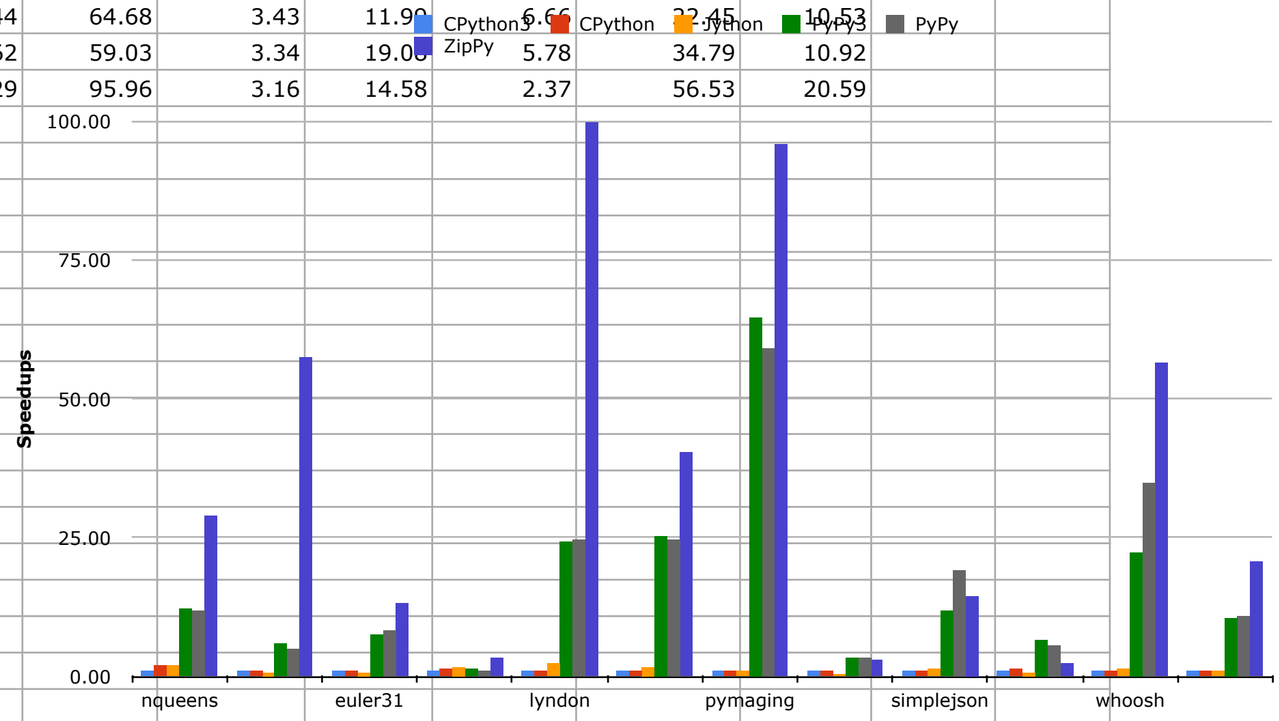
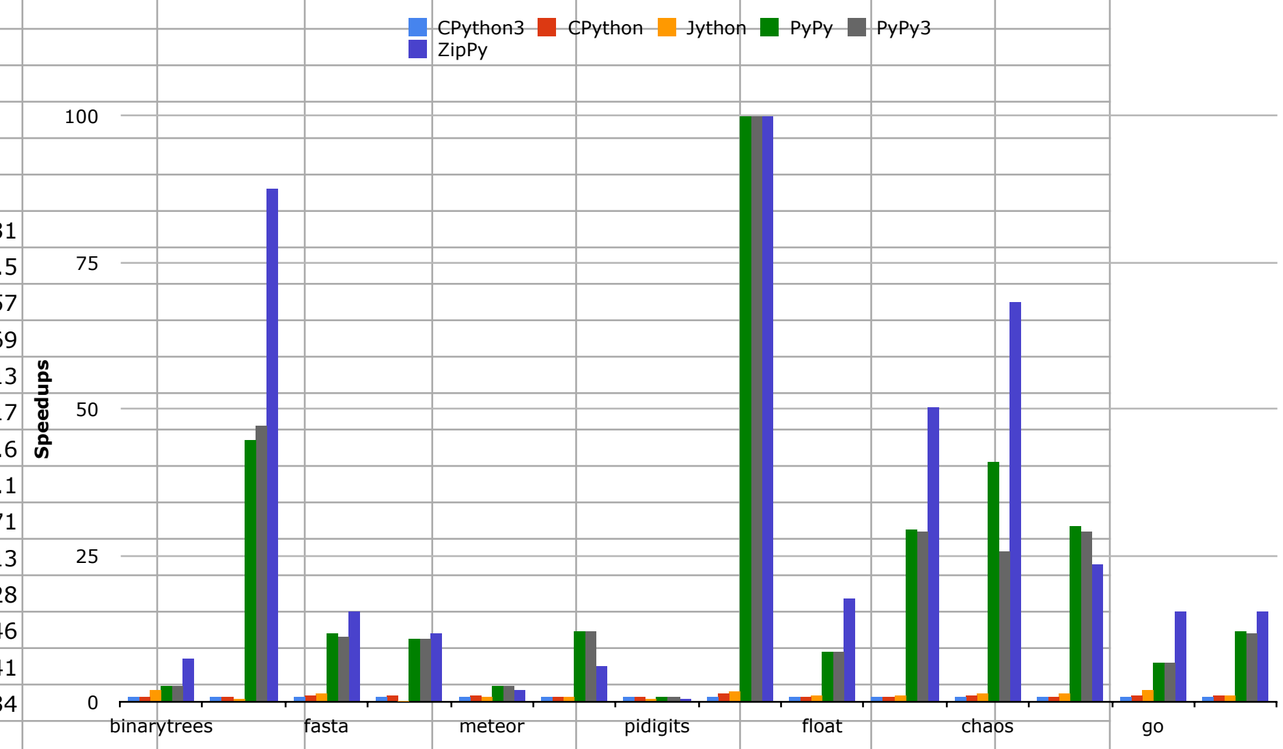
Generator benchmarks: normalized speedups of all VMs

