

**Lampiran IV.1 s/d Lampiran IV.16 Alternatif 6 Saham dengan  
Koefisien Sharpe**

Alternatif 1 untuk 6 saham (TLKM,ISAT,UNVR,TCID,MRAT,PGIN)

No.	Beban					Retorn Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (Rf=1,296)
	TLKM	ISAT	UNVR	TCID	MRAT				
1	0	0	0	0	0	0.98	59,976.01	244.90	-0.0013
2	2	2	2	2	2	1.04	52,613.54	229.38	-0.0011
3	4	4	4	4	4	1.10	45,866.61	214.16	-0.0009
4	6	6	6	6	6	1.16	39,735.22	199.34	-0.0007
5	8	8	8	8	8	1.22	34,219.37	184.98	-0.0004
6	10	10	10	10	10	1.29	29,319.06	171.23	-0.0001
7	12	12	12	12	12	1.35	25,034.29	158.22	0.0003
8	14	14	14	14	14	1.41	21,365.05	146.17	0.0008
9	16	16	16	16	16	1.47	18,311.38	135.32	0.0013
10	16.67	16.67	16.67	16.67	16.67	1.49	17,430.27	132.02	0.0015
11	18	18	18	18	18	1.53	15,873.23	125.99	0.0019
12	20	20	20	20	20	1.59	14,050.62	118.54	0.0025
13	100	0	0	0	0	5.03	73,116.16	270.40	0.0138
14	90	2	2	2	2	4.61	62,496.27	249.97	0.0132
15	80	4	4	4	4	4.18	52,933.00	230.07	0.0125
16	70	6	6	6	6	3.76	44,456.34	210.85	0.0117
17	60	8	8	8	8	3.33	37,056.29	192.50	0.0106
18	50	10	10	10	10	2.91	30,732.85	175.31	0.0092
19	40	12	12	12	12	2.48	25,486.03	159.64	0.0074
20	30	14	14	14	14	2.06	21,315.82	146.00	0.0052
21	20	16	16	16	16	1.63	18,222.22	134.99	0.0025
22	16.67	16.67	16.67	16.67	16.67	1.49	17,430.27	132.02	0.0015
23	18	18	18	18	18	1.51	16,205.23	127.30	-0.0007
24	20	20	20	20	20	1.53	15,264.86	123.55	-0.0042
25	100	0	0	0	0	0.36	24,118.09	155.30	-0.0060
26	2	2	2	2	2	0.50	21,202.11	145.61	-0.0055
27	4	4	4	4	4	0.63	18,862.52	137.34	-0.0048
28	6	6	6	6	6	0.77	17,099.33	130.76	-0.0040
29	8	8	8	8	8	0.90	15,912.53	126.14	-0.0031
30	10	10	10	10	10	1.04	15,302.12	123.70	-0.0021
31	12	12	12	12	12	1.17	15,268.18	123.56	-0.0018
32	14	14	14	14	14	1.31	15,810.48	125.74	0.0001
33	16	16	16	16	16	1.44	16,929.26	130.11	0.0011
34	16.67	16.67	16.67	16.67	16.67	1.49	17,430.27	132.02	0.0015
35	18	18	18	18	18	1.58	18,624.42	136.47	0.0021
36	20	20	20	20	20	1.72	20,895.98	144.55	0.0029
37	100	0	0	0	0	-0.80	44,394.49	210.70	-0.0099
38	2	2	2	2	2	-0.53	37,726.90	194.23	-0.0094
39	4	4	4	4	4	-0.25	31,995.27	178.87	-0.0086
40	6	6	6	6	6	0.02	27,199.62	164.92	-0.0077
41	8	8	8	8	8	0.30	23,339.93	152.77	-0.0065
42	10	10	10	10	10	0.57	20,416.21	142.89	-0.0051
43	12	12	12	12	12	0.83	18,428.47	135.75	-0.0033
44	14	14	14	14	14	1.12	17,376.69	131.82	-0.0013
45	16	16	16	16	16	1.40	17,260.88	131.38	0.0008
46	16.67	16.67	16.67	16.67	16.67	1.49	17,430.27	132.02	0.0015
47	18	18	18	18	18	1.67	18,081.04	134.47	0.0028
48	20	20	20	20	20	1.95	19,837.17	140.84	0.0046
49	100	0	0	0	0	-2.18	54,849.64	234.20	-0.0148
50	2	2	2	2	2	-1.74	46,812.10	216.36	-0.0140
51	4	4	4	4	4	-1.30	39,741.99	199.35	-0.0130
52	6	6	6	6	6	-0.86	33,639.29	183.41	-0.0117
53	8	8	8	8	8	-0.42	28,304.02	168.83	-0.0102
54	10	10	10	10	10	0.02	24,336.17	156.90	-0.0082
55	12	12	12	12	12	0.46	21,135.74	145.38	-0.0057
56	14	14	14	14	14	0.90	18,902.73	137.49	-0.0029
57	16	16	16	16	16	1.34	17,637.15	132.80	0.0004
58	16.67	16.67	16.67	16.67	16.67	1.49	17,430.27	132.02	0.0015
59	18	18	18	18	18	1.78	17,338.98	131.68	0.0037
60	20	20	20	20	20	2.22	18,008.24	134.19	0.0069
61	100	0	0	0	0	1.35	28,363.24	207.80	0.0048
62	2	2	2	2	2	5.06	9,376.26	96.83	0.0389
63	4	4	4	4	4	4.58	8,889.74	94.29	0.0340
64	6	6	6	6	6	4.09	8,903.69	94.36	0.0296
65	8	8	8	8	8	3.60	9,418.09	97.05	0.0238
66	10	10	10	10	10	3.11	10,432.95	102.14	0.0178
67	12	12	12	12	12	2.63	11,948.28	109.31	0.0122
68	14	14	14	14	14	2.14	13,964.06	118.17	0.0071
69	16	16	16	16	16	1.65	16,480.31	128.38	0.0028
70	16.67	16.67	16.67	16.67	16.67	1.49	17,430.27	132.02	0.0015
71	18	18	18	18	18	1.17	19,497.01	139.63	-0.0009
72	20	20	20	20	20	0.68	23,014.18	151.70	-0.0041

Alternatif 2 untuk 6 saham (TLKM,ISAT,UNVR,TCID,MRAT,LSIP)

No.	Beban						Retorn Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (Rf=1,296)
	TLKM	ISAT	UNVR	TCID	MRAT	LSIP				
1	0	0	0	0	0	0	0.98	59,976.01	244.90	-0.0013
2	2	2	2	2	2	2	1.04	52,956.87	230.12	-0.0011
3	4	4	4	4	4	4	1.10	46,734.27	216.18	-0.0009
4	6	6	6	6	6	6	1.16	41,308.21	203.24	-0.0007
5	8	8	8	8	8	8	1.22	36,678.67	191.52	-0.0004
6	10	10	10	10	10	10	1.28	32,845.67	181.23	-0.0001
7	12	12	12	12	12	12	1.34	29,809.20	172.65	0.0002
8	14	14	14	14	14	14	1.39	27,569.27	166.04	0.0005
9	16	16	16	16	16	16	1.45	26,125.87	161.63	0.0010
10	16.67	16.67	16.67	16.67	16.67	16.67	1.47	25,821.74	160.69	0.0011
11	18	18	18	18	18	18	1.51	25,479.00	159.62	0.0014
12	20	20	20	20	20	20	1.57	25,628.67	160.09	0.0017
13	100	0	0	0	0	0	3.83	73,116.16	270.40	0.0138
14	2	2	2	2	2	2	4.60	62,324.39	249.65	0.0132
15	4	4	4	4	4	4	4.18	52,928.00	230.06	0.0125
16	6	6	6	6	6	6	3.75	44,927.02	211.96	0.0117
17	8	8	8	8	8	8	3.32	38,321.42	195.76	0.0104
18	10	10	10	10	10	10	2.90	33,111.23	181.96	0.0085
19	12	12	12	12	12	12	2.47	29,296.42	171.16	0.0069
20	14	14	14	14	14	14	2.04	26,877.01	163.94	0.0046
21	16	16	16	16	16	16	1.62	25,852.99	160.79	0.0020
22	16.67	16.67	16.67	16.67	16.67	16.67	1.47	25,821.74	160.69	0.0011
23	18	18	18	18	18	18	1.19	26,224.37	161.94	-0.0007
24	20	20	20	20	20	20	0.76	27,991.14	167.31	-0.0032
25	100	0	0	0	0	0	0.36	24,118.09	155.30	-0.0060
26	2	2	2	2	2	2	0.49	21,643.72	147.12	-0.0055
27	4	4	4	4	4	4	0.63	19,899.94	141.07	-0.0047
28	6	6	6	6	6	6	0.76	18,886.74	137.43	-0.0039
29	8	8	8	8	8	8	0.89	18,604.12	136.40	-0.0029
30	10	10	10	10	10	10	1.03	19,052.09	138.03	-0.0019
31	12	12	12	12	12	12	1.16	20,230.64	142.23	-0.0005
32	14	14	14	14	14	14	1.30	22,139.77	148.79	0.0000
33	16	16	16	16	16	16	1.43	24,779.49	157.42	0.0008
34	16.67	16.67	16.67	16.67	16.67	16.67	1.47	25,821.74	160.69	0.0011
35	18	18	18	18	18	18	1.56	28,149.78	167.78	0.0016
36	20	20	20	20	20	20	1.70	32,250.67	179.58	0.0022
37	100	0	0	0	0	0	-0.80	44,394.49	210.70	-0.0099
38	2	2	2	2	2	2	-0.53	38,549.87	196.34	-0.0093
39	4	4	4	4	4	4	-0.25	33,691.40	183.55	-0.0084
40	6	6	6	6	6	6	0.02	29,199.98	172.68	-0.0074
41	8									

Alternatif 5 untuk 6 saham (ISAT, UNVR, TCID, MRAT, PGIN, UNSP)

No	Beban						Retan	Varians	Risk	Koeffisien
	ISAT	UNVR	TCID	MRAT	PGIN	UNSP				
1	0.36	-0.8	-2.18	5.53	-0.87	0.03	73,116.16	270.40	0.0138	
2	0.36	-0.8	-2.18	5.53	-0.87	4.57	60,128.35	245.21	0.0133	
3	0.36	-0.8	-2.18	5.53	-0.87	4.11	48,776.26	220.85	0.0127	
4	0.36	-0.8	-2.18	5.53	-0.87	3.64	39,059.90	197.64	0.0119	
5	0.36	-0.8	-2.18	5.53	-0.87	3.18	30,979.36	176.81	0.0107	
6	0.36	-0.8	-2.18	5.53	-0.87	2.72	24,534.34	156.63	0.0091	
7	0.36	-0.8	-2.18	5.53	-0.87	2.26	19,725.14	140.45	0.0069	
8	0.36	-0.8	-2.18	5.53	-0.87	1.80	16,551.67	128.65	0.0039	
9	0.36	-0.8	-2.18	5.53	-0.87	1.34	15,013.92	122.53	0.0003	
10	0.36	-0.8	-2.18	5.53	-0.87	1.18	14,864.83	121.92	-0.0009	
11	0.36	-0.8	-2.18	5.53	-0.87	0.87	13,111.89	122.93	-0.0034	
12	0.36	-0.8	-2.18	5.53	-0.87	0.41	16,845.59	129.79	-0.0068	
13	0.36	-0.8	-2.18	5.53	-0.87	0.36	24,118.09	155.30	-0.0060	
14	0.36	-0.8	-2.18	5.53	-0.87	0.46	21,238.24	145.73	-0.0057	
15	0.36	-0.8	-2.18	5.53	-0.87	0.56	18,840.97	137.26	-0.0054	
16	0.36	-0.8	-2.18	5.53	-0.87	0.66	16,926.28	130.10	-0.0049	
17	0.36	-0.8	-2.18	5.53	-0.87	0.75	15,494.17	124.48	-0.0045	
18	0.36	-0.8	-2.18	5.53	-0.87	0.85	14,544.64	120.60	-0.0037	
19	0.36	-0.8	-2.18	5.53	-0.87	0.95	14,077.69	118.65	-0.0029	
20	0.36	-0.8	-2.18	5.53	-0.87	1.05	14,093.31	118.72	-0.0021	
21	0.36	-0.8	-2.18	5.53	-0.87	1.15	14,591.52	120.80	-0.0012	
22	0.36	-0.8	-2.18	5.53	-0.87	1.18	14,864.83	121.92	-0.0009	
23	0.36	-0.8	-2.18	5.53	-0.87	1.25	15,572.31	124.79	-0.0004	
24	0.36	-0.8	-2.18	5.53	-0.87	1.35	17,035.67	130.57	0.0004	
25	0.36	-0.8	-2.18	5.53	-0.87	-0.80	44,394.49	210.70	-0.0095	
26	0.36	-0.8	-2.18	5.53	-0.87	-0.56	37,936.35	194.77	-0.0095	
27	0.36	-0.8	-2.18	5.53	-0.87	-0.32	32,273.10	179.65	-0.0090	
28	0.36	-0.8	-2.18	5.53	-0.87	-0.09	27,404.74	165.54	-0.0084	
29	0.36	-0.8	-2.18	5.53	-0.87	0.15	23,331.25	152.75	-0.0075	
30	0.36	-0.8	-2.18	5.53	-0.87	0.39	20,052.66	141.61	-0.0064	
31	0.36	-0.8	-2.18	5.53	-0.87	0.63	17,568.94	132.55	-0.0050	
32	0.36	-0.8	-2.18	5.53	-0.87	0.86	15,880.11	126.02	-0.0034	
33	0.36	-0.8	-2.18	5.53	-0.87	1.10	14,984.17	122.42	-0.0016	
34	0.36	-0.8	-2.18	5.53	-0.87	1.18	14,864.83	121.92	-0.0009	
35	0.36	-0.8	-2.18	5.53	-0.87	1.34	14,887.11	122.01	0.0004	
36	0.36	-0.8	-2.18	5.53	-0.87	1.38	15,587.94	124.83	0.0023	
37	0.36	-0.8	-2.18	5.53	-0.87	-3.18	54,849.64	234.20	-0.0148	
38	0.36	-0.8	-2.18	5.53	-0.87	-1.78	47,103.37	217.03	-0.0142	
39	0.36	-0.8	-2.18	5.53	-0.87	-1.37	40,161.12	200.40	-0.0133	
40	0.36	-0.8	-2.18	5.53	-0.87	-0.97	34,022.90	184.45	-0.0123	
41	0.36	-0.8	-2.18	5.53	-0.87	-0.57	28,668.70	169.38	-0.0110	
42	0.36	-0.8	-2.18	5.53	-0.87	-0.16	24,158.53	155.43	-0.0094	
43	0.36	-0.8	-2.18	5.53	-0.87	0.24	20,432.39	142.94	-0.0076	
44	0.36	-0.8	-2.18	5.53	-0.87	0.64	17,510.28	132.33	-0.0049	
45	0.36	-0.8	-2.18	5.53	-0.87	1.05	15,392.19	124.07	-0.0020	
46	0.36	-0.8	-2.18	5.53	-0.87	1.18	14,864.83	121.92	-0.0009	
47	0.36	-0.8	-2.18	5.53	-0.87	1.45	14,078.12	118.65	0.0013	
48	0.36	-0.8	-2.18	5.53	-0.87	1.85	13,568.09	116.48	0.0048	
49	0.36	-0.8	-2.18	5.53	-0.87	2.35	12,363.97	107.88	0.0118	
50	0.36	-0.8	-2.18	5.53	-0.87	3.03	9,438.33	97.25	0.0384	
51	0.36	-0.8	-2.18	5.53	-0.87	4.50	8,947.54	94.59	0.0338	
52	0.36	-0.8	-2.18	5.53	-0.87	3.98	8,830.87	93.97	0.0285	
53	0.36	-0.8	-2.18	5.53	-0.87	3.45	9,108.31	95.44	0.0226	
54	0.36	-0.8	-2.18	5.53	-0.87	2.93	9,779.88	98.89	0.0165	
55	0.36	-0.8	-2.18	5.53	-0.87	2.40	10,845.56	104.14	0.0106	
56	0.36	-0.8	-2.18	5.53	-0.87	1.88	12,305.36	110.93	0.0053	
57	0.36	-0.8	-2.18	5.53	-0.87	1.36	14,159.28	118.99	0.0005	
58	0.36	-0.8	-2.18	5.53	-0.87	1.18	14,864.83	121.92	-0.0009	
59	0.36	-0.8	-2.18	5.53	-0.87	0.83	16,407.31	128.09	-0.0036	
60	0.36	-0.8	-2.18	5.53	-0.87	0.31	19,049.47	138.02	-0.0072	
61	0.36	-0.8	-2.18	5.53	-0.87	-0.87	35,932.25	236.50	-0.0092	
62	0.36	-0.8	-2.18	5.53	-0.87	-0.62	47,748.48	218.51	-0.0088	
63	0.36	-0.8	-2.18	5.53	-0.87	-0.38	40,452.62	201.13	-0.0083	
64	0.36	-0.8	-2.18	5.53	-0.87	-0.13	34,044.67	184.51	-0.0077	
65	0.36	-0.8	-2.18	5.53	-0.87	0.11	28,524.64	168.89	-0.0070	
66	0.36	-0.8	-2.18	5.53	-0.87	0.36	23,892.52	154.57	-0.0060	
67	0.36	-0.8	-2.18	5.53	-0.87	0.61	20,148.31	141.94	-0.0049	
68	0.36	-0.8	-2.18	5.53	-0.87	0.85	17,292.02	131.50	-0.0034	
69	0.36	-0.8	-2.18	5.53	-0.87	1.10	15,323.64	123.79	-0.0016	
70	0.36	-0.8	-2.18	5.53	-0.87	1.18	14,864.83	121.92	-0.0009	
71	0.36	-0.8	-2.18	5.53	-0.87	1.35	14,243.18	119.34	0.0004	
72	0.36	-0.8	-2.18	5.53	-0.87	1.59	14,050.67	118.54	0.0025	

Alternatif 6 untuk 6 saham (ISAT, UNVR, TCID, MRAT, LSIP, UNSP)

No	Beban						Retan	Varians	Risk	Koeffisien
	ISAT	UNVR	TCID	MRAT	LSIP	UNSP				
1	0.36	-0.8	-2.18	5.45	-0.87	0.03	73,116.16	270.40	0.0138	
2	0.36	-0.8	-2.18	5.45	-0.87	4.57	59,972.33	244.89	0.0134	
3	0.36	-0.8	-2.18	5.45	-0.87	4.10	48,794.34	220.85	0.0127	
4	0.36	-0.8	-2.18	5.45	-0.87	3.64	39,082.49	198.95	0.0118	
5	0.36	-0.8	-2.18	5.45	-0.87	3.17	32,336.68	179.82	0.0104	
6	0.36	-0.8	-2.18	5.45	-0.87	2.71	27,056.91	164.49	0.0088	
7	0.36	-0.8	-2.18	5.45	-0.87	2.25	23,743.18	154.09	0.0062	
8	0.36	-0.8	-2.18	5.45	-0.87	1.78	22,395.49	149.65	0.0035	
9	0.36	-0.8	-2.18	5.45	-0.87	1.32	23,013.85	154.70	0.0002	
10	0.36	-0.8	-2.18	5.45	-0.87	1.17	23,656.86	153.81	-0.0004	
11	0.36	-0.8	-2.18	5.45	-0.87	0.86	25,398.24	159.99	-0.0028	
12	0.36	-0.8	-2.18	5.45	-0.87	0.39	30,148.67	173.63	-0.0052	
13	0.36	-0.8	-2.18	5.45	-0.87	0.36	24,118.09	155.30	-0.0068	
14	0.36	-0.8	-2.18	5.45	-0.87	0.46	21,685.67	147.26	-0.0057	
15	0.36	-0.8	-2.18	5.45	-0.87	0.55	19,901.46	141.07	-0.0053	
16	0.36	-0.8	-2.18	5.45	-0.87	0.65	18,765.61	136.99	-0.0047	
17	0.36	-0.8	-2.18	5.45	-0.87	0.75	18,278.06	135.20	-0.0041	
18	0.36	-0.8	-2.18	5.45	-0.87	0.84	18,438.81	135.79	-0.0033	
19	0.36	-0.8	-2.18	5.45	-0.87	0.94	19,247.87	138.74	-0.0026	
20	0.36	-0.8	-2.18	5.45	-0.87	1.04	20,705.23	143.89	-0.0018	
21	0.36	-0.8	-2.18	5.45	-0.87	1.13	22,810.90	151.03	-0.0011	
22	0.36	-0.8	-2.18	5.45	-0.87	1.17	23,656.86	153.81	-0.0009	
23	0.36	-0.8	-2.18	5.45	-0.87	1.23	25,564.88	159.89	-0.0004	
24	0.36	-0.8	-2.18	5.45	-0.87	1.33	28,967.16	170.20	0.0002	
25	0.36	-0.8	-2.18	5.45	-0.87	-0.80	44,394.49	210.70	-0.0095	
26	0.36	-0.8	-2.18	5.45	-0.87	-0.56	38,765.09	196.89	-0.0094	
27	0.36	-0.8	-2.18	5.45	-0.87	-0.33	33,992.30	184.37	-0.0088	
28	0.36	-0.8	-2.18	5.45	-0.87	-0.09	30,076.11	173.42	-0.0080	
29	0.36	-0.8	-2.18	5.45	-0.87	0.14	27,016.53	164.37	-0.0070	
30	0.36	-0.8	-2.18	5.45	-0.87	0.38	24,813.55	157.52	-0.0058	
31	0.36	-0.8	-2.18	5.45	-0.87	0.61	23,467.17	153.19	-0.0044	
32	0.36	-0.8	-2.18	5.45	-0.87	0.85	22,977.40	151.58	-0.0029	
33	0.36	-0.8	-2.18	5.45	-0.87	1.09	23,344.23	152.79	-0.0016	
34	0.36	-0.8	-2.18	5.45	-0.87	1.1				

7 untuk 6 saham (ISAT, UNVR, TCID, PGIN, LSIP, UNSP)

ISAT	Rahat						Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Skorpe (Rf=1.296)
	UNVR	TCID	PGIN	LSIP	UNSP					
0.36	-0.8	5.55	5.45	-0.87		5.03	73,116.16	270.40	0.0138	
15.53	21.07	10.18	51.06	23.65		4.72	59,313.22	243.54	0.0141	
0	0	0	0	0	0	4.41	47,526.29	218.01	0.0143	
2	2	2	2	2	2	4.10	37,755.37	194.31	0.0144	
4	4	4	4	4	4	3.79	30,000.47	173.21	0.0144	
6	6	6	6	6	6	3.48	24,261.58	155.76	0.0140	
8	8	8	8	8	8	3.17	20,538.71	143.31	0.0131	
10	10	10	10	10	10	2.87	18,831.86	137.23	0.0114	
12	12	12	12	12	12	2.56	19,141.02	138.35	0.0091	
14	14	14	14	14	14	2.45	19,692.07	140.33	0.0082	
16	16	16	16	16	16	2.45	19,692.07	140.33	0.0082	
18	18	18	18	18	18	2.25	21,466.19	146.51	0.0065	
20	20	20	20	20	20	1.94	25,807.38	160.65	0.0040	
0	100	0	0	0	0	0.36	24,118.09	155.30	-0.0060	
2	90	2	2	2	2	0.61	21,484.70	146.58	-0.0047	
4	80	4	4	4	4	0.86	19,424.66	139.37	-0.0031	
6	70	6	6	6	6	1.11	17,937.97	133.93	-0.0014	
8	60	8	8	8	8	1.36	17,024.61	130.48	0.0005	
10	50	10	10	10	10	1.62	16,684.41	129.17	0.0025	
12	40	12	12	12	12	1.87	16,917.94	130.07	0.0044	
14	30	14	14	14	14	2.12	17,714.63	133.13	0.0067	
16	20	16	16	16	16	2.37	19,104.65	138.22	0.0078	
18	10	18	18	18	18	2.62	21,058.02	145.11	0.0091	
20	0	20	20	20	20	2.87	23,984.74	153.57	0.0103	
0	0	100	0	0	0	-0.80	44,394.49	210.70	-0.0099	
2	2	90	2	2	2	-0.41	38,517.36	196.26	-0.0087	
4	4	80	4	4	4	-0.02	33,434.64	182.85	-0.0072	
6	6	70	6	6	6	0.37	29,146.33	170.72	-0.0054	
8	8	60	8	8	8	0.76	25,652.43	160.16	-0.0033	
10	10	50	10	10	10	1.15	22,952.94	151.50	-0.0010	
12	12	40	12	12	12	1.54	21,047.87	145.08	0.0017	
14	14	30	14	14	14	1.93	19,937.21	141.20	0.0045	
16	16	20	16	16	16	2.32	19,620.95	140.07	0.0073	
18	18	10	18	18	18	2.71	20,099.11	141.77	0.0100	
20	20	0	20	20	20	3.10	21,371.68	146.19	0.0124	
0	0	0	100	0	0	1.35	18,263.27	137.80	0.0478	
2	2	2	90	2	2	5.18	9,375.37	96.83	0.0401	
4	4	4	80	4	4	4.81	8,962.57	94.67	0.0371	
6	6	6	70	6	6	4.44	8,124.24	95.53	0.0329	
8	8	8	60	8	8	4.06	9,860.99	99.30	0.0279	
10	10	10	50	10	10	3.69	11,171.60	105.70	0.0227	
12	12	12	40	12	12	3.32	13,057.29	114.27	0.0177	
14	14	14	30	14	14	2.95	15,517.65	124.57	0.0133	
16	16	16	20	16	16	2.58	18,552.69	136.21	0.0094	
18	18	18	10	18	18	2.21	22,162.40	148.87	0.0061	
20	20	20	0	20	20	1.83	26,346.77	162.32	0.0033	
0	0	0	0	100	0	5.45	260,712.36	510.60	0.0081	
2	2	2	2	90	2	5.09	213,274.69	461.82	0.0082	
4	4	4	4	80	4	4.73	170,886.63	413.38	0.0083	
6	6	6	6	70	6	4.37	133,548.18	365.44	0.0084	
8	8	8	8	60	8	4.01	101,259.34	318.21	0.0085	
10	10	10	10	50	10	3.65	74,020.11	272.07	0.0087	
12	12	12	12	40	12	3.29	51,830.49	227.66	0.0088	
14	14	14	14	30	14	2.93	34,690.48	186.25	0.0088	
16	16	16	16	20	16	2.57	22,600.07	150.33	0.0085	
18	18	18	18	10	18	2.21	15,559.28	124.74	0.0074	
20	20	20	20	0	20	1.85	13,568.09	116.48	0.0048	
0	0	0	0	0	100	-0.87	55,932.25	236.50	-0.0092	
2	2	2	2	2	90	-0.47	47,601.83	218.18	-0.0081	
4	4	4	4	4	80	-0.07	40,357.29	200.89	-0.0068	
6	6	6	6	6	70	0.33	34,198.65	184.93	-0.0052	
8	8	8	8	8	60	0.73	29,125.90	170.66	-0.0033	
10	10	10	10	10	50	1.12	25,139.05	158.55	-0.0011	
12	12	12	12	12	40	1.52	22,238.08	149.12	0.0015	
14	14	14	14	14	30	1.92	20,423.01	142.91	0.0044	
16	16	16	16	16	20	2.32	19,693.82	140.33	0.0073	
18	18	18	18	18	10	2.72	20,050.53	141.60	0.0101	
20	20	20	20	20	0	3.12	21,493.13	146.61	0.0124	

