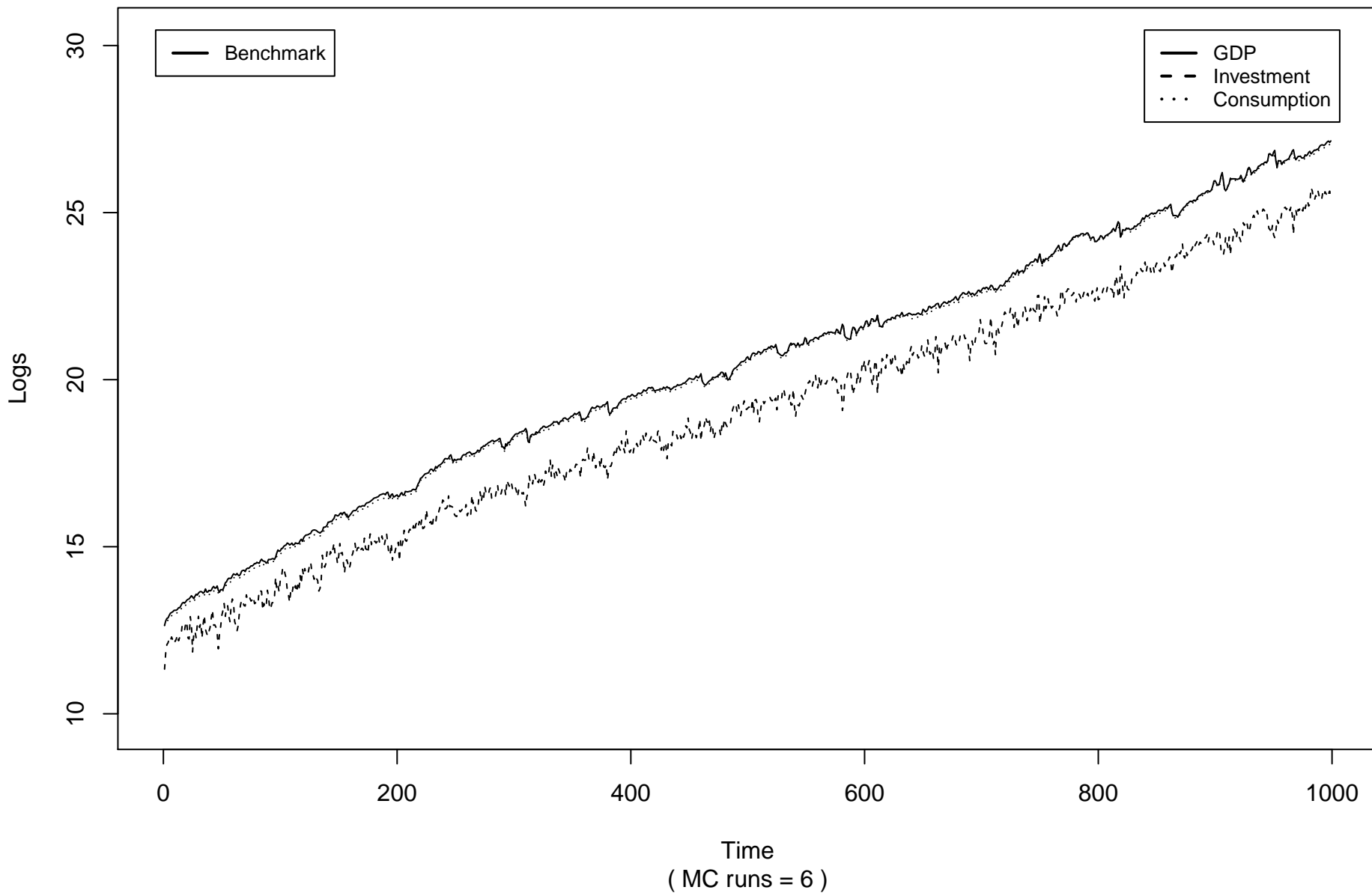
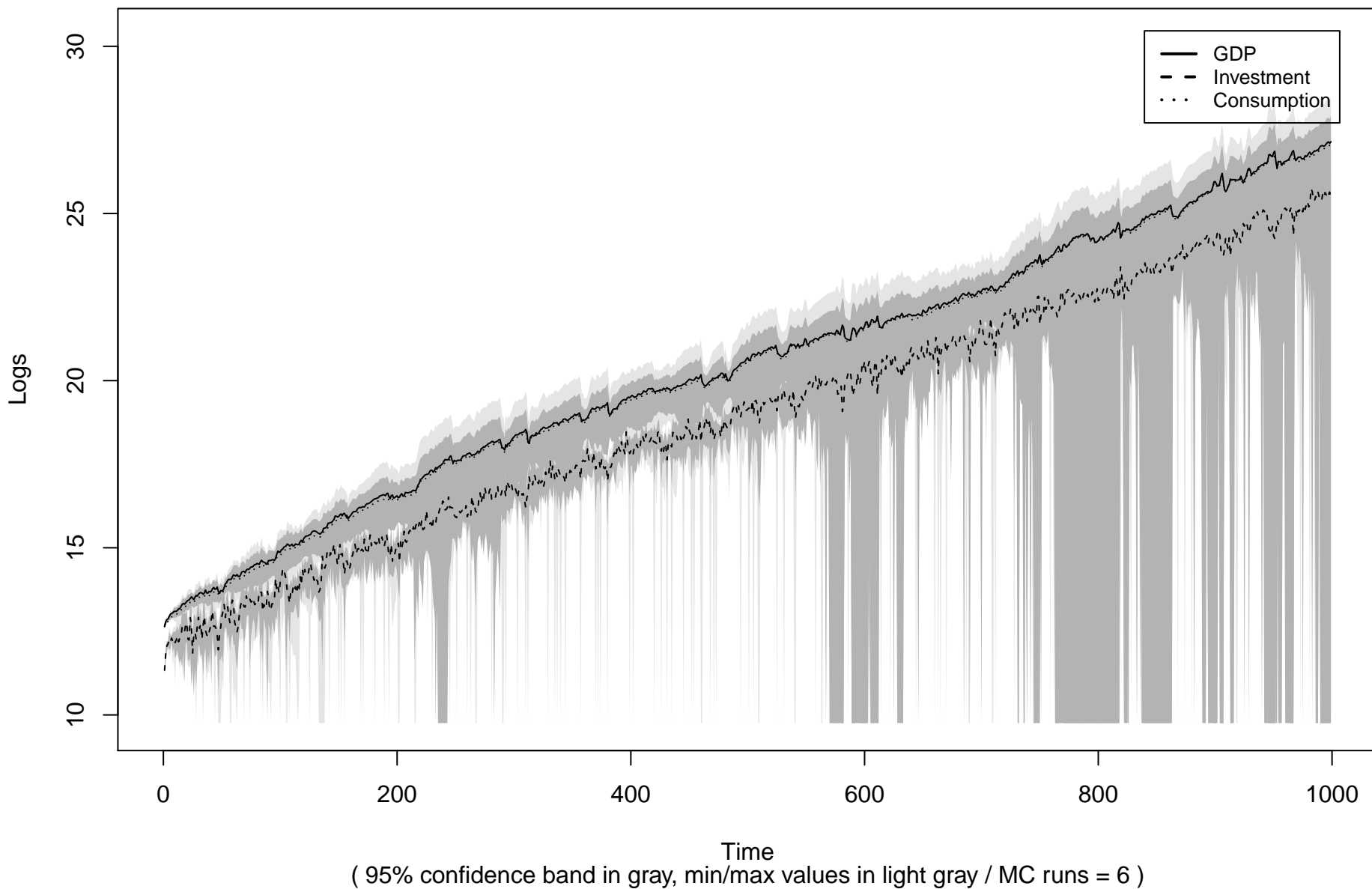


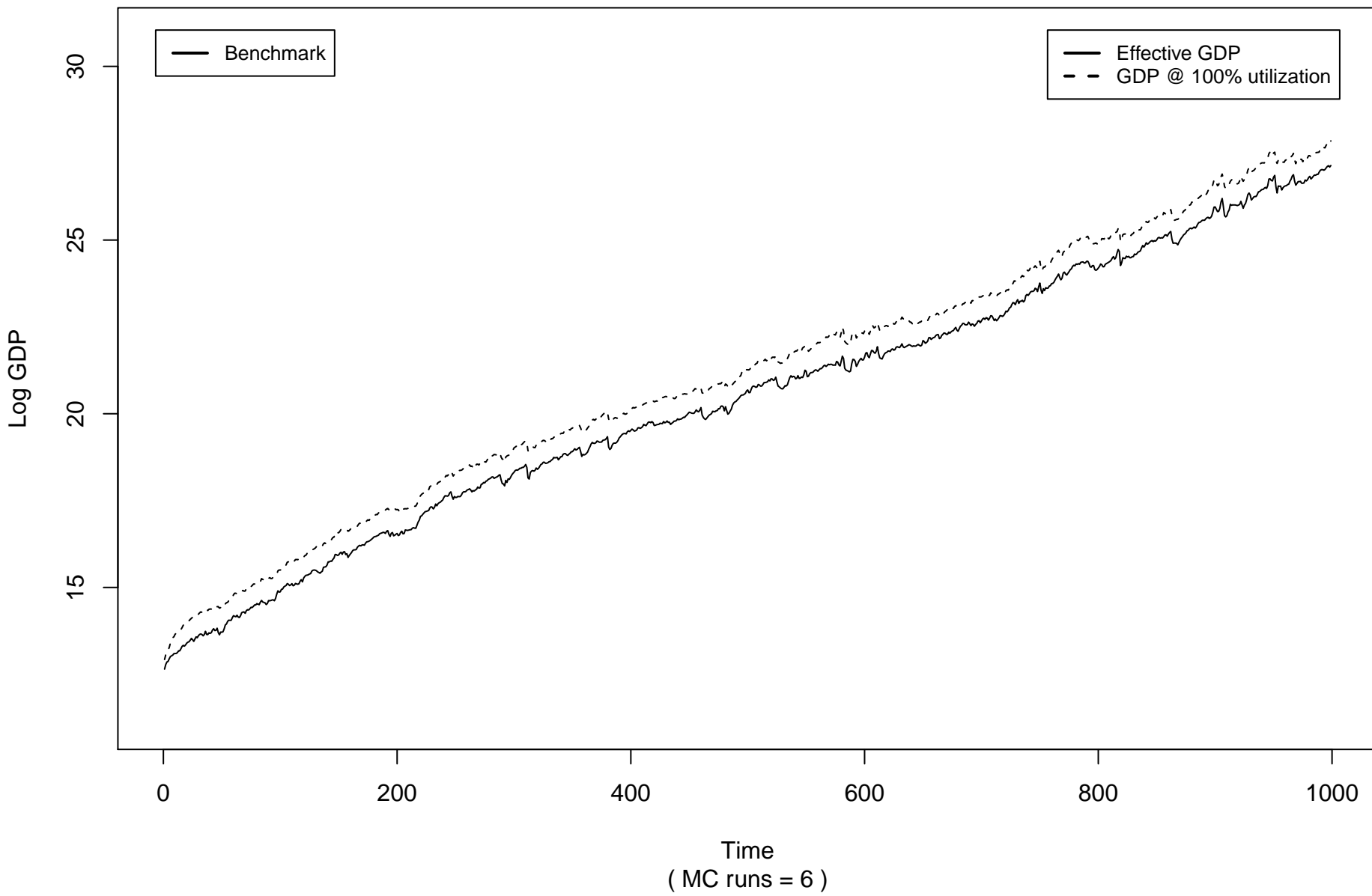
## GDP, investment and consumption ( all experiments )



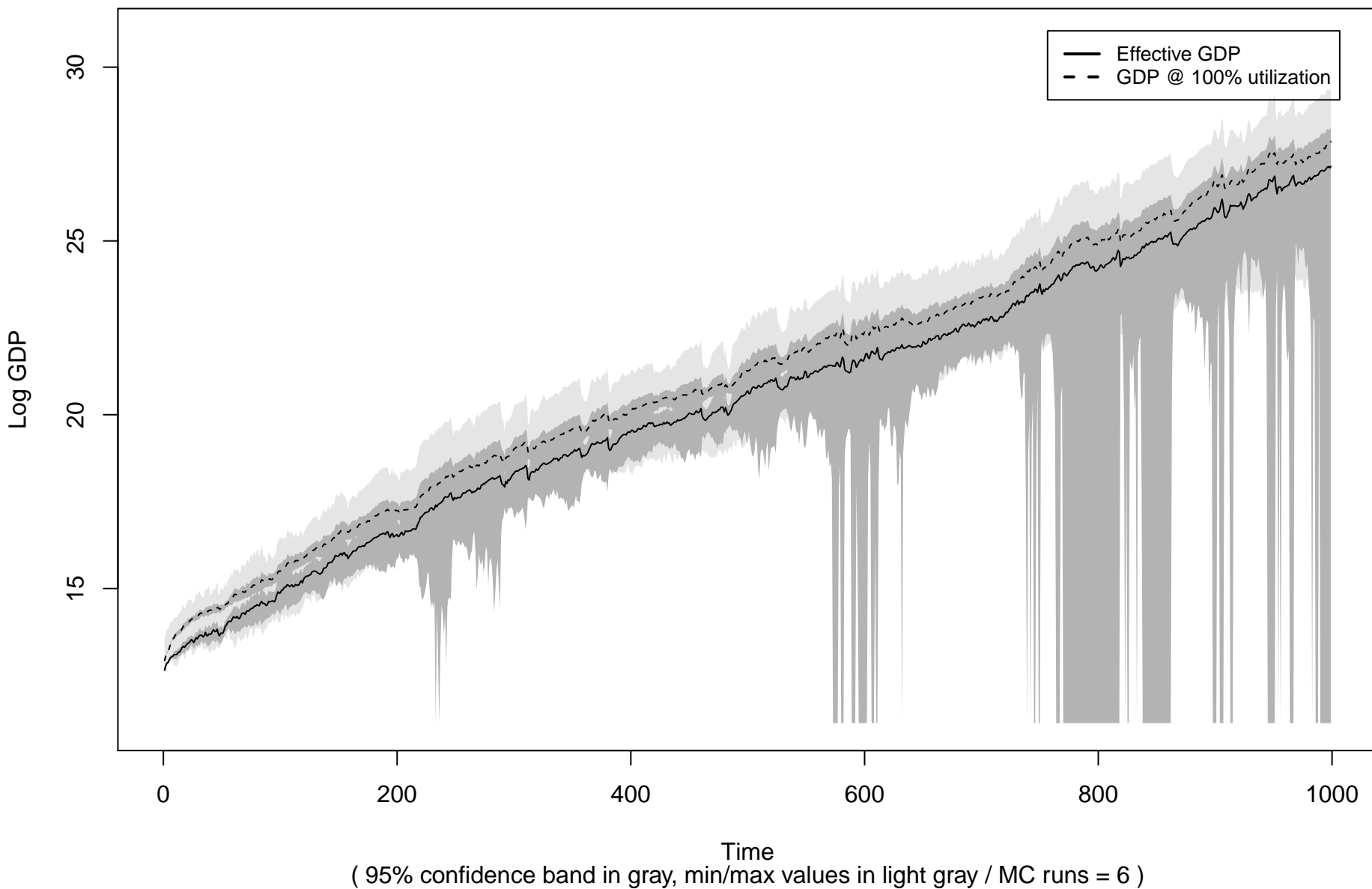
# GDP, investment and consumption ( Benchmark )



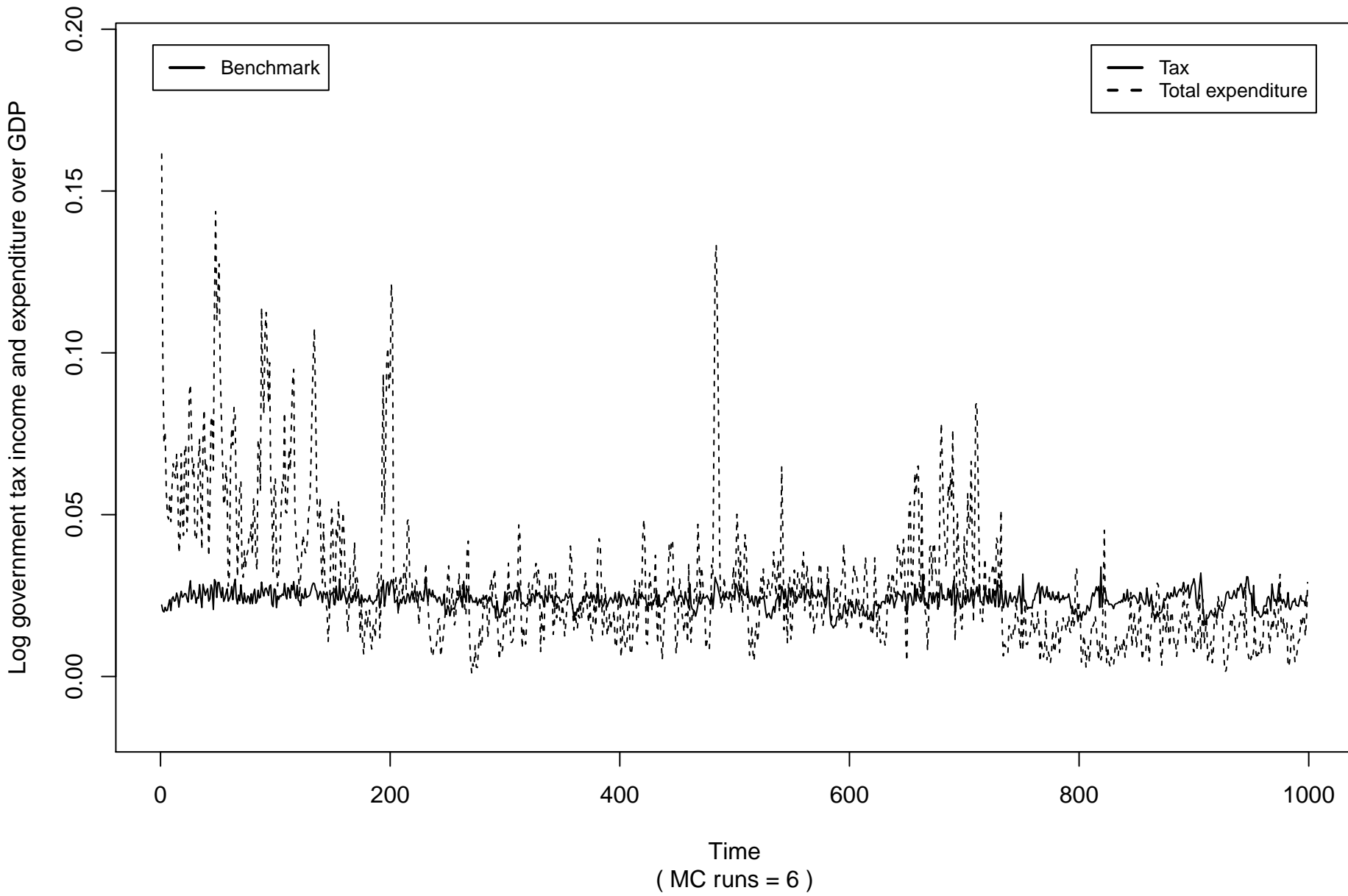
## GDP ( all experiments )



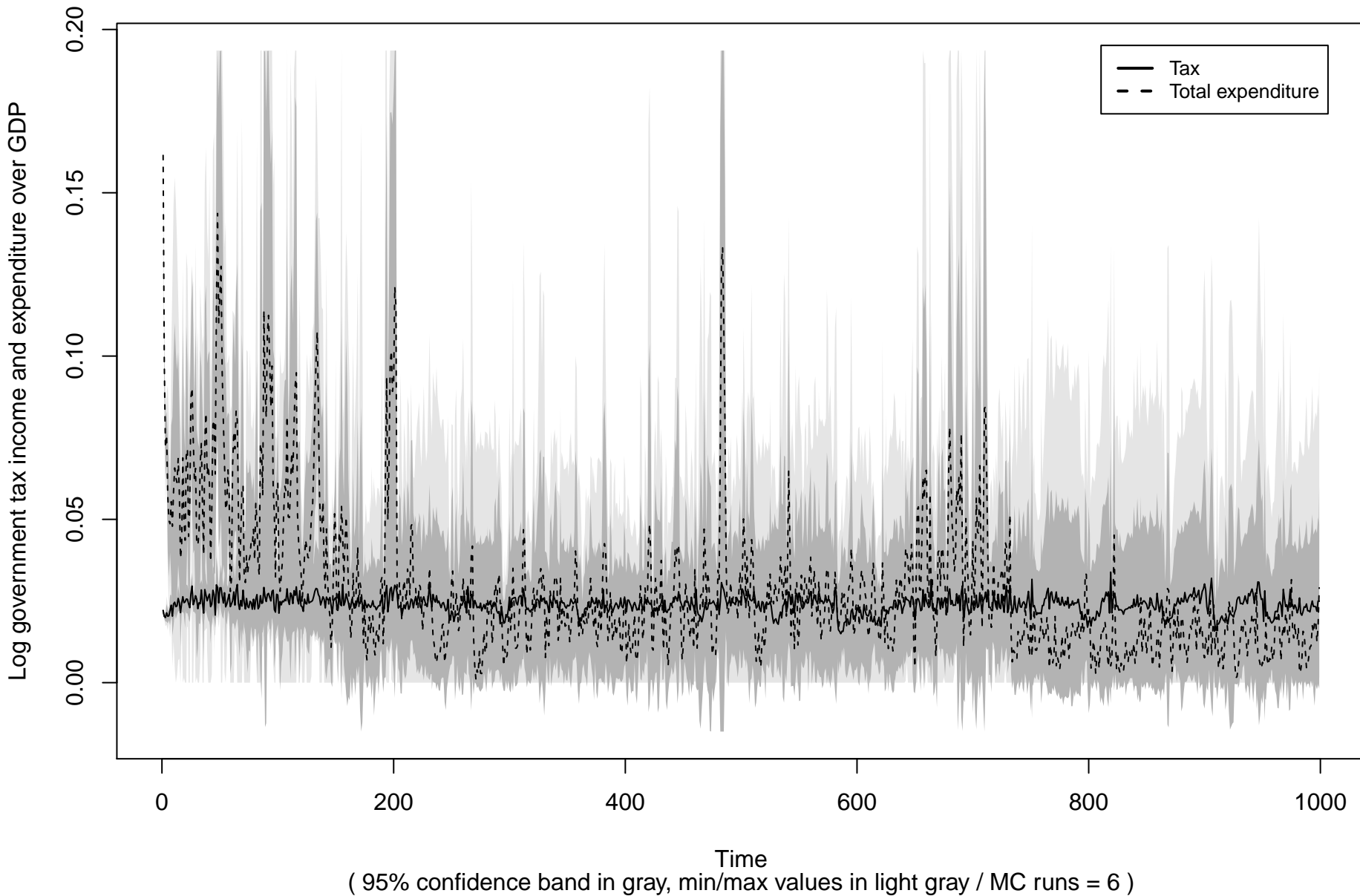
## GDP ( Benchmark )



