Generated on 2014-10-27 16:10:50 by `gEcon` version 0.7.0 (2014-10-27)
Model name: `home_production`

1 CONSUMER

1.1 Optimization problem

$$\max_{K_t^m,K_t^h,C_t^m,C_t^h,N_t^m,N_t^h,I_t^m,I_t^h} U_t = \beta \mathrm{E}_t\left[U_{t+1}\right] + \log\left(1 - N_t^m - N_t^h\right)(1-b) + be^{-1}\log\left(aC_t^{me} + (1-a)\,C_t^{he}\right) \quad (1.1)$$

s.t. :

$$C_t^m + I_t^m + I_t^h = \pi_t + K_{t-1}^m r_t + N_t^m W_t \quad (\lambda_t^{\text{CONSUMER}^1}) \quad (1.2)$$

$$K_t^m = I_t^m + K_{t-1}^m(1-\delta) \quad (\lambda_t^{\text{CONSUMER}^2}) \quad (1.3)$$

$$K_t^h = I_t^h + K_{t-1}^h(1-\delta) \quad (\lambda_t^{\text{CONSUMER}^3}) \quad (1.4)$$

$$C_t^h = \Gamma Z_t^h {K_{t-1}^h}^{\theta} {N_t^h}^{1-\theta} \quad (\lambda_t^{\text{CONSUMER}^4}) \quad (1.5)$$

1.2 Identities

$$K_t = K_t^m + K_t^h \quad (1.6)$$

$$I_t = I_t^m + I_t^h \quad (1.7)$$

$$N_t = N_t^m + N_t^h \quad (1.8)$$

1.3 First order conditions

$$-\lambda_t^{\text{CONSUMER}^2} + \beta\left((1-\delta)\,\mathrm{E}_t\left[\lambda_{t+1}^{\text{CONSUMER}^2}\right] + \mathrm{E}_t\left[\lambda_{t+1}^{\text{CONSUMER}^1} r_{t+1}\right]\right) = 0 \quad (K_t^m) \quad (1.9)$$

$$-\lambda_t^{\text{CONSUMER}^3} + \beta\left((1-\delta)\,\mathrm{E}_t\left[\lambda_{t+1}^{\text{CONSUMER}^3}\right] + \theta\Gamma {K_t^h}^{-1+\theta}\mathrm{E}_t\left[\lambda_{t+1}^{\text{CONSUMER}^4} Z_{t+1}^h {N_{t+1}^h}^{1-\theta}\right]\right) = 0 \quad (K_t^h) \quad (1.10)$$

$$-\lambda_t^{\text{CONSUMER}^1} + ab\left(aC_t^{me} + (1-a)\,C_t^{he}\right)^{-1} C_t^{m\,-1+e} = 0 \quad (C_t^m) \quad (1.11)$$

$$-\lambda_t^{\text{CONSUMER}^4} + b(1-a)\left(aC_t^{me} + (1-a)\,C_t^{he}\right)^{-1} C_t^{h\,-1+e} = 0 \quad (C_t^h) \quad (1.12)$$

$$\lambda_t^{\text{CONSUMER}^1} W_t - (1-b)\left(1 - N_t^m - N_t^h\right)^{-1} = 0 \quad (N_t^m) \quad (1.13)$$

$$-(1-b)\left(1 - N_t^m - N_t^h\right)^{-1} + \Gamma\lambda_t^{\text{CONSUMER}^4} Z_t^h (1-\theta) {K_{t-1}^h}^{\theta} {N_t^h}^{-\theta} = 0 \quad (N_t^h) \quad (1.14)$$

$$\lambda_t^{\text{CONSUMER}^2} - \lambda_t^{\text{CONSUMER}^1} = 0 \quad (I_t^m) \quad (1.15)$$

$$\lambda_t^{\text{CONSUMER}^3} - \lambda_t^{\text{CONSUMER}^1} = 0 \quad (I_t^h) \quad (1.16)$$

