title('r')
198
199 subplot(3,3,6)
200 plot(w_emu, '-k', 'Linewidth', 1.5)
201 title('w')
202
203 subplot(3,3,7)
204 plot(q_emu, '-k', 'Linewidth', 1.5)
205 title('q')

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206 legend('Wage Markup Shock')
207
208 figure
209 subplot(3,3,1)
210 plot(Ylev_mux, '-k', 'Linewidth',1.5)
211 title('Y')
212
213 subplot(3,3,2)
214 plot(Ilev_mux, '-k', 'Linewidth',1.5)
215 title('I')
216
217 subplot(3,3,3)
218 plot(Clev_mux, '-k', 'Linewidth',1.5)
219 title('C')
220
221 subplot(3,3,4)
222 plot(h_mux, '-k', 'Linewidth',1.5)
223 title('h')
224
225 subplot(3,3,5)
226 plot(r_mux, '-k', 'Linewidth',1.5)
227 title('r')
228
229 subplot(3,3,6)
230 plot(wlev_mux, '-k', 'Linewidth',1.5)
231 title('w')
232
233 subplot(3,3,7)
234 plot(q_mux, '-k', 'Linewidth',1.5)
235 title('q')
236 legend('Permanent Prod Shock')
237
238 figure
239 subplot(3,3,1)
240 plot(Ylev_mua, '-k', 'Linewidth',1.5)
241 title('Y')
242
243 subplot(3,3,2)
244 plot(Ilev_mua, '-k', 'Linewidth',1.5)
245 title('I')
246
247 subplot(3,3,3)
248 plot(Clev_mua, '-k', 'Linewidth',1.5)
249 title('C')
250
251 subplot(3,3,4)
252 plot(h_emua, '-k', 'Linewidth',1.5)
253 title('h')
254
255 subplot(3,3,5)
256 plot(rlev_mua, '-k', 'Linewidth',1.5)
257 title('r')
258
259 subplot(3,3,6)
260 plot(wlev_mua, '-k', 'Linewidth',1.5)
261 title('w')
262
263 subplot(3,3,7)
264 plot(qlev_mua, '-k', 'Linewidth',1.5)
265 title('q')
266 legend('IST Shock')
267
268
269

```