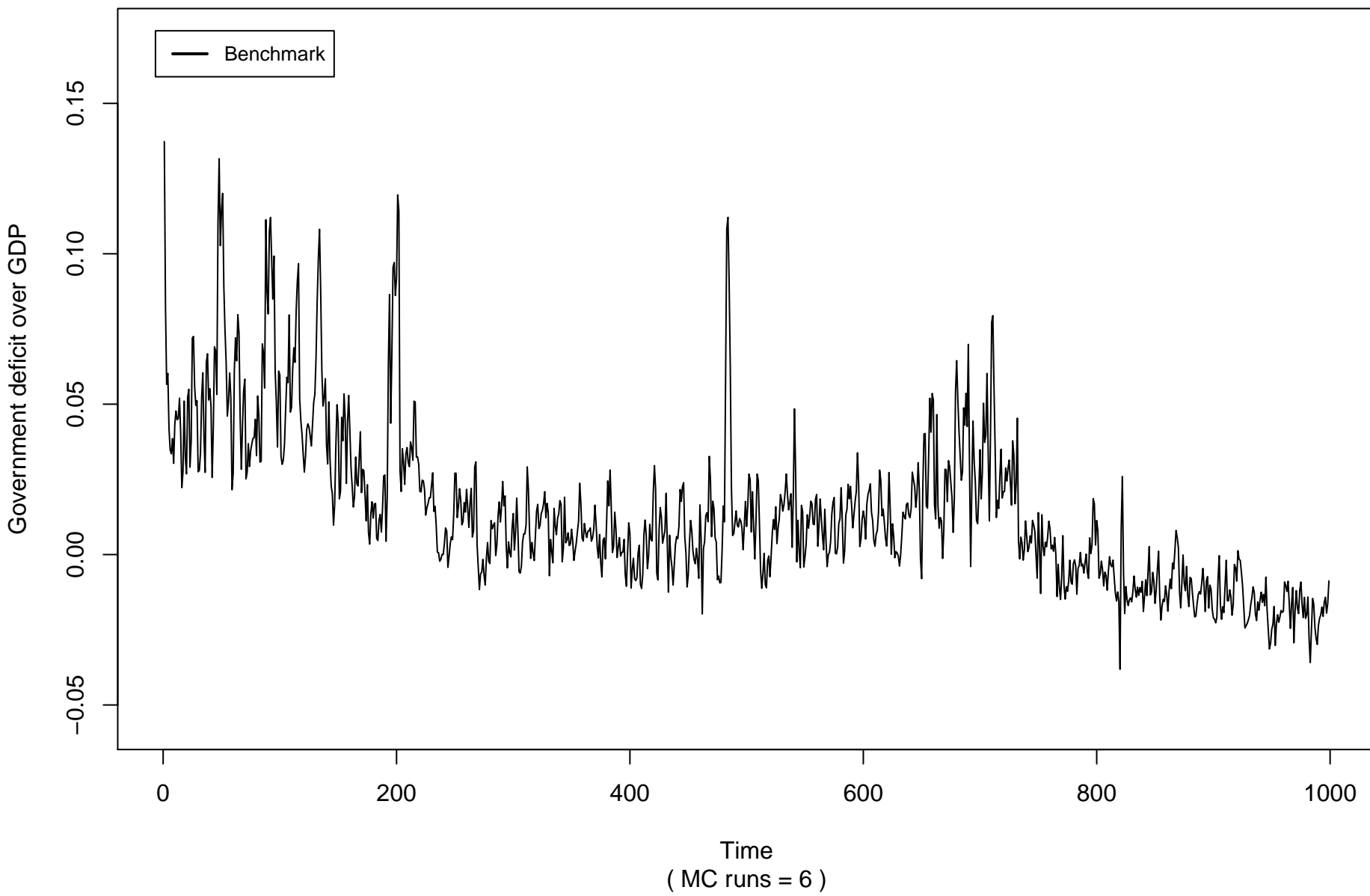
# Government income and expenditure on GDP ( all experiments )



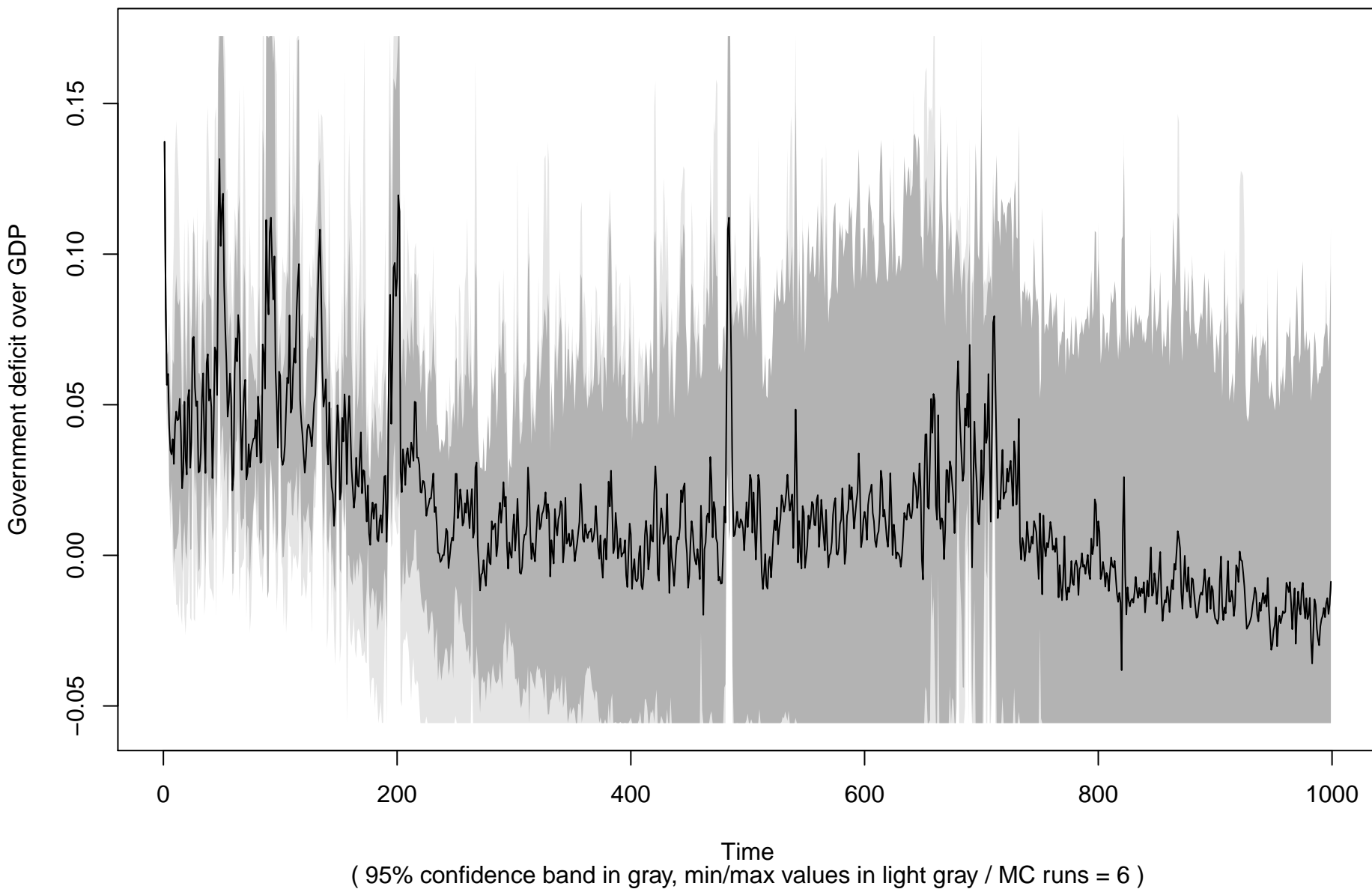
# Government income and expenditure on GDP ( Benchmark )



# Government deficit on GDP ( all experiments )

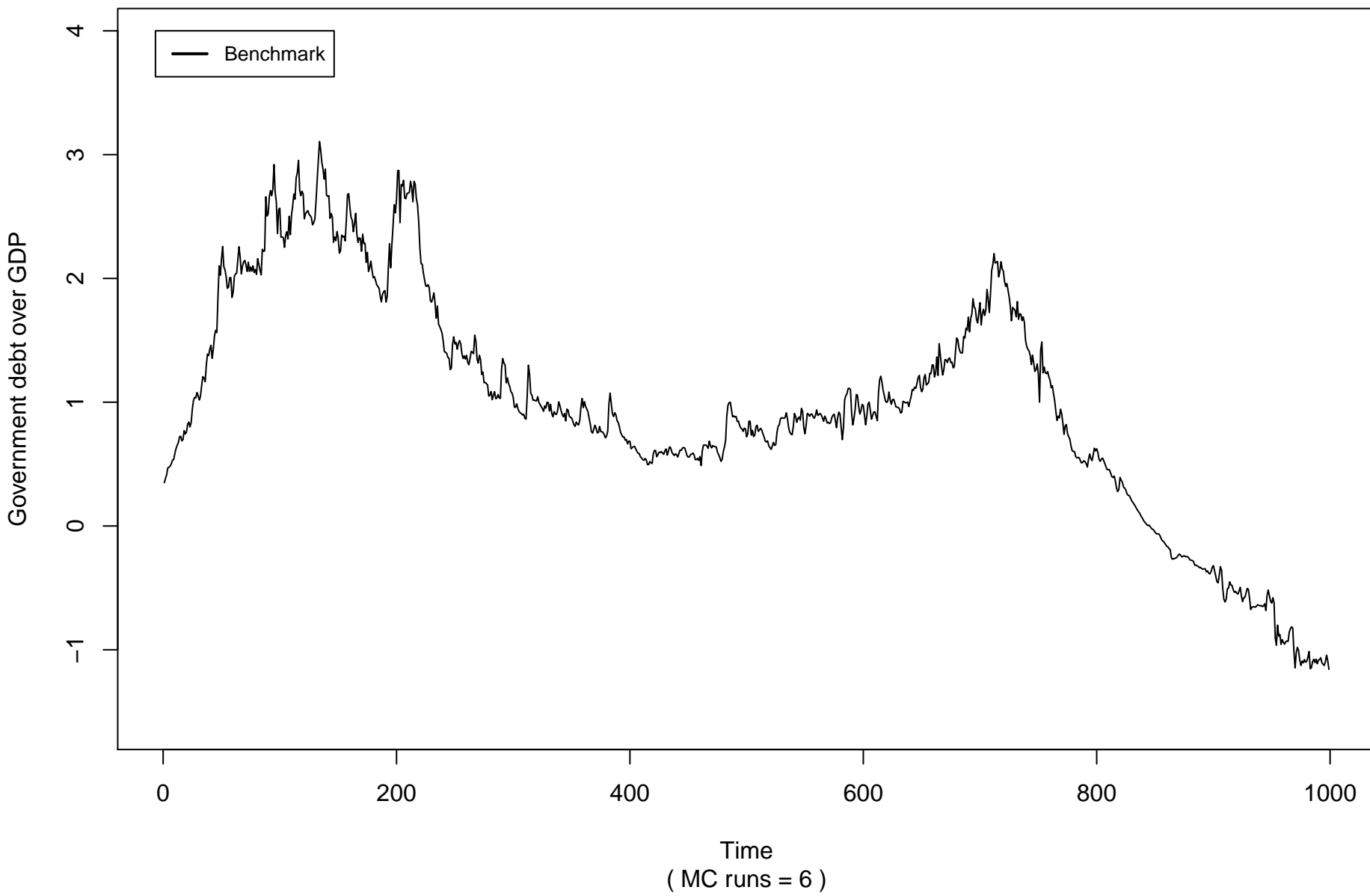


# Government deficit on GDP ( Benchmark )

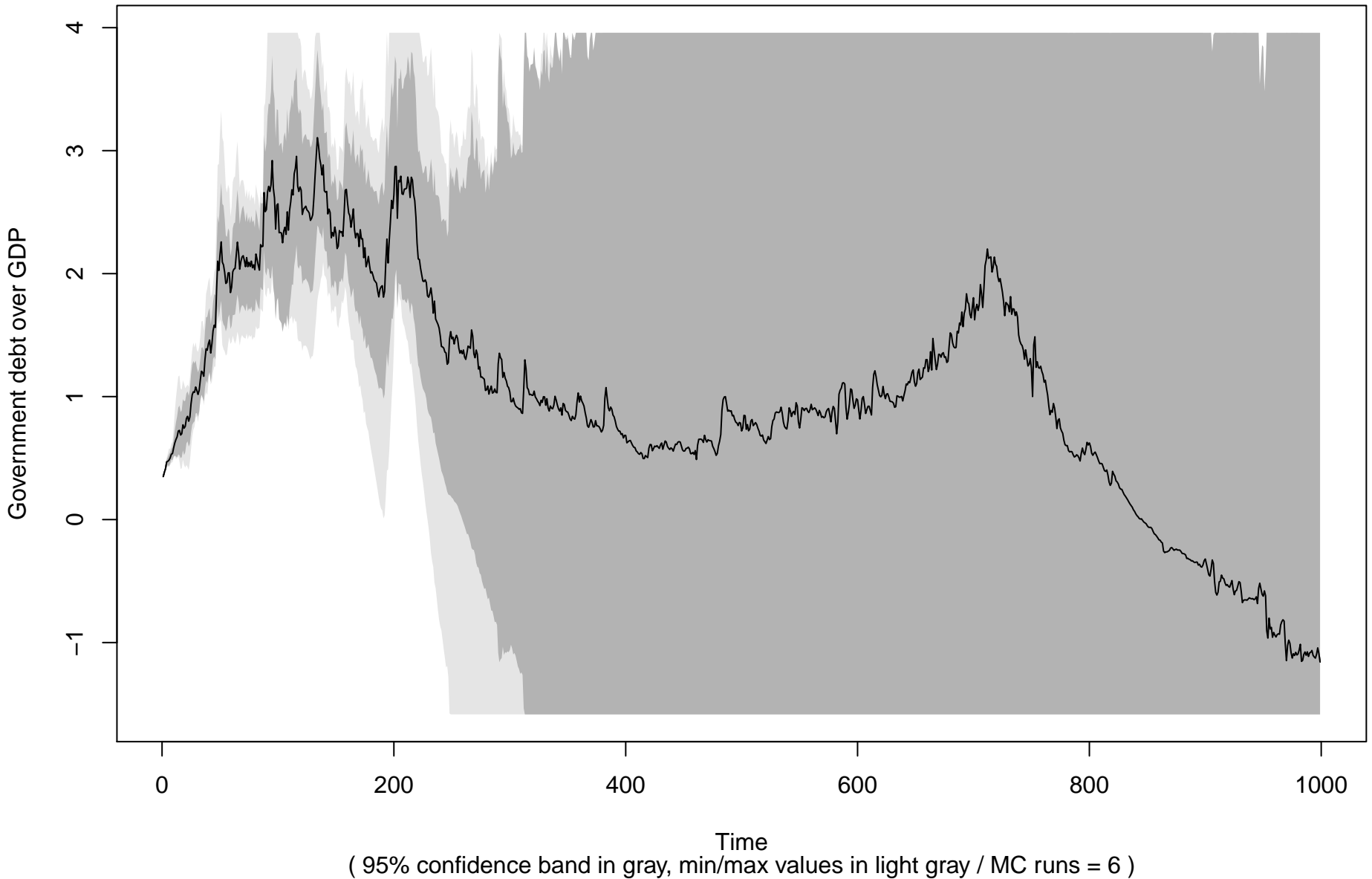




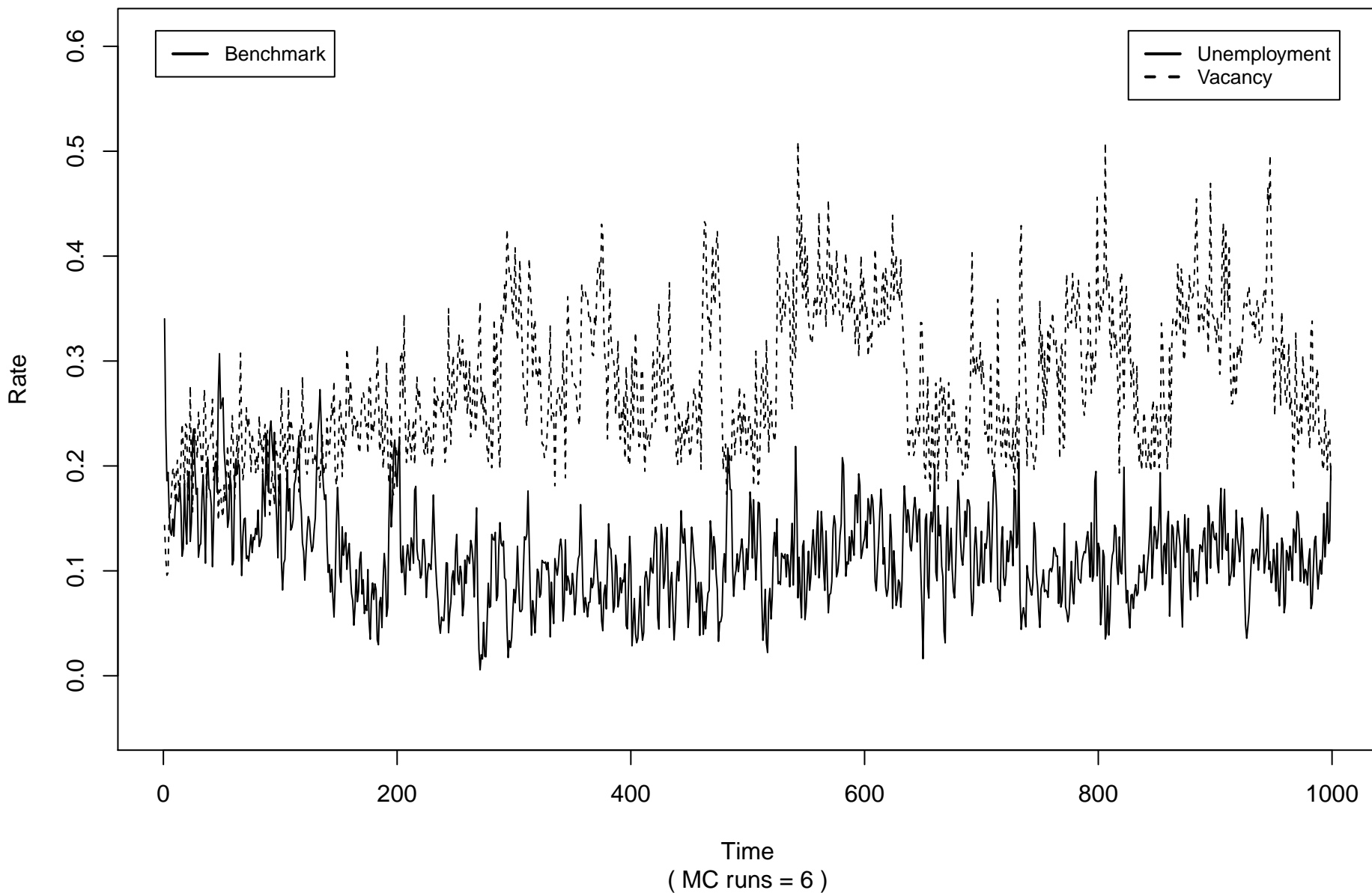
## Government debt on GDP ( all experiments )