benchmark	nqueens	euler11	euler31	eratos	lyndon	partitions	pymaging	python-graph	simplejson	sympy	whoosh	geomean
CPython3	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
CPython	2.12	0.91	1.01	1.42	1.16	1.02	0.93	0.93	1.16	1.26	1.06	1.14
Jython	2.14	0.75	0.64	1.68	2.37	1.72	1.10	0.54	1.23	0.71	1.39	1.16
PyPy3	12.31	6.04	7.71	1.26	24.26	25.44	64.68	3.43	11.90	6.66	22.45	10.53
PyPy	11.95	5.07	8.38	1.14	24.54	24.62	59.03	3.34	19.00	5.78	34.79	10.92
ZipPy	29.05	57.43	13.09	3.32	162.88	40.29	95.96	3.16	14.58	2.37	56.53	20.59



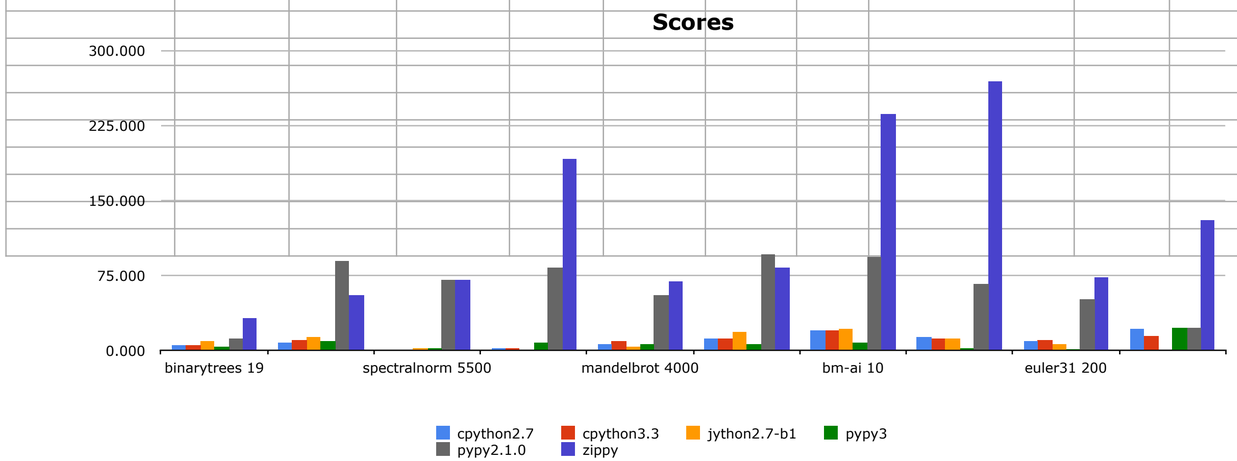
Non-generator benchmarks: speedups of VMs

