

Trh	CP	r_i	riziko	korelace _{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	

Trh I

Covar_M

0.09 0.0144
0.0144 0.1024

vps

0.18	0.0288	1
0.0288	0.2048	1
1	1	0

0
0
1

wi

3.056235 -3.056235 0.537897311 1 0.537897
-3.056235 3.056235 0.462102689 2 0.462103
0.537897 0.462103 -0.110130073 lambda1 -0.11013

Rp

0.261589

zk

1

1 0 0
0 1 0
0 0 1

Trh II

Covar_M

0.0841 -0.005742
-0.005742 0.1089

vps

0.1682	-0.011484	1
-0.011484	0.2178	1
1	1	0

0
0
1

wi

2.445179 -2.445179 0.560640441 1 0.56064
-2.445179 2.445179 0.439359559 2 0.43936
0.56064 0.43936 -0.089254117 lambda1 -0.08925

Rp

0.295149

zk

1

Trh III

Covar_M

0.04 0.00684
0.00684 0.1444

vps

0.08	0.01368	1
0.01368	0.2888	1
1	1	0

0
0
1

			wi	
2.928772	-2.928772	0.805763824	1	0.805764
-2.928772	2.928772	0.194236176	2	0.194236
0.805764	0.194236	-0.067118257	lambda1	-0.06712
			zk	1

Rp
0.224674

Rozhodnutí

Trh	Rp	SigmaP	ratio
I	0.261589	0.234659	1.114761
II	0.295149	0.211251	1.397146
III	0.224674	0.183192	1.226445

VarP	SigmaP
0.055065	0.234659

VarP	SigmaP
0.044627	0.211251

VarP	SigmaP
0.033559	0.183192

	Firma 1	Firma 2	Firma 3		Kovariance	
μ	0.8	0.3	0.6		$\sigma_{1.2}$	-0.1
σ	1.2	0.8	1.1		$\sigma_{1.3}$	-0.5
					$\sigma_{2.3}$	0.3

Covar_M

1.44	-0.1	-0.5
-0.1	0.64	0.3
-0.5	0.3	1.21

VPS

2.88	-0.2	-1	1	0
-0.2	1.28	0.6	1	0
-1	0.6	2.42	1	0
1	1	1	0	1

wi

0.219576	-0.23012	0.01054	0.332139	1	0.332139
-0.23012	0.641161	-0.41105	0.379918	2	0.379918
0.01054	-0.41105	0.400506	0.287943	3	0.287943
0.332139	0.379918	0.287943	-0.59263	lambda1	-0.59263

zk	1
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$E(R_p) = 0.65$

VPS

2.88	-0.2	-1	1	0.8	0
-0.2	1.28	0.6	1	0.3	0
-1	0.6	2.42	1	0.6	0
1	1	1	0	0	1
0.8	0.3	0.6	0	0	0.65

wi

0.084002	0.056001	-0.14	-0.33097	1.200299	1	0.449225
0.056001	0.037334	-0.09334	1.779354	-2.53313	2	0.132817
-0.14	-0.09334	0.23334	-0.44839	1.332836	3	0.417958
-0.33097	1.779354	-0.44839	-3.83598	5.870823	lambda1	-0.01995
1.200299	-2.53313	1.332836	5.870823	-10.6268	lambda2	-1.03662

zk	1
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0.332139 0.379918 0.287943