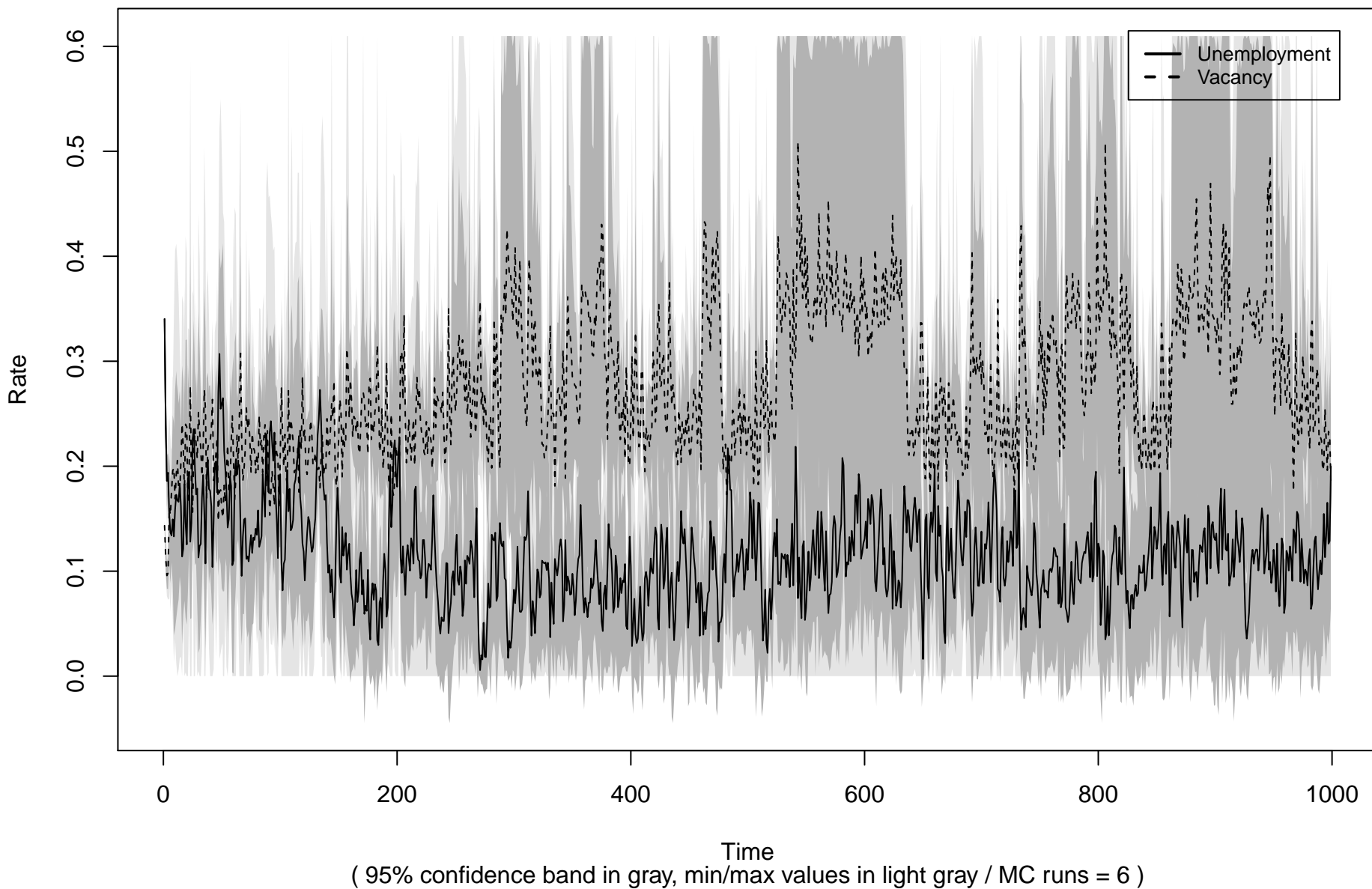
## Government debt on GDP ( Benchmark )



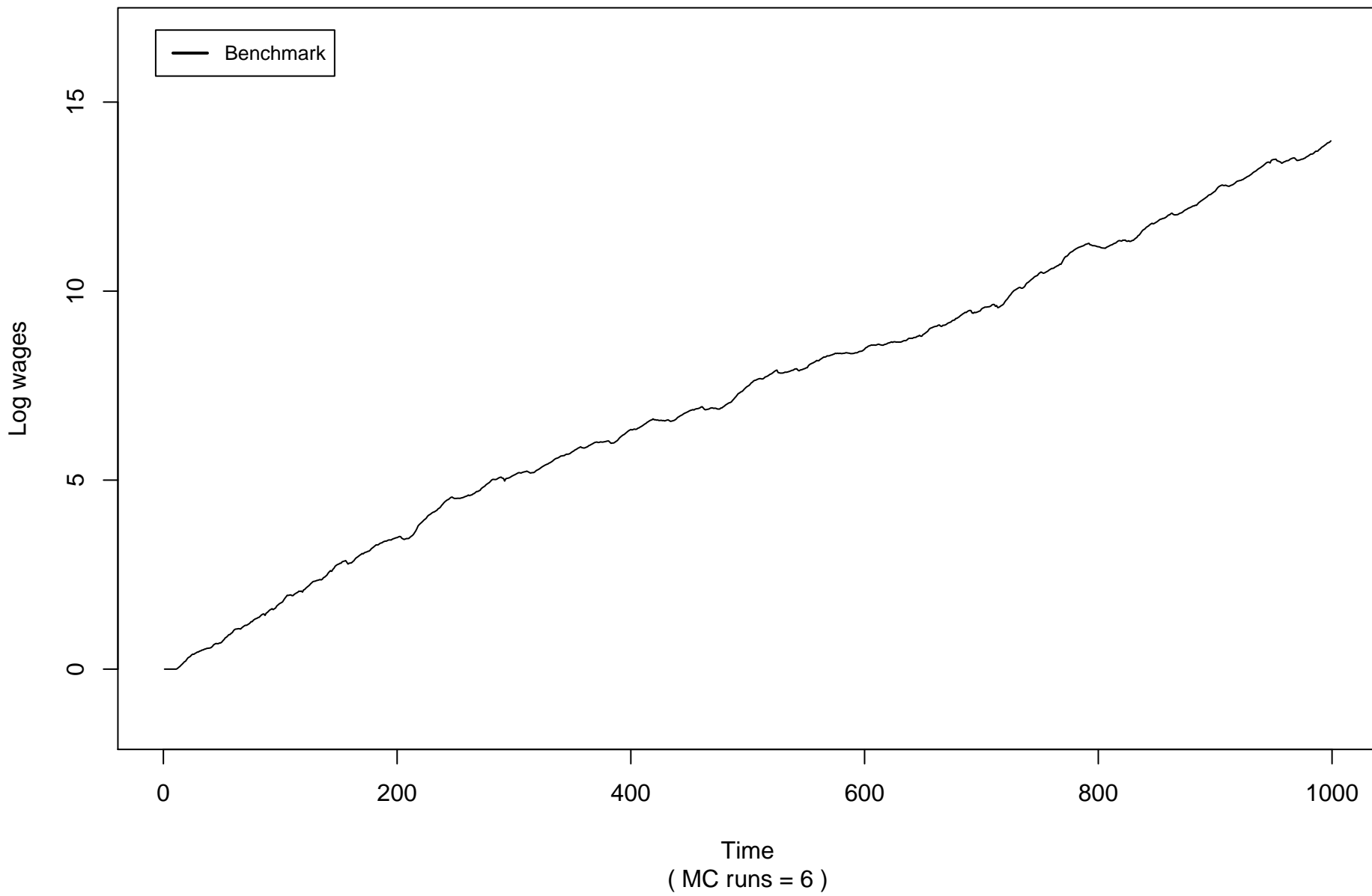
# Unemployment and vacancy rates ( all experiments )



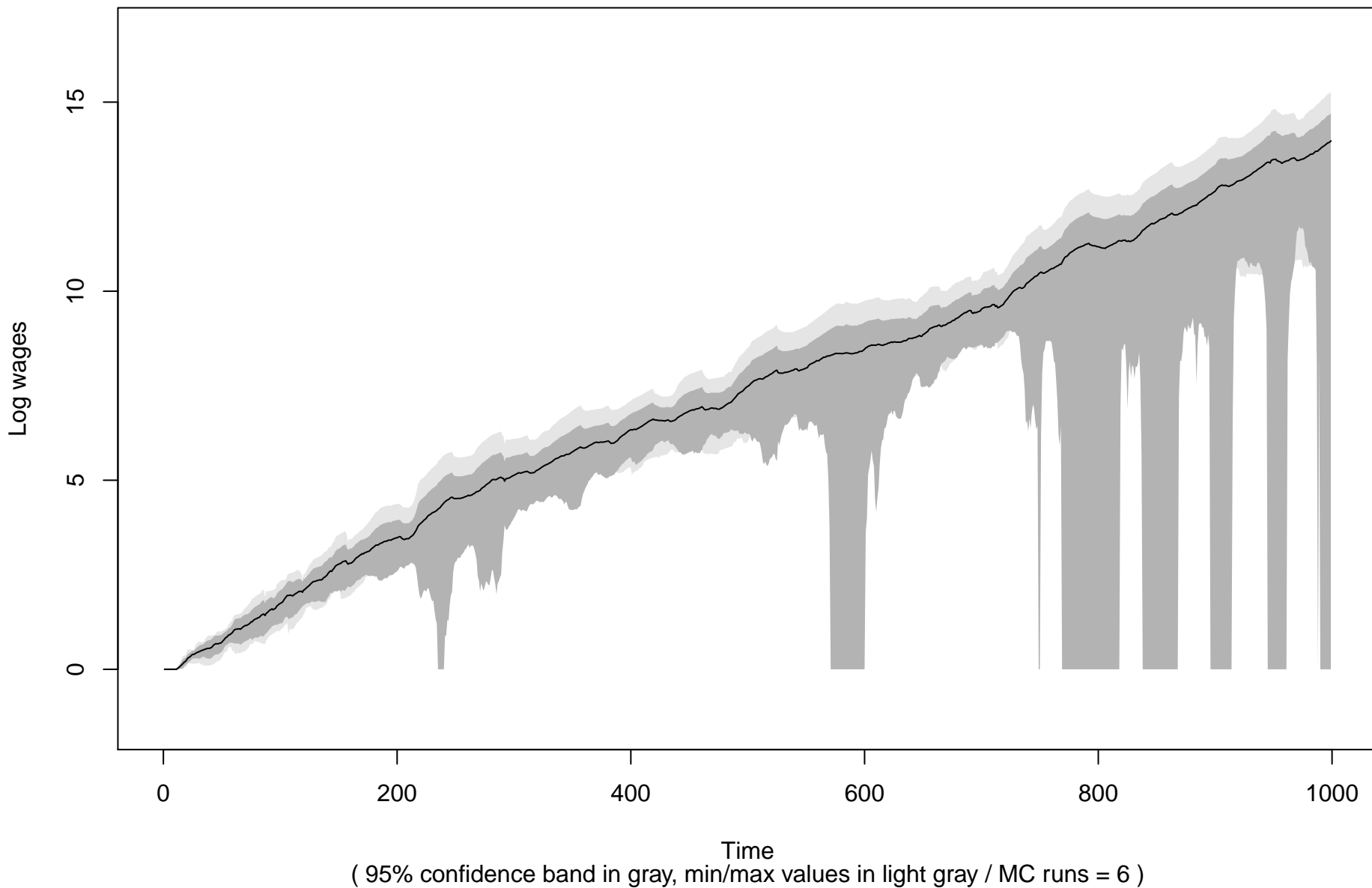
## Unemployment and vacancy rates ( Benchmark )



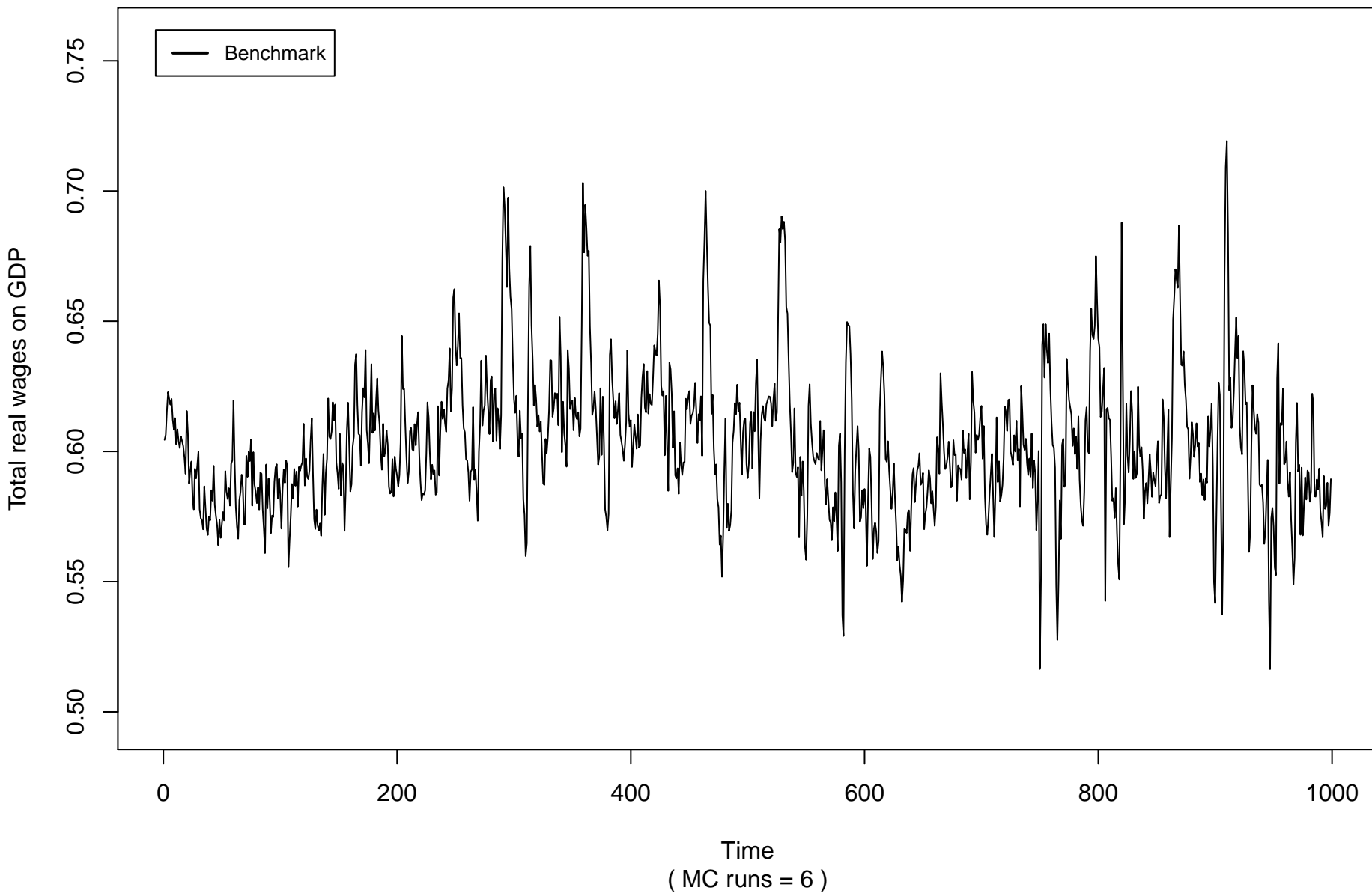
# Real wages average ( all experiments )



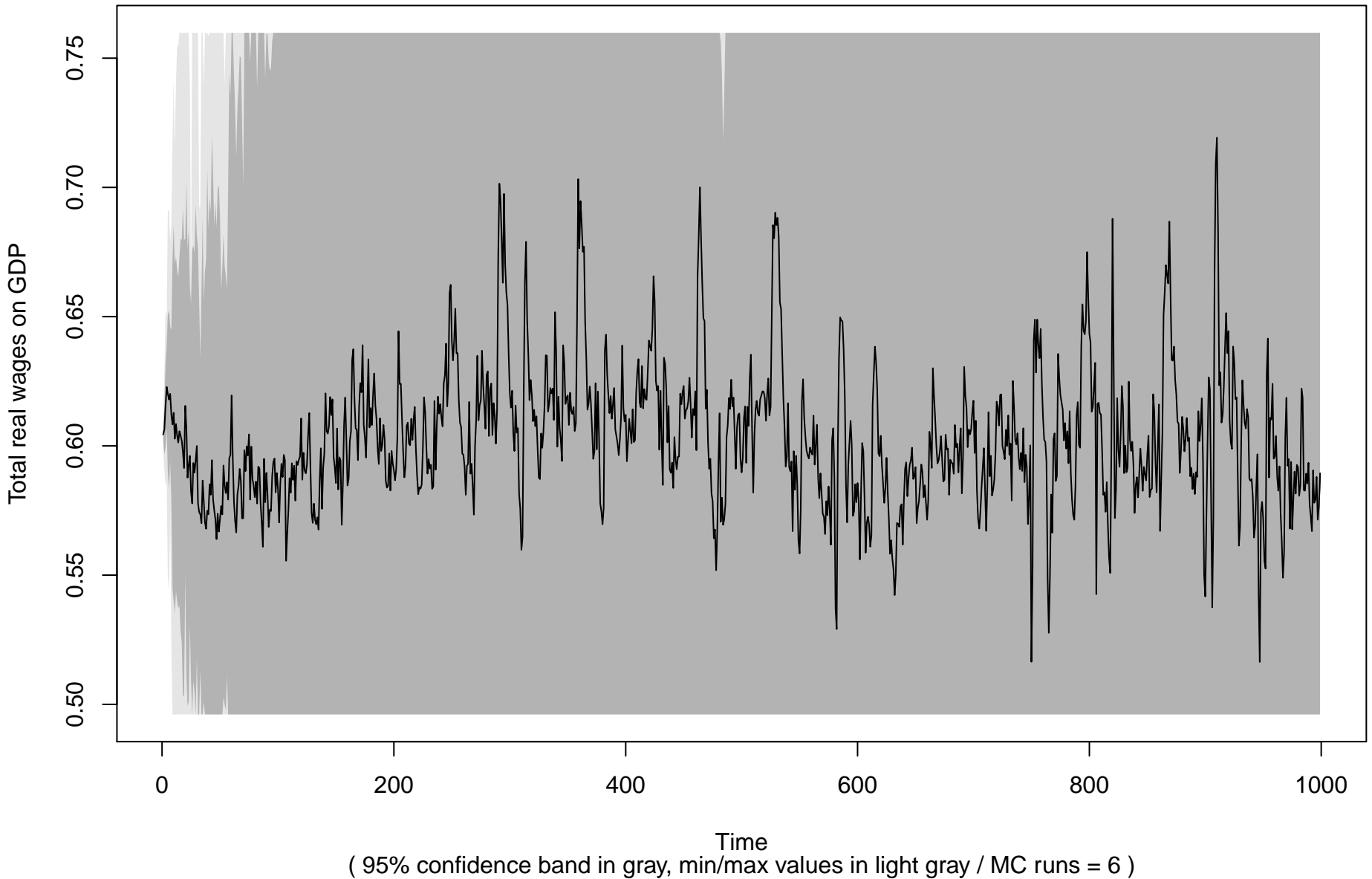
# Real wages average ( Benchmark )