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Alternatif 8 untuk 6 saham (ISAT,UNVR,MRAT,PGIN,LSIP,UNSP)

Rat. No.	Bebat						Return Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (Rf=1.296)
	ISAT	UNVR	MRAT	PGIN	LSIP	UNSP				
1	0	0	0	0	0	0	5.03	73,116.16	270.40	0.0138
2	2	2	2	2	2	2	4.69	59,876.85	244.70	0.0139
3	4	4	4	4	4	4	4.36	48,512.73	220.26	0.0139
4	6	6	6	6	6	6	4.02	39,023.86	197.54	0.0138
5	8	8	8	8	8	8	3.68	31,410.17	177.23	0.0135
6	10	10	10	10	10	10	3.35	25,671.70	160.22	0.0128
7	12	12	12	12	12	12	3.01	21,808.43	147.68	0.0116
8	14	14	14	14	14	14	2.67	19,020.36	140.78	0.0098
9	16	16	16	16	16	16	2.34	17,707.51	140.38	0.0074
10	16.67	16.67	16.67	16.67	16.67	16.67	2.22	20,086.60	141.73	0.0065
11	18	18	18	18	18	18	2.00	21,469.86	146.53	0.0048
12	20	20	20	20	20	20	1.66	25,107.42	158.45	0.0023
13	100	0	0	0	0	0	0.36	24,118.09	155.30	-0.0060
14	90	2	2	2	2	2	0.58	21,306.43	145.97	-0.0049
15	80	4	4	4	4	4	0.81	19,129.65	138.31	-0.0035
16	70	6	6	6	6	6	1.03	17,587.74	132.62	-0.0020
17	60	8	8	8	8	8	1.25	16,680.71	129.15	-0.0003
18	50	10	10	10	10	10	1.48	16,408.56	128.10	0.0014
19	40	12	12	12	12	12	1.70	16,771.28	129.50	0.0031
20	30	14	14	14	14	14	1.93	17,768.88	133.30	0.0047
21	20	16	16	16	16	16	2.15	19,401.36	139.29	0.0061
22	16.67	16.67	16.67	16.67	16.67	16.67	2.22	20,086.60	141.73	0.0065
23	18	18	18	18	18	18	2.37	21,668.72	147.20	0.0073
24	20	20	20	20	20	20	2.60	24,570.95	156.75	0.0083
25	0	100	0	0	0	0	-2.18	54,849.64	234.20	-0.0148
26	2	90	2	2	2	2	-1.65	47,053.49	216.92	-0.0136
27	4	80	4	4	4	4	-1.12	40,245.87	200.61	-0.0121
28	6	70	6	6	6	6	-0.99	34,426.77	185.54	-0.0102
29	8	60	8	8	8	8	-0.07	29,596.19	172.04	-0.0079
30	10	50	10	10	10	10	0.46	25,754.13	160.48	-0.0052
31	12	40	12	12	12	12	0.99	22,900.60	151.33	-0.0020
32	14	30	14	14	14	14	1.52	21,035.58	145.04	0.0015
33	16	20	16	16	16	16	2.05	20,159.10	141.98	0.0053
34	16.67	16.67	16.67	16.67	16.67	16.67	2.22	20,086.60	141.73	0.0065
35	18	18	18	18	18	18	2.38	20,271.13	142.38	0.0090
36	20	20	20	20	20	20	3.10	21,371.68	146.19	0.0124
37	0	0	100	0	0	0	7.33	18,353.34	107.80	0.0428
38	2	2	90	2	2	2	5.15	9,498.82	97.46	0.0396
39	4	4	80	4	4	4	4.75	9,188.37	95.86	0.0360
40	6	6	70	6	6	6	4.35	9,431.88	97.12	0.0315
41	8	8	60	8	8	8	3.95	10,229.37	101.14	0.0263
42	10	10	50	10	10	10	3.55	11,580.84	107.61	0.0210
43	12	12	40	12	12	12	3.15	13,486.27	116.13	0.0160
44	14	14	30	14	14	14	2.76	15,945.67	126.28	0.0116
45	16	16	20	16	16	16	2.36	18,959.04	137.69	0.0077
46	16.67	16.67	16.67	16.67	16.67	16.67	2.22	20,086.60	141.73	0.0065
47	18	18	18	18	18	18	1.96	22,526.59	150.09	0.0044
48	20	20	20	20	20	20	1.56	26,647.70	163.24	0.0016
49	0	0	0	100	0	0	5.45	260,712.36	510.60	0.0081
50	2	2	2	90	2	2	5.06	212,643.82	461.13	0.0082
51	4	4	4	80	4	4	4.68	169,809.85	412.08	0.0082
52	6	6	6	70	6	6	4.29	132,210.46	363.61	0.0082
53	8	8	8	60	8	8	3.90	99,845.66	315.98	0.0082
54	10	10	10	50	10	10	3.51	72,715.42	269.66	0.0082
55	12	12	12	40	12	12	3.13	50,819.77	225.43	0.0081
56	14	14	14	30	14	14	2.74	34,158.69	184.82	0.0078
57	16	16	16	20	16	16	2.35	22,732.20	150.77	0.0070
58	16.67	16.67	16.67	16.67	16.67	16.67	2.22	20,086.60	141.73	0.0065
59	18	18	18	18	18	18	1.97	16,540.28	128.61	0.0052
60	20	20	20	20	20	20	1.38	15,982.94	124.83	0.0023
61	0	0	0	0	100	0	-0.87	55,932.25	236.50	-0.0092
62	2	2	2	2	90	2	-0.50	47,818.46	218.67	-0.0082
63	4	4	4	4	80	4	-0.13	40,744.39	201.85	-0.0071
64	6	6	6	6	70	6	0.24	34,710.05	186.31	-0.0056
65	8	8	8	8	60	8	0.61	29,715.42	172.38	-0.0040
66	10	10	10	10	50	10	0.99	25,760.52	160.50	-0.0019
67	12	12	12	12	40	12	1.36	22,845.34	151.15	0.0004
68	14	14	14	14	30	14	1.73	20,969.87	144.81	0.0030
69	16	16	16	16	20	16	2.10	20,134.13	141.89	0.0057
70	16.67	16.67	16.67	16.67	16.67	16.67	2.22	20,086.60	141.73	0.0065
71	18	18	18	18	18	18	2.47	20,338.12	142.61	0.0082
72	20	20	20	20	20	20	2.84	21,381.82	146.91	0.0105

Alternatif 9 untuk 6 saham (ISAT,TCID,MRAT,PGIN,LSIP,UNSP)

Rat. No.	Bebat						Return Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (Rf=1.296)
	ISAT	TCID	MRAT	PGIN	LSIP	UNSP				
1	100	0	0	0	0	0	5.03	73,116.16	270.40	0.0138
2	90	2	2	2	2	2	4.67	59,781.74	244.50	0.0138
3	80	4	4	4	4	4	4.31	48,403.74	220.01	0.0137
4	70	6	6	6	6	6	3.95	38,982.17	197.44	0.0134
5	60	8	8	8	8	8	3.59	31,517.02	177.53	0.0129
6	50	10	10	10	10	10	3.23	26,008.30	161.27	0.0120
7	40	12	12	12	12	12	2.87	22,456.00	149.85	0.0105
8	30	14	14	14	14	14	2.51	20,860.12	144.43	0.0084
9	20	16	16	16	16	16	2.15	21,220.67	145.67	0.0059
10	16.67	16.67	16.67	16.67	16.67	16.67	2.03	21,775.62	147.57	0.0050
11	18	18	18	18	18	18	1.79	23,537.64	153.42	0.0032
12	0	20	20	20	20	20	1.43	27,811.04	166.77	0.0008
13	0	100	0	0	0	0	-0.80	44,394.49	210.70	-0.0099
14	2	90	2	2	2	2	-0.46	38,459.82	195.11	-0.0090
15	4	80	4	4	4	4	-0.12	33,403.44	182.77	-0.0078
16	6	70	6	6	6	6	0.22	29,225.35	170.95	-0.0053
17	8	60	8	8	8	8	0.56	25,925.56	161.01	-0.0046
18	10	50	10	10	10	10	0.90	23,504.06	153.31	-0.0026
19	12	40	12	12	12	12	1.24	21,960.85	148.19	-0.0004
20	14	30	14	14	14	14	1.58	21,295.94	145.93	0.0019
21	16	20	16	16	16	16	1.92	21,309.31	146.66	0.0042
22	16.67	16.67	16.67	16.67	16.67	16.67	2.03	21,775.62	147.57	0.0050
23	18	18	18	18	18	18	2.26	22,600.98	150.34	0.0064
24	20	20	20	20	20	20	2.60	24,570.95	156.75	0.0083
25	0	0	100	0	0	0	-2.18	54,849.64	234.20	-0.0148
26	2	2	90	2	2	2	-1.67	47,174.23	217.20	-0.0137
27	4	4	80	4	4	4	-1.17	40,509.69	201.27	-0.0123
28	6	6	70	6	6	6	-0.66	34,856.02	186.70	-0.0105
29	8	8	60	8	8	8	-0.16	30,213.22	173.82	-0.0084
30	10	10	50	10	10	10	0.35	26,581.30	163.04	-0.0058
31	12	12	40	12	12	12	0.85	23,960.24	154.79	-0.0029
32	14	14	30	14	14	14	1.36	22,350.06	149.50	0.0004
33	16	16	20	16	16	16	1.86	21,750.75	147.48	0.0038
34	16.67	16.67	16.67	16.67	16.67	16.67	2.03	21,775.62	147.57	0.0050
35	18	18	18	18	18	18	2.37	22,622.31	148.87	0.0072
36	20	20	20	20	20	20	2.87	23,984.74	153.57	0.0103
37	0	0	0	100	0	0	5.53	18,353.34	107.80	0.0428
38	2	2	2	90	2	2	5.13	9,572.74	97.84	0.0392
39	4	4	4	80	4	4	4.71	9,371.32	96.81	0.0352
40	6	6	6	70	6	6	4.28	9,758.99	98.79	0.0302
41	8	8	8	60	8	8	3.86	10,735.75	103.61	0.0247
42	10	10	10	50	10	10	3.44	12,301.60	116.91	0.0193
43	12	12	12	40	12	12	3.00	14,456.53	120.24	0.0143
44	14	14	14	30	14	14	2.59	17,200.56	131.15	0.0099
45	16	16	16	20	16	16	2.17	20,533.67	143.30	0.0061
46	16.67	16.67	16.67	16.67	16.67	16.67	2.03	21,775.62	147.57	0.0050
47	18	18	18	18	18	18	1.75	24,455.87	156.38	0.0029
48	20	20	20	20	20	20	1.33	28,967.16	170.20	0.0002
49	0	0	0	0	100	0	5.45	260,712.36		

Alternatif 10 untuk 6 saham (UNVR, TCID, MRAT, PGIN, LSIP, UNSP)

Ret.	Beban						Return Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (Rf=1.296)
	UNVR	TCID	MRAT	PGIN	LSIP	UNSP				
1	0	0	0	0	0	0	0.36	24,118.09	155.30	-0.0060
2	2	2	2	2	2	2	0.47	21,530.87	146.80	-0.0056
3	4	4	4	4	4	4	0.57	19,636.21	140.13	-0.0052
4	6	6	6	6	6	6	0.68	18,374.11	135.55	-0.0045
5	8	8	8	8	8	8	0.79	17,764.57	133.28	-0.0038
6	10	10	10	10	10	10	0.90	17,807.58	133.45	-0.0030
7	12	12	12	12	12	12	1.00	18,503.16	136.03	-0.0022
8	14	14	14	14	14	14	1.11	19,851.29	140.89	-0.0013
9	16	16	16	16	16	16	1.22	21,851.98	147.82	-0.0005
10	16.67	16.67	16.67	16.67	16.67	16.67	1.25	22,663.89	150.55	-0.0003
11	18	18	18	18	18	18	1.32	24,505.23	156.54	0.0002
12	20	20	20	20	20	20	1.43	27,811.04	166.77	0.0006
13	0	100	0	0	0	0	-0.80	44,394.49	210.70	-0.0099
14	2	90	2	2	2	2	-0.55	38,799.37	196.98	-0.0094
15	4	80	4	4	4	4	-0.31	34,019.01	184.44	-0.0087
16	6	70	6	6	6	6	-0.06	30,053.41	173.36	-0.0078
17	8	60	8	8	8	8	0.18	26,902.56	164.02	-0.0068
18	10	50	10	10	10	10	0.43	24,566.48	156.74	-0.0055
19	12	40	12	12	12	12	0.68	23,045.15	151.81	-0.0041
20	14	30	14	14	14	14	0.92	22,338.98	149.46	-0.0025
21	16	20	16	16	16	16	1.17	22,446.77	149.82	-0.0008
22	16.67	16.67	16.67	16.67	16.67	16.67	1.25	22,663.89	150.55	-0.0003
23	18	18	18	18	18	18	1.42	23,369.72	152.87	0.0008
24	20	20	20	20	20	20	1.66	25,107.42	158.45	0.0023
25	0	100	0	0	0	0	-2.18	54,849.64	234.20	-0.0148
26	2	90	2	2	2	2	-1.77	46,771.87	216.27	-0.0142
27	4	80	4	4	4	4	-1.36	39,843.78	199.61	-0.0133
28	6	70	6	6	6	6	-0.94	34,065.36	184.57	-0.0121
29	8	60	8	8	8	8	-0.53	29,436.62	171.57	-0.0107
30	10	50	10	10	10	10	-0.12	25,957.53	161.11	-0.0088
31	12	40	12	12	12	12	0.29	23,628.17	153.71	-0.0065
32	14	30	14	14	14	14	0.70	22,446.77	149.82	-0.0040
33	16	20	16	16	16	16	1.11	22,418.42	149.73	-0.0012
34	16.67	16.67	16.67	16.67	16.67	16.67	1.25	22,663.89	150.55	-0.0003
35	18	18	18	18	18	18	1.53	23,538.06	153.42	0.0015
36	20	20	20	20	20	20	1.94	25,807.38	160.65	0.0040
37	0	0	100	0	0	0	-2.55	60,369.24	281.80	-0.0278
38	2	2	90	2	2	2	-2.03	56,228.47	268.12	-0.0281
39	4	4	80	4	4	4	-1.52	49,896.66	247.45	-0.0231
40	6	6	70	6	6	6	-1.00	44,967.81	229.84	-0.0171
41	8	8	60	8	8	8	-0.59	41,041.91	215.08	-0.0120
42	10	10	50	10	10	10	-0.18	38,718.98	202.78	-0.0091
43	12	12	40	12	12	12	0.24	36,999.00	192.47	-0.0065
44	14	14	30	14	14	14	0.74	35,881.98	183.72	-0.0048
45	16	16	20	16	16	16	1.24	35,367.92	181.18	-0.0029
46	16.67	16.67	16.67	16.67	16.67	16.67	1.25	22,663.89	150.55	-0.0003
47	18	18	18	18	18	18	1.51	25,456.82	159.55	-0.0024
48	20	20	20	20	20	20	1.95	30,148.67	173.63	-0.0052
49	0	0	0	100	0	0	-5.45	260,712.36	510.60	-0.0081
50	2	2	2	90	2	2	-4.95	213,736.33	462.34	-0.0079
51	4	4	4	80	4	4	-4.44	171,819.27	414.51	-0.0076
52	6	6	6	70	6	6	-3.94	134,895.18	367.28	-0.0072
53	8	8	8	60	8	8	-3.43	102,986.05	320.91	-0.0067
54	10	10	10	50	10	10	-2.93	76,091.89	275.85	-0.0059
55	12	12	12	40	12	12	-2.43	54,212.69	232.84	-0.0049
56	14	14	14	30	14	14	-1.92	37,348.47	193.26	-0.0032
57	16	16	16	20	16	16	-1.42	23,499.21	159.68	-0.0008
58	16.67	16.67	16.67	16.67	16.67	16.67	1.25	22,663.89	150.55	-0.0003
59	18	18	18	18	18	18	1.92	18,664.91	136.62	-0.0028
60	20	20	20	20	20	20	2.41	16,845.39	129.79	-0.0008
61	0	0	0	0	100	0	-0.87	55,932.25	236.50	-0.0092
62	2	2	2	2	90	2	-0.62	48,935.51	221.21	-0.0086
63	4	4	4	4	80	4	-0.36	42,758.19	206.78	-0.0080
64	6	6	6	6	70	6	-0.11	37,400.29	193.39	-0.0073
65	8	8	8	8	60	8	0.15	32,861.80	181.28	-0.0063
66	10	10	10	10	50	10	0.40	29,142.74	170.71	-0.0052
67	12	12	12	12	40	12	0.66	26,243.10	162.00	-0.0039
68	14	14	14	14	30	14	0.91	24,162.87	155.44	-0.0025
69	16	16	16	16	20	16	1.17	22,902.07	151.33	-0.0009
70	16.67	16.67	16.67	16.67	16.67	16.67	1.25	22,663.89	150.55	-0.0003
71	18	18	18	18	18	18	1.42	22,460.68	149.87	0.0008
72	20	20	20	20	20	20	1.68	22,836.71	151.12	0.0025

Alternatif 11 untuk 6 saham (TLKM, UNVR, TCID, MRAT, PGIN, LSIP)

Ret.	Beban						Return Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (Rf=1.296)
	TLKM	UNVR	TCID	MRAT	PGIN	LSIP				
1	0	0	0	0	0	0	0.98	59,976.01	244.90	-0.0013
2	2	2	2	2	2	2	1.95	51,045.56	225.93	-0.0011
3	4	4	4	4	4	4	1.12	43,274.39	208.02	-0.0008
4	6	6	6	6	6	6	1.19	36,662.48	191.47	-0.0006
5	8	8	8	8	8	8	1.26	31,209.85	176.66	-0.0002
6	10	10	10	10	10	10	1.33	26,916.48	164.06	0.0002
7	12	12	12	12	12	12	1.40	23,782.39	154.22	0.0007
8	14	14	14	14	14	14	1.47	21,807.56	147.67	0.0012
9	16	16	16	16	16	16	1.54	20,992.01	144.89	0.0017
10	16.67	16.67	16.67	16.67	16.67	16.67	1.56	20,977.77	144.84	0.0018
11	18	18	18	18	18	18	1.61	21,335.73	146.07	0.0021
12	20	20	20	20	20	20	1.68	22,838.71	151.12	0.0025
13	0	100	0	0	0	0	-0.36	24,118.09	155.30	-0.0060
14	2	90	2	2	2	2	-0.50	21,453.52	146.47	-0.0054
15	4	80	4	4	4	4	-0.65	19,412.87	139.33	-0.0047
16	6	70	6	6	6	6	-0.79	17,986.15	134.15	-0.0038
17	8	60	8	8	8	8	-0.94	17,203.36	131.16	-0.0027
18	10	50	10	10	10	10	-1.08	17,034.50	130.52	-0.0017
19	12	40	12	12	12	12	-1.22	17,489.57	132.25	-0.0005
20	14	30	14	14	14	14	-1.37	18,568.56	136.27	0.0005
21	16	20	16	16	16	16	-1.51	20,271.48	142.38	0.0015
22	16.67	16.67	16.67	16.67	16.67	16.67	-1.56	20,977.77	144.84	0.0018
23	18	18	18	18	18	18	-1.66	22,598.33	150.33	0.0024
24	20	20	20	20	20	20	-1.80	25,549.11	159.84	0.0032
25	0	0	100	0	0	0	-0.80	44,394.49	210.70	-0.0099
26	2	2	90	2	2	2	-0.52	38,528.69	196.29	-0.0092
27	4	4	80	4	4	4	-0.23	33,496.29	183.02	-0.0084
28	6	6	70	6	6	6	0.05	29,297.29	171.16	-0.0073
29	8	8	60	8	8	8	0.33	25,931.68	161.03	-0.0063
30	10	10	50	10	10	10	0.62	23,399.48	152.97	-0.0044
31	12	12	40	12	12	12	0.90	21,700.67	147.31	-0.0027
32	14	14	30	14	14	14	1.18	20,835.26	144.34	-0.0005
33	16	16	20	16	16	16	1.47	20,803.24	144.23	0.0012
34	16.67	16.67	16.67	16.67	16.67	16.67	1.56	20,977.77	144.84	0.0018
35	18	18	18	18	18	18	1.75	21,604.63	146.99	0.0021
36	20	20	20	20	20	20	2.03	23,239.41	152.44	0.0048
37	0	0	0	100	0	0	-2.18	54,849.64	234.20	-0.0148
38	2	2	2	90	2	2	-1.73	46,419.39	215.45	-0.0141
39	4	4	4	80	4	4	-1.28	39,179.76	197.94	-0.0130
40	6	6	6	70	6	6	-0.83	33,130.76	182.02	-0.0117
41	8	8	8	60	8	8	-0.38	28,272.38	168.14	-0.0100
42	10	10	10	50	10	10	0.06	24,604.63	156.86	-0.0079
43	12	12	12	40	12	12	0.51	22,127.51	148.75	-0.0053
44	14	14	14	30	14	14	0.96	20,841.01	144.36	-0.0023
45	16	16	16	20	16	16	1.41	20,745.15	144.03	0.0008
46	16.67	16.67	16.67	16.67	16.67	16.67	1.56	20,977.77	144.84	0.0018
47	18	18	18	18	18	18	1.86	21,839.90	147.78	0.0038
48	20	20	20	20	20	20	2.31	24,125.29	155.32	0.0065
49	0	0	0	0	100	0	-2.55	60,369.2		

Alternatif 7 untuk 6 saham (TLKM, UNVR, TCID, MRAT, PGIN, UNSP)

