r_f = 0,04,
r_M = 0,10 a
σ_M #####

rf	0.04
rM	0.1
sigma_m	0.09
sigma_im	0.0108
sigma_jm	-0.0027
sigma_zm	0.0054

1.

σ_{i,r_M} =0,010
σ_{i,r_M} =-0,002
σ_{i,r_M} =0,005

CML

	ri	sigma_i
rf	0.04	0
market	0.1	0.09

ri

1	0.12
2	0.02
3	0.08

SML1

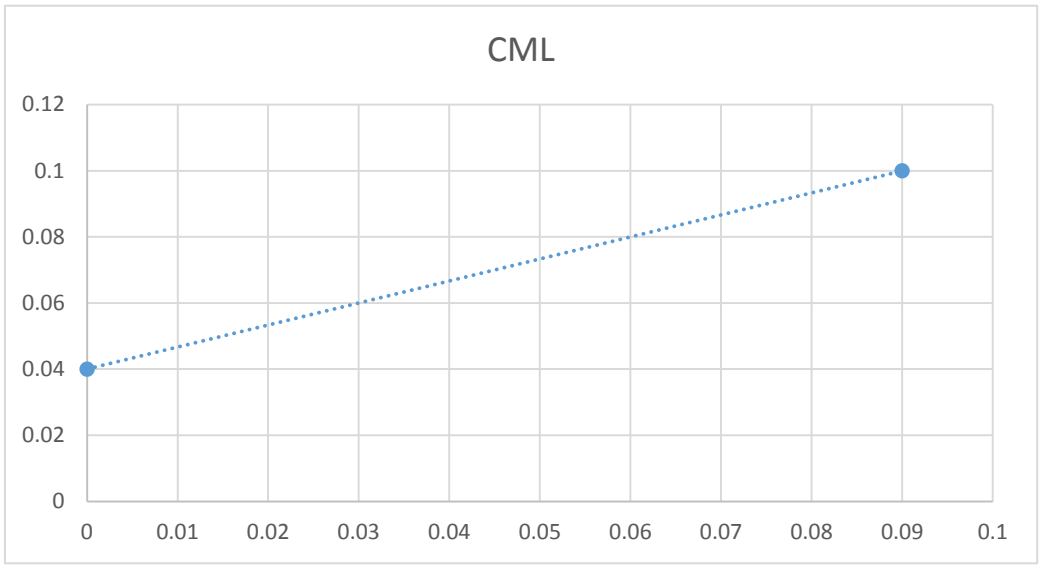
	ri	covar_iM
rf	0.04	0
security 1	0.12	0.0108