2 FIRM

2.1 Optimization problem

$$\max_{K_t^{m^d},N_t^{m^d},Y_t,\pi_t} \Pi_t = \pi_t \quad (2.1)$$

s.t. :

$$\pi_t = Y_t - N_t^{m^d} W_t - r_t K_t^{m^d} \quad (\lambda_t^{\text{FIRM}^1}) \quad (2.2)$$

$$Y_t = \Gamma Z_t^m {K_t^{m^d}}^{\alpha} {N_t^{m^d}}^{1-\alpha} \quad (\lambda_t^{\text{FIRM}^2}) \quad (2.3)$$

2.2 First order conditions

$$-\lambda_t^{\text{FIRM}^1} r_t + \alpha\Gamma\lambda_t^{\text{FIRM}^2} Z_t^m {K_t^m}^{d\,-1+\alpha} {N_t^m}^{d\,1-\alpha} = 0 \quad (K_t^{m^d}) \tag{2.4}$$

$$-\lambda_t^{\text{FIRM}^1} W_t + \Gamma\lambda_t^{\text{FIRM}^2} Z_t^m (1-\alpha) {K_t^m}^{d\,\alpha} {N_t^m}^{d\,-\alpha} = 0 \quad (N_t^{m^d}) \tag{2.5}$$

$$\lambda_t^{\text{FIRM}^1} - \lambda_t^{\text{FIRM}^2} = 0 \quad (Y_t) \tag{2.6}$$

$$1 - \lambda_t^{\text{FIRM}^1} = 0 \quad (\pi_t) \tag{2.7}$$

2.3 First order conditions after reduction

$$-r_t + \alpha\Gamma Z_t^m {K_t^m}^{d\,-1+\alpha} {N_t^m}^{d\,1-\alpha} = 0 \quad (K_t^{m^d}) \tag{2.8}$$

$$-W_t + \Gamma Z_t^m (1-\alpha) {K_t^m}^{d\,\alpha} {N_t^m}^{d\,-\alpha} = 0 \quad (N_t^{m^d}) \tag{2.9}$$

3 EQUILIBRIUM

3.1 Identities

$$K_t^{m^d} = K_{t-1}^m \tag{3.1}$$

$$N_t^{m^d} = N_t^m \tag{3.2}$$

4 EXOG

4.1 Identities

$$Z_t^h = e^{\epsilon_t^h + \psi \log Z_{t-1}^h} \tag{4.1}$$

$$Z_t^m = e^{\epsilon_t^m + \phi \log Z_{t-1}^m} \tag{4.2}$$

5 Equilibrium relationships

$$-r_t + \alpha\Gamma Z_t^m {K_{t-1}^m}^{-1+\alpha} N_t^{m\,1-\alpha} = 0 \tag{5.1}$$

$$-C_t^h + \Gamma Z_t^h {K_{t-1}^h}^{\theta} N_t^{h\,1-\theta} = 0 \tag{5.2}$$

$$-W_t + \Gamma Z_t^m (1-\alpha) {K_{t-1}^m}^{\alpha} N_t^{m\,-\alpha} = 0 \tag{5.3}$$

$$-Y_t + \Gamma Z_t^m {K_{t-1}^m}^{\alpha} N_t^{m\,1-\alpha} = 0 \tag{5.4}$$

$$Z_t^h - e^{\epsilon_t^h + \psi \log Z_{t-1}^h} = 0 \tag{5.5}$$

$$Z_t^m - e^{\epsilon_t^m + \phi \log Z_{t-1}^m} = 0 \tag{5.6}$$

$$\beta\left(ab\mathrm{E}_t\left[r_{t+1}\left(a{C_{t+1}^m}^{e} + (1-a){C_{t+1}^h}^{e}\right)^{-1} {C_{t+1}^m}^{-1+e}\right] + ab(1-\delta)\mathrm{E}_t\left[\left(a{C_{t+1}^m}^{e} + (1-a){C_{t+1}^h}^{e}\right)^{-1} {C_{t+1}^m}^{-1+e}\right]\right) - ab\left(aC_t^{me} + (1- \tag{5.7}$$

