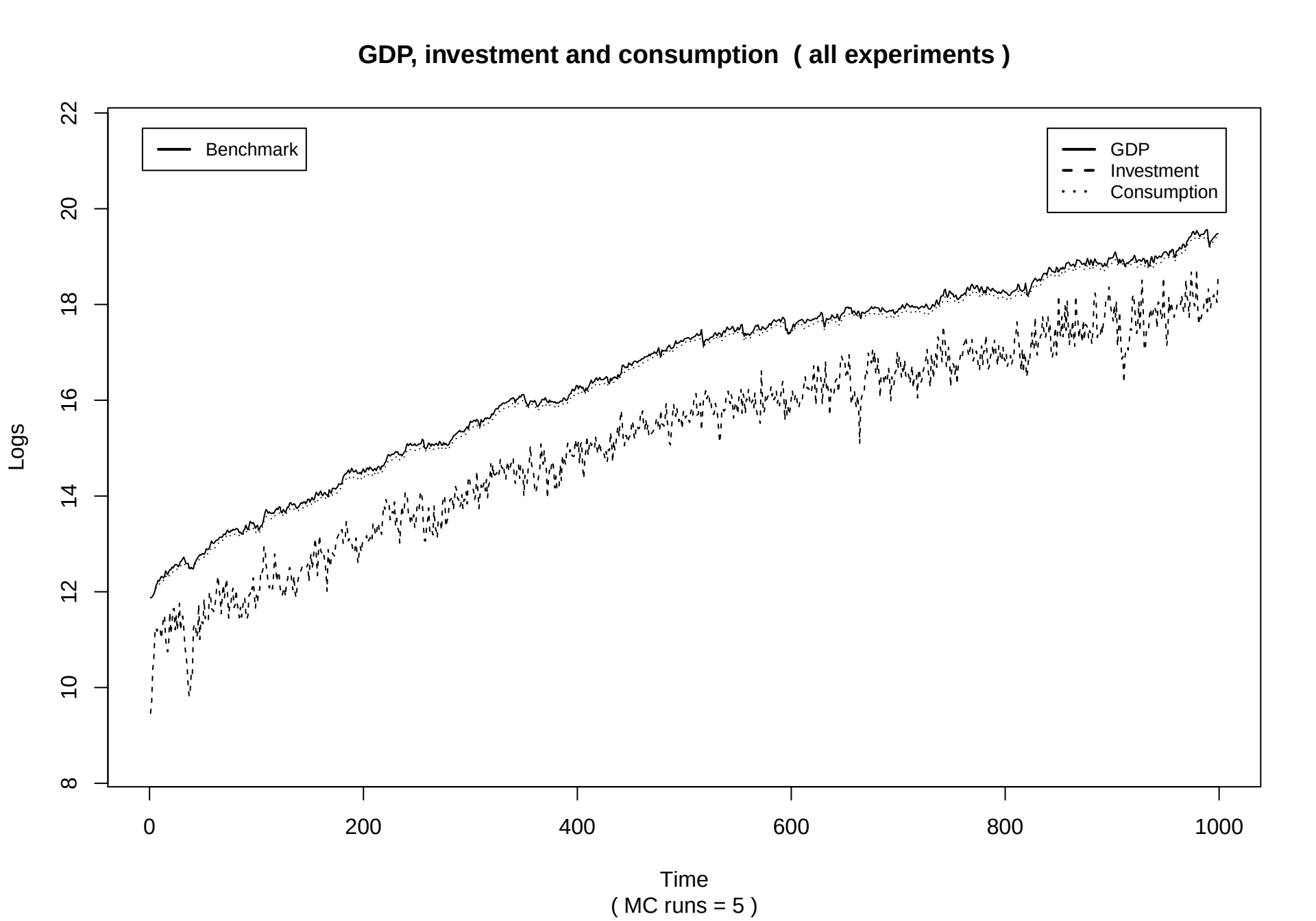
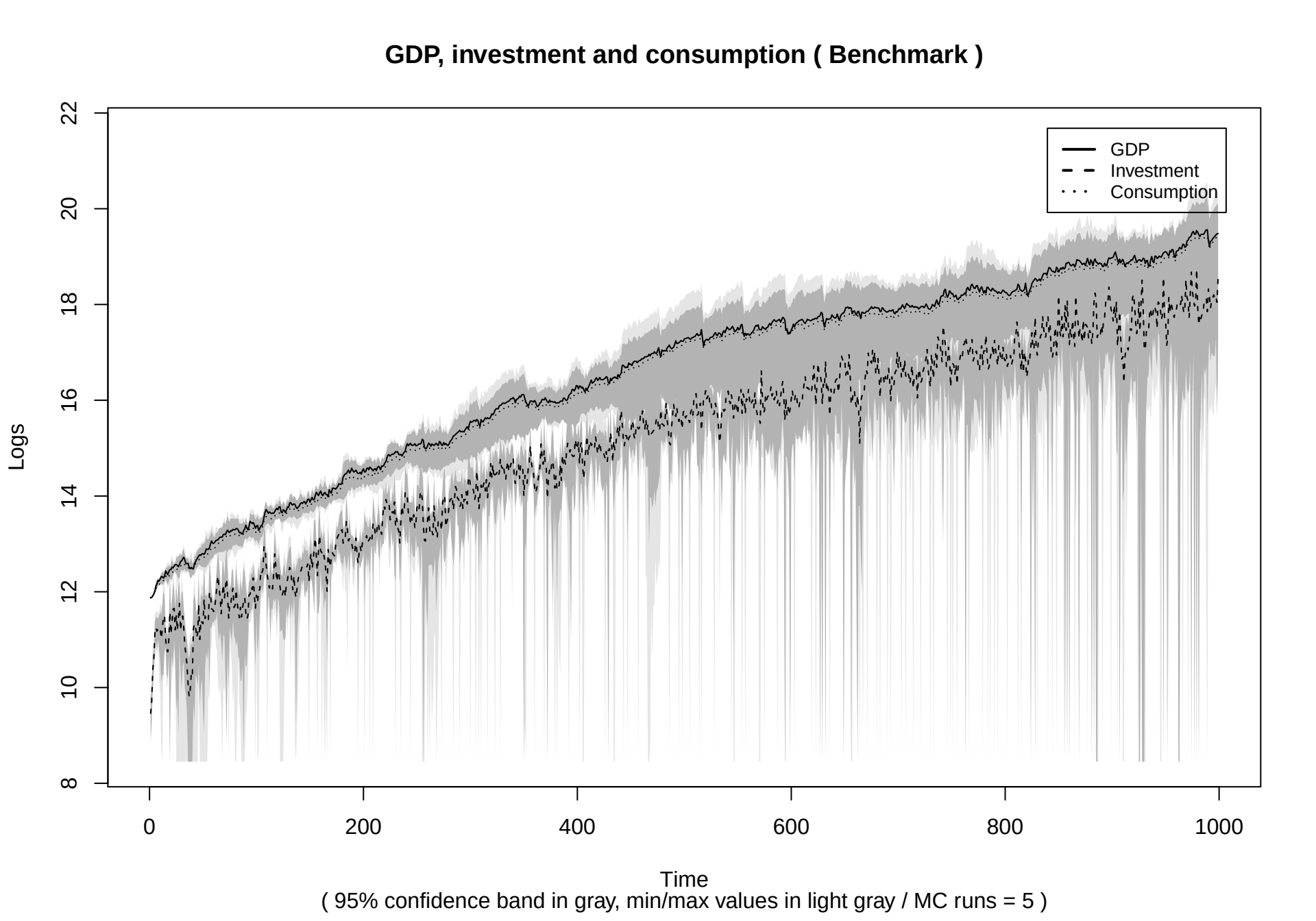
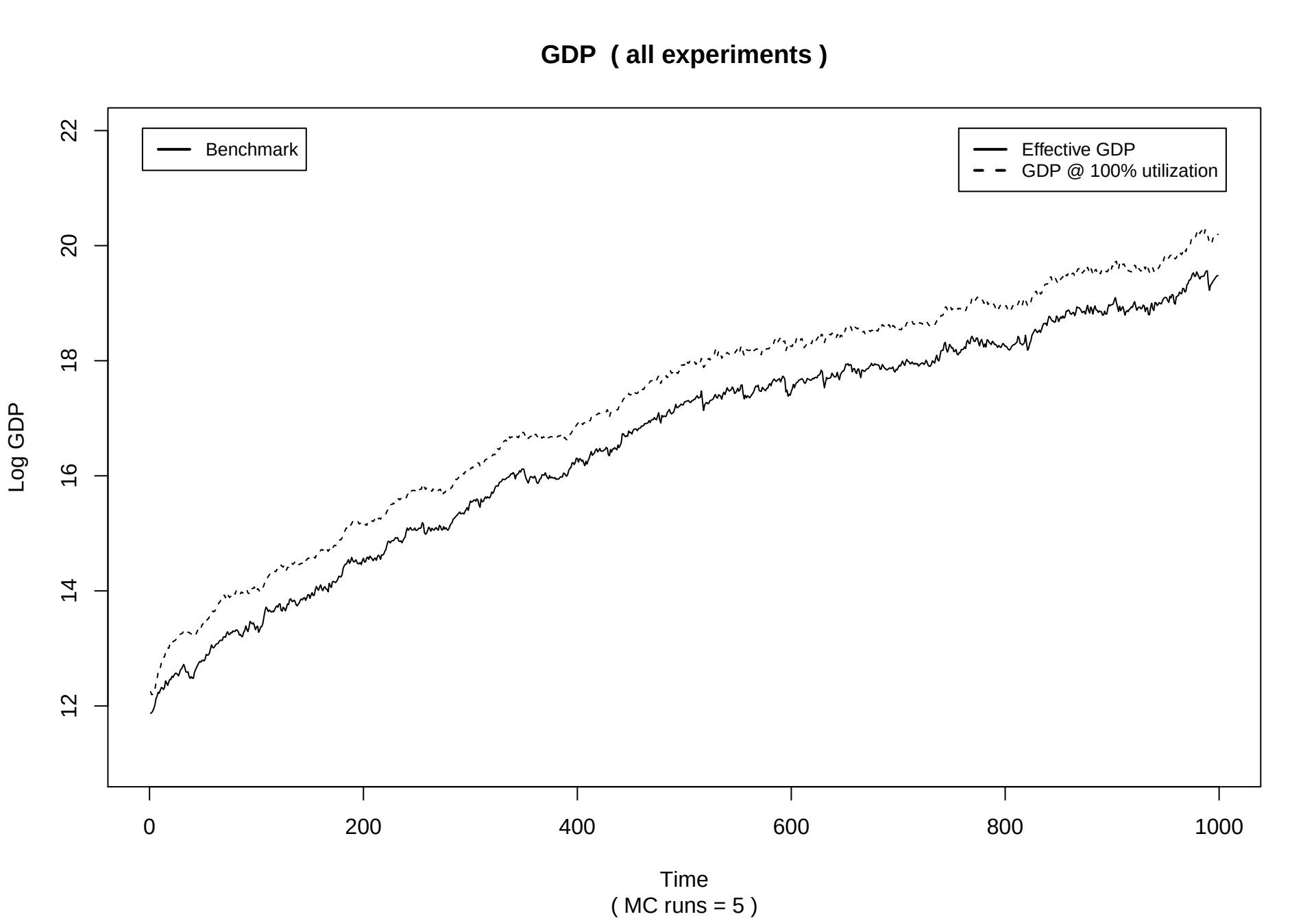
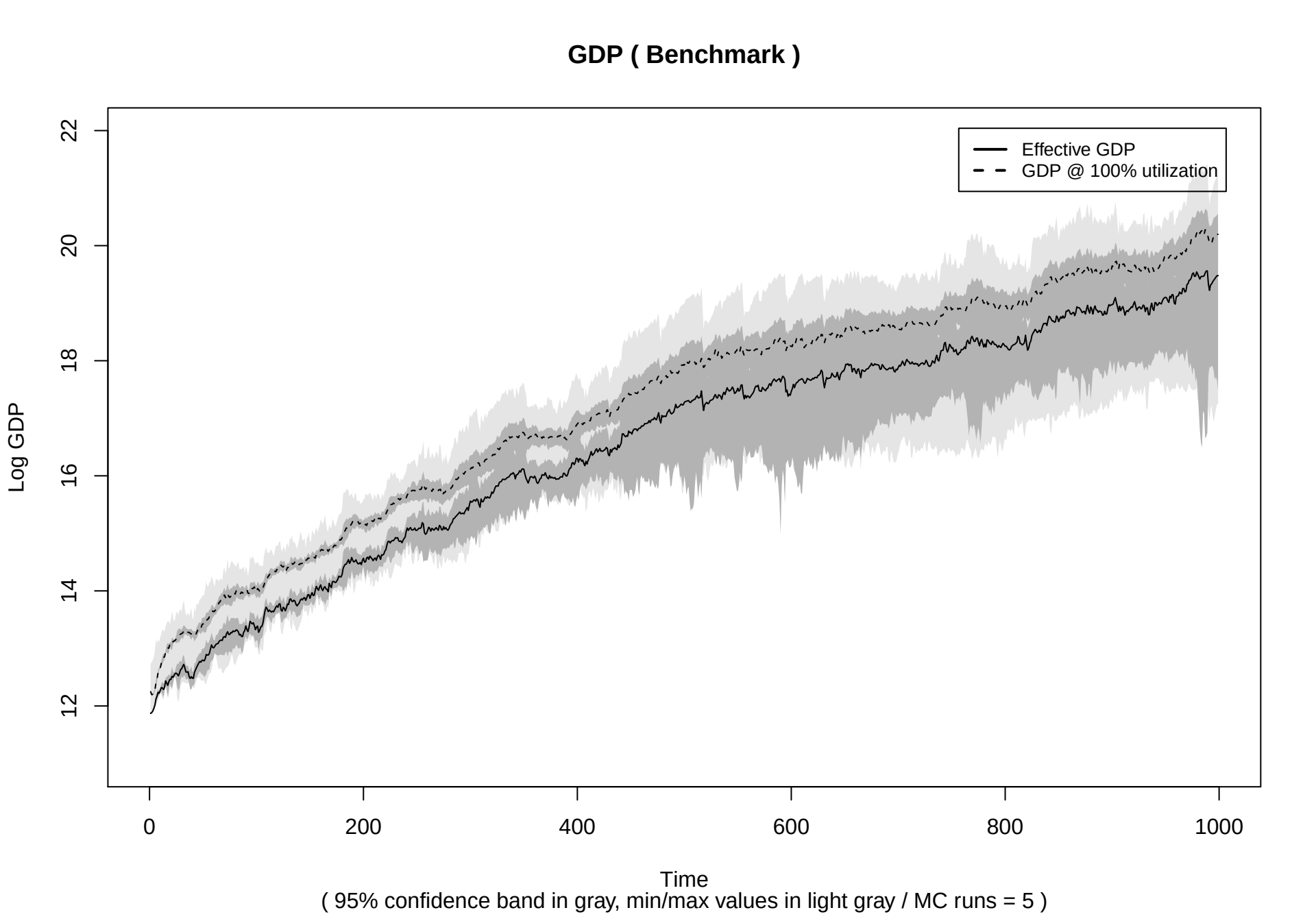
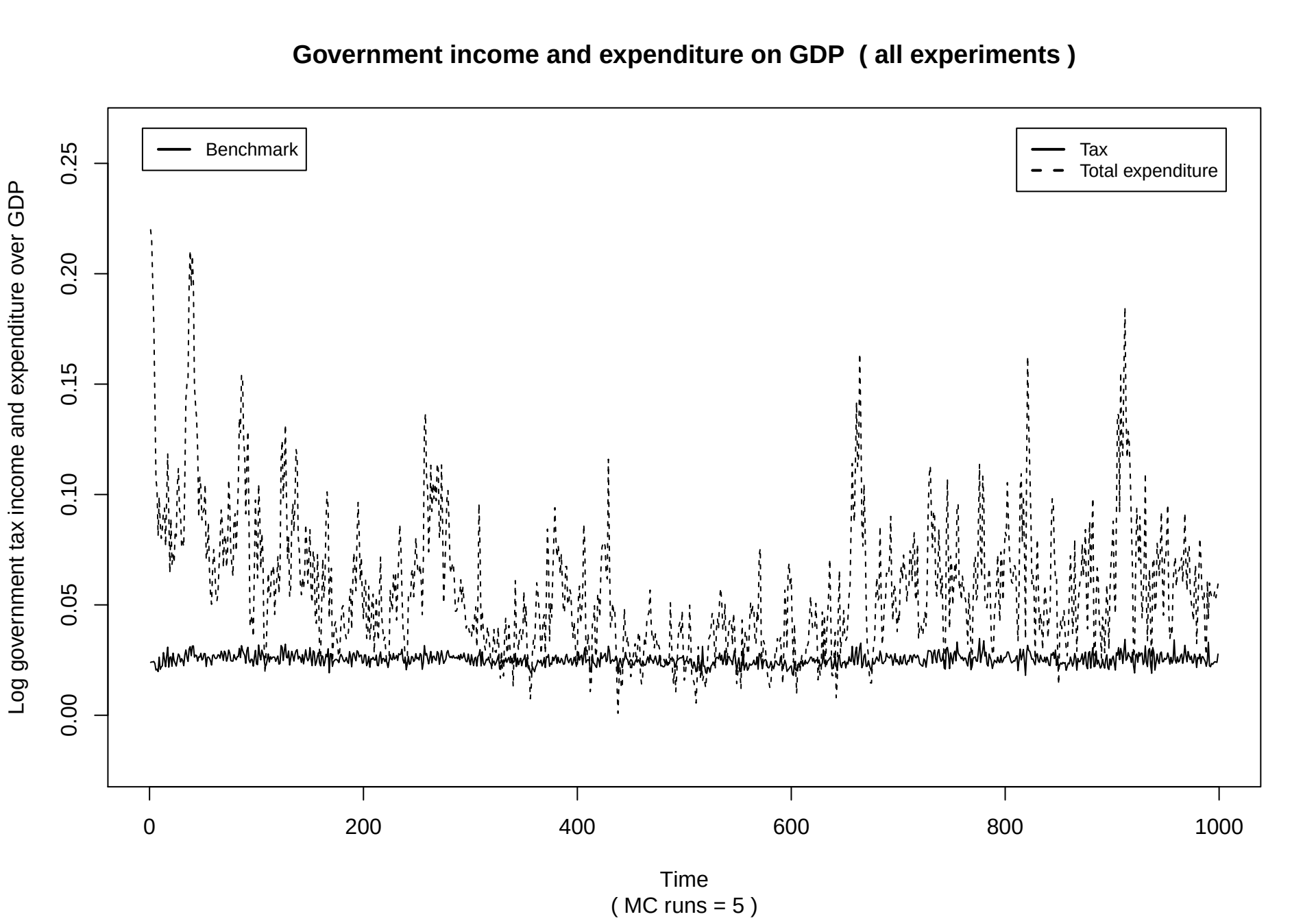
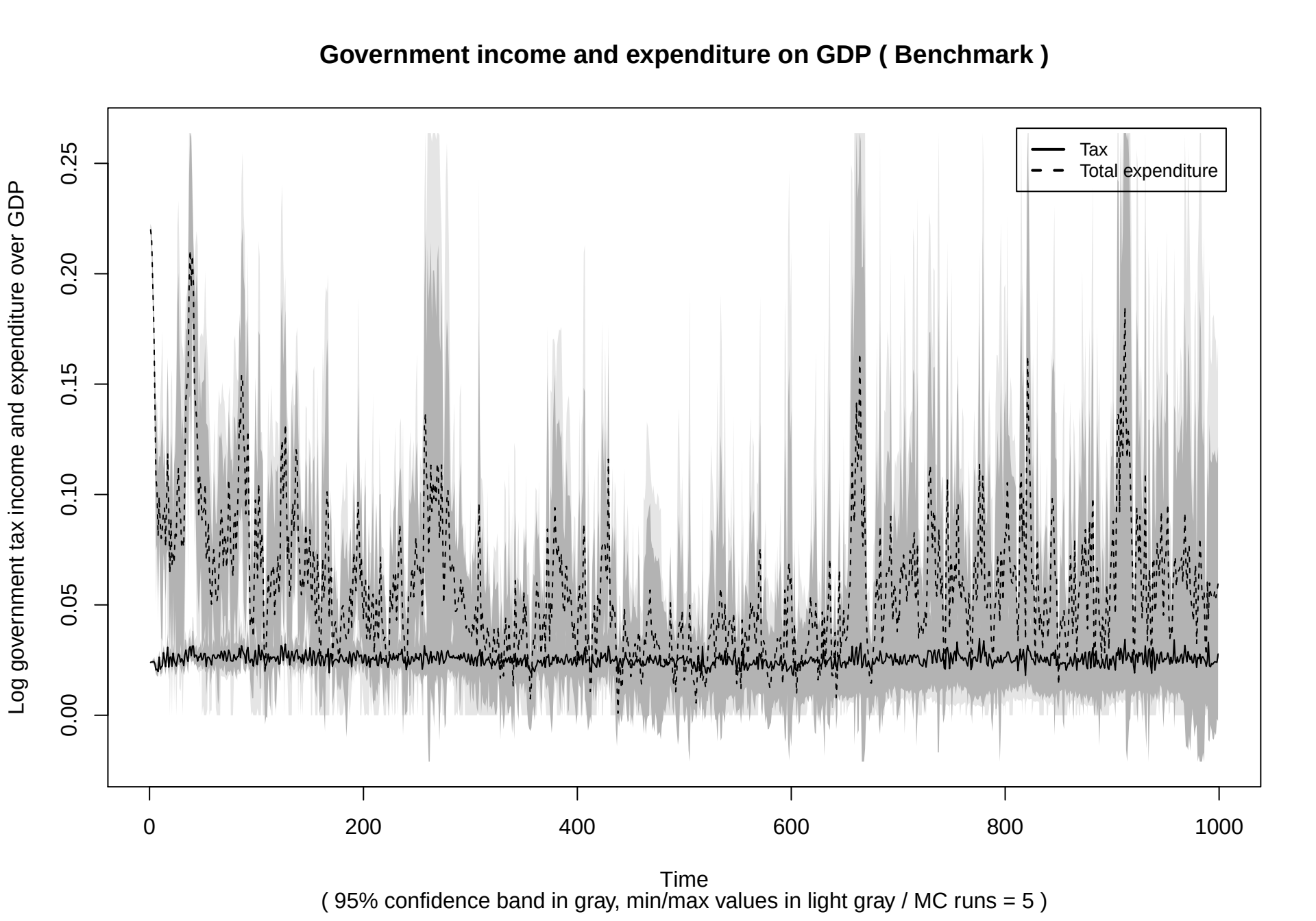

