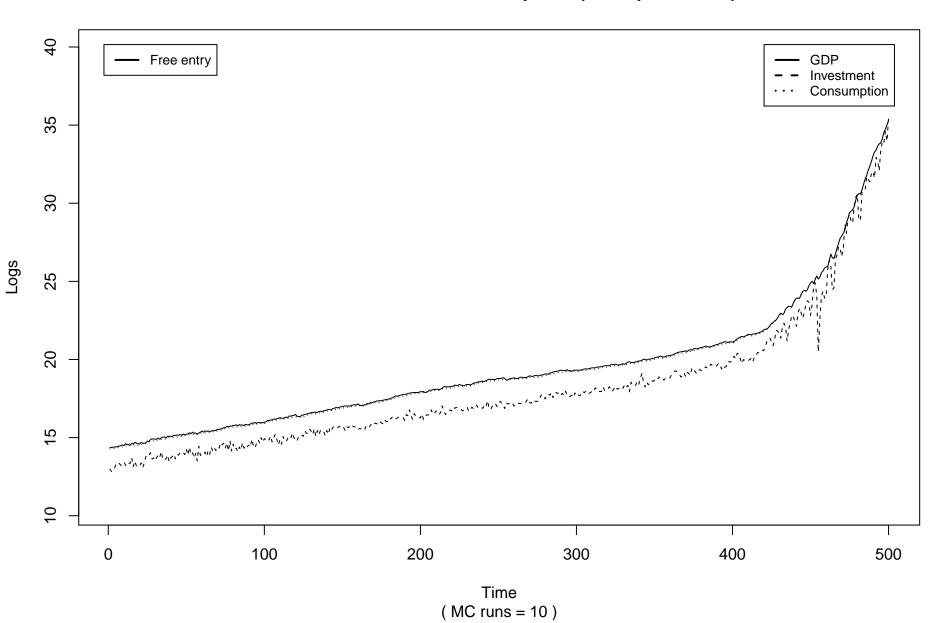
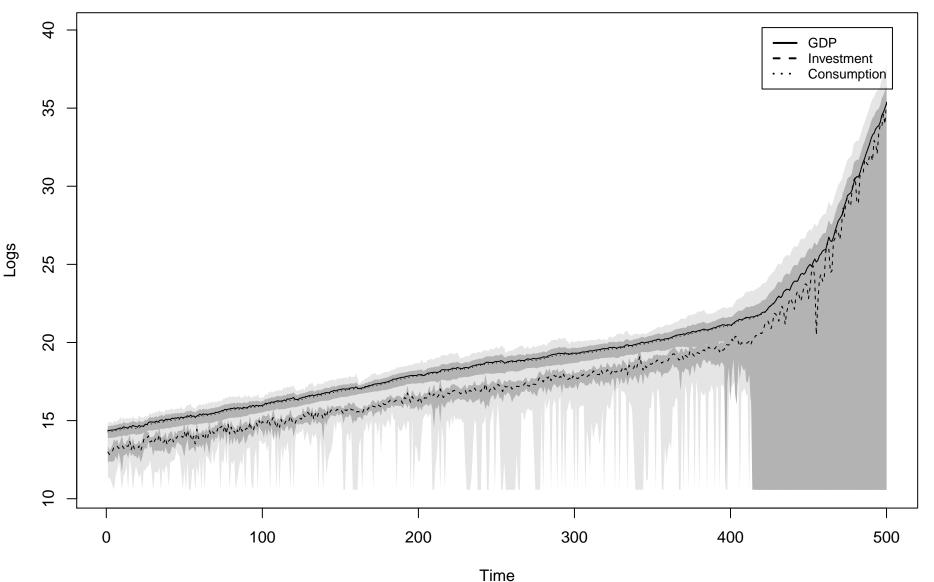
### GDP, investment and consumption (all experiments)

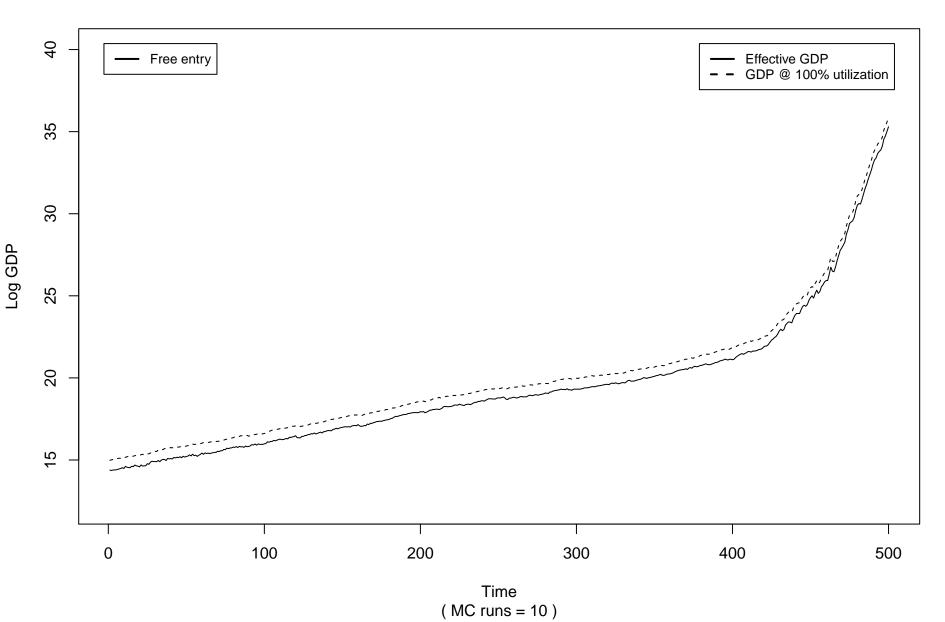


### **GDP**, investment and consumption ( Free entry )

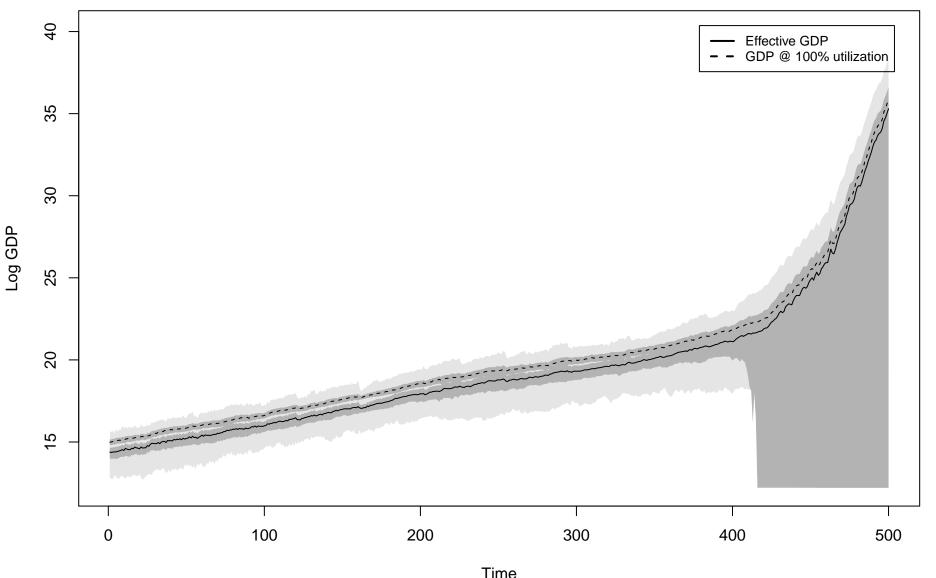


( 95% confidence band in gray, min/max values in light gray / MC runs = 10 )

# GDP (all experiments)

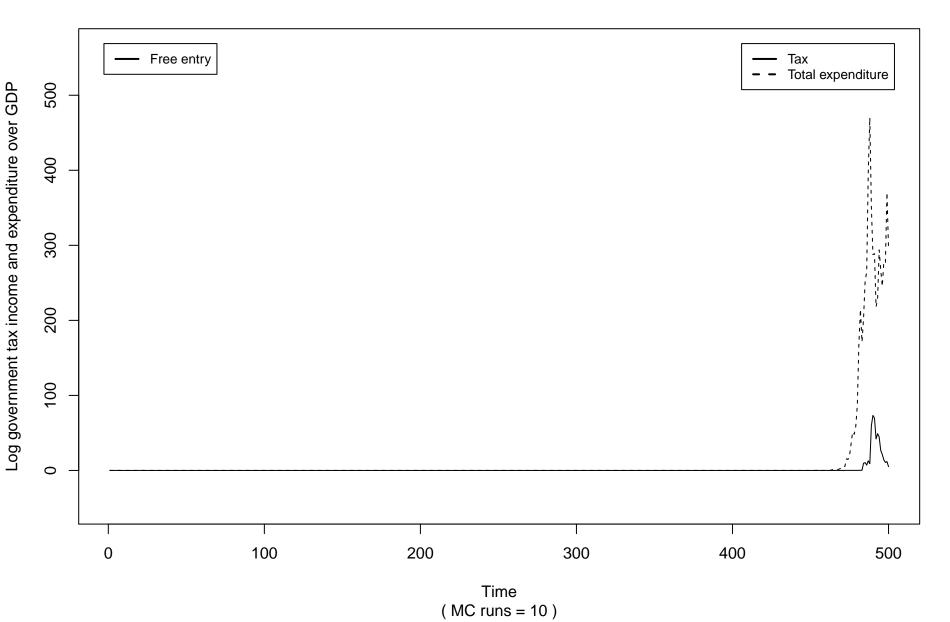


# **GDP (Free entry)**

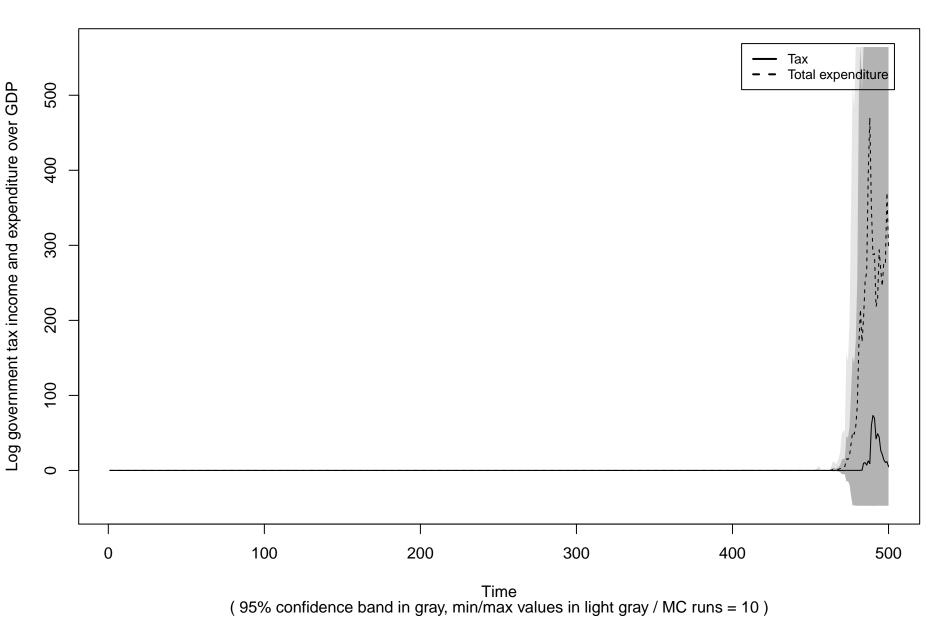


Time ( 95% confidence band in gray, min/max values in light gray / MC runs = 10 )

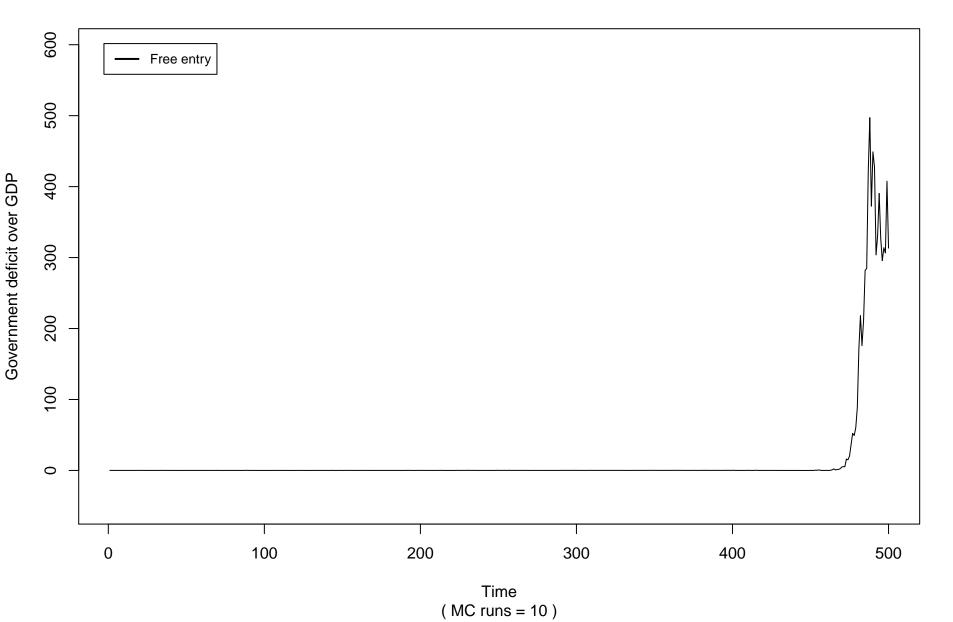
### Government income and expenditure on GDP (all experiments)



