

Market	Security	$r_i$	risk	correlation <sub>A,B</sub>
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 **Cov\_M**

	0.09	0.0144				
	0.0144	0.1024				
					VRS	
2*CM	0.18	0.0288	1	0.22		0
	0.0288	0.2048	1	0.31		0
	1	1	0	0		1
	0.22	0.31	0	0		0.3
Inv_M					wi	
	0	2.52E-15	3.444444	-11.1111	1	0.111111
	0	-2.5E-15	-2.44444	11.11111	2	0.888889
	3.444444	-2.44444	-2.87432	10.56691	lambda1	0.295753
	-11.1111	11.11111	10.56691	-40.3951	lambda2	-1.5516
					proof	1

Market II **Cov\_M**

	0.0841	-0.00574				
	-0.00574	0.1089				
					VRS	
2*CM	0.1682	-0.01148	1	0.26		0
	-0.01148	0.2178	1	0.34		0
	1	1	0	0		1
	0.26	0.34	0	0		0.3
Inv_M					wi	
	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 **Cov\_M**

	0.04	0.00684				
	0.00684	0.1444				
					VRS	
2*CM	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
Inv_M					wi	
	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

Rp	0.3	Var_p	0.084864
Sigma_P	0.291315		

Rp	0.3	Var_p	0.045379
Sigma_P	0.213023		

Rp	0.3	Var_p	0.05187
Sigma_P	0.22775		

$\beta_1 = 1,235$ ;  $\beta_2 = 0,268$ ;  $\beta_3 = 1,997$ ;  $\beta_4 = 2,45$       beta\_i

Rm                      14  
Rf                        6

1      1.235  
2      0.268  
3      1.997  
4      2.45

ri  
1      15.88  
2      8.144  
3      21.976  
4      25.6

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

105.3778 61.44444 166.3778

beta\_1 beta\_2

E(rm) 14.6 0.583087 1.57887

E(ri) 11.43146

E(rj) 18.99941