GDP, investment and consumption (all experiments)
Benchmark
GDP
Investment
Consumption
Logs
8
10
12
14
16
18
20
22
0
200
400
600
800
1000
Time
(MC runs = 5)

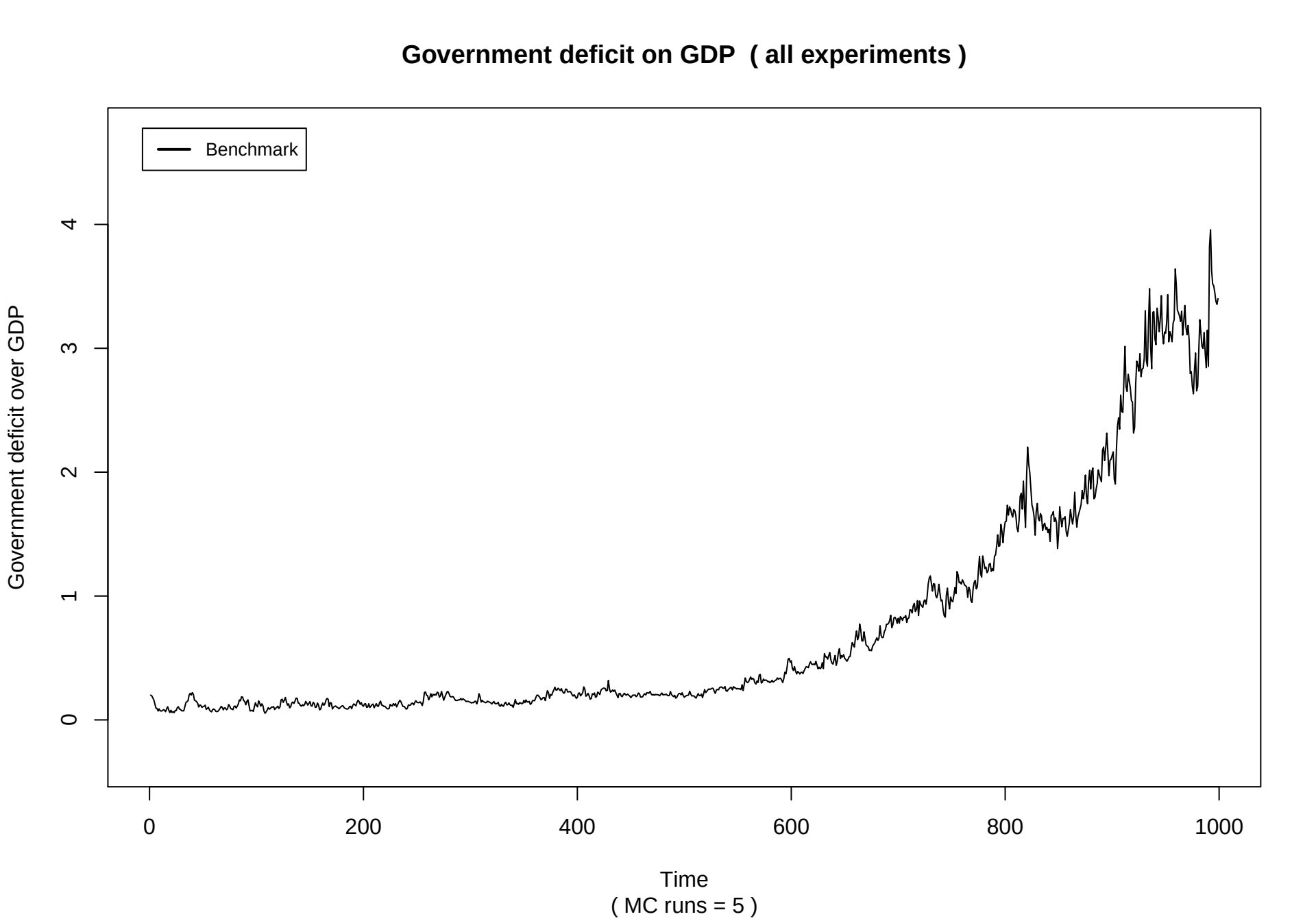

GDP, investment and consumption (Benchmark)
GDP
Investment
Consumption
Logs
8
10
12
14
16
18
20
22
0
200
400
600
800
1000
Time
(95% confidence band in gray, min/max values in light gray / MC runs = 5)

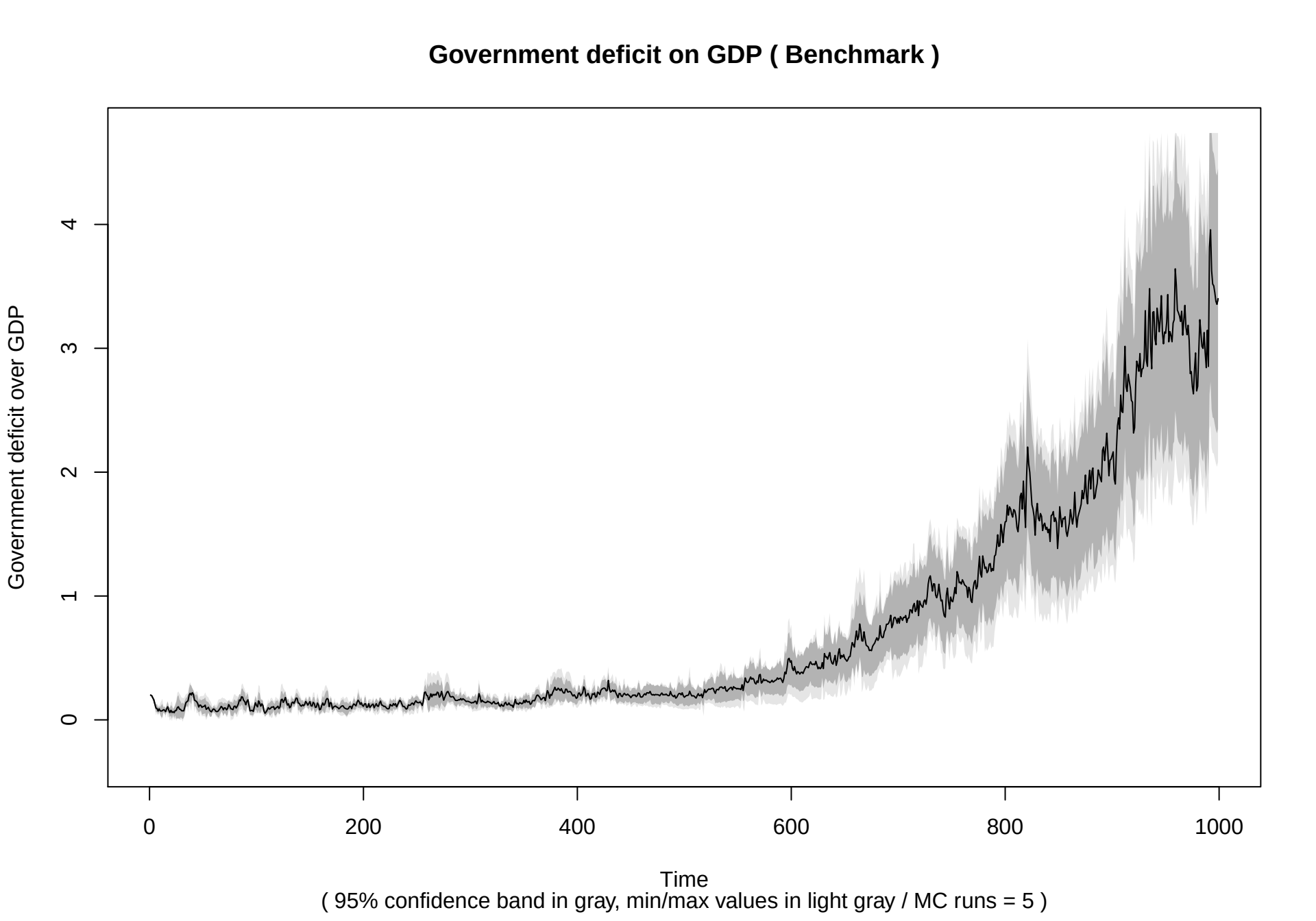

GDP (all experiments)
Benchmark
Effective GDP
GDP @ 100% utilization
Log GDP
12
14
16
18
20
22
0
200
400
600
800
1000
Time
(MC runs = 5)

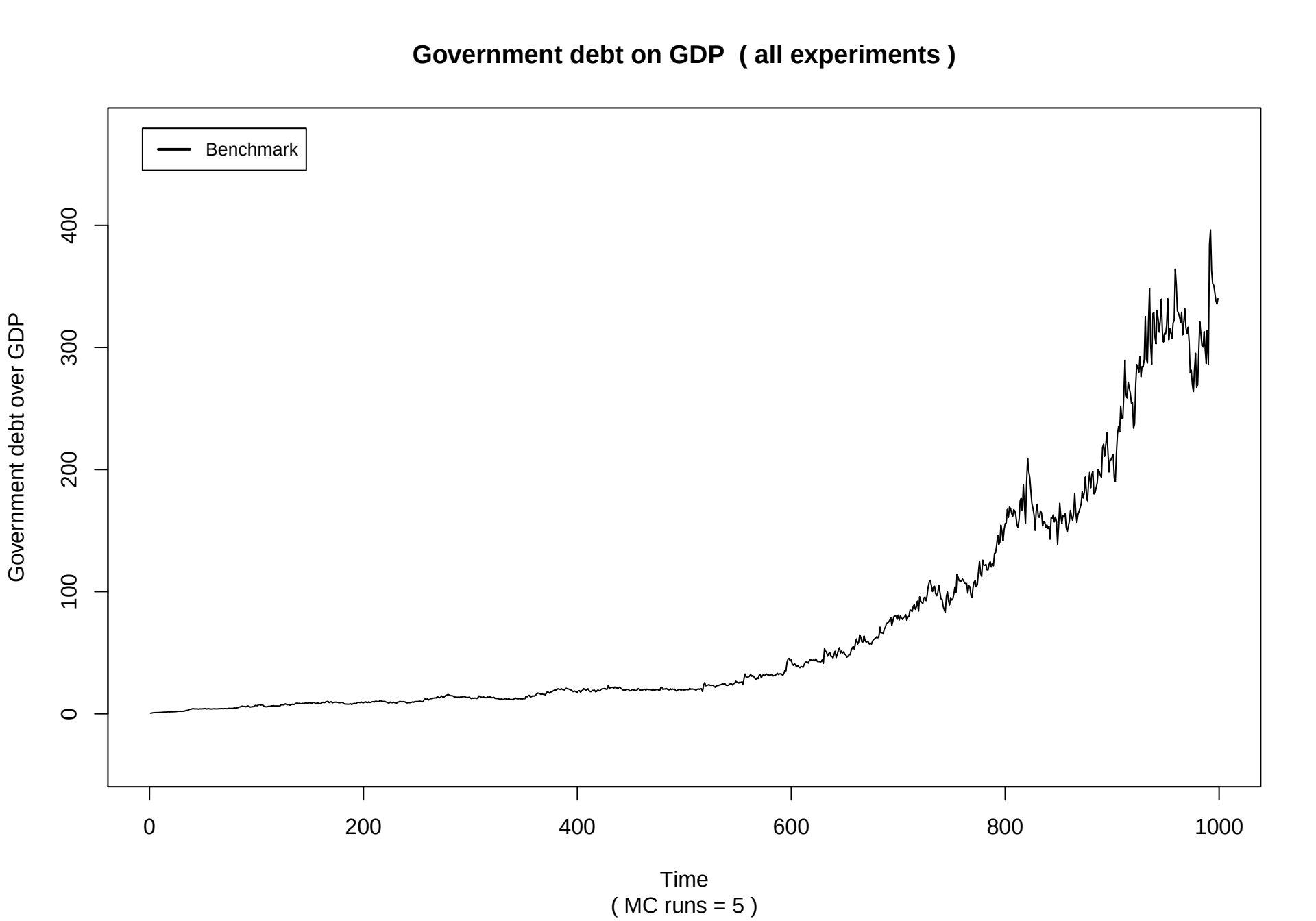

GDP (Benchmark)
Effective GDP
GDP @ 100% utilization
Log GDP
12
14
16
18
20
22
0
200
400
600
800
1000
Time
(95% confidence band in gray, min/max values in light gray / MC runs = 5)

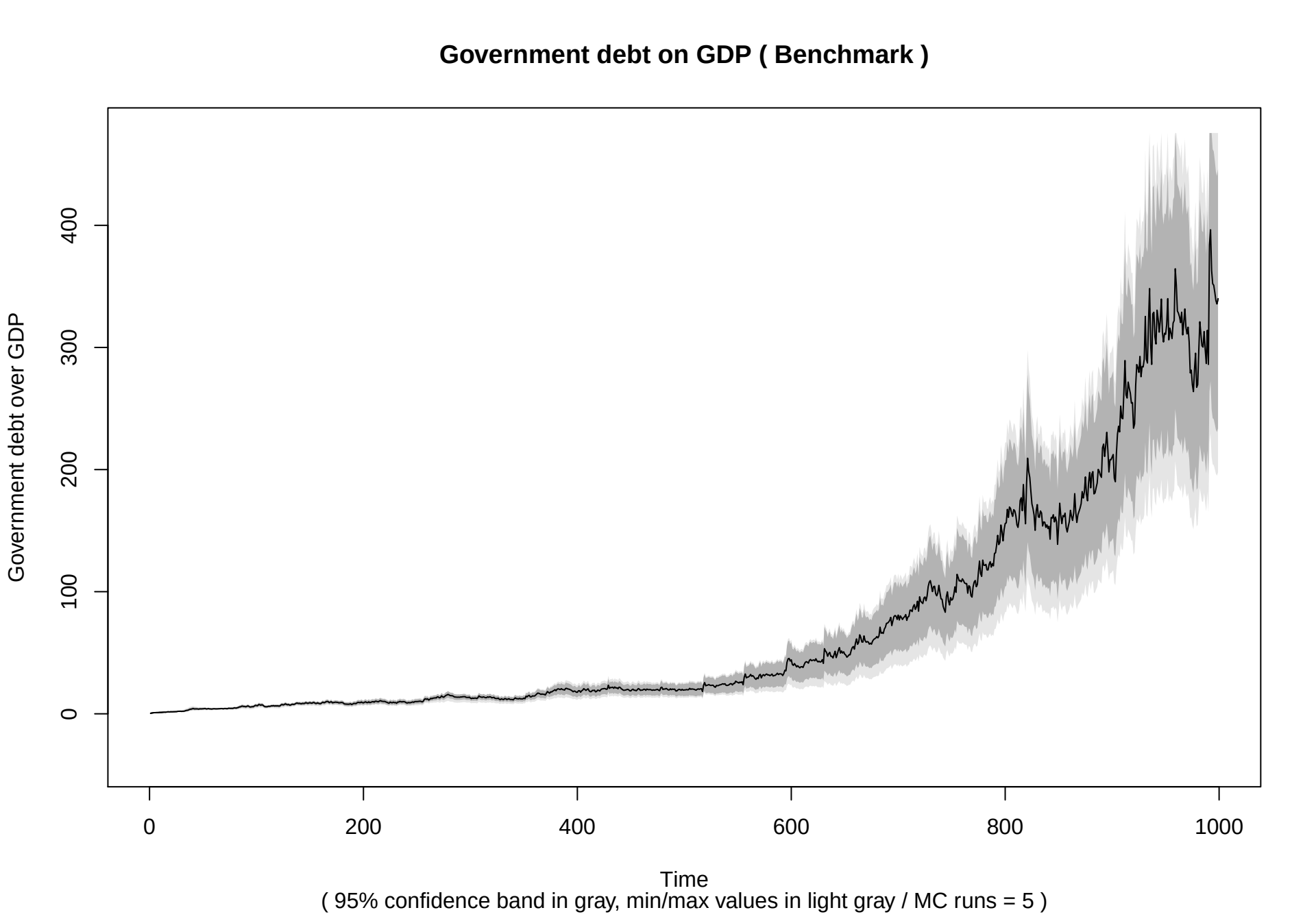

Government income and expenditure on GDP (all experiments)
Benchmark
Tax
Total expenditure
Log government tax income and expenditure over GDP
0.00
0.05
0.10
0.15
0.20
0.25
0
200
400
600
800
1000
Time
(MC runs = 5)

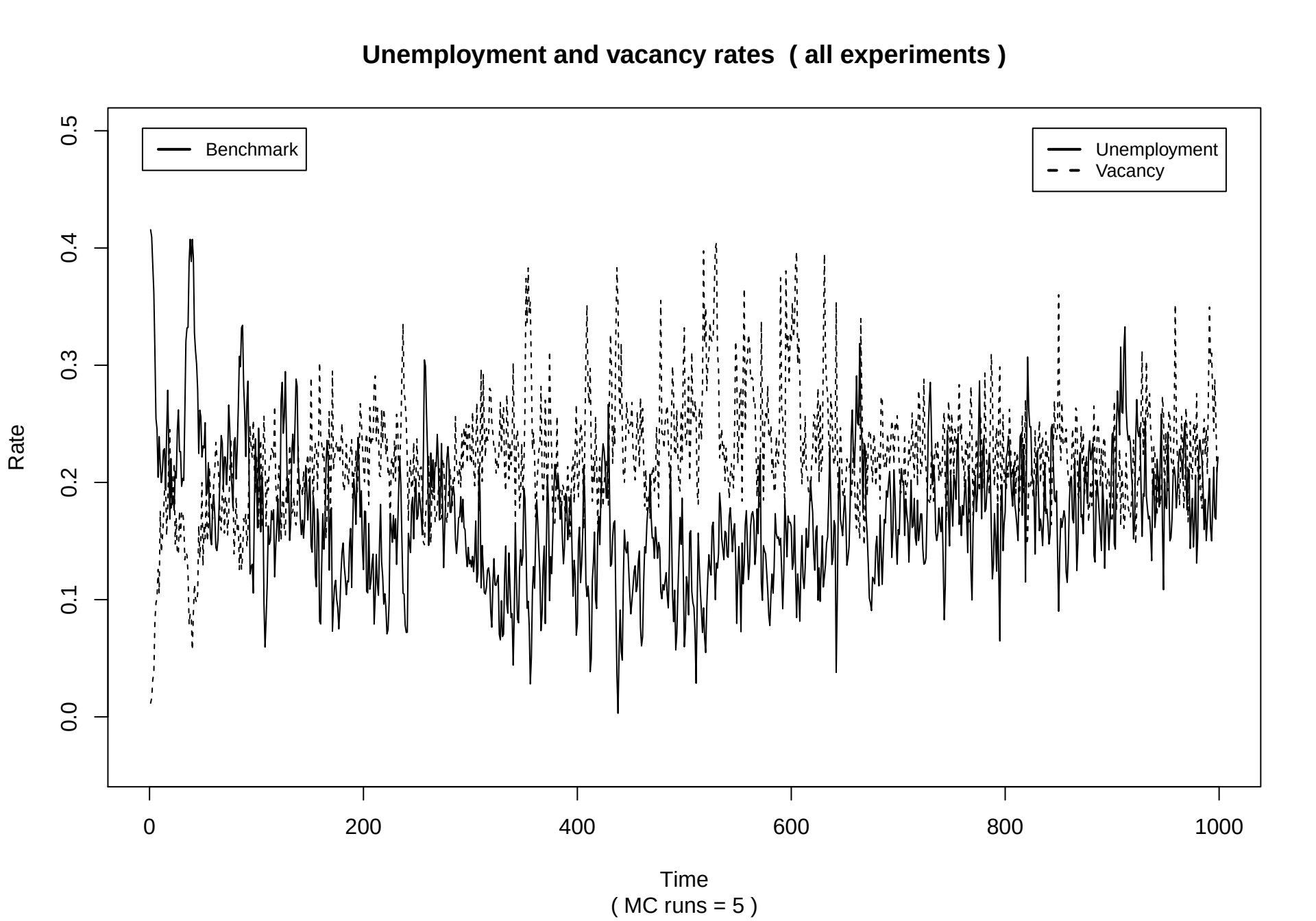

Government income and expenditure on GDP (Benchmark)
Log government tax income and expenditure over GDP
0.00
0.05
0.10
0.15
0.20
0.25
0
200
400
600
800
1000
Time
(95% confidence band in gray, min/max values in light gray / MC runs = 5)
Tax
Total expenditure