$$\beta\left(ab(1-\delta)\mathrm{E}_t\left[\left(a{C_{t+1}^m}^{e} + (1-a){C_{t+1}^h}^{e}\right)^{-1} {C_{t+1}^m}^{-1+e}\right] + b\theta\Gamma(1-a){K_t^h}^{-1+\theta}\mathrm{E}_t\left[Z_{t+1}^h\left(a{C_{t+1}^m}^{e} + (1-a){C_{t+1}^h}^{e}\right)^{-1} {C_{t+1}^h}^{-1+e} N_t^{h} \tag{5.8}$$

$$-(1-b)\left(1-N_t^m-N_t^h\right)^{-1} + abW_t\left(aC_t^{me} + (1-a)C_t^{he}\right)^{-1} C_t^{m\,-1+e} = 0 \tag{5.9}$$

$$-(1-b)\left(1-N_t^m-N_t^h\right)^{-1} + b\Gamma Z_t^h(1-a)(1-\theta)\left(aC_t^{me} + (1-a)C_t^{he}\right)^{-1} {K_{t-1}^h}^{\theta} C_t^{h\,-1+e} N_t^{h\,-\theta} = 0 \tag{5.10}$$

$$I_t - I_t^m - I_t^h = 0 \tag{5.11}$$

$$I_t^m - K_t^m + K_{t-1}^m (1-\delta) = 0 \tag{5.12}$$

$$I_t^h - K_t^h + K_{t-1}^h (1-\delta) = 0 \tag{5.13}$$

$$K_t - K_t^m - K_t^h = 0 \tag{5.14}$$

$$N_t - N_t^m - N_t^h = 0 \tag{5.15}$$

$$-\Pi_t + Y_t - K_{t-1}^m r_t - N_t^m W_t = 0 \tag{5.16}$$

$$U_t - \beta \mathrm{E}_t [U_{t+1}] - \log\left(1 - N_t^m - N_t^h\right)(1-b) - be^{-1}\log\left(aC_t^{me} + (1-a)\, C_t^{he}\right) = 0 \tag{5.17}$$

$$-C_t^m - I_t^m - I_t^h + \Pi_t + K_{t-1}^m r_t + N_t^m W_t = 0 \tag{5.18}$$

6 Steady state relationships

$$-r_{ss} + \alpha \Gamma Z_{ss}^m K_{ss}^{m\,-1+\alpha} N_{ss}^{m\,1-\alpha} = 0 \tag{6.1}$$

$$-C_{ss}^h + \Gamma Z_{ss}^h K_{ss}^{h\,\theta} N_{ss}^{h\,1-\theta} = 0 \tag{6.2}$$

$$-W_{ss} + \Gamma Z_{ss}^m (1-\alpha) K_{ss}^{m\,\alpha} N_{ss}^{m\,-\alpha} = 0 \tag{6.3}$$

$$-Y_{ss} + \Gamma Z_{ss}^m K_{ss}^{m\,\alpha} N_{ss}^{m\,1-\alpha} = 0 \tag{6.4}$$

$$Z_{ss}^h - e^{\psi \log Z_{ss}^h} = 0 \tag{6.5}$$

$$Z_{ss}^m - e^{\phi \log Z_{ss}^m} = 0 \tag{6.6}$$

$$\beta\left(abr_{ss}\left(aC_{ss}^{me} + (1-a)\, C_{ss}^{he}\right)^{-1} C_{ss}^{m\,-1+e} + ab(1-\delta)\left(aC_{ss}^{me} + (1-a)\, C_{ss}^{he}\right)^{-1} C_{ss}^{m\,-1+e}\right) - ab\left(aC_{ss}^{me} + (1-a)\, C_{ss}^{he}\right)^{-1} C_{ss}^{m\,-1+} \tag{6.7}$$

