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Stationary Equilibrium and Transition path for the Firm Dynamics Model

```
clear all;
close all;

Parallel=1 % 2 for GPU, 1 for parallel CPU, 0 for single CPU.
SkipInitialFinal= 1 % 1 to SKIP transition path
```

```
Parallel =

     1
```

```
SkipInitialFinal =

     1
```

Endogenous and Exogenous States

```
n_s= 5; % number of firm-specific Productivity level
n_psi = 10; % number of credit tax
n_a=20; % grid size for capital
```

Stacionary Equilibrium

```
if SkipInitialFinal==1

fprintf(2,'\nStacionary Equilibrium\n')

%Policy parameters
Params.gcost=0.01;
% Distortions
Params.taurate=0.2; % This is the rate for the tax.
Params.subsidyrate=0.2; % This is the rate for the subsidy.

% subsidy-tax distribution (new entrants)
psi_grid = linspace(1,1,n_psi)';
```

```
% Initial guesses
Params.p=1; % output pricecap
Params.Ne=0.5; % total mass of new entrants

% Parameters and initialization options
Parameters_FDM_Brazil;
% Stationary Equilibrium and Results
SS_FDM_Brazil;
```

```
Stacionary Equilibrium
sizes
vector(s) of endogenous state variables
    20

vector(s) of exogenous state variable
     5    10

vector(s) of decision variabes
     0

upsilon size
    10     5    20

sum of upsilon
    1.0000


simoptions =

  struct with fields:

              burnin: 10000
          simperiods: 100000
             iterate: 1
            parallel: 1
               maxit: 10000
    agententryandexit: 1
       endogenousexit: 0


GEPriceParamNames =

  1×1 cell array

    {'p'}


AggVars =

    8.8424

Calculating price vector corresponding to the stationary eqm
```

```
Current Aggregates:

AggVars =

    8.8424

Current GE prices and GeneralEqmConditionsVec:

p =

    1.0000
    0.5000


GeneralEqmConditionsVec =

   -7.8424    3.3876

Current Aggregates:

AggVars =

    9.8450

Current GE prices and GeneralEqmConditionsVec:

p =

    1.0500
    0.5000


GeneralEqmConditionsVec =

   -8.8450    4.5626

Current Aggregates:

AggVars =

    9.2845

Current GE prices and GeneralEqmConditionsVec:

p =

    1.0000
    0.5250


GeneralEqmConditionsVec =

   -8.2845    3.3876
```

```
Current Aggregates:

AggVars =

    8.3488

Current GE prices and GeneralEqmConditionsVec:

p =

    0.9500
    0.5250


GeneralEqmConditionsVec =

   -7.3488    2.2802

Current Aggregates:

AggVars =

    7.3888

Current GE prices and GeneralEqmConditionsVec:

p =

    0.9000
    0.5375


GeneralEqmConditionsVec =

   -6.3888    1.2533

Current Aggregates:

AggVars =

    7.0451

Current GE prices and GeneralEqmConditionsVec:

p =

    0.9000
    0.5125


GeneralEqmConditionsVec =

   -6.0451    1.2533
```

```
Current Aggregates:

AggVars =

    5.7889

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8500
    0.5062