## Wage share ( all experiments )

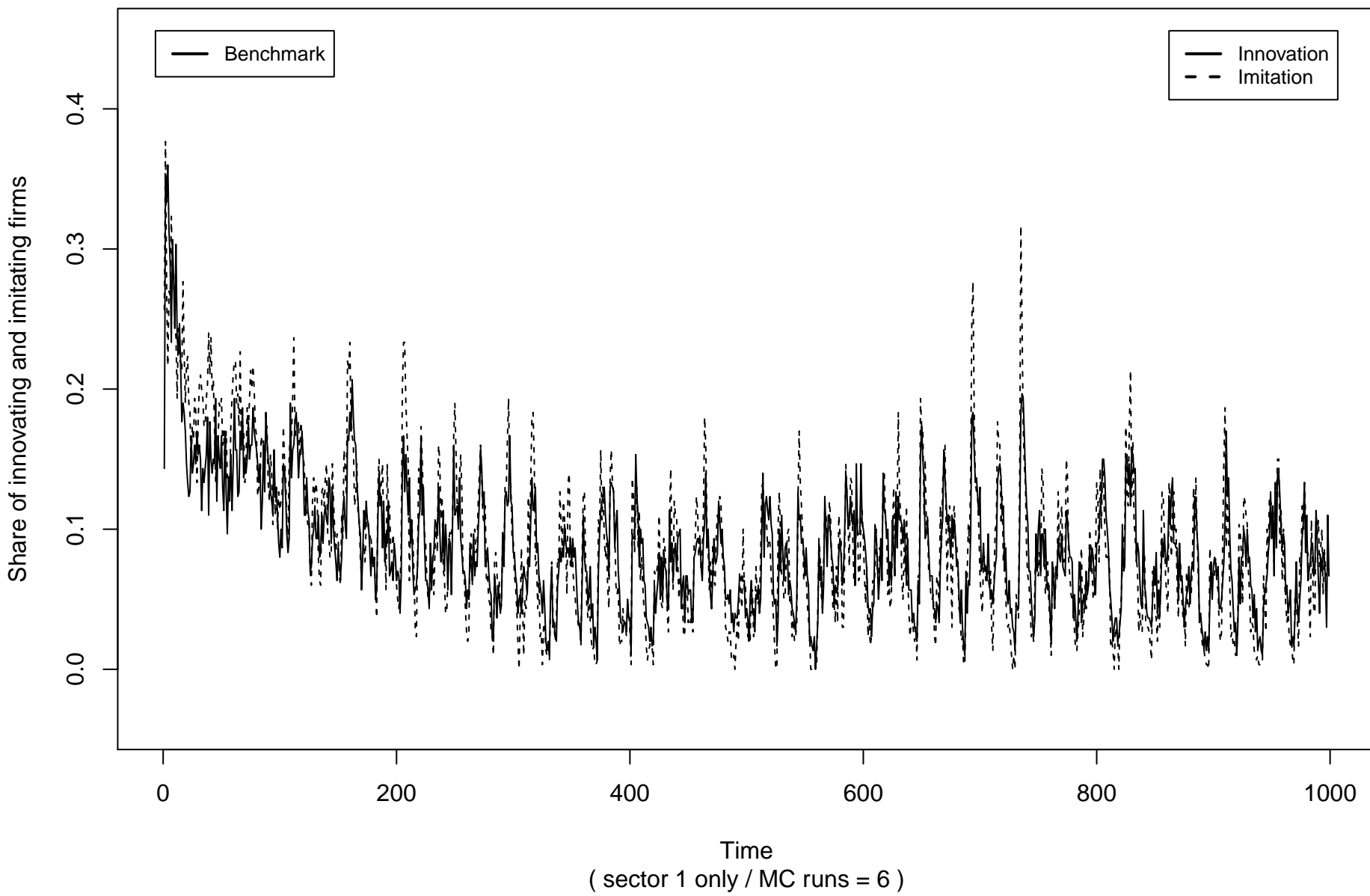


## Wage share ( Benchmark )

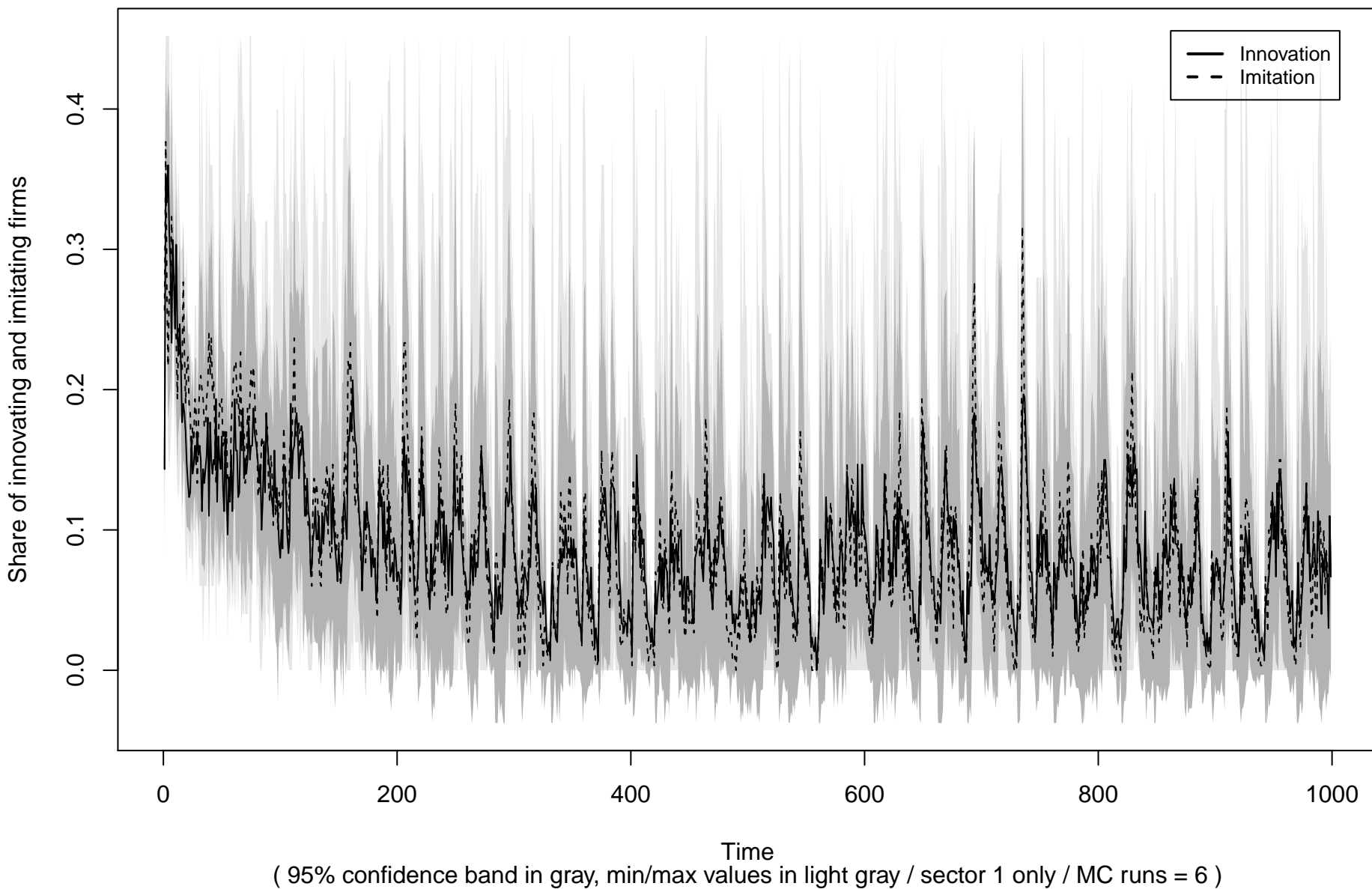




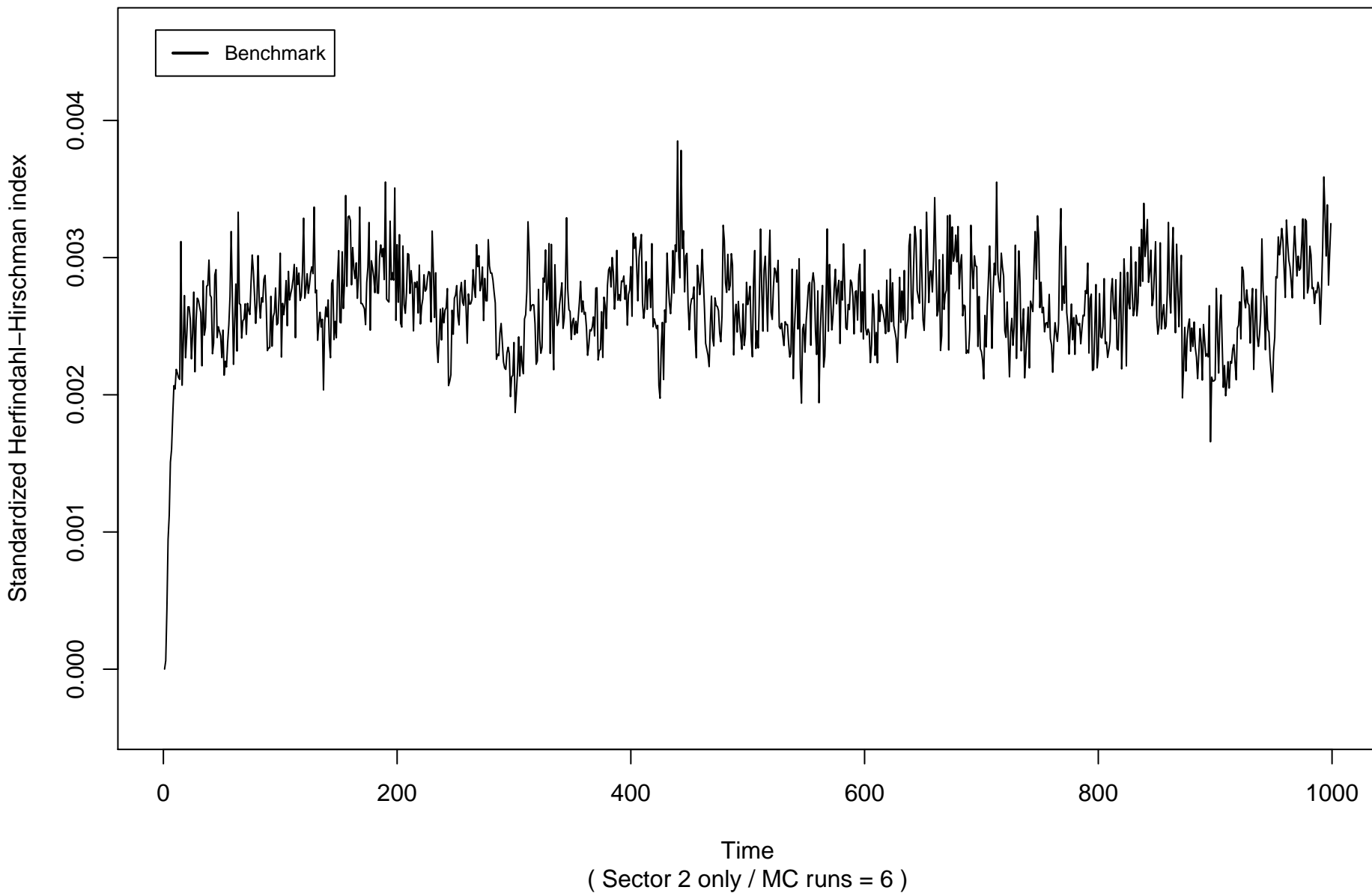
# Innovation and imitation ( all experiments )



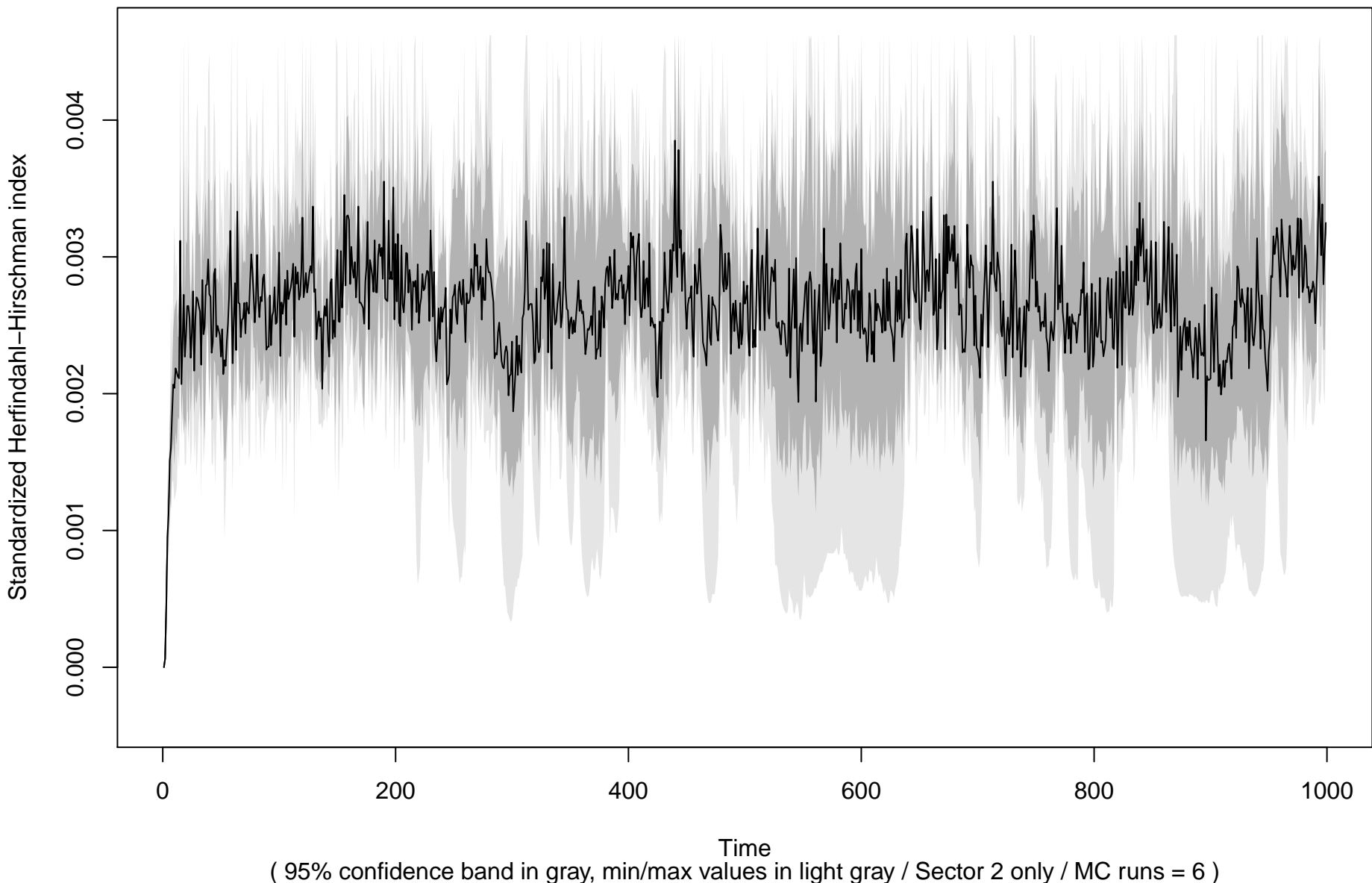
# Innovation and imitation ( Benchmark )



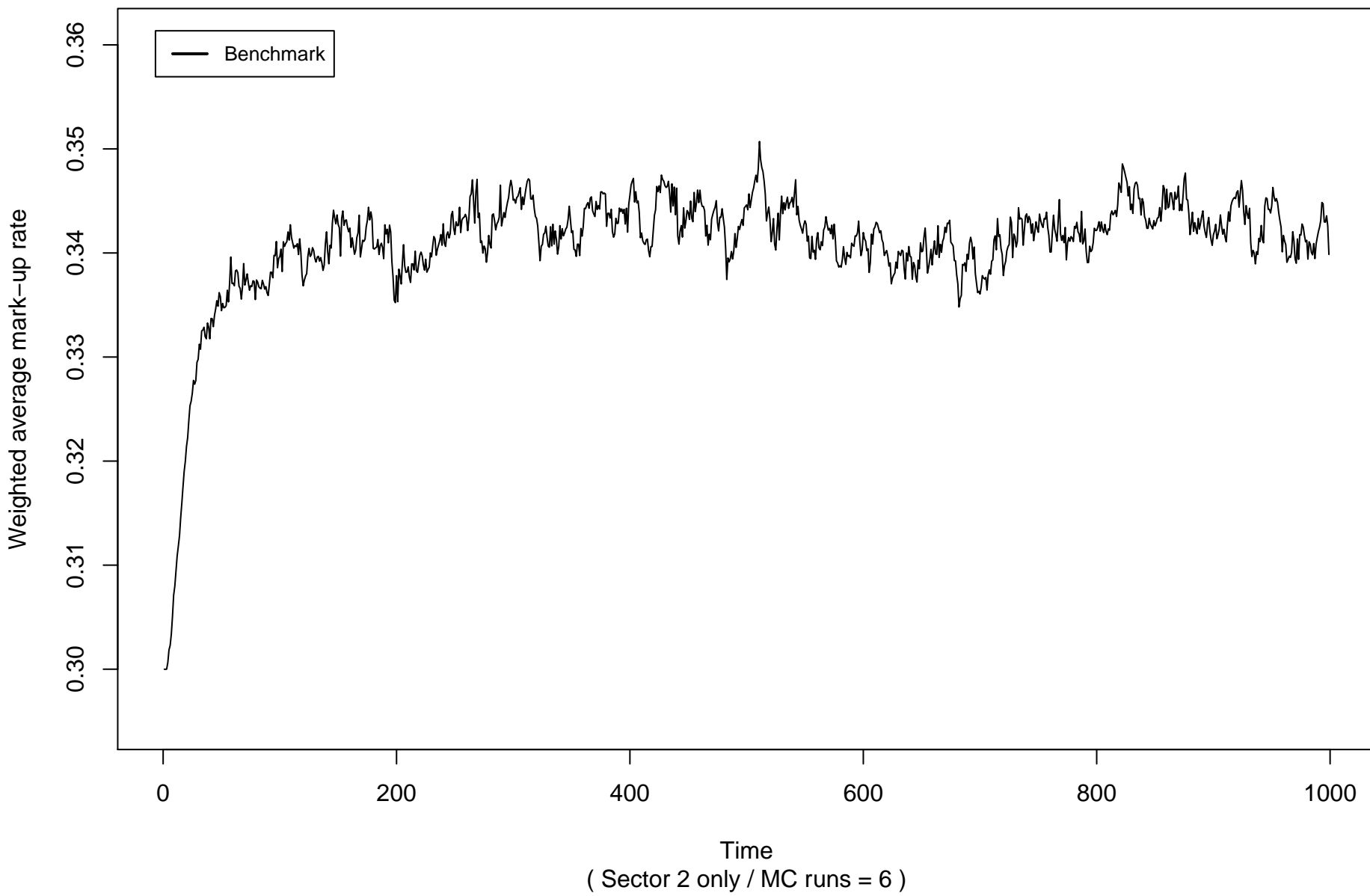
## Market concentration ( all experiments )



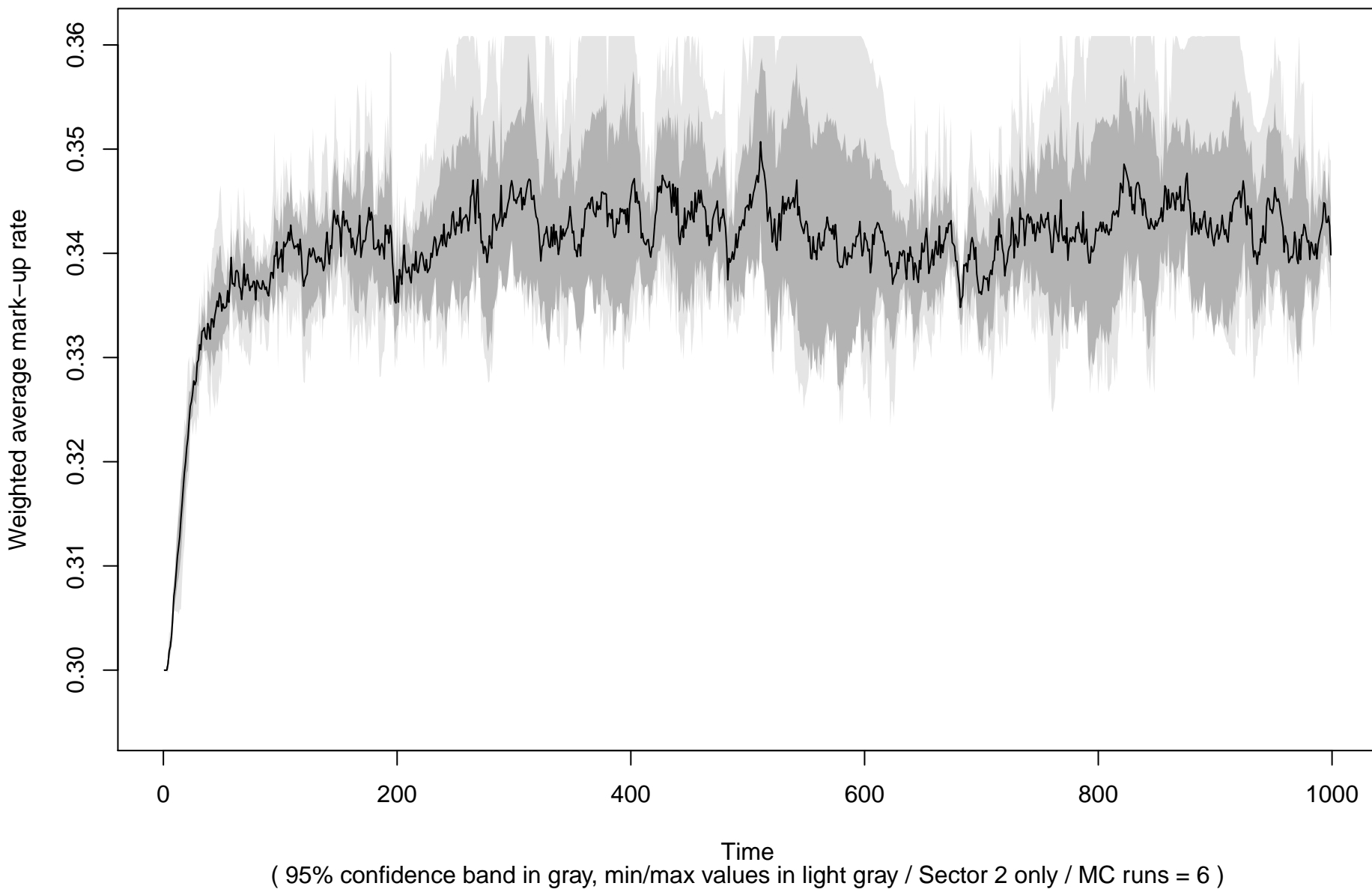
Market concentration ( Benchmark )



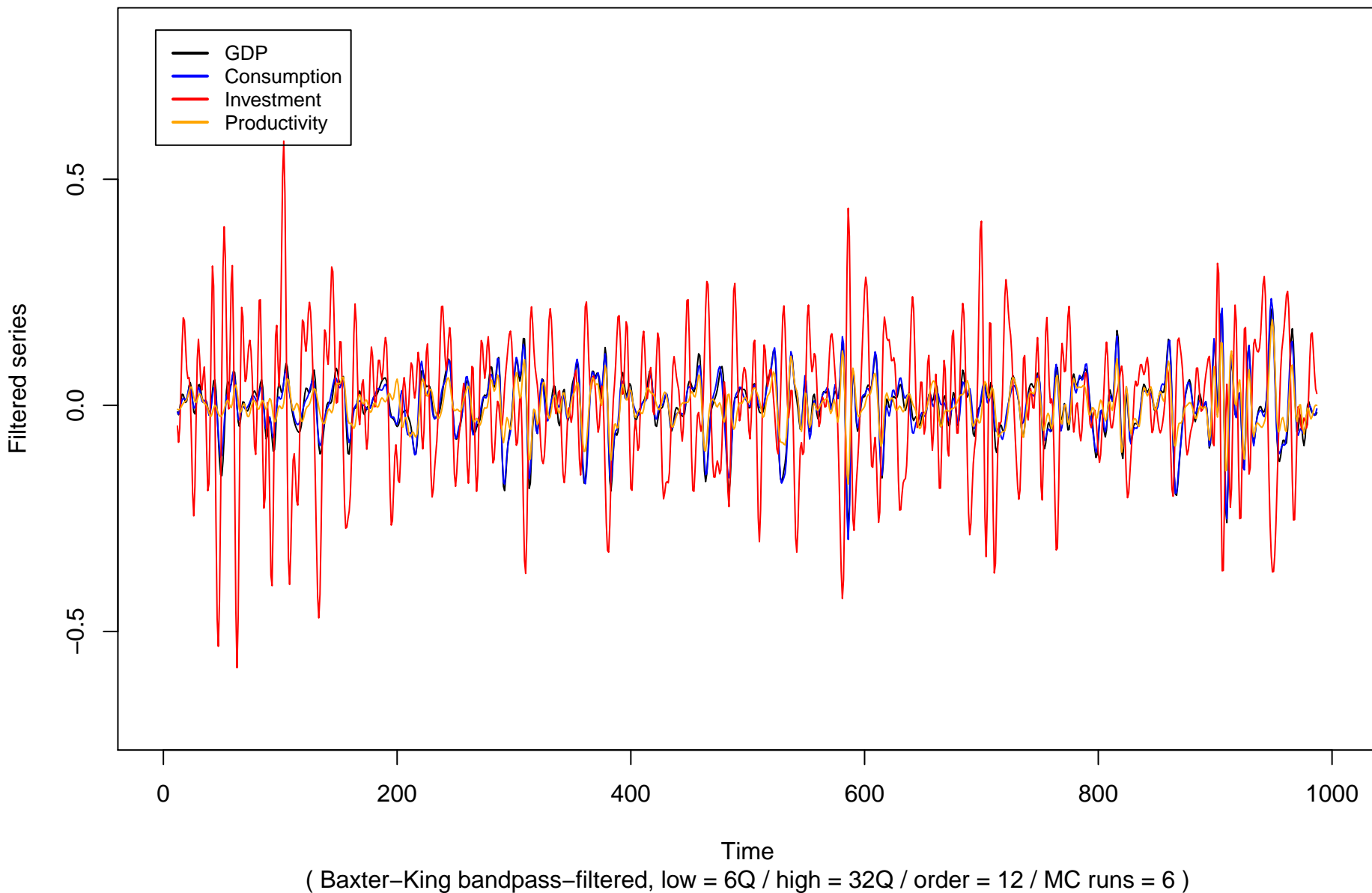
## Mark-up average ( all experiments )