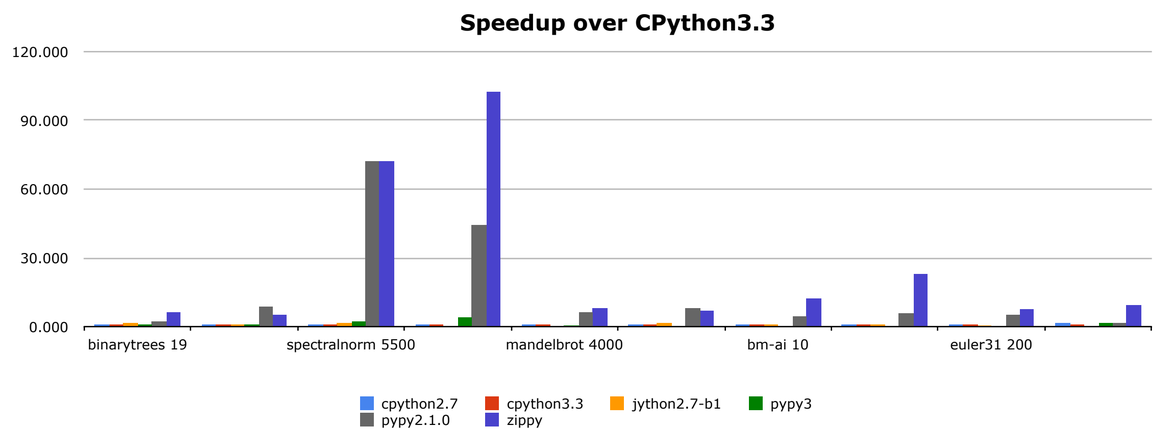
benchmmark	CPython3	CPython	Jython	PyPy	PyPy3	ZipPy
binarytrees	1	0.94	1.99	2.6	2.7	7.31
fannkuchredux	1	0.97	0.51	44.53	47.29	87.5
fasta	1	1.04	1.55	11.73	11.24	15.57
mandelbrot	1	1.08	0.34	10.91	10.82	11.69
meteor	1	1.02	0.77	2.64	2.62	2.13
nbody	1	0.97	0.73	12.13	12.06	6.17
pidigits	1	1	0.62	0.98	0.95	0.6
spectralnorm	1	1.33	1.89	127.33	127.25	128.1
float	1	0.95	1.05	8.64	8.67	17.71
richards	1	0.94	1.21	29.53	29.25	50.13
chaos	1	1.17	1.55	40.88	25.69	68.28
deltablue	1	0.85	1.33	30.08	29.14	23.46
go	1	1.08	1.99	6.79	6.66	15.41
mean	1	1.02	1.05	12.15	11.68	15.34



score	cpython2.7	cpython3.3	jython2.7-b1	pypy3	pypy2.1.0	zippy
binarytrees 19	4.130	5.035	8.808	3.688	11.281	32.495
nbody 5000000	8.141	10.308	12.913	9.332	89.278	55.700
spectralnorm 5500	1.026	0.976	1.546	2.271	70.537	70.600
fannkuchredux 11	1.715	1.865	0.936	7.245	82.713	191.000
mandelbrot 4000	6.845	8.743	2.838	5.794	54.735	68.400
fasta 25000000	11.989	11.530	18.921	6.203	95.804	82.000
bm-ai 10	19.440	19.500	20.800	7.000	94.000	236.280
euler11 10000	12.500	11.640	10.980	1.900	66.600	268.640
euler31 200	8.520	9.740	5.840	1.400	51.020	72.580
eratosthenes 100000	20.700	14.420	0.000	23.100	23.100	129.670

speedup	cpython2.7	cpython3.3	jython2.7-b1	pypy3	pypy2.1.0	zippy
binarytrees 19	0.820	1.000	1.749	0.733	2.240	6.453
nbody 5000000	0.790	1.000	1.253	0.905	8.661	5.404
spectralnorm 5500	1.051	1.000	1.584	2.327	72.264	72.329
fannkuchredux 11	0.919	1.000	0.502	3.884	44.345	102.402
mandelbrot 4000	0.783	1.000	0.325	0.663	6.260	7.823
fasta 25000000	1.040	1.000	1.641	0.538	8.309	7.112
bm-ai 10	0.997	1.000	1.067	0.359	4.821	12.117
euler11 10000	1.074	1.000	0.943	0.163	5.722	23.079
euler31 200	0.875	1.000	0.600	0.144	5.238	7.452
eratosthenes 100000	1.436	1.000	0.000	1.602	1.602	8.992