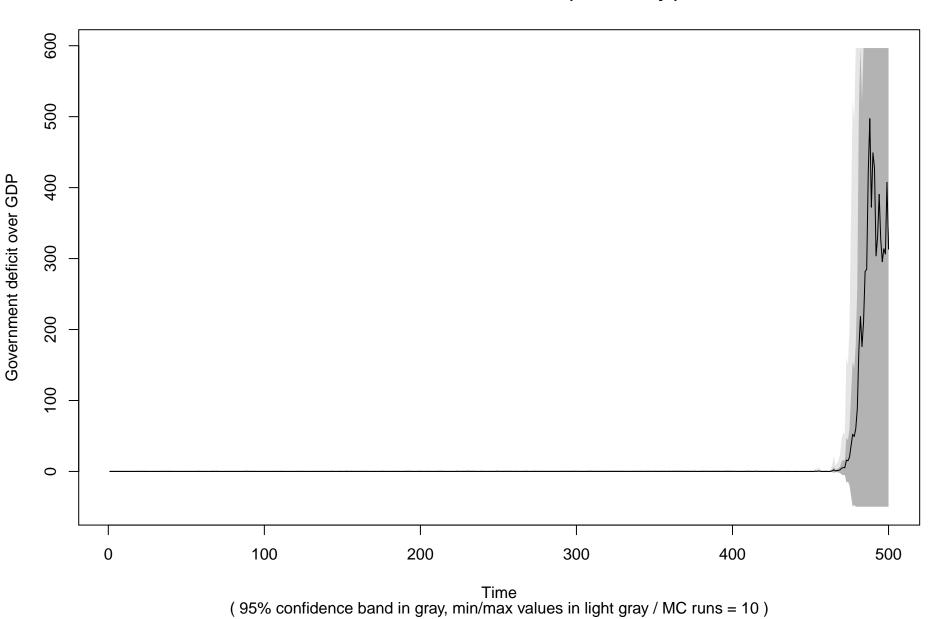
#### Government income and expenditure on GDP (Free entry)



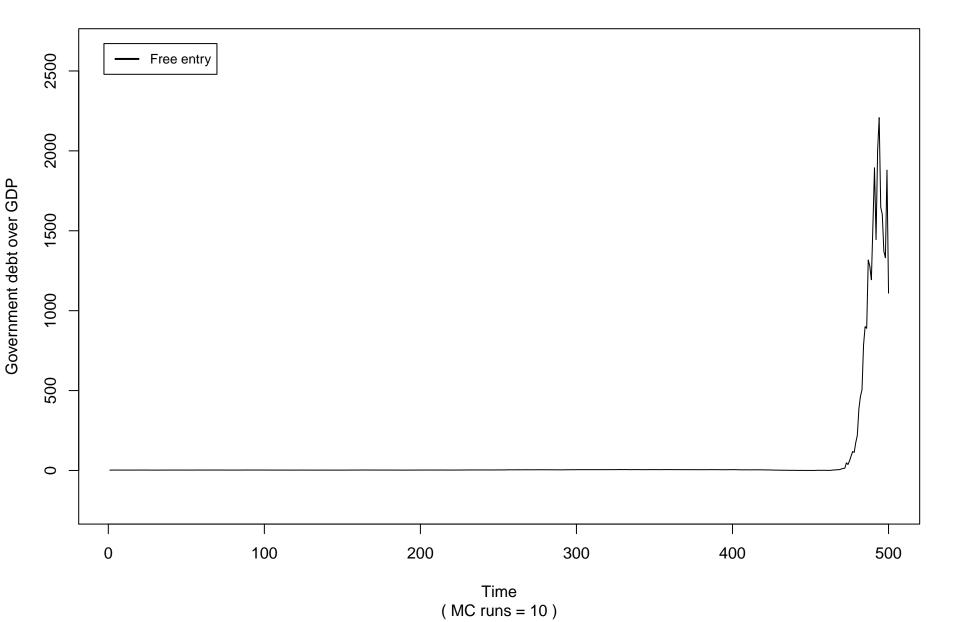
# Government deficit on GDP (all experiments)



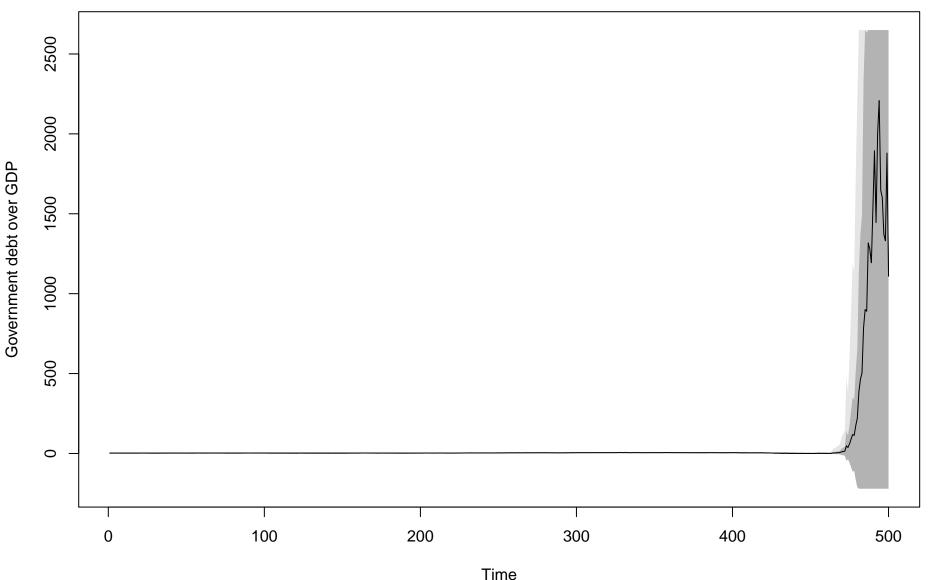
# Government deficit on GDP (Free entry)



# Government debt on GDP (all experiments)

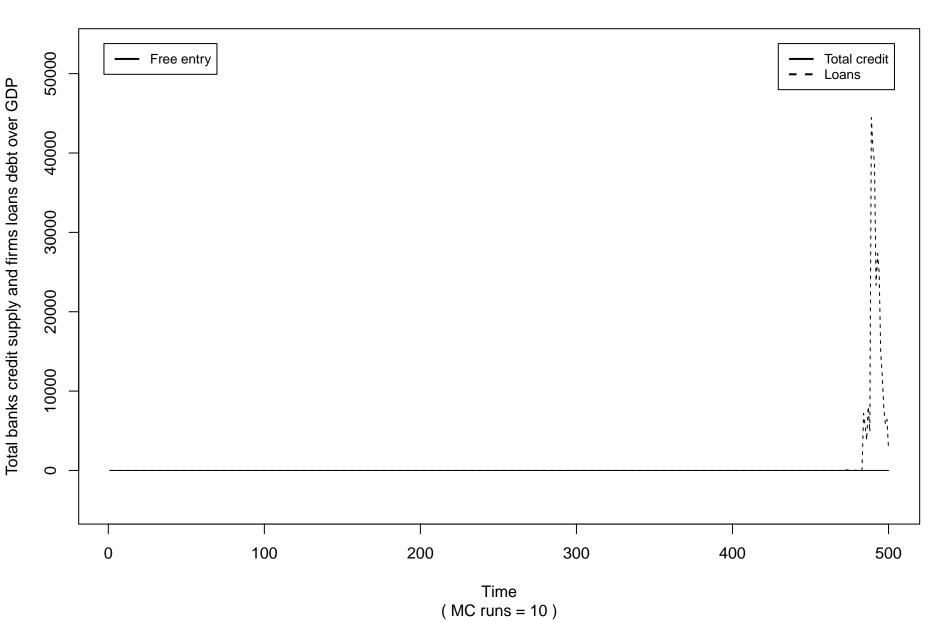


# Government debt on GDP (Free entry)

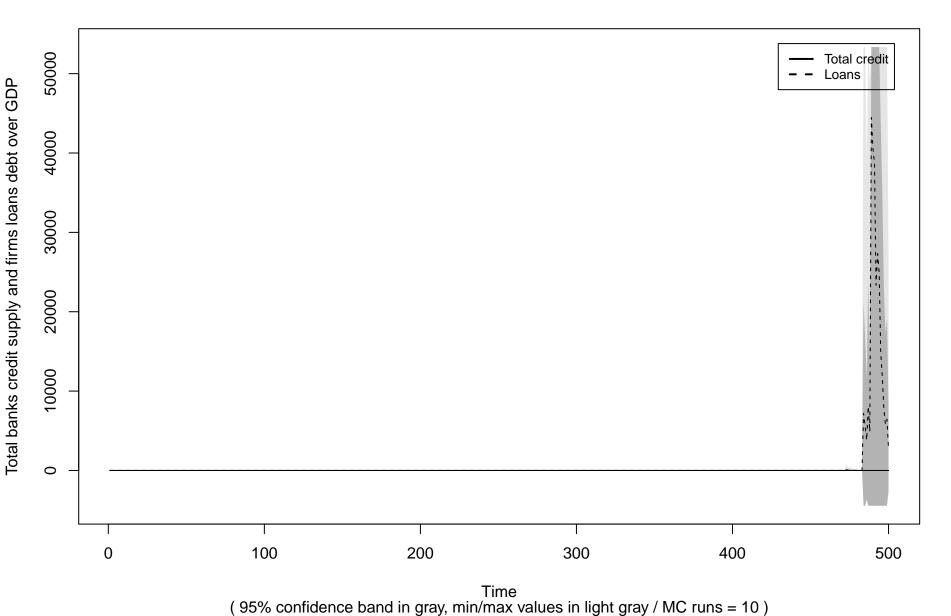


Time ( 95% confidence band in gray, min/max values in light gray / MC runs = 10 )

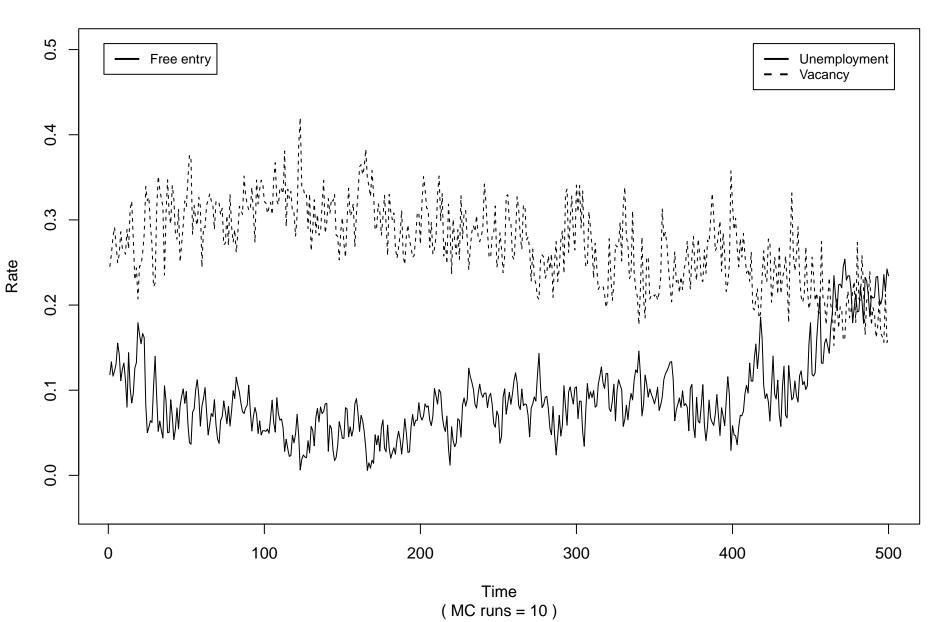
### Total credit supply and loans on GDP (all experiments)