GeneralEqmConditionsVec =

   -4.7889    0.3390

Current Aggregates:

AggVars =

    4.2658

Current GE prices and GeneralEqmConditionsVec:

p =

    0.7500
    0.5437


GeneralEqmConditionsVec =

   -3.2658   -1.1913

Current Aggregates:

AggVars =

    2.7866

Current GE prices and GeneralEqmConditionsVec:

p =

    0.6250
    0.5656


GeneralEqmConditionsVec =

   -1.7866   -2.6539
```

```
Current Aggregates:

AggVars =

    2.1295

Current GE prices and GeneralEqmConditionsVec:

p =

    0.5750
    0.5344


GeneralEqmConditionsVec =

   -1.1295   -3.1266

Current Aggregates:

AggVars =

    0.2140

Current GE prices and GeneralEqmConditionsVec:

p =

    0.3500
    0.5937


GeneralEqmConditionsVec =

    0.7860   -4.1244

Current Aggregates:

AggVars =

    0.9062

Current GE prices and GeneralEqmConditionsVec:

p =

    0.4750
    0.5719


GeneralEqmConditionsVec =

    0.0938   -3.7985
```

```
Current Aggregates:

AggVars =

    3.8680

Current GE prices and GeneralEqmConditionsVec:

p =

    0.7250
    0.5281


GeneralEqmConditionsVec =

   -2.8680   -1.5217

Current Aggregates:

AggVars =

    4.8981

Current GE prices and GeneralEqmConditionsVec:

p =

    0.7750
    0.5594


GeneralEqmConditionsVec =

   -3.8981   -0.8427

Current Aggregates:

AggVars =

    2.6634

Current GE prices and GeneralEqmConditionsVec:

p =

    0.6250
    0.5406


GeneralEqmConditionsVec =

   -1.6634   -2.6539
```

```
Current Aggregates:

AggVars =

    1.5914

Current GE prices and GeneralEqmConditionsVec:

p =

    0.5250
    0.5781


GeneralEqmConditionsVec =

   -0.5914   -3.5249

Current Aggregates:

AggVars =

    3.2079

Current GE prices and GeneralEqmConditionsVec:

p =

    0.6750
    0.5406


GeneralEqmConditionsVec =

   -2.2079   -2.1200

Current Aggregates:

AggVars =

    3.0596

Current GE prices and GeneralEqmConditionsVec:

p =

    0.6750
    0.5156


GeneralEqmConditionsVec =

   -2.0596   -2.1200
```

```
Current Aggregates:

AggVars =

    3.1324

Current GE prices and GeneralEqmConditionsVec:

p =

    0.7000
    0.4906


GeneralEqmConditionsVec =

   -2.1324   -1.8322

Current Aggregates:

AggVars =

    3.8491

Current GE prices and GeneralEqmConditionsVec:

p =

    0.7500
    0.4906


GeneralEqmConditionsVec =

   -2.8491   -1.1913

Current Aggregates:

AggVars =

    3.6197

Current GE prices and GeneralEqmConditionsVec:

p =

    0.7187
    0.5031


GeneralEqmConditionsVec =

   -2.6197   -1.6024
```

```
Current Aggregates:

AggVars =

    2.9170

Current GE prices and GeneralEqmConditionsVec:

p =

    0.6562
    0.5281


GeneralEqmConditionsVec =

   -1.9170   -2.3273

Current Aggregates:

AggVars =

    2.8904

Current GE prices and GeneralEqmConditionsVec:

p =

    0.6812
    0.4781


GeneralEqmConditionsVec =