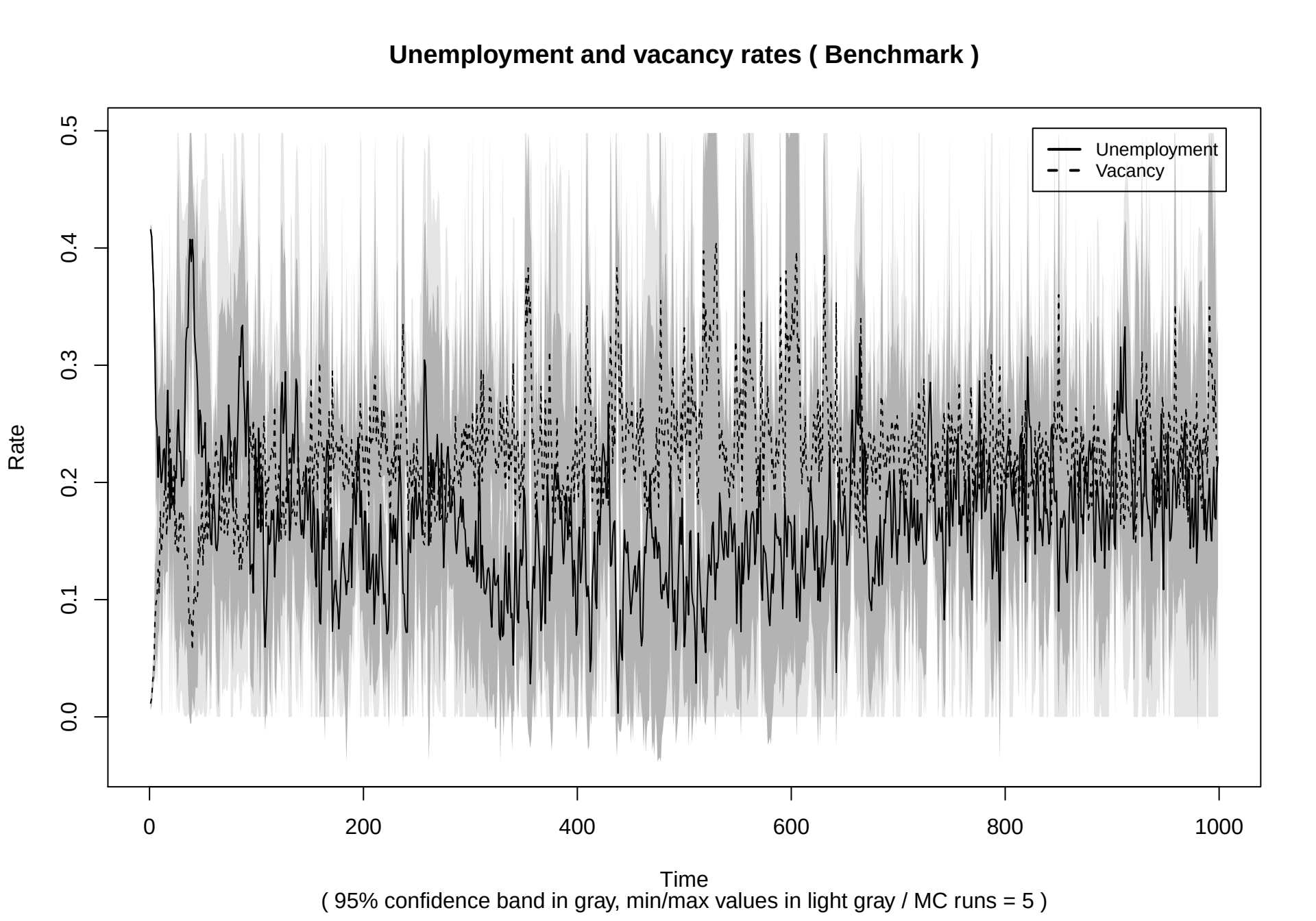

Government deficit on GDP (all experiments)
Benchmark
Government deficit over GDP
0
1
2
3
4
0
200
400
600
800
1000
Time
(MC runs = 5)

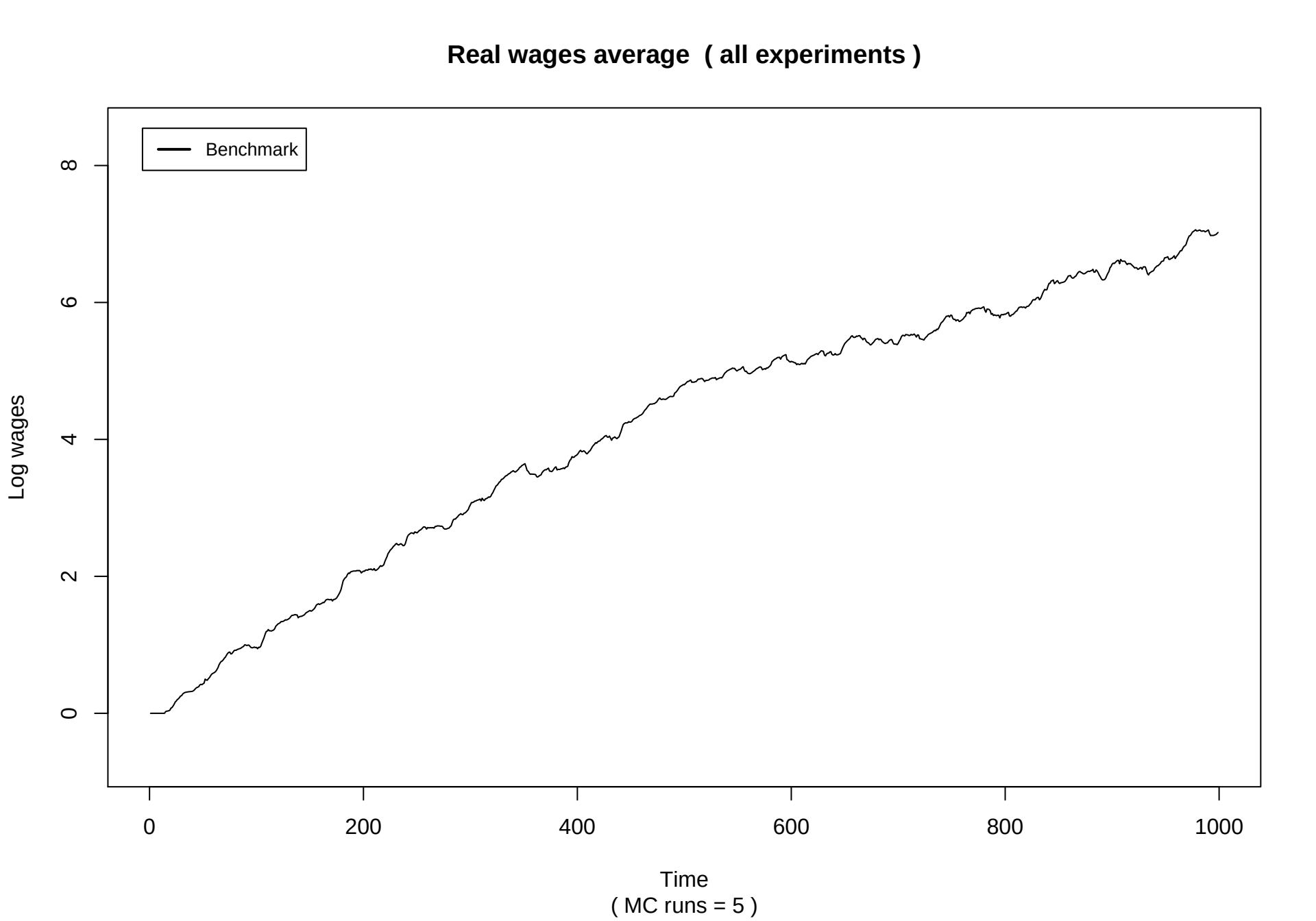

Government deficit on GDP (Benchmark)
Government deficit over GDP
0
1
2
3
4
0
200
400
600
800
1000
Time
(95% confidence band in gray, min/max values in light gray / MC runs = 5)

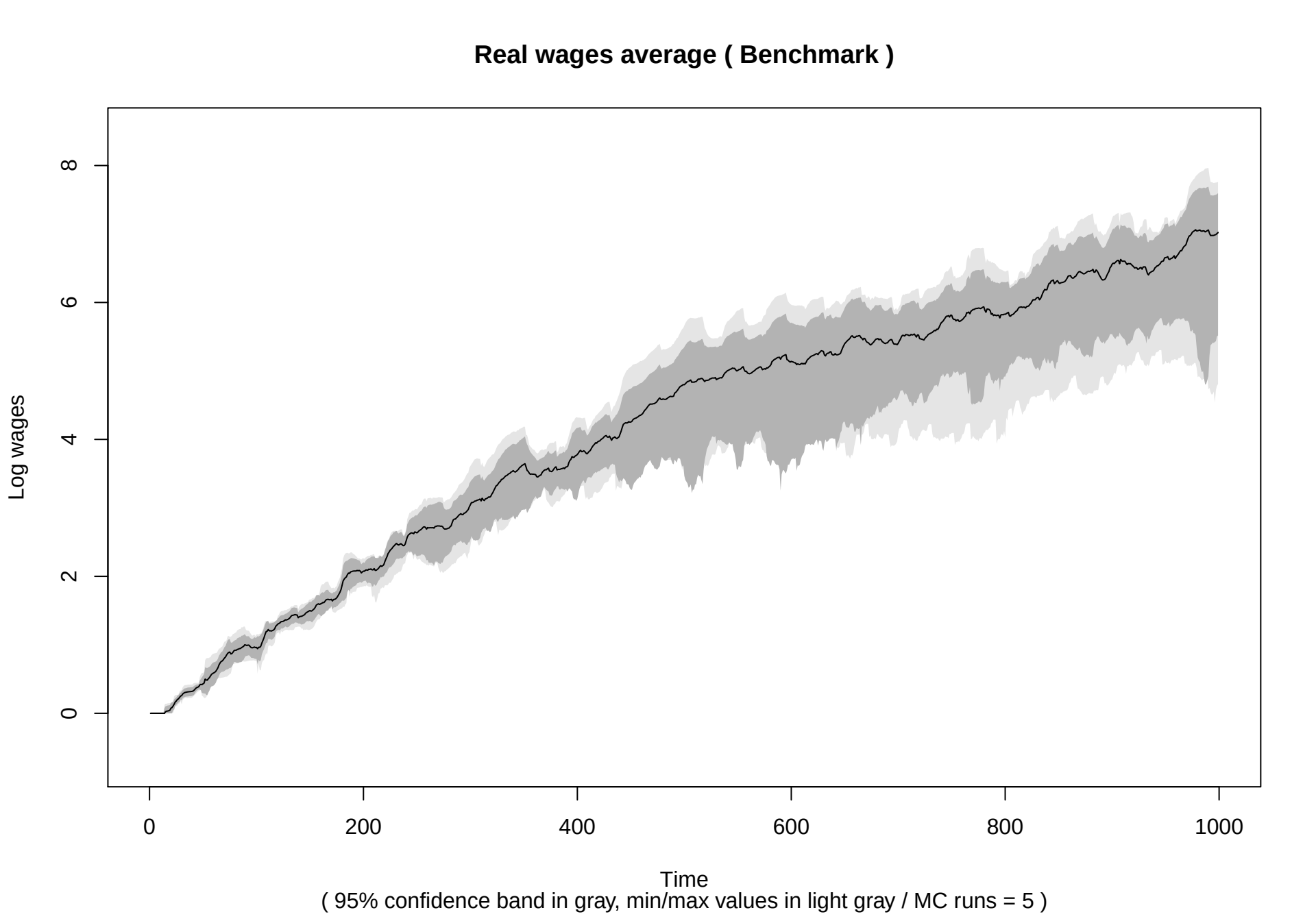

Government debt on GDP (all experiments)
Benchmark
Government debt over GDP
0
100
200
300
400
0
200
400
600
800
1000
Time
(MC runs = 5)

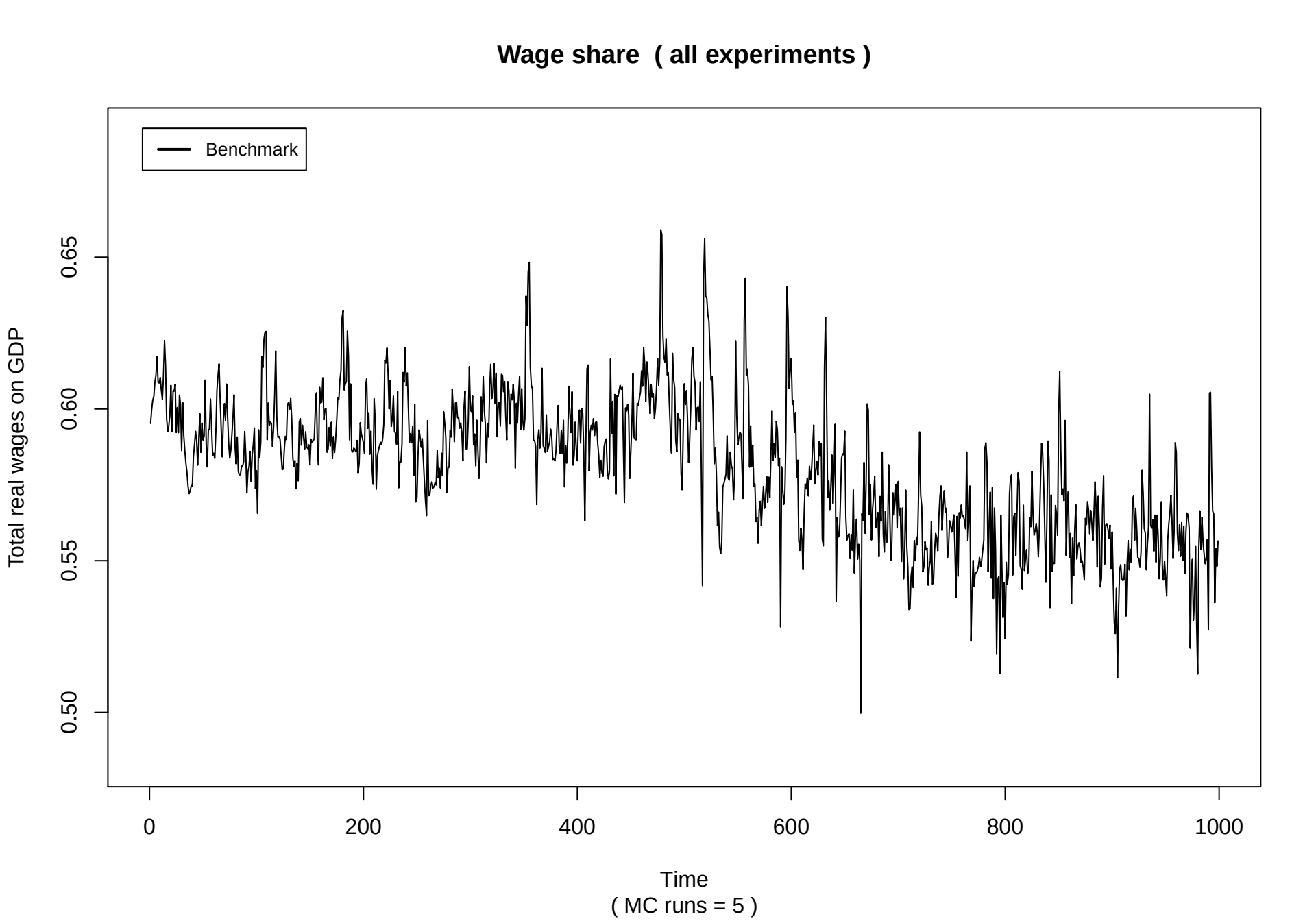

Government debt on GDP (Benchmark)
Government debt over GDP
0
100
200
300
400
0
200
400
600
800
1000
Time
(95% confidence band in gray, min/max values in light gray / MC runs = 5)

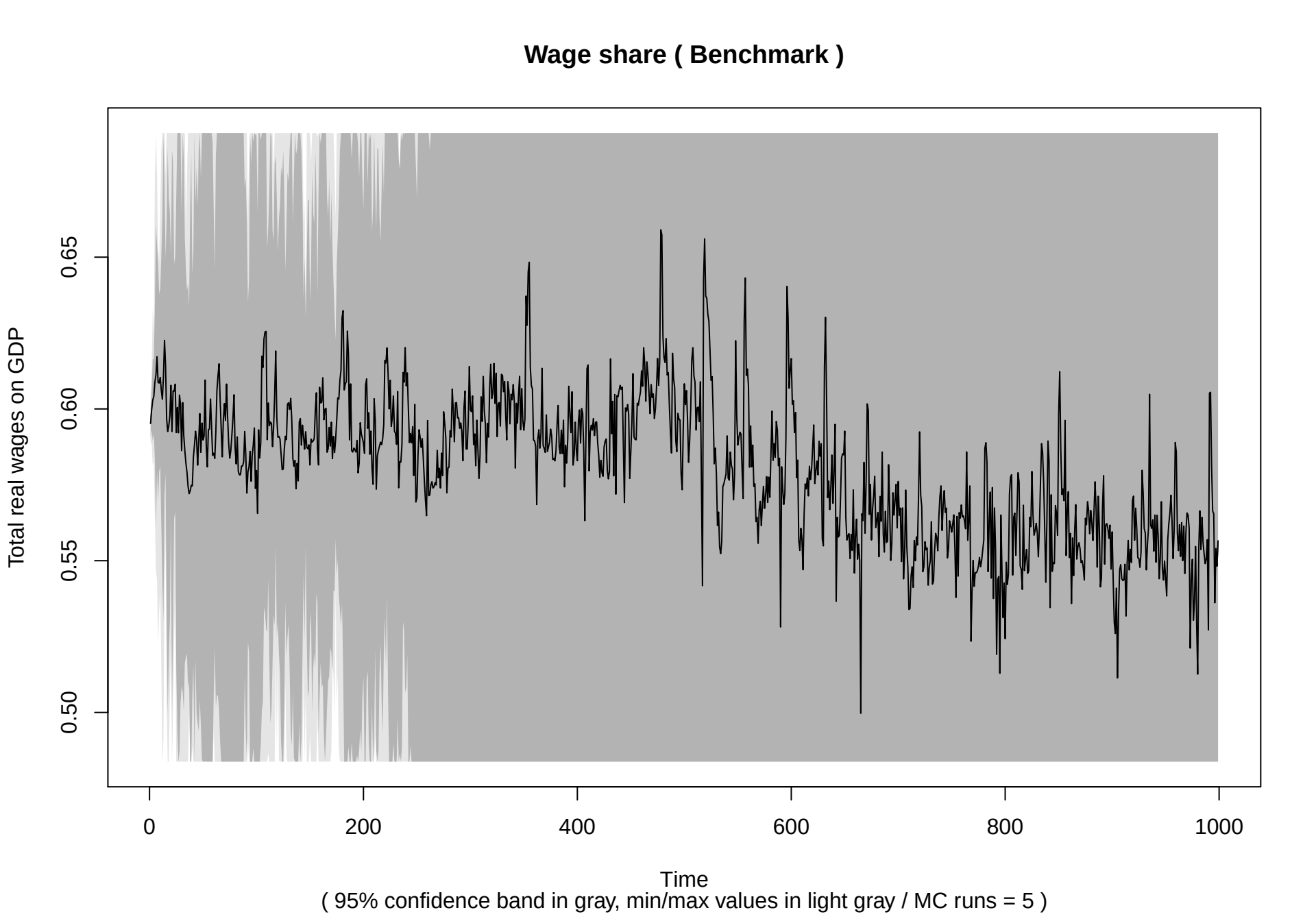

Unemployment and vacancy rates (all experiments)
Benchmark
Unemployment
Vacancy
Rate
0.0
0.1
0.2
0.3
0.4
0.5
0
200
400
600
800
1000
Time
(MC runs = 5)