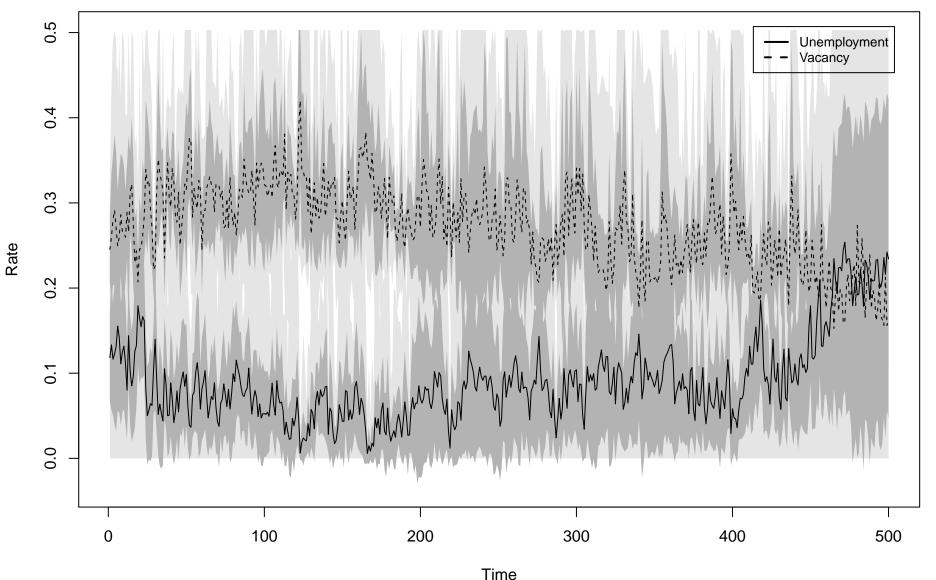
#### Total credit supply and loans on GDP (Free entry)



# Unemployment and vacancy rates (all experiments)

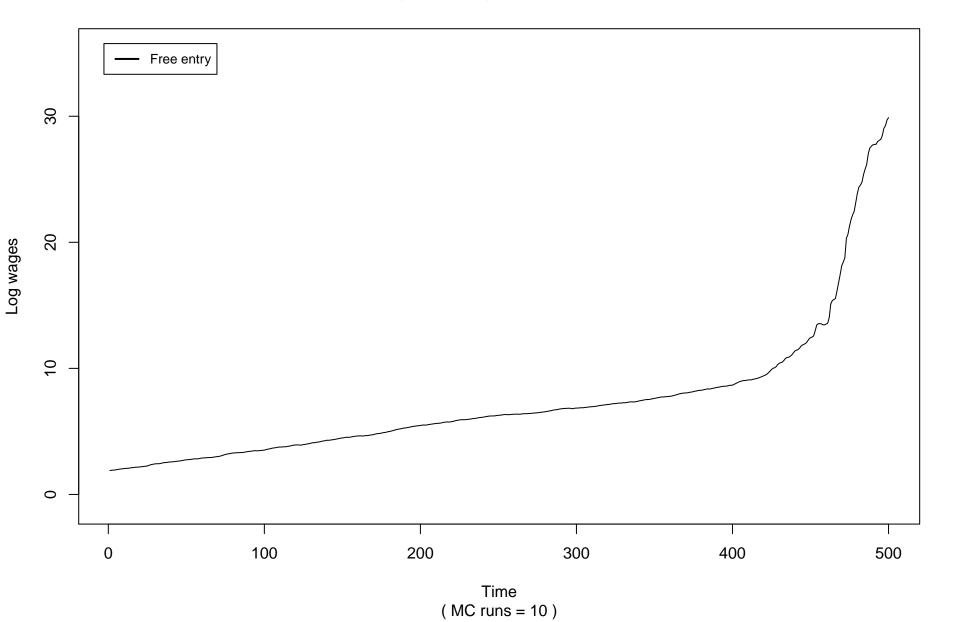


### Unemployment and vacancy rates (Free entry)

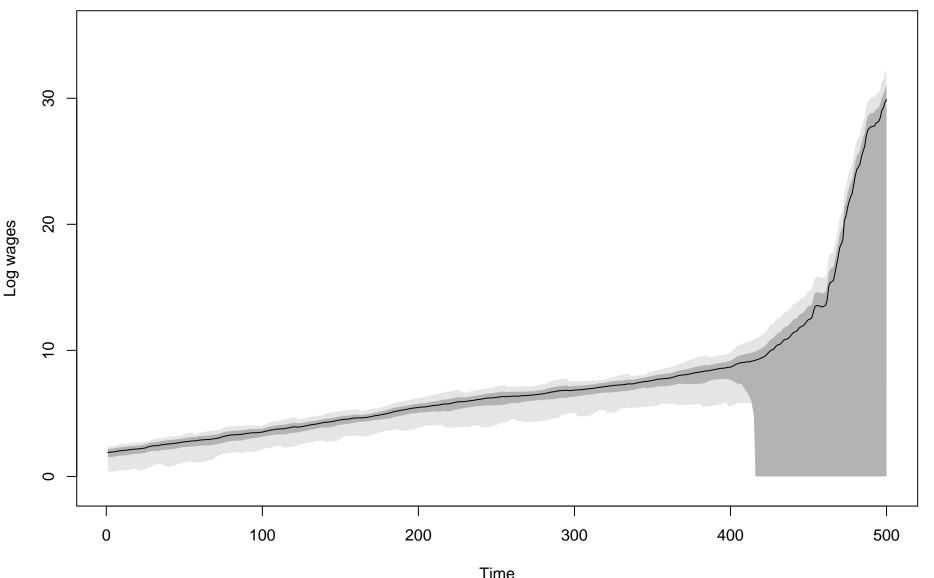


Time ( 95% confidence band in gray, min/max values in light gray / MC runs = 10 )

# Real wages average (all experiments)

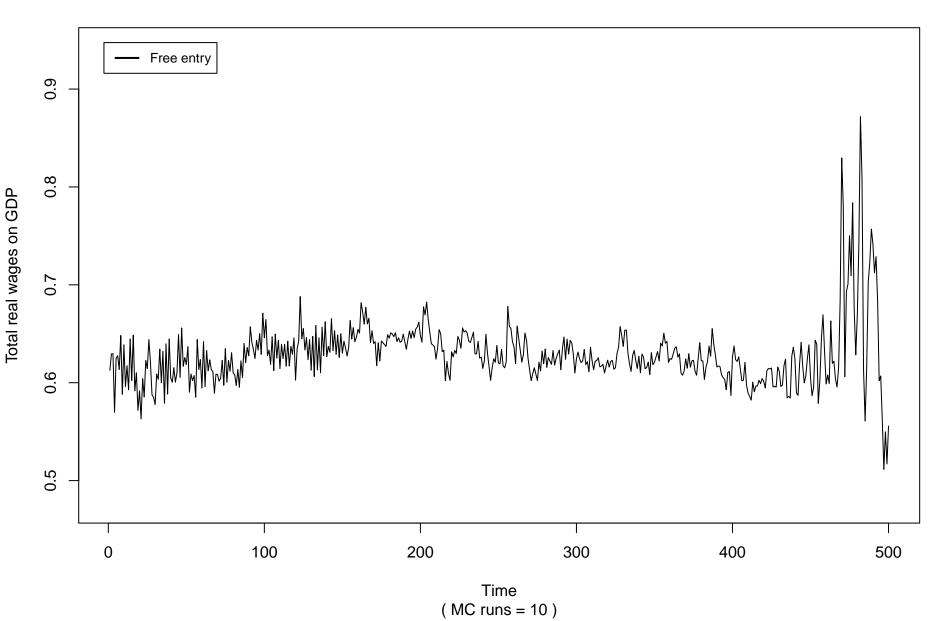


# Real wages average (Free entry)

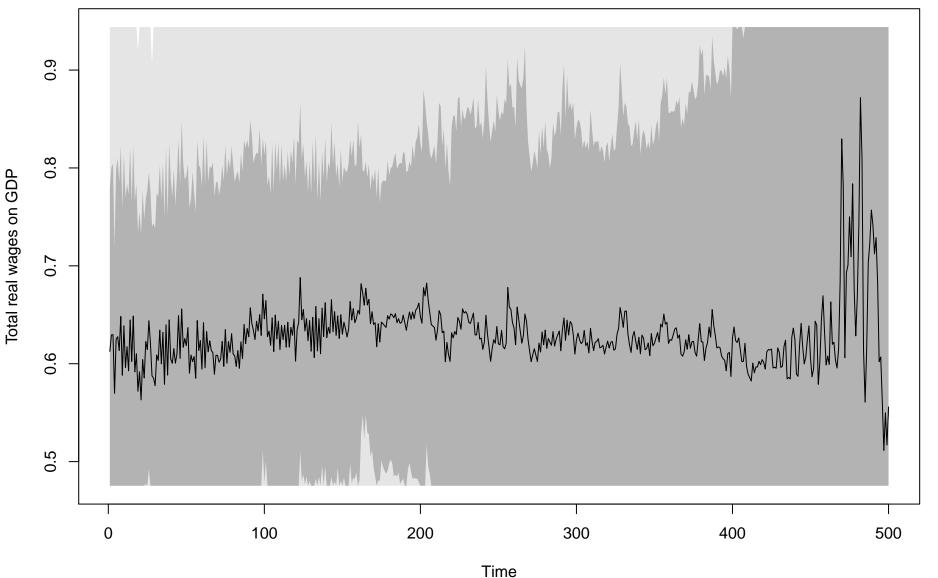


Time ( 95% confidence band in gray, min/max values in light gray / MC runs = 10 )

### Wage share (all experiments)

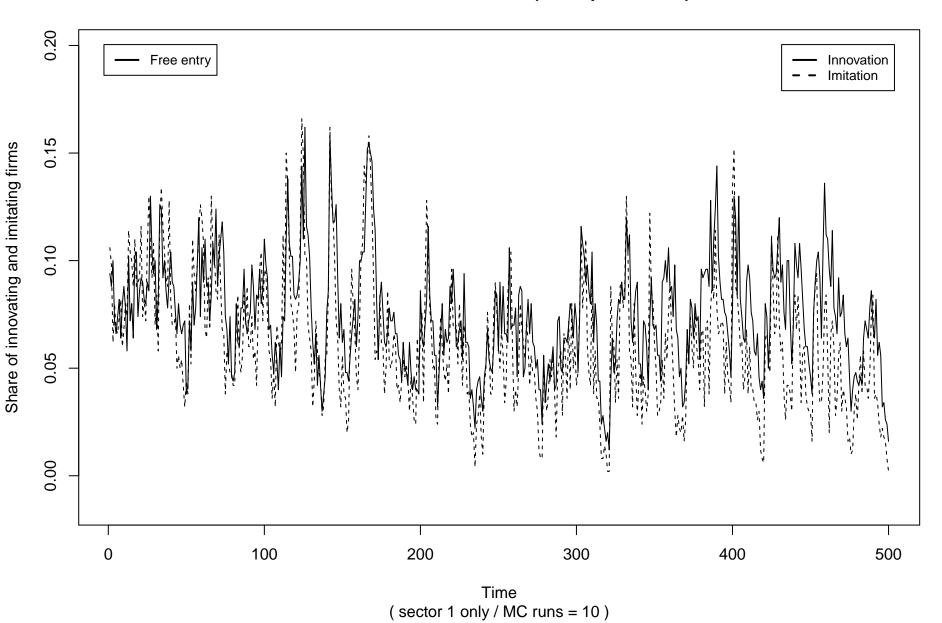


### Wage share (Free entry)

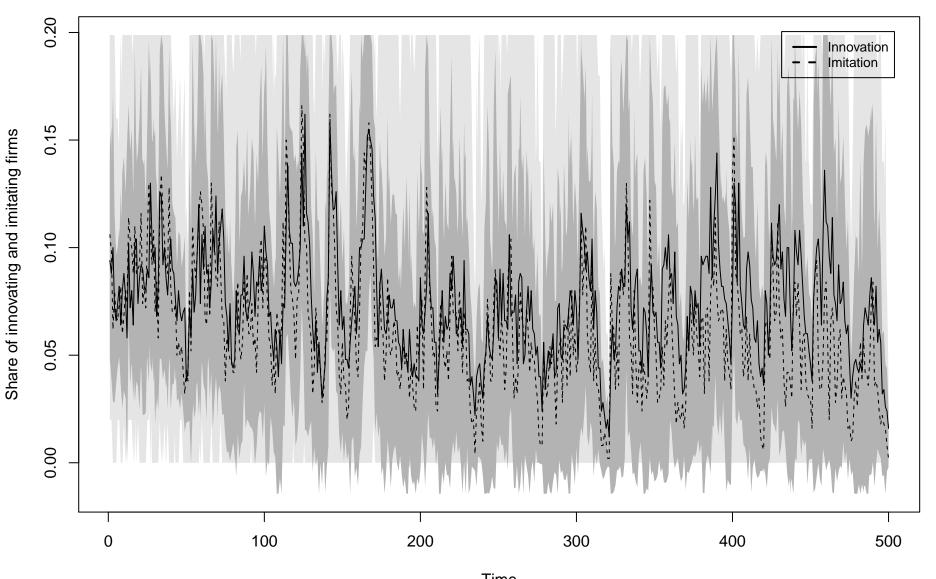


( 95% confidence band in gray, min/max values in light gray / MC runs = 10 )