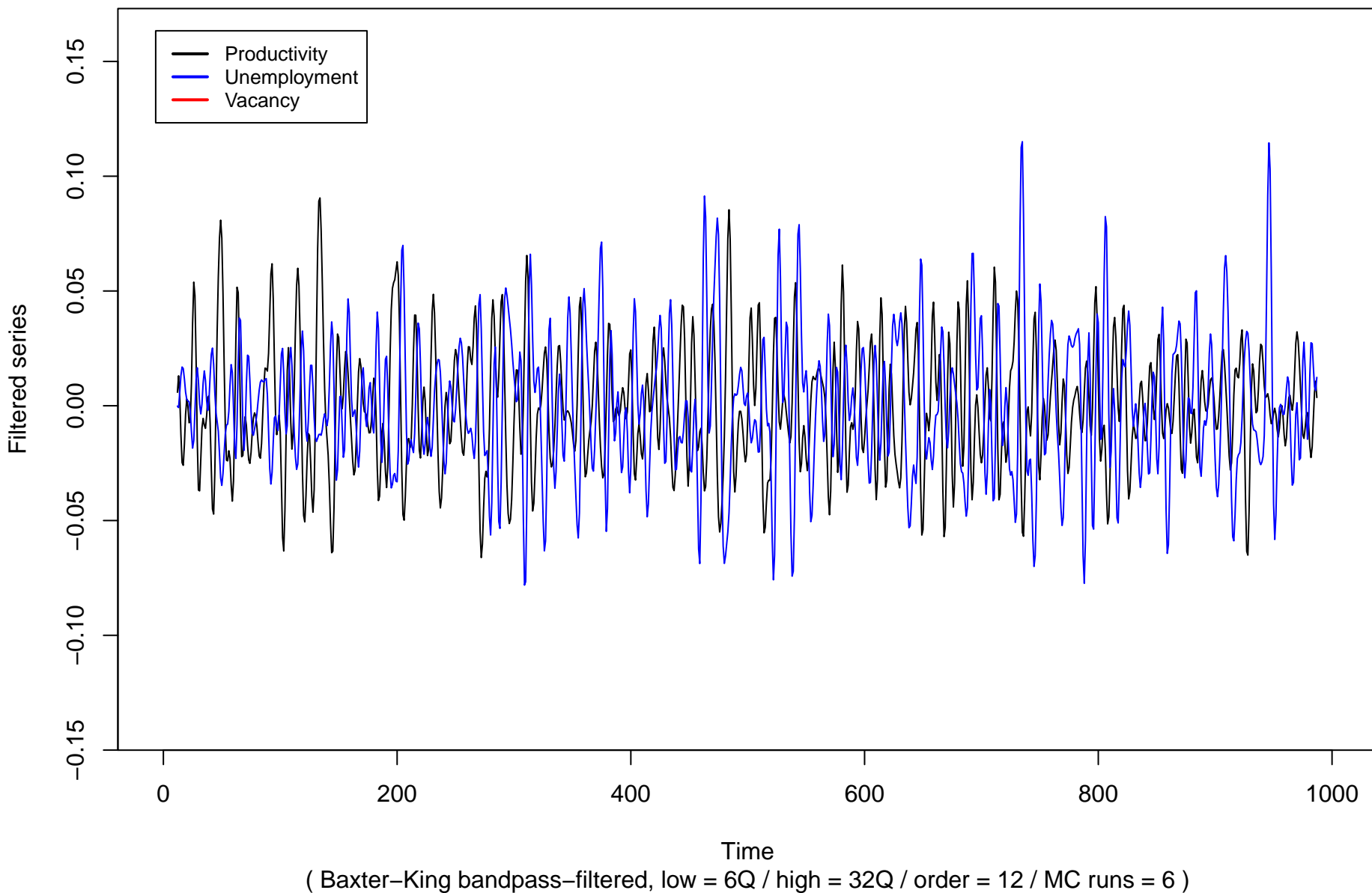
# Mark-up average ( Benchmark )



## GDP cycles ( Benchmark )



# Shimer puzzle ( Benchmark )





## Key statistics and unit roots tests for cycles ( Benchmark )

	<b>GDP (output)</b>	<b>Consumption</b>	<b>Investment</b>	<b>Product.</b>	<b>Real wage</b>
<b>avg. growth rate</b>	0.01364	0.01356	0.009425	0.01348	0.01321
<b>(s.e.)</b>	0.0006488	0.0006419	0.004225	0.0005669	0.0006088
<b>ADF test (logs)</b>	-2.797	-2.626	-10.92	-2.703	-2.608
<b>(s.e.)</b>	0.3314	0.3221	0.2825	0.3152	0.2969
<b>(p-val.)</b>	0.2746	0.3316	0.01	0.2988	0.3235
<b>(s.e.)</b>	0.1267	0.1278	0	0.1268	0.1247
<b>ADF test (bpf)</b>	-11.08	-10.71	-15.11	-10.76	-10.4
<b>(s.e.)</b>	0.1652	0.2379	0.3084	0.2875	0.4399
<b>(p-val.)</b>	0.01	0.01	0.01	0.01	0.01
<b>(s.e.)</b>	0	0	0	0	0
<b>s.d. (bpf)</b>	0.09928	0.08166	1.71	0.06555	0.07035
<b>(s.e.)</b>	0.006391	0.007929	0.0705	0.004294	0.003628
<b>relative s.d. (GDP)</b>	1	0.8225	17.22	0.6603	0.7085

( bpf: Baxter–King bandpass–filtered series, low = 6Q / high = 32Q / order = 12 / MC runs = 6 / 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
<b>GDP (output)</b>	-0.02839	0.2535	0.5979	0.8865	1	0.8865	0.5979	0.2535	-0.02839
(s.e.)	0.02797	0.02161	0.01234	0.00374	4.054e-17	0.00374	0.01234	0.02161	0.02797
(p-val.)	0.7072	0.0001523	6.11e-08	1.823e-11	NA	1.823e-11	6.11e-08	0.0001523	0.7072
<b>Consumption</b>	0.06332	0.3011	0.5877	0.8354	0.9467	0.8683	0.6275	0.3129	0.0258
(s.e.)	0.03398	0.0255	0.01378	0.007101	0.007249	0.005895	0.014	0.02473	0.03134
(p-val.)	0.1846	0.0001164	1.167e-07	6.186e-10	3.504e-10	1.981e-10	8.768e-08	7.98e-05	0.4904
<b>Investment</b>	-0.326	-0.3815	-0.3539	-0.2136	0.01385	0.2517	0.4108	0.4414	0.359
(s.e.)	0.04198	0.03475	0.01743	0.03048	0.05139	0.05383	0.03629	0.01408	0.0216
(p-val.)	0.0007466	0.0001275	6.928e-06	0.002096	0.2346	0.008411	0.0001033	6.586e-07	1.827e-05
<b>Net investment</b>	-0.2601	-0.3023	-0.2743	-0.1498	0.0485	0.2513	0.3796	0.3905	0.3008
(s.e.)	0.03348	0.02949	0.02883	0.04561	0.05886	0.05361	0.03026	0.008533	0.02529
(p-val.)	0.0009809	0.0002261	0.0003623	0.05313	0.1059	0.00836	6.78e-05	1.115e-07	0.0001122
<b>Change in inventories</b>	-0.1931	-0.1277	0.01183	0.1621	0.2477	0.2289	0.1313	0.01896	-0.04868
(s.e.)	0.03148	0.02664	0.01699	0.01754	0.02253	0.0216	0.02083	0.02318	0.02169
(p-val.)	0.004395	0.02845	0.9827	0.001155	0.000214	0.0002899	0.01043	0.8845	0.5511
<b>Unemployment rate</b>	0.3485	0.3115	0.1622	-0.05986	-0.2703	-0.3852	-0.3708	-0.2575	-0.1157
(s.e.)	0.03727	0.04607	0.03994	0.02296	0.01477	0.02399	0.02636	0.02113	0.01529
(p-val.)	0.0002971	0.001453	0.007451	0.5351	1.609e-05	2.015e-05	3.98e-05	0.0001241	0.008516
<b>Productivity</b>	0.2571	0.4489	0.6373	0.7591	0.7597	0.6255	0.3978	0.1489	-0.05521
(s.e.)	0.05445	0.0522	0.03469	0.01507	0.02063	0.02823	0.02683	0.02229	0.01741
(p-val.)	0.007914	0.0003522	7.278e-06	4.455e-08	2.126e-07	2.917e-06	2.888e-05	0.005696	0.5185
<b>Mark-up (sector 2)</b>	0.2041	0.1652	0.08092	-0.02657	-0.1214	-0.1737	-0.176	-0.1446	-0.105
(s.e.)	0.02388	0.02211	0.02495	0.02844	0.03027	0.032	0.03496	0.0371	0.03627
(p-val.)	0.0009567	0.002742	0.241	0.5538	0.04866	0.008735	0.01119	0.03829	0.1081
<b>Total firm debt</b>	0.1999	0.1177	0.02484	-0.06264	-0.1335	-0.1844	-0.2168	-0.2335	-0.2349
(s.e.)	0.0366	0.03839	0.03845	0.03547	0.03073	0.02945	0.03406	0.04167	0.04783
(p-val.)	0.006521	0.008881	0.2814	0.3343	0.03368	0.004419	0.003065	0.004607	0.007637
<b>Liquidity-to-sales ratio</b>	0.09772	-0.1061	-0.3446	-0.558	-0.6816	-0.6779	-0.5582	-0.3728	-0.1841
(s.e.)	0.01085	0.01029	0.01903	0.02065	0.01194	0.009779	0.02284	0.03159	0.03709
(p-val.)	0.01081	0.003908	1.251e-05	1.164e-06	2.515e-08	9.546e-09	1.919e-06	9.24e-05	0.01081
<b>Bankruptcy rate</b>	0.3145	0.3478	0.28	0.1353	-0.01983	-0.1204	-0.1446	-0.1213	-0.09841
(s.e.)	0.02523	0.03728	0.0491	0.04667	0.02785	0.008091	0.02779	0.0388	0.03686
(p-val.)	8.507e-05	0.0003008	0.00338	0.05116	0.697	0.0003961	0.01551	0.0858	0.08721

( non-rate/ratio series are Baxter–King bandpass-filtered, low = 6Q / high = 32Q / order = 12 / MC runs = 6 / 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
<b>GDP (output)</b>	-0.02839	0.2535	0.5979	0.8865	1	0.8865	0.5979	0.2535	-0.02839
<b>(s.e.)</b>	0.02797	0.02161	0.01234	0.00374	4.054e-17	0.00374	0.01234	0.02161	0.02797
<b>(p-val.)</b>	0.7072	0.0001523	6.11e-08	1.823e-11	NA	1.823e-11	6.11e-08	0.0001523	0.7072
<b>Consumption</b>	0.06332	0.3011	0.5877	0.8354	0.9467	0.8683	0.6275	0.3129	0.0258
<b>(s.e.)</b>	0.03398	0.0255	0.01378	0.007101	0.007249	0.005895	0.014	0.02473	0.03134
<b>(p-val.)</b>	0.1846	0.0001164	1.167e-07	6.186e-10	3.504e-10	1.981e-10	8.768e-08	7.98e-05	0.4904
<b>Investment</b>	-0.326	-0.3815	-0.3539	-0.2136	0.01385	0.2517	0.4108	0.4414	0.359
<b>(s.e.)</b>	0.04198	0.03475	0.01743	0.03048	0.05139	0.05383	0.03629	0.01408	0.0216
<b>(p-val.)</b>	0.0007466	0.0001275	6.928e-06	0.002096	0.2346	0.008411	0.0001033	6.586e-07	1.827e-05
<b>Productivity</b>	0.2571	0.4489	0.6373	0.7591	0.7597	0.6255	0.3978	0.1489	-0.05521
<b>(s.e.)</b>	0.05445	0.0522	0.03469	0.01507	0.02063	0.02823	0.02683	0.02229	0.01741
<b>(p-val.)</b>	0.007914	0.0003522	7.278e-06	4.455e-08	2.126e-07	2.917e-06	2.888e-05	0.005696	0.5185
<b>Entry</b>	-0.04992	0.1291	0.3133	0.4532	0.5102	0.4744	0.3697	0.2388	0.1209
<b>(s.e.)</b>	0.02769	0.03286	0.02914	0.01528	0.01029	0.0275	0.0369	0.03538	0.0291
<b>(p-val.)</b>	0.5129	0.04824	0.000173	8.474e-07	6.015e-08	1.193e-05	0.0002026	0.002057	0.04946
<b>Wage</b>	0.3574	0.5382	0.6774	0.7311	0.6773	0.5277	0.3259	0.1234	-0.04262
<b>(s.e.)</b>	0.03287	0.02747	0.02566	0.02928	0.03221	0.02888	0.02122	0.01845	0.02415
<b>(p-val.)</b>	0.0001422	5.85e-06	1.174e-06	1.492e-06	3.622e-06	8.359e-06	2.979e-05	0.01039	0.7383
<b>Unemployment rate</b>	0.3485	0.3115	0.1622	-0.05986	-0.2703	-0.3852	-0.3708	-0.2575	-0.1157
<b>(s.e.)</b>	0.03727	0.04607	0.03994	0.02296	0.01477	0.02399	0.02636	0.02113	0.01529
<b>(p-val.)</b>	0.0002971	0.001453	0.007451	0.5351	1.609e-05	2.015e-05	3.98e-05	0.0001241	0.008516
<b>Vacancy rate</b>	0.08224	-0.1157	-0.3194	-0.4412	-0.4291	-0.2996	-0.1254	0.01135	0.06695
<b>(s.e.)</b>	0.03788	0.02536	0.02098	0.02523	0.026	0.01937	0.01032	0.01506	0.02622
<b>(p-val.)</b>	0.04315	0.04392	3.184e-05	1.18e-05	1.602e-05	3.188e-05	0.0008318	0.994	0.1539

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

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

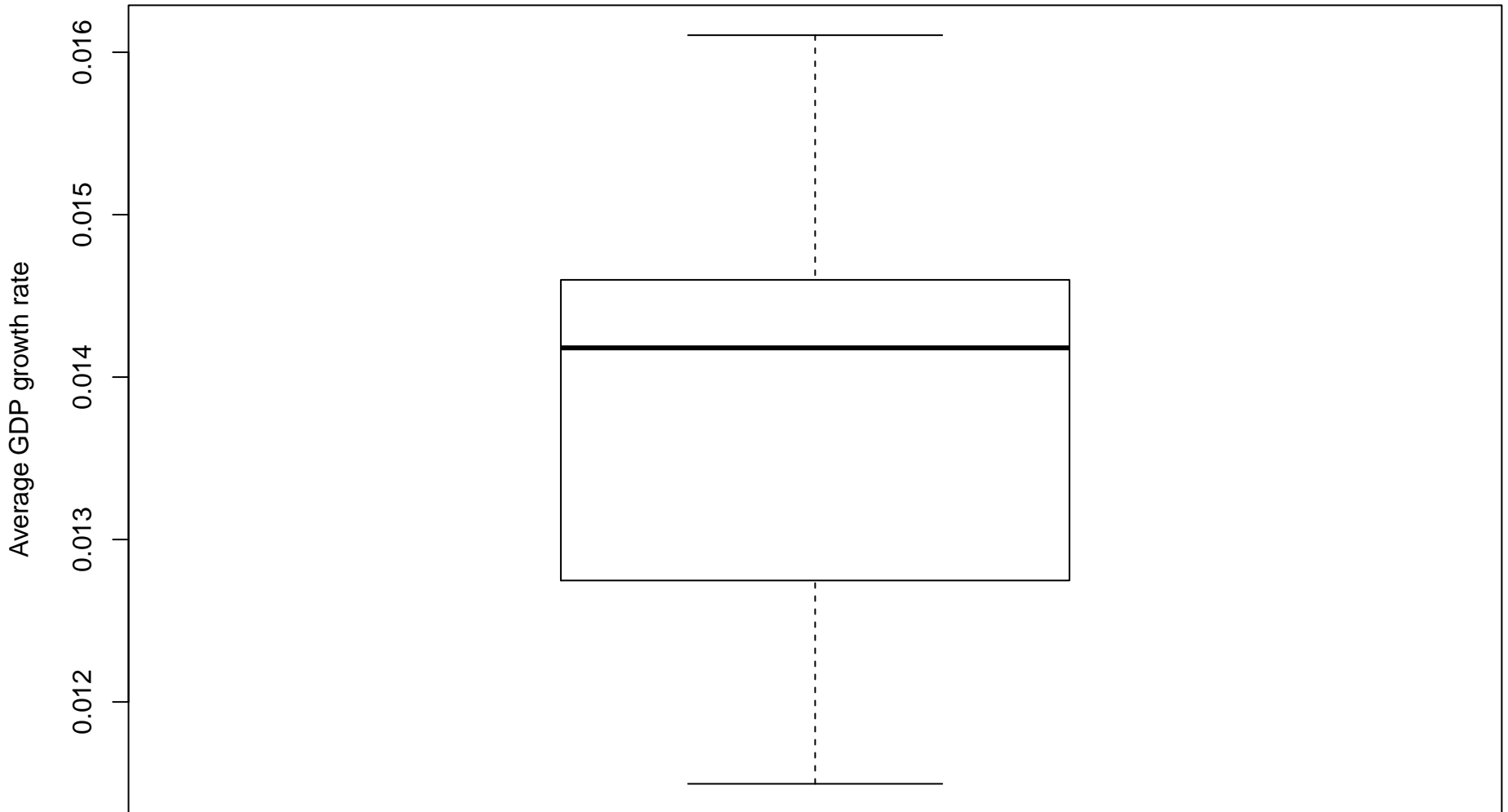
	avg.ADF	rej.ADF	avg.PP	rej.PP	avg.KPSS	rej.KPSS	avg.BDS	rej.BDS	avg.KS	rej.KS	AD	V
dGDP	0.01	1.00	0.01	1.00	0.09	0.00	0.04	0.83	0.29	0.33	0.01	C
dA	0.01	1.00	0.01	1.00	0.09	0.17	0.02	0.83	0.12	0.80	0.00	C
dw	0.01	1.00	0.01	1.00	0.09	0.17	0.02	0.83	0.12	0.80	0.00	C
V	0.01	1.00	0.01	1.00	0.03	0.83	0.00	1.00	0.09	0.73	0.00	C
U	0.01	1.00	0.01	1.00	0.01	1.00	0.00	1.00	0.08	0.80	0.00	C
mu2avg	0.01	1.00	0.01	1.00	0.01	1.00	0.00	1.00	0.10	0.87	0.00	C
HH1	0.01	1.00	0.01	1.00	0.09	0.17	0.00	1.00	0.12	0.60	0.00	C
HH2	0.01	1.00	0.01	1.00	0.04	0.50	0.00	1.00	0.21	0.73	0.00	C

( average p-values for testing H0 and rate of rejection of H0 / MC runs = 6 / period = 2 – 1000 )

( ADF/PP H0: non-stationary, KPSS H0: stationary, BDS H0: i.i.d., KS/AD/WW H0: ergodic )