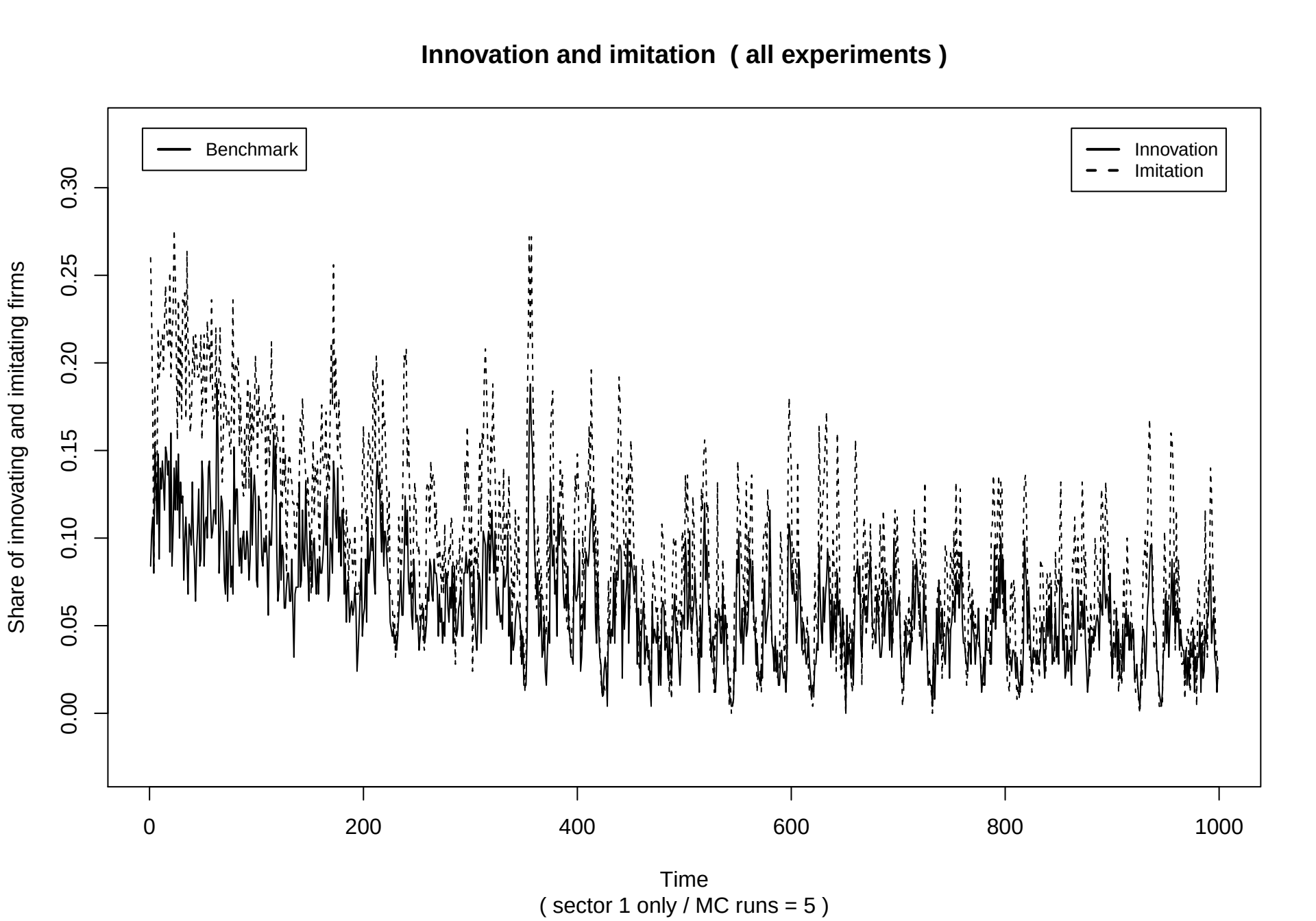

Unemployment and vacancy rates (Benchmark)
Unemployment
Vacancy
Rate
0.0
0.1
0.2
0.3
0.4
0.5
0
200
400
600
800
1000
Time
(95% confidence band in gray, min/max values in light gray / MC runs = 5)

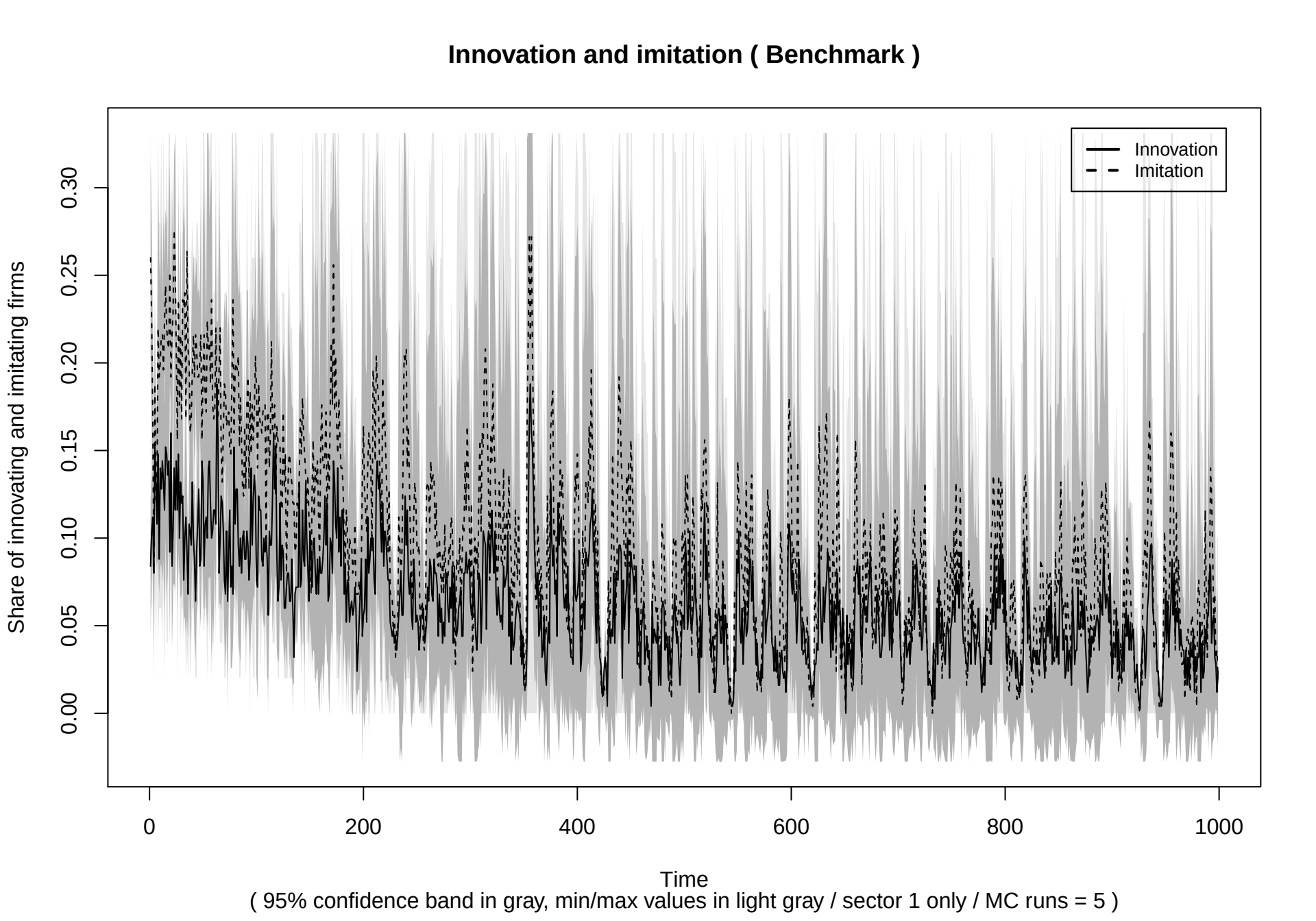

Real wages average (all experiments)
Benchmark
Log wages
0
2
4
6
8
0
200
400
600
800
1000
Time
(MC runs = 5)

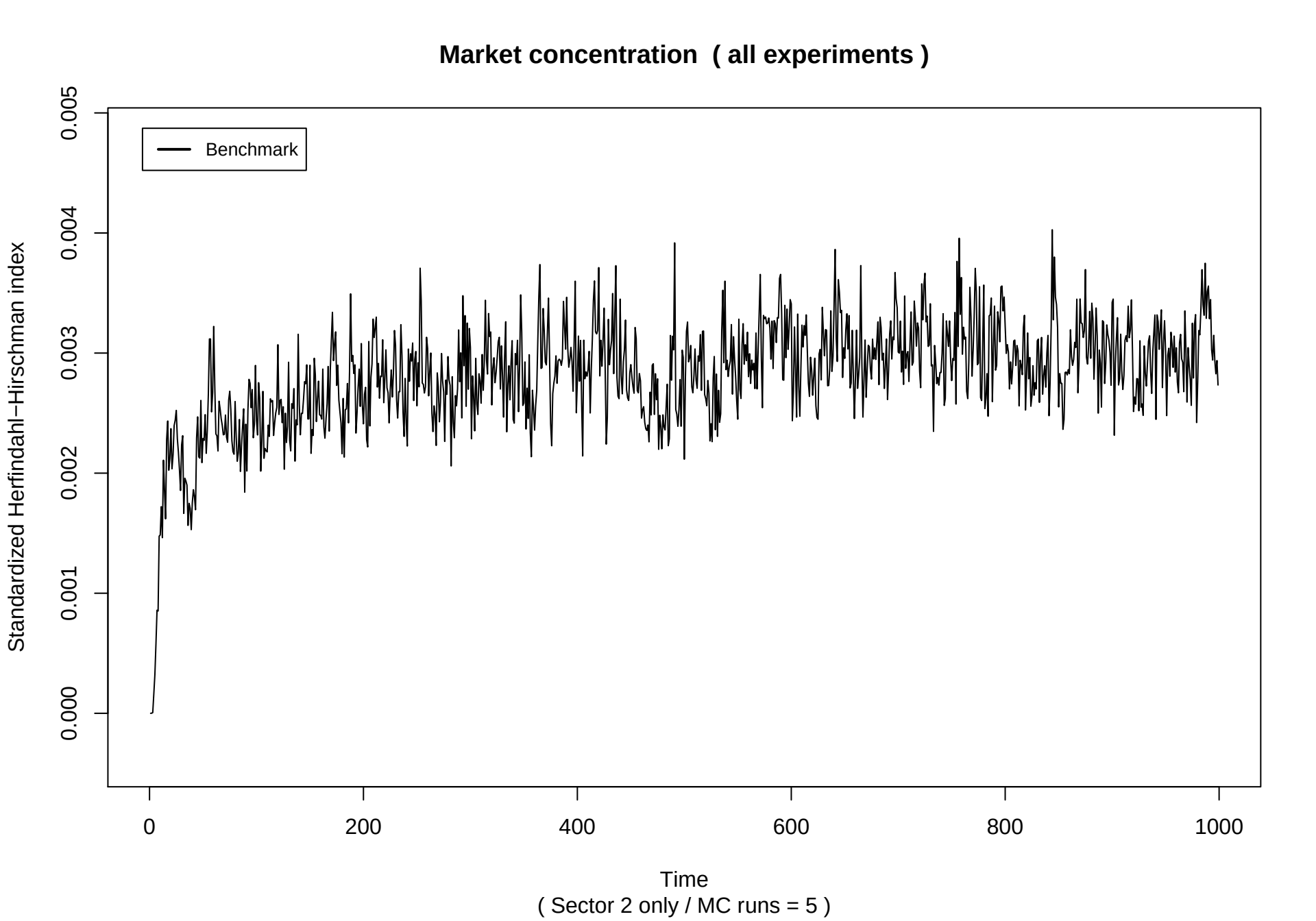

Real wages average (Benchmark)
Log wages
0
2
4
6
8
0
200
400
600
800
1000
Time
(95% confidence band in gray, min/max values in light gray / MC runs = 5)

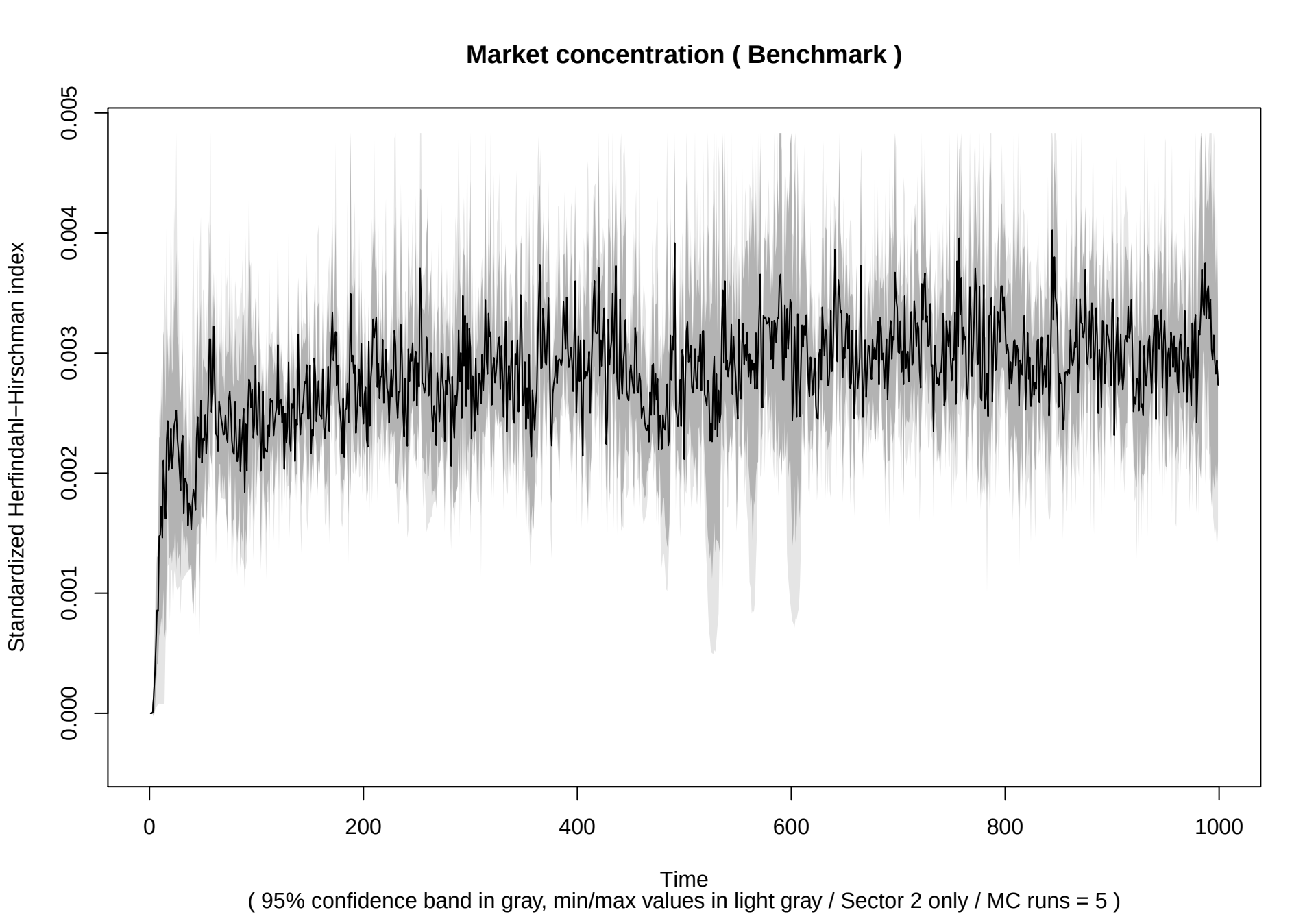

Wage share (all experiments)
Benchmark
Total real wages on GDP
0.50
0.55
0.60
0.65
0
200
400
600
800
1000
Time
(MC runs = 5)

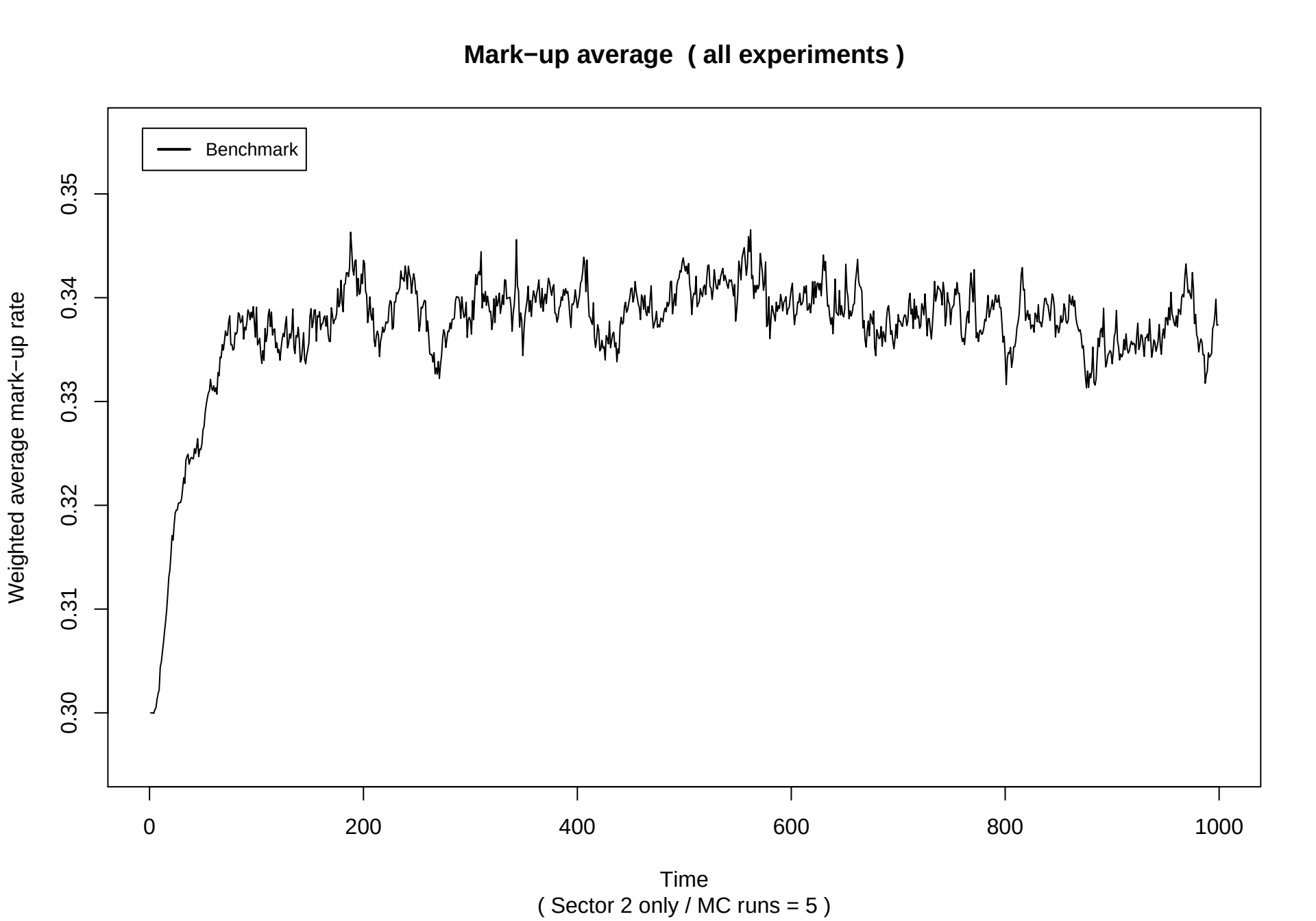

Wage share (Benchmark)
Total real wages on GDP
0.50
0.55
0.60
0.65
0
200
400
600
800
1000
Time
(95% confidence band in gray, min/max values in light gray / MC runs = 5)

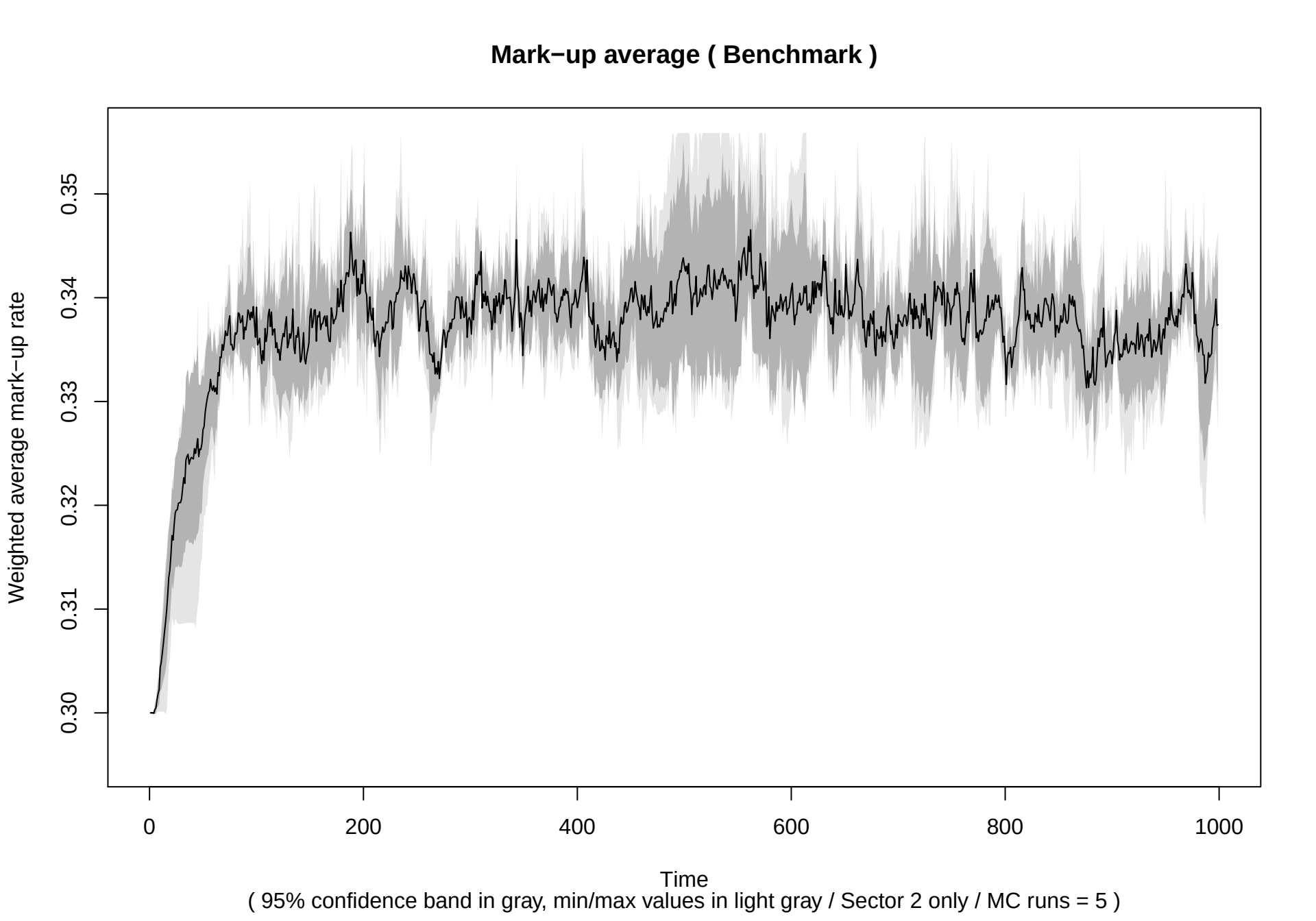

Innovation and imitation (all experiments)
Benchmark
Innovation
Imitation
Share of innovating and imitating firms
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0
200
400
600
800
1000
Time
(sector 1 only / MC runs = 5)