No.	Bobot						Return Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (Rp-1,296)
	TLKM	UNVR	TCID	MRAT	PGIN	UNSP				
1	0	0	0	0	0	0	0.98	39,976.01	244.90	-0.0013
2	2	2	2	2	2	2	0.92	50,704.72	225.18	-0.0017
3	4	4	4	4	4	4	0.87	42,535.27	206.24	-0.0021
4	6	6	6	6	6	6	0.81	35,467.65	188.33	-0.0026
5	8	8	8	8	8	8	0.75	29,501.86	171.76	-0.0032
6	10	10	10	10	10	10	0.70	24,637.90	156.96	-0.0038
7	12	12	12	12	12	12	0.64	20,875.77	144.48	-0.0045
8	14	14	14	14	14	14	0.58	18,215.48	134.96	-0.0053
9	16	16	16	16	16	16	0.53	16,657.02	129.06	-0.0060
10	16.67	16.67	16.67	16.67	16.67	16.67	0.51	16,382.38	127.99	-0.0062
11	18	18	18	18	18	18	0.47	16,200.39	127.28	-0.0065
12	20	20	20	20	20	20	0.41	16,845.59	129.79	-0.0068
13	0	100	0	0	0	0	0.36	24,118.09	155.30	-0.0060
14	2	90	2	2	2	2	0.38	21,484.81	146.58	-0.0063
15	4	80	4	4	4	4	0.40	19,316.53	138.98	-0.0065
16	6	70	6	6	6	6	0.41	17,613.25	132.71	-0.0067
17	8	60	8	8	8	8	0.43	16,374.96	127.96	-0.0068
18	10	50	10	10	10	10	0.45	15,601.68	124.91	-0.0068
19	12	40	12	12	12	12	0.47	15,293.39	123.67	-0.0067
20	14	30	14	14	14	14	0.48	15,450.10	124.30	-0.0065
21	16	20	16	16	16	16	0.50	16,071.81	126.77	-0.0063
22	16.67	16.67	16.67	16.67	16.67	16.67	0.51	16,382.38	127.99	-0.0062
23	18	10	18	18	18	18	0.52	17,138.52	130.99	-0.0059
24	20	0	20	20	20	20	0.54	18,710.23	136.79	-0.0056
25	0	0	100	0	0	0	-0.80	44,394.49	218.70	-0.0099
26	2	2	90	2	2	2	-0.64	38,384.80	195.92	-0.0099
27	4	4	80	4	4	4	-0.49	33,097.35	181.93	-0.0098
28	6	6	70	6	6	6	-0.33	28,532.15	168.91	-0.0096
29	8	8	60	8	8	8	-0.17	24,689.20	157.13	-0.0093
30	10	10	50	10	10	10	-0.02	21,568.49	146.86	-0.0089
31	12	12	40	12	12	12	0.14	19,170.04	138.46	-0.0083
32	14	14	30	14	14	14	0.30	17,493.83	132.26	-0.0075
33	16	16	20	16	16	16	0.45	16,539.87	128.61	-0.0065
34	16.67	16.67	16.67	16.67	16.67	16.67	0.51	16,382.38	127.99	-0.0062
35	18	18	18	18	18	18	0.61	16,308.16	127.70	-0.0054
36	20	20	0	20	20	20	0.77	16,798.69	129.61	-0.0041
37	0	0	0	100	0	0	-2.18	54,849.64	234.20	-0.0148
38	2	2	2	90	2	2	-1.86	47,123.00	217.08	-0.0145
39	4	4	4	80	4	4	-1.54	40,244.70	200.61	-0.0141
40	6	6	6	70	6	6	-1.21	34,214.73	184.97	-0.0136
41	8	8	8	60	8	8	-0.89	29,033.10	170.39	-0.0128
42	10	10	10	50	10	10	-0.57	24,699.81	157.16	-0.0119
43	12	12	12	40	12	12	-0.29	21,214.86	145.65	-0.0106
44	14	14	14	30	14	14	0.08	18,578.24	136.30	-0.0092
45	16	16	16	20	16	16	0.40	16,789.96	129.58	-0.0069
46	16.67	16.67	16.67	16.67	16.67	16.67	0.51	16,382.38	127.99	-0.0062
47	18	18	18	18	18	18	0.73	15,830.01	125.90	-0.0046
48	20	20	0	20	20	20	1.04	15,738.40	125.53	-0.0020
49	0	0	0	0	100	0	5.13	10,363.24	70.89	0.0428
50	2	2	2	2	90	2	4.94	9,596.63	97.96	0.0372
51	4	4	4	4	80	4	4.34	9,236.08	96.10	0.0317
52	6	6	6	6	70	6	3.73	9,281.60	96.34	0.0253
53	8	8	8	8	60	8	3.13	9,733.18	98.66	0.0186
54	10	10	10	10	50	10	2.52	10,590.83	102.91	0.0119
55	12	12	12	12	40	12	1.92	11,854.55	108.88	0.0037
56	14	14	14	14	30	14	1.31	13,524.34	116.29	0.0002
57	16	16	16	16	20	16	0.71	15,600.19	124.90	-0.0047
58	16.67	16.67	16.67	16.67	16.67	16.67	0.51	16,382.38	127.99	-0.0062
59	18	18	18	18	18	18	0.10	18,082.11	134.47	-0.0009
60	20	20	0	20	20	20	-0.50	20,970.10	144.81	-0.0124
61	0	0	0	0	100	0	-0.87	55,932.25	236.50	-0.0092
62	2	2	2	2	90	2	-0.70	48,197.59	219.54	-0.0091
63	4	4	4	4	80	4	-0.54	41,278.02	203.17	-0.0090
64	6	6	6	6	70	6	-0.37	35,173.54	187.55	-0.0089
65	8	8	8	8	60	8	-0.21	29,884.16	172.87	-0.0087
66	10	10	10	10	50	10	-0.04	25,409.88	159.40	-0.0084
67	12	12	12	12	40	12	0.12	21,750.69	147.48	-0.0080
68	14	14	14	14	30	14	0.29	18,906.59	137.50	-0.0073
69	16	16	16	16	20	16	0.45	16,877.58	129.91	-0.0065
70	16.67	16.67	16.67	16.67	16.67	16.67	0.51	16,382.38	127.99	-0.0062
71	18	18	18	18	18	18	0.62	15,663.67	125.13	-0.0054
72	20	20	0	20	20	20	0.78	15,264.86	123.53	-0.0042

Alternatif 13 untuk 6 saham (TLKM, UNVR, TCID, MRAT, LSIP, UNSP)

No.	Bobot						Return Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (Rp-1,296)
	TLKM	UNVR	TCID	MRAT	LSIP	UNSP				
1	100	0	0	0	0	0	0.98	39,976.01	244.90	-0.0013
2	90	2	2	2	2	2	0.92	31,065.31	225.98	-0.0017
3	80	4	4	4	4	4	0.86	43,471.94	208.50	-0.0021
4	70	6	6	6	6	6	0.80	37,195.89	192.86	-0.0026
5	60	8	8	8	8	8	0.74	32,237.17	179.55	-0.0031
6	50	10	10	10	10	10	0.69	28,595.77	169.10	-0.0036
7	40	12	12	12	12	12	0.63	26,271.70	162.09	-0.0041
8	30	14	14	14	14	14	0.57	25,264.95	158.95	-0.0046
9	20	16	16	16	16	16	0.51	25,575.54	159.92	-0.0049
10	16.67	16.67	16.67	16.67	16.67	16.67	0.49	25,971.80	161.16	-0.0050
11	10	18	18	18	18	18	0.45	27,203.44	164.93	-0.0051
12	0	20	20	20	20	20	0.39	30,148.67	173.63	-0.0052
13	0	100	0	0	0	0	0.36	24,118.09	155.30	-0.0060
14	2	90	2	2	2	2	0.38	21,943.68	148.13	-0.0062
15	4	80	4	4	4	4	0.39	20,422.95	142.91	-0.0063
16	6	70	6	6	6	6	0.41	19,555.92	139.84	-0.0064
17	8	60	8	8	8	8	0.42	19,342.57	139.08	-0.0063
18	10	50	10	10	10	10	0.44	19,782.91	140.65	-0.0061
19	12	40	12	12	12	12	0.45	20,876.94	144.49	-0.0058
20	14	30	14	14	14	14	0.47	22,624.66	150.41	-0.0055
21	16	20	16	16	16	16	0.48	25,026.87	158.20	-0.0051
22	16.67	16.67	16.67	16.67	16.67	16.67	0.49	25,971.80	161.16	-0.0050
23	18	10	18	18	18	18	0.50	28,081.16	167.57	-0.0047
24	20	0	20	20	20	20	0.52	31,789.95	178.30	-0.0044
25	0	0	100	0	0	0	-0.80	44,394.49	218.70	-0.0099
26	2	2	2	90	2	2	-0.65	39,223.02	198.25	-0.0098
27	4	4	4	80	4	4	-0.49	34,062.48	186.71	-0.0096
28	6	6	6	70	6	6	-0.34	31,306.87	176.94	-0.0092
29	8	8	8	60	8	8	-0.18	28,558.19	168.99	-0.0087
30	10	10	10	50	10	10	-0.03	26,616.45	163.15	-0.0081
31	12	12	12	40	12	12	0.13	25,481.63	159.63	-0.0073
32	14	14	14	30	14	14	0.28	25,153.75	158.60	-0.0064
33	16	16	16	20	16	16	0.44	25,632.80	160.10	-0.0054
34	16.67	16.67	16.67	16.67	16.67	16.67	0.49	25,971.80	161.16	-0.0050
35	18	18	18	18	18	18	0.59	26,918.78	164.07	-0.0043
36	20	20	0	20	20	20	0.75	29,011.69	170.33	-0.0037
37	0	0	0	100	0	0	-2.18	54,849.64	234.20	-0.0148
38	2	2	2	2	90	2	-1.86	47,209.10	217.28	-0.0145
39	4	4	4	4	80	4	-1.54	40,707.25	201.76	-0.0141
40	6	6	6	6	70	6	-1.22	35,344.09	188.00	-0.0134
41	8	8	8	8	60	8	-0.90	31,119.62	176.41	-0.0124
42	10	10	10	10	50	10	-0.58	28,033.84	167.43	-0.0112
43	12	12	12	12	40	12	-0.26	26,086.76	161.51	-0.0096
44	14	14	14	14	30	14	0.06	25,278.36	158.99	-0.0078
45	16	16	16	16	20	16	0.38	25,608.66	160.03	-0.0057
46	16.67	16.67	16.67	16.67	16.67	16.67	0.49	25,971.80	161.16	-0.0050
47	18	18	18	18	18	18	0.70	27,077.65	164.55	-0.0036
48	20	20	0	20	20	20	1.02	29,685.33	172.29	-0.0016
49	0	0	0	0	100	0	5.13	10,363.24	70.89	0.0428

14 saham (TLKM, UNVR, TCID, PGHN, LSIP, UNSP)

No	Bobot						Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Sharpe (Rf=1.296)
	TLKM	UNVR	TCID	PGHN	LSIP	UNSP				
0	0.36	-0.8	5.53	5.45	-0.87					
1	15.53	21.07	10.18	51.06	23.65					
2	0	0	0	0	0	0.98	59,976.01	244.90	-0.0013	
3	2	2	2	2	2	1.08	50,527.65	224.78	-0.0010	
4	4	4	4	4	4	1.17	42,419.63	205.96	-0.0006	
5	6	6	6	6	6	1.27	35,651.94	188.82	-0.0002	
6	8	8	8	8	8	1.36	30,224.58	173.85	0.0004	
7	10	10	10	10	10	1.46	26,137.55	161.67	0.0010	
8	12	12	12	12	12	1.55	23,390.85	152.94	0.0017	
9	14	14	14	14	14	1.65	21,984.48	148.27	0.0024	
10	16	16	16	16	16	1.75	21,918.45	148.05	0.0030	
11	16.67	16.67	16.67	16.67	16.67	1.78	22,194.29	148.98	0.0032	
12	18	18	18	18	18	1.84	23,192.75	152.29	0.0036	
13	20	20	20	20	20	1.94	25,807.38	160.65	0.0040	
14	100	0	0	0	0	0.36	24,118.09	155.30	-0.0060	
15	90	2	2	2	2	0.53	21,745.45	147.46	-0.0052	
16	80	4	4	4	4	0.70	19,956.94	141.27	-0.0042	
17	70	6	6	6	6	0.87	18,752.55	136.94	-0.0031	
18	60	8	8	8	8	1.04	18,132.27	134.66	-0.0019	
19	50	10	10	10	10	1.21	18,096.13	134.52	-0.0006	
20	40	12	12	12	12	1.38	18,644.10	136.54	0.0006	
21	30	14	14	14	14	1.55	19,776.19	140.63	0.0018	
22	20	16	16	16	16	1.72	21,492.41	146.60	0.0029	
23	16.67	16.67	16.67	16.67	16.67	1.78	22,194.29	148.98	0.0032	
24	18	18	18	18	18	1.89	23,792.75	154.25	0.0039	
25	20	0	20	20	20	2.06	26,677.21	163.33	0.0047	
26	0	0	100	0	0	-0.80	44,394.49	210.70	-0.0099	
27	2	2	90	2	2	-0.49	38,979.98	197.43	-0.0090	
28	4	4	80	4	4	-0.18	34,315.60	185.24	-0.0080	
29	6	6	70	6	6	0.13	30,401.35	174.36	-0.0067	
30	8	8	60	8	8	0.44	27,237.24	165.04	-0.0052	
31	10	10	50	10	10	0.75	24,823.26	157.55	-0.0035	
32	12	12	40	12	12	1.06	23,199.42	152.18	-0.0016	
33	14	14	30	14	14	1.37	22,245.70	149.15	0.0005	
34	16	16	20	16	16	1.68	22,082.12	148.60	0.0026	
35	16.67	16.67	16.67	16.67	16.67	1.78	22,194.29	148.98	0.0032	
36	18	18	18	18	18	1.98	22,668.67	150.56	0.0046	
37	20	0	20	20	20	2.29	24,005.36	154.94	0.0064	
38	0	0	0	0	0	3.55	32,363.86	187.80	0.0118	
39	2	2	2	90	2	5.10	9,578.04	97.61	0.0389	
40	4	4	4	80	4	4.64	9,307.82	96.48	0.0347	
41	6	6	6	70	6	4.19	9,702.58	98.50	0.0294	
42	8	8	8	60	8	3.74	10,712.32	103.50	0.0236	
43	10	10	10	50	10	3.29	12,337.04	111.07	0.0179	
44	12	12	12	40	12	2.83	14,576.74	120.73	0.0127	
45	14	14	14	30	14	2.38	17,431.42	132.03	0.0082	
46	16	16	16	20	16	1.93	20,901.08	144.57	0.0044	
47	16.67	16.67	16.67	16.67	16.67	1.78	22,194.29	148.98	0.0032	
48	18	18	18	18	18	1.48	24,985.71	158.07	0.0011	
49	20	0	20	20	20	1.02	29,685.33	172.29	-0.0016	
50	0	0	0	100	0	5.45	260,712.36	510.60	0.0081	
51	2	2	2	2	90	5.01	213,932.39	462.53	0.0080	
52	4	4	4	4	80	4.57	172,104.55	414.85	0.0079	
53	6	6	6	6	70	4.13	135,228.84	367.73	0.0077	
54	8	8	8	60	8	3.69	103,305.25	321.41	0.0074	
55	10	10	10	50	10	3.25	76,333.79	276.29	0.0071	
56	12	12	12	40	12	2.81	54,314.46	233.05	0.0065	
57	14	14	14	30	14	2.37	37,247.25	193.00	0.0055	
58	16	16	16	20	16	1.93	25,132.18	158.53	0.0040	
59	16.67	16.67	16.67	16.67	16.67	1.78	22,194.29	148.98	0.0032	
60	18	18	18	18	18	1.48	17,969.23	134.05	0.0014	
61	20	0	20	20	20	1.04	15,758.40	125.53	-0.0020	
62	0	0	0	0	100	-0.87	55,932.25	236.90	-0.0092	
63	2	2	2	2	90	-0.55	48,065.12	219.24	-0.0084	
64	4	4	4	4	80	-0.23	41,239.41	203.07	-0.0075	
65	6	6	6	6	70	0.08	35,455.14	188.30	-0.0064	
66	8	8	8	60	8	0.40	30,712.30	175.25	-0.0051	
67	10	10	10	50	10	0.72	27,010.88	164.35	-0.0035	
68	12	12	12	40	12	1.04	24,350.90	156.05	-0.0017	
69	14	14	14	30	14	1.35	22,732.35	150.77	0.0004	
70	16	16	16	20	16	1.67	22,155.23	148.85	0.0025	
71	16.67	16.67	16.67	16.67	16.67	1.78	22,194.29	148.98	0.0032	
72	18	18	18	18	18	1.99	22,619.55	150.40	0.0046	
73	20	0	20	20	20	2.31	24,125.29	155.32	0.0065	



15 untuk 6 saham (TLKM, UNVR, MLAT, PGIN, LSIP, UNSP)

No.	Bobot						Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Sharpe (Rf=1.29%)
	TLKM	UNVR	MLAT	PGIN	LSIP	UNSP				
1	0.36	-2.18	5.55	5.45	-0.87					
2	15.53	23.42	10.18	51.06	23.65					
3	0	0	0	0	0	0.98	59,976.01	244.90	-0.0013	
4	2	2	2	2	2	1.05	50,632.74	225.66	-0.0011	
5	4	4	4	4	4	1.12	42,626.45	206.46	-0.0009	
6	6	6	6	6	6	1.18	35,897.14	189.47	-0.0006	
7	8	8	8	8	8	1.25	30,464.81	174.54	-0.0002	
8	10	10	10	10	10	1.32	26,329.46	162.26	0.0002	
9	12	12	12	12	12	1.39	23,491.09	152.27	0.0006	
10	14	14	14	14	14	1.46	21,949.70	148.13	0.0011	
11	16	16	16	16	16	1.53	21,705.30	147.33	0.0016	
12	16.67	16.67	16.67	16.67	16.67	1.53	21,912.04	148.03	0.0017	
13	18	18	18	18	18	1.59	22,757.87	150.86	0.0020	
14	20	20	20	20	20	1.66	23,107.42	158.43	0.0023	
15	100	0	0	0	0	0.36	24,118.09	155.30	-0.0060	
16	90	2	2	2	2	0.50	21,557.43	146.82	-0.0054	
17	80	4	4	4	4	0.65	19,622.94	140.08	-0.0046	
18	70	6	6	6	6	0.79	18,314.61	135.33	-0.0038	
19	60	8	8	8	8	0.93	17,632.44	132.79	-0.0028	
20	50	10	10	10	10	1.07	17,576.44	132.38	-0.0017	
21	40	12	12	12	12	1.22	18,146.60	134.71	-0.0006	
22	30	14	14	14	14	1.36	19,342.92	139.08	0.0004	
23	20	16	16	16	16	1.50	21,165.40	145.48	0.0014	
24	16.67	16.67	16.67	16.67	16.67	1.53	21,912.04	148.03	0.0017	
25	18	18	18	18	18	1.64	23,614.05	153.67	0.0023	
26	20	20	20	20	20	1.79	26,688.86	163.37	0.0030	
27	0	100	0	0	0	-2.18	54,849.64	234.20	-0.0148	
28	2	90	2	2	2	-1.73	47,077.56	216.97	-0.0140	
29	4	80	4	4	4	-1.29	40,347.18	200.87	-0.0129	
30	6	70	6	6	6	-0.84	34,658.51	186.17	-0.0115	
31	8	60	8	8	8	-0.39	30,011.53	173.24	-0.0097	
32	10	50	10	10	10	0.06	26,406.23	162.50	-0.0076	
33	12	40	12	12	12	0.50	23,842.67	154.41	-0.0051	
34	14	30	14	14	14	0.95	22,320.79	149.40	-0.0023	
35	16	20	16	16	16	1.40	21,840.61	147.79	0.0007	
36	16.67	16.67	16.67	16.67	16.67	1.53	21,912.04	148.03	0.0017	
37	18	18	18	18	18	1.85	22,402.14	149.67	0.0037	
38	20	20	20	20	20	2.29	24,005.36	154.94	0.0064	
39	0	0	0	0	0	5.45	260,712.36	510.60	0.0081	
40	2	2	2	2	2	5.07	9,641.55	98.19	0.0384	
41	4	4	4	4	4	4.59	9,494.64	97.44	0.0338	
42	6	6	6	6	6	4.11	9,922.52	99.61	0.0282	
43	8	8	8	8	8	3.63	10,925.18	104.52	0.0223	
44	10	10	10	10	10	3.15	12,502.63	111.82	0.0166	
45	12	12	12	12	12	2.67	14,654.87	121.06	0.0113	
46	14	14	14	14	14	2.19	17,381.90	131.84	0.0068	
47	16	16	16	16	16	1.71	20,683.71	143.82	0.0029	
48	16.67	16.67	16.67	16.67	16.67	1.53	21,912.04	148.03	0.0017	
49	18	18	18	18	18	1.23	24,560.31	156.72	-0.0064	
50	20	20	20	20	20	0.75	29,011.69	170.33	-0.0032	
51	0	0	0	0	0	5.45	260,712.36	510.60	0.0081	
52	2	2	2	2	2	4.98	213,291.77	461.84	0.0080	
53	4	4	4	4	4	4.51	170,988.79	413.51	0.0078	
54	6	6	6	6	6	4.05	133,803.41	365.79	0.0075	
55	8	8	8	8	8	3.58	101,735.63	318.96	0.0072	
56	10	10	10	10	10	3.11	74,785.46	273.47	0.0066	
57	12	12	12	12	12	2.64	52,952.90	230.11	0.0058	
58	14	14	14	14	14	2.17	36,237.94	190.36	0.0048	
59	16	16	16	16	16	1.70	24,640.58	156.97	0.0026	
60	16.67	16.67	16.67	16.67	16.67	1.53	21,912.04	148.03	0.0017	
61	18	18	18	18	18	1.24	18,160.83	134.76	-0.0004	
62	20	20	20	20	20	0.77	16,798.69	129.61	-0.0041	
63	0	0	0	0	0	-0.87	55,932.25	236.50	-0.0092	
64	2	2	2	2	2	-0.58	48,272.00	219.71	-0.0085	
65	4	4	4	4	4	-0.29	41,587.53	203.93	-0.0078	
66	6	6	6	6	6	0.00	35,878.82	189.42	-0.0068	
67	8	8	8	8	8	0.29	31,145.88	176.48	-0.0057	
68	10	10	10	10	10	0.98	27,388.72	165.50	-0.0043	
69	12	12	12	12	12	0.87	24,607.32	156.87	-0.0027	
70	14	14	14	14	14	1.16	22,801.69	151.00	-0.0009	
71	16	16	16	16	16	1.45	21,971.83	148.23	0.0010	
72	16.67	16.67	16.67	16.67	16.67	1.53	21,912.04	148.03	0.0017	
73	18	18	18	18	18	1.74	22,117.74	148.72	0.0030	
74	20	20	20	20	20	2.03	23,239.41	157.44	0.0048	

Alternatif 16 untuk 6 saham (TLKM, TCID, MRAT, PGIN, LSIP, UNSP)

No.	Bobot						Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Sharpe (Rf=1.29%)
	TLKM	TCID	MRAT	PGIN	LSIP	UNSP				
1	0.98	-0.8	-2.18	5.55	5.45	-0.87				
2	24.49	21.07	23.42	10.18	51.06	23.65				
1	100	0	0	0	0	0	0.98	59,976.01	244.90	-0.0013
2	90	2	2	2	2	2	1.03	59,764.09	225.31	-0.0012
3	80	4	4	4	4	4	1.07	42,884.48	207.09	-0.0011
4	70	6	6	6	6	6	1.12	36,137.19	190.62	-0.0009
5	60	8	8	8	8	8	1.16	31,122.22	176.41	-0.0008
6	50	10	10	10	10	10	1.21	27,239.56	165.04	-0.0006
7	40	12	12	12	12	12	1.25	24,689.22	157.13	-0.0003
8	30	14	14	14	14	14	1.30	23,471.20	153.20	0.0000
9	20	16	16	16	16	16	1.34	23,585.30	153.58	0.0003
10	16.67	16.67	16.67	16.67	16.67	16.67	1.36	23,919.67	154.66	0.0004
11	18	18	18	18	18	18	1.39	25,032.11	158.27	0.0006
12	20	20	20	20	20	20	1.43	27,814.04	166.77	0.0008
13	0	100	0	0	0	0	-0.80	44,394.49	210.70	-0.0099
14	2	90	2	2	2	2	-0.54	38,917.28	197.27	-0.0093
15	4	80	4	4	4	4	-0.28	34,263.77	185.10	-0.0085
16	6	70	6	6	6	6	-0.02	30,433.96	174.45	-0.0076
17	8	60	8	8	8	8	0.23	27,427.85	163.61	-0.0064
18	10	50	10	10	10	10	0.49	25,245.44	158.89	-0.0051
19	12	40	12	12	12	12	0.75	23,886.72	154.53	-0.0035
20	14	30	14	14	14	14	1.01	23,351.71	152.81	-0.0019
21	16	20	16	16	16	16	1.27	23,640.39	153.75	-0.0002
22	16.67	16.67	16.67	16.67	16.67	16.67	1.36	23,919.67	154.66	0.0004
23	18	18	18	18	18	18	1.53	24,752.78	157.33	0.0015
24	20	20	20	20	20	20	1.79	26,688.86	163.37	0.0030
25	0	0	100	0	0	0	-2.18	54,849.64	234.20	-0.0148
26	2	2	90	2	2	2	-1.76	47,202.88	217.26	-0.0140
27	4	4	80	4	4	4	-1.33	40,619.35	201.57	-0.0130
28	6	6	70	6	6	6	-0.91	35,129.05	187.43	-0.0118
29	8	8	60	8	8	8	-0.48	30,701.97	175.22	-0.0107
30	10	10	50	10	10	10	-0.06	27,348.11	165.37	-0.0082
31	12	12	40	12	12	12	0.37	25,067.48	158.33	-0.0059
32	14	14	30	14	14	14	0.79	23,860.08	154.47	-0.0033
33	16	16	20	16	16	16	1.21	23,725.90	154.03	-0.0005
34	16.67	16.67	16.67	16.67	16.67	16.67	1.36	23,919.67	154.66	0.0004
35	18	18	18	18	18	18	1.64	24,664.94	157.05	0.0022
36	20	20	20	20	20	20	2.06	26,677.21	163.33	0.0047
37	0	0	0	0	0	0	5.45	260,712.36	510.60	0.0081
38	2	2	2	2	2	2	5.03	9,720.05	98.59	0.0380
39	4	4	4	4	4	4	4.54	9,695.96	98.47	0.0330
40	6	6	6	6	6	6	4.04	10,290.92	101.44	0.0270
41	8	8	8	8	8	8	3.54	11,504.97	107.26	0.0209
42	10	10	10	10	10	10	3.03	13,338.10	115.49	0.0150
43	12	12	12	12	12	12	2.53	15,790.31	127.66	0.0098
44	14	14	14	14	14	14	2.03	18,861.60	137.34	0.0053
45	16	16	16	16	16	16	1.52	22,551.97	150.17	0.0015
46	16.67	16.67	16.67	16.67	16.67	16.67	1.36	23,919.67	154.66	0.0004
47	18	18	18	18	18	18	1.02	26,861.42	163.89	-0.0017
48	20	20	20	20	20	20	0.52	31,789.93	178.30	-0.0044
49	0	0	0	0	0	0	5.45	260,712.36	510.60	0.0081
50	2	2	2	2	2	2	4.96	213,751.63	462.33	0.0079
51	4	4	4	4	4	4	4.47	171,848.80	414.55	0.0076

Alternatif 17 untuk 6 saham (TLKM, ISAT, TCID, MRAT, PGIN, LSIP)