### Innovation and imitation (all experiments)

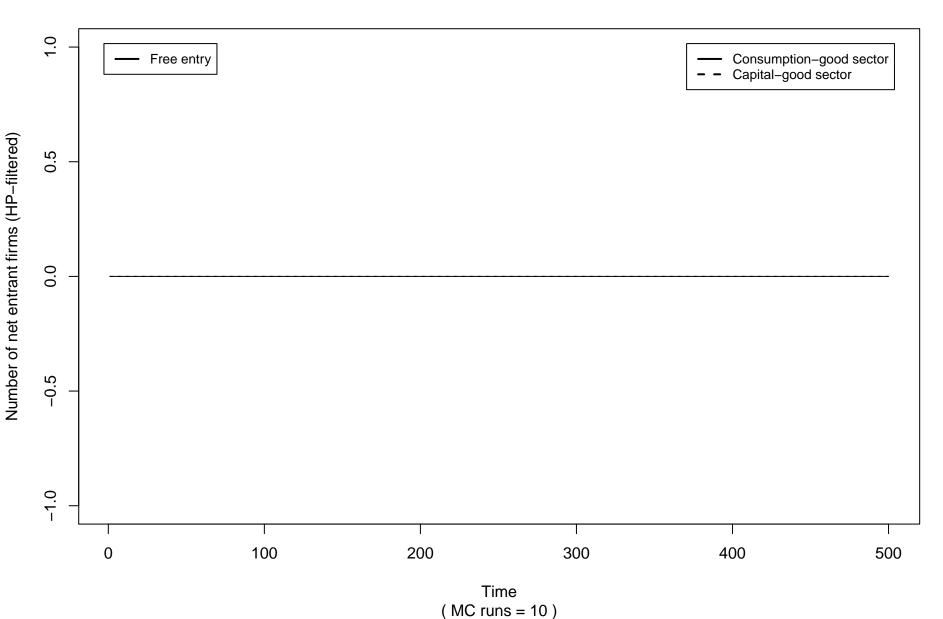


### Innovation and imitation (Free entry)

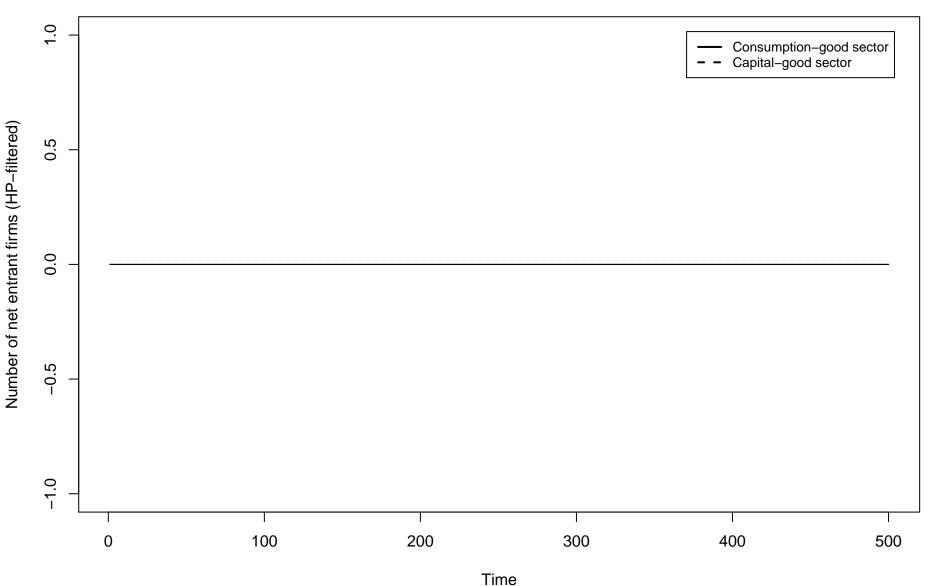


Time ( 95% confidence band in gray, min/max values in light gray / sector 1 only / MC runs = 10 )

# Net entry of firms trend (all experiments)

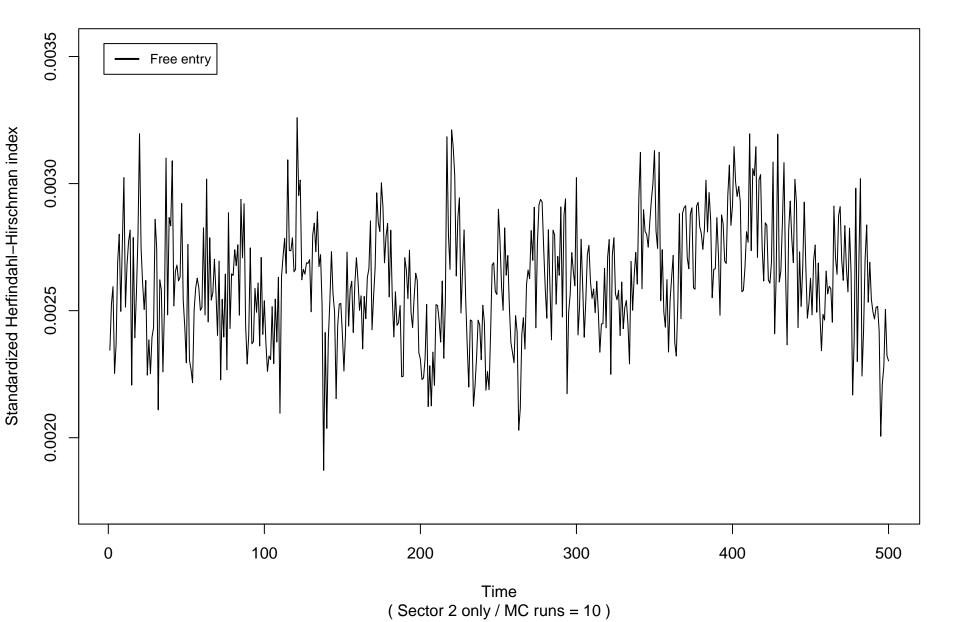


#### Net entry of firms trend (Free entry)

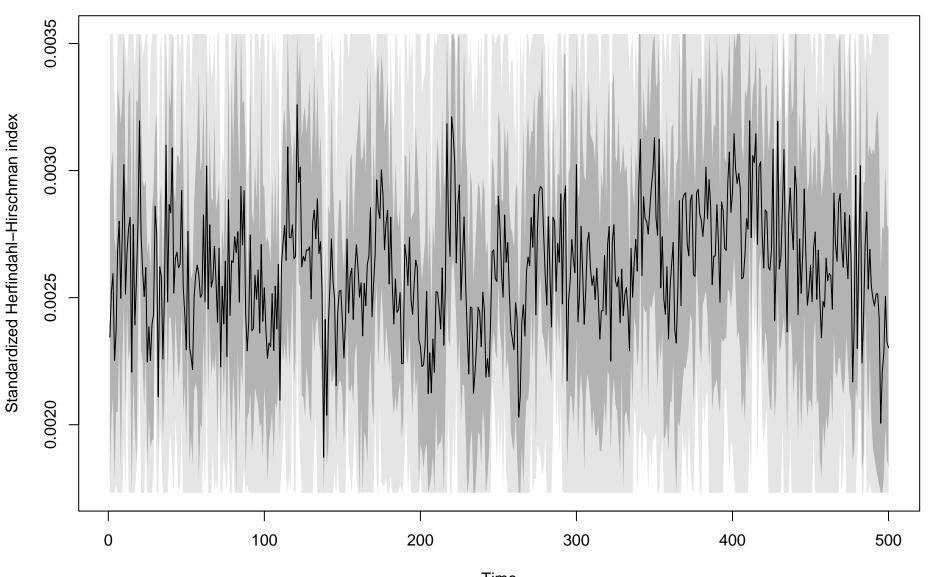


( 95% confidence band in gray, min/max values in light gray / MC runs = 10 )

### Market concentration (all experiments)

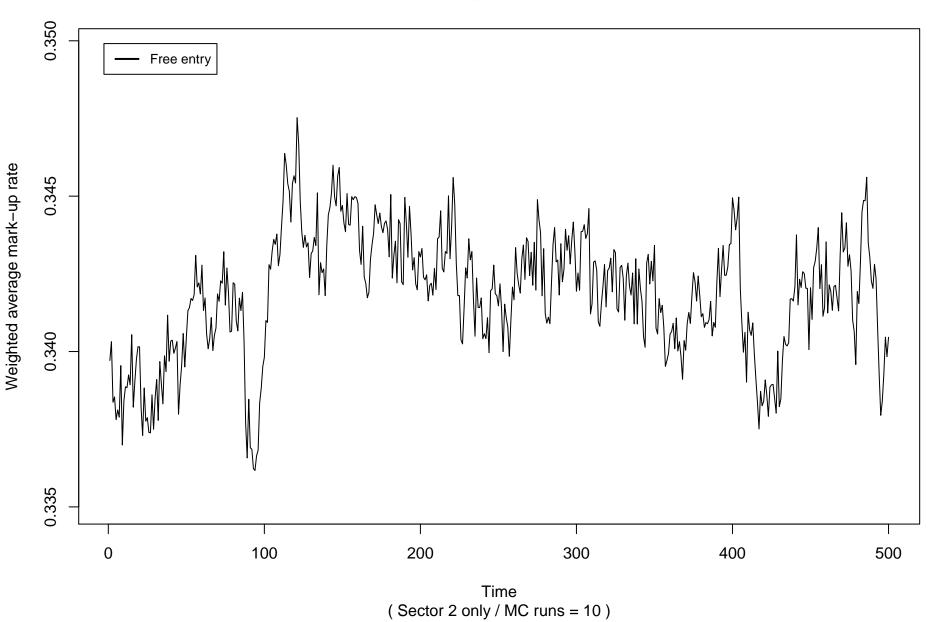


### Market concentration (Free entry)

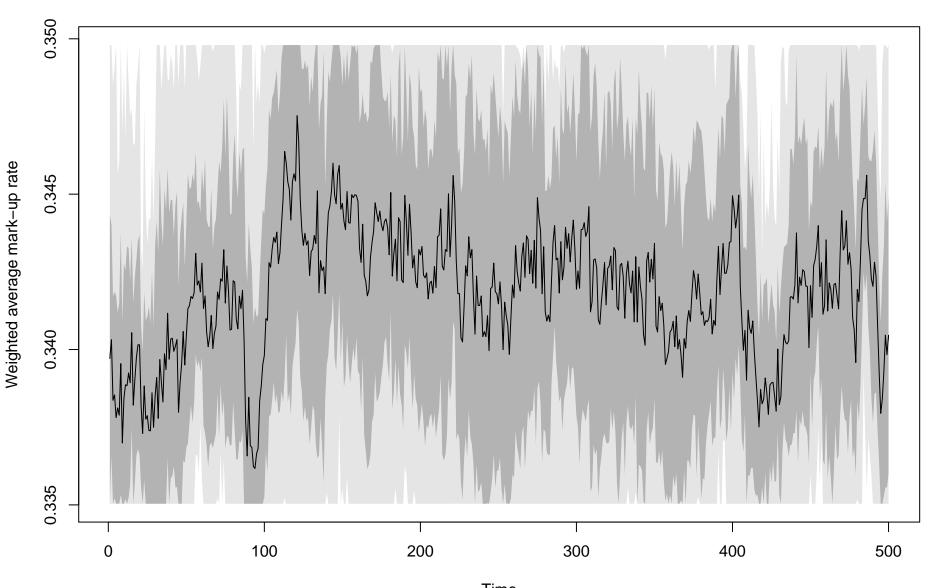


Time ( 95% confidence band in gray, min/max values in light gray / Sector 2 only / MC runs = 10 )