Execution time for object bound benchmarks

fixed storage 5

benchmarks	1	2	3	4	5	mean
float	3.577	3.374	3.227	3.109	3.256	3.309
richards	0.984	1.010	1.123	0.905	1.178	1.040
chaos	4.865	4.836	4.863	4.963	5.304	4.966
deltablue	1.391	1.129	1.210	1.198	1.212	1.228
go	1.072	1.004	0.995	0.979	0.999	1.010

fixed storage 3

benchmarks	1	2	3	4	5	mean
float	3.335	3.324	3.327	3.278	3.563	3.365
richards	1.200	1.094	1.176	1.028	1.016	1.103
chaos	5.036	5.134	4.927	4.846	4.964	4.981
deltablue	1.133	1.215	1.229	1.128	1.265	1.194
go	1.123	1.106	1.089	1.072	1.082	1.094

fixed storage 1

benchmarks	1	2	3	4	5	mean
float	3.568	4.042	3.487	3.657	3.599	3.671
richards	1.186	1.242	1.257	1.201	1.226	1.222
chaos	5.442	5.298	5.123	5.085	5.177	5.225
deltablue	1.229	1.222	1.261	1.321	1.163	1.239
go	1.075	1.077	1.087	1.068	1.129	1.087

flex storage

benchmarks	1	2	3	4	5	mean
float	3.146	3.134	3.022	3.129	3.118	3.110
richards	1.160	1.164	1.200	1.184	1.146	1.171
chaos	4.495	4.229	4.367	4.311	4.369	4.354
deltablue	1.131	1.214	1.154	1.185	1.176	1.172
go	0.988	0.983	0.968	0.999	1.053	0.998

flex storage evol

benchmarks	1	2	3	4	5	mean
float	3.170	3.154	3.188	3.238	3.221	3.194
richards	1.213	1.156	1.171	1.234	1.159	1.187
chaos	4.336	4.245	4.261	4.383	4.504	4.346
deltablue	1.172	1.118	1.215	1.181	1.134	1.164
go	1.002	1.045	1.083	1.004	1.032	1.033

object storage allocations

benchmarks	fixed	flexible
float	3,168,003,888	0
richards	11,989,584	0
chaos	30,501,652,896	0
deltablue	620,934,480	0
go	336,672	0
float	2,464,003,024	0
richards	9,325,232	0
chaos	23,723,507,808	0
deltablue	482,949,040	0
go	261,856	0
float	1,760,002,160	0
richards	6,660,880	0
chaos	16,945,362,720	0
deltablue	379,459,960	0
go	187,040	0
float	4,032	1,232,000,000
richards	7,488	3,994,608
chaos	4,608	11,861,752,280
deltablue	4,608	172,480,280
go	5,184	129,192
float	4,032	1,232,000,000
richards	7,488	3,994,608
chaos	4,608	11,861,752,280
deltablue	6,624	172,480,280
go	5,184	129,192

average exe time of each object model config

	fixed	flex	flex evol
float	3.309	3.110	3.194
richards	1.040	1.171	1.187
chaos	4.966	4.354	4.346
deltablue	1.228	1.172	1.164
go	1.010	0.998	1.033