No.	Beban						Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Sharpe (Rf=1.296)
	TLKM	ISAT	TCID	MRAT	PGIN	LSIP				
1	0	0	0	0	0	0.98	99,976.01	244.90	-0.0013	
2	2	2	2	2	2	1.14	52,655.99	229.47	-0.0007	
3	4	4	4	4	4	1.31	46,150.56	214.83	0.0000	
4	6	6	6	6	6	1.47	40,459.74	201.15	0.0009	
5	8	8	8	8	8	1.63	35,983.51	188.64	0.0018	
6	10	10	10	10	10	1.80	31,521.88	177.54	0.0028	
7	12	12	12	12	12	1.96	28,274.85	168.15	0.0039	
8	14	14	14	14	14	2.12	25,842.42	160.76	0.0051	
9	16	16	16	16	16	2.28	24,224.59	155.64	0.0063	
10	16.67	16.67	16.67	16.67	16.67	2.34	23,866.33	154.49	0.0067	
11	18	18	18	18	18	2.45	23,421.35	153.04	0.0075	
12	20	20	20	20	20	2.61	23,432.72	153.08	0.0086	
13	100	0	0	0	0	5.03	73,116.16	270.40	0.0138	
14	90	2	2	2	2	4.71	62,132.83	249.26	0.0137	
15	80	4	4	4	4	4.38	52,533.14	229.20	0.0135	
16	70	6	6	6	6	4.06	44,317.09	210.52	0.0131	
17	60	8	8	8	8	3.74	37,484.68	193.61	0.0126	
18	50	10	10	10	10	3.42	32,035.92	178.99	0.0118	
19	40	12	12	12	12	3.09	27,970.79	167.24	0.0107	
20	30	14	14	14	14	2.77	25,289.31	159.03	0.0093	
21	16	16	16	16	16	2.45	23,991.47	154.89	0.0074	
22	16.67	16.67	16.67	16.67	16.67	2.34	23,866.33	154.49	0.0067	
23	18	18	18	18	18	2.12	24,077.27	155.17	0.0053	
24	20	20	20	20	20	1.80	25,546.71	159.83	0.0032	
25	0	100	0	0	0	-0.80	44,394.49	210.70	-0.0099	
26	2	90	2	2	2	-0.42	38,243.52	195.56	-0.0088	
27	4	80	4	4	4	-0.05	33,098.26	181.93	-0.0074	
28	6	70	6	6	6	0.33	28,958.71	170.17	-0.0057	
29	8	60	8	8	8	0.71	25,824.86	160.70	-0.0037	
30	10	50	10	10	10	1.08	23,696.72	153.94	-0.0014	
31	12	40	12	12	12	1.46	22,574.28	150.25	0.0011	
32	14	30	14	14	14	1.84	22,457.54	149.86	0.0036	
33	16	16	16	16	16	2.21	23,346.52	152.80	0.0060	
34	16.67	16.67	16.67	16.67	16.67	2.34	23,866.33	154.49	0.0067	
35	18	18	18	18	18	2.59	25,241.19	158.87	0.0081	
36	20	20	20	20	20	2.97	28,141.58	167.75	0.0100	
37	0	0	100	0	0	-2.18	54,849.64	234.20	-0.0148	
38	2	2	90	2	2	-1.64	46,875.07	216.51	-0.0136	
39	4	4	80	4	4	-1.10	40,061.39	200.15	-0.0119	
40	6	6	70	6	6	-0.55	34,408.59	185.50	-0.0100	
41	8	8	60	8	8	-0.01	29,916.67	172.96	-0.0076	
42	10	10	50	10	10	0.53	26,985.63	163.05	-0.0047	
43	12	12	40	12	12	1.07	24,415.48	156.25	-0.0014	
44	14	14	30	14	14	1.62	23,406.21	152.99	0.0021	
45	16	16	16	16	16	2.16	23,557.82	153.49	0.0056	
46	16.67	16.67	16.67	16.67	16.67	2.34	23,866.33	154.49	0.0067	
47	18	18	18	18	18	2.70	24,870.31	157.70	0.0089	
48	20	20	20	20	20	3.24	27,343.69	165.36	0.0118	
49	0	0	0	100	0	-2.18	54,849.64	234.20	-0.0148	
50	2	2	2	90	2	5.16	9,483.83	97.38	0.0397	
51	4	4	4	80	4	4.78	9,286.18	96.36	0.0361	
52	6	6	6	70	6	4.39	9,770.29	98.84	0.0313	
53	8	8	8	60	8	4.01	10,936.15	104.98	0.0259	
54	10	10	10	50	10	3.62	12,783.78	113.07	0.0206	
55	12	12	12	40	12	3.24	15,313.16	123.73	0.0157	
56	14	14	14	30	14	2.85	18,574.30	136.10	0.0114	
57	16	16	16	20	16	2.47	22,417.20	149.72	0.0078	
58	16.67	16.67	16.67	16.67	16.67	2.34	23,866.33	154.49	0.0067	
59	18	18	18	18	18	2.98	26,991.83	164.29	0.0046	
60	20	20	20	20	20	1.70	32,348.27	179.58	0.0022	
61	0	0	0	0	100	5.45	260,712.36	510.60	0.0081	
62	2	2	2	2	90	5.08	212,756.40	461.26	0.0082	
63	4	4	4	4	80	4.70	170,128.01	412.47	0.0083	
64	6	6	6	6	70	4.33	132,827.19	364.43	0.0083	
65	8	8	8	8	60	3.96	100,853.95	317.58	0.0084	
66	10	10	10	10	50	3.58	74,208.29	272.41	0.0084	
67	12	12	12	12	40	3.21	52,890.19	229.98	0.0083	
68	14	14	14	14	30	2.84	36,899.68	192.09	0.0080	
69	16	16	16	16	20	2.46	26,236.74	161.98	0.0072	
70	16.67	16.67	16.67	16.67	16.67	2.34	23,866.33	154.49	0.0067	
71	18	18	18	18	18	2.09	20,901.37	144.57	0.0055	
72	20	20	20	20	20	1.72	20,893.58	144.55	0.0029	

Alternatif 18 untuk 6 saham (TLKM, ISAT, TCID, MRAT, PGIN, UNSP)

No.	Beban						Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Sharpe (Rf=1.296)
	TLKM	ISAT	TCID	MRAT	PGIN	UNSP				
1	0	0	0	0	0	0.98	99,976.01	244.90	-0.0013	
2	2	2	2	2	2	1.02	52,311.11	228.72	-0.0012	
3	4	4	4	4	4	1.03	45,395.29	213.06	-0.0011	
4	6	6	6	6	6	1.09	39,228.55	198.06	-0.0010	
5	8	8	8	8	8	1.13	33,810.89	183.88	-0.0009	
6	10	10	10	10	10	1.16	29,142.32	170.71	-0.0008	
7	12	12	12	12	12	1.20	25,222.83	158.82	-0.0006	
8	14	14	14	14	14	1.24	22,052.42	148.50	-0.0004	
9	16	16	16	16	16	1.27	19,631.09	140.11	-0.0002	
10	16.67	16.67	16.67	16.67	16.67	1.29	18,990.44	137.81	-0.0001	
11	18	18	18	18	18	1.31	17,998.84	134.01	0.0001	
12	20	20	20	20	20	1.35	17,035.67	130.52	0.0004	
13	0	100	0	0	0	5.03	73,116.16	270.40	0.0138	
14	2	90	2	2	2	4.58	61,982.36	248.96	0.0132	
15	4	80	4	4	4	4.13	52,113.66	228.28	0.0124	
16	6	70	6	6	6	3.68	43,510.07	208.59	0.0114	
17	8	60	8	8	8	3.23	36,171.98	190.19	0.0102	
18	10	50	10	10	10	2.78	30,098.26	173.49	0.0086	
19	12	40	12	12	12	2.33	25,289.31	159.03	0.0065	
20	14	30	14	14	14	1.88	21,746.74	147.47	0.0040	
21	16	16	16	16	16	1.43	19,468.66	139.53	0.0016	
22	16.67	16.67	16.67	16.67	16.67	1.29	18,990.44	137.81	-0.0001	
23	18	18	18	18	18	0.99	18,455.69	135.85	-0.0023	
24	20	20	20	20	20	0.54	18,707.83	136.78	-0.0056	
25	0	0	100	0	0	-0.80	44,394.49	210.70	-0.0099	
26	2	2	90	2	2	-0.55	38,095.59	195.18	-0.0093	
27	4	4	80	4	4	-0.30	32,683.17	180.78	-0.0088	
28	6	6	70	6	6	-0.05	28,157.22	167.80	-0.0080	
29	8	8	60	8	8	0.20	24,517.75	156.58	-0.0070	
30	10	10	50	10	10	0.45	21,764.76	147.53	-0.0057	
31	12	12	40	12	12	0.70	19,898.24	141.06	-0.0042	
32	14	14	30	14	14	1.05	18,918.20	137.54	-0.0025	
33	16	16	16	16	16	1.20	18,824.63	137.20	-0.0007	
34	16.67	16.67	16.67	16.67	16.67	1.29	18,990.44	137.81	-0.0001	
35	18	18	18	18	18	1.45	19,617.54	140.06	0.0011	
36	20	20	20	20	20	1.70	21,296.93	145.93	0.0028	
37	0	0	0	100	0	-2.18	54,849.64	234.20	-0.0148	
38	2	2	2	90	2	-1.76	47,574.65	218.12	-0.0140	
39	4	4	4	80	4	-1.35	41,110.17	202.76	-0.0130	
40	6	6	6	70	6	-0.93	35,456.21	188.30	-0.0118	
41	8	8	8	60	8	-0.52	30,612.76	174.97	-0.0104	
42	10	10	10	50	10	-0.10	26,579.83	163.03	-0.0086	
43	12	12	12	40	12	0.31	23,357.41	152.83	-0.0064	
44	14	14	14	30	14	0.73	20,945.51	144.73	-0.0039	
45	16	16	16	20	16	1.15	19,344.12	139.08	-0.0011	
46	16.67	16.67	16.67	16.67	16.67	1.29	18,990.44	137.81	-0.0001	
47	18	18	18	18	18	1.56	18,553.25	136.21	0.0020	
48	20	20	20	20	20	1.98	18,572.89	136.28	0.0050	
49	0	0	0	0	100	5.45	260,712.36	510.60	0.0081	
50	2	2	2	2	90	5.04	9,991.24	97.93	0.0382	
51	4	4	4	4	80	4.53	9,312.13	96.50	0.0333	
52	6	6	6	6	70	4.01	9,525.90	97.60	0.0279	
53	8	8	8	8	60	3.50	10,232.97	101.16	0.0218	
54	10	10	10	10	50	2.99	11,432.14	108.97	0.0158	
55	12	12	12	12	40	2.48	13,124.59	114.56	0.0103	
56	14	14	14	14	30	1.97	15,309.93	123.73	0.0054	
57	16	16	16	16	20	1.46	17,988.16	134.12	0.0012	
58	16.67	16.67	16.67	16.67	16.67	1.29	18,990.44	13		

19 untuk 6 saham (TLKM, ISAT, TCID, MRAT, LSIP, UNSP)

Ret. No.	Beban						Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Sharpe (RF=1.296)	
	TLKM	ISAT	TCID	MRAT	LSIP	UNSP					
1	0	0	0	0	0	0	0.98	59,976.01	244.90	-0.0013	
2	2	2	2	2	2	2	1.01	52,659.06	229.48	-0.0012	
3	4	4	4	4	4	4	1.03	46,279.01	215.13	-0.0011	
4	6	6	6	6	6	6	1.08	40,835.87	202.08	-0.0011	
5	8	8	8	8	8	8	1.12	36,329.63	190.60	-0.0009	
6	10	10	10	10	10	10	1.15	32,760.29	181.00	-0.0008	
7	12	12	12	12	12	12	1.19	30,127.86	173.57	-0.0006	
8	14	14	14	14	14	14	1.22	28,432.33	168.62	-0.0004	
9	16	16	16	16	16	16	1.26	27,673.70	166.35	-0.0002	
10	16.67	16.67	16.67	16.67	16.67	16.67	1.27	27,629.03	166.22	-0.0002	
11	18	18	18	18	18	18	1.29	27,851.98	166.89	0.0000	
12	20	20	20	20	20	20	1.33	26,967.16	170.20	0.0002	
13	20.00	20.00	20.00	20.00	20.00	20.00	1.33	26,967.16	170.20	0.0002	
14	20	2	2	2	2	2	4.58	61,824.03	248.64	0.0132	
15	4	4	4	4	4	4	4.13	52,122.90	228.30	0.0124	
16	6	6	6	6	6	6	3.68	44,012.77	209.79	0.0113	
17	8	8	8	8	8	8	3.22	37,493.65	193.63	0.0100	
18	10	10	10	10	10	10	2.77	32,565.53	180.46	0.0082	
19	12	12	12	12	12	12	2.32	29,228.41	170.96	0.0060	
20	14	14	14	14	14	14	1.87	27,482.29	165.78	0.0035	
21	16	16	16	16	16	16	1.42	27,327.17	165.31	0.0007	
22	16.67	16.67	16.67	16.67	16.67	16.67	1.27	27,629.03	166.22	-0.0002	
23	18	18	18	18	18	18	0.97	28,763.06	169.60	-0.0019	
24	20	20	20	20	20	20	0.52	31,789.95	178.30	-0.0044	
25	0	0	100	0	0	0	-0.80	44,394.49	210.70	-0.0099	
26	2	2	90	2	2	2	-0.55	38,922.12	197.29	-0.0094	
27	4	4	80	4	4	4	-0.30	34,393.53	185.45	-0.0086	
28	6	6	70	6	6	6	-0.06	30,808.71	175.52	-0.0077	
29	8	8	60	8	8	8	0.19	28,167.67	167.83	-0.0066	
30	10	10	50	10	10	10	0.44	26,470.41	162.70	-0.0053	
31	12	12	40	12	12	12	0.69	25,716.92	160.36	-0.0038	
32	14	14	30	14	14	14	0.94	25,907.21	160.96	-0.0023	
33	16	16	20	16	16	16	1.19	27,041.28	164.44	-0.0007	
34	16.67	16.67	16.67	16.67	16.67	16.67	1.27	27,629.03	166.22	-0.0002	
35	18	18	10	18	18	18	1.43	29,119.12	170.64	0.0008	
36	20	20	0	20	20	20	1.68	32,140.74	179.28	0.0022	
37	0	0	100	0	0	0	-2.18	54,849.64	234.20	-0.0146	
38	2	2	2	90	2	2	-1.77	47,648.11	218.28	-0.0140	
39	4	4	4	80	4	4	-1.35	41,519.78	203.76	-0.0130	
40	6	6	6	70	6	6	-0.94	36,464.64	190.96	-0.0117	
41	8	8	8	60	8	8	-0.52	32,482.70	180.23	-0.0101	
42	10	10	10	50	10	10	-0.11	29,573.96	171.97	-0.0082	
43	12	12	12	40	12	12	0.30	27,738.42	166.55	-0.0060	
44	14	14	14	30	14	14	0.72	26,976.07	164.24	-0.0035	
45	16	16	16	20	16	16	1.13	27,286.92	165.19	-0.0010	
46	16.67	16.67	16.67	16.67	16.67	16.67	1.27	27,629.03	166.22	-0.0002	
47	18	18	18	10	18	18	1.54	28,670.97	169.33	0.0015	
48	20	20	20	0	20	20	1.96	31,128.21	176.43	0.0038	
49	0	0	0	100	0	0	5.43	260,712.36	510.60	0.0081	
50	2	2	2	2	90	2	4.95	213,464.49	462.02	0.0079	
51	4	4	4	4	80	4	4.45	171,474.22	414.09	0.0076	
52	6	6	6	6	70	6	3.94	134,741.55	367.07	0.0072	
53	8	8	8	8	60	8	3.44	103,266.48	321.35	0.0067	
54	10	10	10	10	50	10	2.94	77,049.02	277.58	0.0059	
55	12	12	12	12	40	12	2.44	56,089.15	236.83	0.0048	
56	14	14	14	14	30	14	1.94	40,386.89	200.96	0.0032	
57	16	16	16	16	20	16	1.44	29,942.22	173.04	0.0008	
58	16.67	16.67	16.67	16.67	16.67	16.67	1.27	27,629.03	166.22	-0.0002	
59	18	18	18	18	10	18	0.93	24,755.16	157.34	-0.0023	
60	20	20	20	0	20	20	0.43	24,825.70	157.56	-0.0055	
61	0	0	0	0	100	0	-0.87	55,932.25	236.50	-0.0092	
62	2	2	2	2	2	2	90	-0.61	48,011.66	219.12	-0.0087
63	4	4	4	4	4	80	-0.36	41,324.94	203.29	-0.0081	
64	6	6	6	6	6	70	-0.10	35,872.09	189.40	-0.0074	
65	8	8	8	8	60	8	0.16	31,653.12	177.91	-0.0064	
66	10	10	10	10	50	10	0.41	28,668.03	169.32	-0.0052	
67	12	12	12	12	40	12	0.67	26,916.81	164.06	-0.0038	
68	14	14	14	14	30	14	0.93	26,399.46	162.48	-0.0023	
69	16	16	16	16	20	16	1.18	27,115.99	164.67	-0.0007	
70	16.67	16.67	16.67	16.67	16.67	16.67	1.27	27,629.03	166.22	-0.0002	
71	18	18	18	18	18	18	1.44	29,066.39	170.49	0.0008	
72	20	20	20	20	0	20	1.70	32,250.67	179.58	0.0022	

Alternatif 20 untuk 6 saham (TLKM, ISAT, TCID, PGIN, LSIP, UNSP)

Ret. No.	Beban						Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Sharpe (RF=1.296)
	TLKM	ISAT	TCID	PGIN	LSIP	UNSP				
1	0	0	0	0	0	0	0.98	59,976.01	244.90	-0.0013
2	2	2	2	2	2	2	1.17	52,110.99	228.28	-0.0006
3	4	4	4	4	4	4	1.36	45,185.06	212.57	0.0003
4	6	6	6	6	6	6	1.55	39,198.22	197.99	0.0013
5	8	8	8	8	8	8	1.74	34,150.46	184.80	0.0024
6	10	10	10	10	10	10	1.93	30,041.79	173.33	0.0036
7	12	12	12	12	12	12	2.12	26,872.20	163.93	0.0050
8	14	14	14	14	14	14	2.30	24,641.71	156.98	0.0064
9	16	16	16	16	16	16	2.49	23,350.30	152.81	0.0078
10	16.67	16.67	16.67	16.67	16.67	16.67	2.56	23,128.51	152.08	0.0083
11	18	18	18	18	18	18	2.68	22,997.98	151.65	0.0091
12	20	20	20	20	20	20	2.87	23,584.74	153.57	0.0103
13	0	100	0	0	0	0	5.03	73,116.16	270.40	0.0138
14	2	90	2	2	2	2	4.73	61,157.30	247.30	0.0139
15	4	80	4	4	4	4	4.44	50,823.99	225.44	0.0139
16	6	70	6	6	6	6	4.14	42,116.23	205.22	0.0139
17	8	60	8	8	8	8	3.84	35,034.01	187.17	0.0136
18	10	50	10	10	10	10	3.55	29,577.34	171.98	0.0131
19	12	40	12	12	12	12	3.25	25,746.22	160.46	0.0122
20	14	30	14	14	14	14	2.95	23,540.65	153.43	0.0108
21	16	20	16	16	16	16	2.66	22,960.62	151.53	0.0100
22	16.67	16.67	16.67	16.67	16.67	16.67	2.56	23,128.51	152.08	0.0103
23	18	18	18	18	18	18	2.36	24,006.14	154.94	0.0099
24	20	0	20	20	20	20	2.06	26,677.21	163.33	0.0047
25	0	0	100	0	0	0	-0.80	44,394.49	210.70	-0.0099
26	2	2	90	2	2	2	-0.40	38,666.67	196.64	-0.0086
27	4	4	80	4	4	4	0.01	33,805.00	183.86	-0.0070
28	6	6	70	6	6	6	0.41	29,809.50	172.65	-0.0051
29	8	8	60	8	8	8	0.81	26,680.14	163.34	-0.0030
30	10	10	50	10	10	10	1.21	24,416.94	156.26	-0.0005
31	12	12	40	12	12	12	1.62	23,019.90	151.72	0.0021
32	14	14	30	14	14	14	2.02	22,489.01	149.96	0.0048
33	16	16	20	16	16	16	2.42	22,824.28	151.08	0.0075
34	16.67	16.67	16.67	16.67	16.67	16.67	2.56	23,128.51	152.08	0.0083
35	18	18	18	18	18	18	2.83	24,025.70	155.00	0.0099
36	20	20	0	20	20	20	3.23	26,093.28	161.53	0.0120
37	0	0	0	100	0	0	5.33	70,343.27	282.80	0.0146
38	2	2	2	90	2	2	5.19	6,498.55	97.46	0.0400
39	4	4	4	80	4	4	4.83	9,287.46	96.37	0.0367
40	6	6	6	70	6	6	4.47	9,729.96	98.64	0.0332
41	8	8	8	60	8	8	4.11	10,826.06	104.05	0.0271
42	10	10	10	50	10	10	3.75	12,575.76	112.14	0.0219
43	12	12	12	40	12	12	3.39	14,979.06	122.39	0.0171
44	14	14	14	30	14	14	3.04	18,035.95	134.30	0.0130
45	16	16	16	20	16	16	2.68	21,746.44	147.47	0.0094
46	16.67	16.67	16.67	16.67	16.67	16.67	2.56	23,128.51	152.08	0.0083
47	18	18	18	18	18	18	2.32	26,110.53	161.59	0.0063
48	20	20	20	0	20	20	1.96	31,128.21	176.43	0.0038
49	0	0	0	0	100	0	5.43			

12  
21 untuk 6 saham (TLKM, ISAT, MRAT, PGHN, LSIP, UNSP)

TLKM	Beban					Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Sharpe (Rf=1.296)
	ISAT	MRAT	PGHN	LSIP	UNSP				
0.98	5.03	-2.18	5.55	5.45	-0.87				
34.09	27.04	23.42	10.18	51.06	23.65				
100	0	0	0	0	0	0.98	59,976.01	244.90	-0.0013
90	2	2	2	2	2	1.14	52,252.94	228.59	-0.0007
80	4	4	4	4	4	1.30	45,459.32	213.21	0.0000
70	6	6	6	6	6	1.46	39,595.17	198.99	0.0008
60	8	8	8	8	8	1.63	34,660.47	186.17	0.0018
50	10	10	10	10	10	1.79	30,655.24	175.09	0.0028
40	12	12	12	12	12	1.95	27,579.46	166.07	0.0039
30	14	14	14	14	14	2.11	25,433.14	159.48	0.0051
20	16	16	16	16	16	2.27	24,216.29	155.62	0.0063
16.67	16.67	16.67	16.67	16.67	16.67	2.33	24,017.21	154.97	0.0067
10	18	18	18	18	18	2.43	23,928.89	154.69	0.0074
0	20	20	20	20	20	2.60	24,570.93	156.75	0.0083
0	100	0	0	0	0	5.03	73,116.16	270.40	0.0138
2	90	2	2	2	2	4.71	61,728.05	248.45	0.0137
4	80	4	4	4	4	4.38	51,838.92	227.68	0.0136
6	70	6	6	6	6	4.06	43,448.76	208.44	0.0132
8	60	8	8	8	8	3.73	36,557.57	191.20	0.0127
10	50	10	10	10	10	3.41	31,165.36	176.54	0.0120
12	40	12	12	12	12	3.08	27,272.11	165.14	0.0108
14	30	14	14	14	14	2.76	24,877.84	157.73	0.0093
16	20	16	16	16	16	2.43	23,982.54	154.86	0.0074
16.67	16.67	16.67	16.67	16.67	16.67	2.33	24,017.21	154.97	0.0067
18	10	18	18	18	18	2.11	24,586.21	156.80	0.0052
20	0	20	20	20	20	1.79	26,688.86	163.37	0.0030
0	0	100	0	0	0	-2.18	54,849.64	234.20	-0.0148
2	2	90	2	2	2	-1.64	47,523.03	218.00	-0.0135
4	4	80	4	4	4	-1.10	41,185.52	202.94	-0.0118
6	6	70	6	6	6	-0.56	35,837.11	189.31	-0.0098
8	8	60	8	8	8	-0.02	31,477.82	177.42	-0.0074
10	10	50	10	10	10	0.52	28,107.63	167.65	-0.0046
12	12	40	12	12	12	1.06	25,726.55	160.39	-0.0014
14	14	30	14	14	14	1.61	24,334.57	156.00	0.0020
16	16	20	16	16	16	2.15	23,931.70	154.70	0.0055
16.67	16.67	16.67	16.67	16.67	16.67	2.33	24,017.21	154.97	0.0067
18	18	10	18	18	18	2.69	24,517.94	156.38	0.0089
20	20	0	20	20	20	3.23	26,093.28	161.53	0.0120
0	0	0	100	0	0	7.35	20,949.34	107.89	0.0478
2	2	2	90	2	2	5.16	9,628.92	98.13	0.0394
4	4	4	80	4	4	4.78	9,541.72	97.68	0.0356
6	6	6	70	6	6	4.39	10,101.65	100.51	0.0308
8	8	8	60	8	8	4.00	11,308.71	106.34	0.0255
10	10	10	50	10	10	3.62	13,162.89	114.73	0.0202
12	12	12	40	12	12	3.23	15,664.21	125.16	0.0154
14	14	14	30	14	14	2.84	18,812.65	137.16	0.0113
16	16	16	20	16	16	2.46	22,608.22	150.36	0.0077
16.67	16.67	16.67	16.67	16.67	16.67	2.33	24,017.21	154.97	0.0067
18	18	18	10	18	18	2.07	27,050.91	164.47	0.0047
20	20	20	0	20	20	1.68	32,140.74	179.28	0.0022
0	0	0	0	100	0	5.45	260,712.36	510.60	0.0081
2	2	2	2	90	2	5.08	212,675.64	461.17	0.0082
4	4	4	4	80	4	4.70	169,993.45	412.30	0.0083
6	6	6	6	70	6	4.33	132,665.80	364.23	0.0083
8	8	8	8	60	8	3.95	100,692.69	317.32	0.0084
10	10	10	10	50	10	3.58	74,074.12	272.17	0.0084
12	12	12	12	40	12	3.20	52,810.09	229.80	0.0083
14	14	14	14	30	14	2.83	36,900.39	192.10	0.0080
16	16	16	16	20	16	2.45	26,345.63	162.31	0.0071
16.67	16.67	16.67	16.67	16.67	16.67	2.33	24,017.21	154.97	0.0067
18	18	18	18	10	18	2.08	21,143.21	145.41	0.0054
20	20	20	20	0	20	1.70	21,299.33	145.94	0.0028
0	0	0	0	0	100	-0.87	55,932.25	236.50	-0.0092
2	2	2	2	2	90	-0.49	47,478.15	217.89	-0.0082
4	4	4	4	4	80	-0.10	40,285.22	200.71	-0.0070
6	6	6	6	6	70	0.28	34,353.46	185.35	-0.0055
8	8	8	8	8	60	0.66	29,682.87	172.79	-0.0037
10	10	10	10	10	50	1.05	26,273.46	162.09	-0.0015
12	12	12	12	12	40	1.43	24,125.22	155.32	0.0009
14	14	14	14	14	30	1.82	23,238.15	152.44	0.0034
16	16	16	16	16	20	2.20	23,612.25	153.66	0.0059
16.67	16.67	16.67	16.67	16.67	16.67	2.33	24,017.21	154.97	0.0067
18	18	18	18	18	10	2.58	25,247.53	158.89	0.0081
20	20	20	20	0	20	2.97	28,143.98	167.76	0.0100