$$\beta\left(ab(1-\delta)\left(aC_{ss}^{me} + (1-a)\, C_{ss}^{he}\right)^{-1} C_{ss}^{m\,-1+e} + b\theta\Gamma Z_{ss}^h (1-a)\left(aC_{ss}^{me} + (1-a)\, C_{ss}^{he}\right)^{-1} C_{ss}^{h\,-1+e} K_{ss}^{h\,-1+\theta} N_{ss}^{h\,1-\theta}\right) - ab\left(aC_{ss}^{me} + \right. \tag{6.8}$$

$$-(1-b)\left(1 - N_{ss}^m - N_{ss}^h\right)^{-1} + abW_{ss}\left(aC_{ss}^{me} + (1-a)\, C_{ss}^{he}\right)^{-1} C_{ss}^{m\,-1+e} = 0 \tag{6.9}$$

$$-(1-b)\left(1 - N_{ss}^m - N_{ss}^h\right)^{-1} + b\Gamma Z_{ss}^h (1-a)(1-\theta)\left(aC_{ss}^{me} + (1-a)\, C_{ss}^{he}\right)^{-1} C_{ss}^{h\,-1+e} K_{ss}^{h\,\theta} N_{ss}^{h\,-\theta} = 0 \tag{6.10}$$

$$I_{ss} - I_{ss}^m - I_{ss}^h = 0 \tag{6.11}$$

$$I_{ss}^m - K_{ss}^m + K_{ss}^m (1-\delta) = 0 \tag{6.12}$$

$$I_{ss}^h - K_{ss}^h + K_{ss}^h (1-\delta) = 0 \tag{6.13}$$

$$K_{ss} - K_{ss}^m - K_{ss}^h = 0 \tag{6.14}$$

$$N_{ss} - N_{ss}^m - N_{ss}^h = 0 \tag{6.15}$$

$$-\Pi_{ss} + Y_{ss} - r_{ss} K_{ss}^m - N_{ss}^m W_{ss} = 0 \tag{6.16}$$

$$U_{ss} - \beta U_{ss} - \log\left(1 - N_{ss}^m - N_{ss}^h\right)(1-b) - be^{-1}\log\left(aC_{ss}^{me} + (1-a)\, C_{ss}^{he}\right) = 0 \tag{6.17}$$

$$-C_{ss}^m - I_{ss}^m - I_{ss}^h + \Pi_{ss} + r_{ss} K_{ss}^m + N_{ss}^m W_{ss} = 0 \tag{6.18}$$

7 Parameter settings

$$a = 0.337 \tag{7.1}$$

$$\alpha = 0.36 \tag{7.2}$$

$$b = 0.63 \tag{7.3}$$

$$\beta = 0.99 \tag{7.4}$$

$$\delta = 0.025 \tag{7.5}$$

$$e = 0.8 \tag{7.6}$$

$$\phi = 0.95 \tag{7.7}$$

$$\psi = 0.95 \tag{7.8}$$

$$\theta = 0.08 \tag{7.9}$$

$$\Gamma = 1 \tag{7.10}$$

8 Steady state values

	Steady state values
r	0.0351
C^m	0.7224
C^h	0.3805
I	0.3143
I^m	0.2658
I^h	0.0485
K	12.5726
K^m	10.6329
K^h	1.9397
N	0.6102
N^m	0.2799
N^h	0.3303
Π	0
U	-79.6929
W	2.3706
Y	1.0367
Z^h	1
Z^m	1

9 The solution of the perturbation

9.1 P

$$\begin{array}{c} \\ K^m \\ K^h \\ Z^h \\ Z^m \end{array} \begin{array}{c} \begin{array}{cccc} K^m_{t-1} & K^h_{t-1} & Z^h_{t-1} & Z^m_{t-1} \end{array} \\ \begin{pmatrix} 0.8762 & 0.1545 & -0.3729 & 0.6255 \\ 0.4683 & 0.0826 & 2.0323 & -2.6403 \\ 0 & 0 & 0.95 & 0 \\ 0 & 0 & 0 & 0.95 \end{pmatrix} \end{array}$$

