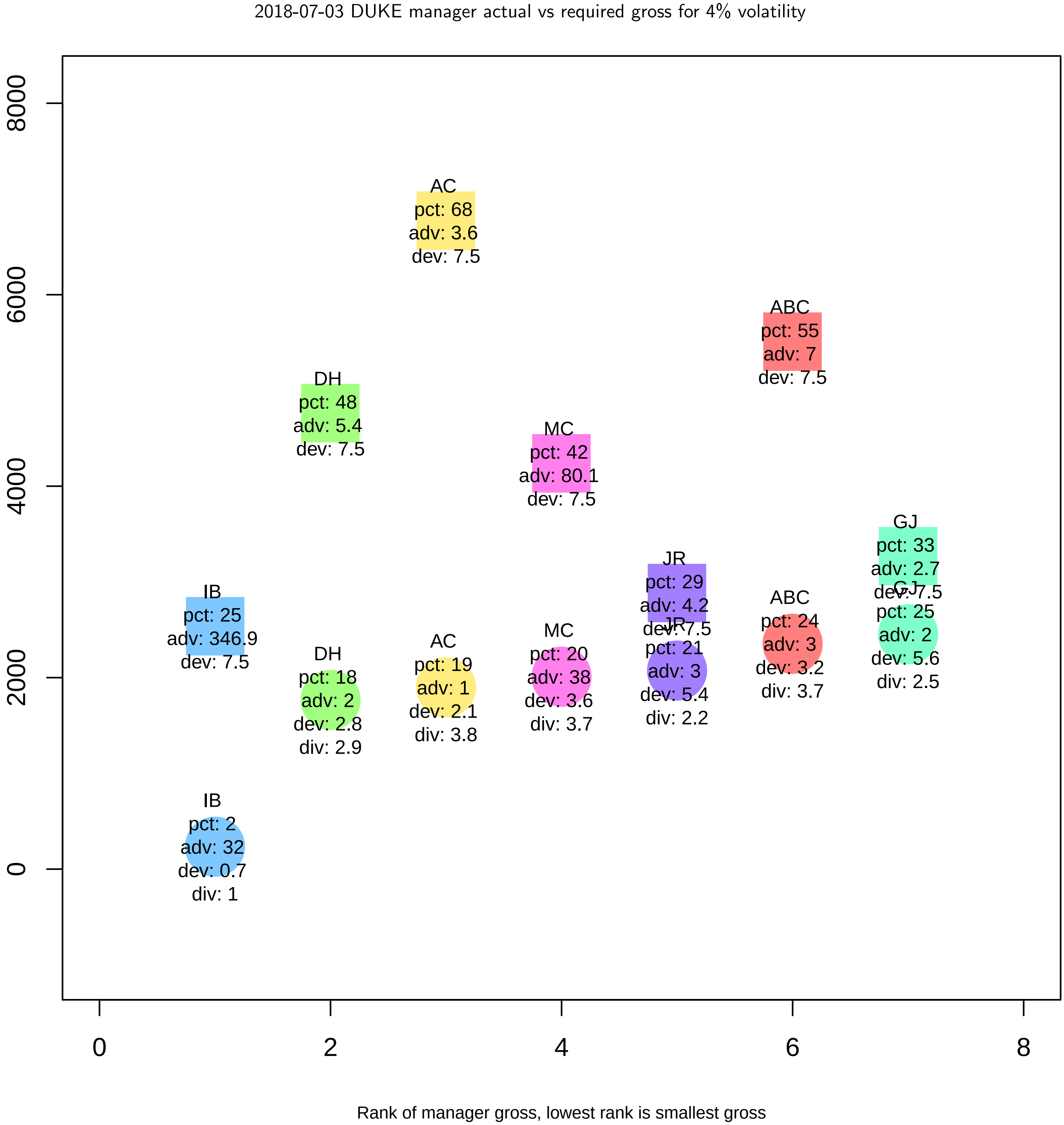
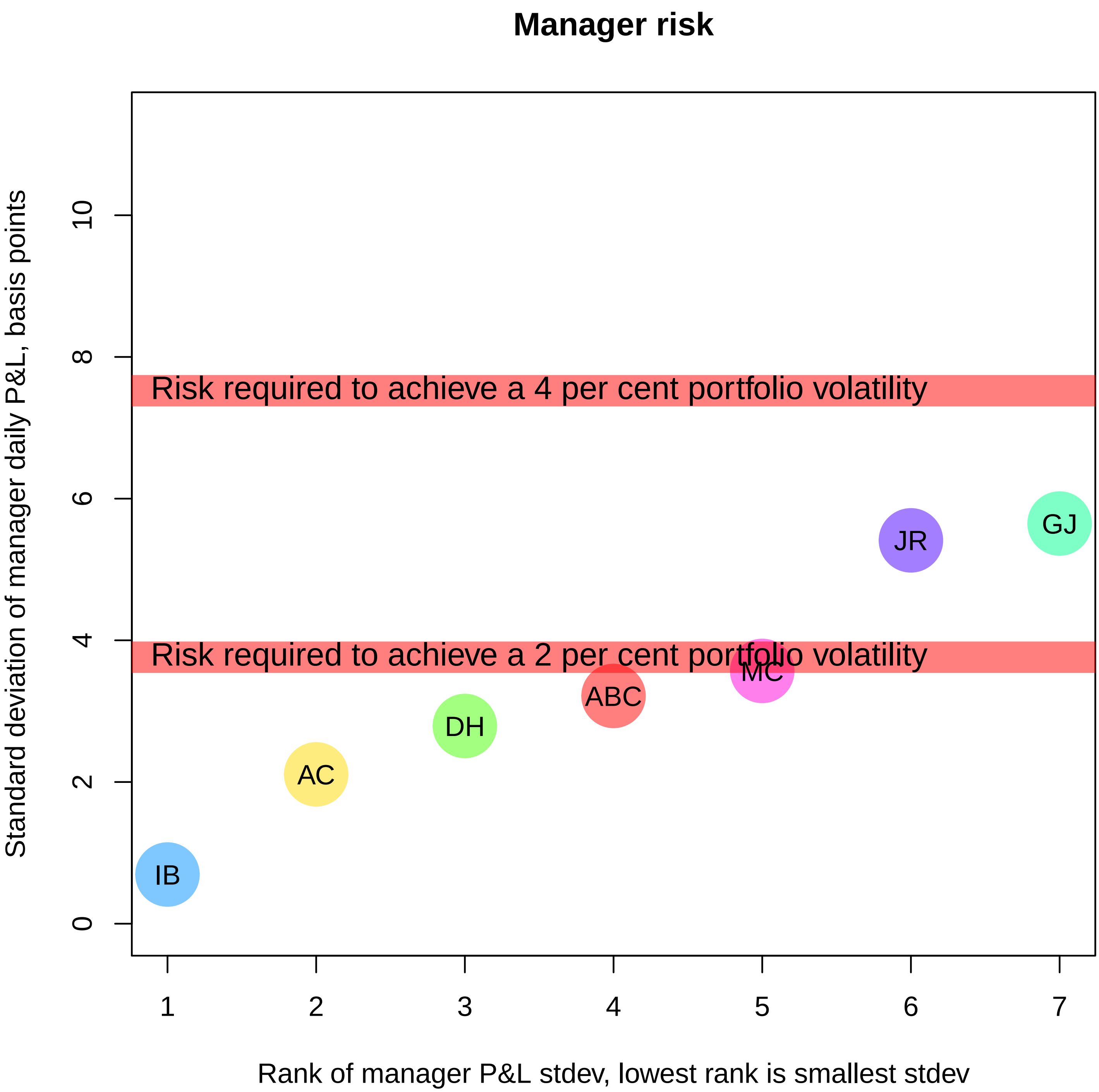
1 2018-07-03 DUKE Managers



2 2018-07-03 DUKE Manager risk



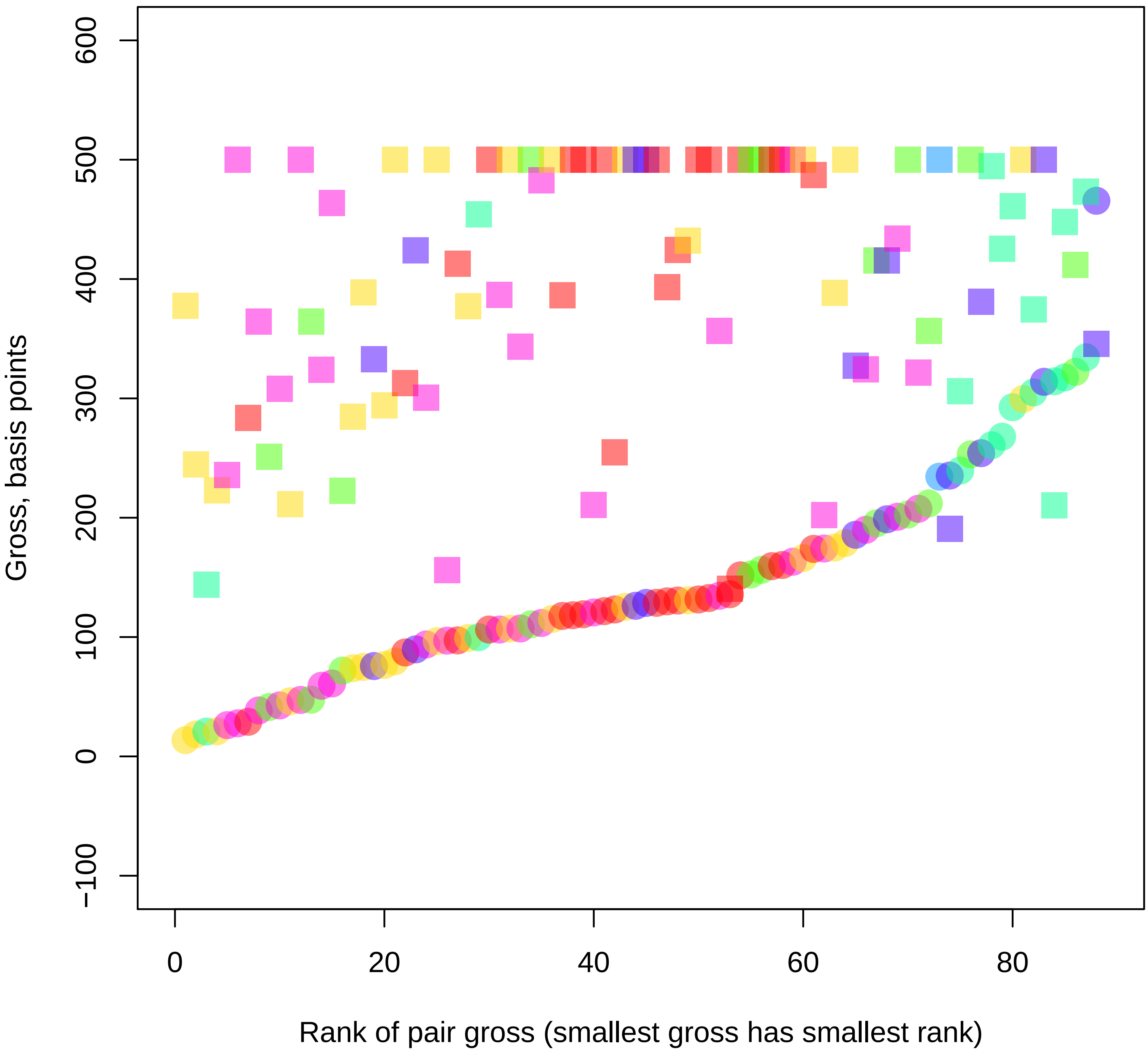
3 2018-07-03 DUKE Manager risk contributions

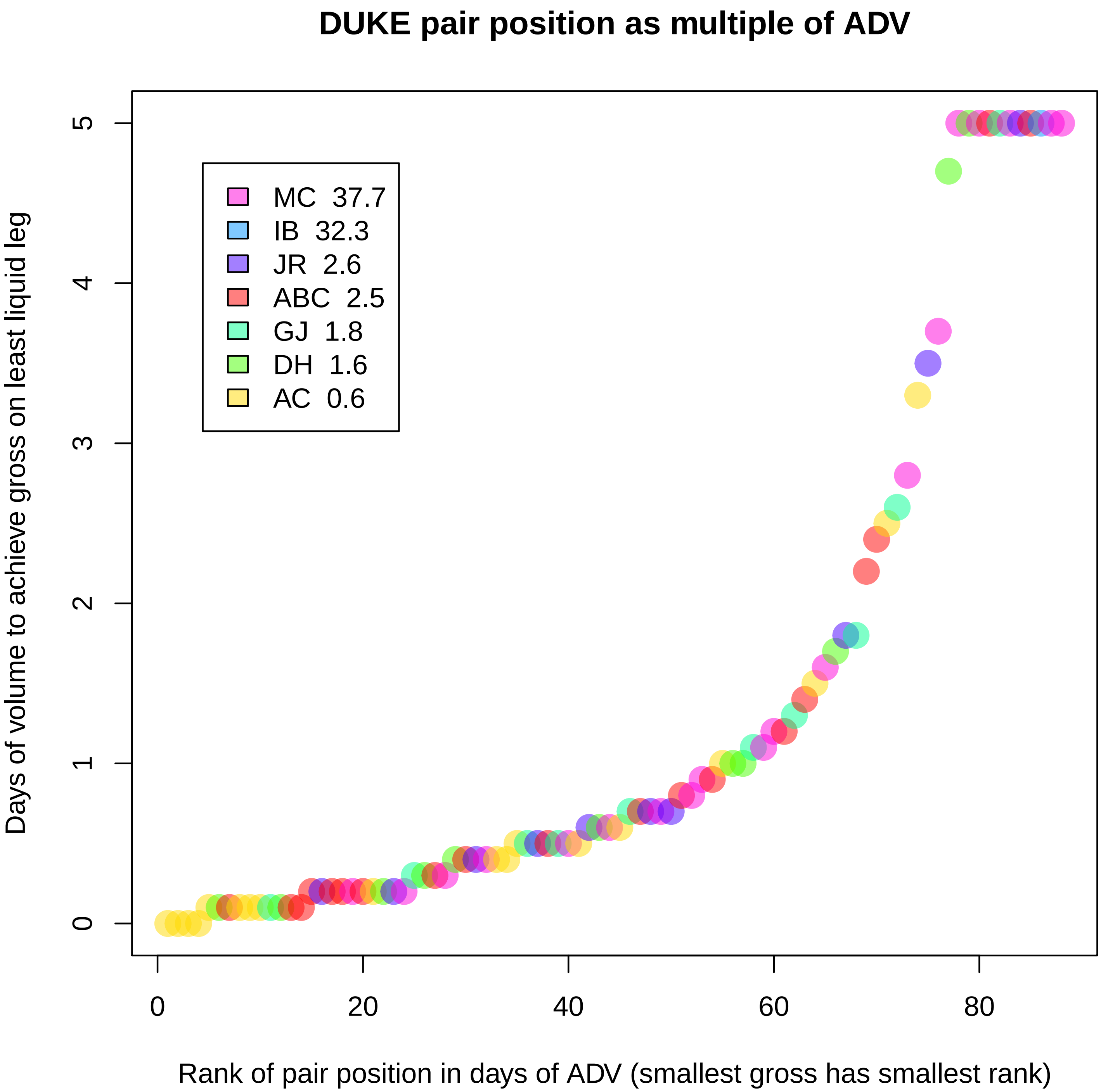