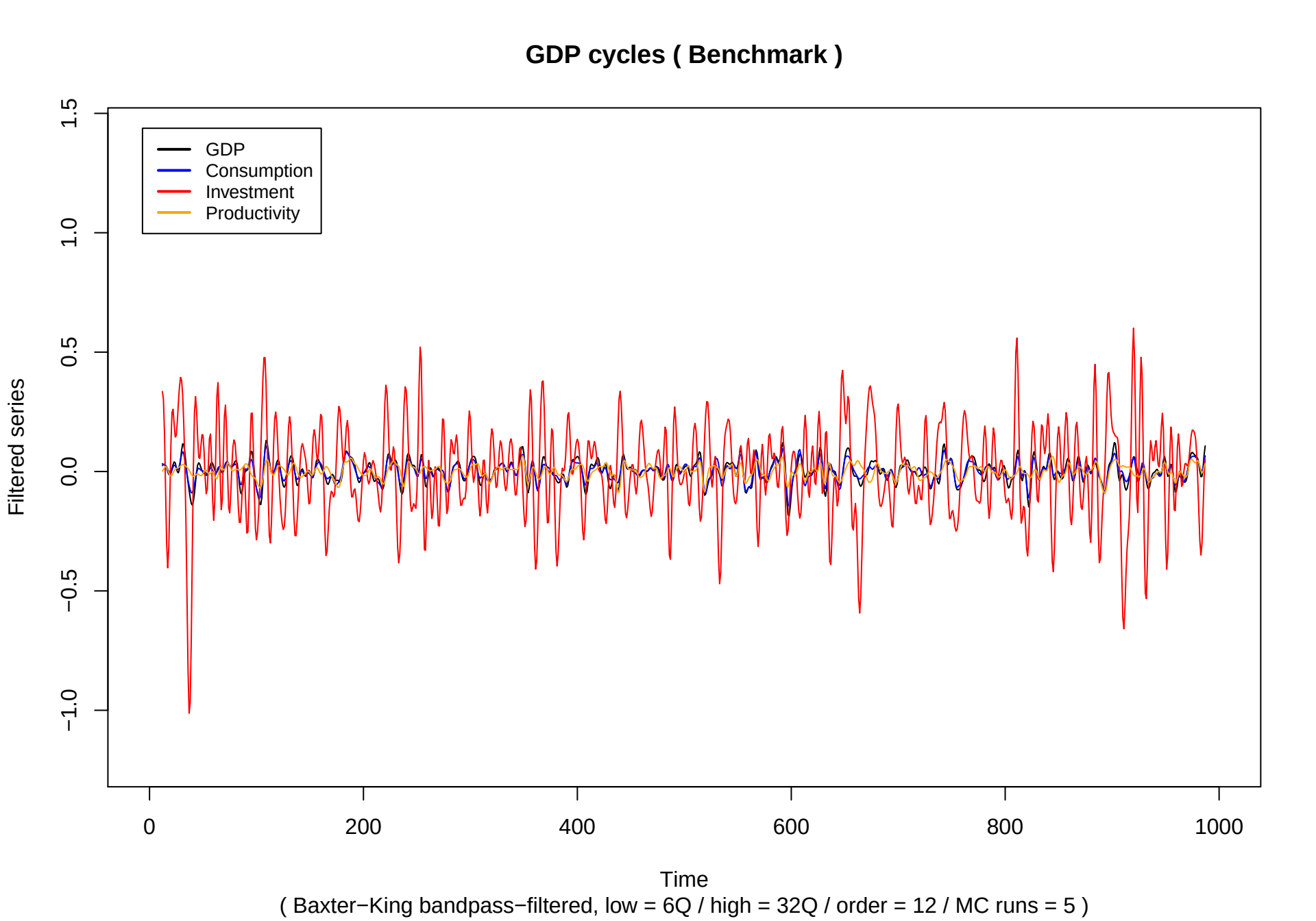

Innovation and imitation (Benchmark)
Innovation
Imitation
Share of innovating and imitating firms
0.00
0.05
0.10
0.15
0.20
0.25
0.30
0
200
400
600
800
1000
Time
(95% confidence band in gray, min/max values in light gray / sector 1 only / MC runs = 5)

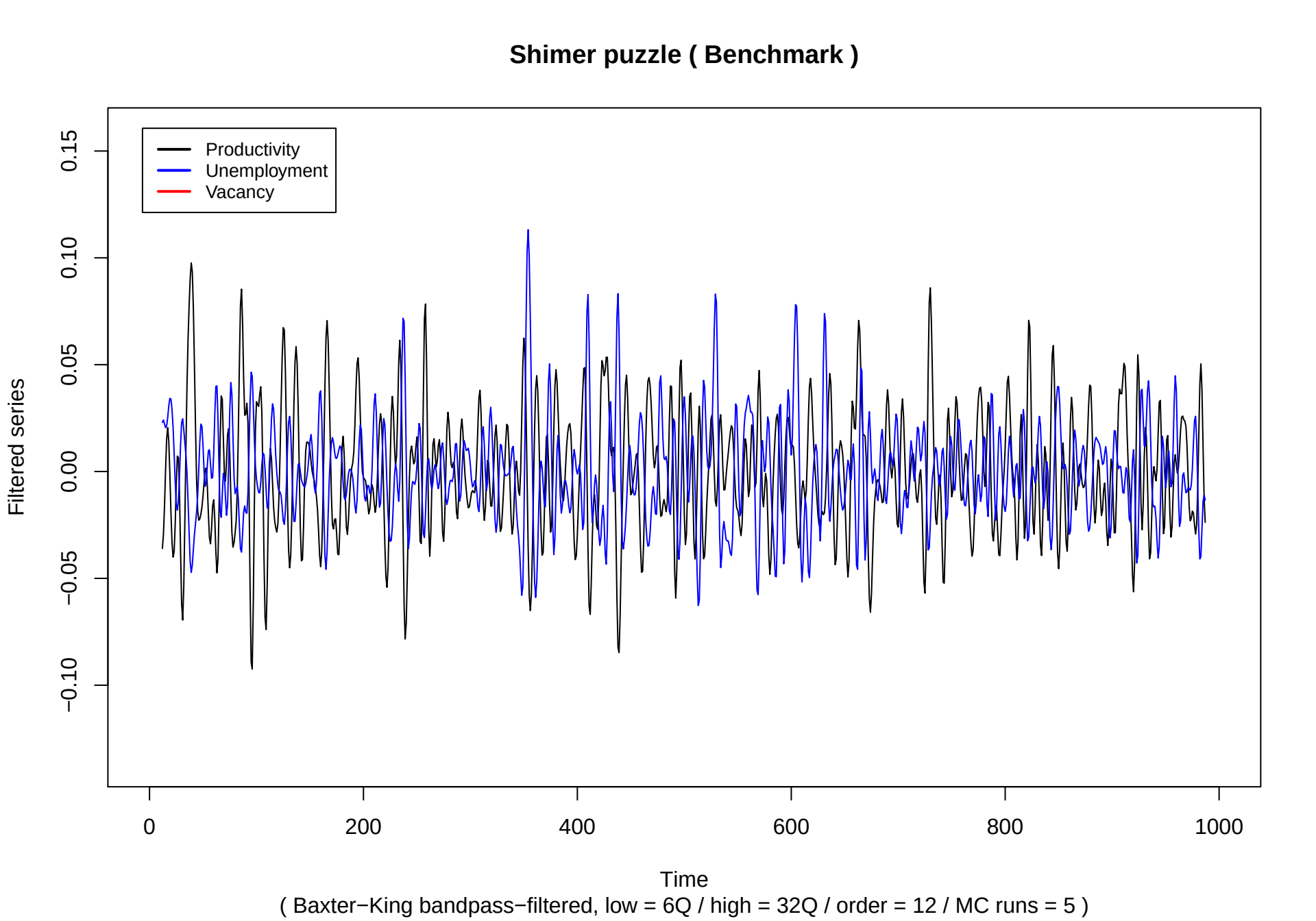

Market concentration (all experiments)
Benchmark
Standardized Herfindahl−Hirschman index
0.000
0.001
0.002
0.003
0.004
0.005
0
200
400
600
800
1000
Time
(Sector 2 only / MC runs = 5)


Market concentration (Benchmark)
Standardized Herfindahl−Hirschman index
0.000
0.001
0.002
0.003
0.004
0.005
0
200
400
600
800
1000
Time
(95% confidence band in gray, min/max values in light gray / Sector 2 only / MC runs = 5)


Mark−up average (all experiments)
Benchmark
Weighted average mark−up rate
0.30
0.31
0.32
0.33
0.34
0.35
0
200
400
600
800
1000
Time
(Sector 2 only / MC runs = 5)


Mark−up average (Benchmark)
Weighted average mark−up rate
0.30
0.31
0.32
0.33
0.34
0.35
0
200
400
600
800
1000
Time
(95% confidence band in gray, min/max values in light gray / Sector 2 only / MC runs = 5)


GDP cycles (Benchmark)
GDP
Consumption
Investment
Productivity
Filtered series
1.5
1.0
0.5
0.0
−0.5
−1.0
0
200
400
600
800
1000
Time
(Baxter−King bandpass−filtered, low = 6Q / high = 32Q / order = 12 / MC runs = 5)


Shimer puzzle (Benchmark)
Productivity
Unemployment
Vacancy
Filtered series
0.15
0.10
0.05
0.00
−0.05
−0.10
0
200
400
600
800
1000
Time
(Baxter−King bandpass−filtered, low = 6Q / high = 32Q / order = 12 / MC runs = 5)

Key statistics and unit roots tests for cycles (Benchmark)

	GDP (output)	Consumption	Investment	Product.	Real wage
avg. growth rate	0.007036	0.006946	0.008661	0.006897	0.006507
(s.e.)	0.0005977	0.0006216	0.0006252	0.0005608	0.0005803
ADF test (logs)	−1.974	−1.81	−9.317	−1.985	−1.855
(s.e.)	0.2545	0.2437	0.4767	0.2963	0.2901
(p−val.)	0.5895	0.6586	0.01	0.5857	0.6398
(s.e.)	0.1077	0.1032	0	0.1246	0.1228
ADF test (bpf)	−11.38	−10.82	−14.25	−10.52	−10.33
(s.e.)	0.3241	0.3653	0.2816	0.332	0.2671
(p−val.)	0.01	0.01	0.01	0.01	0.01
(s.e.)	0	0	0	0	0
s.d. (bpf)	0.08597	0.0652	1.498	0.05098	0.06221
(s.e.)	0.002041	0.001897	0.05165	0.001275	0.001475
relative s.d. (GDP)	1	0.7584	17.42	0.593	0.7237

(bpf: Baxter−King bandpass−filtered series, low = 6Q / high = 32Q / order = 12 / MC runs = 5 / period = 2 − 1000)
(ADF test H0: there are unit roots / non−stationary at 5% level)

Correlation structure for GDP (Benchmark)

	−4	−3	−2	−1	0	1	2	3	4
GDP (output)	−0.04182	0.2402	0.5888	0.8833	1	0.8833	0.5888	0.2402	−0.04182
(s.e.)	0.02003	0.0167	0.01085	0.003597	3.511e−17	0.003597	0.01085	0.0167	0.02003
(p−val.)	0.7832	0.0002182	5.388e−07	1.103e−09	NA	1.103e−09	5.388e−07	0.0002182	0.7832
Consumption	0.05015	0.2824	0.5671	0.8175	0.9338	0.8585	0.6201	0.3088	0.02691
(s.e.)	0.01289	0.007024	0.006877	0.005392	0.002623	0.007886	0.01585	0.02263	0.02687
(p−val.)	0.7947	3.075e−06	1.029e−07	7.78e−09	2.457e−10	2.88e−08	1.943e−06	0.0002005	0.7398
Investment	−0.3004	−0.3128	−0.2348	−0.06091	0.1605	0.3475	0.429	0.3893	0.2712
(s.e.)	0.02423	0.009198	0.02731	0.04494	0.04921	0.03922	0.0228	0.01842	0.02601
(p−val.)	0.0002992	5.379e−06	0.001598	0.2445	0.05797	0.0009463	4.352e−05	2.949e−05	0.0006489
Net investment	−0.1957	−0.1697	−0.07701	0.07628	0.2446	0.3627	0.3825	0.3047	0.1755
(s.e.)	0.02578	0.026	0.03847	0.0468	0.04497	0.03409	0.02459	0.02983	0.03977
(p−val.)	0.003283	0.007177	0.2899	0.1684	0.007665	0.000456	0.0001	0.0006205	0.02306
Change in inventories	−0.2709	−0.1845	0.01751	0.2364	0.353	0.3049	0.1449	−0.01915	−0.09766
(s.e.)	0.0215	0.02516	0.02175	0.01472	0.01107	0.008733	0.008574	0.01798	0.02148
(p−val.)	0.000314	0.004114	0.9238	0.0001452	6.225e−06	4.968e−06	0.00032	0.9582	0.086
Unemployment rate	0.2707	0.1967	0.01311	−0.2239	−0.4157	−0.4783	−0.3947	−0.2204	−0.04391
(s.e.)	0.03094	0.02428	0.01764	0.01706	0.02491	0.03613	0.04558	0.04921	0.04818
(p−val.)	0.001259	0.002579	0.9828	0.0003438	7.146e−05	0.000162	0.0009364	0.01616	0.07764
Productivity	0.2514	0.4063	0.5479	0.6334	0.6277	0.5215	0.3461	0.1516	−0.01599
(s.e.)	0.02688	0.02386	0.02373	0.02842	0.03475	0.04054	0.04194	0.03716	0.02869
(p−val.)	0.001069	6.703e−05	1.679e−05	1.806e−05	4.164e−05	0.0001727	0.001239	0.03668	0.7907
Mark−up (sector 2)	0.2399	0.1878	0.1006	−0.0009605	−0.09021	−0.1471	−0.1662	−0.1552	−0.1274
(s.e.)	0.03371	0.03689	0.03616	0.03637	0.04118	0.04455	0.04113	0.03242	0.02541
(p−val.)	0.00309	0.01351	0.1429	0.6021	0.2653	0.06435	0.03218	0.02263	0.03082
Total firm debt	0.1167	0.04114	−0.03476	−0.0994	−0.1481	−0.1827	−0.2069	−0.2202	−0.218
(s.e.)	0.02001	0.02076	0.02103	0.01874	0.01441	0.01397	0.02328	0.03415	0.04035
(p−val.)	0.02607	0.8139	0.8291	0.05825	0.001968	0.0004929	0.001696	0.004894	0.009024
Liquidity−to−sales ratio	−0.01926	−0.1829	−0.3821	−0.5639	−0.662	−0.6317	−0.4826	−0.2687	−0.06008
(s.e.)	0.01772	0.006755	0.02464	0.04509	0.05977	0.06225	0.0514	0.03352	0.02248
(p−val.)	0.9686	2.862e−05	0.0001012	0.0001853	0.000277	0.0003957	0.0006073	0.001755	0.5316
Bankruptcy rate	0.2541	0.2752	0.2342	0.1623	0.104	0.08262	0.08045	0.05683	−0.01331
(s.e.)	0.05032	0.05481	0.0562	0.05091	0.04149	0.041	0.05097	0.05561	0.04836
(p−val.)	0.009408	0.008847	0.01873	0.06001	0.1843	0.2556	0.151	0.06019	0.1192

(non−rate/ratio series are Baxter−King bandpass−filtered, low = 6Q / high = 32Q / order = 12 / MC runs = 5 / period = 2 − 1000)
(test H0: lag coefficient is not significant at 5% level)

Correlation structure for GDP (Benchmark)

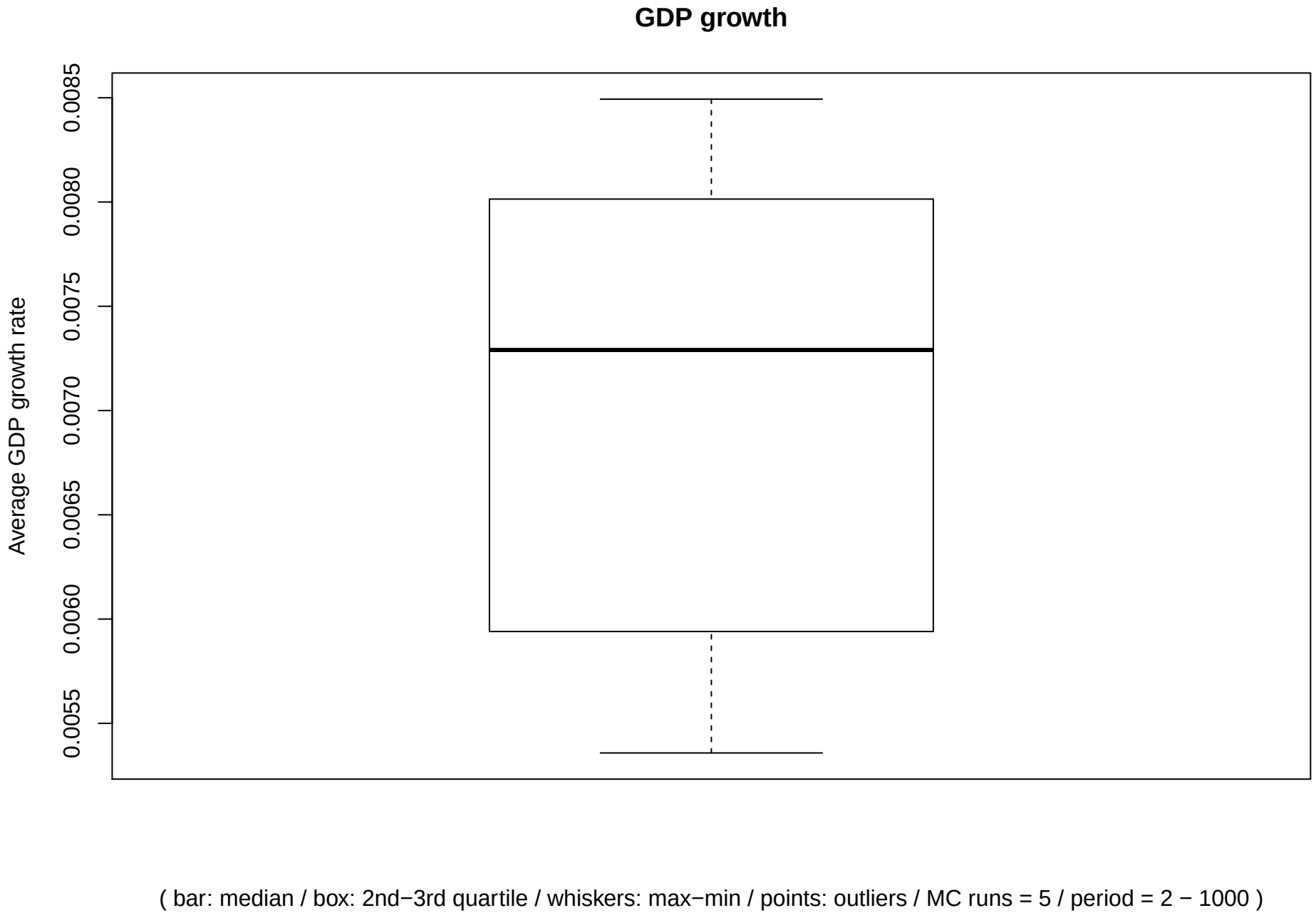
	−4	−3	−2	−1	0	1	2	3	4
GDP (output)	−0.04182	0.2402	0.5888	0.8833	1	0.8833	0.5888	0.2402	−0.04182
(s.e.)	0.02003	0.0167	0.01085	0.003597	3.511e−17	0.003597	0.01085	0.0167	0.02003
(p−val.)	0.7832	0.0002182	5.388e−07	1.103e−09	NA	1.103e−09	5.388e−07	0.0002182	0.7832
Consumption	0.05015	0.2824	0.5671	0.8175	0.9338	0.8585	0.6201	0.3088	0.02691
(s.e.)	0.01289	0.007024	0.006877	0.005392	0.002623	0.007886	0.01585	0.02263	0.02687
(p−val.)	0.7947	3.075e−06	1.029e−07	7.78e−09	2.457e−10	2.88e−08	1.943e−06	0.0002005	0.7398
Investment	−0.3004	−0.3128	−0.2348	−0.06091	0.1605	0.3475	0.429	0.3893	0.2712
(s.e.)	0.02423	0.009198	0.02731	0.04494	0.04921	0.03922	0.0228	0.01842	0.02601
(p−val.)	0.0002992	5.379e−06	0.001598	0.2445	0.05797	0.0009463	4.352e−05	2.949e−05	0.0006489
Productivity	0.2514	0.4063	0.5479	0.6334	0.6277	0.5215	0.3461	0.1516	−0.01599
(s.e.)	0.02688	0.02386	0.02373	0.02842	0.03475	0.04054	0.04194	0.03716	0.02869
(p−val.)	0.001069	6.703e−05	1.679e−05	1.806e−05	4.164e−05	0.0001727	0.001239	0.03668	0.7907
Entry	−0.01075	0.1463	0.295	0.393	0.4147	0.3622	0.2644	0.1561	0.06328
(s.e.)	0.03316	0.03631	0.03301	0.02584	0.02217	0.02861	0.03739	0.04185	0.03956
(p−val.)	0.5351	0.04052	0.001061	0.000107	4.558e−05	0.0002331	0.002822	0.04382	0.3375
Wage	0.2837	0.45	0.5825	0.6403	0.6018	0.4757	0.3021	0.1271	−0.01623
(s.e.)	0.02989	0.02719	0.02039	0.01357	0.01538	0.02142	0.02423	0.023	0.02041
(p−val.)	0.0008825	6.997e−05	6.995e−06	9.073e−07	1.964e−06	2.116e−05	0.0002913	0.0237	0.9465
Unemployment rate	0.2707	0.1967	0.01311	−0.2239	−0.4157	−0.4783	−0.3947	−0.2204	−0.04391
(s.e.)	0.03094	0.02428	0.01764	0.01706	0.02491	0.03613	0.04558	0.04921	0.04818
(p−val.)	0.001259	0.002579	0.9828	0.0003438	7.146e−05	0.000162	0.0009364	0.01616	0.07764
Vacancy rate	0.08932	−0.05021	−0.174	−0.225	−0.1866	−0.09298	−0.007568	0.02371	−0.002523
(s.e.)	0.04893	0.05118	0.05672	0.06732	0.0756	0.07172	0.05473	0.03332	0.0283
(p−val.)	0.09347	0.2771	0.05973	0.03634	0.08732	0.1127	0.04676	0.5975	0.7889