9.2 Q

	ϵ^h	ϵ^m
K^m	−0.3926	0.6584
K^h	2.1393	−2.7792
Z^h	1	0
Z^m	0	1

9.3 R

	K^m_{t-1}	K^h_{t-1}	Z^h_{t-1}	Z^m_{t-1}
r	−0.4894	−0.08	−0.6218	1.96
C^m	0.93	0.0069	−0.8599	0.6952
C^h	−0.3112	0.1511	1.7804	−0.8463
I	−0.4533	−0.2798	−0.0746	4.867
I^m	−3.9534	6.1809	−14.918	25.0205
I^h	18.734	−35.696	81.2939	−105.6101
K	0.8132	0.1434	−0.0019	0.1217
N	−0.0751	−0.0155	0.0429	0.226
N^m	0.2353	−0.125	−0.9715	1.5781
N^h	−0.3382	0.0772	0.9026	−0.9199
Π	0	0	0	0
U	−0.054	−0.0098	−0.0683	−0.0832
W	0.2753	0.045	0.3497	0.3819
Y	0.5106	−0.08	−0.6218	1.96

9.4 S

	ϵ^h	ϵ^m
r	−0.6545	2.0631
C^m	−0.9051	0.7318
C^h	1.8741	−0.8908
I	−0.0785	5.1231
I^m	−15.7031	26.3373
I^h	85.5725	−111.1686
K	−0.002	0.1281
N	0.0452	0.2379
N^m	−1.0227	1.6612
N^h	0.9501	−0.9683
Π	0	0
U	−0.0719	−0.0875
W	0.3682	0.402
Y	−0.6545	2.0631

10 Statistics of the model

10.1 Moments

	Steady state value	Std. dev.	Variance	Loglinear
r	0.0351	1.5572	2.4248	Y
C^m	0.7224	0.9767	0.954	Y
C^h	0.3805	1.52	2.3104	Y
I	0.3143	4.828	23.3092	Y
I^m	0.2658	12.888	166.0993	Y
I^h	0.0485	57.2629	3279.0405	Y
K	12.5726	0.4326	0.1871	Y
N	0.6102	0.2513	0.0632	Y
N^m	0.2799	1.3761	1.8936	Y
N^h	0.3303	0.9286	0.8623	Y
W	2.3706	0.6601	0.4358	Y
Y	1.0367	1.7868	3.1926	Y