   -1.8904   -2.0490

Current Aggregates:

AggVars =

    2.7266

Current GE prices and GeneralEqmConditionsVec:

p =

    0.6844
    0.4469


GeneralEqmConditionsVec =

   -1.7266   -2.0133
```

```
Current Aggregates:

AggVars =

    3.0242

Current GE prices and GeneralEqmConditionsVec:

p =

    0.7281
    0.4094


GeneralEqmConditionsVec =

   -2.0242   -1.4810

Current Aggregates:

AggVars =

    2.9150

Current GE prices and GeneralEqmConditionsVec:

p =

    0.7641
    0.3500


GeneralEqmConditionsVec =

   -1.9150   -1.0001

Current Aggregates:

AggVars =

    2.3926

Current GE prices and GeneralEqmConditionsVec:

p =

    0.7484
    0.3063


GeneralEqmConditionsVec =

   -1.3926   -1.2123
```

```
Current Aggregates:

AggVars =

    1.8631

Current GE prices and GeneralEqmConditionsVec:

p =

    0.7727
    0.2141


GeneralEqmConditionsVec =

   -0.8631   -0.8767

Current Aggregates:

AggVars =

    1.3567

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8523
    0.1172


GeneralEqmConditionsVec =

   -0.3567    0.3797

Current Aggregates:

AggVars =

   -0.7299

Current GE prices and GeneralEqmConditionsVec:

p =

    0.9363
   -0.0477


GeneralEqmConditionsVec =

    1.7299    1.9903
```

```
Current Aggregates:

AggVars =

   -0.2217

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8609
   -0.0187


GeneralEqmConditionsVec =

    1.2217    0.5305

Current Aggregates:

AggVars =

    0.7872

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8367
    0.0734


GeneralEqmConditionsVec =

    0.2128    0.1140

Current Aggregates:

AggVars =

   -0.3351

Current GE prices and GeneralEqmConditionsVec:

p =

    0.9164
   -0.0234


GeneralEqmConditionsVec =

    1.3351    1.5789
```

```
Current Aggregates:

AggVars =

    1.5413

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8086
    0.1547


GeneralEqmConditionsVec =

   -0.5413   -0.3409

Current Aggregates:

AggVars =

    0.4582

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8805
    0.0359


GeneralEqmConditionsVec =

    0.5418    0.8840

Current Aggregates:

AggVars =

    1.3072

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8266
    0.1250


GeneralEqmConditionsVec =

   -0.3072   -0.0522
```

```
Current Aggregates:

AggVars =

    0.8150

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8109
    0.0813


GeneralEqmConditionsVec =

    0.1850   -0.3037

Current Aggregates:

AggVars =

    0.9313

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8213
    0.0902


GeneralEqmConditionsVec =

    0.0687   -0.1377

Current Aggregates:

AggVars =

    0.4092

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8314
    0.0387


GeneralEqmConditionsVec =

    0.5908    0.0274
```

```
Current Aggregates:

AggVars =

    1.0847