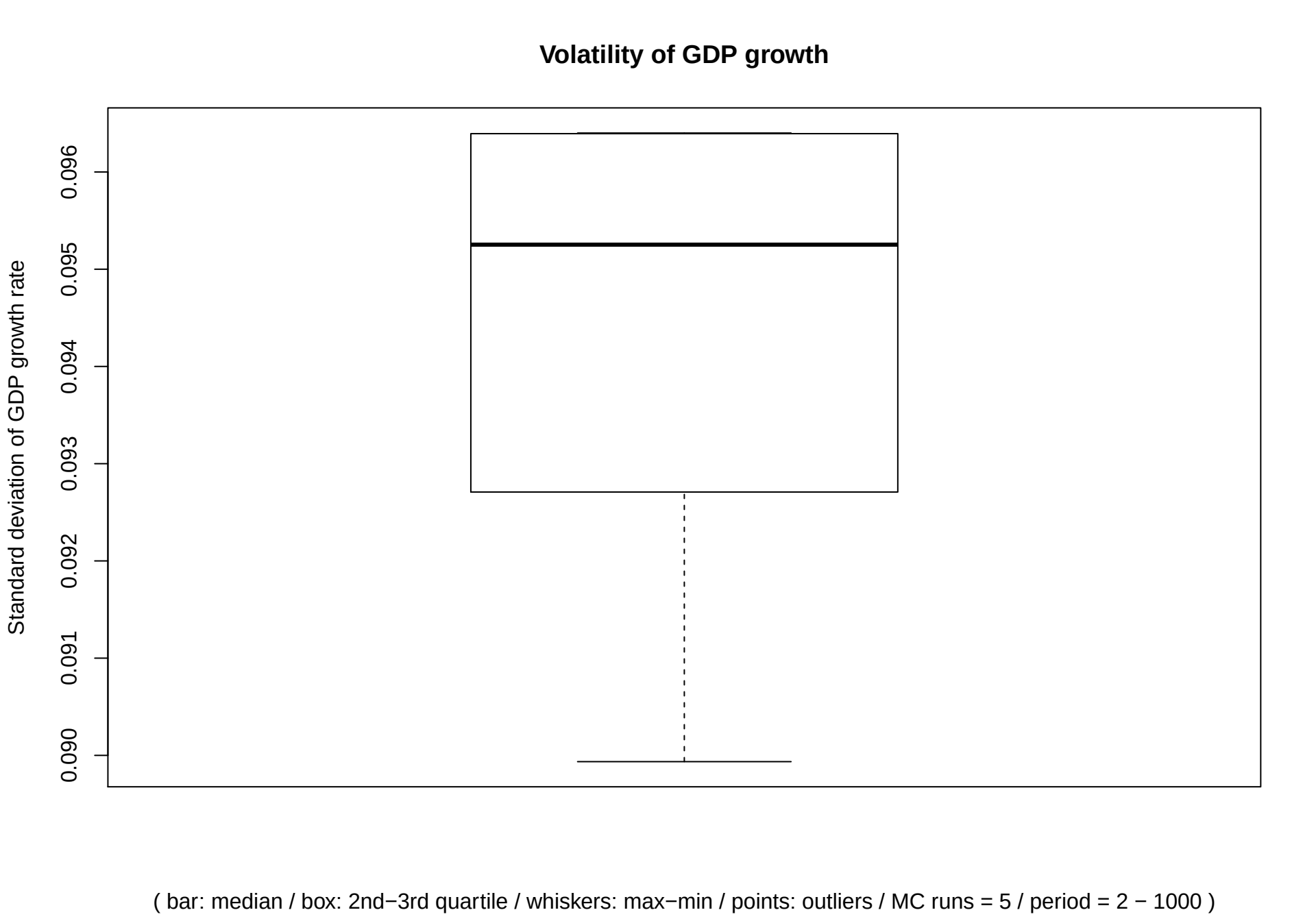
(non−rate/ratio series are Baxter−King bandpass−filtered, low = 6Q / high = 32Q / order = 12 / MC runs = 5 / period = 2 − 1000)
(test H0: lag coefficient is not significant at 5% level)

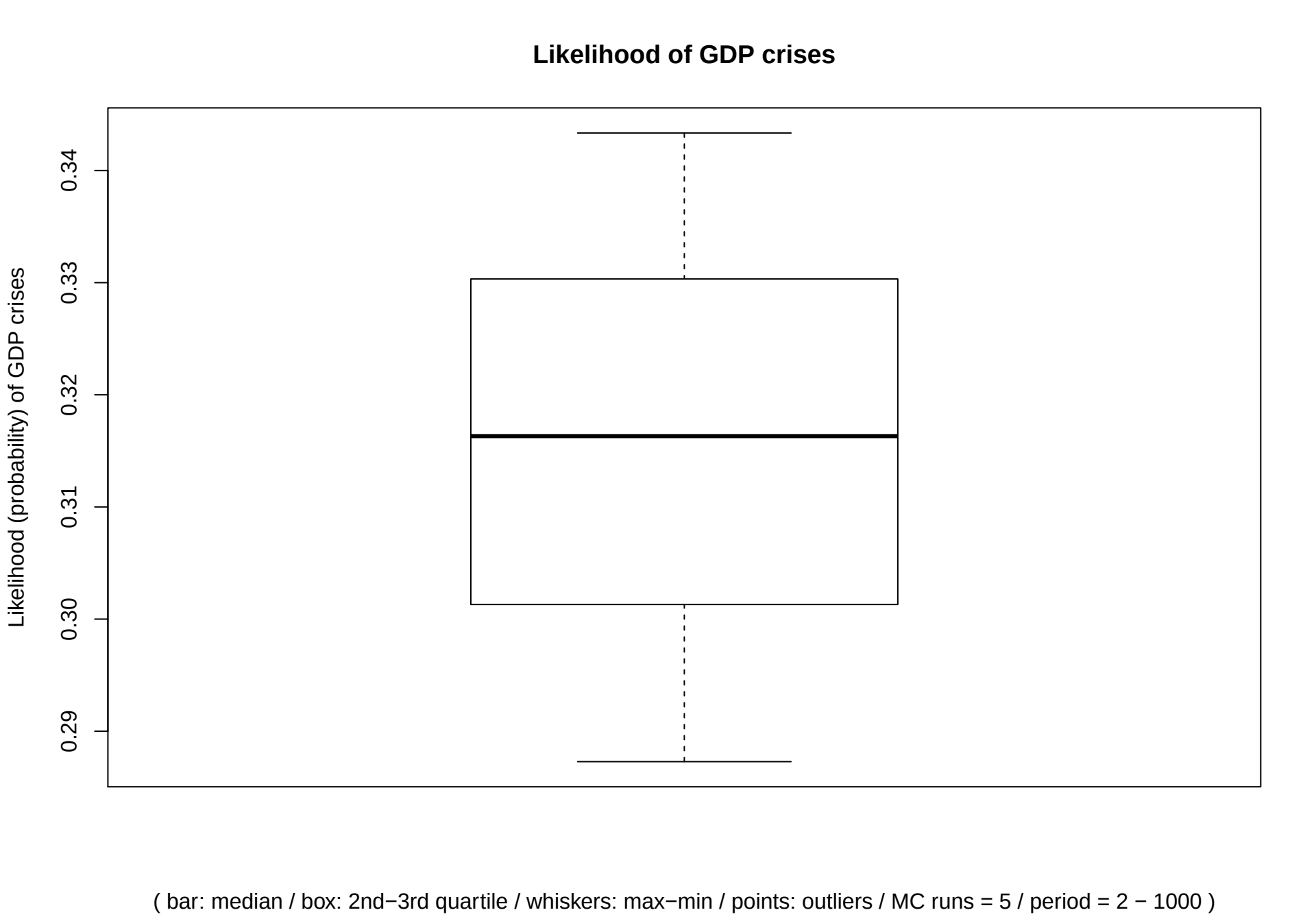
Stationarity, i.i.d. and ergodicity tests (Benchmark)

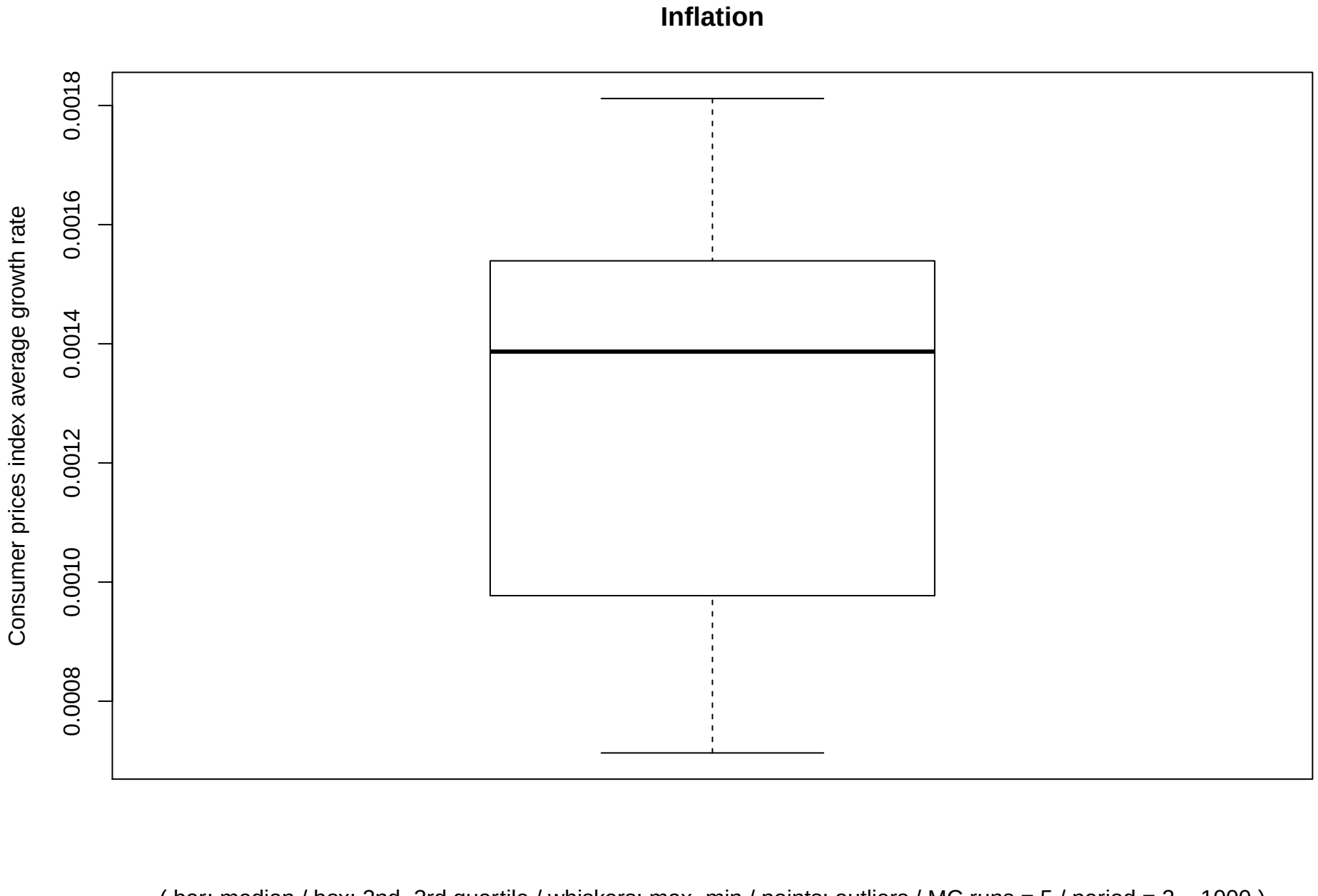
	avg.ADF	rej.ADF	avg.PP	rej.PP	avg.KPSS	rej.KPSS	avg.BDS	rej.BDS	avg.KS	rej.KS	AD	W
dGDP	0.01	1.00	0.01	1.00	0.09	0.00	0.02	0.80	0.38	0.10	0.10	0
dA	0.01	1.00	0.01	1.00	0.05	0.80	0.00	1.00	0.04	0.80	0.00	0
dw	0.01	1.00	0.01	1.00	0.04	0.60	0.00	1.00	0.04	0.80	0.00	0
V	0.01	1.00	0.01	1.00	0.03	0.80	0.00	1.00	0.09	0.80	0.00	0
U	0.01	1.00	0.01	1.00	0.02	0.80	0.00	1.00	0.00	1.00	0.00	0
mu2avg	0.01	1.00	0.01	1.00	0.02	1.00	0.00	1.00	0.04	0.90	0.00	0
HH1	0.01	1.00	0.01	1.00	0.10	0.00	0.00	1.00	0.12	0.60	0.00	0
HH2	0.01	1.00	0.01	1.00	0.01	1.00	0.00	1.00	0.07	0.70	0.00	0

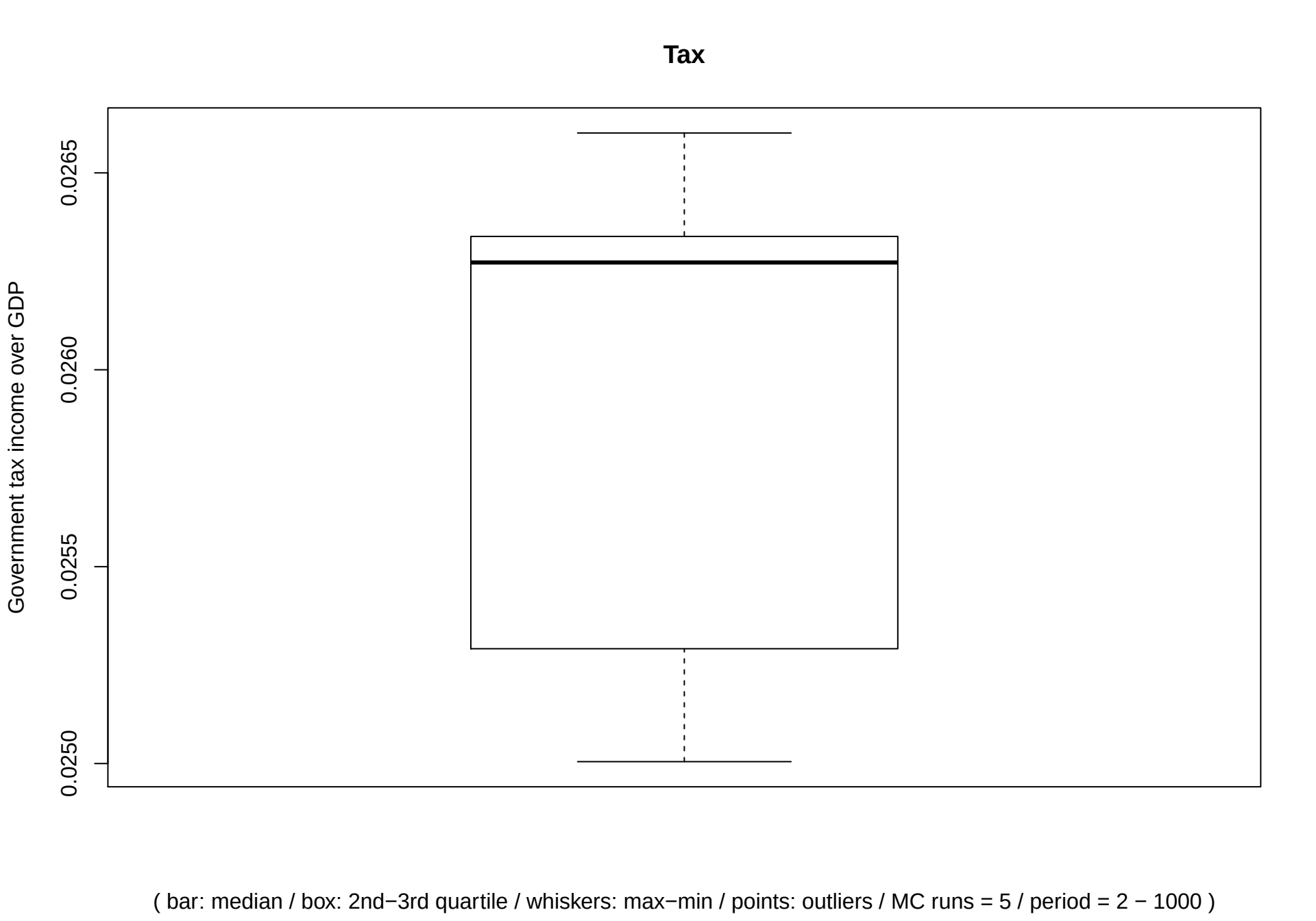
(average p−values for testing H0 and rate of rejection of H0 / MC runs = 5 / period = 2 − 1000)
(ADF/PP H0: non−stationary, KPSS H0: stationary, BDS H0: i.i.d., KS/AD/WW H0: ergodic)
(significance = 0.05)

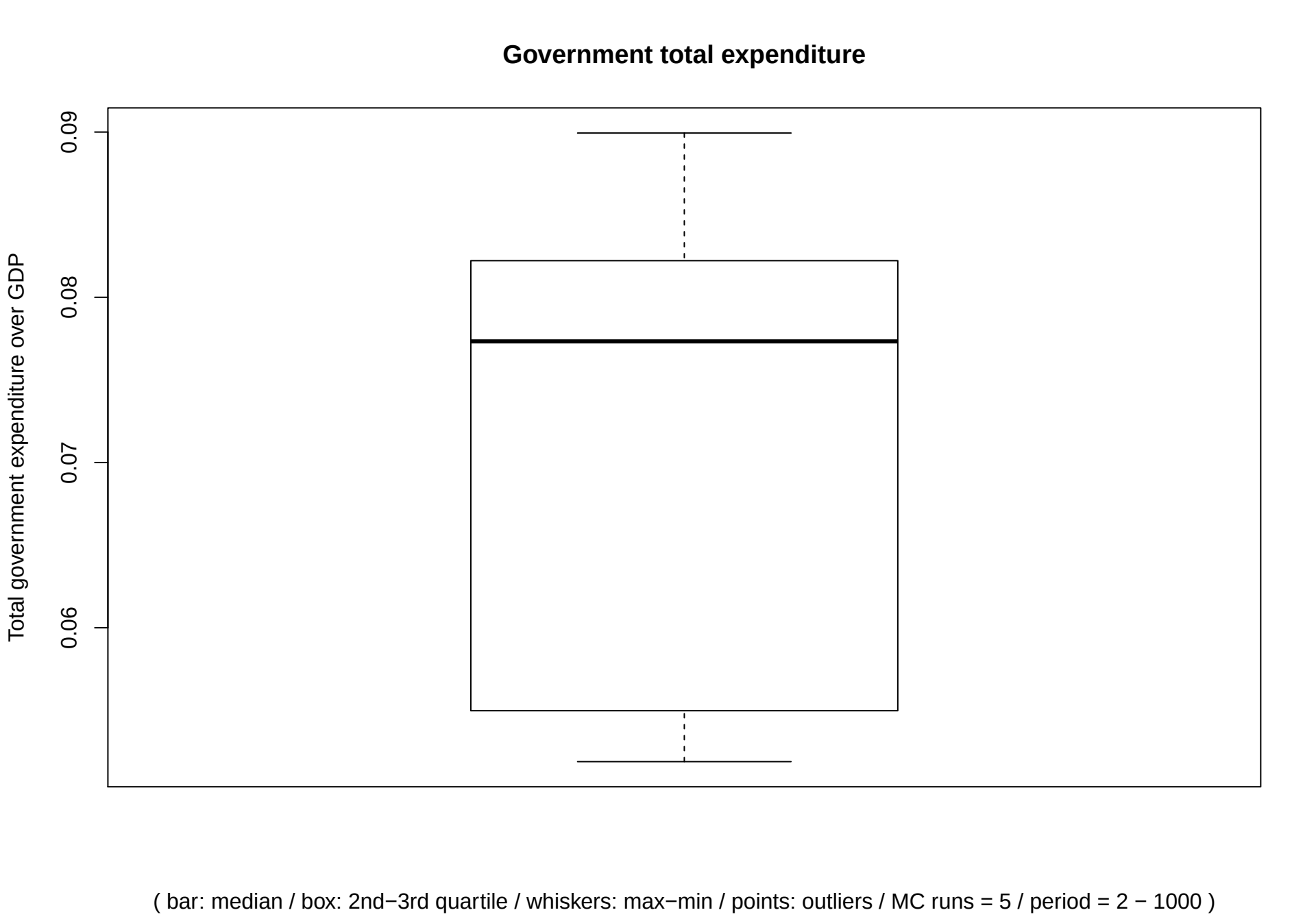

GDP growth
Average GDP growth rate
0.0055
0.0060
0.0065
0.0070
0.0075
0.0080
0.0085
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)