10.2 Correlation matrix

	r	C^m	C^h	I	I^m	I^h	K	N	N^m	N^h	W	Y
r	1	0.3865	-0.1576	0.9644	0.7077	-0.3461	0.1003	0.9227	0.873	-0.635	0.7172	0.9373
C^m	0.3865	1	-0.8433	0.2945	0.1137	0.0207	0.5653	0.0949	0.7811	-0.9335	0.0558	0.6222
C^h	-0.1576	-0.8433	1	0.0411	-0.0502	0.0844	-0.0964	0.2217	-0.5751	0.8331	0.4206	-0.2875
I	0.9644	0.2945	0.0411	1	0.6087	-0.2045	0.228	0.9793	0.7912	-0.5039	0.8717	0.9314
I^m	0.7077	0.1137	-0.0502	0.6087	1	-0.9011	-0.0558	0.6099	0.5076	-0.3325	0.4088	0.542
I^h	-0.3461	0.0207	0.0844	-0.2045	-0.9011	1	0.1935	-0.2173	-0.1939	0.1348	-0.028	-0.1597
K	0.1003	0.5653	-0.0964	0.228	-0.0558	0.1935	1	0.118	0.3068	-0.3263	0.4488	0.4021
K^m	0.5408	0.8422	-0.4384	0.5593	0.3028	-0.0679	0.8367	0.4043	0.7663	-0.7602	0.5111	0.779
K^h	-0.8383	-0.7036	0.6574	-0.6843	-0.6343	0.4086	-0.0538	-0.5635	-0.9457	0.9058	-0.2714	-0.8286
N	0.9227	0.0949	0.2217	0.9793	0.6099	-0.2173	0.118	1	0.6585	-0.327	0.8964	0.8384
N^m	0.873	0.7811	-0.5751	0.7912	0.5076	-0.1939	0.3068	0.6585	1	-0.9265	0.4751	0.9457
N^h	-0.635	-0.9335	0.8331	-0.5039	-0.3325	0.1348	-0.3263	-0.327	-0.9265	1	-0.1484	-0.7684
Π	0	0	0	0	0	0	0	0	0	0	0	0
U	-0.7291	-0.0588	-0.4134	-0.8795	-0.4261	0.0451	-0.4398	-0.9038	-0.4849	0.157	-0.9998	-0.7428
W	0.7172	0.0558	0.4206	0.8717	0.4088	-0.028	0.4488	0.8964	0.4751	-0.1484	1	0.7353
Y	0.9373	0.6222	-0.2875	0.9314	0.542	-0.1597	0.4021	0.8384	0.9457	-0.7684	0.7353	1
Z^h	0.431	-0.4075	0.7841	0.6312	0.2203	0.0732	0.1791	0.7441	0.0465	0.3136	0.8825	0.3619
Z^m	0.9465	0.2633	0.0979	0.9962	0.6241	-0.2256	0.2694	0.982	0.7563	-0.4588	0.9037	0.9164

10.3 Autocorrelations

	$t-1$	$t-2$	$t-3$	$t-4$	$t-5$
r	0.7052	0.4611	0.2605	0.0998	-0.025
C^m	0.8516	0.6216	0.4176	0.2412	0.0924
C^h	0.7709	0.512	0.2977	0.1245	-0.0114
I	0.7333	0.4818	0.2747	0.1084	-0.0212
I^m	0.0756	0.0316	-0.0029	-0.0291	-0.048
I^h	-0.078	-0.0735	-0.0678	-0.0612	-0.0543
K	0.9604	0.8629	0.7274	0.5705	0.4053
N	0.7125	0.466	0.2634	0.1011	-0.025
N^m	0.8032	0.5369	0.3157	0.1364	-0.0048
N^h	0.8197	0.555	0.3334	0.1522	0.0083
W	0.7395	0.5114	0.3175	0.1563	0.026
Y	0.7874	0.5333	0.3205	0.1464	0.0079

10.4 Variance decomposition

	ϵ^h	ϵ^m
r	0.1955	0.8045
C^m	0.2383	0.7617
C^h	0.6164	0.3836
I	0.3999	0.6001
I^m	0.0535	0.9465
I^h	0.0146	0.9854
K	0.3874	0.6126
N	0.563	0.437
N^m	0.0032	0.9968
N^h	0.1058	0.8942
W	0.796	0.204
Y	0.1361	0.8639

11 Statistics of the model

11.1 Moments relative to moments of the reference variable

	Steady state value relative to Y	Std. dev. relative to Y	Variance relative to Y	Loglinear
r	0.0339	0.8715	0.7595	Y
C^m	0.6968	0.5466	0.2988	Y
C^h	0.3671	0.8507	0.7237	Y
I	0.3032	2.7021	7.3011	Y
I^m	0.2564	7.213	52.027	Y
I^h	0.0468	32.0482	1027.0892	Y
K	12.1271	0.2421	0.0586	Y
K^m	10.2561	0.3547	0.1258	Y
K^h	1.8709	1.0662	1.1369	Y
N	0.5886	0.1407	0.0198	Y
N^m	0.27	0.7702	0.5931	Y
N^h	0.3186	0.5197	0.2701	Y
Π	0	0	0	Y
U	-76.8688	0.0761	0.0058	Y
W	2.2866	0.3695	0.1365	Y
Y	1	1	1	Y
Z^h	0.9646	0.5106	0.2608	Y
Z^m	0.9646	0.5106	0.2608	Y