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8278
    0.1034


GeneralEqmConditionsVec =

   -0.0847   -0.0324

Current Aggregates:

AggVars =

    1.2137

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8124
    0.1202


GeneralEqmConditionsVec =

   -0.2137   -0.2812

Current Aggregates:

AggVars =

    0.8991

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8306
    0.0851


GeneralEqmConditionsVec =

    0.1009    0.0140
```

```
Current Aggregates:

AggVars =

    1.0548

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8371
    0.0983


GeneralEqmConditionsVec =

   -0.0548    0.1206

Current Aggregates:

AggVars =

    1.0234

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8332
    0.0963


GeneralEqmConditionsVec =

   -0.0234    0.0555

Current Aggregates:

AggVars =

    1.2092

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8303
    0.1146


GeneralEqmConditionsVec =

   -0.2092    0.0090
```

```
Current Aggregates:

AggVars =

    0.9766

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8306
    0.0925


GeneralEqmConditionsVec =

    0.0234    0.0128

Current Aggregates:

AggVars =

    0.9134

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8359
    0.0854


GeneralEqmConditionsVec =

    0.0866    0.1010

Current Aggregates:

AggVars =

    1.0425

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0989


GeneralEqmConditionsVec =

   -0.0425    0.0008
```

```
Current Aggregates:

AggVars =

    0.9961

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8272
    0.0951


GeneralEqmConditionsVec =

    0.0039   -0.0417

Current Aggregates:

AggVars =

    0.9306

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8279
    0.0887


GeneralEqmConditionsVec =

    0.0694   -0.0299

Current Aggregates:

AggVars =

    1.0144

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8293
    0.0964


GeneralEqmConditionsVec =

   -0.0144   -0.0068
```

```
Current Aggregates:

AggVars =

    0.9952

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8327
    0.0937


GeneralEqmConditionsVec =

    0.0048    0.0478

Current Aggregates:

AggVars =

    0.9959

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8286
    0.0948


GeneralEqmConditionsVec =

    0.0041   -0.0194

Current Aggregates:

AggVars =

    1.0334

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8274
    0.0986


GeneralEqmConditionsVec =

   -0.0334   -0.0390
```

```
Current Aggregates:

AggVars =

    0.9909

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0940


GeneralEqmConditionsVec =

    0.0091   -0.0002

Current Aggregates:

AggVars =

    1.0095

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8305
    0.0956


GeneralEqmConditionsVec =

   -0.0095    0.0124

Current Aggregates:

AggVars =

    0.9859