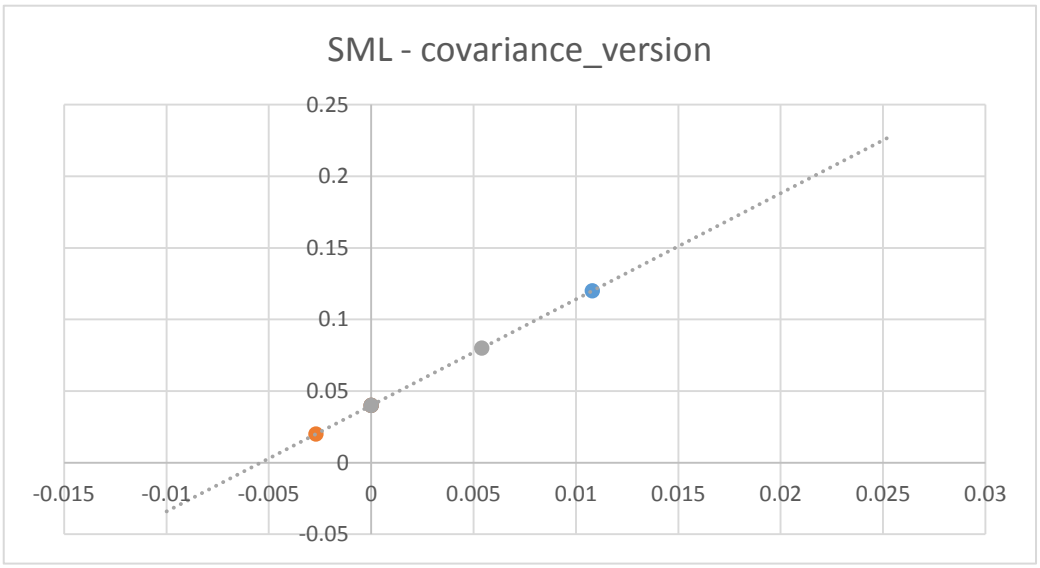
SML2

	ri	covar_iM
rf	0.04	0
security 1	0.02	-0.0027

SML3

	ri	covar_iM
rf	0.04	0
security 1	0.08	0.0054

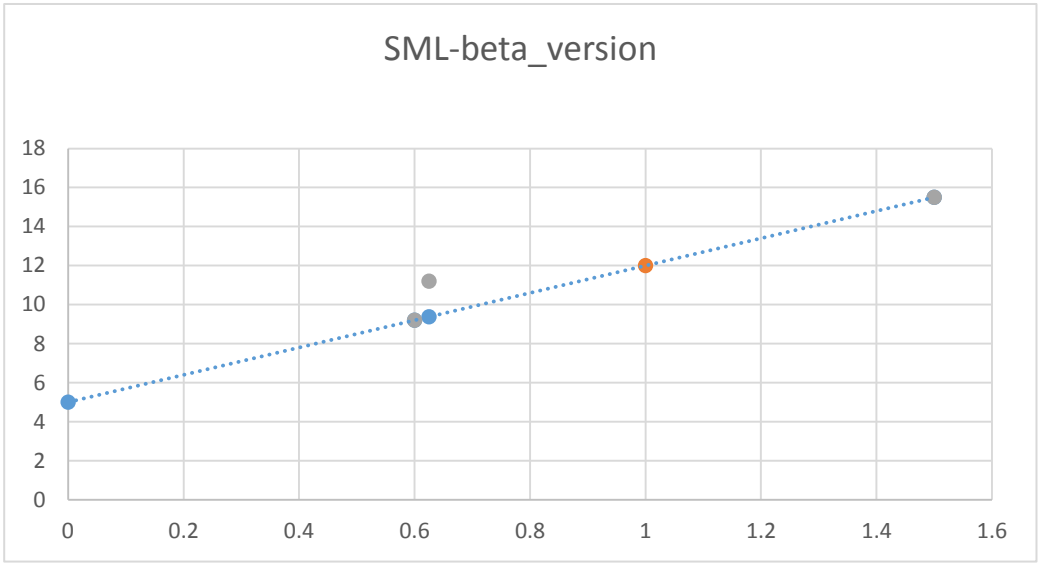

CML
0.12
0.1
0.08
0.06
0.04
0.02
0
0
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1


SML - covariance_version
0.25
0.2
0.15
0.1
0.05
0
-0.05
-0.015
-0.01
-0.005
0
0.005
0.01
0.015
0.02
0.025
0.03

	r_i	correlation i a M	sigma i	covar_iM	beta_i	E(ri)	gama	
S_1	15.5	0.9	20	216	1.5	15.5	0	corret_pric
S_2	9.2	0.8	9	86.4	0.6	9.2	0	corret_pric
S_3	11.2	0.5	15	90	0.625	9.375	1.825	undervalue
MP	12	1	12	144	1	12		
r_f	5	0	0	0				

	E(ri)	beta_i	ri
rf	5	0	5
s1	15.5	1.5	15.5
s2	9.2	0.6	9.2
s3	9.375	0.625	11.2

e
e



Day	A	B	C	D	E	Market Ind
1	570	98.4	669.1	53.9	103.5	333.4
2	569	98.2	715	53.8	103	338.9
3	563.8	96.6	725	53.2	101.9	346.8
4	575.3	96.5	716	53.9	100	347.8
5	595.1	97	725	55.6	101.6	350.9
6	602.8	98.4	727.5	57	101.2	348.1
7	601.8	99	716.6	54.7	102	349.4
8	601.3	105.4	721.5	55.6	101.6	354.2
9	614.8	116.9	718.6	55.9	101.7	361.1
10	628.1	119.6	717.8	56.5	100.5	372.7
11	629	113.2	729.5	56.4	103.4	371.6
12	618.6	109.5	702.6	54.9	102.3	395.9
13	638	105	750.8	55	102.8	397.6
14	656	104.9	789.7	56.6	99.8	406.1
15	662	105.3	799.1	56.9	101.4	400.7
16	669.4	105.7	805	56	100.9	396.6
17	700.7	108.5	870	56.7	95.3	398.2
18	709	110.3	937.6	57	65.7	400.9
19	713	112.6	948.8	56.8	99.4	399.1
20	708	113.9	951.5	56.5	99.2	401.1

	A	B
	-0.001755927	-0.00203
	-0.009180855	-0.01643
	0.020192065	-0.00104
	0.033837815	0.005168
	0.012856008	0.01433
	-0.001660303	0.006079
	-0.000831186	0.062643
	0.022203034	0.103556
	0.021402378	0.022834
	0.001431867	-0.055
	-0.016672396	-0.03323
	0.030879423	-0.04196
	0.027822506	-0.00095
	0.009104767	0.003806
	0.011116233	0.003791
	0.045698047	0.026145
	0.011775691	0.016454
	0.005625894	0.020638
	-0.007037327	0.011479
E(ri)	0.011410933	0.007699

rf 0.03 p.a.
assumption 250
rf_p.d. 0.00012

covar_iM	-7.66363E-05	-2E-05
var_i	0.000267119	0.001223
beta_i	-0.246231127	-0.06446
E(ri)	-0.002246253	-0.0005