speedups of each object model config relative to fix

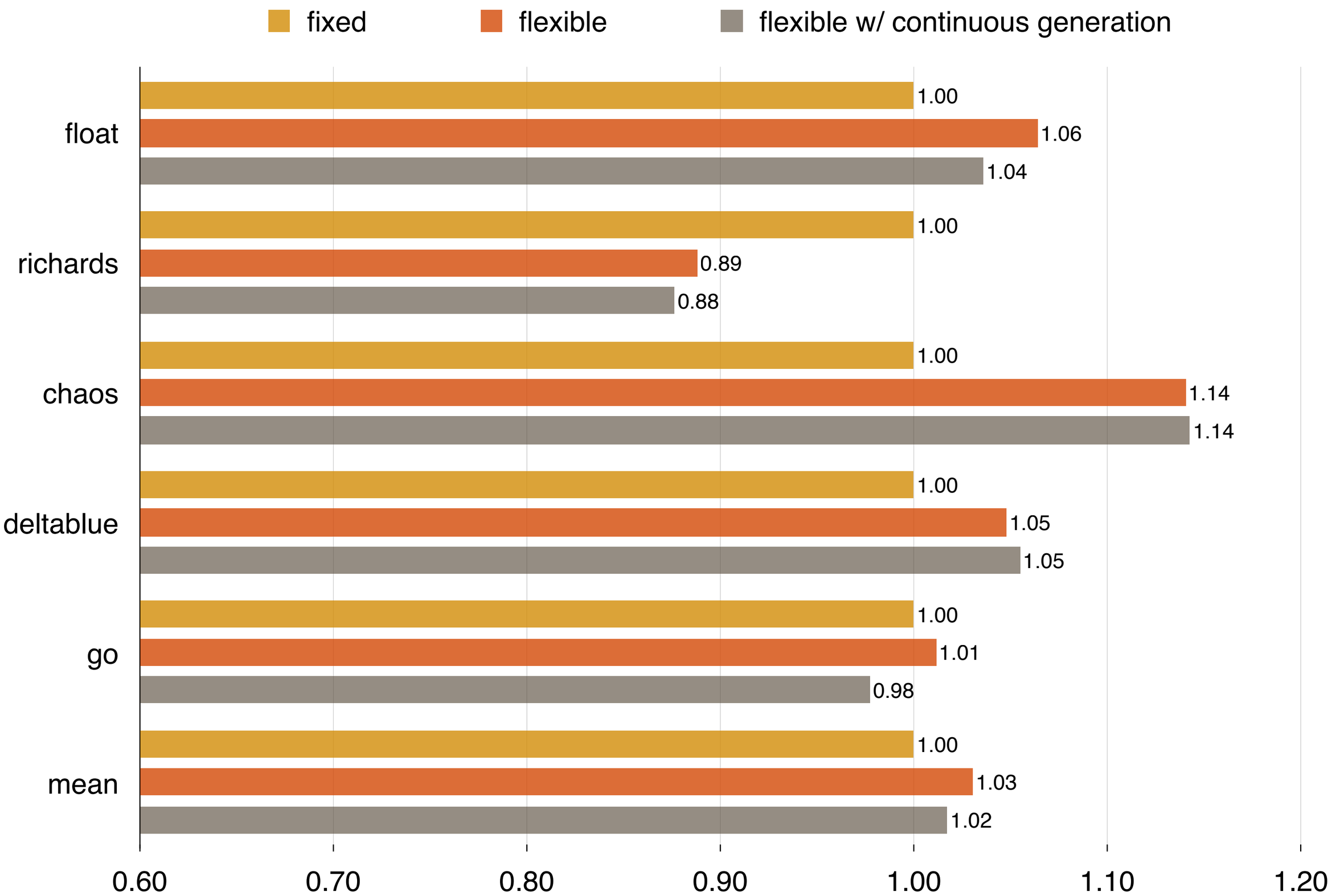
benchmarks	fixed	flex	flex evol
float	1.00	1.06	1.04
richards	1.00	0.89	0.88
chaos	1.00	1.14	1.14
deltablue	1.00	1.05	1.05
go	1.00	1.01	0.98
mean	1.00	1.03	1.02

