

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	

$E^R=30\%$

Market I

**CM**

0.09 0.0144  
0.0144 0.1024

0.18	0.0288	1	0.22
0.0288	0.2048	1	0.31
1	1	0	0
0.22	0.31	0	0

0 2.52E-15 3.444444 -11.1111  
0 -2.5E-15 -2.44444 11.1111  
3.444444 -2.44444 -2.87432 10.56691  
-11.1111 11.1111 10.56691 -40.3951

proof

VFS

0  
0  
1  
0.3

W(I)

0.111111  
0.888889  
0.295753  
-1.5516

R(P)

0.3

Market II

**CM**

0.0841 -0.00574  
-0.00574 0.1089

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

0 -3.9E-15 4.25 -12.5  
0 3.87E-15 -3.25 12.5  
4.25 -3.25 -5.65587 18.86038  
-12.5 12.5 18.86038 -63.9012

proof

VFS

0  
0  
1  
0.3

W(I)

0.5  
0.5  
0.002242  
-0.31

R(P)

0.3

Market III

**CM**

0.09 0.00684

0.00684 0.1444

0.18	0.01368	1	0.18
0.01368	0.2888	1	0.41
1	1	0	0
0.18	0.41	0	0

VFS

0  
0  
1  
0.3

8.07E-16	-8.1E-16	1.782609	-4.34783
-8.1E-16	8.07E-16	-0.78261	4.347826
1.782609	-0.78261	-0.7107	2.225195
-4.34783	4.347826	2.225195	-8.3448

W(I)

0.478261  
0.521739  
-0.04314  
-0.27825

R(P)

0.3

proof

1

	0.11111111	0.888889
0.111111		
0.888889	0.00111111	0.001422
	0.00142222	0.080909

0.0848642

VAR(P)	Sigma(p)
0.084864	0.291315

	0.5	0.5
0.5		
0.5	0.021025	-0.00144
	-0.0014355	0.027225

0.045379

VAR(P)	Sigma(p)
0.045379	0.213023

	0.47826087	0.521739
0.478261		
0.521739	0.00478261	0.002908
	0.00039652	0.066968

0.07505507

VAR(P)	Sigma(p)
0.075055	0.273962

$\beta = 1.235, \beta = 0.268, \beta = 1.997, \beta = 2.45$

rm	0.14	
rf	0.06	
		beta_i
r1	0.1588	1.235
r2	0.08144	0.268
r3	0.21976	1.997
r4	0.256	2.45

Year	$r_M$	$r_i$	$r_i$	$\beta$	$\beta_i$		
1	10	9	22	0.666666667	5	Defensive	Agressive
2	32	24	48	0.68	1.64	Defensive	Agressive
3	20	14	30	0.538461538	1.769230769	Defensive	Agressive
4	18	-2	-20	-0.818181818	-2.454545455	Defensive	Agressive
5	17	16	29	0.9	2.2	Defensive	Agressive
6	3	4	-3	0.75	2.5	Defensive	Agressive
7	12	8	21	1	2.8	Neutral	Agressive
8	-5	0	-15	0.583333333	1.833333333	Defensive	Agressive
9	18	12	28	0.454545455	1.909090909	Defensive	Agressive
10	21	15	36	0.571428571	2.071428571	Defensive	Agressive
	14.6	10	17.6				Agressive

covar      105.378 | 61.44444444 | 166.3777778 |  
 Var(M)      105.3778  
               beta\_i      0.583087305    1.578869675

rf=7                    7  
 ri                        9  
                           24  
                           14  
                           -2  
                           16  
                           4  
                           12  
                           0  
                           12  
                           15

105.3778	61.44444	166.3778
	0.583087	1.57887

ri	11.43146
rj	18.99941