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8309
    0.0933


GeneralEqmConditionsVec =

    0.0141    0.0191
```

```
Current Aggregates:

AggVars =

    1.0073

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8297
    0.0956


GeneralEqmConditionsVec =

   -0.0073   -0.0004

Current Aggregates:

AggVars =

    0.9887

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8290
    0.0940


GeneralEqmConditionsVec =

    0.0113   -0.0129

Current Aggregates:

AggVars =

    1.0043

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8301
    0.0952


GeneralEqmConditionsVec =

   -0.0043    0.0061
```

```
Current Aggregates:

AggVars =

    1.0207

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8301
    0.0968


GeneralEqmConditionsVec =

   -0.0207    0.0059

Current Aggregates:

AggVars =

    0.9984

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8299
    0.0947


GeneralEqmConditionsVec =

    0.0016    0.0013

Current Aggregates:

AggVars =

    1.0014

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8295
    0.0951


GeneralEqmConditionsVec =

   -0.0014   -0.0051
```

```
Current Aggregates:

AggVars =

    0.9924

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8296
    0.0942


GeneralEqmConditionsVec =

    0.0076   -0.0034

Current Aggregates:

AggVars =

    1.0036

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8297
    0.0952


GeneralEqmConditionsVec =

   -0.0036   -0.0011

Current Aggregates:

AggVars =

    1.0006

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8301
    0.0949


GeneralEqmConditionsVec =

   -0.0006    0.0053
```

```
Current Aggregates:

AggVars =

    1.0012

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8296
    0.0950


GeneralEqmConditionsVec =

   -0.0012   -0.0025

Current Aggregates:

AggVars =

    0.9959

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0945


GeneralEqmConditionsVec =

    0.0041   -0.0000

Current Aggregates:

AggVars =

    1.0017

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8297
    0.0951


GeneralEqmConditionsVec =

   -0.0017   -0.0008
```

```
Current Aggregates:

AggVars =

    0.9989

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8300
    0.0947


GeneralEqmConditionsVec =

    0.0011    0.0030

Current Aggregates:

AggVars =

    1.0006

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8297
    0.0950


GeneralEqmConditionsVec =

   -0.0006   -0.0011

Current Aggregates:

AggVars =

    1.0039

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8296
    0.0953


GeneralEqmConditionsVec =

   -0.0039   -0.0033
```

```
Current Aggregates:

AggVars =

    0.9998

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0949


GeneralEqmConditionsVec =

   1.0e-03 *

    0.2449    0.1773

Current Aggregates:

AggVars =

    0.9987

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0948


GeneralEqmConditionsVec =

    0.0013   -0.0001

Current Aggregates:

AggVars =

    0.9994

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0948


GeneralEqmConditionsVec =
```

```
   1.0e-03 *

    0.5744   -0.2851

Current Aggregates:

AggVars =

    0.9986

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0947


GeneralEqmConditionsVec =

    0.0014    0.0010

Current Aggregates:

AggVars =

    1.0001

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8297
    0.0949


GeneralEqmConditionsVec =

   1.0e-03 *

   -0.0969   -0.5879

Current Aggregates:

AggVars =

    1.0004

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0949
```

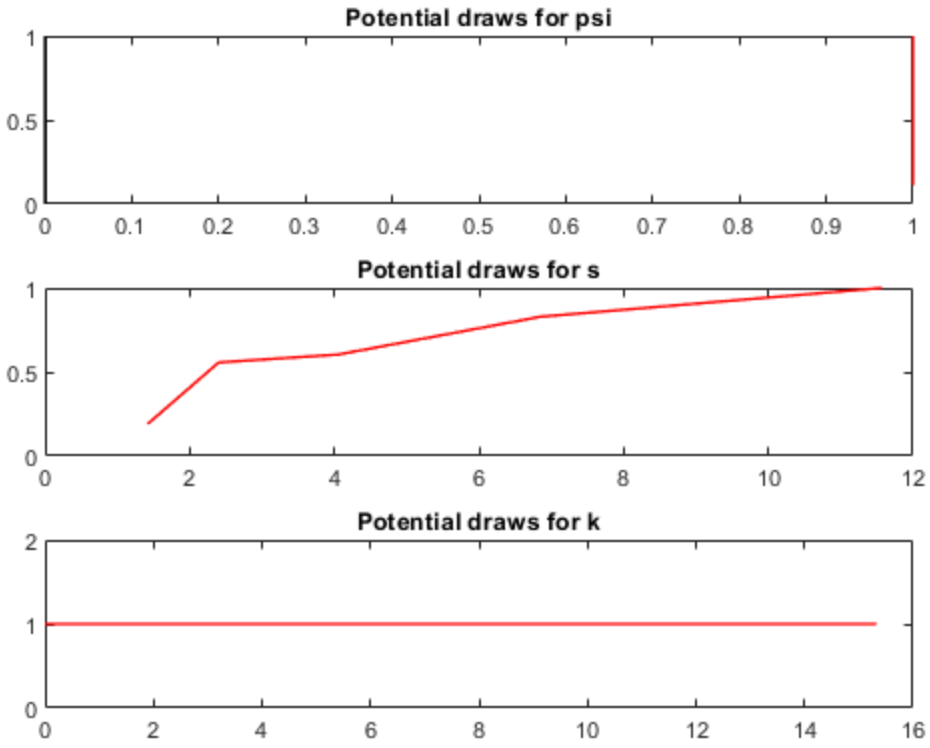
```
GeneralEqmConditionsVec =

   1.0e-03 *

   -0.4264   -0.1255

Current Aggregates:

AggVars =

    1.0001

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0949


GeneralEqmConditionsVec =

   1.0e-03 *

   -0.0846    0.6397

Current Aggregates:

AggVars =

    1.0001

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0949


GeneralEqmConditionsVec =

   1.0e-03 *

   -0.0938   -0.2810

Current Aggregates:

AggVars =

    0.9994
```

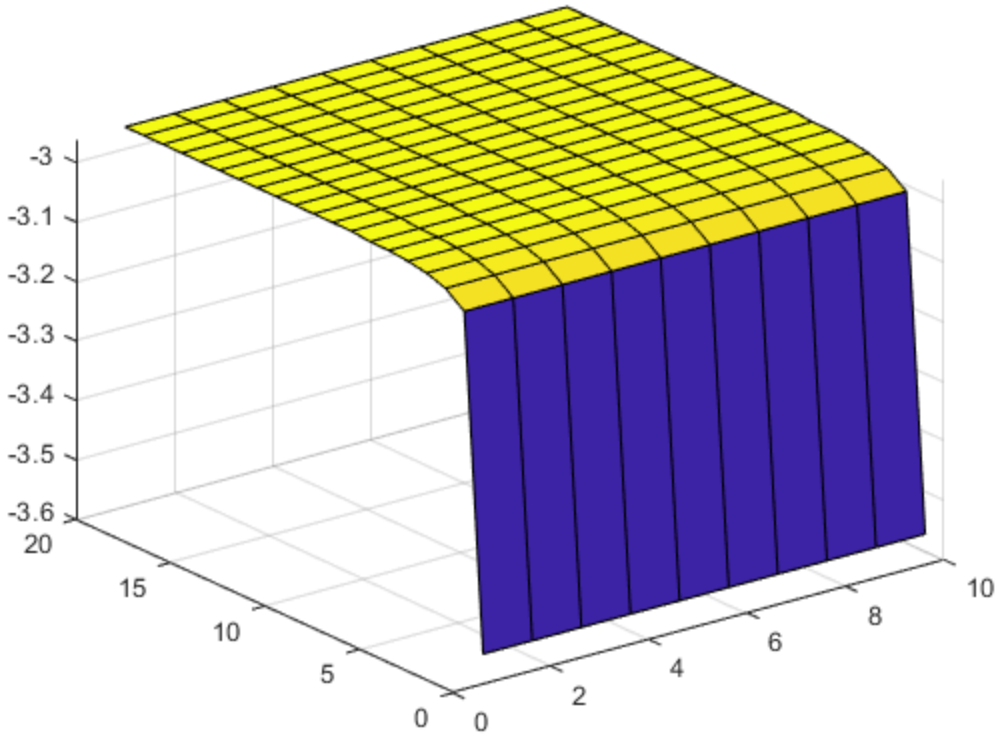
```
Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0948


GeneralEqmConditionsVec =

   1.0e-03 *

    0.5775    0.0217

Current Aggregates:

AggVars =

    1.0002

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0949


GeneralEqmConditionsVec =

   1.0e-03 *

   -0.1754   -0.0887

Current Aggregates:

AggVars =

    1.0005

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8297
    0.0949


GeneralEqmConditionsVec =

   1.0e-03 *

   -0.5141   -0.5469
```

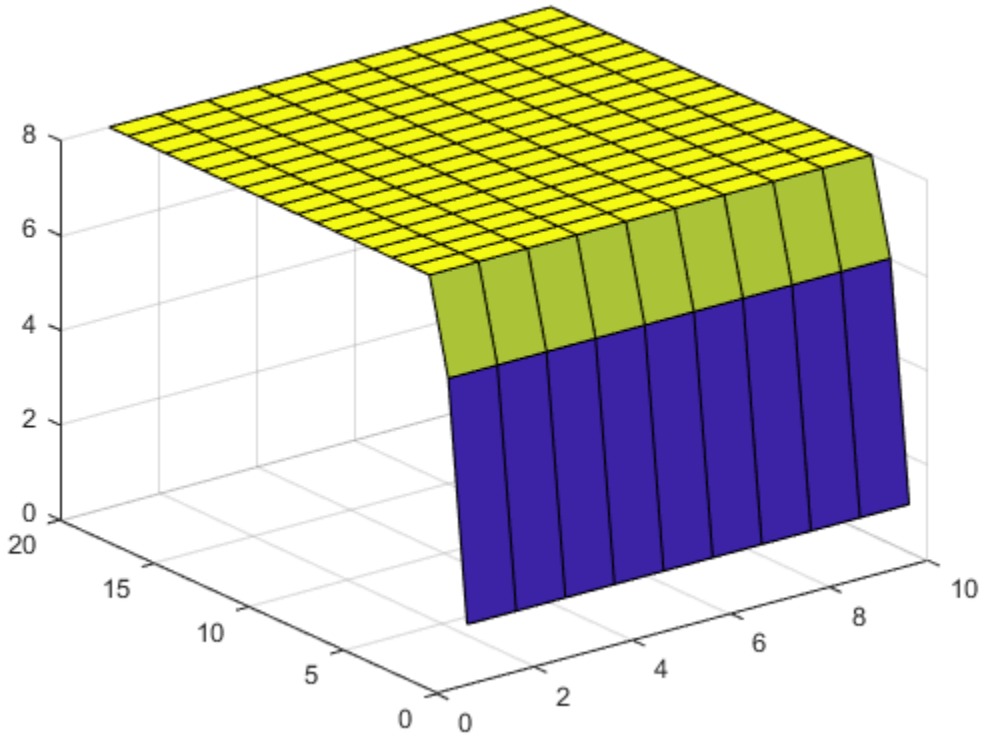
```
Current Aggregates:

AggVars =

    0.9999

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0949


GeneralEqmConditionsVec =

   1.0e-04 *

    0.5513   -0.0378

Current Aggregates:

AggVars =

    1.0000

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0949


GeneralEqmConditionsVec =

   1.0e-03 *

   -0.0265    0.1886

Current Aggregates:

AggVars =

    0.9998

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0949
```

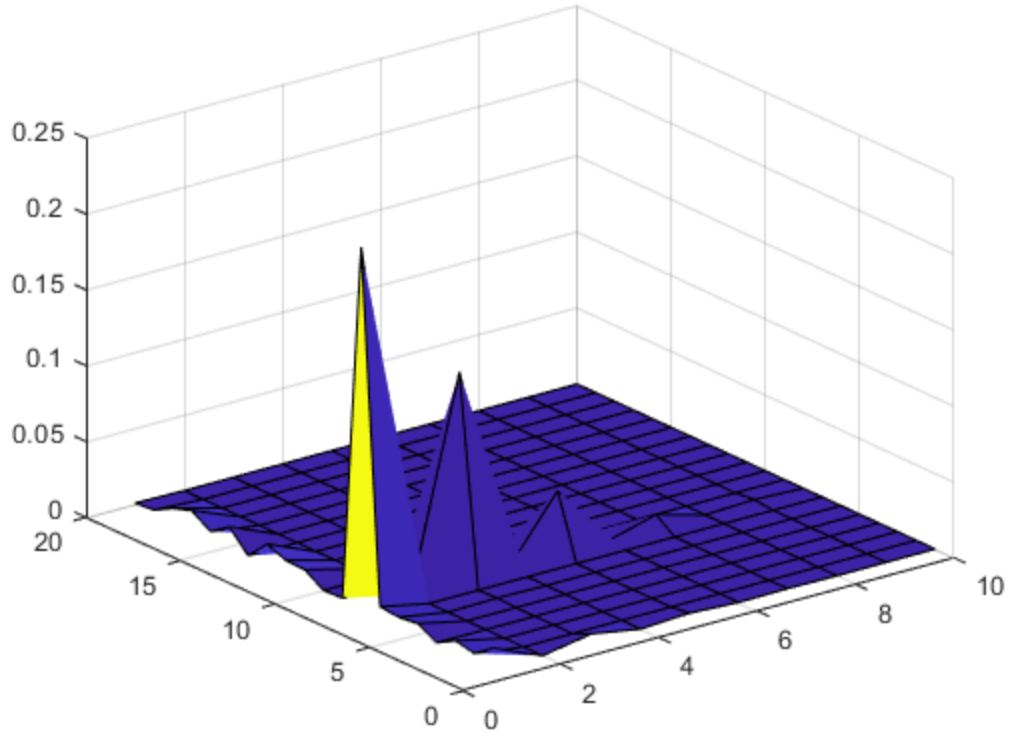
```
GeneralEqmConditionsVec =

   1.0e-03 *

    0.2041    0.2734

Current Aggregates:

AggVars =

    1.0001

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0949


GeneralEqmConditionsVec =

   1.0e-04 *

   -0.8055    0.0186

Current Aggregates:

AggVars =

    1.0000

Current GE prices and GeneralEqmConditionsVec:

p =

    0.8298
    0.0949


GeneralEqmConditionsVec =

   1.0e-03 *

    0.0011   -0.1905

Current Aggregates:

AggVars =

    1.0000

Current GE prices and GeneralEqmConditionsVec:
```

```