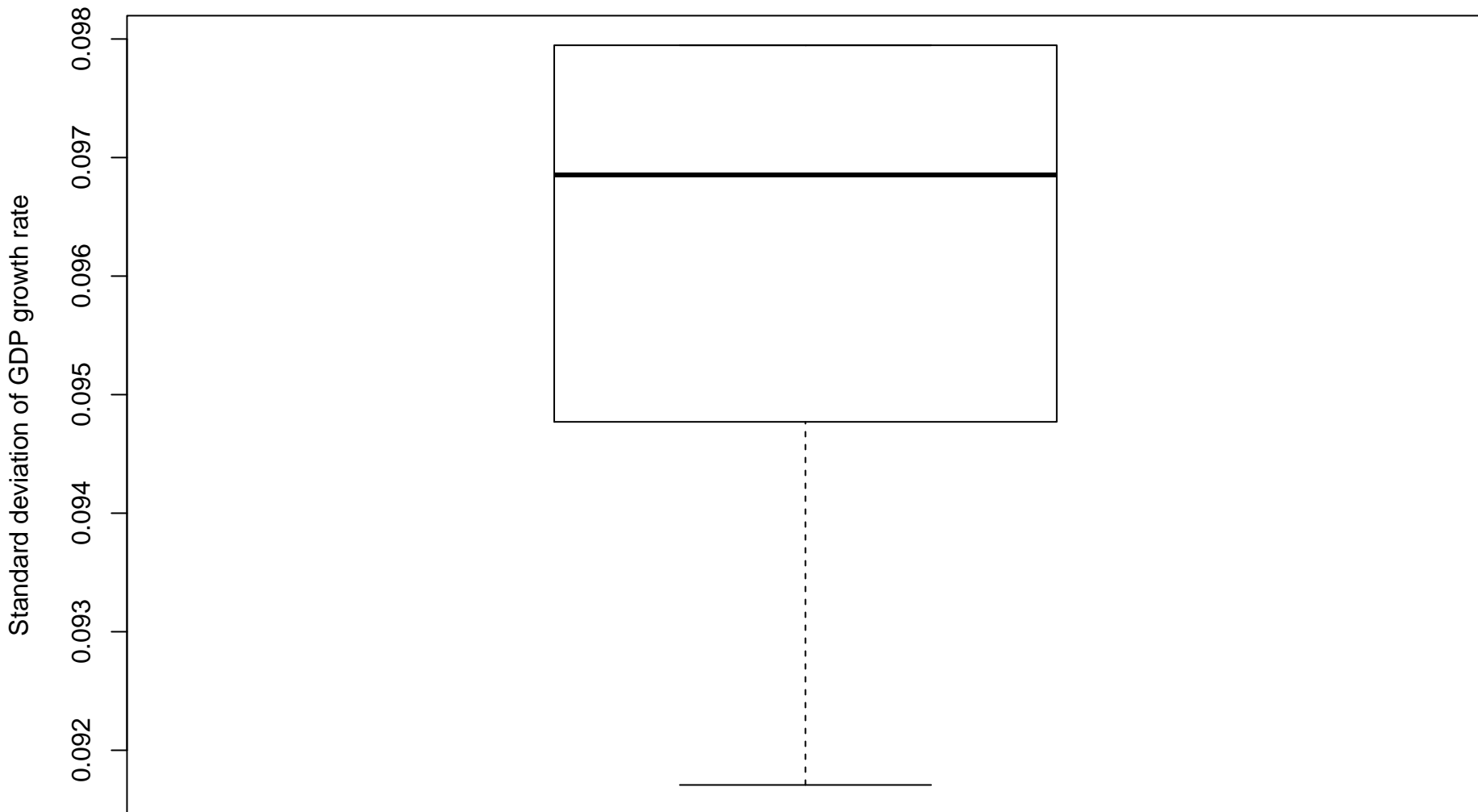
( significance = 0.05 )

## GDP growth



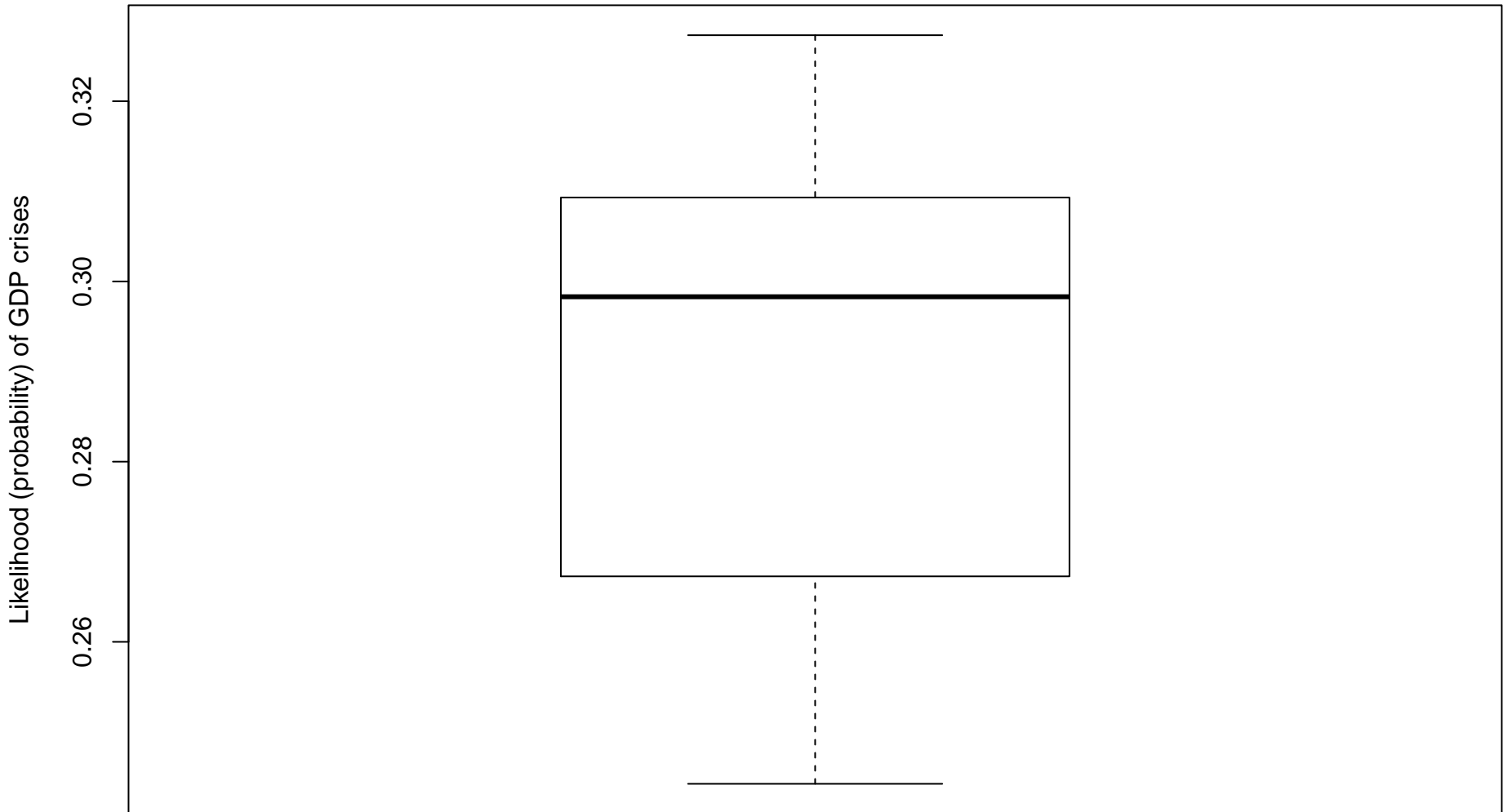
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Volatility of GDP growth



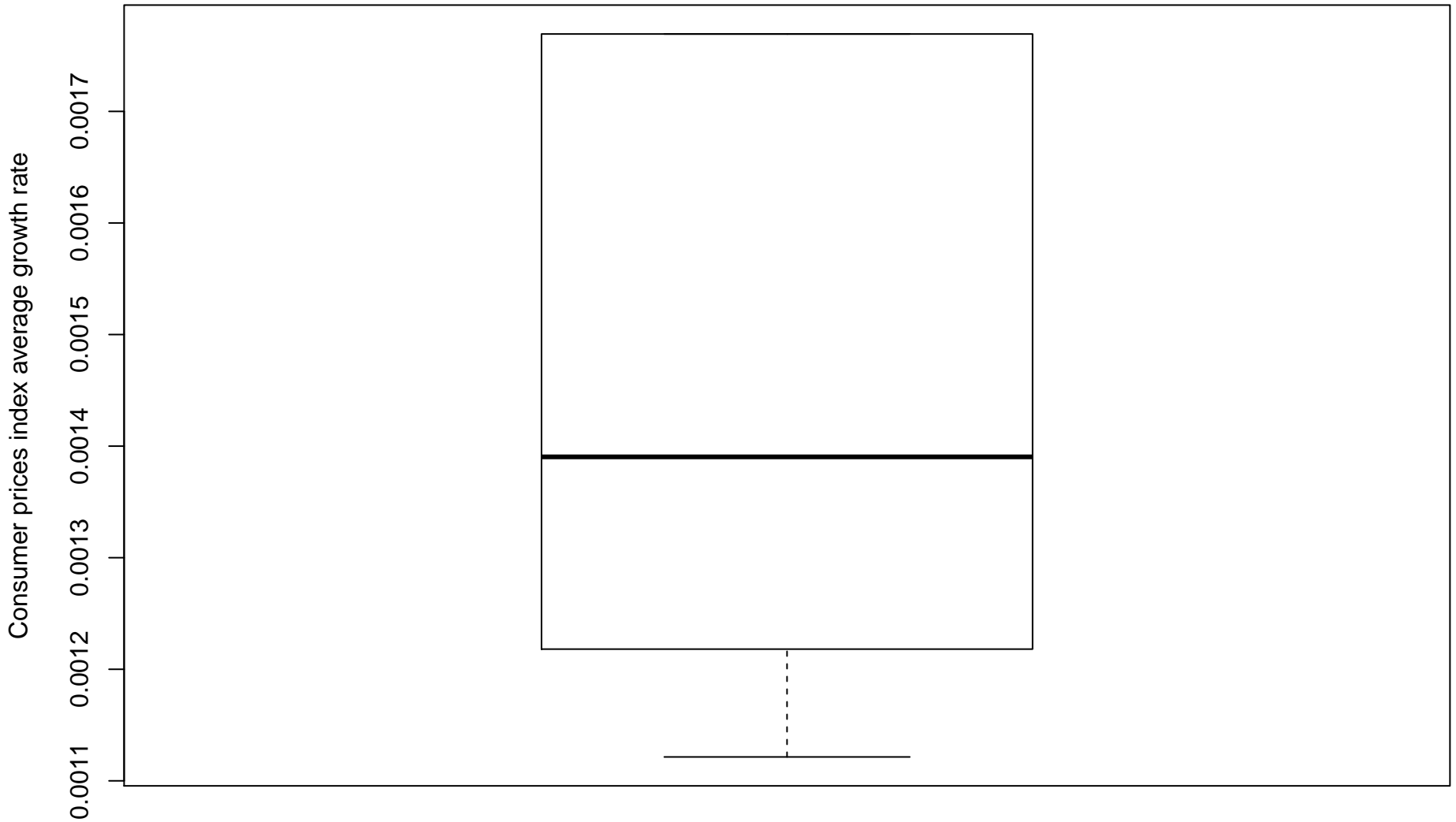
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Likelihood of GDP crises



( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

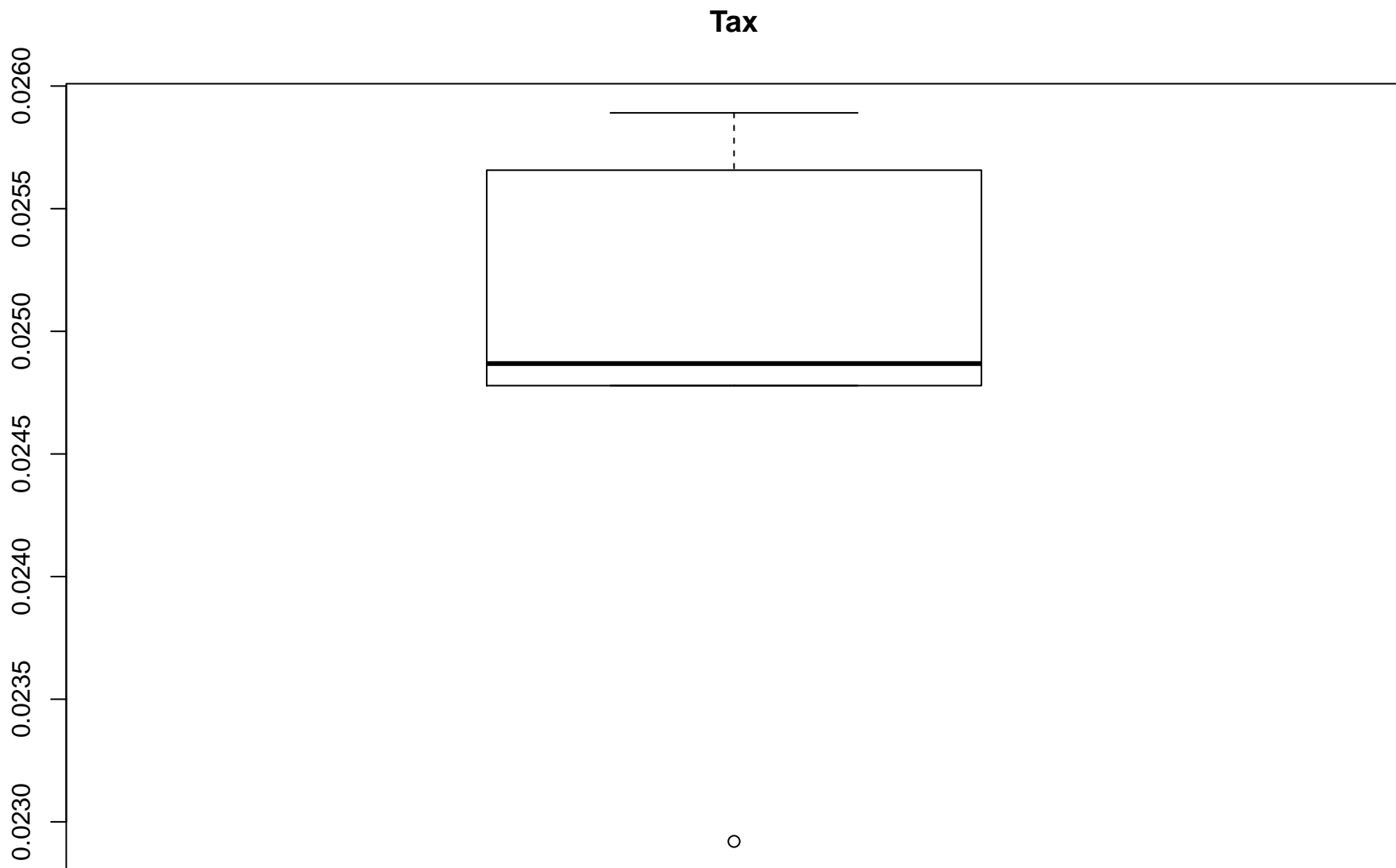
# Inflation



( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

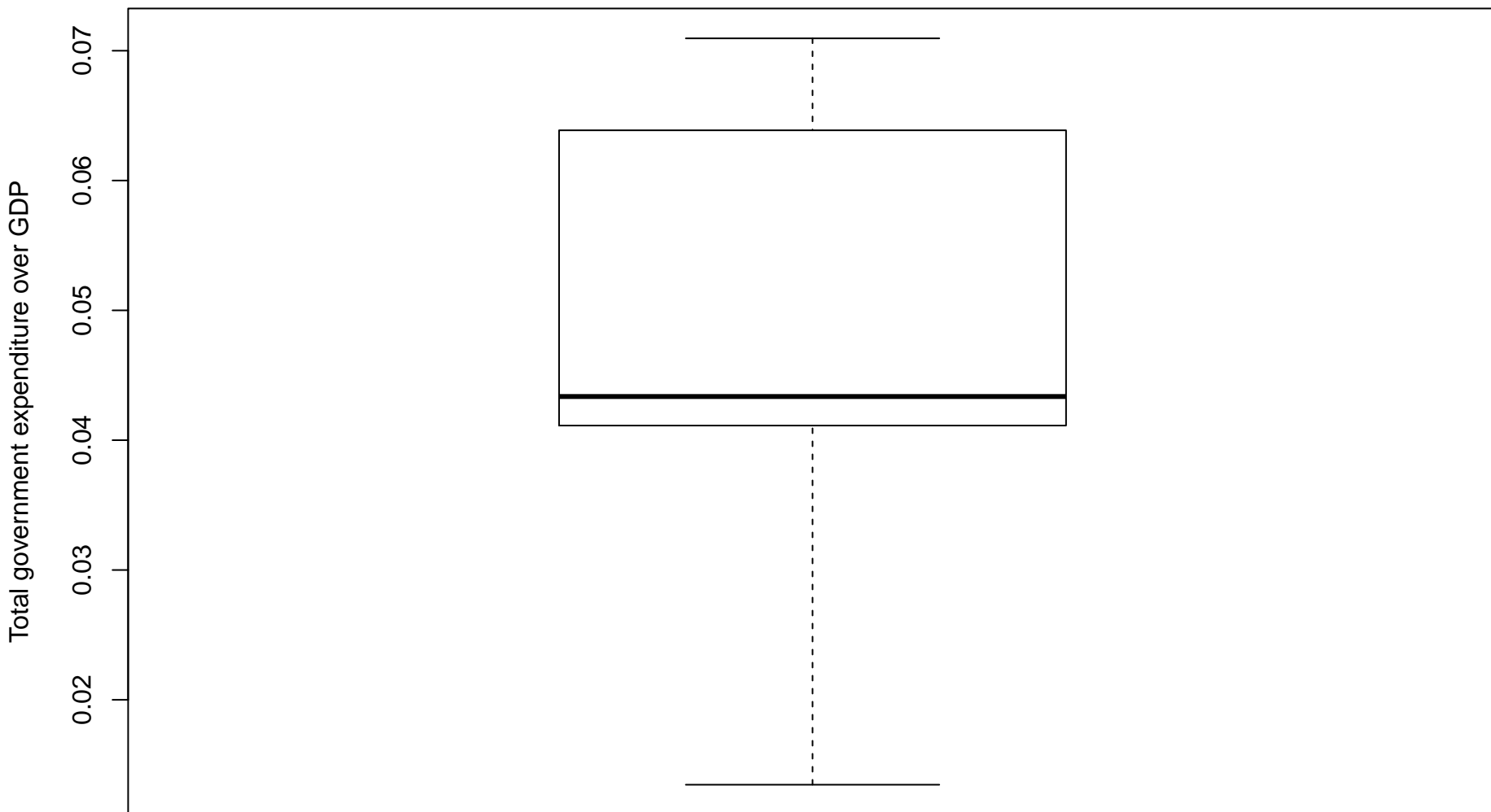


Government tax income over GDP



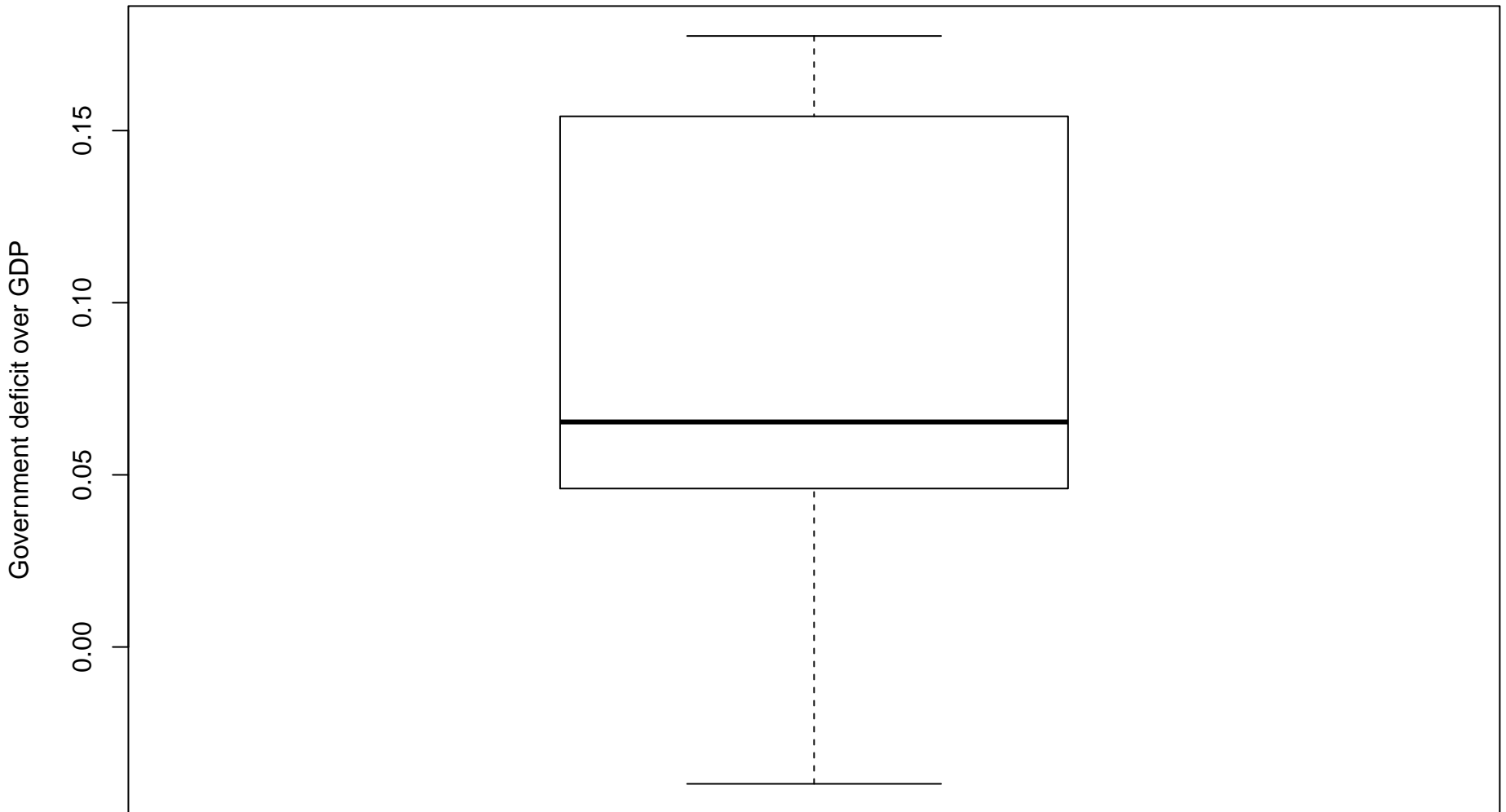
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Government total expenditure