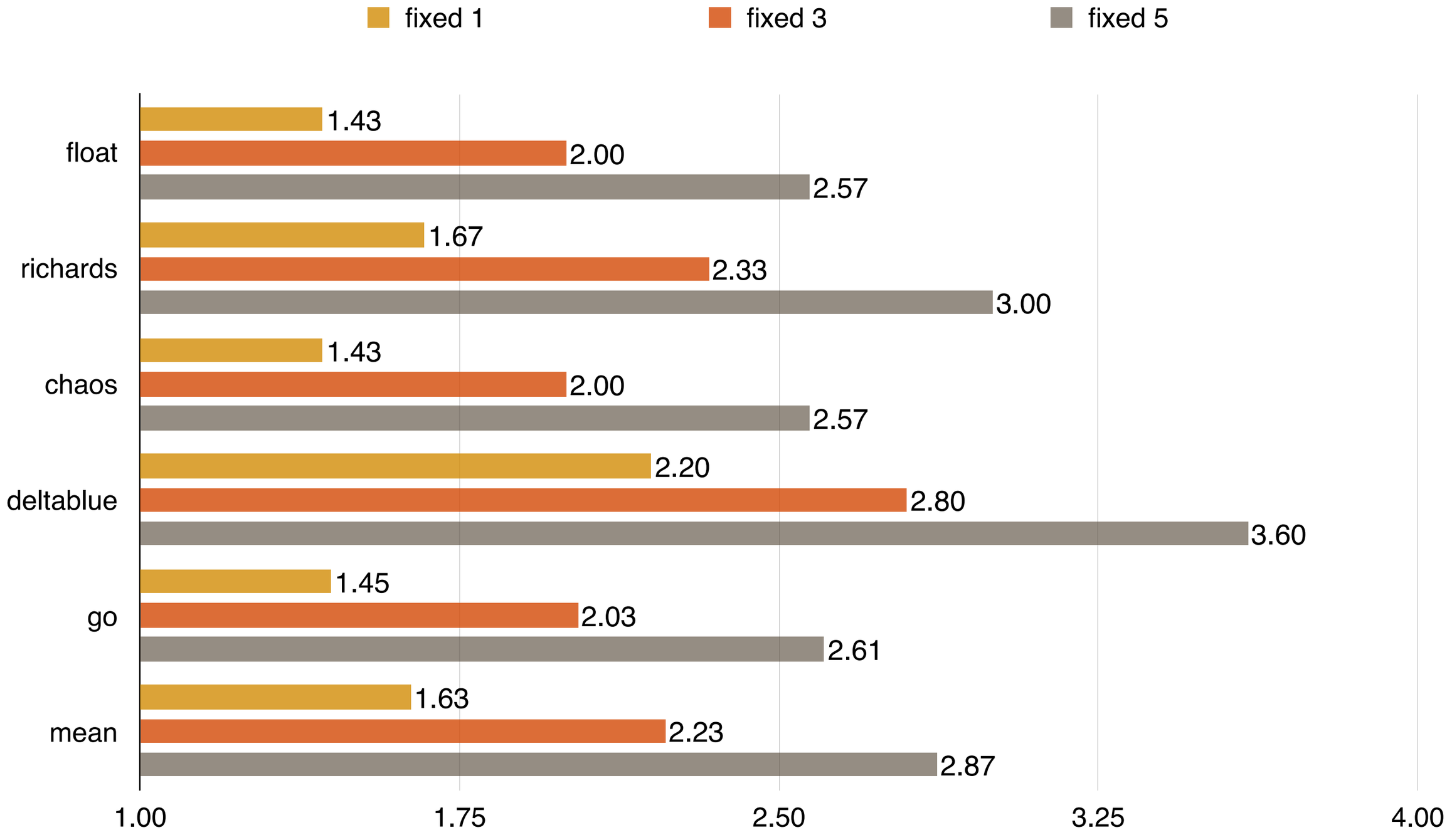
storage allocation of different fix sizes relative to flex evol