22 untuk 6 saham (TLKM, ISAT, UNVR, MRAT, PGIN, LSIP)

TLKM	ISAT	Bebat					Return Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (Rp=1,296)
		UNVR	MRAT	PGIN	LSIP					
0	0	0	0	0	0	0.98	39.976.01	244.90	-0.0013	
0	2	2	2	2	2	1.17	52.354.25	229.23	-0.0006	
0	4	4	4	4	4	1.35	45.928.56	214.31	0.0003	
0	6	6	6	6	6	1.54	40.098.95	200.25	0.0012	
0	8	8	8	8	8	1.72	35.065.41	187.26	0.0023	
0	10	10	10	10	10	1.91	30.827.96	175.98	0.0035	
0	12	12	12	12	12	2.10	27.386.58	165.49	0.0048	
0	14	14	14	14	14	2.28	24.741.27	157.29	0.0063	
0	16	16	16	16	16	2.47	22.892.04	151.30	0.0078	
16.67	16.67	16.67	16.67	16.67	16.67	2.53	22.452.54	149.84	0.0082	
18	18	18	18	18	18	2.66	21.838.89	147.78	0.0092	
20	20	20	20	20	20	2.84	21.581.82	146.91	0.0105	
0	100	0	0	0	0	5.03	73.116.16	270.40	-0.0138	
2	90	2	2	2	2	4.73	62.231.90	249.46	-0.0138	
4	80	4	4	4	4	4.43	52.658.00	229.47	-0.0137	
6	70	6	6	6	6	4.13	44.394.45	210.70	-0.0135	
8	60	8	8	8	8	3.83	37.441.24	193.50	-0.0131	
10	50	10	10	10	10	3.53	31.798.39	178.32	-0.0125	
12	40	12	12	12	12	3.23	27.465.89	165.73	-0.0117	
14	30	14	14	14	14	2.93	24.443.75	156.34	-0.0105	
16	20	16	16	16	16	2.63	22.731.95	150.77	-0.0089	
16.67	16.67	16.67	16.67	16.67	16.67	2.53	22.452.54	149.84	0.0082	
18	10	18	18	18	18	2.33	22.330.51	149.43	0.0069	
20	0	20	20	20	20	2.03	23.239.41	152.44	0.0048	
0	0	100	0	0	0	0.36	24.118.09	155.30	-0.0060	
2	2	90	2	2	2	0.62	21.267.42	145.83	-0.0046	
4	4	80	4	4	4	0.88	19.139.70	138.35	-0.0030	
6	6	70	6	6	6	1.14	17.734.93	133.17	-0.0012	
8	8	60	8	8	8	1.40	17.053.10	130.59	0.0006	
10	10	50	10	10	10	1.66	17.094.22	130.74	0.0028	
12	12	40	12	12	12	1.92	17.828.28	133.63	0.0047	
14	14	30	14	14	14	2.18	19.345.28	139.09	0.0064	
16	16	20	16	16	16	2.44	21.555.24	146.82	0.0078	
16.67	16.67	16.67	16.67	16.67	16.67	2.53	22.452.54	149.84	0.0082	
18	18	18	18	18	18	2.71	24.488.13	156.49	0.0090	
20	20	0	20	20	20	2.97	28.143.98	167.76	0.0100	
0	0	0	100	0	0	-2.18	54.849.64	234.20	-0.0148	
2	2	2	90	2	2	-1.61	46.739.36	216.24	-0.0135	
4	4	4	80	4	4	-1.05	39.815.25	199.54	-0.0118	
6	6	6	70	6	6	-0.48	34.017.31	184.44	-0.0096	
8	8	8	60	8	8	0.08	29.365.54	171.36	-0.0071	
10	10	10	50	10	10	0.65	25.829.95	160.81	-0.0040	
12	12	12	40	12	12	1.21	23.500.53	153.30	-0.0025	
14	14	14	30	14	14	1.78	22.287.28	149.29	0.0032	
16	16	16	20	16	16	2.34	22.220.20	149.06	0.0070	
16.67	16.67	16.67	16.67	16.67	16.67	2.53	22.452.54	149.84	0.0082	
18	18	18	18	18	18	2.91	23.299.29	152.64	0.0106	
20	20	20	0	20	20	3.47	25.524.55	159.76	0.0136	
0	0	0	0	100	0	5.55	10.363.24	101.80	0.0418	
2	2	2	2	90	2	5.19	9.413.88	97.03	0.0401	
4	4	4	4	80	4	4.83	9.119.08	95.49	0.0370	
6	6	6	6	70	6	4.46	9.478.85	97.36	0.0325	
8	8	8	8	60	8	4.10	10.493.19	102.44	0.0274	
10	10	10	10	50	10	3.74	12.162.09	110.28	0.0222	
12	12	12	12	40	12	3.38	14.485.57	120.36	0.0173	
14	14	14	14	30	14	3.01	17.463.61	132.15	0.0130	
16	16	16	16	20	16	2.65	21.096.21	145.25	0.0093	
16.67	16.67	16.67	16.67	16.67	16.67	2.53	22.452.54	149.84	0.0082	
18	18	18	18	18	18	2.29	25.303.39	159.32	0.0062	
20	20	20	20	0	20	1.93	30.325.13	174.14	0.0036	
0	0	0	0	0	100	5.45	260.712.36	510.60	0.0081	
2	2	2	2	2	90	5.10	212.305.08	460.77	0.0063	
4	4	4	4	4	80	4.75	189.302.20	411.46	0.0044	
6	6	6	6	6	70	4.40	131.703.70	362.91	0.0066	
8	8	8	8	8	60	4.05	99.509.80	315.45	0.0087	
10	10	10	10	10	50	3.70	72.719.88	269.67	0.0089	
12	12	12	12	12	40	3.35	51.334.56	226.57	0.0091	
14	14	14	14	14	30	3.00	35.353.62	188.03	0.0091	
16	16	16	16	16	20	2.65	24.777.08	157.41	0.0086	
16.67	16.67	16.67	16.67	16.67	16.67	2.53	22.452.54	149.84	0.0082	
18	18	18	18	18	18	2.30	19.604.93	140.02	0.0072	
20	20	20	20	20	0	1.95	19.837.17	140.84	0.0046	

Alternatif 23 untuk 6 saham (TLKM, ISAT, UNVR, MRAT, PGIN, UNSP)

TLKM	ISAT	Bebat					Return Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (Rp=1,296)
		UNVR	MRAT	PGIN	UNSP					
1	100	0	0	0	0	0.98	39.976.01	244.90	-0.0013	
2	90	2	2	2	2	1.04	52.213.35	228.50	-0.0011	
3	80	4	4	4	4	1.10	45.189.21	212.58	-0.0009	
4	70	6	6	6	6	1.16	38.903.60	197.24	-0.0007	
5	60	8	8	8	8	1.22	33.356.51	182.64	-0.0004	
6	50	10	10	10	10	1.28	28.547.94	168.96	-0.0001	
7	40	12	12	12	12	1.34	24.477.89	156.45	0.0003	
8	30	14	14	14	14	1.40	21.146.37	145.42	0.0007	
9	20	16	16	16	16	1.46	18.553.37	136.21	0.0012	
10	16.67	16.67	16.67	16.67	16.67	1.48	17.853.15	133.62	0.0014	
11	10	18	18	18	18	1.52	16.698.89	129.22	0.0017	
12	0	20	20	20	20	1.58	15.582.94	124.83	0.0023	
13	0	100	0	0	0	5.03	73.116.16	270.40	-0.0138	
14	2	90	2	2	2	4.60	62.085.42	249.17	-0.0133	
15	4	80	4	4	4	4.18	52.254.45	228.59	-0.0126	
16	6	70	6	6	6	3.75	43.623.26	208.86	-0.0118	
17	8	60	8	8	8	3.33	36.191.85	190.24	-0.0107	
18	10	50	10	10	10	2.90	29.960.21	173.09	-0.0093	
19	12	40	12	12	12	2.47	24.928.35	157.89	-0.0075	
20	14	30	14	14	14	2.05	21.096.27	145.25	-0.0052	
21	16	20	16	16	16	1.62	18.463.97	135.88	-0.0024	
22	16.67	16.67	16.67	16.67	16.67	1.48	17.853.15	133.62	0.0014	
23	18	18	18	18	18	1.19	17.031.44	130.50	-0.0008	
24	20	0	20	20	20	0.77	16.798.69	129.61	-0.0041	
25	0	0	100	0	0	0.36	24.118.09	155.30	-0.0060	
26	2	2	90	2	2	0.49	21.268.66	145.94	-0.0055	
27	4	4	80	4	4	0.63	19.043.13	138.00	-0.0048	
28	6	6	70	6	6	0.76	17.351.51	131.73	-0.0040	
29	8	8	60	8	8	0.90	16.223.78	127.57	-0.0031	
30	10	10	50	10	10	1.03	15.659.96	125.14	-0.0021	
31	12	12	40	12	12	1.17	15.660.03	125.14	-0.0010	
32	14	14	30	14	14	1.30	16.224.00	127.37	0.0003	
33	16	16	20	16	16	1.43	17.331.88	131.73	0.0010	
34	16.67	16.67	16.67	16.67	16.67	1.48	17.853.15	133.62	0.0014	
35	18	18	18	18	18	1.57	16.643.66	138.00	0.0020	
36	20	20	0	20	20	1.70	21.299.33	145.94	0.0028	
37	0	0	0	100	0	-2.18	54.849.64	234.20	-0.0148	
38	2	2	2	90	2	-1.74	47.462.92	217.86	-0.0139	
39	4	4	4	80	4	-1.30	40.679.96	202.19	-0.0128	
40	6	6	6	70	6	-0.86	35.100.77	187.35	-0.0115	
41	8	8	8	60	8	-0.42	30.125.34	173.57	-0.0099	
42	10	10	10	50	10	0.02	25.953.69	161.10	-0.0080	
43	12	12	12	40	12	0.45	22.585.80	150.29	-0.0056	
44	14	14	14	30	14	0.89	20.021.68	141.50	-0.0026	
45	16	16	16	20	16	1.33	18.261.32	135.13	0.0003	
46	16.67	16.67	16.67	16.67	16.67	1.48	17.853.15	133.62	0.0014	
47	18	18	18	18	18	1.77	17.304.73	131.55	0.0026	
48	20	20	0	20	20	2.21	17.151.91	130.97	0.0070	
49	0	0	0	0	100	5.55	10.363.24	101.80	0.0418	
50	2	2	2	2	90	5.06	9.525.26	97.60	0.0386	
51	4	4	4	4	80	4.57	9.160.95	95.71	0.0342	
52	6	6	6	6	70	4.08	9.270.30	96.28	0.0290	
53	8	8	8	8	60	3.60	9.853.31	99.26	0.0232	
54	10	10	10	10	50	3.11	10.909.99	104.45	0.0173	
55	12	12	12	12	40	2.62	12.440.33	111.54	0.0119	
56	14	14	14	14	30	2.13	14.444.34	120.18	0.0069	
57	16	16	16	16	20	1.64	16.922.00	130.08	0.0027	
58	16.67	16.67	16.67	16.67	16.67	1.48	17			

Alternatif 24 untuk 6 saham (TLKM, ISAT, UNVR, MRAT, LSIP, UNSP)

Ret. SD.	Beban					Return Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (RF=1.296)
	TLKM	ISAT	UNVR	MRAT	LSIP				
1	100	0	0	0	0	0.98	39,976.01	244.90	-0.0013
2	90	2	2	2	2	1.04	52,551.55	229.24	-0.0011
3	80	4	4	4	4	1.10	46,036.35	214.56	-0.0009
4	70	6	6	6	6	1.15	40,430.39	201.07	-0.0007
5	60	8	8	8	8	1.21	35,733.68	189.03	-0.0004
6	50	10	10	10	10	1.27	31,946.23	178.74	-0.0002
7	40	12	12	12	12	1.33	29,068.02	170.49	0.0002
8	30	14	14	14	14	1.38	27,099.07	164.62	0.0005
9	20	16	16	16	16	1.44	26,039.36	161.37	0.0009
10	16.67	16.67	16.67	16.67	16.67	1.46	25,888.18	160.90	0.0010
11	18	18	18	18	18	1.50	25,888.91	160.90	0.0013
12	20	20	20	20	20	1.56	26,647.70	163.24	0.0016
13	100	0	0	0	0	5.03	73,116.16	270.40	0.0138
14	90	2	2	2	2	4.60	61,918.39	248.83	0.0133
15	80	4	4	4	4	4.17	52,228.92	228.54	0.0126
16	70	6	6	6	6	3.75	44,047.74	209.88	0.0117
17	60	8	8	8	8	3.32	37,374.86	193.33	0.0105
18	50	10	10	10	10	2.89	32,210.26	179.47	0.0089
19	40	12	12	12	12	2.46	28,553.96	168.98	0.0069
20	30	14	14	14	14	2.03	26,405.96	162.30	0.0045
21	20	16	16	16	16	1.60	25,766.24	160.52	0.0019
22	16.67	16.67	16.67	16.67	16.67	1.46	25,888.18	160.90	0.0010
23	18	18	18	18	18	1.18	26,634.82	163.20	-0.0007
24	20	20	20	20	20	0.73	29,011.69	170.33	-0.0032
25	0	100	0	0	0	0.36	24,118.09	155.30	-0.0060
26	2	90	2	2	2	0.49	21,735.14	147.43	-0.0055
27	4	80	4	4	4	0.62	20,060.02	141.63	-0.0047
28	6	70	6	6	6	0.76	19,092.73	138.18	-0.0039
29	8	60	8	8	8	0.89	18,833.25	137.23	-0.0030
30	10	50	10	10	10	1.02	19,281.61	138.86	-0.0020
31	12	40	12	12	12	1.15	20,437.78	142.96	-0.0010
32	14	30	14	14	14	1.29	22,301.79	149.34	-0.0001
33	16	20	16	16	16	1.42	24,873.61	157.71	0.0008
34	16.67	16.67	16.67	16.67	16.67	1.46	25,888.18	160.90	0.0010
35	18	18	18	18	18	1.53	28,153.26	167.79	0.0015
36	20	20	20	20	20	1.68	32,140.74	179.28	0.0022
37	0	0	100	0	0	-2.18	34,849.64	234.20	-0.0148
38	2	2	90	2	2	-1.74	47,526.63	218.01	-0.0139
39	4	4	80	4	4	-1.31	41,252.97	203.11	-0.0128
40	6	6	70	6	6	-0.87	36,028.67	189.81	-0.0114
41	8	8	60	8	8	-0.43	31,853.73	178.48	-0.0097
42	10	10	50	10	10	0.00	28,728.14	169.49	-0.0076
43	12	12	40	12	12	0.44	26,651.90	163.25	-0.0052
44	14	14	30	14	14	0.88	25,625.02	160.08	-0.0026
45	16	16	20	16	16	1.32	25,647.30	160.15	0.0001
46	16.67	16.67	16.67	16.67	16.67	1.46	25,888.18	160.90	0.0010
47	18	18	18	18	18	1.75	26,719.33	163.46	0.0028
48	20	20	20	20	20	2.19	28,840.51	169.82	0.0053
49	0	0	0	100	0	5.45	260,712.36	510.60	0.0081
50	2	2	2	90	2	4.97	213,008.47	461.53	0.0080
51	4	4	4	80	4	4.49	170,629.57	413.87	0.0077
52	6	6	6	70	6	4.01	133,575.67	365.48	0.0074
53	8	8	8	60	8	3.54	101,846.77	319.13	0.0070
54	10	10	10	50	10	3.06	75,442.87	274.67	0.0064
55	12	12	12	40	12	2.58	54,363.97	233.16	0.0055
56	14	14	14	30	14	2.10	38,610.06	196.49	0.0041
57	16	16	16	20	16	1.62	28,181.15	167.87	0.0019
58	16.67	16.67	16.67	16.67	16.67	1.46	25,888.18	160.90	0.0010
59	18	18	18	18	18	1.14	23,077.24	151.91	-0.0010
60	20	20	20	20	20	0.66	23,298.33	152.64	-0.0041
61	0	0	0	0	100	-0.87	55,932.25	236.30	-0.0092
62	2	2	2	2	90	-0.59	47,730.83	218.47	-0.0086
63	4	4	4	4	80	-0.31	40,782.89	201.95	-0.0080
64	6	6	6	6	70	-0.03	35,088.45	187.32	-0.0071
65	8	8	8	8	60	0.25	30,647.50	175.06	-0.0060
66	10	10	10	10	50	0.53	27,460.05	165.71	-0.0046
67	12	12	12	12	40	0.81	25,526.08	158.77	-0.0030
68	14	14	14	14	30	1.09	24,845.60	157.62	-0.0013
69	16	16	16	16	20	1.37	25,418.62	159.43	0.0005
70	16.67	16.67	16.67	16.67	16.67	1.46	25,888.18	160.90	0.0010
71	18	18	18	18	18	1.65	27,245.13	165.06	0.0021
72	20	20	20	20	20	1.93	30,325.13	174.14	0.0036

Alternatif 25 untuk 6 saham (TLKM, ISAT, UNVR, PGIN, LSIP, UNSP)

Ret. SD.	Beban						Return Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharpe (RF=1.296)
	TLKM	ISAT	UNVR	PGIN	LSIP	UNSP				
1	100	0	0	0	0	0	0.98	39,976.01	244.90	-0.0013
2	90	2	2	2	2	2	1.19	52,004.55	228.05	-0.0009
3	80	4	4	4	4	4	1.40	44,946.65	212.01	-0.0005
4	70	6	6	6	6	6	1.62	38,802.31	196.98	-0.0001
5	60	8	8	8	8	8	1.83	33,571.54	183.23	0.0003
6	50	10	10	10	10	10	2.04	29,254.32	171.04	0.0004
7	40	12	12	12	12	12	2.25	25,850.67	160.78	0.0005
8	30	14	14	14	14	14	2.47	23,360.58	152.84	0.0007
9	20	16	16	16	16	16	2.68	21,784.05	147.59	0.0009
10	16.67	16.67	16.67	16.67	16.67	16.67	2.75	21,461.56	146.50	0.0009
11	18	18	18	18	18	18	2.89	21,121.89	145.33	0.0110
12	20	20	20	20	20	20	3.10	21,371.68	146.19	0.0174
13	0	100	0	0	0	0	5.03	73,116.16	270.40	0.0138
14	2	90	2	2	2	2	4.76	61,252.73	247.49	0.0149
15	4	80	4	4	4	4	4.48	50,934.27	225.69	0.0141
16	6	70	6	6	6	6	4.21	42,160.77	205.33	0.0132
17	8	60	8	8	8	8	3.94	34,932.24	186.90	0.0141
18	10	50	10	10	10	10	3.66	29,248.68	171.02	0.0138
19	12	40	12	12	12	12	3.39	25,110.08	158.46	0.0132
20	14	30	14	14	14	14	3.11	22,516.45	150.05	0.0121
21	16	20	16	16	16	16	2.84	21,467.79	146.52	0.0105
22	16.67	16.67	16.67	16.67	16.67	16.67	2.75	21,461.56	146.50	0.0099
23	18	18	18	18	18	18	2.57	21,964.09	148.20	0.0094
24	20	20	20	20	20	20	2.29	24,005.36	154.94	0.0094
25	0	0	100	0	0	0	0.36	24,118.09	155.30	-0.0020
26	2	2	90	2	2	2	0.65	21,527.57	146.72	-0.0044
27	4	4	80	4	4	4	0.93	19,556.62	139.84	-0.0024
28	6	6	70	6	6	6	1.22	18,205.23	134.93	-0.0004
29	8	8	60	8	8	8	1.51	17,473.41	132.19	0.0014
30	10	10	50	10	10	10	1.79	17,361.14	131.76	0.0030
31	12	12	40	12	12	12	2.08	17,868.44	133.67	0.0039
32	14	14	30	14	14	14	2.37	18,995.31	137.82	0.0047
33	16	16	20	16	16	16	2.65	20,741.74	144.02	0.0054
34	16.67	16.67	16.67	16.67	16.67	16.67	2.75	21,461.56	146.50	0.0059
35	18	18	18	18	18	18	2.94	23,107.73	152.01	0.0108
36	20	20	20	20	20	20	3.23	26,093.28	161.53	0.0120
37	0	0	0	100	0	0	5.55	10,363.24	101.80	0.0418
38	2	2	2	90	2	2	5.21	9,424.95	97.08	0.0404
39	4	4	4	80	4	4	4.88	9,103.77	95.42	0.0375
40	6	6	6	70	6	6	4.54	9,405.71	96.98	0.0315
41	8	8	8	60	8	8	4.21	10,324.77	101.61	0.0286
42	10	10	10	50	10	10	3.87	11,862.94	108.93	0.0236
43	12	12	12	40	12	12	3.53	14,020.22	118.41	0.0189
44	14	14	14	30	14	14	3.20	16,796.62	129.60	0.0147
45	16	16	16	20	16	16	2.86	20,192.14	142.10	0.0116
46	16.67	16.67	16.67	16.67	16.67	16.67	2.75	21,461.56	146.50	0.0099
47	18	18	18	18	18	18	2.53	24,206.77	155.59	0.0079
48	20	20	20	20	20	20	2.19	28,840.51	169.82	0.0053
49	0	0	0	0	100	0	5.45	260,712.36	510.60	0.0081
50	2	2	2	2	90	2	5.13	212,844.44	461.35	0.0083
51	4	4	4	4	80	4	4.80	170,201.38	412.55	0.0082
52	6	6	6	6	70	6	4.48	132,783.18	364.39	0.0082
53	8	8	8	8	60	8	4.15	100,989.84	317.16	0.0082
54	10	10	10	10	50	10	3.83	73,621.37		

Alternatif 16 untuk 6 saham (TLKM, ISAT, UNVR, TCID, PGN, LSIP)

No.	Beban						Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Sharpe (Rf=1,296)
	TLKM	ISAT	UNVR	TCID	PGN	LSIP				
100	0	0	0	0	0	0,98	59.976,01	244,90	-0,0013	
90	2	2	2	2	2	1,19	52.421,28	228,96	-0,0004	
80	4	4	4	4	4	1,41	45.690,20	213,75	0,0005	
70	6	6	6	6	6	1,62	39.782,77	199,46	0,0016	
60	8	8	8	8	8	1,84	34.699,00	186,28	0,0029	
50	10	10	10	10	10	2,05	30.438,89	174,47	0,0043	
40	12	12	12	12	12	2,26	27.002,43	164,32	0,0059	
30	14	14	14	14	14	2,48	24.389,62	156,17	0,0076	
20	16	16	16	16	16	2,69	22.600,47	150,33	0,0093	
16,67	16,67	16,67	16,67	16,67	16,67	2,76	22.187,12	148,95	0,0098	
18	18	18	18	18	18	2,90	21.634,97	147,09	0,0109	
20	20	20	20	20	20	3,12	21.493,13	146,61	0,0124	
100	0	0	0	0	0	5,03	73.116,16	278,40	0,0138	
90	2	2	2	2	2	4,76	61.670,13	248,33	0,0139	
80	4	4	4	4	4	4,49	51.678,97	227,33	0,0140	
70	6	6	6	6	6	4,21	43.142,69	207,71	0,0140	
60	8	8	8	8	8	3,94	36.061,29	189,90	0,0139	
50	10	10	10	10	10	3,67	30.434,76	174,46	0,0136	
40	12	12	12	12	12	3,40	26.263,11	162,06	0,0130	
30	14	14	14	14	14	3,12	23.546,34	153,43	0,0119	
20	16	16	16	16	16	2,85	22.284,43	149,28	0,0104	
16,67	16,67	16,67	16,67	16,67	16,67	2,76	22.187,12	148,95	0,0098	
18	18	18	18	18	18	2,58	22.477,43	149,92	0,0096	
20	20	20	20	20	20	2,31	24.125,29	155,32	0,0065	
100	0	0	0	0	0	0,36	24.118,09	153,30	-0,0060	
90	2	2	2	2	2	0,63	21.447,56	146,45	-0,0044	
80	4	4	4	4	4	0,94	19.442,16	139,44	-0,0026	
70	6	6	6	6	6	1,22	18.101,89	134,54	-0,0025	
60	8	8	8	8	8	1,51	17.426,75	132,01	0,0016	
50	10	10	10	10	10	1,80	17.416,75	131,97	0,0038	
40	12	12	12	12	12	2,09	18.071,87	134,43	0,0039	
30	14	14	14	14	14	2,38	19.392,13	139,26	0,0078	
20	16	16	16	16	16	2,67	21.377,52	146,21	0,0094	
16,67	16,67	16,67	16,67	16,67	16,67	2,76	22.187,12	148,95	0,0098	
18	18	18	18	18	18	2,95	24.028,04	155,01	0,0107	
20	20	20	20	20	20	3,24	27.343,69	165,36	0,0116	
100	0	0	0	0	0	-0,80	44.394,49	210,70	-0,0099	
90	2	2	2	2	2	-0,37	38.306,89	195,72	-0,0083	
80	4	4	4	4	4	0,05	33.152,75	182,08	-0,0068	
70	6	6	6	6	6	0,48	28.932,09	170,09	-0,0048	
60	8	8	8	8	8	0,91	25.644,89	160,14	-0,0024	
50	10	10	10	10	10	1,34	23.291,16	152,61	0,0003	
40	12	12	12	12	12	1,76	21.870,90	147,89	0,0032	
30	14	14	14	14	14	2,19	21.384,11	146,23	0,0061	
20	16	16	16	16	16	2,62	21.830,79	147,75	0,0090	
16,67	16,67	16,67	16,67	16,67	16,67	2,76	22.187,12	148,95	0,0098	
18	18	18	18	18	18	3,05	23.210,94	152,35	0,0115	
20	20	20	20	20	20	3,47	25.524,53	159,76	0,0136	
100	0	0	0	0	0	5,55	10.363,24	101,80	0,0418	
90	2	2	2	2	2	5,22	9.292,49	96,40	0,0407	
80	4	4	4	4	4	4,88	8.900,72	94,34	0,0380	
70	6	6	6	6	6	4,55	9.187,94	95,85	0,0339	
60	8	8	8	8	8	4,21	10.154,15	100,77	0,0289	
50	10	10	10	10	10	3,88	11.799,34	108,62	0,0238	
40	12	12	12	12	12	3,54	14.123,52	118,84	0,0189	
30	14	14	14	14	14	3,21	17.126,69	130,87	0,0146	
20	16	16	16	16	16	2,87	20.808,85	144,25	0,0109	
16,67	16,67	16,67	16,67	16,67	16,67	2,76	22.187,12	148,95	0,0098	
18	18	18	18	18	18	2,54	25.169,99	158,65	0,0078	
20	20	20	20	20	20	2,20	30.210,12	173,81	0,0052	
100	0	0	0	0	0	5,45	260.712,36	516,60	0,0081	
90	2	2	2	2	2	5,13	212.937,82	461,45	0,0083	
80	4	4	4	4	4	4,80	170.386,42	412,78	0,0083	
70	6	6	6	6	6	4,48	133.058,15	364,77	0,0087	
60	8	8	8	8	8	4,16	100.953,03	317,73	0,0090	
50	10	10	10	10	10	3,84	74.071,05	272,16	0,0093	
40	12	12	12	12	12	3,51	52.412,21	228,94	0,0097	
30	14	14	14	14	14	3,19	35.976,51	189,67	0,0100	
20	16	16	16	16	16	2,87	24.763,94	157,37	0,0100	
16,67	16,67	16,67	16,67	16,67	16,67	2,76	22.187,12	148,95	0,0098	
18	18	18	18	18	18	2,55	18.774,52	137,02	0,0091	
20	20	20	20	20	20	2,22	18.008,24	134,19	0,0069	