### Mark-up average (all experiments)

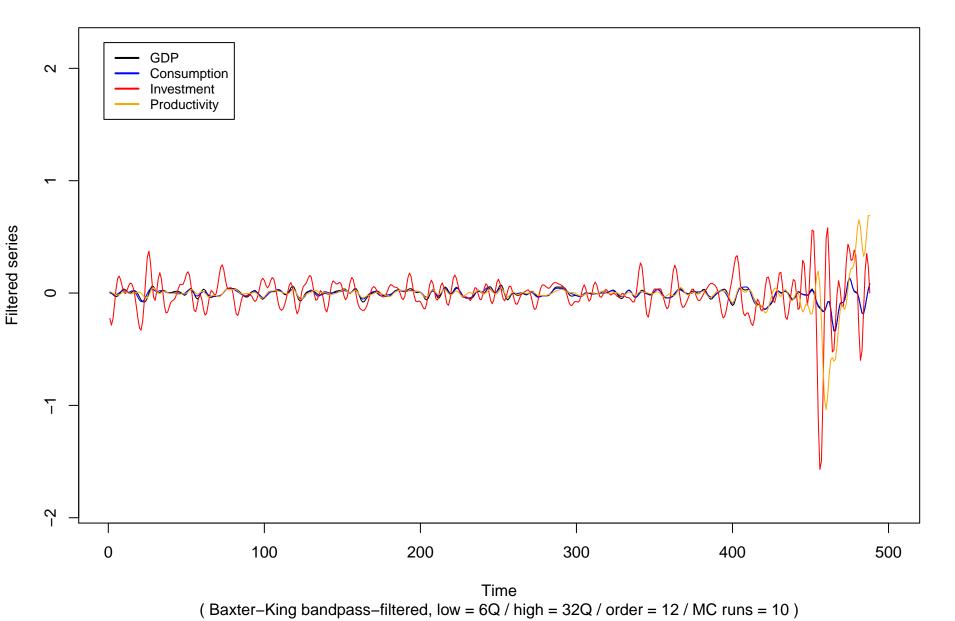


### Mark-up average (Free entry)

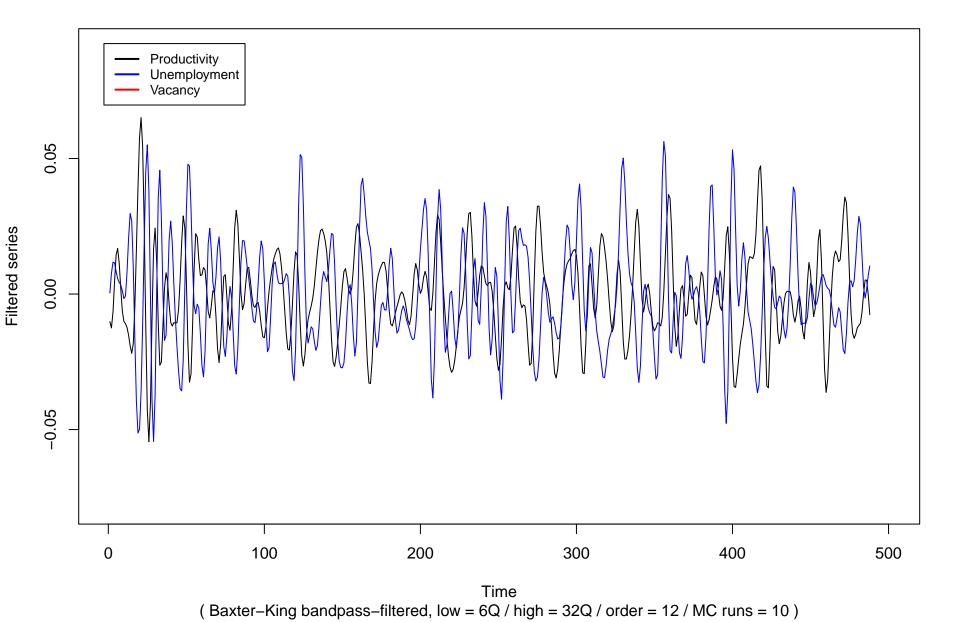


Time ( 95% confidence band in gray, min/max values in light gray / Sector 2 only / MC runs = 10 )

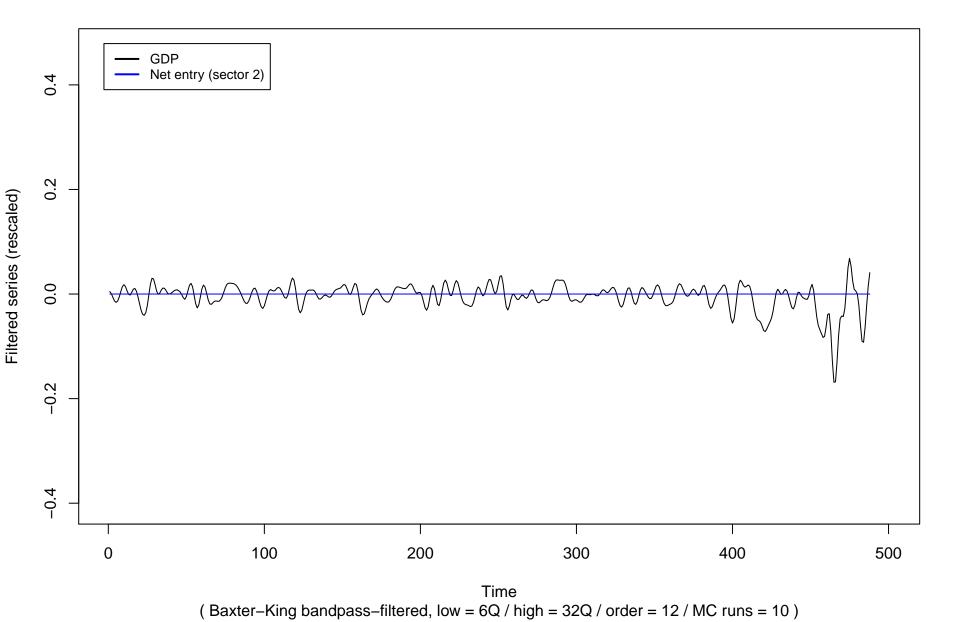
### **GDP cycles (Free entry)**



# Shimer puzzle (Free entry)



### Net entry dynamics and business cycle ( Free entry )



#### Key statistics and unit roots tests for cycles (Free entry)

	GDP (output)	Consumption	Investment	Product.	Real wage
avg. growth rate	0.0199	0.01984	0.02105	0.02256	0.02225
(s.e.)	0.005395	0.005424	0.005787	0.007685	0.007669
ADF test (logs)	-1.496	-1.176	-5.973	-1.576	-1.746
(s.e.)	0.8124	0.8404	0.5589	0.6944	0.7104
(p-val.)	0.4741	0.5403	0.09293	0.5044	0.4592
(s.e.)	0.1321	0.1292	0.08293	0.1358	0.1346
ADF test (bpf)	-6.026	-5.834	-6.618	-6.311	-6.099
(s.e.)	0.1506	0.1347	0.11	0.3378	0.3491
(p-val.)	0.01	0.01	0.01	0.01031	0.01026
(s.e.)	0	0	0	0.0003069	0.0002629
s.d. (bpf)	0.09117	0.07282	1.714	0.07333	0.07788
(s.e.)	0.003488	0.003511	0.199	0.01359	0.0139
relative s.d. (GDP)	1	0.7987	18.8	0.8044	0.8542

#### **Correlation structure for GDP (Free entry)**

	-4	-3	-2	-1	0	1	2	3	4
GDP (output)	0.01675	0.2888	0.6159	0.8896	1	0.8896	0.6159	0.2888	0.01675
(s.e.)	0.03876	0.02993	0.01685	0.004889	2.617e-17	0.004889	0.01685	0.02993	0.03876
(p-val.)	0.1516	3.247e-05	7.393e-11	2.719e-17	NA	2.719e-17	7.393e-11	3.247e-05	0.1516
Consumption	0.08487	0.325	0.6036	0.8383	0.9422	0.8622	0.6365	0.3466	0.08136
(s.e.)	0.04937	0.04033	0.02565	0.01153	0.006553	0.009902	0.01816	0.02942	0.0386
(p-val.)	0.009126	9.261e-05	3.794e-09	1.094e-13	2.15e-16	2.114e-14	1.03e-10	4.041e-06	0.04047
Investment	-0.2645	-0.3347	-0.3325	-0.2101	0.01936	0.2764	0.4553	0.4915	0.3948
(s.e.)	0.02914	0.05568	0.07953	0.0848	0.06789	0.03783	0.02173	0.03482	0.04352
(p-val.)	6.808e-05	2.353e-05	3.344e-06	0.0001477	0.173	0.0002846	1.648e-08	4.385e-07	2.453e-05
Net investment	-0.2098	-0.2764	-0.2792	-0.1712	0.03724	0.2721	0.4333	0.4595	0.3601
(s.e.)	0.03311	0.06285	0.08837	0.09411	0.07542	0.04162	0.02335	0.0401	0.05079
(p–val.)	0.0003887	3.625e-06	1.461e-05	0.001566	0.1403	0.0006322	5.226e-08	2.823e-06	0.0001865
Change in inventories	-0.2684	-0.1901	0.003051	0.2282	0.372	0.3637	0.2286	0.05723	-0.05836
(s.e.)	0.03585	0.03548	0.03706	0.04245	0.04805	0.04502	0.03147	0.01867	0.01879
(p–val.)	0.0002622	0.006339	0.2733	0.003417	9.222e-05	7.041e-05	0.0005429	0.849	0.7897
Unemployment rate	0.2474	0.267	0.2039	0.05573	-0.1308	-0.2792	-0.3285	-0.2695	-0.1452
(s.e.)	0.03673	0.0594	0.08905	0.1043	0.09819	0.07743	0.06102	0.05806	0.05692
(p-val.)	0.000686	0.0004821	0.001552	0.01459	0.09533	0.01504	0.001394	0.001077	0.01233
Productivity	0.1657	0.3577	0.5713	0.7356	0.7819	0.6758	0.4638	0.2225	0.02314
(s.e.)	0.05384	0.04706	0.03812	0.04354	0.05292	0.05046	0.03961	0.03571	0.04245
(p–val.)	4.546e-05	0.0001145	2.09e-07	5.455e-08	1.634e-07	4.419e-07	2.328e-06	0.001577	0.1237
Mark-up (sector 2)	0.1711	0.1549	0.09711	0.01505	-0.06175	-0.1084	-0.1158	-0.09699	-0.07471
(s.e.)	0.05528	0.04986	0.04924	0.0478	0.04266	0.03835	0.03948	0.0433	0.04553
(p–val.)	0.03404	0.05425	0.06048	0.122	0.2721	0.1127	0.04117	0.07631	0.1241
Total firm debt	0.2324	0.1544	0.06492	-0.01869	-0.08472	-0.1316	-0.1671	-0.1977	-0.2225
(s.e.)	0.07183	0.07788	0.07785	0.07152	0.06455	0.06443	0.07124	0.07547	0.0722
(p-val.)	0.002427	0.004872	0.02213	0.0399	0.02441	0.000483	0.003451	0.01072	0.008219
Liquidity-to-sales ratio	0.1282	-0.07183	-0.2923	-0.4791	-0.582	-0.575	-0.4765	-0.331	-0.185
(s.e.)	0.0488	0.04832	0.06479	0.08133	0.08608	0.07645	0.06618	0.06213	0.06517
(p-val.)	0.02396	0.1301	0.00181	7.834e-05	1.944e-05	1.427e-05	2.198e-05	0.00032	0.0255
Bankruptcy rate	0.3323	0.386	0.3414	0.2098	0.04789	-0.07712	-0.1266	-0.1172	-0.09353
(s.e.)	0.04901	0.06147	0.07271	0.07748	0.0802	0.08625	0.08738	0.07386	0.05193
(p-val.)	0.0003024	0.0003806	0.002831	0.006162	0.09306	0.01712	0.0003422	0.0006017	0.04298

( non-rate/ratio series are Baxter-King bandpass-filtered, low = 6Q / high = 32Q / order = 12 / MC runs = 10 / period = 301 - 600 ) ( test H0: lag coefficient is not significant at 5% level )