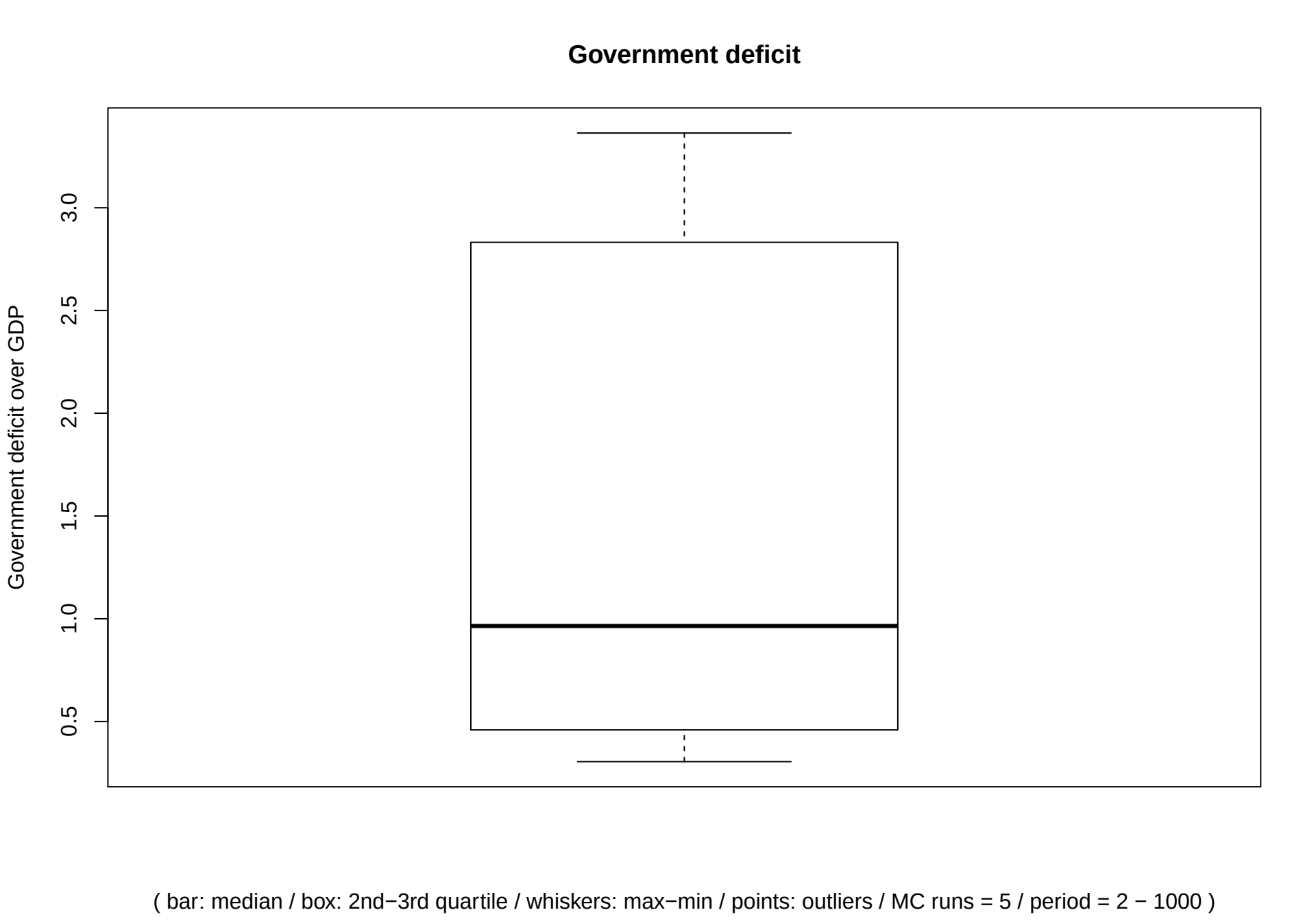

Volatility of GDP growth
Standard deviation of GDP growth rate
0.090
0.091
0.092
0.093
0.094
0.095
0.096
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)

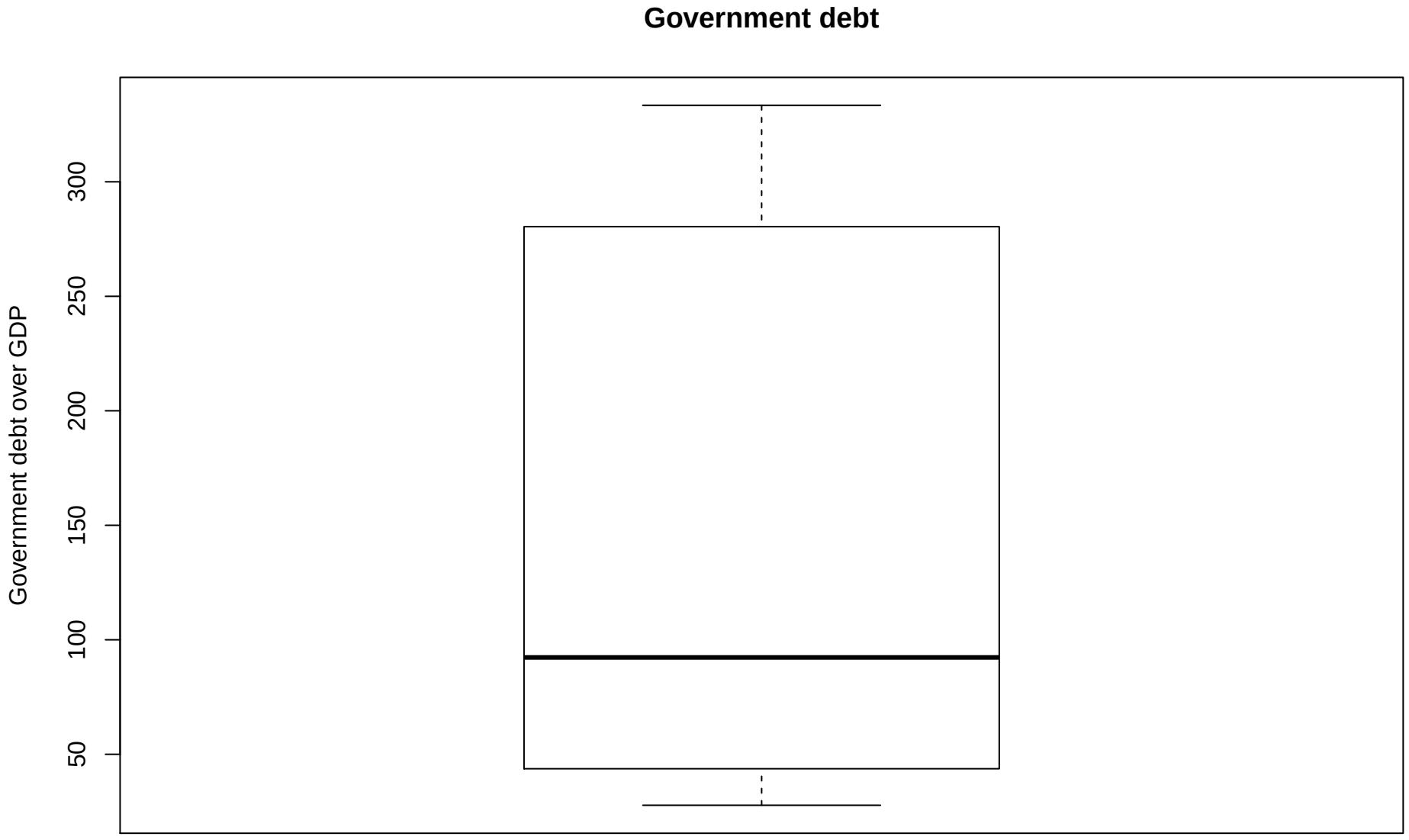

Likelihood of GDP crises
Likelihood (probability) of GDP crises
0.29
0.30
0.31
0.32
0.33
0.34
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)


Inflation
Consumer prices index average growth rate
0.0008
0.0010
0.0012
0.0014
0.0016
0.0018
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)

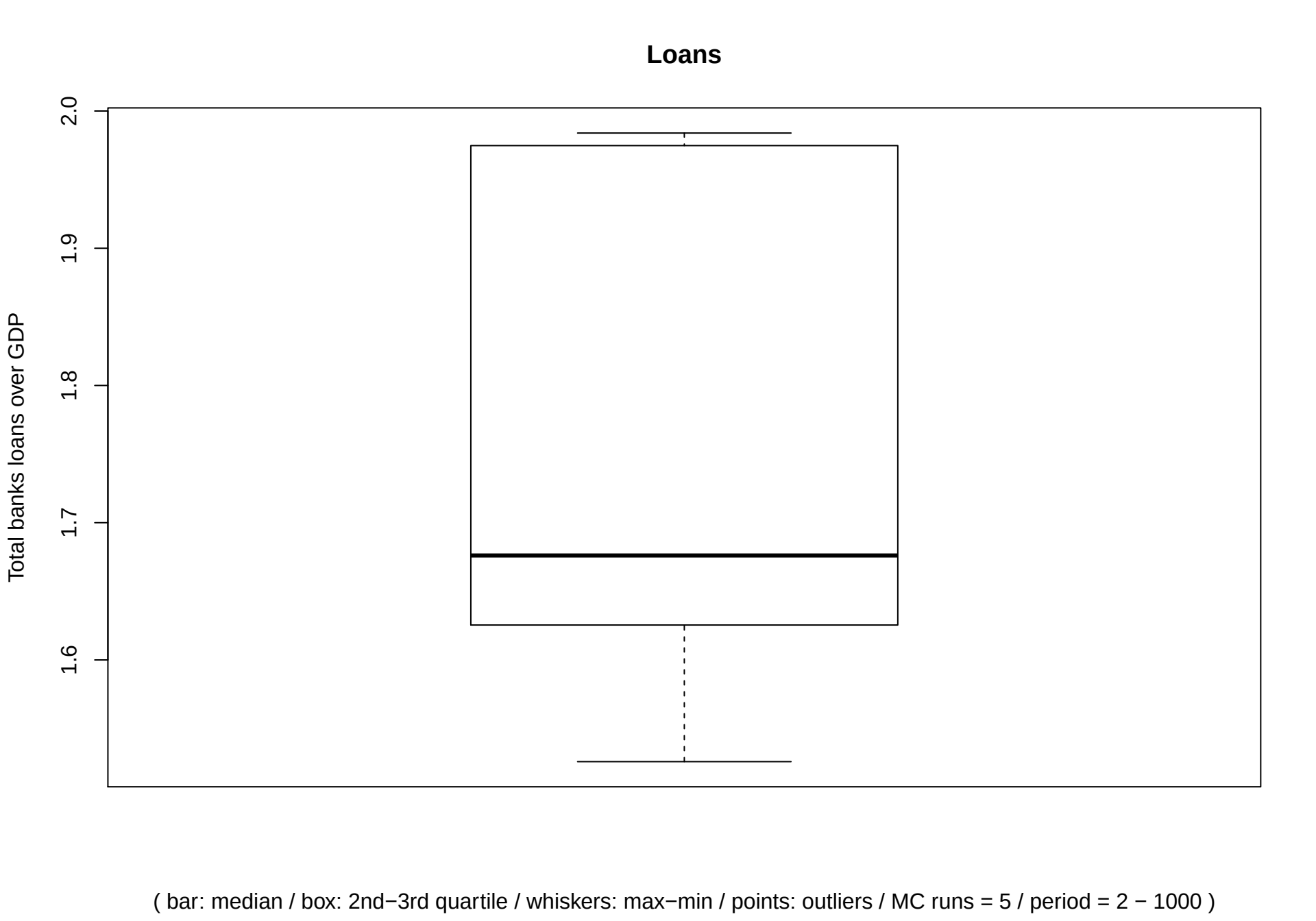

Tax
Government tax income over GDP
0.0250
0.0255
0.0260
0.0265
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)

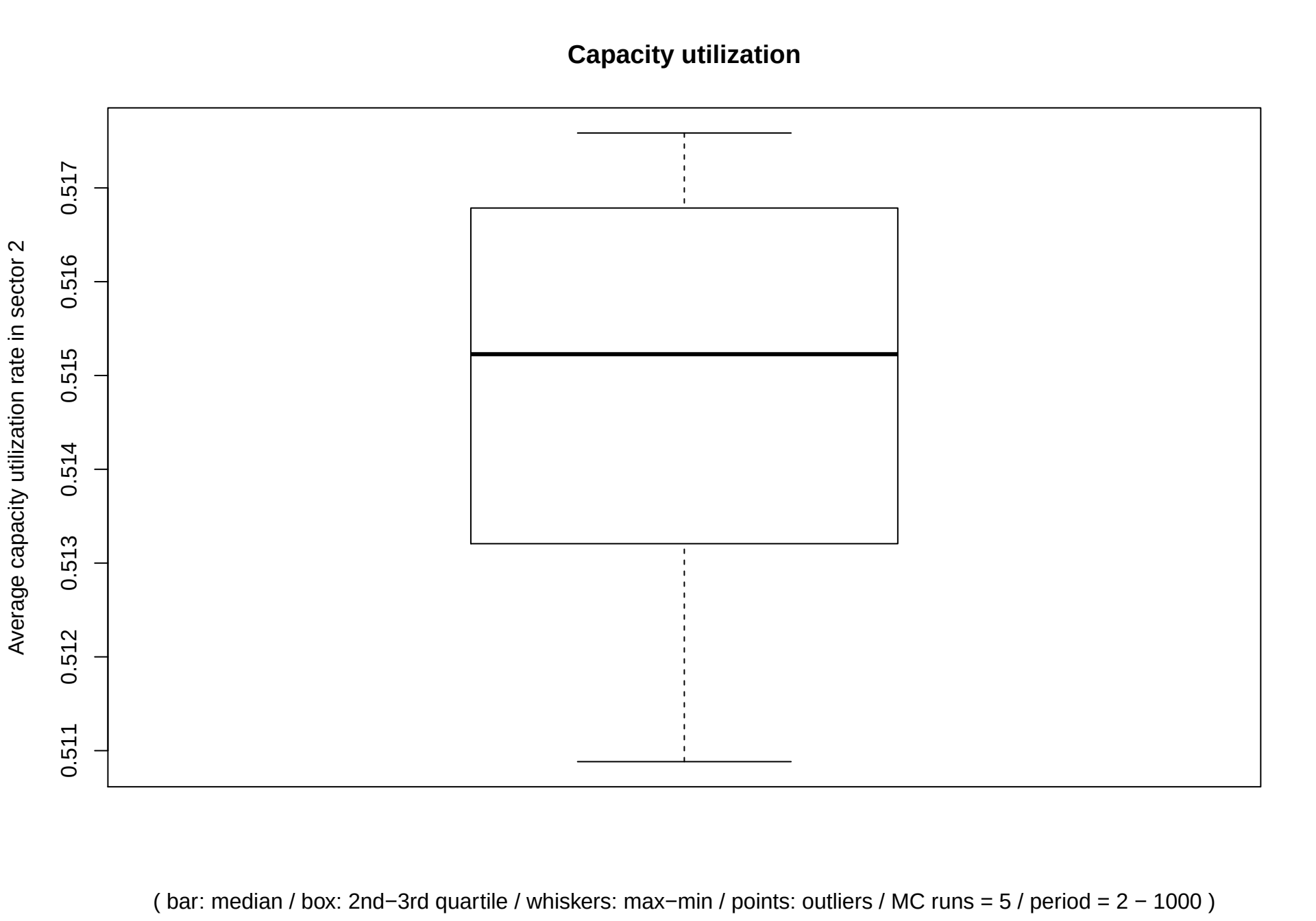

Government total expenditure
Total government expenditure over GDP
0.06
0.07
0.08
0.09
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)

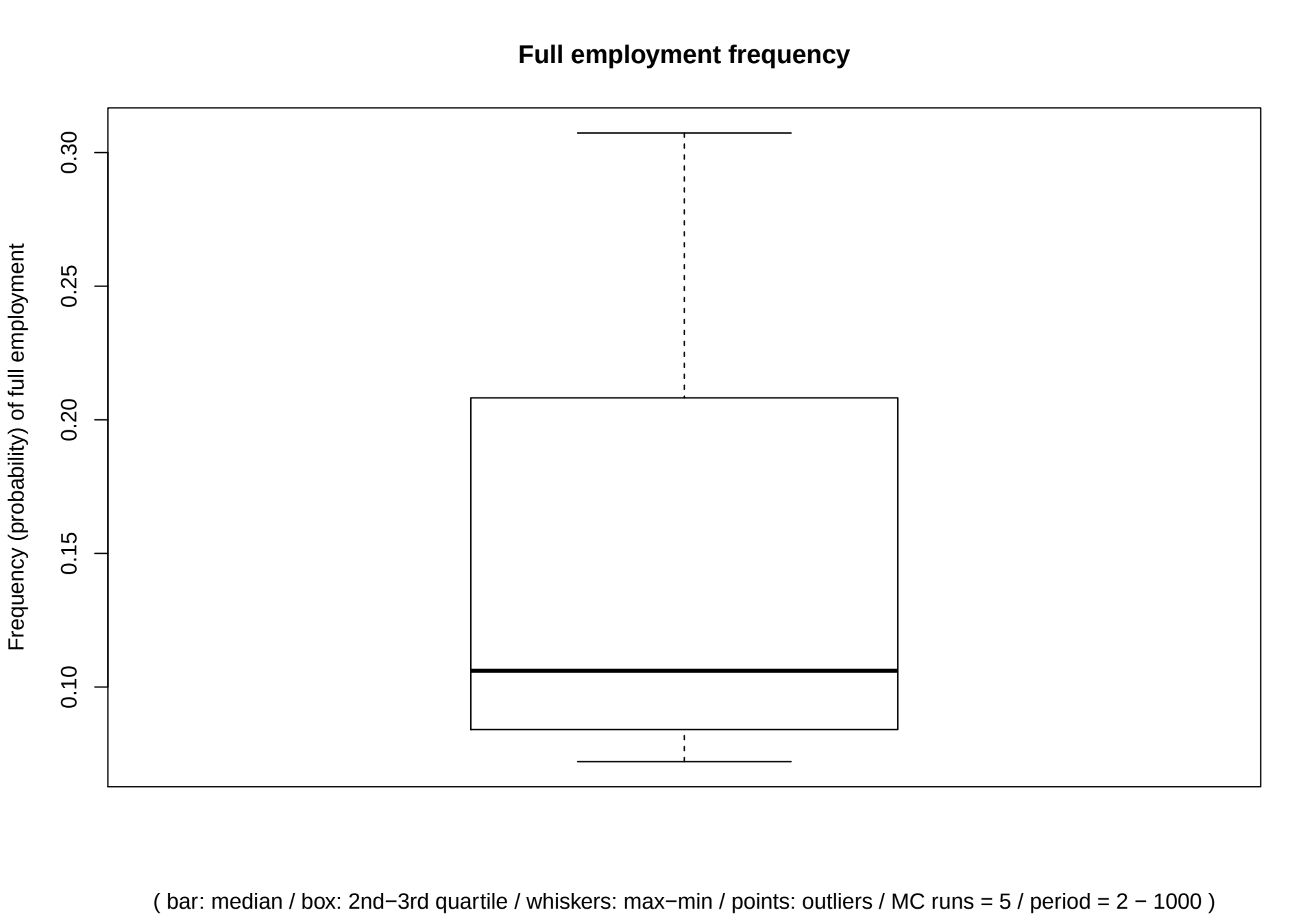

Government deficit
Government deficit over GDP
0.5
1.0
1.5
2.0
2.5
3.0
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)



(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)

