

## Problem Set #5

MACS 40000, Dr. Evans

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1. (a)
2. Solve for the steady-state equilibrium

(a) The steady state solution:

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b_ss is: [ 0.04543521  0.09555252  0.15051623  0.21049668
0.27567042
 0.34622048  0.42233659  0.50421542  0.59206086  0.68608424
 0.78650466  0.8935492   1.00745328  1.12846093  1.25682512
 1.39280805  1.53668154  1.68872735  1.84923755  2.01851489
 2.19687322  2.38463783  2.58214595  2.78974713  3.00780371
 3.23669126  3.47679914  3.72853089  3.99230486  4.26855466
 4.55772979  4.86029616  5.17673675  5.50755217  5.85326134
 6.21440219  6.59153227  6.98522954  7.3960931   7.82474394
 8.27182575  8.73800577  9.22397563  9.73045223 10.25817869
10.80792529 11.38049048 11.97670189 12.5974174  13.24352625
13.91595019 14.61564467 15.34360004 14.99733858 14.64110852
14.27453963 13.89724815 13.5088363  13.1088918  12.69698729
12.27267984 11.83551034 11.3850029  10.92066428 10.44198321
 9.94842977  9.43945469  8.91448862  8.37294144  7.8142015
 7.23763476  6.64258409  6.02836831  5.39428139  4.73959151
 4.06354014  3.36534101  2.64417917  1.89920989  1.12955759]
c_ss is: [ 1.34858055  1.34555857  1.34254336  1.33953491  1.3365332
1.33353822
 1.33054994  1.32756837  1.32459347  1.32162525  1.31866367  1.31570873
 1.31276041  1.3098187   1.30688358  1.30395504  1.30103306  1.29811762
 1.29520873  1.29230634  1.28941047  1.28652108  1.28363817  1.28076171
 1.27789171  1.27502813  1.27217097  1.26932021  1.26647585  1.26363785
 1.26080622  1.25798093  1.25516197  1.25234933  1.24954299  1.24674294
 1.24394916  1.24116165  1.23838038  1.23560534  1.23283652  1.23007391
 1.22731749  1.22456724  1.22182316  1.21908522  1.21635342  1.21362775
 1.21090818  1.2081947   1.20548731  1.20278598  1.2000907   1.19740147
 1.19471826  1.19204107  1.18936987  1.18670466  1.18404542  1.18139214
 1.17874481  1.1761034   1.17346792  1.17083835  1.16821466  1.16559686
 1.16298492  1.16037883  1.15777858  1.15518417  1.15259556  1.15001276
 1.14743574  1.1448645   1.14229902  1.13973928  1.13718529  1.13463702
 1.13209445  1.12955759]
w_ss is: 1.37938038407
r_ss is: 0.0365382668907
K_ss is: 501.237306089
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Y_ss is: 123.9320222
C_ss is: 98.8701568954
Euler errors are: [ 1.16118226e-12  5.72711878e-11 -2.22610819e-11
-7.72593101e-12
 9.48463530e-13 -6.15063556e-14 -1.35447209e-14 -2.24265051e-14
-1.56541446e-14 -1.44328993e-15 6.88338275e-15 1.19904087e-14
1.62092562e-14 1.92068583e-14 2.10942375e-14 2.37587727e-14
2.79776202e-14 3.14193116e-14 3.74145159e-14 4.42978987e-14
5.29576383e-14 6.53921362e-14 7.78266340e-14 9.08162434e-14
1.05582210e-13 1.16129328e-13 1.28563826e-13 1.36668454e-13
1.41220369e-13 1.42663659e-13 1.36779477e-13 1.31894495e-13
1.20348176e-13 1.10245146e-13 9.83657600e-14 8.32667268e-14
7.40518757e-14 6.58362254e-14 5.65103520e-14 5.59552404e-14
6.21724894e-14 6.76125822e-14 7.76045894e-14 9.98090499e-14
1.33892897e-13 1.62647673e-13 2.09499085e-13 2.61679567e-13
3.09530179e-13 4.19109192e-13 7.19424520e-13 -1.76647585e-12
-5.57840441e-11 5.03538322e-11 5.57576207e-12 -2.54374299e-12
-2.02091677e-11 3.77105014e-11 5.28304067e-11 -1.11525233e-11
-4.74151829e-11 -4.14982493e-11 -1.87452276e-11 3.88189481e-12
1.96282990e-11 2.58306709e-11 2.13780105e-11 6.11377615e-12
-1.62184710e-11 -3.41410233e-11 -2.52148302e-11 2.62849742e-11
7.35248529e-11 1.38140610e-11 -7.14740489e-11 -1.70607972e-11
1.83896232e-11 6.68587408e-12 1.90303329e-12 8.16231527e-11]
Resource constraint error is: 4.97379915032e-14
SS computation time: 0.0366 sec

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(b)