#### **Correlation structure for GDP (Free entry)**

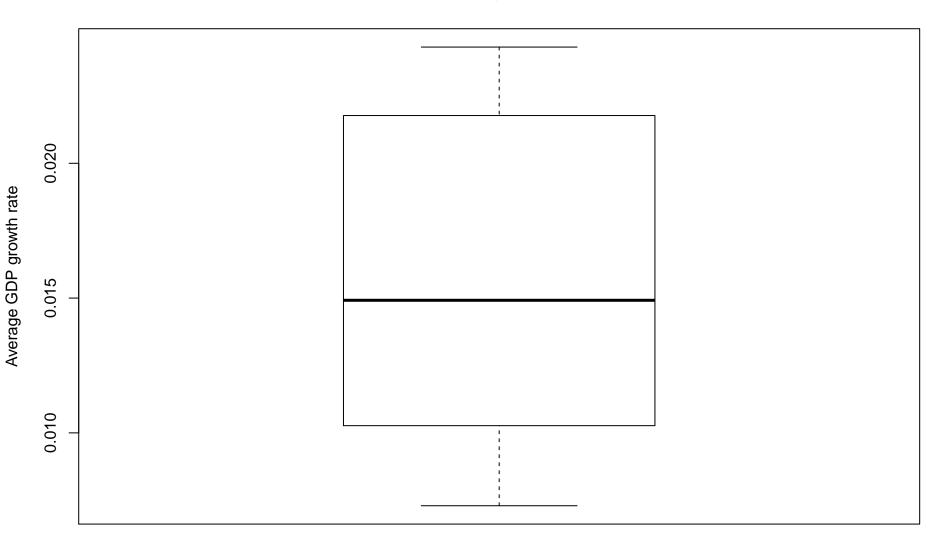
	-4	-3	-2	-1	0	1	2	3	4
GDP (output)	0.01675	0.2888	0.6159	0.8896	1	0.8896	0.6159	0.2888	0.01675
(s.e.)	0.03876	0.02993	0.01685	0.004889	2.617e-17	0.004889	0.01685	0.02993	0.03876
(p-val.)	0.1516	3.247e-05	7.393e-11	2.719e-17	NA	2.719e-17	7.393e-11	3.247e-05	0.1516
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(s.e.)	0.04937	0.04033	0.02565	0.01153	0.006553	0.009902	0.01816	0.02942	0.0386
(p–val.)	0.009126	9.261e-05	3.794e-09	1.094e-13	2.15e-16	2.114e-14	1.03e-10	4.041e-06	0.04047
Investment	-0.2645	-0.3347	-0.3325	-0.2101	0.01936	0.2764	0.4553	0.4915	0.3948
(s.e.)	0.02914	0.05568	0.07953	0.0848	0.06789	0.03783	0.02173	0.03482	0.04352
(p–val.)	6.808e-05	2.353e-05	3.344e-06	0.0001477	0.173	0.0002846	1.648e-08	4.385e-07	2.453e-05
Productivity	0.1657	0.3577	0.5713	0.7356	0.7819	0.6758	0.4638	0.2225	0.02314
(s.e.)	0.05384	0.04706	0.03812	0.04354	0.05292	0.05046	0.03961	0.03571	0.04245
(p-val.)	4.546e-05	0.0001145	2.09e-07	5.455e-08	1.634e-07	4.419e-07	2.328e-06	0.001577	0.1237
Net entry	NaN								
(s.e.)	NA								
(p–val.)	1	1	1	1	1	1	1	1	1
Entry	-0.07136	0.1063	0.3122	0.4895	0.5793	0.5462	0.4173	0.2467	0.09271
(s.e.)	0.02633	0.02788	0.03247	0.03937	0.04244	0.03907	0.03244	0.02965	0.03339
(p–val.)	0.4162	0.03795	2.683e-05	1.291e-06	4.559e-07	4.041e-07	1.293e-06	0.0001627	0.05399
Wage	0.3341	0.5131	0.6598	0.7255	0.6836	0.5396	0.3464	0.1582	0.01192
(s.e.)	0.03627	0.03641	0.03971	0.04209	0.04345	0.04672	0.05056	0.05287	0.0528
(p-val.)	3.142e-05	4.151e-07	7.126e-08	4.66e-08	1.098e-07	2.054e-06	0.0002013	0.00166	0.136
Unemployment rate	0.2474	0.267	0.2039	0.05573	-0.1308	-0.2792	-0.3285	-0.2695	-0.1452
(s.e.)	0.03673	0.0594	0.08905	0.1043	0.09819	0.07743	0.06102	0.05806	0.05692
(p-val.)	0.000686	0.0004821	0.001552	0.01459	0.09533	0.01504	0.001394	0.001077	0.01233
Vacancy rate	0.2113	0.04889	-0.1666	-0.3513	-0.428	-0.3672	-0.2253	-0.08354	-0.004116
(s.e.)	0.02738	0.03977	0.07903	0.118	0.1387	0.1291	0.09498	0.0525	0.03296
(p–val.)	0.0004896	0.2008	0.001188	1.478e-05	1.101e-05	2.971e-05	0.0001493	0.006387	0.5053

#### Stationarity, i.i.d. and ergodicity tests (Free entry)

	avg.ADF	rej.ADF	avg.PP	rej.PP	avg.KPSS	rej.KPSS	avg.BDS	rej.BDS	avg.KS	rej.KS	AD	V
dGDP	0.01	1.00	0.01	1.00	0.08	0.10	0.12	0.70	0.19	0.44	0.00	C
dA	0.03	0.90	0.01	1.00	0.08	0.30	0.02	0.90	0.05	0.80	0.00	C
dw	0.02	0.90	0.01	1.00	0.08	0.30	0.03	0.90	0.05	0.80	0.00	C
V	0.03	0.80	0.01	1.00	0.04	0.70	0.00	1.00	0.04	0.87	0.00	C
U	0.11	0.80	0.10	0.90	0.03	0.80	0.00	1.00	0.05	0.91	0.00	C
mu2avg	0.06	0.80	0.01	1.00	0.04	0.60	0.00	1.00	0.02	0.96	0.00	C
HH1	0.02	0.90	0.01	1.00	0.09	0.10	0.00	1.00	0.08	0.76	0.00	C
HH2	0.03	0.90	0.01	1.00	0.05	0.50	0.01	0.90	0.06	0.82	0.00	C

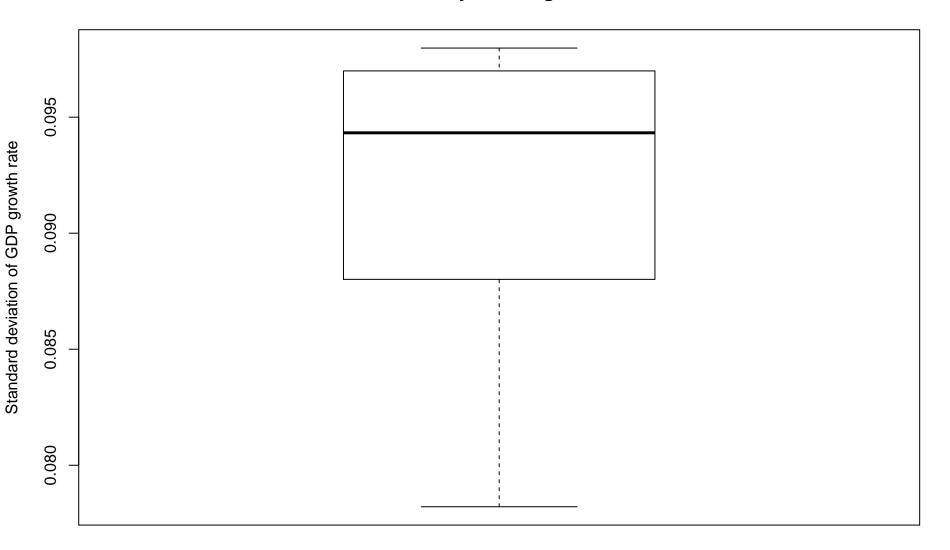
( average p-values for testing H0 and rate of rejection of H0 / MC runs = 10 / period = 301 - 600 ) ( ADF/PP H0: non-stationary, KPSS H0: stationary, BDS H0: i.i.d., KS/AD/WW H0: ergodic ) ( significance = 0.05 )





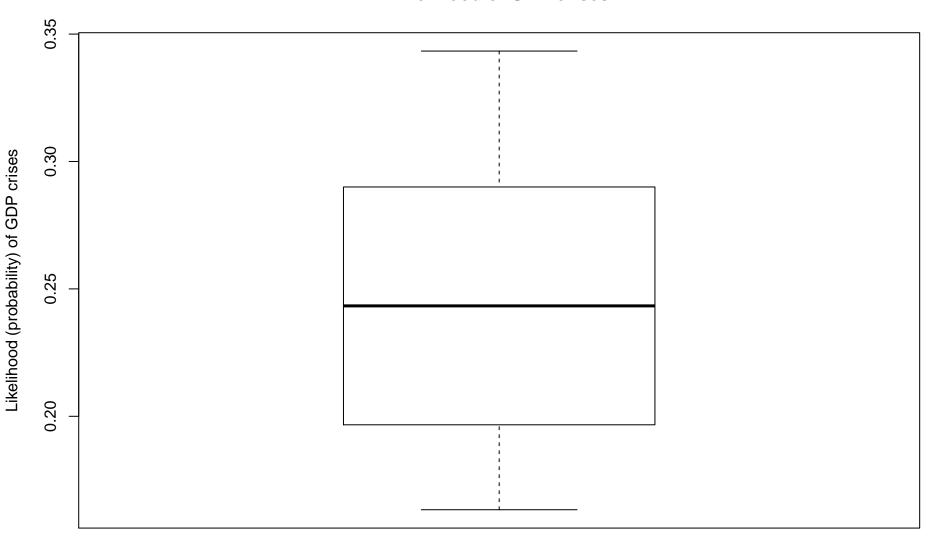
(bar: median / box: 2nd-3rd quartile / whiskers: max-min / points: outliers / MC runs = 10 / period = 301 - 600)

# **Volatility of GDP growth**



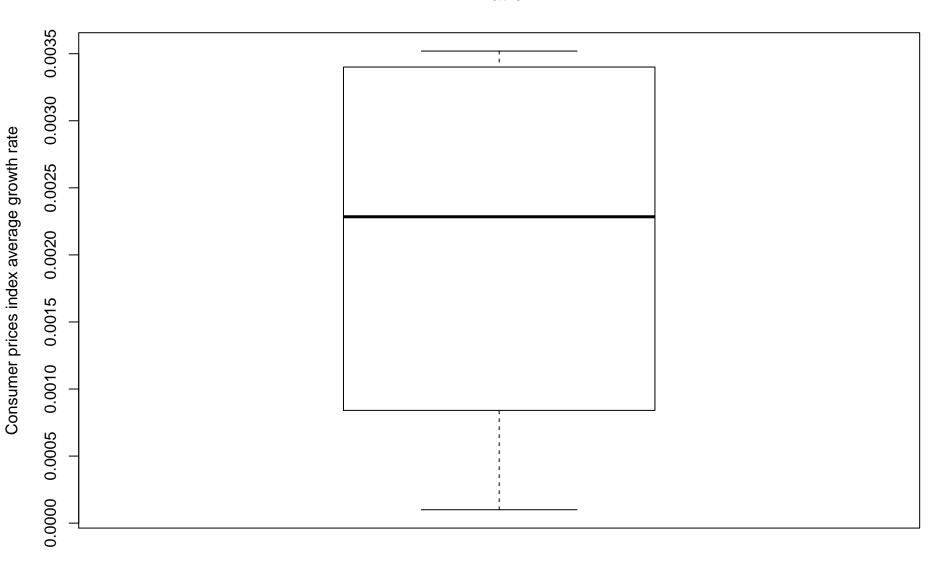
(bar: median / box: 2nd-3rd quartile / whiskers: max-min / points: outliers / MC runs = 10 / period = 301 - 600)

#### Likelihood of GDP crises

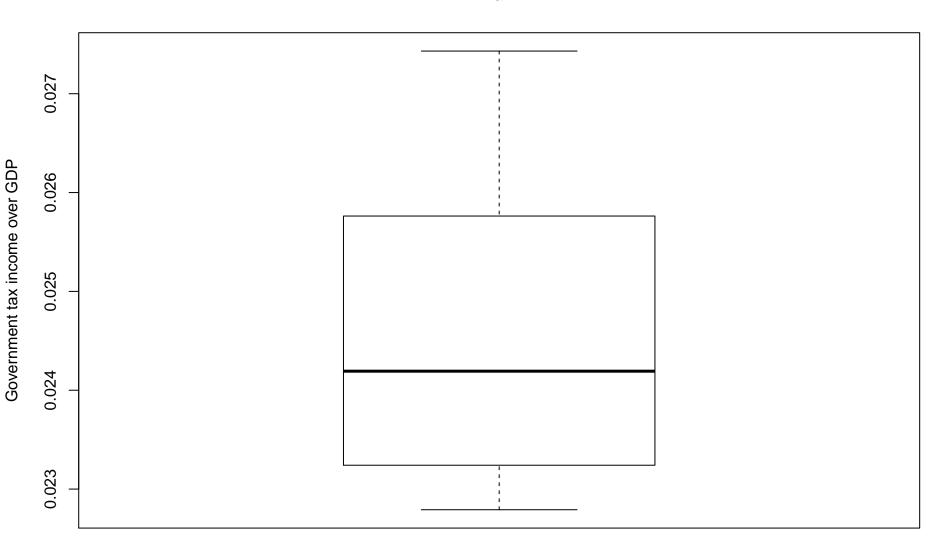


(bar: median / box: 2nd-3rd quartile / whiskers: max-min / points: outliers / MC runs = 10 / period = 301 - 600)