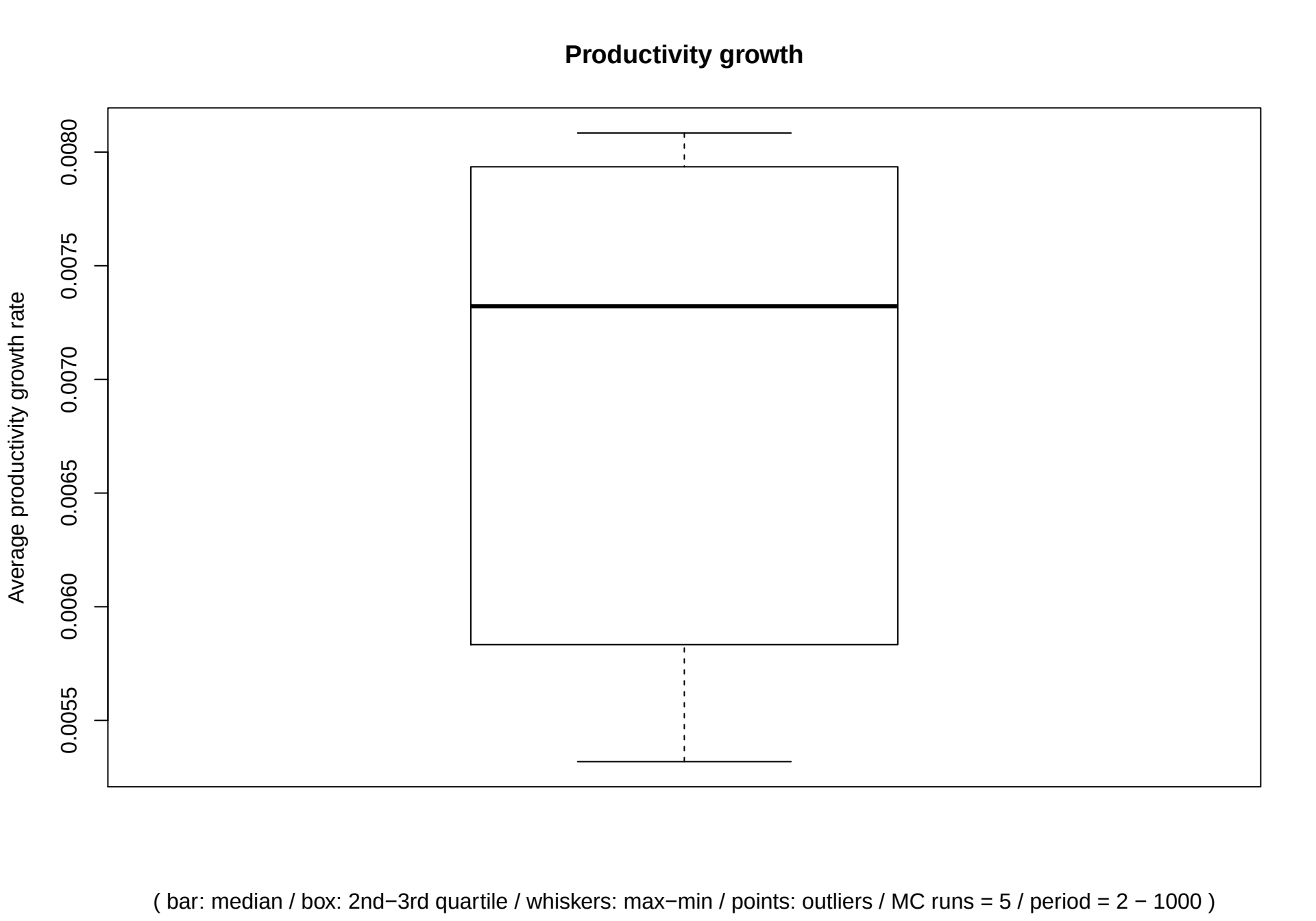

Loans
Total banks loans over GDP
2.0
1.9
1.8
1.7
1.6
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)

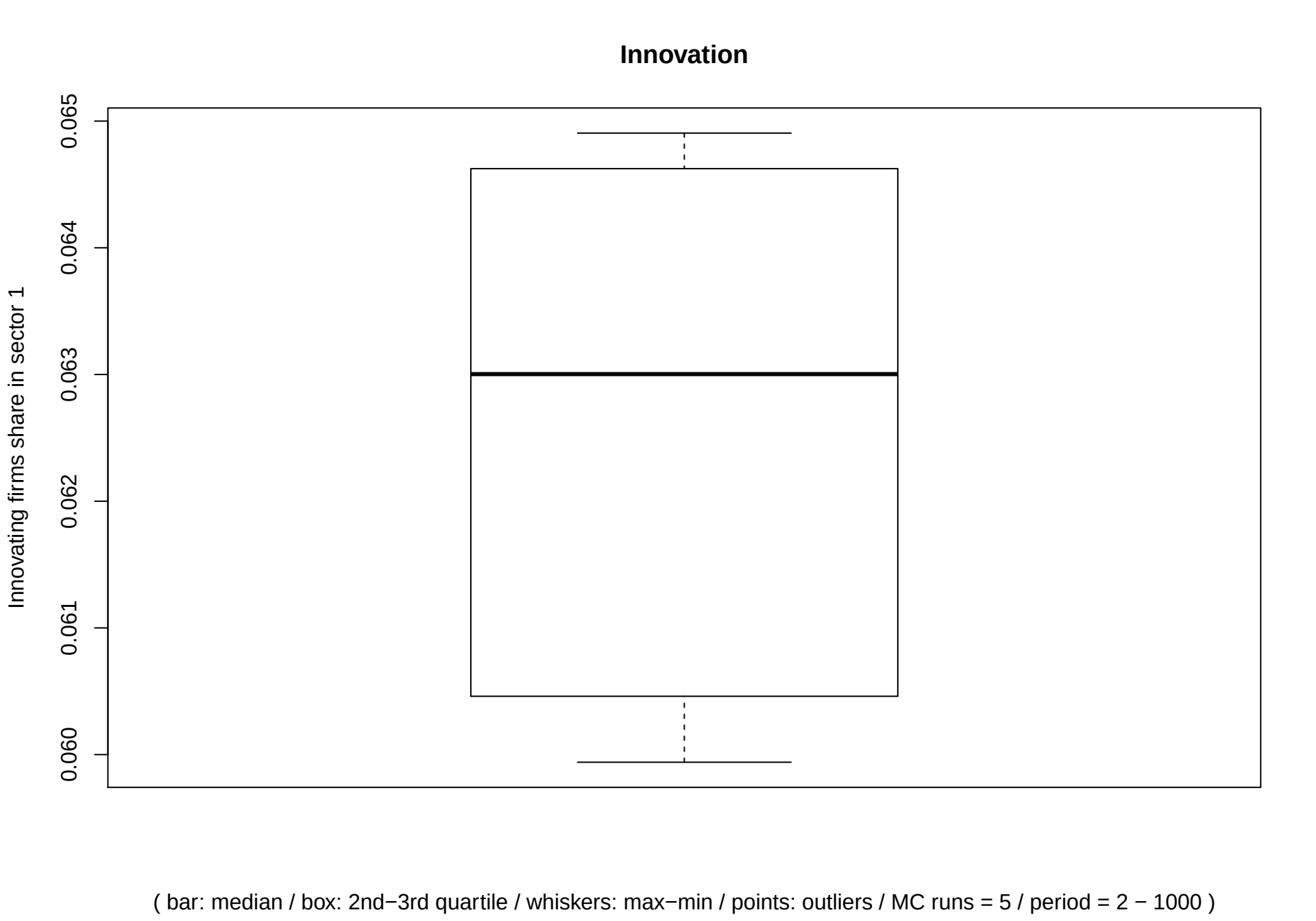

Capacity utilization
Average capacity utilization rate in sector 2
0.511
0.512
0.513
0.514
0.515
0.516
0.517
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)

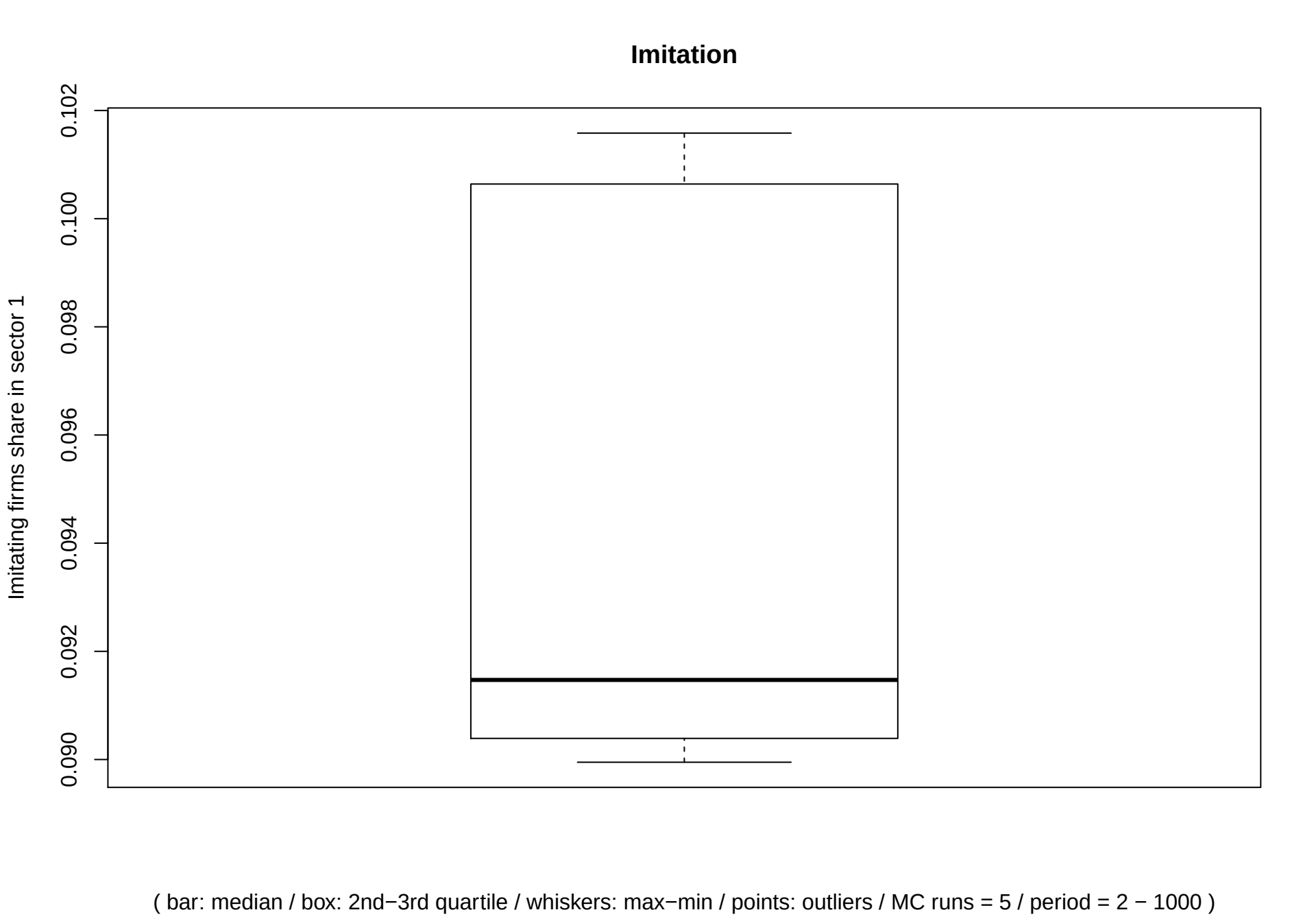

Full employment frequency
Frequency (probability) of full employment
0.10
0.15
0.20
0.25
0.30
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)

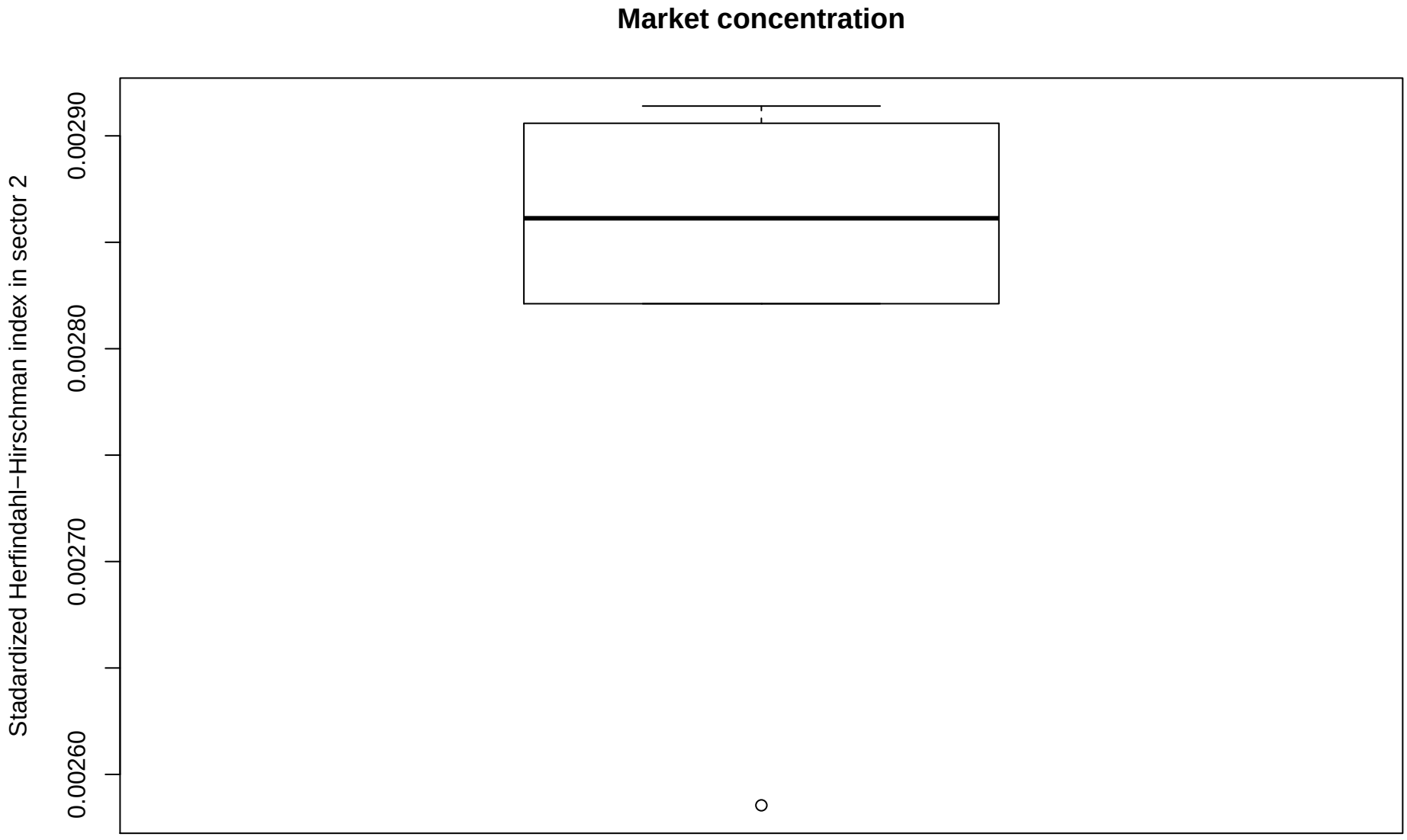

Unemployment
Average unemployment rate
0.14
0.16
0.18
0.20
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)

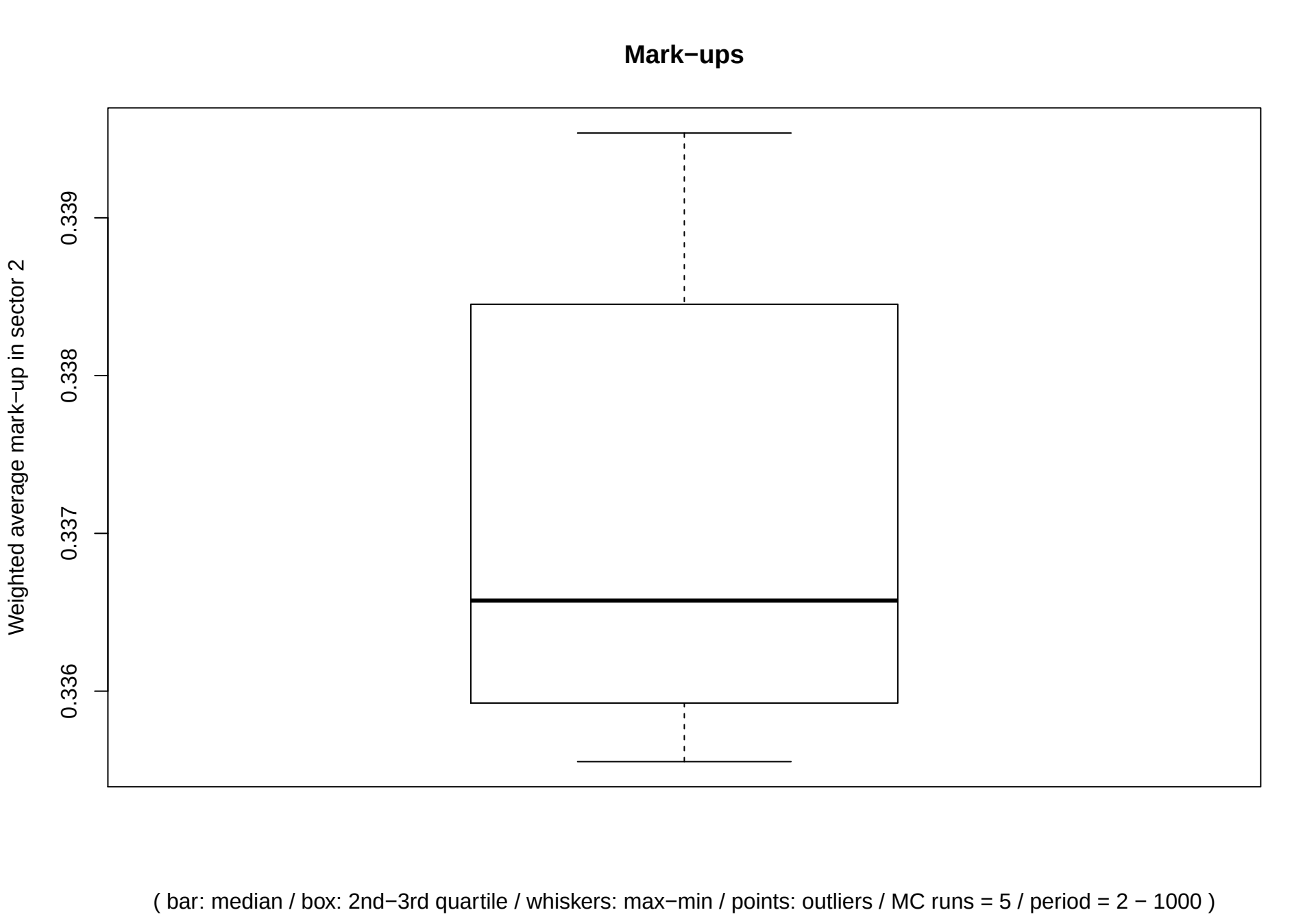

Vacancy
Average net vacancy rate
0.21
0.22
0.23
0.24
0.25
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)


Productivity growth
Average productivity growth rate
0.0055
0.0060
0.0065
0.0070
0.0075
0.0080
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)


Innovation
Innovating firms share in sector 1
0.060
0.061
0.062
0.063
0.064
0.065
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)


Imitation
Imitating firms share in sector 1
0.090
0.092
0.094
0.096
0.098
0.100
0.102
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)


Market concentration
Stadardized Herfindahl−Hirschman index in sector 2
0.00290
0.00280
0.00270
0.00260
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)


Mark−ups
Weighted average mark−up in sector 2
0.336
0.337
0.338
0.339
(bar: median / box: 2nd−3rd quartile / whiskers: max−min / points: outliers / MC runs = 5 / period = 2 − 1000)

Monte Carlo descriptive statistics (all experiments)

	Avg[1]	SD[1]	Min[1]	Max[1]
GDP growth	0.007019	0.001338	0.005358	0.008493
Volatility of GDP growth	0.09414	0.002791	0.08994	0.0964
Likelihood of GDP crises	0.3157	0.02232	0.2873	0.3433
Inflation	0.001286	0.0004399	0.0007131	0.001812
Tax	0.0259	0.0007061	0.025	0.0266
Government total expenditure	0.07127	0.01692	0.0519	0.08994
Government deficit	1.585	1.415	0.3046	3.364
Government debt	155.5	141.5	27.75	333.4
Loans	1.757	0.2099	1.526	1.984
Capacity utilization	0.5147	0.002727	0.5109	0.5176
Full employment frequency	0.1556	0.1004	0.07207	0.3073
Unemployment	0.1692	0.03667	0.1292	0.2087
Vacancy	0.2217	0.02023	0.2042	0.2506
Productivity growth	0.006898	0.001254	0.005319	0.008084
Innovation	0.06259	0.002304	0.05994	0.0649
Imitation	0.09481	0.005791	0.08995	0.1016
Market concentration	0.002818	0.000135	0.002585	0.002914
Mark−ups	0.3372	0.001715	0.3356	0.3395

Experiments: [1] Benchmark
(numbers in brackets indicate the experiment number / MC runs = 5 / period = 2 − 1000)