p =

    0.8298
    0.0949


GeneralEqmConditionsVec =

   1.0e-04 *

   -0.1960    0.9380

Calculating various equilibrium objects
Distribution statistics of benchmark economy
                                <5      5 to 49     >=50     total
Share of establishments      58.12      26.67      15.21    100.00
Share of output               4.21      28.57      67.22    100.00
Share of labour               4.21      28.57      67.22    100.00
Share of capital              6.72      45.39      47.89    100.00
Share of employment           4.21      28.57      67.22    100.00
The equilibrium output price is p=0.8298
The equilibrium value for the mass of entrants is Ne=0.0949
Average Labor is n=2.1078
Average Capital is k=4.8664
Average Output is y=4.2156
Total Factor Productivity is TFP=1.5560
```




-3
-3.1
-3.2
-3.3
-3.4
-3.5
-3.6
20
15
10
5
0
0
2
4
6
8
10


8
6
4
2
0
20
15
10
5
0
0
2
4
6
8
10



Transition Path

```
else

   fprintf(2,'\nTransition Path\n')



% Distortions

% INITIAL
Params.taurate_initial=0.2; % This is the rate for the tax.
Params.subsidyrate_initial=0.2; % This is the rate for the subsidy.
Params.gcost_initial=0.01;

psi_grid_initial = linspace(-1,1,n_psi)';

% FINAL
Params.taurate_final=0.2; % This is the rate for the tax.
Params.subsidyrate_final=0.2; % This is the rate for the subsidy.
Params.gcost_final = 0.01;

psi_grid_final = linspace(-0.5,1.5,n_psi)';
```

Initial Period

```
%Policy parameters
Params.gcost=Params.gcost_initial;
Params.subsidyrate=Params.subsidyrate_initial;
Params.taurate=Params.taurate_initial;

psi_grid = psi_grid_initial;

% Initial guesses
Params.p=1; % output price
Params.Ne=0.5; % total mass of new entrants

% Parameters and initialization options
Parameters_FDM_Brazil;

% Find equilibrium prices
heteroagentoptions.verbose=1;
n_p=0;
disp('Calculating price vector corresponding to the stationary eqm')
[p_eqm,p_eqm_index,GeneralEqmCondn]=HeteroAgentStationaryEqm_Case1(V0,...
    n_d, n_a, n_z, n_p, pi_z, d_grid, a_grid, z_grid, ReturnFn,...
    FnsToEvaluate, GeneralEqmEqns, Params,
 DiscountFactorParamNames,...
    ReturnFnParamNames, FnsToEvaluateParamNames,
 GeneralEqmEqnParamNames,...
    GEPriceParamNames,heteroagentoptions, simoptions, vfoptions,
 EntryExitParamNames);
Params_initial=Params;


% Value Function, Policy and Firm Distribution in GE

disp('Calculating various equilibrium objects')
Params.p=p_eqm.p;
Params.Ne=p_eqm.Ne;
  [V_initial,Policy_initial]=ValueFnIter_Case1(V0, n_d,n_a,n_z,
[],a_grid,z_grid, pi_z,...
    ReturnFn, Params, DiscountFactorParamNames,
 ReturnFnParamNames,vfoptions);

StationaryDist_initial=StationaryDist_Case1(Policy,n_d,n_a,n_z,pi_z,...
    simoptions, Params, EntryExitParamNames);

Params_initial=Params;

    save ./SavedOutput/TPDynamics_initial.mat...