Current DUKE manager volatility, drawdown contributions: Σum, **S**tandalone, **M**arginal												
Manager	Pair #	gross	Σ σ	S σ	M σ	S draw	M draw	cross PM ρ	PM pair ρ	L/S ρ mean	L/S ρ median	L/S ρ min
GJ	10	24.5	2.65	1.07	0.32	1.19	0.56	0.3	2.2	39.6	37.8	0
JR	10	20.7	2.29	1.03	0.33	1.41	0.61	4.1	3.4	50.9	54.9	21.5
MC	19	20.1	2.53	0.67	0.15	0.32	-0.18	3.2	0.2	33.1	24.8	-2.4
ABC	19	23.5	2.27	0.61	0.18	1.49	-0.21	5.3	0	51.8	49.2	16.9
DH	11	17.7	1.55	0.53	0.15	0.63	0.22	4.2	0.2	56	56.3	10.8
AC	18	19	1.53	0.4	0.03	0.92	0.08	-0.3	0	48.2	49.3	0
IB	1	2.3	0.13	0.13	-0.01	0.12	-0.11	-1.6	NA	81.9	81.9	81.9
ALL	88	127.8	12.95	4.44	1.15	6.08	0.97	2.2	NA	51.6	50.6	18.4

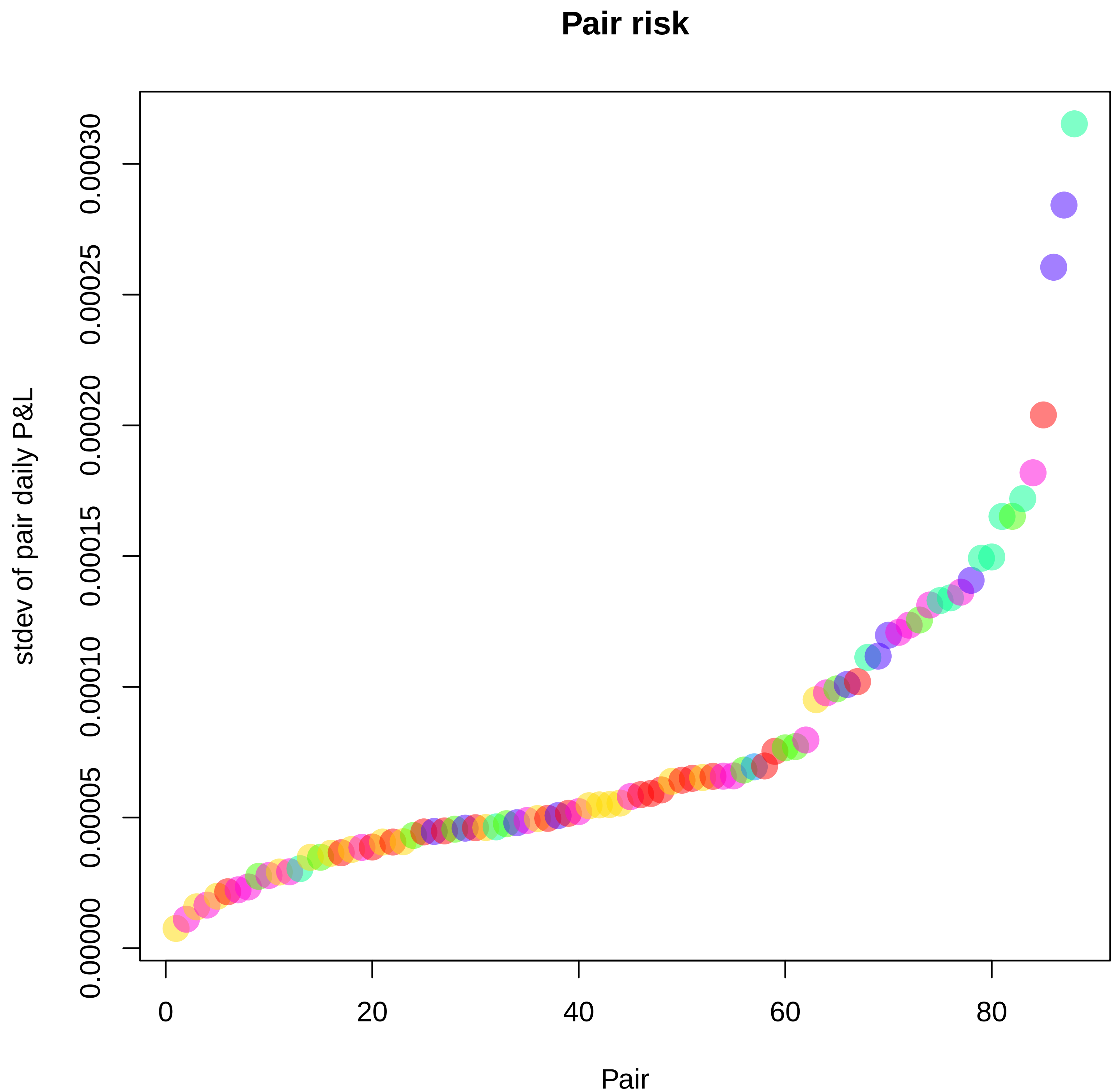
Current DUKE manager liquidity risk											
Manager	Pair count	max days	avg days	mid days	0-1 days	1+ days	2+ days	3+ days	5+ days	10+ days	20+ days