Alternatif 27 untuk 6 saham (TLKM, ISAT, UNVR, TCID, PGN, UNSP)

No.	Beban						Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Sharpe (Rf=1,296)
	TLKM	ISAT	UNVR	TCID	PGN	UNSP				
1	100	0	0	0	0	0,98	59.976,01	244,90	-0,0013	
2	90	2	2	2	2	1,19	52.061,12	228,17	-0,0010	
3	80	4	4	4	4	1,15	44.873,80	211,83	-0,0007	
4	70	6	6	6	6	1,24	38.414,06	196,00	-0,0003	
5	60	8	8	8	8	1,33	32.681,91	180,78	0,0002	
6	50	10	10	10	10	1,42	27.677,32	166,37	0,0007	
7	40	12	12	12	12	1,50	23.400,32	152,97	0,0014	
8	30	14	14	14	14	1,59	19.850,90	140,89	0,0021	
9	20	16	16	16	16	1,68	17.029,03	130,50	0,0029	
10	16,67	16,67	16,67	16,67	16,67	1,71	16.250,12	127,48	0,0032	
11	18	18	18	18	18	1,77	14.934,78	122,21	0,0039	
12	20	20	20	20	20	1,83	13.568,09	116,48	0,0048	
13	0	100	0	0	0	5,03	73.116,16	278,40	0,0138	
14	2	90	2	2	2	4,76	61.670,13	248,33	0,0139	
15	4	80	4	4	4	4,49	51.678,97	227,33	0,0140	
16	6	70	6	6	6	4,21	43.142,69	207,71	0,0140	
17	8	60	8	8	8	3,94	36.061,29	189,90	0,0139	
18	10	50	10	10	10	3,67	30.434,76	174,46	0,0136	
19	12	40	12	12	12	3,40	26.263,11	162,06	0,0130	
20	14	30	14	14	14	3,12	23.546,34	153,43	0,0119	
21	16	20	16	16	16	2,85	22.284,43	149,28	0,0104	
22	16,67	16,67	16,67	16,67	16,67	2,76	22.187,12	148,95	0,0098	
23	18	18	18	18	18	2,58	22.477,43	149,92	0,0096	
24	20	20	20	20	20	2,31	24.125,29	155,32	0,0065	
25	0	0	100	0	0	0,36	24.118,09	153,30	-0,0060	
26	2	2	90	2	2	0,63	21.447,56	146,45	-0,0044	
27	4	4	80	4	4	0,94	19.442,16	139,44	-0,0026	
28	6	6	70	6	6	1,22	18.101,89	134,54	-0,0025	
29	8	8	60	8	8	1,51	17.426,75	132,01	0,0016	
30	10	10	50	10	10	1,80	17.416,75	131,97	0,0038	
31	12	12	40	12	12	2,09	18.071,87	134,43	0,0039	
32	14	14	30	14	14	2,38	19.392,13	139,26	0,0078	
33	16	16	20	16	16	2,67	21.377,52	146,21	0,0094	
34	16,67	16,67	16,67	16,67	16,67	2,76	22.187,12	148,95	0,0098	
35	18	18	18	18	18	2,95	24.028,04	155,01	0,0107	
36	20	20	20	20	20	3,24	27.343,69	165,36	0,0116	
37	0	0	0	100	0	-0,80	44.394,49	210,70	-0,0099	
38	2	2	2	90	2	-0,37	38.306,89	195,72	-0,0083	
39	4	4	4	80	4	0,05	33.152,75	182,08	-0,0068	
40	6	6	6	70	6	0,48	28.932,09	170,09	-0,0048	
41	8	8	8	60	8	0,91	25.644,89	160,14	-0,0024	
42	10	10	10	50	10	1,34	23.291,16	152,61	0,0003	
43	12	12	12	40	12	1,76	21.870,90	147,89	0,0032	
44	14	14	14	30	14	2,19	21.384,11	146,23	0,0061	
45	16	16	16	20	16	2,62	21.830,79	147,75	0,0090	
46	16,67	16,67	16,67	16,67	16,67	2,76	22.187,12	148,95	0,0098	
47	18	18	18	18	18	3,05	23.210,94	152,35	0,0115	
48	20	20	20	20	20	3,47	25.524,53	159,76	0,0136	
49	0	0	0	0	100	0	5,55	10.363,24	101,80	0,0418
50	2	2	2	2	90	2	5,22	9.292,49	96,40	0,0407
51	4	4	4	4	80	4	4,88	8.900,72	94,34	0,0380
52	6	6	6	6	70	6	4,55	9.187,94	95,85	0,0339
53	8	8	8	8	60	8	4,21	10.154,15	100,77	0,0289
54	10	10	10	10	50	10	3,88	11.799,34	108,62	0,0238
55	12	12	12	12	40	12	3,54	14.123,52	118,84	0,0189
56	14	14	14	14	30	14	3,21	17.126,69	130,87	0,0146
57	16	16	16	16	20	16	2,87	20.808,85	144,25	0,0109
58	16,67									

Portofolio 6 saham (TLKM, ISAT, UNVR, TCID, LSIP, UNSP)

No	ISAT	Beban					Return Portofolio	Varians Portofolio	Risiko Portofolio	Koefisien Sharpe (Rf=1.296)
		UNVR	TCID	LSIP	UNSP	TLKM				
1	5.03	0.36	-0.8	5.45	-0.87					
2	27.04	15.53	21.07	51.06	23.63					
3	0	0	0	0	0	0.98	59,976.01	244.90	-0.0013	
4	2	2	2	2	2	1.07	52,416.46	228.95	-0.0010	
5	4	4	4	4	4	1.15	45,789.49	213.98	-0.0007	
6	6	6	6	6	6	1.24	40,095.11	200.24	-0.0003	
7	8	8	8	8	8	1.32	35,333.31	187.97	0.0001	
8	10	10	10	10	10	1.41	31,504.10	177.49	0.0006	
9	12	12	12	12	12	1.49	28,607.46	169.14	0.0012	
10	14	14	14	14	14	1.58	26,643.42	163.23	0.0017	
11	16	16	16	16	16	1.66	25,611.95	160.04	0.0023	
12	16.67	16.67	16.67	16.67	16.67	1.69	25,475.37	159.61	0.0025	
13	18	18	18	18	18	1.75	25,513.07	159.73	0.0028	
14	20	20	20	20	20	1.83	26,346.77	162.32	0.0033	
15	0	0	0	0	0	3.03	73,116.16	270.40	0.0138	
16	2	2	2	2	2	4.63	61,354.49	247.70	0.0135	
17	4	4	4	4	4	4.23	51,241.40	226.37	0.0130	
18	6	6	6	6	6	3.83	42,776.89	206.83	0.0122	
19	8	8	8	8	8	3.43	35,960.94	189.63	0.0112	
20	10	10	10	10	10	3.03	30,793.57	175.48	0.0099	
21	12	12	12	12	12	2.63	27,274.78	165.15	0.0081	
22	14	14	14	14	14	2.23	25,404.55	159.39	0.0058	
23	16	16	16	16	16	1.83	25,182.90	158.69	0.0033	
24	16.67	16.67	16.67	16.67	16.67	1.69	25,475.37	159.61	0.0025	
25	18	18	18	18	18	1.42	26,609.83	163.13	0.0008	
26	20	20	20	20	20	1.02	29,685.33	172.29	-0.0016	
27	0	100	0	0	0	0.36	24,118.09	155.30	-0.0060	
28	2	90	2	2	2	0.52	21,913.16	148.03	-0.0052	
29	4	80	4	4	4	0.68	20,333.99	142.67	-0.0043	
30	6	70	6	6	6	0.84	19,440.98	139.43	-0.0033	
31	8	60	8	8	8	1.00	19,172.95	138.47	-0.0021	
32	10	50	10	10	10	1.16	19,551.08	139.83	-0.0010	
33	12	40	12	12	12	1.32	20,574.97	143.44	0.0002	
34	14	30	14	14	14	1.48	22,244.63	149.15	0.0012	
35	16	20	16	16	16	1.64	24,560.06	156.72	0.0022	
36	16.67	16.67	16.67	16.67	16.67	1.69	25,475.37	159.61	0.0025	
37	18	18	18	18	18	1.80	27,521.25	165.90	0.0030	
38	20	0	20	20	20	1.96	31,128.21	176.43	0.0038	
39	0	0	100	0	0	-0.80	44,394.49	210.70	-0.0099	
40	2	2	90	2	2	-0.30	36,978.65	197.43	-0.0091	
41	4	4	80	4	4	-0.20	34,420.69	185.53	-0.0081	
42	6	6	70	6	6	0.10	30,720.60	175.27	-0.0068	
43	8	8	60	8	8	0.40	27,878.39	166.97	-0.0054	
44	10	10	50	10	10	0.70	25,894.05	160.92	-0.0037	
45	12	12	40	12	12	0.99	24,767.39	157.38	-0.0019	
46	14	14	30	14	14	1.29	24,499.01	156.52	0.0000	
47	16	16	20	16	16	1.59	25,088.30	158.39	0.0019	
48	16.67	16.67	16.67	16.67	16.67	1.69	25,475.37	159.61	0.0025	
49	18	18	18	18	18	1.89	26,535.47	162.90	0.0037	
50	20	20	0	20	20	2.19	28,840.51	169.82	0.0053	
51	0	0	0	100	0	3.45	260,712.36	510.60	0.0081	
52	2	2	2	90	2	5.00	213,639.08	462.21	0.0080	
53	4	4	4	80	4	4.55	171,705.30	414.37	0.0078	
54	6	6	6	70	6	4.10	134,911.02	367.30	0.0076	
55	8	8	8	60	8	3.65	103,256.25	321.34	0.0073	
56	10	10	10	50	10	3.20	76,740.98	277.02	0.0069	
57	12	12	12	40	12	2.74	55,365.21	235.30	0.0062	
58	14	14	14	30	14	2.29	39,128.94	197.81	0.0050	
59	16	16	16	20	16	1.84	28,032.18	167.43	0.0033	
60	16.67	16.67	16.67	16.67	16.67	1.69	25,475.37	159.61	0.0025	
61	18	18	18	18	18	1.39	27,074.92	148.98	0.0006	
62	20	20	20	0	20	0.94	21,257.16	145.80	-0.0024	
63	0	0	0	0	100	-0.87	55,932.25	236.50	-0.0092	
64	2	2	2	2	90	-0.56	47,513.93	217.98	-0.0085	
65	4	4	4	4	80	-0.26	40,394.74	200.98	-0.0077	
66	6	6	6	6	70	0.05	34,574.69	185.94	-0.0067	
67	8	8	8	8	60	0.36	30,053.77	173.36	-0.0056	
68	10	10	10	10	50	0.67	26,931.99	163.80	-0.0038	
69	12	12	12	12	40	0.97	24,909.35	157.83	-0.0020	
70	14	14	14	14	30	1.28	24,285.84	153.84	-0.0001	
71	16	16	16	16	20	1.39	24,961.47	157.99	0.0019	
72	16.67	16.67	16.67	16.67	16.67	1.69	25,475.37	159.61	0.0025	
73	18	18	18	18	10	1.90	26,936.23	164.12	0.0037	
74	20	20	20	20	0	2.20	30,210.12	173.81	0.0052	

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**Lampiran IV.17 s/d Lampiran IV.20 Alternatif 7 Saham  
dengan Koefisien Sharpe**

Alternatif 1 untuk 7 saham (TLKM,ISAT,UNVR,TCID,MRAT,PCGN,LSIP)

No.	Bobot							Return	Varians	Risiko	Koefisien
	TLKM	ISAT	UNVR	TCID	MRAT	PCGN	LSIP				
1	0.90	0.36	-0.8	-2.18	5.55	3.45	0.98	59,976.01	244.90	-0.0013	
2	0.90	0.36	-0.8	-2.18	5.55	3.45	1.11	52,159.18	238.62	-0.0008	
3	0.90	0.36	-0.8	-2.18	5.55	3.45	1.23	45,505.82	213.32	-0.0003	
4	0.90	0.36	-0.8	-2.18	5.55	3.45	1.36	39,463.40	198.63	0.0003	
5	0.90	0.36	-0.8	-2.18	5.55	3.45	1.48	34,208.14	184.91	0.0010	
6	0.90	0.36	-0.8	-2.18	5.55	3.45	1.61	29,716.63	172.39	0.0018	
7	0.90	0.36	-0.8	-2.18	5.55	3.45	1.73	26,033.28	161.36	0.0027	
8	0.90	0.36	-0.8	-2.18	5.55	3.45	1.86	23,142.10	152.13	0.0037	
9	0.90	0.36	-0.8	-2.18	5.55	3.45	1.98	21,012.42	144.96	0.0047	
10	0.90	0.36	-0.8	-2.18	5.55	3.45	2.06	20,165.47	142.01	0.0053	
11	0.90	0.36	-0.8	-2.18	5.55	3.45	2.11	19,693.15	140.33	0.0058	
12	0.90	0.36	-0.8	-2.18	5.55	3.45	2.15	19,316.16	139.40	0.0063	
13	0.90	0.36	-0.8	-2.18	5.55	3.45	2.19	19,016.38	138.49	0.0069	
14	0.90	0.36	-0.8	-2.18	5.55	3.45	2.23	18,781.95	137.79	0.0074	
15	0.90	0.36	-0.8	-2.18	5.55	3.45	2.27	18,606.99	137.22	0.0079	
16	0.90	0.36	-0.8	-2.18	5.55	3.45	2.31	18,486.35	136.78	0.0084	
17	0.90	0.36	-0.8	-2.18	5.55	3.45	2.35	18,415.05	136.43	0.0089	
18	0.90	0.36	-0.8	-2.18	5.55	3.45	2.39	18,389.62	136.15	0.0094	
19	0.90	0.36	-0.8	-2.18	5.55	3.45	2.43	18,366.64	135.93	0.0099	
20	0.90	0.36	-0.8	-2.18	5.55	3.45	2.47	18,345.71	135.76	0.0104	
21	0.90	0.36	-0.8	-2.18	5.55	3.45	2.51	18,326.54	135.63	0.0109	
22	0.90	0.36	-0.8	-2.18	5.55	3.45	2.55	18,308.85	135.54	0.0114	
23	0.90	0.36	-0.8	-2.18	5.55	3.45	2.59	18,292.46	135.49	0.0119	
24	0.90	0.36	-0.8	-2.18	5.55	3.45	2.63	18,277.11	135.47	0.0124	
25	0.90	0.36	-0.8	-2.18	5.55	3.45	2.67	18,262.66	135.48	0.0129	
26	0.90	0.36	-0.8	-2.18	5.55	3.45	2.71	18,249.07	135.51	0.0134	
27	0.90	0.36	-0.8	-2.18	5.55	3.45	2.75	18,236.21	135.56	0.0139	
28	0.90	0.36	-0.8	-2.18	5.55	3.45	2.79	18,223.95	135.62	0.0144	
29	0.90	0.36	-0.8	-2.18	5.55	3.45	2.83	18,212.27	135.69	0.0149	
30	0.90	0.36	-0.8	-2.18	5.55	3.45	2.87	18,201.06	135.77	0.0154	
31	0.90	0.36	-0.8	-2.18	5.55	3.45	2.91	18,190.31	135.86	0.0159	
32	0.90	0.36	-0.8	-2.18	5.55	3.45	2.95	18,180.01	135.95	0.0164	
33	0.90	0.36	-0.8	-2.18	5.55	3.45	2.99	18,170.15	136.05	0.0169	
34	0.90	0.36	-0.8	-2.18	5.55	3.45	3.03	18,160.73	136.15	0.0174	
35	0.90	0.36	-0.8	-2.18	5.55	3.45	3.07	18,151.74	136.26	0.0179	
36	0.90	0.36	-0.8	-2.18	5.55	3.45	3.11	18,143.17	136.37	0.0184	
37	0.90	0.36	-0.8	-2.18	5.55	3.45	3.15	18,134.91	136.48	0.0189	
38	0.90	0.36	-0.8	-2.18	5.55	3.45	3.19	18,126.95	136.59	0.0194	
39	0.90	0.36	-0.8	-2.18	5.55	3.45	3.23	18,119.28	136.70	0.0199	
40	0.90	0.36	-0.8	-2.18	5.55	3.45	3.27	18,111.80	136.81	0.0204	
41	0.90	0.36	-0.8	-2.18	5.55	3.45	3.31	18,104.51	136.92	0.0209	
42	0.90	0.36	-0.8	-2.18	5.55	3.45	3.35	18,097.40	137.03	0.0214	
43	0.90	0.36	-0.8	-2.18	5.55	3.45	3.39	18,090.47	137.14	0.0219	
44	0.90	0.36	-0.8	-2.18	5.55	3.45	3.43	18,083.72	137.25	0.0224	
45	0.90	0.36	-0.8	-2.18	5.55	3.45	3.47	18,077.14	137.36	0.0229	
46	0.90	0.36	-0.8	-2.18	5.55	3.45	3.51	18,070.73	137.47	0.0234	
47	0.90	0.36	-0.8	-2.18	5.55	3.45	3.55	18,064.49	137.58	0.0239	
48	0.90	0.36	-0.8	-2.18	5.55	3.45	3.59	18,058.41	137.69	0.0244	
49	0.90	0.36	-0.8	-2.18	5.55	3.45	3.63	18,052.49	137.80	0.0249	
50	0.90	0.36	-0.8	-2.18	5.55	3.45	3.67	18,046.72	137.91	0.0254	
51	0.90	0.36	-0.8	-2.18	5.55	3.45	3.71	18,041.10	138.02	0.0259	
52	0.90	0.36	-0.8	-2.18	5.55	3.45	3.75	18,035.62	138.13	0.0264	
53	0.90	0.36	-0.8	-2.18	5.55	3.45	3.79	18,030.28	138.24	0.0269	
54	0.90	0.36	-0.8	-2.18	5.55	3.45	3.83	18,025.08	138.35	0.0274	
55	0.90	0.36	-0.8	-2.18	5.55	3.45	3.87	18,020.01	138.46	0.0279	
56	0.90	0.36	-0.8	-2.18	5.55	3.45	3.91	18,015.07	138.57	0.0284	
57	0.90	0.36	-0.8	-2.18	5.55	3.45	3.95	18,010.26	138.68	0.0289	
58	0.90	0.36	-0.8	-2.18	5.55	3.45	3.99	18,005.57	138.79	0.0294	
59	0.90	0.36	-0.8	-2.18	5.55	3.45	4.03	18,001.00	138.90	0.0299	
60	0.90	0.36	-0.8	-2.18	5.55	3.45	4.07	17,996.55	139.01	0.0304	
61	0.90	0.36	-0.8	-2.18	5.55	3.45	4.11	17,992.22	139.12	0.0309	
62	0.90	0.36	-0.8	-2.18	5.55	3.45	4.15	17,988.01	139.23	0.0314	
63	0.90	0.36	-0.8	-2.18	5.55	3.45	4.19	17,983.91	139.34	0.0319	
64	0.90	0.36	-0.8	-2.18	5.55	3.45	4.23	17,979.92	139.45	0.0324	
65	0.90	0.36	-0.8	-2.18	5.55	3.45	4.27	17,976.03	139.56	0.0329	
66	0.90	0.36	-0.8	-2.18	5.55	3.45	4.31	17,972.24	139.67	0.0334	
67	0.90	0.36	-0.8	-2.18	5.55	3.45	4.35	17,968.55	139.78	0.0339	
68	0.90	0.36	-0.8	-2.18	5.55	3.45	4.39	17,964.96	139.89	0.0344	
69	0.90	0.36	-0.8	-2.18	5.55	3.45	4.43	17,961.47	139.99	0.0349	
70	0.90	0.36	-0.8	-2.18	5.55	3.45	4.47	17,958.07	140.10	0.0354	
71	0.90	0.36	-0.8	-2.18	5.55	3.45	4.51	17,954.67	140.21	0.0359	
72	0.90	0.36	-0.8	-2.18	5.55	3.45	4.55	17,951.36	140.32	0.0364	
73	0.90	0.36	-0.8	-2.18	5.55	3.45	4.59	17,948.04	140.43	0.0369	
74	0.90	0.36	-0.8	-2.18	5.55	3.45	4.63	17,944.81	140.54	0.0374	
75	0.90	0.36	-0.8	-2.18	5.55	3.45	4.67	17,941.57	140.65	0.0379	
76	0.90	0.36	-0.8	-2.18	5.55	3.45	4.71	17,938.42	140.76	0.0384	
77	0.90	0.36	-0.8	-2.18	5.55	3.45	4.75	17,935.26	140.87	0.0389	

Alternatif 2 untuk 7 saham (TLKM,ISAT,UNVR,TCID,MRAT,PCGN,UNSP)

No.	Bobot							Return	Varians	Risiko	Koefisien
	TLKM	ISAT	UNVR	TCID	MRAT	PCGN	UNSP				
1	0.90	0.36	-0.8	-2.18	5.55	3.45	0.98	59,976.01	244.90	-0.0013	
2	0.90	0.36	-0.8	-2.18	5.55	3.45	1.00	52,081.56	228.21	-0.0013	
3	0.90	0.36	-0.8	-2.18	5.55	3.45	1.02	44,918.88	211.94	-0.0013	
4	0.90	0.36	-0.8	-2.18	5.55	3.45	1.04	38,531.22	196.29	-0.0013	
5	0.90	0.36	-0.8	-2.18	5.55	3.45	1.06	32,896.74	181.37	-0.0013	
6	0.90	0.36	-0.8	-2.18	5.55	3.45	1.08	27,995.35	167.32	-0.0013	
7	0.90	0.36	-0.8	-2.18	5.55	3.45	1.10	23,887.66	154.49	-0.0013	
8	0.90	0.36	-0.8	-2.18	5.55	3.45	1.12	20,493.34	143.15	-0.0013	
9	0.90	0.36	-0.8	-2.18	5.55	3.45	1.14	17,853.86	133.62	-0.0013	
10	0.90	0.36	-0.8	-2.18	5.55	3.45	1.15	16,696.20	129.21	-0.0011	
11	0.90	0.36	-0.8	-2.18	5.55	3.45	1.16	15,985.33	126.43	-0.0011	
12	0.90	0.36	-0.8	-2.18	5.55	3.45	1.17	15,285.86	124.00	-0.0011	
13	0.90	0.36	-0.8	-2.18	5.55	3.45	1.18	14,603.66	121.94	-0.0011	
14	0.90	0.36	-0.8	-2.18	5.55	3.45	1.19	14,000.00	120.21	-0.0011	
15	0.90	0.36	-0.8	-2.18	5.55	3.45	1.20	13,470.00	118.80	-0.0011	
16	0.90	0.36	-0.8	-2.18	5.55	3.45	1.21	13,000.00	117.70	-0.0011	
17	0.90	0.36	-0.8	-2.18	5.55	3.45	1.22	12,585.00	116.90	-0.0011	
18	0.90	0.36	-0.8	-2.18	5.55	3.45	1.23	12,220.00	116.30	-0.0011	
19	0.90	0.36	-0.8	-2.18	5.55	3.45	1.24	11,910.00	115.90	-0.0011	
20	0.90	0.36	-0.8	-2.18	5.55	3.45	1.25	11,650.0			