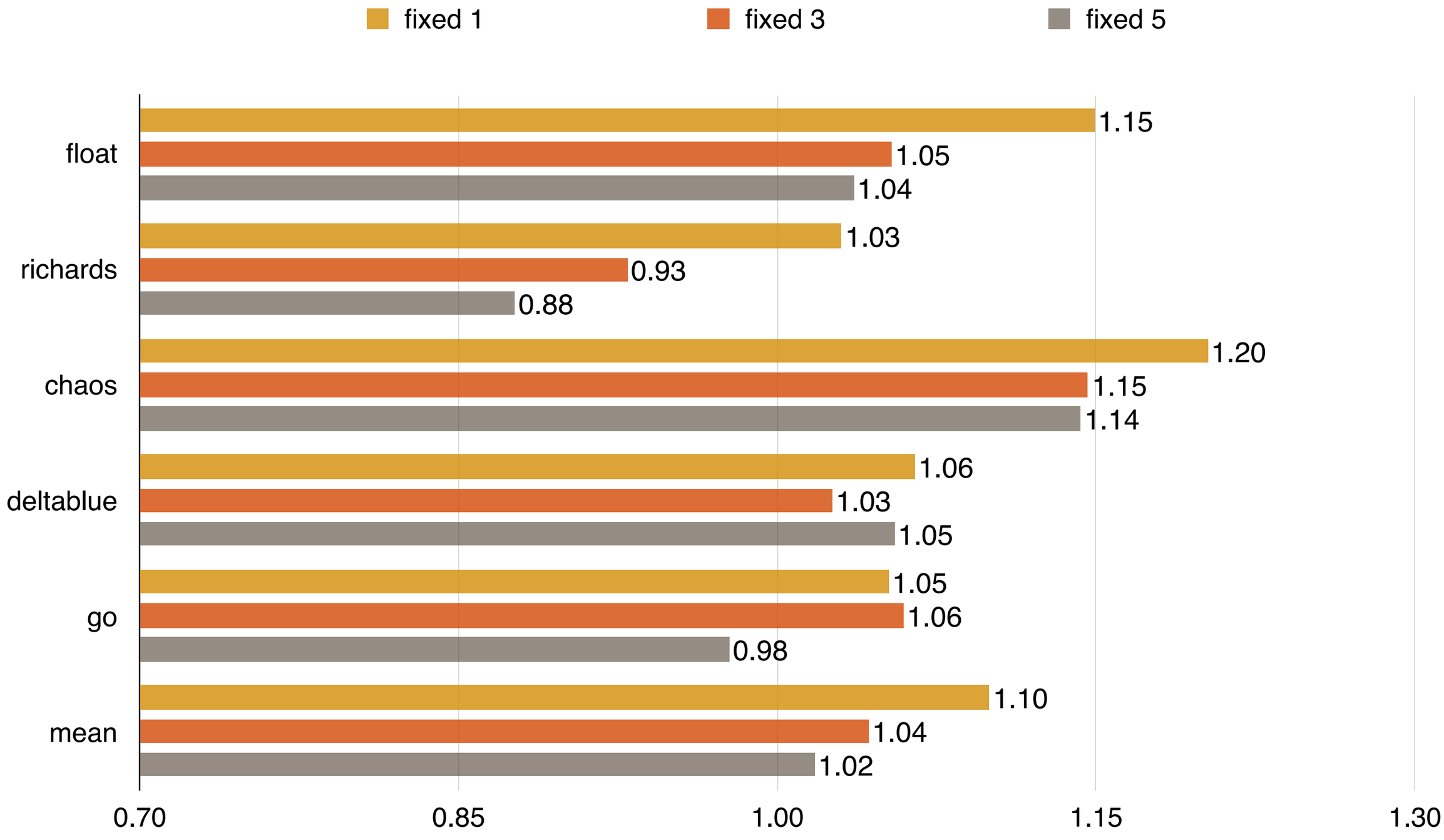
benchmarks	space fix1	space fix3	space fix5
float	1.43	2.00	2.57
richards	1.67	2.33	3.00
chaos	1.43	2.00	2.57
deltablue	2.20	2.80	3.60
go	1.45	2.03	2.61
mean	1.63	2.23	2.87

slowsdown of different fix sizes relative to flex evol

benchmarks	space fix1	space fix3	space fix5
float	1.15	1.05	1.04
richards	1.03	0.93	0.88
chaos	1.20	1.15	1.14
deltablue	1.06	1.03	1.05
go	1.05	1.06	0.98
mean	1.10	1.04	1.02


fixed
flexible
flexible w/ continuous generation
float
1.00
1.06
1.04
richards
1.00
0.89
0.88
chaos
1.00
1.14
1.14
deltablue
1.00
1.05
1.05
go
1.00
1.01
0.98
mean
1.00
1.03
1.02
0.60
0.70
0.80
0.90
1.00
1.10
1.20


fixed 1
fixed 3
fixed 5
float
1.43
2.00
2.57
richards
1.67
2.33
3.00
chaos
1.43
2.00
2.57
deltablue
2.20
2.80
3.60
go
1.45
2.03
2.61
mean
1.63
2.23
2.87
1.00
1.75
2.50
3.25
4.00


fixed 1
fixed 3
fixed 5
float
1.15
1.05
1.04
richards
1.03
0.93
0.88
chaos
1.20
1.15
1.14
deltablue
1.06
1.03
1.05
go
1.05
1.06
0.98
mean
1.10
1.04
1.02
0.70
0.85
1.00
1.15
1.30