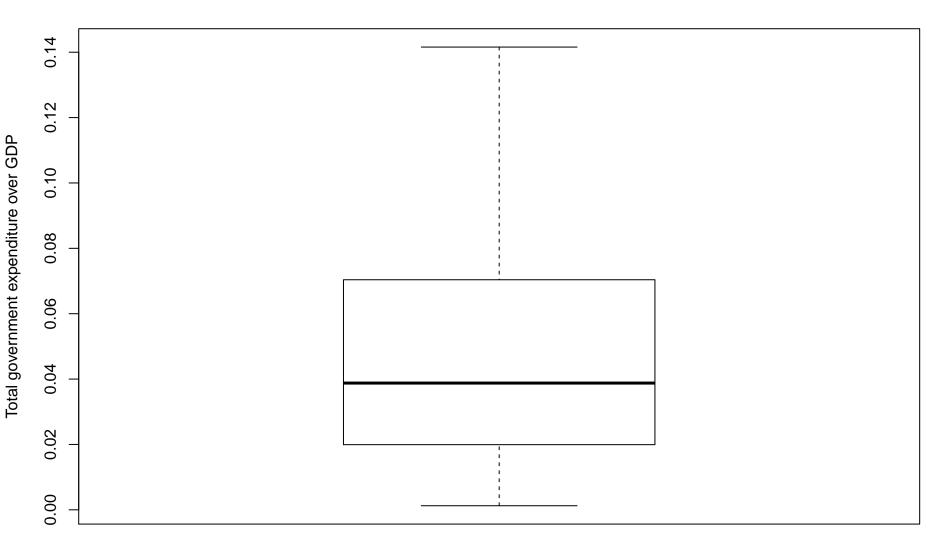




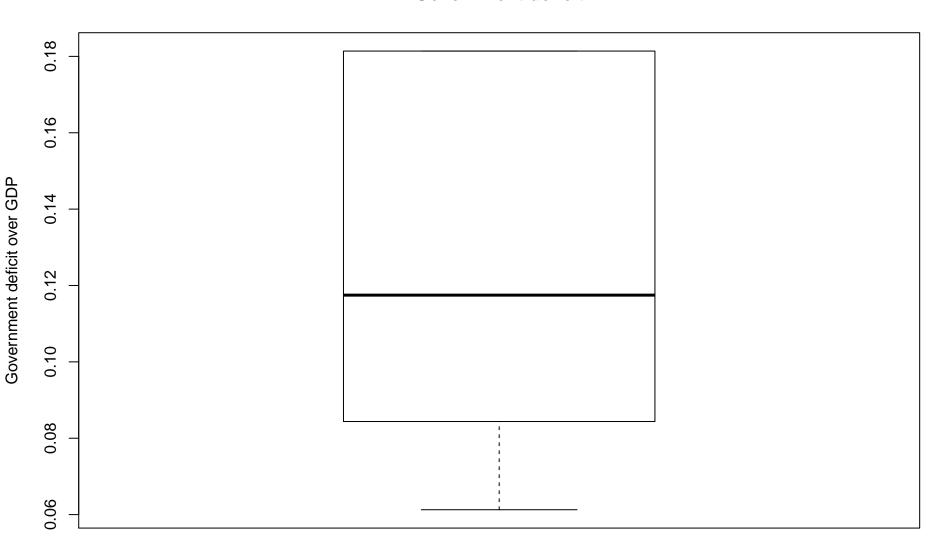




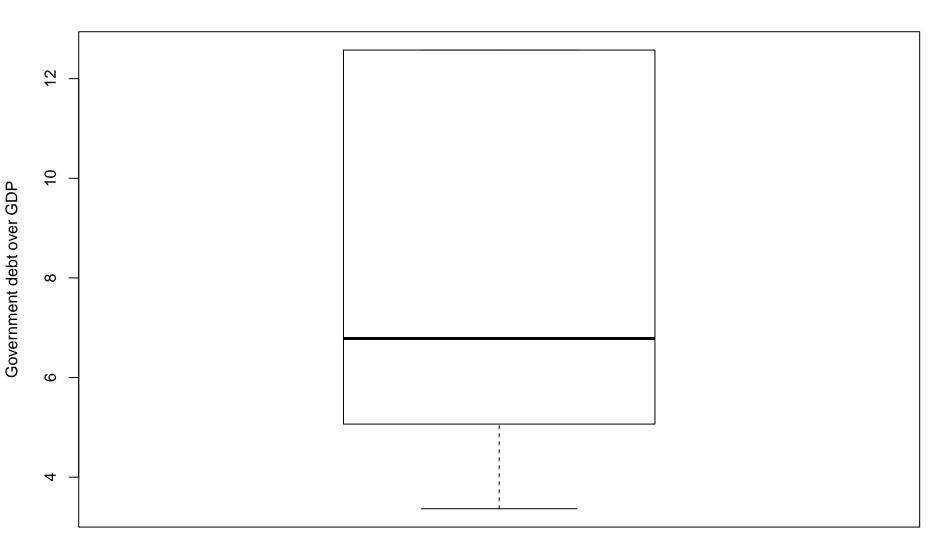
### **Government total expenditure**



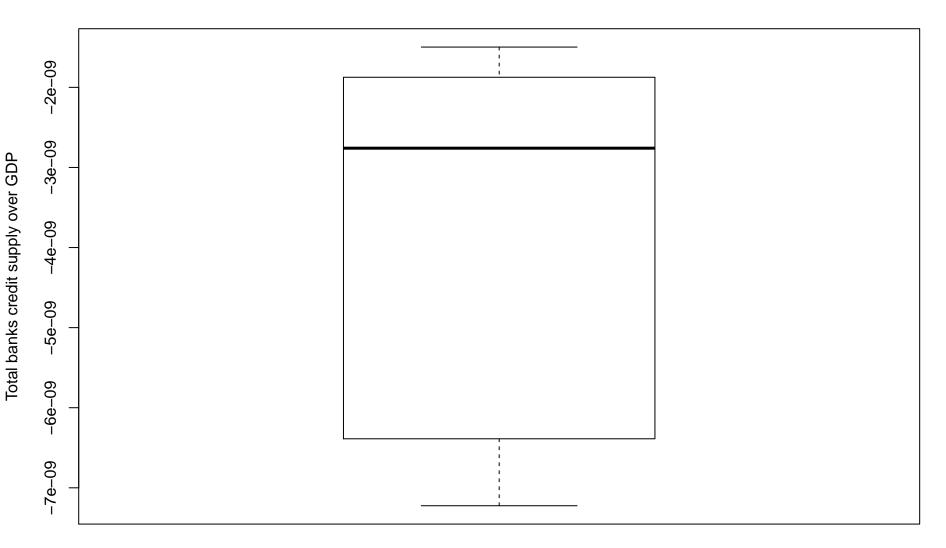
### **Government deficit**



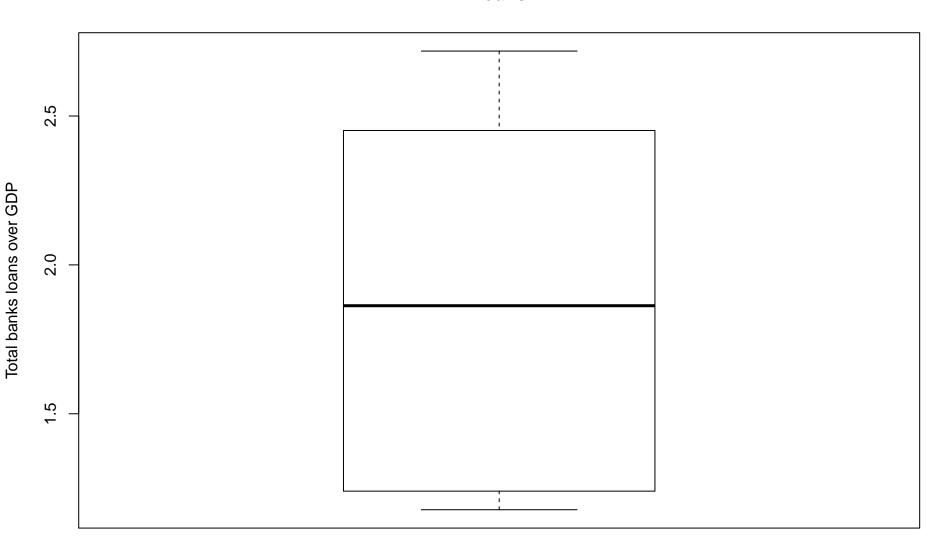
### **Government debt**



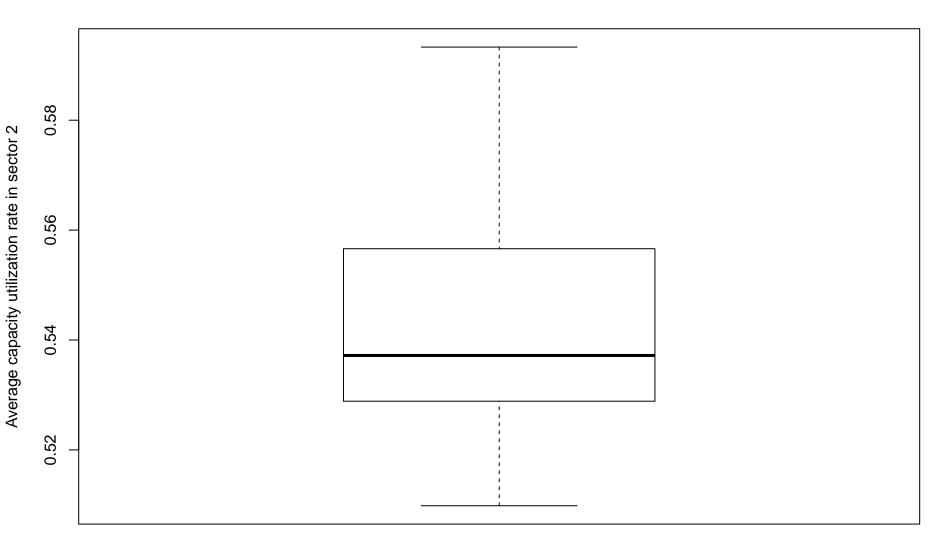




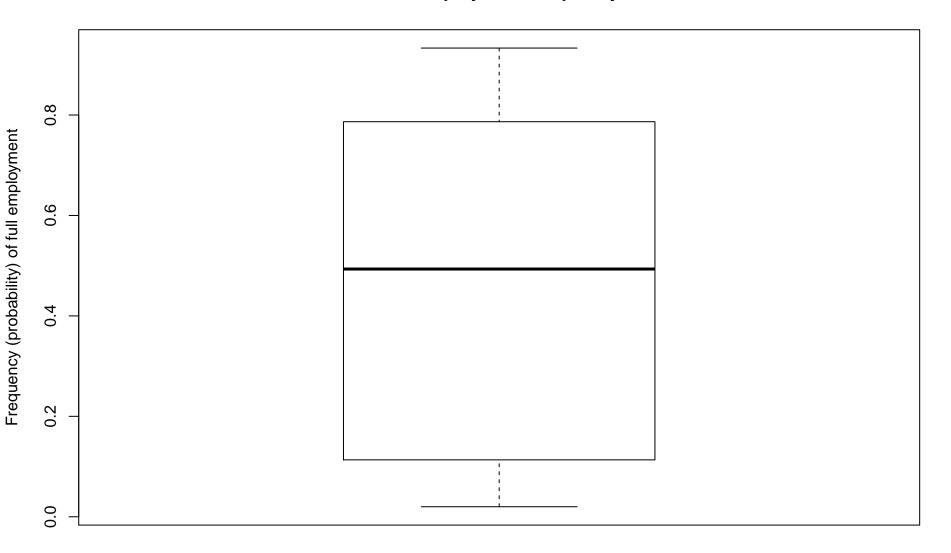




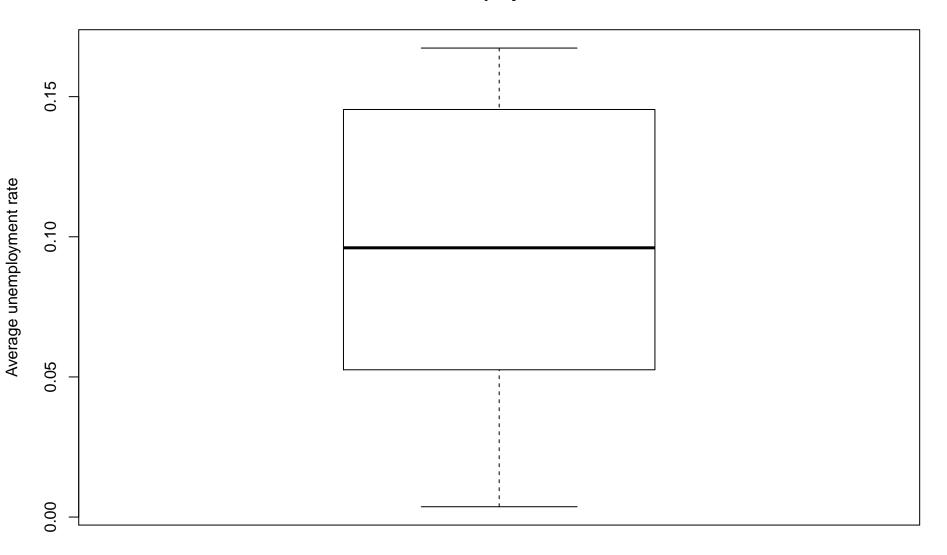
# **Capacity utilization**



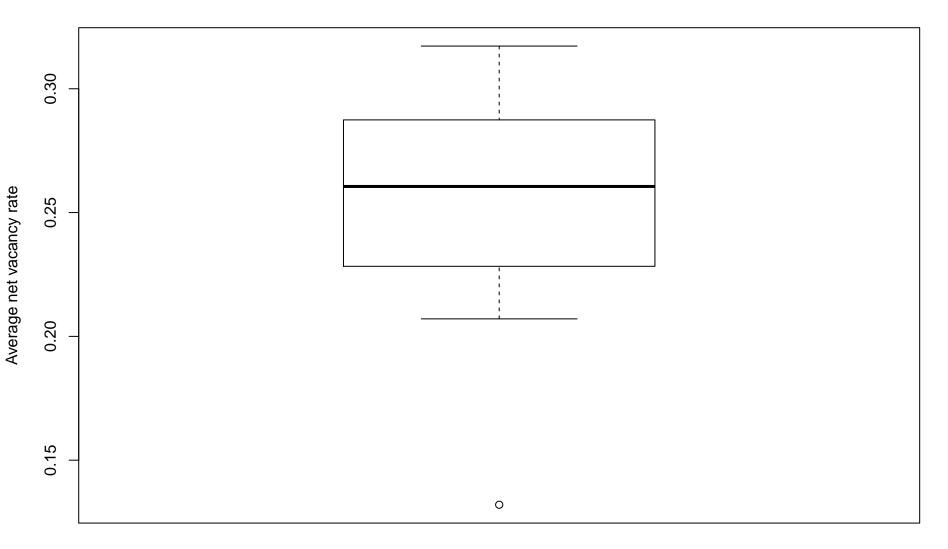
# Full employment frequency



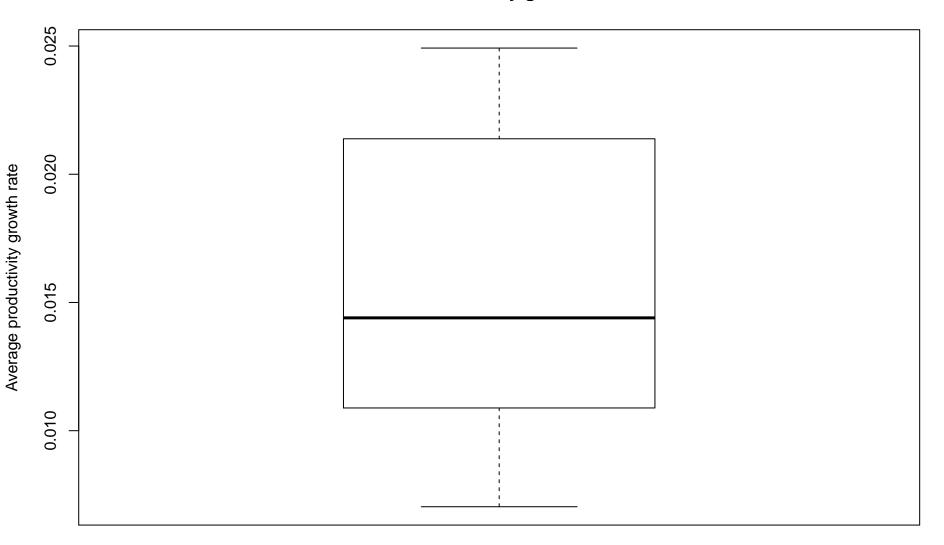
# Unemployment



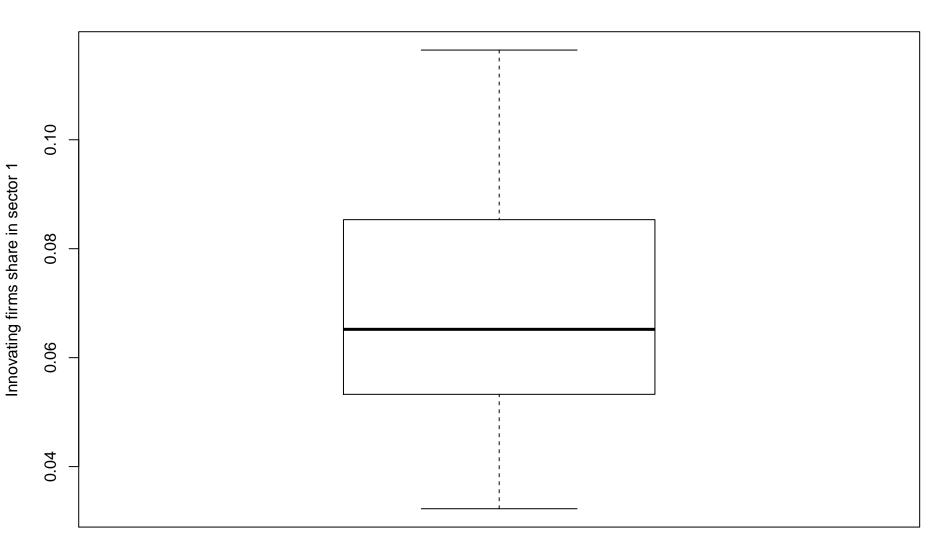




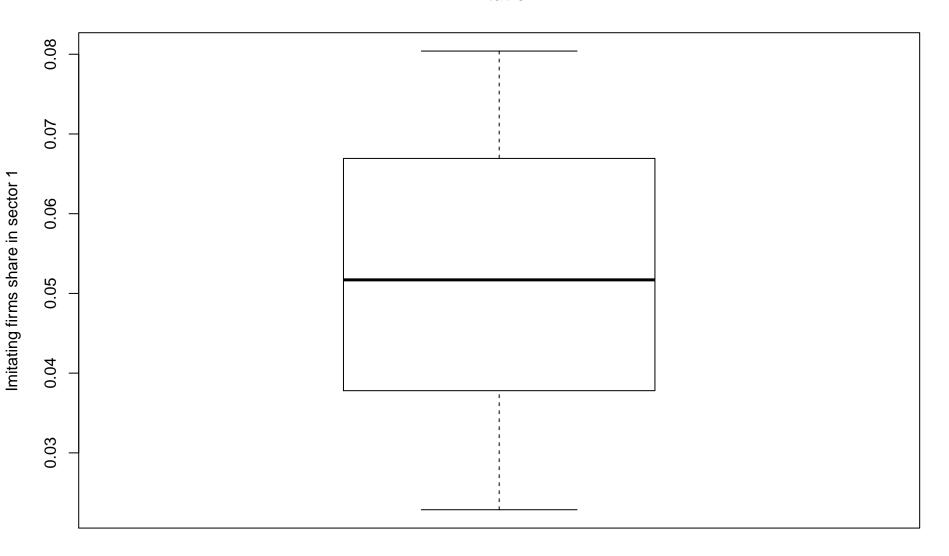
# **Productivity growth**



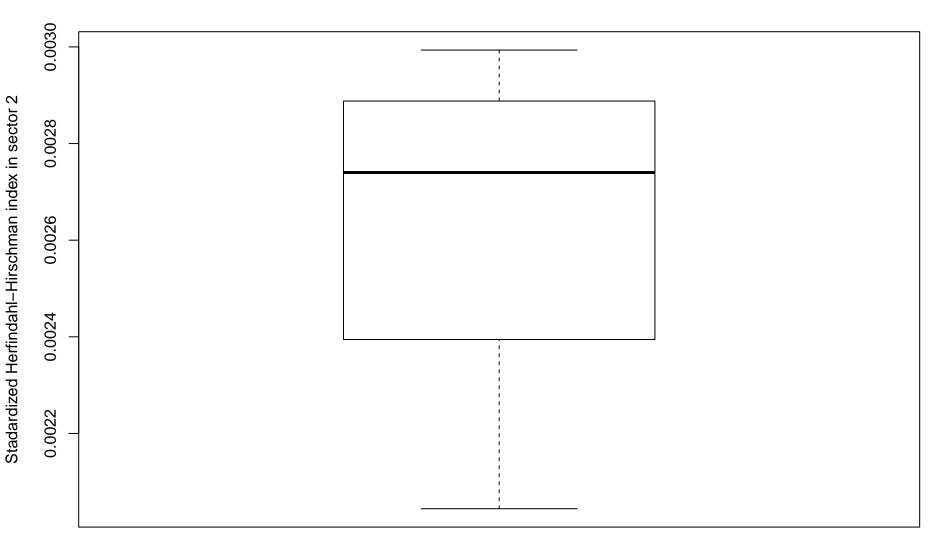




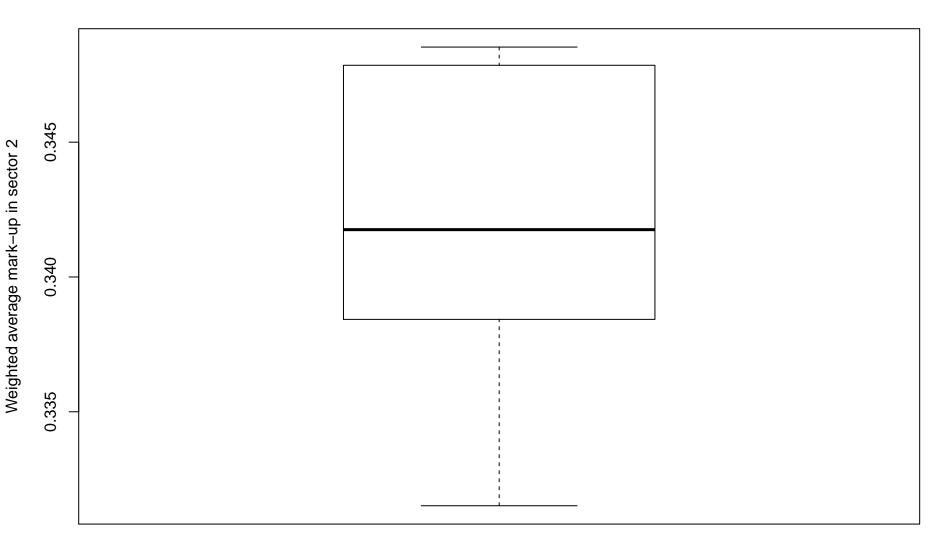




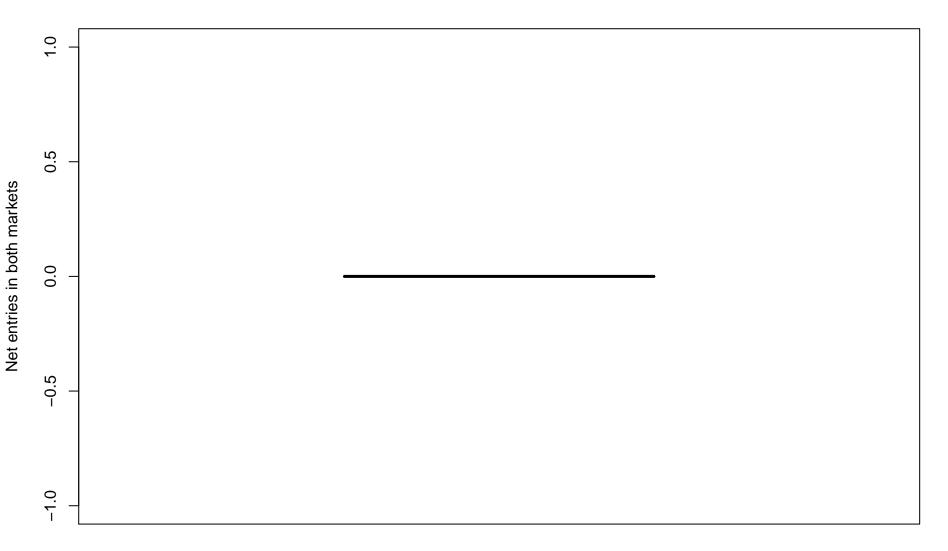












### Monte Carlo descriptive statistics (all experiments)

	Avg[1]	SD[1]	Min[1]	Max[1]
GDP growth	0.01994	0.01711	0.007297	0.06619