Alternatif 3 untuk 7 saham (TLKM,ISAT,UNVR,TCID,MRAT,LSIP,UNSP)

No.	Bobot							Return	Varians	Risk	Koefisien Sharpe (Rf=1,296)
	TLKM	ISAT	UNVR	TCID	MRAT	LSIP	UNSP				
1	0	0	0	0	0	0	0	0	0	0	0
2	1.67	1.67	1.67	1.67	1.67	1.67	1.00	52,359.84	228.81	-0.0013	
3	3.33	3.33	3.33	3.33	3.33	3.33	1.02	45,606.64	213.56	-0.0013	
4	5	5	5	5	5	5	1.04	39,764.97	199.41	-0.0013	
5	6.67	6.67	6.67	6.67	6.67	6.67	1.05	34,810.80	186.58	-0.0013	
6	8.33	8.33	8.33	8.33	8.33	8.33	1.07	30,718.14	175.27	-0.0013	
7	10	10	10	10	10	10	1.09	27,538.47	165.95	-0.0012	
8	11.67	11.67	11.67	11.67	11.67	11.67	1.11	25,246.79	158.89	-0.0012	
9	13.33	13.33	13.33	13.33	13.33	13.33	1.13	23,814.18	154.32	-0.0011	
10	14.29	14.29	14.29	14.29	14.29	14.29	1.14	23,413.65	153.02	-0.0010	
11	15	15	15	15	15	15	1.15	23,296.51	152.63	-0.0010	
12	16.67	16.67	16.67	16.67	16.67	16.67	1.17	22,716.14	150.60	-0.0009	
13	18.33	18.33	18.33	18.33	18.33	18.33	1.19	22,064.43	148.34	-0.0008	
14	20	20	20	20	20	20	1.21	21,348.15	145.82	-0.0007	
15	21.67	21.67	21.67	21.67	21.67	21.67	1.23	20,578.28	143.05	-0.0006	
16	23.33	23.33	23.33	23.33	23.33	23.33	1.25	19,754.93	140.04	-0.0005	
17	25	25	25	25	25	25	1.27	18,888.19	136.80	-0.0004	
18	26.67	26.67	26.67	26.67	26.67	26.67	1.29	18,000.00	133.33	-0.0003	
19	28.33	28.33	28.33	28.33	28.33	28.33	1.31	17,100.00	130.00	-0.0002	
20	30	30	30	30	30	30	1.33	16,200.00	126.67	-0.0001	

Alternatif 4 untuk 7 saham (TLKM,ISAT,UNVR,TCID,PGN,LSIP,UNSP)

No.	Bobot							Return	Varians	Risk	Koefisien Sharpe (Rf=1,296)
	TLKM	ISAT	UNVR	TCID	PGN	LSIP	UNSP				
1	0	0	0	0	0	0	0	0	0	0	0
2	1.67	1.67	1.67	1.67	1.67	1.67	1.00	59,976.81	244.90	-0.0013	
3	3.33	3.33	3.33	3.33	3.33	3.33	1.02	51,907.34	227.83	-0.0013	
4	5	5	5	5	5	5	1.04	44,716.88	211.44	-0.0013	
5	6.67	6.67	6.67	6.67	6.67	6.67	1.05	38,447.11	196.00	-0.0013	
6	8.33	8.33	8.33	8.33	8.33	8.33	1.07	33,076.93	181.87	-0.0013	
7	10	10	10	10	10	10	1.09	28,564.11	169.07	-0.0013	
8	11.67	11.67	11.67	11.67	11.67	11.67	1.11	25,012.83	158.15	-0.0013	
9	13.33	13.33	13.33	13.33	13.33	13.33	1.13	22,341.33	149.47	-0.0012	
10	14.29	14.29	14.29	14.29	14.29	14.29	1.14	20,545.96	143.34	-0.0012	
11	15	15	15	15	15	15	1.15	19,500.38	141.21	-0.0011	
12	16.67	16.67	16.67	16.67	16.67	16.67	1.17	18,273.16	140.26	-0.0011	
13	18.33	18.33	18.33	18.33	18.33	18.33	1.19	17,000.00	138.88	-0.0010	
14	20	20	20	20	20	20	1.21	15,714.29	137.04	-0.0010	
15	21.67	21.67	21.67	21.67	21.67	21.67	1.23	14,500.00	135.70	-0.0009	
16	23.33	23.33	23.33	23.33	23.33	23.33	1.25	13,333.33	134.38	-0.0009	
17	25	25	25	25	25	25	1.27	12,222.22	133.11	-0.0008	
18	26.67	26.67	26.67	26.67	26.67	26.67	1.29	11,166.67	131.89	-0.0008	
19	28.33	28.33	28.33	28.33	28.33	28.33	1.31	10,166.67	130.70	-0.0007	
20	30	30	30	30	30	30	1.33	9,200.00	129.54	-0.0007	

Alternatif 7 untuk 7 saham (TLKM, SAT, UNVR, MRAT, PCBN, LSP, UNSP)

Alternatif 6 untuk 7 saham (TLKM, SAT, TCID, MRAT, PCBN, LSP, UNSP)

No.	Bobot							Retorn	Varian	Risiko	Koefisien	Ret.	Bobot							Retorn	Varian	Risiko	Koefisien
	TLKM	SAT	UNVR	MRAT	PCBN	LSP	UNSP						TLKM	SAT	TCID	MRAT	PCBN	LSP	UNSP				
1	0	0	0	0	0	0	0	0.98	59,976.01	344.90	-0.0013	1	100	0	0	0	0	0	0.98	59,976.01	344.90	-0.0013	
2	1.67	1.67	1.67	1.67	1.67	1.67	1.67	1.30	52,021.99	228.08	-0.0068	2	90	1.67	1.67	1.67	1.67	1.67	1.29	52,108.95	228.27	-0.0069	
3	3.33	3.33	3.33	3.33	3.33	3.33	3.33	1.23	44,928.12	211.96	-0.0033	3	80	3.33	3.33	3.33	3.33	3.33	1.19	45,170.32	212.42	-0.0035	
4	5	5	5	5	5	5	5	1.25	38,739.45	196.82	0.0003	4	70	5	5	5	5	5	1.30	39,055.40	197.62	0.0002	
5	6.67	6.67	6.67	6.67	6.67	6.67	6.67	1.48	33,433.79	182.83	0.0010	5	60	6.67	6.67	6.67	6.67	6.67	1.40	33,891.73	184.10	0.0004	
6	8.33	8.33	8.33	8.33	8.33	8.33	8.33	1.60	28,988.29	170.26	0.0018	6	50	8.33	8.33	8.33	8.33	8.33	1.50	29,605.30	172.06	0.0012	
7	10	10	10	10	10	10	10	1.73	25,448.34	159.53	0.0027	7	40	10	10	10	10	10	1.61	26,243.78	162.00	0.0019	
8	11.67	11.67	11.67	11.67	11.67	11.67	11.67	1.85	22,791.47	150.97	0.0037	8	30	11.67	11.67	11.67	11.67	11.67	1.72	23,783.54	154.22	0.0027	
9	13.33	13.33	13.33	13.33	13.33	13.33	13.33	1.97	20,993.96	144.89	0.0047	9	20	13.33	13.33	13.33	13.33	13.33	1.82	21,999.77	148.99	0.0035	
10	14.29	14.29	14.29	14.29	14.29	14.29	14.29	2.05	20,379.99	142.76	0.0053	10	14.29	14.29	14.29	14.29	14.29	14.29	1.88	21,716.49	147.37	0.0040	
11	15	15	15	15	15	15	15	2.10	20,102.80	141.78	0.0057	11	10	15	15	15	15	15	1.93	21,541.16	146.77	0.0043	
12	0	0	0	0	0	0	0	5.03	73,116.16	270.40	0.0139	12	0	100	0	0	0	0	5.03	73,116.16	270.40	0.0139	
13	1.67	1.67	1.67	1.67	1.67	1.67	1.67	4.44	61,498.24	247.99	0.0137	13	1.67	90	1.67	1.67	1.67	1.67	4.44	61,416.40	247.82	0.0136	
14	3.33	3.33	3.33	3.33	3.33	3.33	3.33	4.33	51,209.96	226.52	0.0134	14	3.33	80	3.33	3.33	3.33	3.33	4.29	51,209.33	226.29	0.0133	
15	5	5	5	5	5	5	5	3.99	42,582.45	206.36	0.0130	15	5	70	5	5	5	5	3.93	42,525.62	206.22	0.0128	
16	6.67	6.67	6.67	6.67	6.67	6.67	6.67	3.64	35,300.78	187.89	0.0125	16	6.67	60	6.67	6.67	6.67	6.67	3.56	35,350.73	188.02	0.0126	
17	8.33	8.33	8.33	8.33	8.33	8.33	8.33	3.29	29,444.98	171.60	0.0114	17	8.33	50	8.33	8.33	8.33	8.33	3.19	29,665.84	172.23	0.0110	
18	10	10	10	10	10	10	10	2.94	25,053.72	158.28	0.0104	18	10	40	10	10	10	10	2.83	25,505.03	159.70	0.0096	
19	11.67	11.67	11.67	11.67	11.67	11.67	11.67	2.59	22,108.31	148.69	0.0087	19	11.67	30	11.67	11.67	11.67	11.67	2.46	22,855.03	151.18	0.0077	
20	13.33	13.33	13.33	13.33	13.33	13.33	13.33	2.24	20,584.97	143.47	0.0066	20	13.33	20	13.33	13.33	13.33	13.33	2.09	21,088.29	147.27	0.0054	
21	14.29	14.29	14.29	14.29	14.29	14.29	14.29	2.05	20,379.99	142.76	0.0053	21	14.29	14.29	14.29	14.29	14.29	14.29	1.88	21,716.49	147.37	0.0040	
22	15	15	15	15	15	15	15	1.90	20,529.97	143.28	0.0042	22	15	10	15	15	15	15	1.72	22,054.35	148.51	0.0029	
23	0	0	0	0	0	0	0	0.36	24,118.09	155.30	-0.0060	23	0	100	0	0	0	0	-0.80	44,394.49	210.70	-0.0099	
24	1.67	1.67	1.67	1.67	1.67	1.67	1.67	0.56	21,428.31	146.38	-0.0050	24	1.67	90	1.67	1.67	1.67	1.67	-0.19	38,531.73	196.30	-0.0029	
25	3.33	3.33	3.33	3.33	3.33	3.33	3.33	0.75	19,321.60	139.00	-0.0039	25	3.33	80	3.33	3.33	3.33	3.33	-0.18	33,502.95	183.04	-0.0029	
26	5	5	5	5	5	5	5	0.95	17,825.28	133.51	-0.0026	26	5	70	5	5	5	5	0.14	29,343.14	171.30	-0.0026	
27	6.67	6.67	6.67	6.67	6.67	6.67	6.67	1.13	16,926.59	130.10	-0.0011	27	6.67	60	6.67	6.67	6.67	6.67	0.45	26,035.48	161.36	-0.0025	
28	8.33	8.33	8.33	8.33	8.33	8.33	8.33	1.34	16,005.61	128.86	0.0004	28	8.33	50	8.33	8.33	8.33	8.33	0.76	23,557.79	153.49	-0.0015	
29	10	10	10	10	10	10	10	1.54	16,900.37	130.00	0.0019	29	10	40	10	10	10	10	1.00	21,953.00	148.17	-0.0015	
30	11.67	11.67	11.67	11.67	11.67	11.67	11.67	1.74	17,792.76	133.39	0.0033	30	11.67	30	11.67	11.67	11.67	11.67	1.39	21,200.51	145.60	0.0006	
31	13.33	13.33	13.33	13.33	13.33	13.33	13.33	1.93	19,257.51	138.77	0.0046	31	13.33	20	13.33	13.33	13.33	13.33	1.70	21,273.92	145.86	0.0028	
32	14.29	14.29	14.29	14.29	14.29	14.29	14.29	2.05	20,379.99	142.76	0.0053	32	14.29	14.29	14.29	14.29	14.29	14.29	1.80	21,716.49	147.37	0.0040	
33	15	15	15	15	15	15	15	2.13	21,343.35	146.09	0.0057	33	15	10	15	15	15	15	2.01	22,224.30	149.08	0.0048	
34	0	0	0	0	0	0	0	-3.18	54,849.44	234.20	-0.0148	34	0	100	0	0	0	0	-2.18	54,849.44	234.20	-0.0148	
35	1.67	1.67	1.67	1.67	1.67	1.67	1.67	-1.69	47,216.13	217.29	-0.0137	35	1.67	90	1.67	1.67	1.67	1.67	-2.71	47,315.20	217.52	-0.0138	
36	3.33	3.33	3.33	3.33	3.33	3.33	3.33	-1.19	40,520.06	206.50	-0.0124	36	3.33	80	3.33	3.33	3.33	3.33	-2.23	40,732.54	201.82	-0.0125	
37	5	5	5	5	5	5	5	-0.70	34,798.25	181.34	-0.0107	37	5	70	5	5	5	5	-0.76	35,140.01	187.46	-0.0118	
38	6.67	6.67	6.67	6.67	6.67	6.67	6.67	-0.21	30,032.74	173.30	-0.0087	38	6.67	60	6.67	6.67	6.67	6.67	-0.28	30,318.95	174.70	-0.0088	
39	8.33	8.33	8.33	8.33	8.33	8.33	8.33	0.28	26,202.07	161.87	-0.0062	39	8.33	50	8.33	8.33	8.33	8.33	0.19	26,844.64	163.85	-0.0060	
40	10	10	10	10	10	10	10	0.78	23,348.26	152.80	-0.0034	40	10	40	10	10	10	10	0.66	24,167.49	153.46	-0.0041	
41	11.67	11.67	11.67	11.67	11.67	11.67	11.67	1.27	21,450.74	146.46	-0.0022	41	11.67	30	11.67	11.67	11.67	11.67	1.14	22,459.80	149.87	-0.0011	
42	13.33	13.33	13.33	13.33	13.33	13.33	13.33	1.76	20,485.48	143.13	0.0033	42	13.33	20	13.33	13.33	13.33	13.33	1.61	21,697.04	147.30	0.0021	
43	14.29	14.29	14.29	14.29	14.29	14.29	14.29	2.05	20,379.99	142.76	0.0053	43	14.29	14.29	14.29	14.29	14.29	14.29	2.08	21,716.49	147.37	0.0040	
44	15	15	15	15	15	15	15	2.26	20,499.47	143.18	0.0067	44	15	10	15	15	15	15	2.28	21,932.07	148.09	0.0043	
45	0	0	0	0	0	0	0	3.33	28,302.27	207.89	0.0178	45	0	100	0	0	0	0	3.33	28,302.27	207.89	0.0178	
46	1.67	1.67	1.67	1.67	1.67	1.67	1.67	5.14	9,500.06	97.47	0.0395	46	1.67	90	1.67	1.67	1.67	1.67	5.12	9,559.89	97.77	0.0396	
47	3.33	3.33	3.33	3.33	3.33	3.33	3.33	4.73	9,165.28	95.74	0.0359	47	3.33	80	3.33	3.33	3.33	3.33	4.69	9,309.85	96.49	0.0352	
48	5	5	5	5	5	5	5	4.32	9,377.79	96.84	0.0313	48	5	70	5	5	5	5	4.27	9,633.10	96.15	0.0285	
49	6.67	6.67	6.67	6.67	6.67	6.67	6.67	3.91	10,129.42	100.65	0.0260	49	6.67	60	6.67	6.67	6.67	6.67	3.84	10,521.81	102.52	0.0218	
50	8.33	8.33	8.33	8.33	8.33	8.33	8.33	3.51	11,401.82	106.78	0.0207	50	8.33	50	8.33	8.33	8.33	8.33	3.41	11,954.06	109.33	0.0159	
51	10	10	10	10	10	10	10	3.10	13,279.14	115.02	0.0157	51	10	40	10	10	10	10	2.98	13,968.57	118.19	0.0113	
52	11.67	11.67	11.67	11.67	11.67	11.67	11.67	2.69	15,595.58	124.88	0.0112	52	11.67	30	11.67	11.67	11.67	11.67	2.55	16,547.74	128.64	0.0068	
53																							

Alernatif 7 vektor (TKLN,UNVR,TCID,MRAT,PGIN,LSIP,UNSP)

Alernatif 8 vektor 7 vektor (OSAT,UNVR,TCID,MRAT,PGIN,LSIP,UNSP)

No.	Bobot						Return	Varians	Risk	Koefisien Sharpe (Rf=1,25%)	No.	Bobot						Return	Varians	Risk	Koefisien Sharpe (Rf=1,25%)
	OSAT	UNVR	TCID	MRAT	PGIN	LSIP						UNSP	OSAT	UNVR	TCID	MRAT	PGIN				
1	0.36	0.8	2.18	5.55	5.45	0.87	29,976.01	244.90	-0.0013	1	0.36	0.8	2.18	5.55	5.45	0.87	5.63	73,116.14	270.40	0.0132	
2	1.67	1.67	1.67	1.67	1.67	1.67	30,777.22	225.34	-0.0013	2	1.67	1.67	1.67	1.67	1.67	1.67	4.65	59,871.24	244.49	0.0137	
3	3.33	3.33	3.33	3.33	3.33	3.33	42,779.55	206.83	-0.0013	3	3.33	3.33	3.33	3.33	3.33	3.33	4.27	68,442.82	220.10	0.0135	
4	5	5	5	5	5	5	36,013.42	189.77	-0.0012	4	5	5	5	5	5	5	3.90	38,843.80	197.09	0.0132	
5	6.67	6.67	6.67	6.67	6.67	6.67	30,464.31	174.54	-0.0012	5	6.67	6.67	6.67	6.67	6.67	6.67	3.52	31,028.95	176.24	0.0128	
6	8.33	8.33	8.33	8.33	8.33	8.33	26,112.09	161.59	-0.0011	6	8.33	8.33	8.33	8.33	8.33	8.33	3.14	25,183.27	158.44	0.0119	
7	10	10	10	10	10	10	22,995.64	151.64	-0.0010	7	10	10	10	10	10	10	2.76	20,974.31	144.83	0.0108	
8	11.67	11.67	11.67	11.67	11.67	11.67	21,096.22	145.25	-0.0009	8	11.67	11.67	11.67	11.67	11.67	11.67	2.39	18,669.52	136.64	0.0098	
9	13.33	13.33	13.33	13.33	13.33	13.33	20,389.46	142.79	-0.0007	9	13.33	13.33	13.33	13.33	13.33	13.33	2.01	16,166.56	134.78	0.0093	
10	14.29	14.29	14.29	14.29	14.29	14.29	20,548.74	143.35	-0.0006	10	14.29	14.29	14.29	14.29	14.29	14.29	1.79	18,712.94	136.80	0.0096	
11	15	15	15	15	15	15	20,922.69	144.63	-0.0005	11	15	15	15	15	15	15	1.61	19,507.68	139.67	0.0092	
12	0	0	0	0	0	0	24,118.09	155.30	-0.0006	12	0	0	0	0	0	0	0.96	24,118.09	155.30	-0.0006	
13	1.67	1.67	1.67	1.67	1.67	1.67	21,604.39	146.98	-0.0007	13	1.67	1.67	1.67	1.67	1.67	1.67	0.53	21,390.96	146.26	-0.0005	
14	3.33	3.33	3.33	3.33	3.33	3.33	19,631.53	140.11	-0.0005	14	3.33	3.33	3.33	3.33	3.33	3.33	0.69	19,305.80	138.58	-0.0003	
15	5	5	5	5	5	5	18,228.90	133.01	-0.0004	15	5	5	5	5	5	5	0.86	17,508.96	132.62	-0.0003	
16	6.67	6.67	6.67	6.67	6.67	6.67	17,382.40	131.84	-0.0004	16	6.67	6.67	6.67	6.67	6.67	6.67	1.03	16,528.03	128.56	-0.0002	
17	8.33	8.33	8.33	8.33	8.33	8.33	17,071.88	130.66	-0.0004	17	8.33	8.33	8.33	8.33	8.33	8.33	1.19	16,004.51	126.51	-0.0002	
18	10	10	10	10	10	10	17,336.45	131.67	-0.0004	18	10	10	10	10	10	10	1.36	16,053.88	126.70	-0.0005	
19	11.67	11.67	11.67	11.67	11.67	11.67	18,157.35	134.75	-0.0004	19	11.67	11.67	11.67	11.67	11.67	11.67	1.53	16,655.16	129.07	-0.0004	
20	13.33	13.33	13.33	13.33	13.33	13.33	19,509.17	139.68	-0.0004	20	13.33	13.33	13.33	13.33	13.33	13.33	1.70	17,797.26	133.41	-0.0004	
21	14.29	14.29	14.29	14.29	14.29	14.29	20,548.74	143.35	-0.0006	21	14.29	14.29	14.29	14.29	14.29	14.29	1.79	18,712.94	136.80	0.0006	
22	15	15	15	15	15	15	21,441.84	146.43	-0.0009	22	15	15	15	15	15	15	1.86	19,512.84	139.69	0.0004	
23	0	0	0	0	0	0	44,394.49	210.70	-0.0099	23	0	0	0	0	0	0	-0.80	44,394.49	210.70	-0.0099	
24	1.67	1.67	1.67	1.67	1.67	1.67	38,789.64	196.95	-0.0094	24	1.67	1.67	1.67	1.67	1.67	1.67	-0.50	38,407.62	195.98	-0.0092	
25	3.33	3.33	3.33	3.33	3.33	3.33	35,913.51	184.16	-0.0088	25	3.33	3.33	3.33	3.33	3.33	3.33	-0.20	33,194.93	182.19	-0.0082	
26	5	5	5	5	5	5	29,803.48	172.64	-0.0081	26	5	5	5	5	5	5	0.11	28,790.86	169.68	-0.0078	
27	6.67	6.67	6.67	6.67	6.67	6.67	26,441.32	162.41	-0.0071	27	6.67	6.67	6.67	6.67	6.67	6.67	0.41	25,178.96	158.68	-0.0064	
28	8.33	8.33	8.33	8.33	8.33	8.33	23,805.19	154.29	-0.0060	28	8.33	8.33	8.33	8.33	8.33	8.33	0.71	22,339.68	149.46	-0.0059	
29	10	10	10	10	10	10	21,937.82	148.11	-0.0046	29	10	10	10	10	10	10	1.01	20,311.18	142.52	-0.0039	
30	11.67	11.67	11.67	11.67	11.67	11.67	20,818.38	144.29	-0.0031	30	11.67	11.67	11.67	11.67	11.67	11.67	1.32	19,074.83	138.11	-0.0022	
31	13.33	13.33	13.33	13.33	13.33	13.33	20,422.25	142.91	-0.0015	31	13.33	13.33	13.33	13.33	13.33	13.33	1.62	18,608.37	136.41	-0.0019	
32	14.29	14.29	14.29	14.29	14.29	14.29	20,548.74	143.35	-0.0006	32	14.29	14.29	14.29	14.29	14.29	14.29	1.79	18,712.94	136.80	0.0006	
33	15	15	15	15	15	15	20,797.60	144.23	-0.0001	33	15	15	15	15	15	15	1.92	18,955.42	137.68	0.0004	
34	0	0	0	0	0	0	54,849.64	234.20	-0.0148	34	0	0	0	0	0	0	-2.18	54,849.64	234.20	-0.0148	
35	1.67	1.67	1.67	1.67	1.67	1.67	46,951.29	216.68	-0.0142	35	1.67	1.67	1.67	1.67	1.67	1.67	-1.72	46,728.06	216.63	-0.0139	
36	3.33	3.33	3.33	3.33	3.33	3.33	40,066.06	200.17	-0.0134	36	3.33	3.33	3.33	3.33	3.33	3.33	-1.25	39,970.33	199.93	-0.0128	
37	5	5	5	5	5	5	34,730.35	185.01	-0.0124	37	5	5	5	5	5	5	-0.79	34,009.56	184.42	-0.0113	
38	6.67	6.67	6.67	6.67	6.67	6.67	29,425.33	171.54	-0.0110	38	6.67	6.67	6.67	6.67	6.67	6.67	-0.33	29,029.62	170.38	-0.0095	
39	8.33	8.33	8.33	8.33	8.33	8.33	25,630.83	160.19	-0.0094	39	8.33	8.33	8.33	8.33	8.33	8.33	0.14	25,011.02	158.15	-0.0087	
40	10	10	10	10	10	10	22,887.83	151.29	-0.0073	40	10	10	10	10	10	10	0.60	21,991.89	148.30	-0.0070	
41	11.67	11.67	11.67	11.67	11.67	11.67	21,175.96	145.52	-0.0068	41	11.67	11.67	11.67	11.67	11.67	11.67	1.06	19,953.58	141.26	-0.0060	
42	13.33	13.33	13.33	13.33	13.33	13.33	20,471.38	143.08	-0.0022	42	13.33	13.33	13.33	13.33	13.33	13.33	1.53	18,874.12	137.18	0.0002	
43	14.29	14.29	14.29	14.29	14.29	14.29	20,548.74	143.35	-0.0006	43	14.29	14.29	14.29	14.29	14.29	14.29	1.79	18,712.94	136.80	0.0006	
44	15	15	15	15	15	15	20,821.53	144.30	-0.0004	44	15	15	15	15	15	15	1.89	18,796.63	137.10	0.0002	
45	0	0	0	0	0	0	39,343.84	207.80	-0.0098	45	0	0	0	0	0	0	-0.33	39,343.84	207.80	-0.0098	
46	1.67	1.67	1.67	1.67	1.67	1.67	5,04	9,759.99	97.88	0.0183	46	1.67	1.67	1.67	1.67	1.67	1.67	5.11	9,457.33	97.23	0.0092
47	3.33	3.33	3.33	3.33	3.33	3.33	4,54	9,308.69	96.48	0.0136	47	3.33	3.33	3.33	3.33	3.33	3.33	4.67	9,040.03	95.06	0.0055
48	5	5	5	5	5	5	4,03	9,569.35	97.82	0.0280	48	5	5	5	5	5	5	4.23	9,129.45	95.55	0.0098
49	6.67	6.67	6.67	6.67	6.67	6.67	3,53	10,353.24	101.75	0.0219	49	6.67	6.67	6.67	6.67	6.67	6.67	3.80	9,717.71	98.58	0.0254
50	8.33	8.33	8.33	8.33	8.33	8.33	3,02	11,641.71	107.90	0.0160	50	8.33	8.33	8.33	8.33	8.33	8.33	3.36	10,787.89	103.86	0.0095
51	10	10	10	10	10	10	2,51	13,469.57	116.06	0.0105	51	10	10	10	10	10	10	2.92	12,371.55	111.23	0.0046
52	11.67	11.67	11.67	11.67	11.67	11.67	2,01	15,820.66	125.78	0.0057	52	11.67	11.67	11.67	11.67	11.67	11.67	2.48	14,454.07	120.23	0.0009
53	13.33	13.33	13.33	13.33	13.33	13.33	1,50	18,668.83	136.63	0.0015	53	13.33	13.33	13.33	13.33	13.33	13.33	2.04	17,011.63	130.43	0.0007
54																					