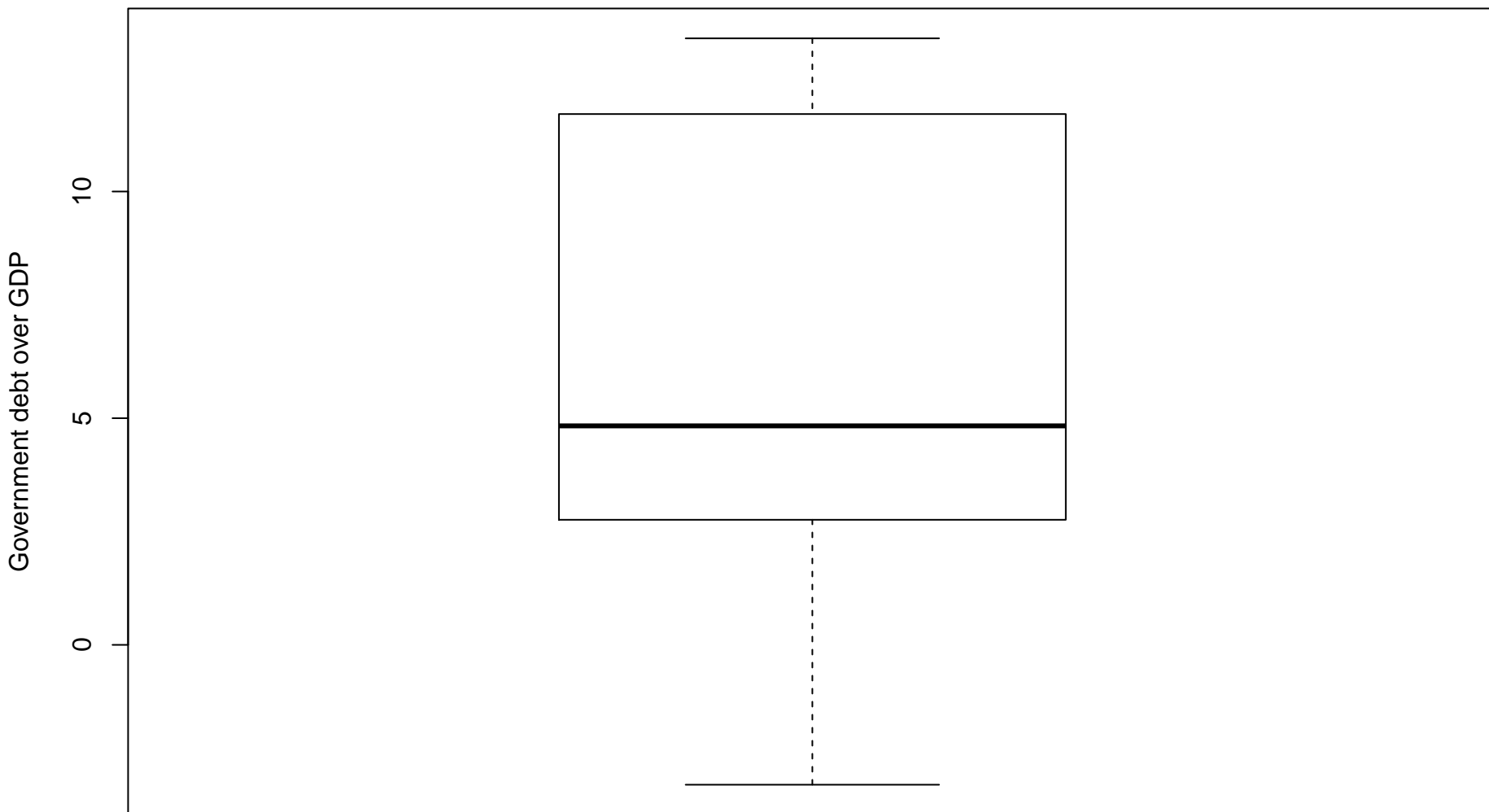
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Government deficit



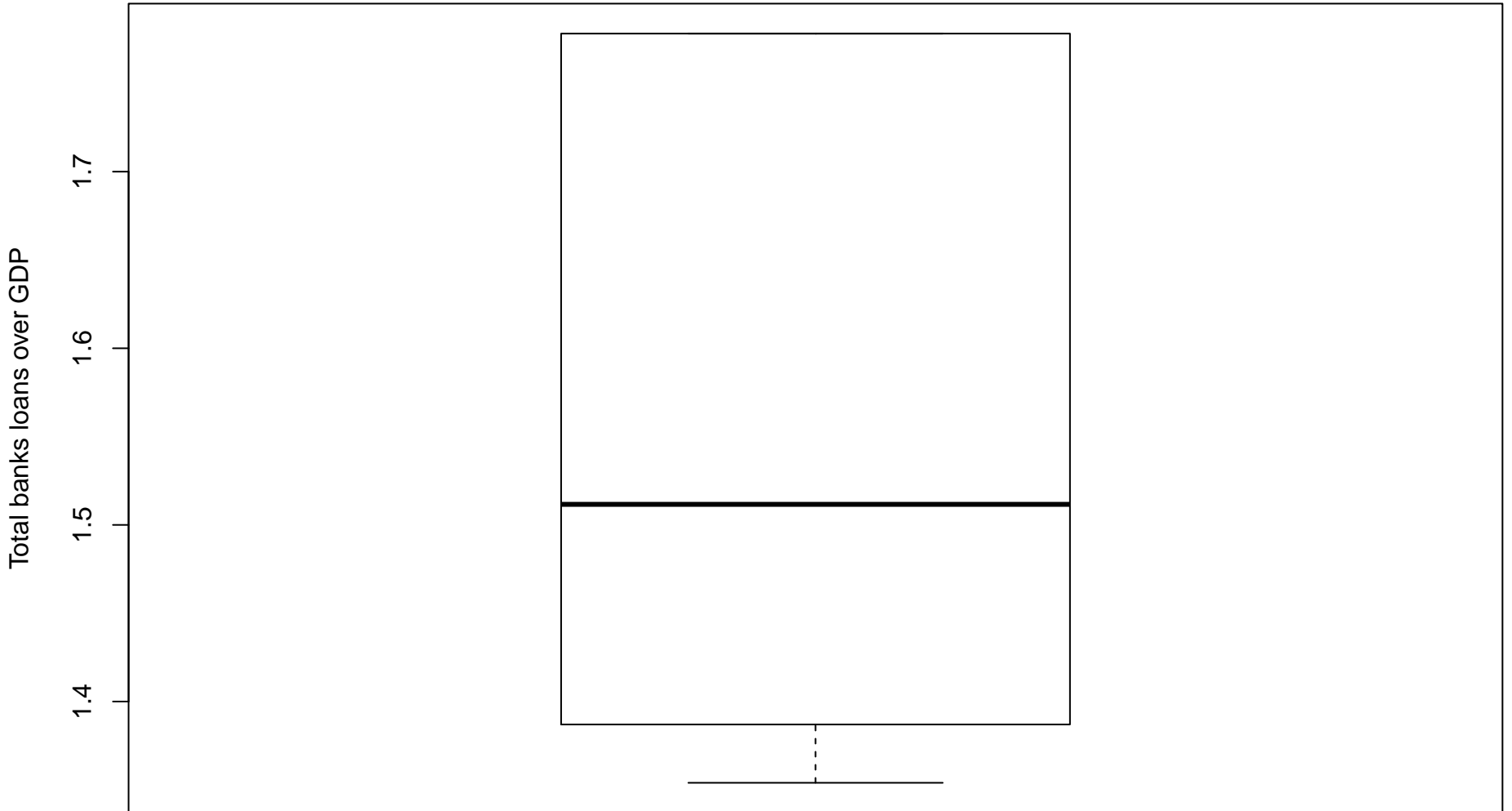
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Government debt



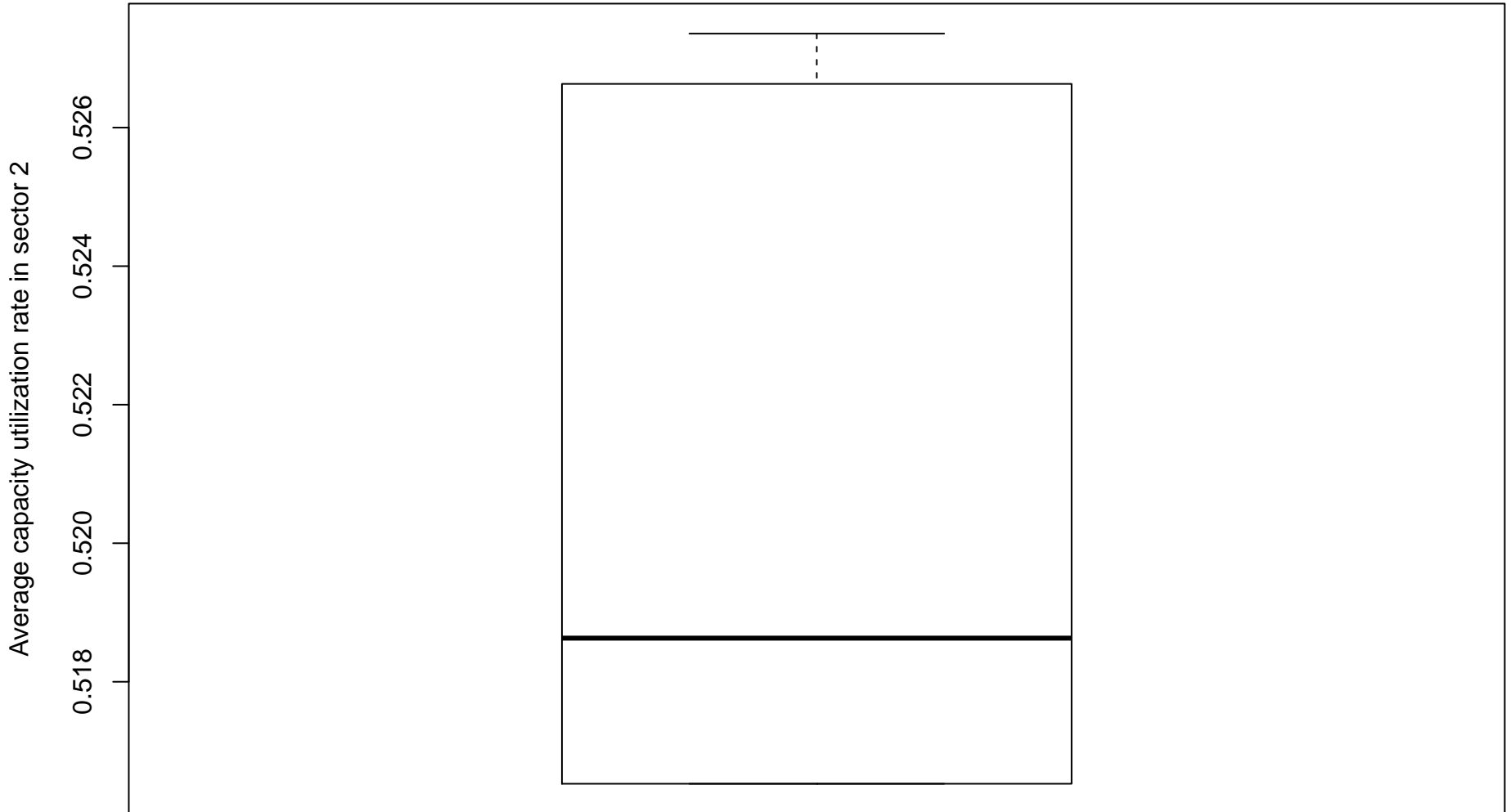
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Loans



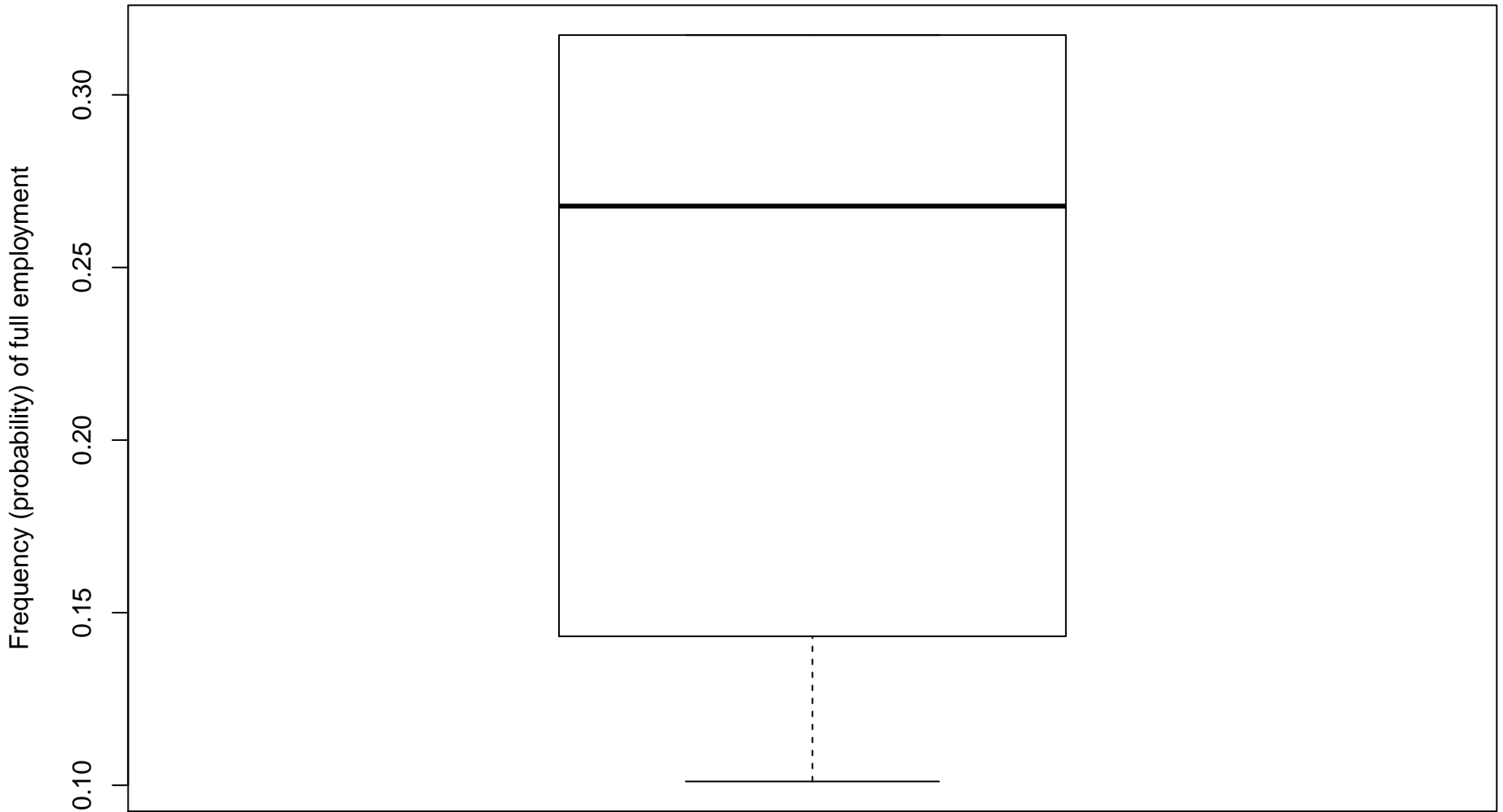
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Capacity utilization



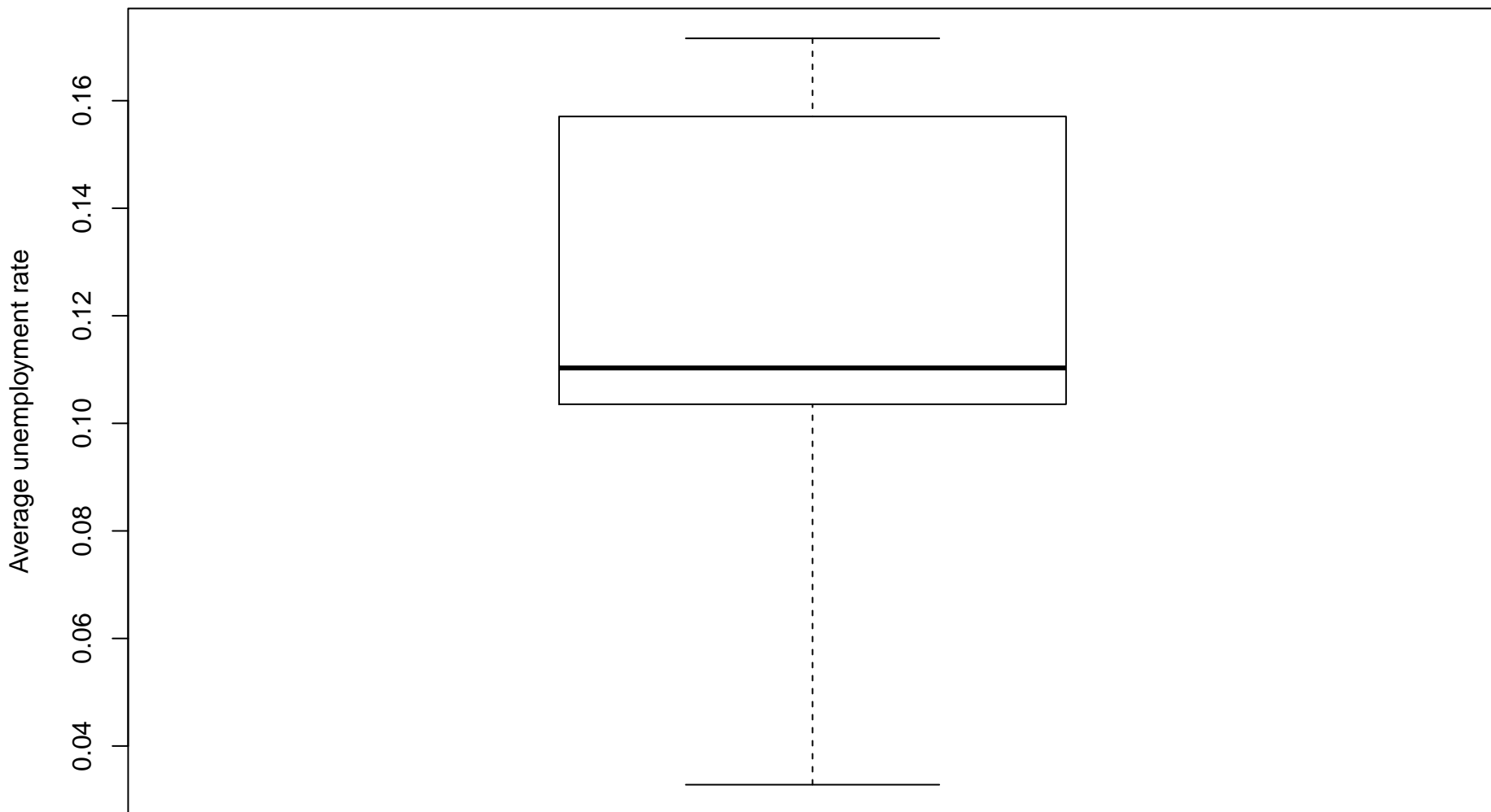
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Full employment frequency



( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

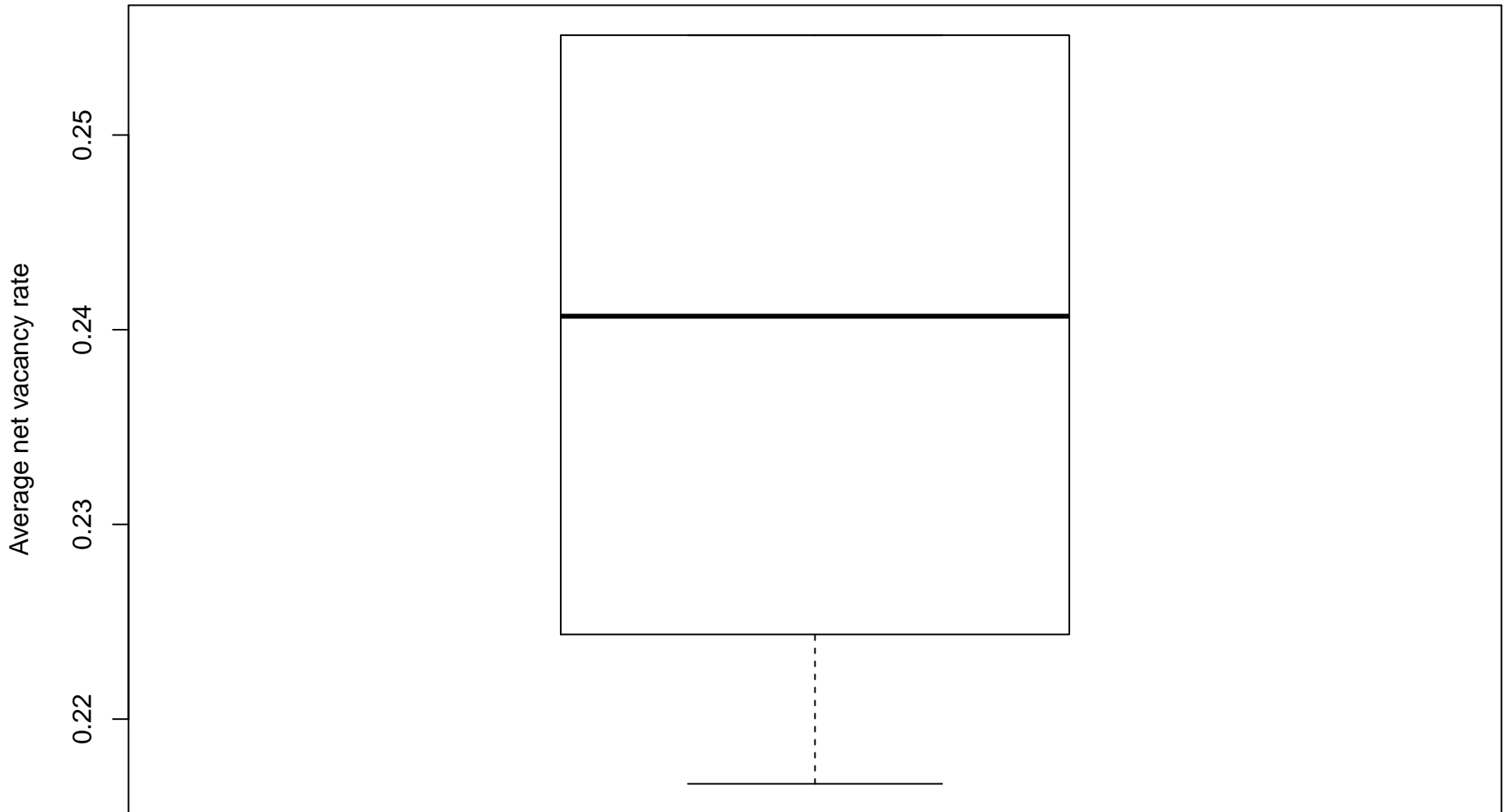
## Unemployment



( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

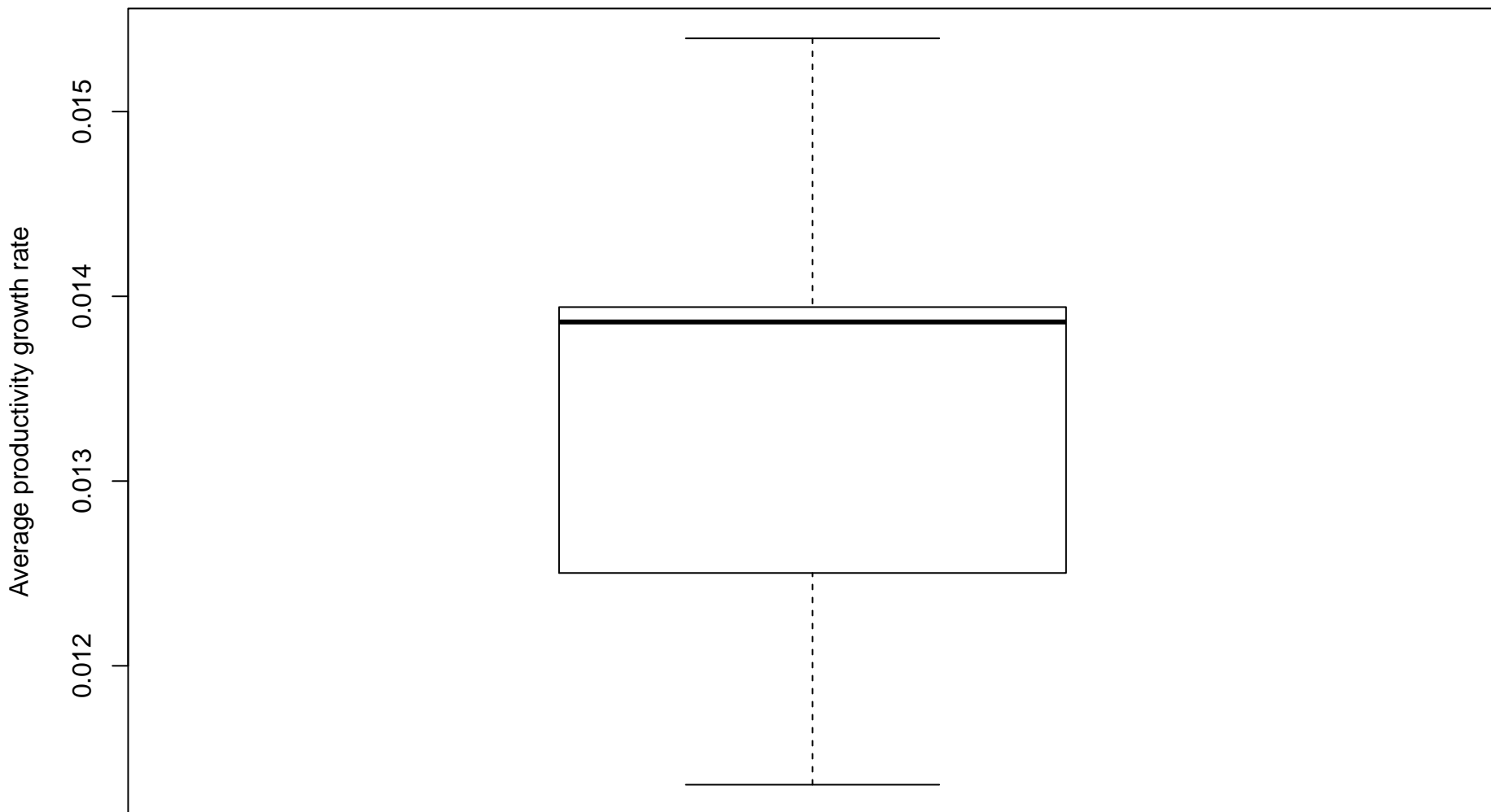


# Vacancy



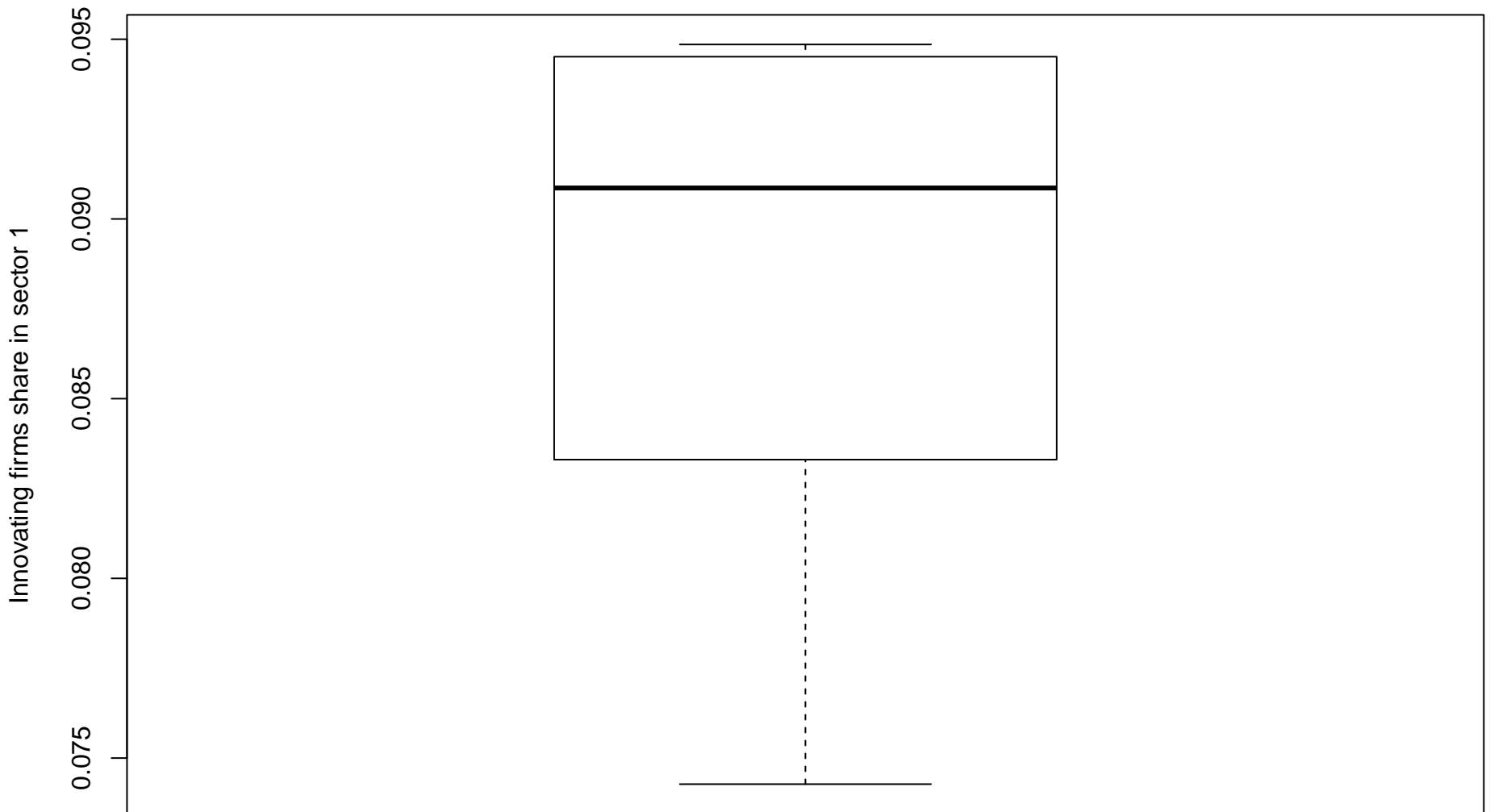
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Productivity growth



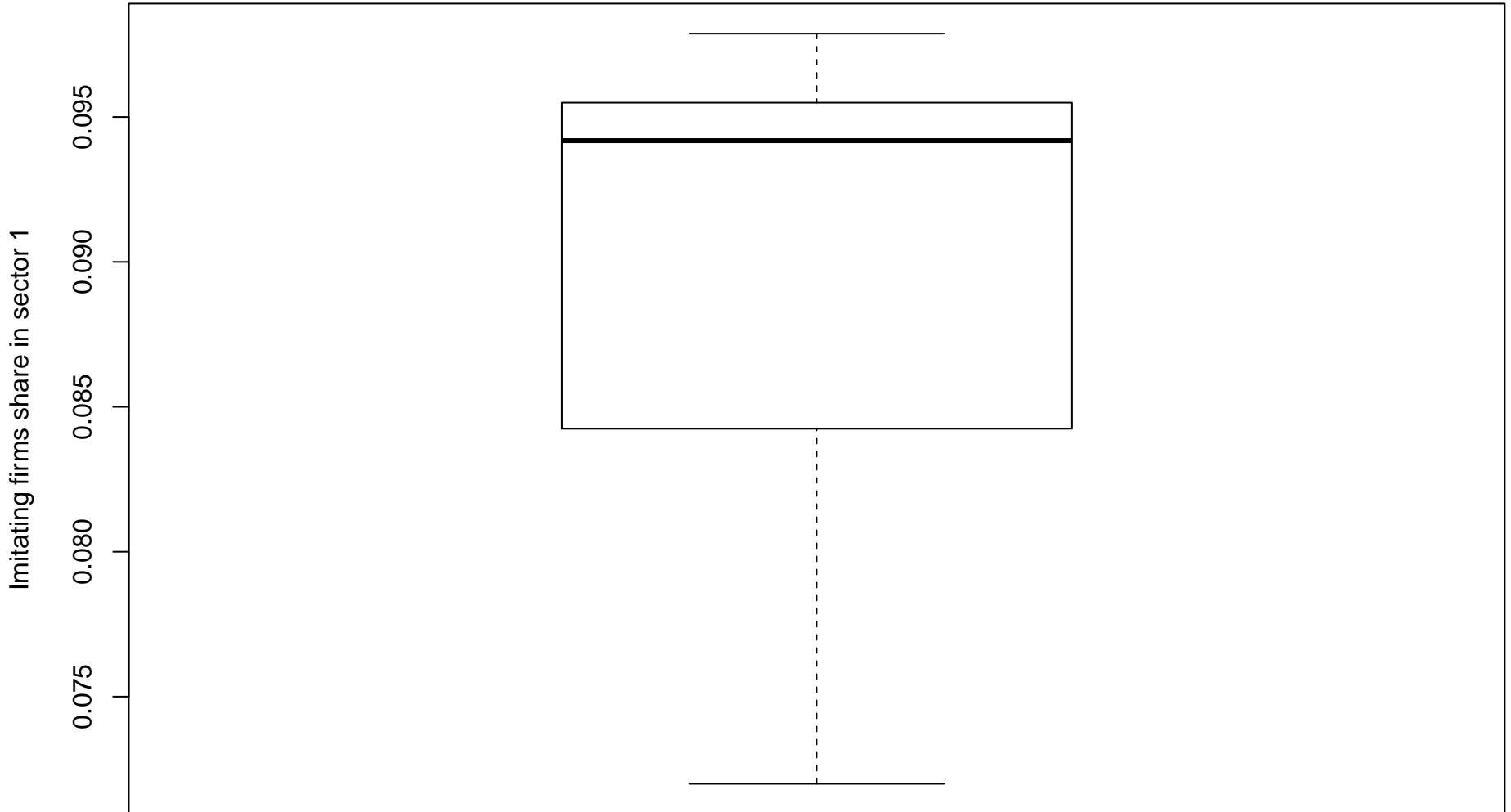
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

# Innovation



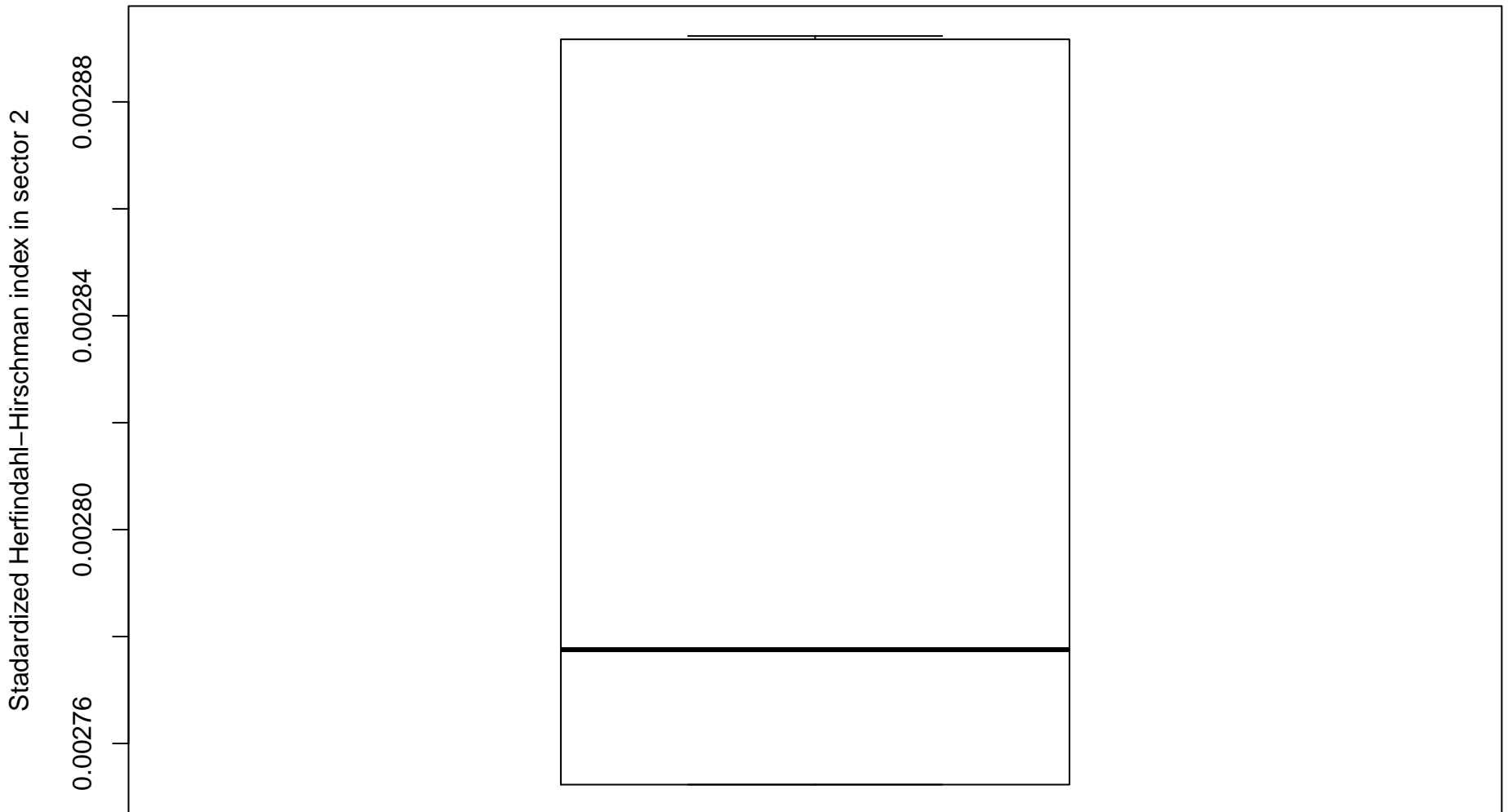
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Imitation



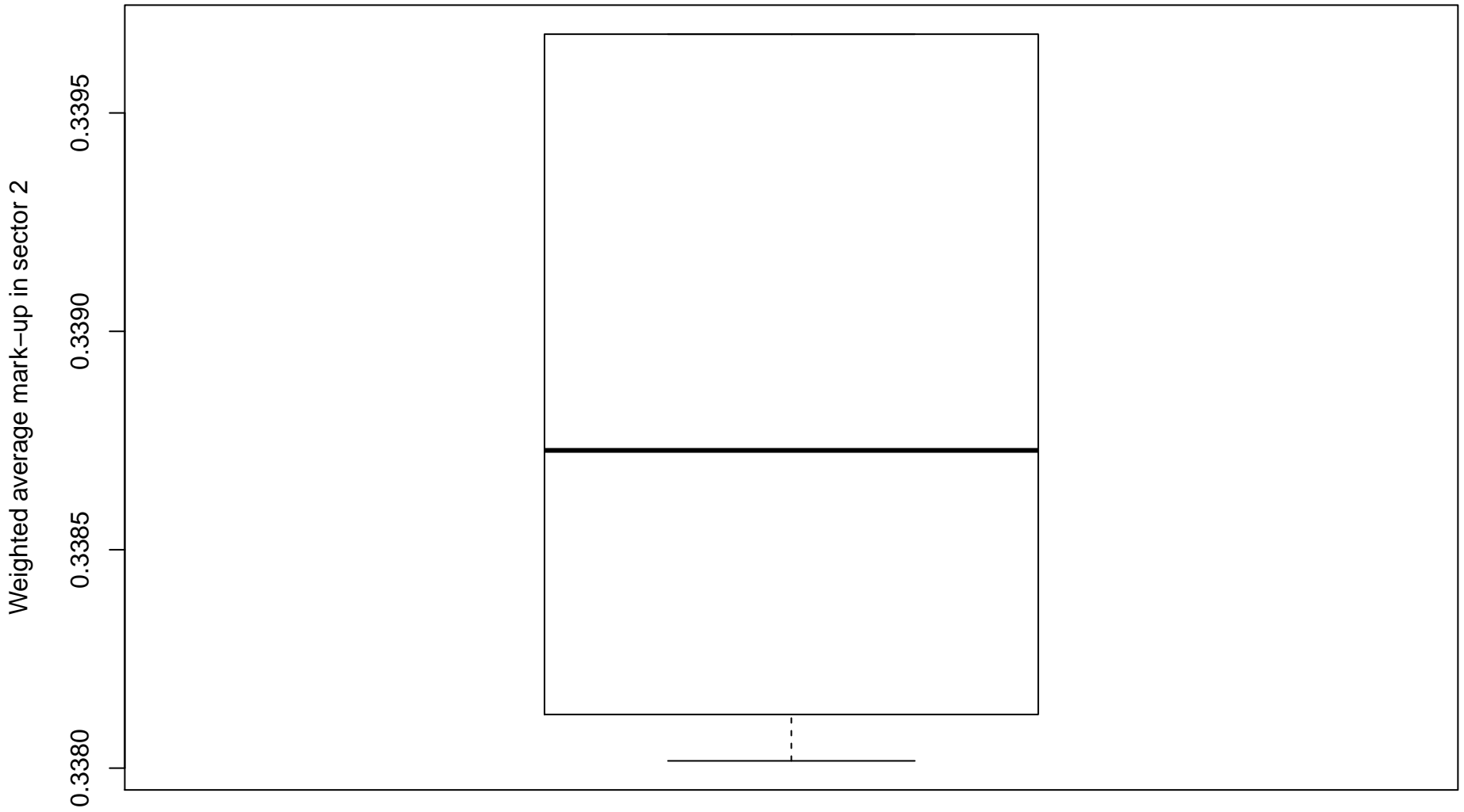
( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Market concentration



( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

## Mark-ups



( bar: median / box: 2nd–3rd quartile / whiskers: max–min / points: outliers / MC runs = 6 / period = 2 – 1000 )

# Monte Carlo descriptive statistics ( all experiments )

	<b>Avg[1]</b>	<b>SD[1]</b>	<b>Min[1]</b>	<b>Max[1]</b>
<b>GDP growth</b>	0.01388	0.00159	0.0115	0.01611
<b>Volatility of GDP growth</b>	0.09809	0.006443	0.09171	0.1104
<b>Likelihood of GDP crises</b>	0.2908	0.03027	0.2442	0.3273
<b>Inflation</b>	0.001689	0.0007978	0.001121	0.003244
<b>Tax</b>	0.02483	0.001045	0.02292	0.02589
<b>Government total expenditure</b>	0.04602	0.02019	0.01346	0.07095
<b>Government deficit</b>	0.0781	0.07867	-0.03975	0.1775
<b>Government debt</b>	5.737	6.052	-3.085	13.38
<b>Loans</b>	1.863	0.8823	1.354	3.638
<b>Capacity utilization</b>	0.5115	0.02507	0.4612	0.5274
<b>Full employment frequency</b>	0.3141	0.2464	0.1011	0.7878
<b>Unemployment</b>	0.1143	0.04879	0.0328	0.1716
<b>Vacancy</b>	0.2779	0.1048	0.2167	0.4901
<b>Productivity growth</b>	0.01349	0.001389	0.01136	0.0154
<b>Innovation</b>	0.08811	0.007953	0.07427	0.09485
<b>Imitation</b>	0.08966	0.009839	0.07199	0.09788
<b>Market concentration</b>	0.00265	0.0004169	0.001808	0.002892
<b>Mark-ups</b>	0.3409	0.005595	0.338	0.3523

Experiments: [1] Benchmark

( numbers in brackets indicate the experiment number / MC runs = 6 / period = 2 – 1000 )