IB	1	32.3	17.2	17.2	0	1	1	1	1	1	1
MC	19	449.3	16.2	0.3	9	10	7	6	5	3	2
JR	10	17.3	0.9	0.2	7	3	2	2	1	1	0
ABC	19	28.2	0.8	0.1	13	6	4	2	2	1	1
GJ	10	9.2	0.7	0	5	5	2	1	1	0	0
DH	11	7.5	0.5	0.1	6	5	2	2	1	0	0
AC	18	3.3	0.4	0.1	15	3	2	1	0	0	0

4 2018-07-03 DUKE Manager correlations

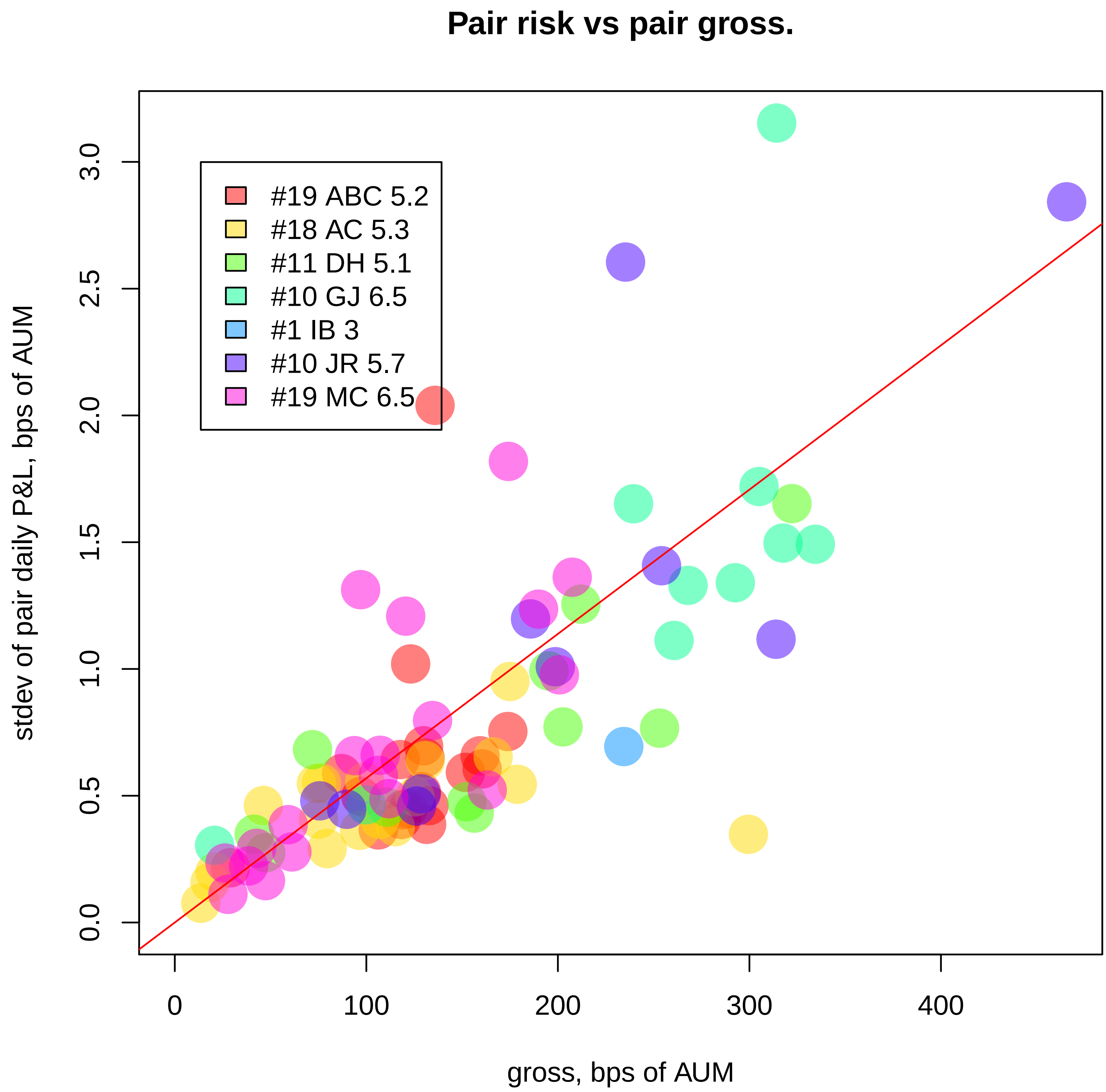