        Params_initial V_initial Policy_initial StationaryDist_initial
```

Final Period

```
%Policy parameters
```

```
Params.gcost=Params.gcost_final;
Params.subsidyrate=Params.subsidyrate_final;
Params.taurate=Params.taurate_final;

psi_grid = psi_grid_initial;

% Initial guesses
Params.p=1; % output price
Params.Ne=0.5; % total mass of new entrants

% Parameters and initialization options
Parameters_FDM_Brazil;

% Find equilibrium prices
heteroagentoptions.verbose=1;

n_p=0;
disp('Calculating price vector corresponding to the stationary eqm')
[p_eqm,p_eqm_index,GeneralEqmCondn]=HeteroAgentStationaryEqm_Case1(V0,...
    n_d, n_a, n_z, n_p, pi_z, d_grid, a_grid, z_grid, ReturnFn,...
    FnsToEvaluate, GeneralEqmEqns, Params,
 DiscountFactorParamNames,...
    ReturnFnParamNames, FnsToEvaluateParamNames,
 GeneralEqmEqnParamNames,...
    GEPriceParamNames,heteroagentoptions, simoptions, vfoptions,
 EntryExitParamNames);


% Value Function, Policy and Firm Distribution in GE

disp('Calculating various equilibrium objects')
Params.p=p_eqm.p;
Params.Ne=p_eqm.Ne;
    [V_final,Policy_final]=ValueFnIter_Case1(V0, n_d,n_a,n_z,
[],a_grid,z_grid, pi_z,...
    ReturnFn, Params, DiscountFactorParamNames,
 ReturnFnParamNames,vfoptions);

StationaryDist_final=StationaryDist_Case1(Policy,n_d,n_a,n_z,pi_z,...
    simoptions, Params, EntryExitParamNames);

Params_final=Params;
save ./SavedOutput/HopenhaynRogerson1993_final.mat Params_final...
    V_final Policy_final StationaryDist_final
```

General Equilibrium Transition Path

```
T=50 % number of time periods to transtion path

Params=Params_initial;


transpathoptions.parallel=1;
```

```
transpath_shootingalgo=0;
vfoptions.endogenousexit=0;
transpathoptions.agentexit=0;
transpathoptions.agententry=1;

ParamPath=Params.taurate_final*ones(T,1);
ParamPathNames={'gcost'};

% We need to give an initial guess for the price path on interest
 rates
PricePath0_p=[linspace(Params_initial.p, Params_final.p, floor(T/2))';
 Params_final.p*ones(T-floor(T/2),1)]; % PricePath0 is matrix of size
 T-by-'number of prices'
PricePath0_Ne=[linspace(Params_initial.Ne, Params_final.Ne,
 floor(T/2))'; Params_final.Ne*ones(T-floor(T/2),1)]; % PricePath0 is
 matrix of size T-by-'number of prices'
PricePath0=[PricePath0_p, PricePath0_Ne]; % PricePath0 is matrix of
 size T-by-'number of prices'
PricePathNames={'p','Ne'};

% Rewrite the General Eqm conditions as rules for updating the price
transpathoptions.specialgeneqmcondn={0,'entry'};

 % Alternative attempt, based on minimizing weighted sum of squares.
    transpathoptions.GEnewprice=2;
    transpathoptions.weightsforpath=ones(T,2); % Same size as
 PricePath

GeneralEqmEqnParamNames(1).Names={};
GeneralEqmEqn_GoodsMarket = @(AggVars,GEprices) 1-AggVars;

GeneralEqmEqnParamNames(2).Names={'beta','ce'};
GeneralEqmEqn_Entry = @(EValueFn,GEprices,beta,ce) beta*EValueFn-ce;

GeneralEqmEqns={GeneralEqmEqn_GoodsMarket,GeneralEqmEqn_Entry};

transpathoptions.weightscheme=1
transpathoptions.verbose=1


[PricePath]=TransitionPath_Case1(PricePath0, PricePathNames,
 ParamPath,....
    ParamPathNames, T, V_final, StationaryDist_initial, n_d, n_a, n_z,
 pi_z,...
    d_grid,a_grid,z_grid, ReturnFn, FnsToEvaluate, GeneralEqmEqns,
 Params,...
    DiscountFactorParamNames, ReturnFnParamNames,
 FnsToEvaluateParamNames,...
    GeneralEqmEqnParamNames,transpathoptions, vfoptions, simoptions,
 EntryExitParamNames);

end
```

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