0.158855 -0.01262 -0.04782

-0.01262 0.092376 0.032818

-0.04782 0.032818 0.100322

0.296317

Rp	VarP	SigmaP	
0.552452	0.296317	0.54435	1.014885

0.449225 0.132817 0.417958

0.290597 -0.00597 -0.09388

-0.00597 0.01129 0.016654

-0.09388 0.016654 0.211373

Rp	VarP	SigmaP	
0.65	0.346877	0.588963	1.103635

Emise	CP ₁	CP ₂	CP ₃	CP ₄	CP ₅	CP ₆	CP ₇	r _i (v %)
CP ₁	80.5	82.7	85.3	85.1	123.9	22	3.5	1.9
CP ₂	82.7	184.7	131.5	69.4	49.5	58	-9.9	6.1
CP ₃	85.3	131.5	374.2	384.5	366.5	103.8	343.5	2.9
CP ₄	85.1	69.4	384.5	684.8	599.1	51.6	502.7	4
CP ₅	123.9	49.5	366.5	599.1	871.4	-21.2	520.4	5.7
CP ₆	22	58	103.8	51.6	-21.2	89.7	74.4	3.4
CP ₇	3.5	-9.9	343.5	502.7	520.4	74.4	574.6	4.9

161	165.4	170.6	170.2	247.8	44	7	1
165.4	369.4	263	138.8	99	116	-19.8	1
170.6	263	748.4	769	733	207.6	687	1
170.2	138.8	769	1369.6	1198.2	103.2	1005.4	1
247.8	99	733	1198.2	1742.8	-42.4	1040.8	1
44	116	207.6	103.2	-42.4	179.4	148.8	1
7	-19.8	687	1005.4	1040.8	148.8	1149.2	1
1	1	1	1	1	1	1	0

0.077542	-0.00619	0.008788	-0.00971	-0.03769	-0.07775	0.045002	2.1372
-0.00619	0.007803	-0.00362	0.000167	0.001056	-0.00048	0.001254	0.044435
0.008788	-0.00362	0.007544	-0.00229	-0.00426	-0.00879	0.002623	-0.29067
-0.00971	0.000167	-0.00229	0.004278	0.004072	0.01066	-0.00718	-0.23027
-0.03769	0.001056	-0.00426	0.004072	0.02058	0.040175	-0.02394	-0.77333
-0.07775	-0.00048	-0.00879	0.01066	0.040175	0.086382	-0.0502	-1.1224
0.045002	0.001254	0.002623	-0.00718	-0.02394	-0.0502	0.032436	1.235036
2.1372	0.044435	-0.29067	-0.23027	-0.77333	-1.1224	1.235036	-30.2875

E(Rp) = 5%

161	165.4	170.6	170.2	247.8	44	7	1
165.4	369.4	263	138.8	99	116	-19.8	1
170.6	263	748.4	769	733	207.6	687	1
170.2	138.8	769	1369.6	1198.2	103.2	1005.4	1
247.8	99	733	1198.2	1742.8	-42.4	1040.8	1
44	116	207.6	103.2	-42.4	179.4	148.8	1
7	-19.8	687	1005.4	1040.8	148.8	1149.2	1
1	1	1	1	1	1	1	0
1.9	6.1	2.9	4	5.7	3.4	4.9	0

0.016039	0.007661	-0.00407	-0.00315	-0.00914	-0.02351	0.016171	2.286871
0.007661	0.004685	-0.00072	-0.00131	-0.00537	-0.01269	0.007746	0.010736
-0.00407	-0.00072	0.004856	-0.00092	0.001708	0.002544	-0.0034	-0.25938
-0.00315	-0.00131	-0.00092	0.003579	0.001028	0.004877	-0.00411	-0.24623
-0.00914	-0.00537	0.001708	0.001028	0.00733	0.015	-0.01055	-0.8428
-0.02351	-0.01269	0.002544	0.004877	0.015	0.038551	-0.02477	-1.2544
0.016171	0.007746	-0.0034	-0.00411	-0.01055	-0.02477	0.01892	1.305199
2.286871	0.010736	-0.25938	-0.24623	-0.8428	-1.2544	1.305199	-30.6517
-0.37867	0.085259	-0.07916	0.040381	0.175762	0.333946	-0.17751	0.921531

