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               MONTE CARLO EXPERIMENT #          4.000
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*******************************************************************************
   COMPUTING A MPE OF THE DYNAMIC GAME
*******************************************************************************

-------------------------------------------------------------------------------
       Values of the structural parameters

                       Fixed cost firm 1   =          -1.900
                       Fixed cost firm 2   =          -1.800
                       Fixed cost firm 3   =          -1.700
                       Fixed cost firm 4   =          -1.600
                       Fixed cost firm 5   =          -1.500
       Parameter of market size (theta_rs) =           1.000
Parameter of competition effect (theta_rn) =           1.000
                     Entry cost (theta_ec) =          0.0000
                       Discount factor     =          0.9500
                    Std. Dev. epsilons     =           1.000

-------------------------------------------------------------------------------

       BEST RESPONSE MAPPING ITERATIONS

         Best response mapping iteration  =          1.000
         Convergence criterion =           1000.

         Best response mapping iteration  =          2.000
         Convergence criterion =          0.9412

         Best response mapping iteration  =          3.000
         Convergence criterion =          0.2406

         Best response mapping iteration  =          4.000
         Convergence criterion =         0.07843

         Best response mapping iteration  =          5.000
         Convergence criterion =         0.02782

         Best response mapping iteration  =          6.000
         Convergence criterion =         0.01126

         Best response mapping iteration  =          7.000
         Convergence criterion =        0.004470

         Best response mapping iteration  =          8.000
         Convergence criterion =        0.001788

         Best response mapping iteration  =          9.000
```

```
Convergence criterion =       0.0007131

Best response mapping iteration  =          10.00
Convergence criterion =       0.0002847

Best response mapping iteration  =          11.00
Convergence criterion =       0.0001136

Best response mapping iteration  =          12.00
Convergence criterion =      4.535e-005

Best response mapping iteration  =          13.00
Convergence criterion =      1.809e-005

Best response mapping iteration  =          14.00
Convergence criterion =      7.219e-006

--------------------------------------------------------------------------------
        CONVERGENCE ACHIEVED AFTER          15.00 BEST RESPONSE ITERATIONS
--------------------------------------------------------------------------------
        EQUILIBRIUM PROBABILITIES

         0.1880          0.2052          0.2236          0.2434
         0.2644
         0.1880          0.2052          0.2236          0.2434
         0.2644
         0.1880          0.2052          0.2236          0.2434
         0.2644
         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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         0.1880          0.2052          0.2236          0.2434
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0.3213	0.3458	0.3713	0.3977
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0.4944	0.5217	0.5489	0.5759
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0.6810	0.7037	0.7254	0.7460
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0.6810	0.7037	0.7254	0.7460
0.7655			
0.6810	0.7037	0.7254	0.7460
0.7655			
0.8344	0.8482	0.8610	0.8729
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         0.8344          0.8482          0.8610          0.8729
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         0.8344          0.8482          0.8610          0.8729
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         0.8344          0.8482          0.8610          0.8729
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         0.8344          0.8482          0.8610          0.8729
         0.8839
         0.8344          0.8482          0.8610          0.8729
         0.8839
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********************************************************************************
*********
   DESCRIPTIVE STATISTICS FROM THE EQUILIBRIUM
   BASED ON      5.000e+004 OBSERVATIONS

   TABLE 2 OF THE PAPER AGUIRREGABIRIA AND MIRA (2007)
********************************************************************************
*********


--------------------------------------------------------------------------------
--------
       (1)    Average number of active firms   =           2.735
--------------------------------------------------------------------------------
--------
       (2)    Std. Dev. number of firms        =           1.513
--------------------------------------------------------------------------------
--------
       (3)    Regression N[t] on N[t-1]        =          0.5322
--------------------------------------------------------------------------------
--------
       (4)    Average number of entrants       =          0.9948
--------------------------------------------------------------------------------
--------
       (5)    Average number of exits          =          0.9890
--------------------------------------------------------------------------------
```

```
--------
      (6)    Excess turnover (in # of firms)  =          0.8696
--------------------------------------------------------------------------------
--------
      (7)    Correlation entries and exits    =         -0.2298
--------------------------------------------------------------------------------
--------
      (8)    Frequencies of being active      =
         0.5035
         0.5266
         0.5483
         0.5658
         0.5913
--------------------------------------------------------------------------------
--------


********************************************************************************
      MONTE CARLO EXPERIMENT #          4.000
********************************************************************************

    Replication =           1.000
        (a)     Simulations of x's and a's
        (b.1)   Estimation of initial CCPs (Non-Parametric)
        (b.2)   NPL algorithm using frequency estimates as initial CCPs
        (c.1)   Estimation of initial CCPs (Semi-Parametric: Logit)
        (c.2)   NPL algorithm using Logit estimates as initial CCPs
        (d.1)   Estimation of initial CCPs (Completely Random)
        (d.2)   NPL algorithm using U(0,1) random draws as initial CCPs
        (e)     NPL algorithm using true values as initial CCPs
    Replication =         2.00000
        (a)     Simulations of x's and a's
        (b.1)   Estimation of initial CCPs (Non-Parametric)
        (b.2)   NPL algorithm using frequency estimates as initial CCPs
        (c.1)   Estimation of initial CCPs (Semi-Parametric: Logit)
        (c.2)   NPL algorithm using Logit estimates as initial CCPs
        (d.1)   Estimation of initial CCPs (Completely Random)
        (d.2)   NPL algorithm using U(0,1) random draws as initial CCPs
        (e)     NPL algorithm using true values as initial CCPs

...