11.2 Correlations with the reference variable

	Y_{t-5}	Y_{t-4}	Y_{t-3}	Y_{t-2}	Y_{t-1}	Y_t	Y_{t+1}	Y_{t+2}	Y_{t+3}	Y_{t+4}	Y_{t+5}
r	0.1526	0.278	0.4282	0.6043	0.8064	0.9373	0.5864	0.3062	0.0862	-0.0805	-0.2011
C^m	-0.1938	-0.0979	0.0332	0.2043	0.4199	0.6222	0.6796	0.5837	0.4832	0.383	0.2869
C^h	0.0441	-0.0009	-0.0602	-0.1357	-0.229	-0.2875	-0.318	-0.238	-0.1678	-0.1076	-0.057
I	0.0997	0.2242	0.3758	0.556	0.7659	0.9314	0.6451	0.3796	0.1665	0.0006	-0.1238
I^m	0.1445	0.2261	0.3222	0.433	0.5582	0.542	-0.0161	-0.0804	-0.1258	-0.1553	-0.1716
I^h	-0.1238	-0.1565	-0.1921	-0.2303	-0.2702	-0.1597	0.3725	0.3066	0.2462	0.1919	0.144
K	-0.4168	-0.3439	-0.2304	-0.0695	0.1459	0.4021	0.5721	0.6637	0.6935	0.6763	0.6249
K^m	-0.2704	-0.1487	0.0188	0.2385	0.5164	0.779	0.7513	0.6917	0.6104	0.5162	0.4161
K^h	-0.1204	-0.2349	-0.3735	-0.5372	-0.7268	-0.8286	-0.528	-0.2844	-0.0923	0.0542	0.1611
N	0.1448	0.2541	0.3843	0.5358	0.7088	0.8384	0.5281	0.2718	0.0712	-0.0804	-0.1896
N^m	0.0258	0.1572	0.3216	0.5219	0.7601	0.9457	0.7497	0.4934	0.2814	0.1102	-0.0239
N^h	0.04	-0.0704	-0.2118	-0.3875	-0.6001	-0.7684	-0.6774	-0.4837	-0.3177	-0.1786	-0.0648
Π	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN	NaN
U	0.0268	-0.0751	-0.2046	-0.3643	-0.5562	-0.7428	-0.5653	-0.4095	-0.274	-0.1588	-0.0632
W	-0.0324	0.0684	0.1969	0.3556	0.5466	0.7353	0.5683	0.4149	0.2809	0.1664	0.071
Y	0.0079	0.1464	0.3205	0.5333	0.7874	1	0.7874	0.5333	0.3205	0.1464	0.0079
Z^h	0.0406	0.0846	0.1373	0.1992	0.2702	0.3619	0.243	0.1447	0.0655	0.0035	-0.0434
Z^m	0.0787	0.2025	0.3543	0.5359	0.7486	0.9164	0.6234	0.3802	0.183	0.0276	-0.0906