Volatility of GDP growth	0.09491	0.01277	0.07821	0.1266
Likelihood of GDP crises	0.244	0.05656	0.1633	0.3433
Inflation	0.00265	0.002565	0.0001	0.009014
Tax	0.1836	0.5033	0.02279	1.616
Government total expenditure	2.006	6.205	0.00125	19.67
Government deficit	2.434	7.198	0.06128	22.91
Government debt	18.16	27.29	3.367	90
Credit supply	-5.106e-09	5.302e-09	-1.891e-08	-1.497e-09
Loans	94.76	293.9	1.178	931.2
Capacity utilization	0.542	0.02302	0.5098	0.5933
Full employment frequency	0.4433	0.3378	0.02	0.9333
Unemployment	0.1062	0.08743	0.003687	0.2925
Vacancy	0.251	0.05293	0.132	0.3172
Productivity growth	0.02246	0.02441	0.007035	0.09031
Innovation	0.06998	0.02411	0.03227	0.1165
Imitation	0.05218	0.01856	0.02287	0.0804
Market concentration	0.002641	0.0003073	0.002044	0.002993
Mark-ups	0.3419	0.005353	0.3315	0.3485
Net entry of firms	0	0	0	0

Experiments: [1] Free entry ( numbers in brackets indicate the experiment number / MC runs = 10 / period = 301 - 600 )