5 2018-07-03 DUKE Pairs

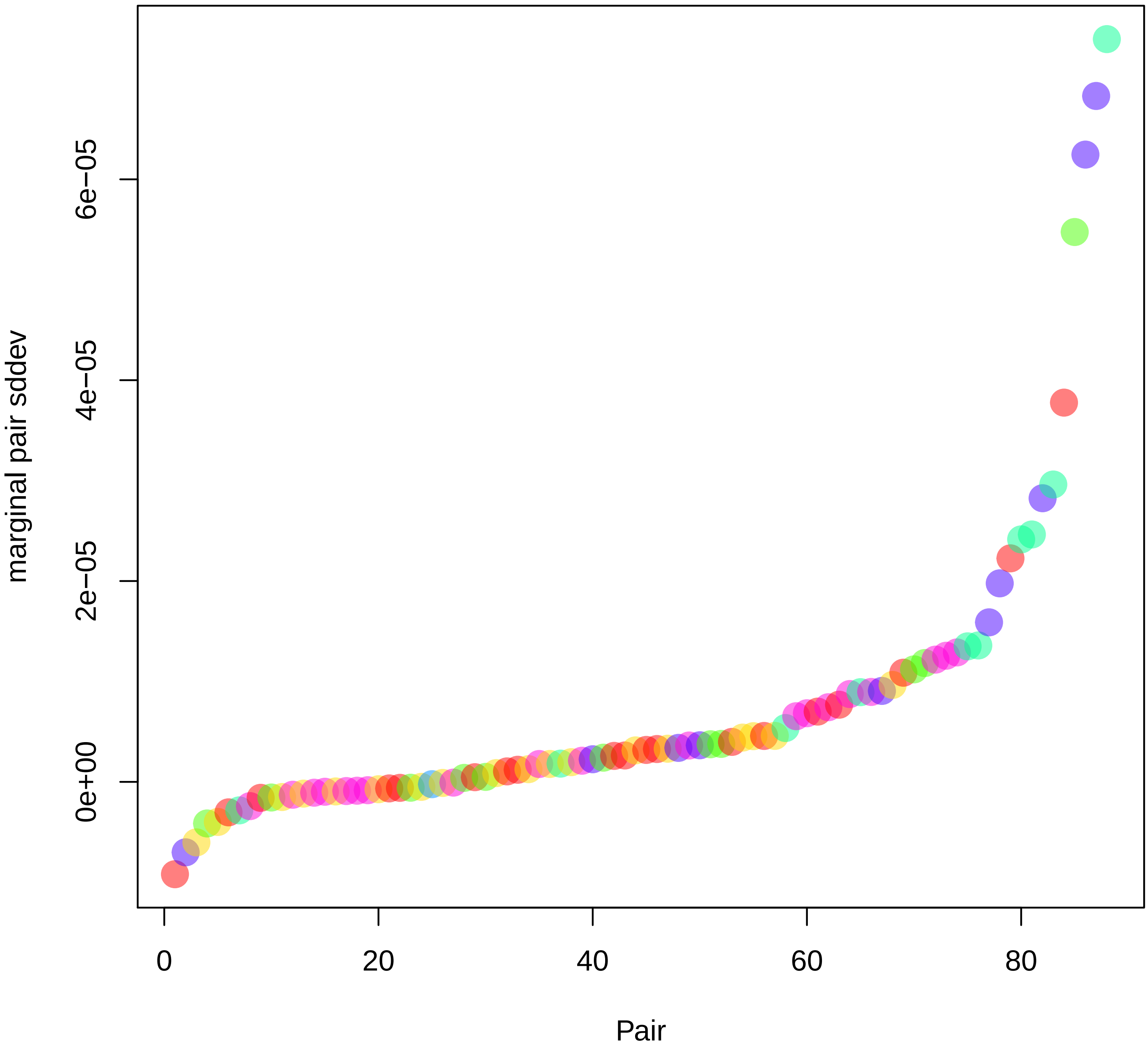


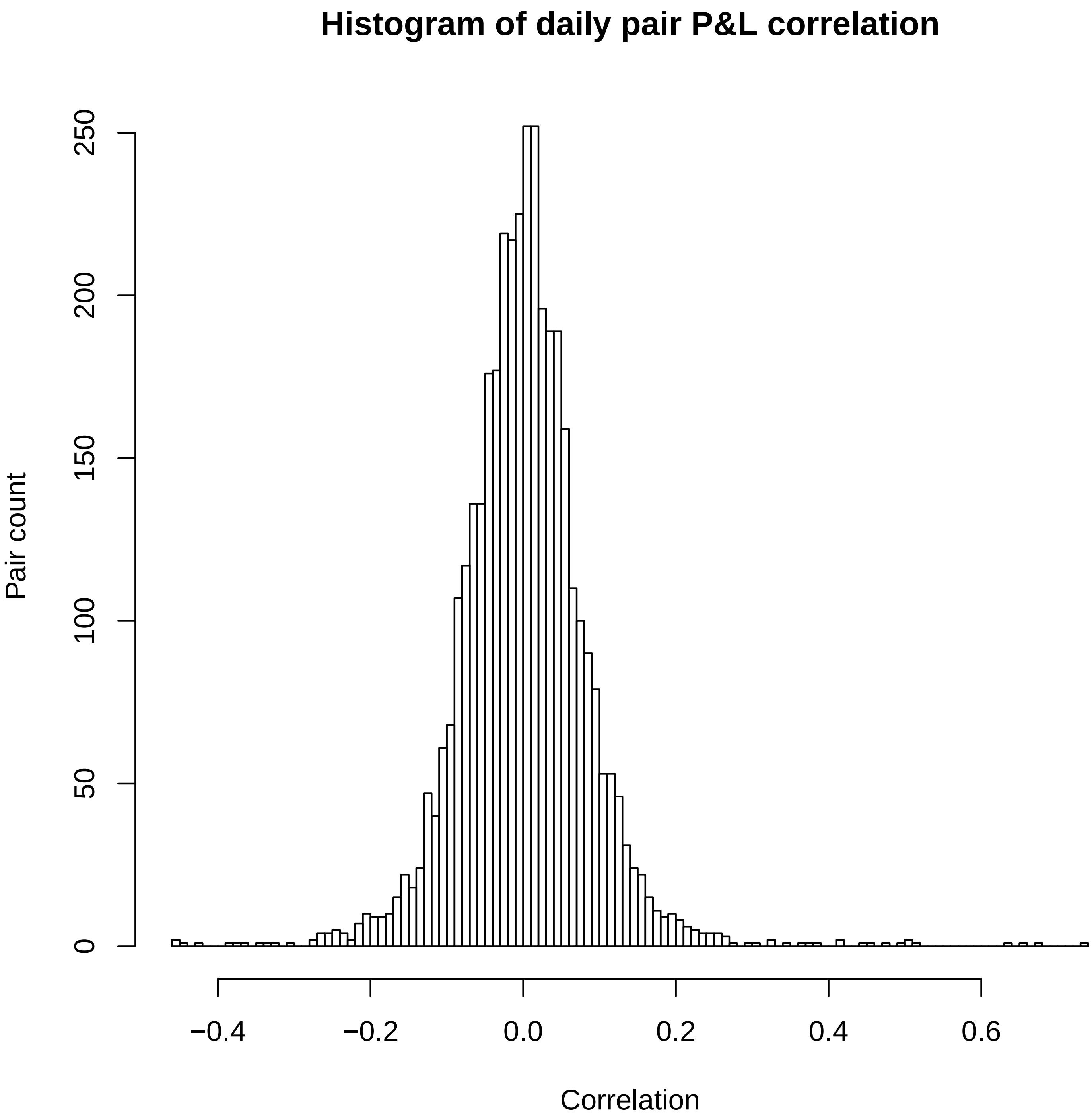

DUKE pair position as multiple of ADV
MC 37.7
IB 32.3
JR 2.6
ABC 2.5
GJ 1.8
DH 1.6
AC 0.6
Days of volume to achieve gross on least liquid leg
0
1
2
3
4
5
0
20
40
60
80
Rank of pair position in days of ADV (smallest gross has smallest rank)



Pair risk
stdev of pair daily P&L
0.00000
0.00005
0.00010
0.00015
0.00020
0.00025
0.00030
0
20
40
60
80
Pair


Pair risk vs pair gross.
#19 ABC 5.2
#18 AC 5.3
#11 DH 5.1
#10 GJ 6.5
#1 IB 3
#10 JR 5.7
#19 MC 6.5
stdev of pair daily P&L, bps of AUM
gross, bps of AUM
0.0
0.5
1.0
1.5
2.0
2.5
3.0
0
100
200
300
400


marginal pair sddev
6e−05
4e−05
2e−05
0e+00
0
20
40
60
80
Pair


Histogram of daily pair P&L correlation
Pair count
0
50
100
150
200
250
−0.4
−0.2
0.0
0.2
0.4
0.6
Correlation