Min.Variance portfolio

Covar_M

0.000267119	0.000122
0.000122378	0.001223
0.000257158	-0.00011
0.000190277	0.000168
-0.000253024	-1.4E-05

Systém of Matrices

0.000534238	0.000245
0.000244757	0.002447
0.000514316	-0.00021
0.000380554	0.000337
-0.000506048	-2.7E-05
1	1
3135.688208	-308.358

-308.3583546	450.2518
-723.9039686	127.2655
-2041.711841	-269.301
-61.71404383	0.141659
0.518336137	0.091635

C	D	E	
0.066349	-0.00186	-0.00484	0.016362
0.013889	-0.01122	-0.01074	0.023043
-0.01249	0.013072	-0.01882	0.002879
0.012491	0.031053	0.015873	0.008874
0.003442	0.024868	-0.00394	-0.00801
-0.0151	-0.04119	0.007874	0.003728
0.006815	0.016319	-0.00393	0.013644
-0.00403	0.005381	0.000984	0.019293
-0.00111	0.010676	-0.01187	0.031619
0.016168	-0.00177	0.028447	-0.00296
-0.03757	-0.02696	-0.0107	0.063344
0.066352	0.00182	0.004876	0.004285
0.050514	0.028676	-0.02962	0.021153
0.011833	0.005286	0.015905	-0.01339
0.007356	-0.01594	-0.00494	-0.01028
0.077651	0.012423	-0.0571	0.004026
0.07483	0.005277	-0.37193	0.006758
0.011875	-0.00351	0.414053	-0.0045
0.002842	-0.0053	-0.00201	0.004999
0.018532	0.002479	-0.00223	0.00973
-0.00014	-5.8E-05	-0.00035	0.000311
0.001071	0.00033	0.017557	0.000311

-0.46036	-0.18606	-1.12845	1
-0.0043	-0.00167	-0.01072	0.00973

beta	alfa	beta
-0.24623	0.013807	-0.06446
0.216607	0.004275	0.480577
0.070644	0.016213	0.001057
1.292229	17	0.017993
0.00034	0.004468	2.33E-05

0.000257	0.00019	-0.00025
-0.00011	0.000168	-1.4E-05
0.001071	0.000203	-0.0015
0.000203	0.00033	-0.00026
-0.0015	-0.00026	0.017557

0.000514	0.000381	-0.00051	1
-0.00021	0.000337	-2.7E-05	1
0.002143	0.000407	-0.00299	1
0.000407	0.000659	-0.00052	1
-0.00299	-0.00052	0.035114	1
1	1	1	0
-723.904	-2041.71	-61.714	0.518336

vrs			
	0		
	0		
	0		
	0		
	0		
	1		
wi		0.518336137	0.091635
0.518336			

127.2655	-269.301	0.141659	0.091635		0.091635	7.17675E-05	5.81E-06
713.6363	-162.924	45.92632	0.073796		0.073796	5.8127E-06	1.03E-05
-162.924	2488.709	-14.7721	0.285904		0.285904	9.83657E-06	-7.2E-07
45.92632	-14.7721	30.41821	0.030329		0.030329	2.81979E-05	4.41E-06
0.073796	0.285904	0.030329	-0.00043		-0.00043	-3.9777E-06	-3.8E-08
				proof	1		
						Rp	0.008629

alfa	beta	alfa	beta	alfa	beta
0.008326	-0.46036	0.023011	-0.18606	0.00429	-1.12845
0.009485	0.435922	0.008604	0.245452	0.004844	1.800924
0.03597	0.061566	0.032628	0.032694	0.018372	0.022574
17	1.115282	17	0.574584	17	0.392624
0.021996	0.001187	0.018098	0.000194	0.005738	0.007134

0.073796	0.285903523	0.030329

9.84E-06	2.81979E-05	-4E-06
-7.2E-07	4.40873E-06	-3.8E-08
5.83E-06	4.28886E-06	-3.3E-06
4.29E-06	2.6937E-05	-2.3E-06
-3.3E-06	-2.25589E-06	1.62E-05

Var_p	0.000215376	Sigma_p	0.014676

total risk = syst. Risk+unsyst. Risk
sym risk is beta-p^2*var_m
beta_p=suma_wi*beta-i

beta_p	-0.254929935

VarP_syst-p	2.02271E-05	0.004497
Unsyst_par	0.000195149	0.01397

alfa
0.008746
0.035544
0.134796
17
0.30889