    Replication =         999.000
        (a)     Simulations of x's and a's
        (b.1)   Estimation of initial CCPs (Non-Parametric)
        (b.2)   NPL algorithm using frequency estimates as initial CCPs
        (c.1)   Estimation of initial CCPs (Semi-Parametric: Logit)
        (c.2)   NPL algorithm using Logit estimates as initial CCPs
        (d.1)   Estimation of initial CCPs (Completely Random)
        (d.2)   NPL algorithm using U(0,1) random draws as initial CCPs
        (e)     NPL algorithm using true values as initial CCPs
    Replication =         1000.00
        (a)     Simulations of x's and a's
```

(b.1) Estimation of initial CCPs (Non-Parametric)
(b.2) NPL algorithm using frequency estimates as initial CCPs
(c.1) Estimation of initial CCPs (Semi-Parametric: Logit)
(c.2) NPL algorithm using Logit estimates as initial CCPs
(d.1) Estimation of initial CCPs (Completely Random)
(d.2) NPL algorithm using U(0,1) random draws as initial CCPs
(e) NPL algorithm using true values as initial CCPs

Number of Re-drawings due to Multicollinearity = 0.000000

****
MONTE CARLO EXPERIMENT # 4.00000
EMPIRICAL MEANS AND STANDARD ERRORS

TABLE 4 OF THE PAPER AGUIRREGABIRIA AND MIRA (2007)
****

	theta_fc_1	theta_rs	theta_rn	theta_ec
TRUE VALUES	-1.90000	1.00000	1.00000	0.000000
MEAN 2step-True	-1.90130	1.00602	1.01408	-0.00283881
MEDIAN 2step-True	-1.90959	1.00340	0.991762	0.00121757
S.E. 2step-True	0.516520	0.331523	1.35003	0.111337
MEAN 2step-Freq	-0.916849	0.330050	0.102813	0.237531
MEDIAN 2step-Freq	-0.915114	0.331320	0.0949388	0.236495
S.E. 2step-Freq	0.238733	0.0950107	0.339252	0.110433
MEAN NPL-Freq	-1.90888	0.994919	0.977453	-0.00292536
MEDIAN NPL-Freq	-1.95455	0.979689	0.849147	0.000351669
S.E. NPL-Freq	0.536969	0.318883	1.32343	0.108562

MEAN 2step-Logit	-2.08042	0.889536	0.525217	-0.00344358
MEDIAN 2step-Logit	-2.09910	0.881133	0.500104	0.000126992
S.E. 2step-Logit	0.439715	0.263955	1.07328	0.110223
MEAN NPL-Logit	-1.90649	0.997391	0.987480	-0.00268923
MEDIAN NPL-Logit	-1.94298	0.986571	0.915117	0.000867003
S.E. NPL-Logit	0.490378	0.293882	1.20559	0.108343
MEAN 2step-Random	-2.08042	0.889536	0.525217	-0.00344358
MEDIAN 2step-Rando	-2.09910	0.881133	0.500104	0.000126992
S.E. 2step-Random	0.439715	0.263955	1.07328	0.110223
MEAN NPL-Random	-1.90466	0.996924	0.987603	-0.00269832
MEDIAN NPL-Random	-1.94198	0.988743	0.923940	0.000568465
S.E. NPL-Random	0.481617	0.284053	1.16735	0.108016

****

MONTE CARLO EXPERIMENT # 4.00000
SQUARE-ROOT MEAN SQUARE ERRORS
RATIOS OVER THE SQUARE-ROOT MSE OF THE 2-STEP PML USING THE TRUE CCPs

TABLE 5 OF THE PAPER AGUIRREGABIRIA AND MIRA (2007)

****

	theta_fc_1	theta_rs	theta_rn	theta_ec
SQ-MSE 2-step-TRUE	0.516522	0.331578	1.35010	0.111373
RATIO: 2step-Freq	1.95872	2.04071	0.710453	2.35197
RATIO: NPL-Freq	1.03973	0.961836	0.980383	0.975113
RATIO: 2step-Logit	0.920176	0.862956	0.869273	0.990153
RATIO: NPL-Logit	0.949468	0.886348	0.893007	0.973094
RATIO: 2step-Rando	0.891265	0.777017	0.769342	1.00646
RATIO: NPL-Random	0.932467	0.856722	0.864687	0.970157