			2.1372	0.044435	-0.29067	-0.23027	-0.77333
VPS							
	0		367.6936	7.853678	-52.9898	-41.881	-204.776
	0		7.853678	0.36468	-1.69843	-0.71011	-1.70094
	0		-52.9898	-1.69843	31.61554	25.73579	82.38249
	0		-41.881	-0.71011	25.73579	36.31192	106.6853
	0		-204.776	-1.70094	82.38249	106.6853	521.1259
	0		-52.7736	-2.89267	33.86451	13.33649	-18.4013
	0		9.238319	-0.5433	-123.312	-142.966	-497.027
	1						
	wi	Rp	VarP	Sigma_P	ratio		
	1	2.1372	0.39525	15.14374	3.891496	0.101568	
	2	0.044435					
	3	-0.29067					
	4	-0.23027					
	5	-0.77333					
	6	-1.1224					
	7	1.235036					
lambda1		-30.2875					
zk		1					
		VPS		0.3935	0.43703	-0.65518	-0.04433
	1.9	0					
	6.1	0		12.46483	14.22203	-21.9915	-1.48441
	2.9	0		14.22203	35.27677	-37.6528	-1.34447
	4	0		-21.9915	-37.6528	160.6291	11.167
	5.7	0		-1.48441	-1.34447	11.167	1.345623
	3.4	0		1.755887	0.779106	-8.64797	-0.95644
	4.9	0		3.595548	10.52776	-28.2459	-0.95001
	0	1		0.57518	-1.80691	-93.9892	-9.30635
	0	5					
		wi	Rp	VarP	Sigma_P	ratio	
	-0.37867	1	0.3935	5	39.86213	6.313646	0.791935
	0.085259	2	0.43703				
	-0.07916	3	-0.65518				
	0.040381	4	-0.04433				
	0.175762	5	0.036015				
	0.333946	6	0.415334				
	-0.17751	7	0.417629				
	0.921531	lambda1	-26.0441				
	-2.33151	lambda2	-10.736				
	zk		1				

-1.1224 1.235036

-52.7736 9.238319

-2.89267 -0.5433

33.86451 -123.312

13.33649 -142.966

-18.4013 -497.027

113.0031 -103.134

-103.134 876.446

0.036015 0.415334 0.417629

1.755887 3.595548 0.57518

0.779106 10.52776 -1.80691

-8.64797 -28.2459 -93.9892

-0.95644 -0.95001 -9.30635

1.130259 -0.31711 7.827232

-0.31711 15.47344 12.90509

7.827232 12.90509 100.2183

Riziková portfolia	A	B	C	D
\bar{r}_p	6.20%	4%	7.50%	8.40%
σ_p	14.50%	9.70%	17%	20%

rf

0.035

	1	2	3	4	5
r_f	0.2	0.4	0.5	0.6	0.8
Portfolio	0.8	0.6	0.5	0.4	0.2

Rp

Portfolio

A	0.0566	0.0512	0.0485	0.0458	0.0404
B	0.039	0.038	0.0375	0.037	0.036
C	0.067	0.059	0.055	0.051	0.043
D	0.0742	0.0644	0.0595	0.0546	0.0448

VarP

Portfolio

A	0.013456	0.007569	0.005256	0.003364	0.000841
B	0.006022	0.003387	0.002352	0.001505	0.000376
C	0.018496	0.010404	0.007225	0.004624	0.001156
D	0.0256	0.0144	0.01	0.0064	0.0016

SigmaP

Portfolio

A	0.116	0.087	0.0725	0.058	0.029
B	0.0776	0.0582	0.0485	0.0388	0.0194
C	0.136	0.102	0.085	0.068	0.034
D	0.16	0.12	0.1	0.08	0.04

ratio

A	0.487931	0.588506	0.668966	0.789655	1.393103
B	0.502577	0.652921	0.773196	0.953608	1.85567
C	0.492647	0.578431	0.647059	0.75	1.264706
D	0.46375	0.536667	0.595	0.6825	1.12