12 Impulse response functions

12.1 Shock ϵ^h

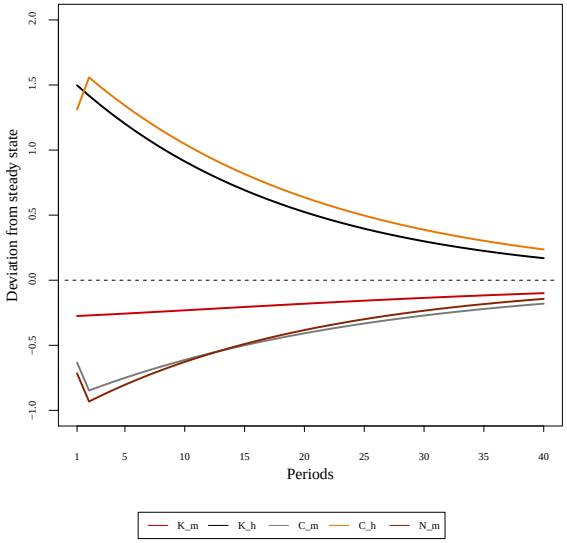

Figure 1: Impulse response function for ϵ^h shock

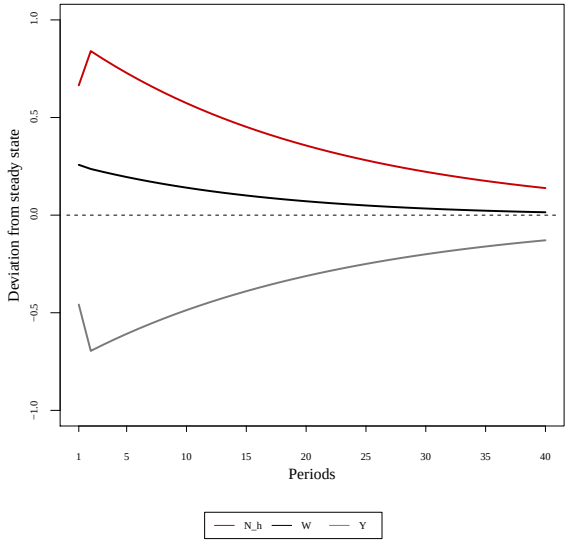

Figure 2: Impulse response function for ϵ^h shock

12.2 Shock ϵ^m

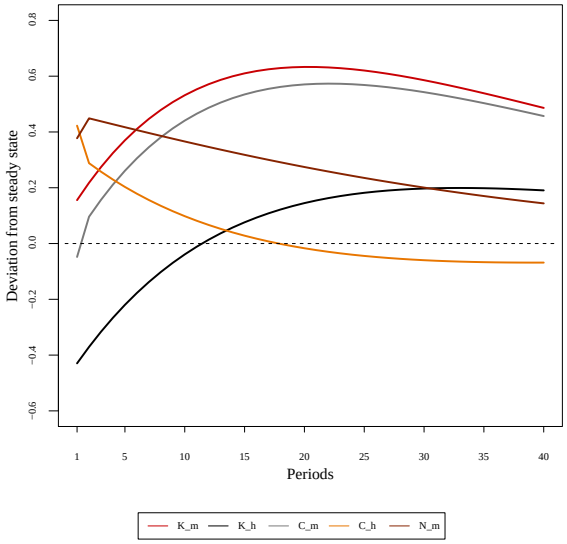

Figure 3: Impulse response function for ϵ^m shock

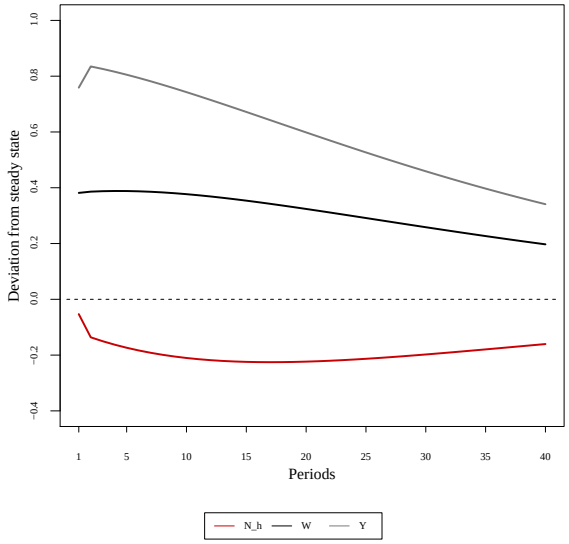

Figure 4: Impulse response function for ϵ^m shock