

Market	Security	r_i	risk	correlation _{A,B}
I	A	0.22	0.3	0.15
	B	0.31	0.32	
II	A	0.26	0.29	-0.06
	B	0.34	0.33	
III	A	0.18	0.2	0.09
	B	0.41	0.38	

Market

I

II

III

Market I

CovMatrix

0.09	0.0144
0.0144	0.1024

0.18	0.0288	1	0.22	vrs	0
0.0288	0.2048	1	0.31		0
1	1	0	0		1
0.22	0.31	0	0		0.3

InvMatrix

0	2.52E-15	3.444444	-11.1111	1	0.111111
0	-2.5E-15	-2.44444	11.1111	2	0.888889
3.444444	-2.44444	-2.87432	10.56691	lambda1	0.295753
-11.1111	11.1111	10.56691	-40.3951	lambda2	-1.5516
				proof	1

Market II

CovMatrix

0.0841	-0.00574
-0.00574	0.1089

0.1682	-0.01148	1	0.26	vrs	0
-0.01148	0.2178	1	0.34		0
1	1	0	0		1
0.26	0.34	0	0		0.3

InvMatrix

0	-3.9E-15	4.25	-12.5	1	0.5
0	3.87E-15	-3.25	12.5	2	0.5
4.25	-3.25	-5.65587	18.86038	lambda1	0.002242
-12.5	12.5	18.86038	-63.9012	lambda2	-0.31
				proof	1

Market III

CovMatrix

0.04	0.00684
0.00684	0.1444

vrs

0.08	0.01368	1	0.18	0
0.01368	0.2888	1	0.41	0
1	1	0	0	1
0.18	0.41	0	0	0.3

InvMatrix

					<u>wi</u>
0	8.07E-16	1.782609	-4.34783	1	0.478261
0	-8.1E-16	-0.78261	4.347826	2	0.521739
1.782609	-0.78261	-0.39293	1.450147	lambda1	0.042115
-4.34783	4.347826	1.450147	-6.45444	lambda2	-0.48619
				proof	1

<u>Rp</u>	<u>SigmaP</u>	<u>ratio</u>
0.3	0.291315	1.029814
0.3	0.213023	1.408296
0.3	0.22775	1.317231

Rp	VarP	SigmaP
0.3	0.084864	0.291315

<u>Rp</u>	<u>VarP</u>	<u>SigmaP</u>
0.3	0.045379	0.213023

<u>Rp</u>	<u>VarP</u>	<u>SigmaP</u>
0.3	0.05187	0.22775

Beta_i

1	1.235
2	0.268
3	1.997
4	2.45

rf 0.06

r_m 0.14

r_ei

1	0.1588
2	0.08144
3	0.21976
4	0.256

Year	r_M	r_i	r_j	β_i	β_j	agr/def/neutral
1	10	9	22	0.666666667	5	defensive agre
2	32	24	48	0.68	1.64	defensive agre
3	20	14	30	0.538461538	1.76923	defensive agre
4	18	-2	-20	-0.818181818	-2.45455	defensive agre
5	17	16	29	0.9	2.2	defensive agre
6	3	4	-3	0.75	2.5	defensive agre
7	12	8	21	0.2	2.8	defensive agre
8	-5	0	-15	0.583333333	1.83333	defensive agre
9	18	12	28	0.454545455	1.90909	defensive agre
10	21	15	36	0.571428571	2.07143	defensive agre

E (ri) 14.6 10 17.6
cov_i,m 105.3778 61.44444 166.3778
beta_i 1 0.583087 1.57887

Eq.return_fot 10years

r_ei 11.43146 *overvaluated*
r_ej 18.99941 *overvaluated*

rf 7