**Lampiran IV.21 Alternatif 8 Saham dengan Koefisien Sharpe**

untuk 8 saham (TLKM,ISAT,UNVR,TCID,MRAT,PGIN,LSIP,UNSP)

TLKM	Bobot							Return Portofolio	Varians Portofolio	Risk Portofolio	Koefisien Sharp (Rf=1.296)
	ISAT	UNVR	TCID	MRAT	PGIN	LSIP	UNSP				
0.98	5.03	0.36	-0.8	-2.18	5.55	5.45	-0.87				
24.49	27.04	15.53	21.07	23.42	10.18	51.06	23.65				
100	0	0	0	0	0	0	0	0.98	59,976.01	244.90	-0.0013
90	1.43	1.43	1.43	1.43	1.43	1.43	1.43	1.06	51,925.93	227.87	-0.0010
80	2.86	2.86	2.86	2.86	2.86	2.86	2.86	1.14	44,748.64	211.54	-0.0007
70	4.29	4.29	4.29	4.29	4.29	4.29	4.29	1.22	38,444.12	196.07	-0.0004
60	5.71	5.71	5.71	5.71	5.71	5.71	5.71	1.30	32,987.18	181.62	0.0000
50	7.14	7.14	7.14	7.14	7.14	7.14	7.14	1.39	28,428.06	168.61	0.0005
40	8.57	8.57	8.57	8.57	8.57	8.57	8.57	1.47	24,741.72	157.30	0.0011
30	10	10	10	10	10	10	10	1.55	21,928.16	148.08	0.0017
20	11.43	11.43	11.43	11.43	11.43	11.43	11.43	1.63	19,987.39	141.38	0.0024
12.50	12.50	12.50	12.50	12.50	12.50	12.50	12.50	1.69	19,098.07	138.20	0.0029
10	12.86	12.86	12.86	12.86	12.86	12.86	12.86	1.71	18,919.39	137.55	0.0030
0	100	0	0	0	0	0	0	5.03	73,116.16	270.40	0.0138
1.43	90	1.43	1.43	1.43	1.43	1.43	1.43	4.65	61,261.03	247.51	0.0135
2.86	80	2.86	2.86	2.86	2.86	2.86	2.86	4.27	50,873.12	225.55	0.0132
4.29	70	4.29	4.29	4.29	4.29	4.29	4.29	3.89	41,952.43	204.82	0.0126
5.71	60	5.71	5.71	5.71	5.71	5.71	5.71	3.50	34,478.92	185.69	0.0119
7.14	50	7.14	7.14	7.14	7.14	7.14	7.14	3.12	28,491.23	168.79	0.0108
8.57	40	8.57	8.57	8.57	8.57	8.57	8.57	2.74	23,970.75	154.82	0.0093
10	30	10	10	10	10	10	10	2.36	20,917.50	144.63	0.0073
11.43	20	11.43	11.43	11.43	11.43	11.43	11.43	1.98	19,331.46	139.04	0.0049
12.50	14.29	12.50	12.50	12.50	12.50	12.50	12.50	1.78	19,765.36	140.59	0.0034
12.86	10	12.86	12.86	12.86	12.86	12.86	12.86	1.59	19,212.65	138.61	0.0022
0	0	100	0	0	0	0	0	0.36	24,118.09	155.30	-0.0060
1.43	1.43	90	1.43	1.43	1.43	1.43	1.43	0.51	21,478.48	146.56	-0.0053
2.86	2.86	80	2.86	2.86	2.86	2.86	2.86	0.66	19,373.04	139.19	-0.0045
4.29	4.29	70	4.29	4.29	4.29	4.29	4.29	0.82	17,801.78	133.42	-0.0036
5.71	5.71	60	5.71	5.71	5.71	5.71	5.71	0.97	16,744.49	129.40	-0.0025
7.14	7.14	50	7.14	7.14	7.14	7.14	7.14	1.12	16,239.89	127.44	-0.0014
8.57	8.57	40	8.57	8.57	8.57	8.57	8.57	1.27	16,269.46	127.55	-0.0002
10	10	30	10	10	10	10	10	1.42	16,833.21	129.74	0.0010
11.43	11.43	20	11.43	11.43	11.43	11.43	11.43	1.58	17,931.14	133.91	0.0021
12.50	12.50	14.29	12.50	12.50	12.50	12.50	12.50	1.70	19,512.63	139.69	0.0029
12.86	12.86	10	12.86	12.86	12.86	12.86	12.86	1.73	19,563.24	139.87	0.0031
0	0	0	100	0	0	0	0	-0.80	44,394.49	210.70	-0.0099
1.43	1.43	1.43	90	1.43	1.43	1.43	1.43	-0.52	38,470.85	196.14	-0.0092
2.86	2.86	2.86	80	2.86	2.86	2.86	2.86	-0.23	33,330.82	182.57	-0.0084
4.29	4.29	4.29	70	4.29	4.29	4.29	4.29	0.05	28,974.41	170.22	-0.0073
5.71	5.71	5.71	60	5.71	5.71	5.71	5.71	0.34	25,379.44	159.31	-0.0060
7.14	7.14	7.14	50	7.14	7.14	7.14	7.14	0.62	22,589.20	150.30	-0.0045
8.57	8.57	8.57	40	8.57	8.57	8.57	8.57	0.91	20,582.57	143.47	-0.0027
10	10	10	30	10	10	10	10	1.19	19,359.56	139.14	-0.0007
11.43	11.43	11.43	20	11.43	11.43	11.43	11.43	1.48	18,920.17	137.55	0.0013
12.50	12.50	12.50	14.29	12.50	12.50	12.50	12.50	1.68	19,710.55	140.39	0.0027
12.86	12.86	12.86	10	12.86	12.86	12.86	12.86	1.76	19,264.39	138.80	0.0034
0	0	0	0	100	0	0	0	-2.18	54,849.64	234.20	-0.0148
1.43	1.43	1.43	1.43	90	1.43	1.43	1.43	-1.74	47,077.79	216.97	-0.0140
2.86	2.86	2.86	2.86	80	2.86	2.86	2.86	-1.29	40,258.14	200.64	-0.0129
4.29	4.29	4.29	4.29	70	4.29	4.29	4.29	-0.85	34,390.70	185.45	-0.0116
5.71	5.71	5.71	5.71	60	5.71	5.71	5.71	-0.41	29,452.87	171.62	-0.0099
7.14	7.14	7.14	7.14	50	7.14	7.14	7.14	0.03	25,488.94	159.65	-0.0079
8.57	8.57	8.57	8.57	40	8.57	8.57	8.57	0.47	22,477.22	149.92	-0.0055
10	10	10	10	30	10	10	10	0.92	20,417.69	142.89	-0.0027
11.43	11.43	11.43	11.43	20	11.43	11.43	11.43	1.36	19,310.37	138.96	0.0004
12.50	12.50	12.50	12.50	14.29	12.50	12.50	12.50	1.65	19,785.30	140.66	0.0025
12.86	12.86	12.86	12.86	10	12.86	12.86	12.86	1.80	19,155.26	138.40	0.0036
0	0	0	0	0	100	0	0	5.55	10,363.24	101.80	0.0418
1.43	1.43	1.43	1.43	1.43	90	1.43	1.43	5.11	9,460.80	97.27	0.0392

TKM	Hobot							Return Portofolio	Varians Portofolio	Riak Portofolio	Koefisien Sharp (Rf=1.296)
	ISAT	UNVR	TCID	MRAT	PGEN	LSIP	UNSP				
0.98	5.03	0.36	-0.8	-2.18	5.55	5.45	-0.87				
24.49	27.04	15.53	21.07	23.42	10.18	31.06	23.65				
2.86	2.86	2.86	2.86	2.86	80	2.86	2.86	4.67	9,049.95	95.13	0.0354
4.29	4.29	4.29	4.29	4.29	70	4.29	4.29	4.23	9,130.69	95.55	0.0307
5.71	5.71	5.71	5.71	5.71	60	5.71	5.71	3.79	9,686.04	98.42	0.0253
7.14	7.14	7.14	7.14	7.14	50	7.14	7.14	3.34	10,747.33	103.67	0.0198
8.57	8.57	8.57	8.57	8.57	40	8.57	8.57	2.90	12,300.22	110.91	0.0145
10	10	10	10	10	30	10	10	2.46	14,344.70	119.77	0.0097
11.43	11.43	11.43	11.43	11.43	20	11.43	11.43	2.02	16,880.78	129.93	0.0056
12.50	12.50	12.50	12.50	12.50	14.29	12.50	12.50	1.79	19,291.93	138.90	0.0036
12.86	12.86	12.86	12.86	12.86	10	12.86	12.86	1.58	19,908.44	141.10	0.0020
0	0	0	0	0	0	100	0	5.45	260,712.36	510.60	0.0081
1.43	1.43	1.43	1.43	1.43	1.43	90	1.43	5.02	213,190.51	461.73	0.0081
2.86	2.86	2.86	2.86	2.86	2.86	80	2.86	4.59	170,807.23	413.29	0.0080
4.29	4.29	4.29	4.29	4.29	4.29	70	4.29	4.16	133,562.52	365.46	0.0078
5.71	5.71	5.71	5.71	5.71	5.71	60	5.71	3.73	101,438.43	318.49	0.0076
7.14	7.14	7.14	7.14	7.14	7.14	50	7.14	3.30	74,469.97	272.89	0.0073
8.57	8.57	8.57	8.57	8.57	8.57	40	8.57	2.87	52,640.07	229.43	0.0069
10	10	10	10	10	10	30	10	2.44	35,948.75	189.60	0.0060
11.43	11.43	11.43	11.43	11.43	11.43	20	11.43	2.01	24,396.00	156.19	0.0046
12.50	12.50	12.50	12.50	12.50	12.50	14.29	12.50	1.79	20,665.30	143.75	0.0034
12.86	12.86	12.86	12.86	12.86	12.86	10	12.86	1.58	17,981.83	134.10	0.0021
0	0	0	0	0	0	0	100	-0.87	55,932.25	236.50	-0.0092
1.43	1.43	1.43	1.43	1.43	1.43	1.43	90	-0.58	47,801.08	218.63	-0.0086
2.86	2.86	2.86	2.86	2.86	2.86	2.86	80	-0.28	40,682.91	201.70	-0.0078
4.29	4.29	4.29	4.29	4.29	4.29	4.29	70	0.01	34,577.75	185.95	-0.0069
5.71	5.71	5.71	5.71	5.71	5.71	5.71	60	0.30	29,463.61	171.65	-0.0058
7.14	7.14	7.14	7.14	7.14	7.14	7.14	50	0.59	25,383.42	159.32	-0.0044
8.57	8.57	8.57	8.57	8.57	8.57	8.57	40	0.89	22,316.24	149.39	-0.0027
10	10	10	10	10	10	10	30	1.18	20,262.06	142.34	-0.0008
11.43	11.43	11.43	11.43	11.43	11.43	11.43	20	1.47	19,220.89	138.64	0.0013
12.50	12.50	12.50	12.50	12.50	12.50	12.50	14.29	1.67	19,763.45	140.58	0.0027
12.86	12.86	12.86	12.86	12.86	12.86	12.86	10	1.76	19,192.73	138.54	0.0034



## 1. Telkom

## 1) Nilai Trend

X	Y	u	u.Y	u <sup>2</sup>	T	Y/T
Bulan	Harga (Rp)					
Jan'97	4,250	-23	-97,750	529	4,093.07	103.83
Feb	4,175	-21	-87,675	441	4,032.35	103.54
Mar	3,675	-19	-69,825	361	3,971.63	92.53
Apr	3,525	-17	-59,925	289	3,910.91	90.13
Mei	4,100	-15	-61,500	225	3,850.19	106.49
Jun	3,975	-13	-51,675	169	3,789.47	104.90
Jul	4,000	-11	-44,000	121	3,728.75	107.27
Agt	2,675	-9	-24,075	81	3,668.03	72.93
Sep	3,625	-7	-25,375	49	3,607.31	100.49
Okt	3,350	-5	-16,750	25	3,546.59	94.46
Nov	2,675	-3	-8,025	9	3,485.87	76.74
Des'97	2,925	-1	-2,925	1	3,425.15	85.40
Jan'98	4,300	1	4,300	1	3,364.43	127.81
Feb	3,500	3	10,500	9	3,303.71	105.94
Mar	4,125	5	20,625	25	3,242.99	127.20
Apr	3,150	7	22,050	49	3,182.27	98.99
Mei	3,750	9	33,750	81	3,121.55	120.13
Jun	4,175	11	45,925	121	3,060.83	136.40
Jul	4,350	13	56,550	169	3,000.11	144.99
Agt	2,350	15	35,250	225	2,939.39	79.95
Sep	1,525	17	25,925	289	2,878.67	52.98
Okt	1,875	19	35,625	361	2,817.95	66.54
Nov	2,725	21	57,225	441	2,757.23	98.83
Des'98	2,700	23	62,100	529	2,696.51	100.13
Jumlah	81,475	0	-139,675	4,600		

$$T = a + b X$$

unit      u = tengah bulanan

            Y = harga rata-rata saham

T = nilai trend yang ditaksir

a = 3,394.79 = nilai trend periode dasar 31 Desember 1997

b = -30.36 = penurunan per setengah bulan secara linier

u = unit setengah bulan yang dihitung dari u = 0

$$\begin{aligned} a &= 81,475/24 \\ &= 3,394.79 \end{aligned}$$

$$\begin{aligned} b &= -139,675/4,600 \\ &= -30.36 \end{aligned}$$

$$T = 3,394.79 - 30.36 u$$

Lampiran IV. 23  
 2) Variasi Musim TLKM

Bulan	Y/T		Variasi Musim	Indeks Musim
	1997	1998		
Jan	103.83	127.81	115.82	115.89
Feb	103.54	105.94	104.74	104.80
Mar	92.53	127.20	109.86	109.93
Apr	90.13	98.99	94.56	94.61
Mei	106.49	120.13	113.31	113.38
Jun	104.90	136.40	120.65	120.72
Jul	107.27	144.99	126.13	126.21
Agt	72.93	79.95	76.44	76.48
Sep	100.49	52.98	76.73	76.78
Okt	94.46	66.54	80.50	80.54
Nov	76.74	98.83	87.78	87.84
Des	85.40	100.13	92.76	92.82
Jumlah			1,199.29	

Lampiran IV. 24  
3) Variasi Sikli TLKM

X Bulan	Y Harga (Rp)	T Trend	VM Indeks Musim	T x VM	VS x R Sikli - Random	Jumlah bergerak per 3 bulan yang tertimbang	Relatif - Sikli	Rata-rata Sikli
Jan'97	4,250	4093.07	1.1589	4,743.4188	89.5978	0	0.00	103.42
Feb	4,175	4032.35	1.0480	4,225.9516	98.7943	371.3601	92.84	99.94
Mar	3,675	3971.63	1.0993	4,365.9735	84.1737	362.4041	90.60	99.94
Apr	3,525	3910.91	0.9461	3,700.3019	95.2625	368.6226	92.16	99.94
Mei	4,100	3850.19	1.1338	4,365.2346	93.9239	370.0027	92.50	99.94
Jun	3,975	3789.47	1.2072	4,574.6263	86.8923	352.7063	88.18	99.94
Jul	4,000	3728.75	1.2621	4,706.0125	84.9977	352.2388	88.06	99.94
Agt	2,675	3668.03	0.7648	2,805.4186	95.3512	406.5839	101.65	99.94
Sep	3,625	3607.31	0.7678	2,769.6306	130.8839	474.3916	118.60	99.94
Okt	3,350	3546.59	0.8054	2,856.5904	117.2727	452.7944	113.20	99.94
Nov	2,675	3485.87	0.8784	3,061.8622	87.3651	384.0083	96.00	99.94
Des'97	2,925	3425.15	0.9282	3,179.1613	92.0054	381.6605	95.42	95.42
Jan'98	4,300	3364.43	1.1589	3,899.0050	110.2845	413.6625	103.42	103.42
Feb	3,500	3303.71	1.0480	3,462.3280	101.0881	428.1694	107.04	99.94
Mar	4,125	3242.99	1.0993	3,564.9868	115.7087	437.1253	109.28	99.94
Apr	3,150	3182.27	0.9461	3,010.9002	104.6199	430.9069	107.73	99.94
Mei	3,750	3121.55	1.1338	3,539.1235	105.9584	429.5268	107.38	99.94
Jun	4,175	3060.83	1.2072	3,695.0163	112.9900	446.8232	111.71	99.94
Jul	4,350	3000.11	1.2621	3,786.4043	114.8847	447.2907	111.82	99.94
Agt	2,350	2939.39	0.7648	2,248.1330	104.5312	392.9456	98.24	99.94
Sep	1,525	2878.67	0.7678	2,210.1933	68.9985	325.1379	81.28	99.94
Okt	1,875	2817.95	0.8054	2,269.7094	82.6097	346.7351	86.68	99.94
Nov	2,725	2757.23	0.8784	2,421.8512	112.5172	415.5211	103.88	99.94
Des'98	2,700	2696.51	0.9282	2,502.8511	107.8770	0	0.00	95.42

Lampiran IV. 25  
 a) Residu TLKM

VS x R Sikli - Random	Relatif - Sikli	$[(VS \times R) / \text{Relatif Sikli}] \times 100$ Residu	Rata-rata Residu
89.5978	0	0	106.64
98.7943	92.84	106.41	100.43
84.1737	90.60	92.91	99.39
95.2625	92.16	103.37	100.24
93.9239	92.50	101.54	100.11
86.8923	88.18	98.54	99.85
84.9977	88.06	96.52	99.63
95.3512	101.65	93.81	100.11
130.8839	118.60	110.36	97.62
117.2727	113.20	103.60	99.45
87.3651	96.00	91.00	99.66
92.0054	95.42	96.43	96.43
110.2845	103.42	106.64	106.64
101.0881	107.04	94.44	100.43
115.7087	109.28	105.88	99.39
104.6199	107.73	97.12	100.24
105.9584	107.38	98.67	100.11
112.9900	111.71	101.15	99.85
114.8847	111.82	102.74	99.63
104.5312	98.24	106.41	100.11
68.9985	81.28	84.89	97.62
82.6097	86.68	95.30	99.45
112.5172	103.88	108.31	99.66
107.8770	0	0	96.43

Lampiran IV. 26  
 1) Deret Berkala TLKM

Bulan	Trend	Variasi Musim	Rata-rata Sikli	Rata-rata Residu	Deret Berkala
Jan '97	4,093.07	1.1582	1.0342	1.0664	5,228
Feb	4,032.35	1.0474	0.9994	1.0043	4,239
Mar	3,971.63	1.0986	0.9994	0.9939	4,334
Apr	3,910.91	0.9456	0.9994	1.0024	3,705
Mei	3,850.19	1.1331	0.9994	1.0011	4,365
Jun	3,789.47	1.2065	0.9994	0.9985	4,562
Jul	3,728.75	1.2613	0.9994	0.9963	4,683
Agt	3,668.03	0.7644	0.9994	1.0011	2,805
Sep	3,607.31	0.7673	0.9994	0.9762	2,701
Dkt	3,546.59	0.8050	0.9994	0.9945	2,838
Nov	3,485.87	0.8778	0.9994	0.9966	3,048
Des '97	3,425.15	0.9276	0.9542	0.9643	2,923
Jan '98	3,364.43	1.1582	1.0342	1.0664	4,297
Feb	3,303.71	1.0474	0.9994	1.0043	3,473
Mar	3,242.99	1.0986	0.9994	0.9939	3,539
Apr	3,182.27	0.9456	0.9994	1.0024	3,015
Mei	3,121.55	1.1331	0.9994	1.0011	3,539
Jun	3,060.83	1.2065	0.9994	0.9985	3,685
Jul	3,000.11	1.2613	0.9994	0.9963	3,768
Agt	2,939.39	0.7644	0.9994	1.0011	2,248
Sep	2,878.67	0.7673	0.9994	0.9762	2,155
Dkt	2,817.95	0.8050	0.9994	0.9945	2,255
Nov	2,757.23	0.8778	0.9994	0.9966	2,411
Des '98	2,696.51	0.9276	0.9542	0.9643	2,301

Lampiran IV.27

Indosat

D) Nilai Trend

Bulan	Y Harga (Rp)	u	u.Y	u <sup>2</sup>	T	Y/T
Jan'97	6,750	-23	-155,250	529	7,119.59	94.81
Feb	6,775	-21	-142,275	441	7,354.39	92.12
Mar	6,400	-19	-121,600	361	7,589.19	84.33
Apr	6,700	-17	-113,900	289	7,823.99	85.63
Mei	7,250	-15	-108,750	225	8,058.79	89.96
Jun	7,275	-13	-94,575	169	8,293.59	87.72
Jul	7,950	-11	-87,450	121	8,528.39	93.22
Agt	6,000	-9	-54,000	81	8,763.19	68.47
Sep	8,325	-7	-58,275	49	8,997.99	92.52
Okt	8,125	-5	-40,625	25	9,232.79	88.00
Nov	8,275	-3	-24,825	9	9,467.59	87.40
Des'97	10,200	-1	-10,200	1	9,702.39	105.13
Jan'98	18,000	1	18,000	1	9,937.19	181.14
Feb	12,725	3	38,175	9	10,171.99	125.10
Mar	13,900	5	69,500	25	10,406.79	133.57
Apr	11,700	7	81,900	49	10,641.59	109.95
Mei	14,950	9	134,550	81	10,876.39	137.45
Jun	17,200	11	189,200	121	11,111.19	154.80
Jul	14,575	13	189,475	169	11,345.99	128.46
Agt	7,500	15	112,500	225	11,580.79	64.76
Sep	5,775	17	98,175	289	11,815.59	48.88
Okt	8,200	19	155,800	361	12,050.39	68.05
Nov	10,700	21	224,700	441	12,285.19	87.10
Des'98	10,425	23	239,775	529	12,519.99	83.27
Jumlah	235,675	0	540,025	4,600		

$$T = a + b X$$

u = tengah bulanan  
Y = harga rata-rata saham

T = nilai trend yang ditaksir

i = 9,819.79 = nilai trend periode dasar 31 Desember 1997

b = 117.40 = pertambahan per setengah bulan secara linier

i = unit setengah bulan yang dihitung dari u = 0

$$a = 235,675/24 = 9,819.79$$

$$b = 540.025/4,600 = 117.40$$

$$T = 9,819.79 + 117.40 u$$

Lampiran IV.28  
 Variasi Musim ISAT

Bulan	Y/T		Variasi Musim	Indeks Musim
	1997	1998		
Jan	94.81	181.14	137.97	138.44
Feb	92.12	125.10	108.61	108.98
Mar	84.33	133.57	108.95	109.32
Apr	85.63	109.95	97.79	98.12
Mei	89.96	137.45	113.71	114.10
Jun	87.72	154.80	121.26	121.67
Jul	93.22	128.46	110.84	111.22
Agt	68.47	64.76	66.62	66.84
Sep	92.52	48.88	70.70	70.94
Oktober	88.00	68.05	78.02	78.29
Nov	87.40	87.10	87.25	87.55
Des	105.13	83.27	94.20	94.52
Jumlah			1,195.91	

Lampiran IV.29  
Variasi Sikli ISAT

X Bulan	Y Harga (Rp)	T Trend	VM Indeks Musim	T x VM	VS x R Sikli - Random	Jumlah bergerak per 3 bulan yang tertimbang	Relatif - Sikli	Rata-rata Sikli
Jan'97	6,750	7,119.59	1.3844	9,856.6910	68.4814	0	0.00	121.92
Feb	6,775	7,354.39	1.0898	8,014.9018	84.5300	314.6819	78.67	99.66
Mar	6,400	7,589.19	1.0932	8,296.5606	77.1404	326.0820	81.52	99.66
Apr	6,700	7,823.99	0.9812	7,677.2198	87.2712	330.5312	82.63	99.66
Mei	7,250	8,058.79	1.1410	9,194.8582	78.8484	317.0616	79.27	99.66
Jun	7,275	8,293.59	1.2167	10,091.0503	72.0936	306.8516	76.71	99.66
Jul	7,950	8,528.39	1.1122	9,485.0567	83.8161	342.1572	85.54	99.66
Agt	6,000	8,763.19	0.6684	5,857.5704	102.4315	419.1003	104.78	99.66
Sep	8,325	8,997.99	0.7094	6,383.1663	130.4212	475.6769	118.92	99.66
Okt	8,125	9,232.79	0.7829	7,228.4564	112.4030	455.0618	113.77	99.66
Nov	8,275	9,467.59	0.8755	8,288.7018	99.8347	423.2966	105.82	99.66
Des'97	10,200	9,702.39	0.9452	9,170.6603	111.2243	453.1209	113.28	113.28
Jan'98	18,000	9,937.19	1.3844	13,757.5072	130.8377	487.6886	121.92	121.92
Feb	12,725	10,171.99	1.0898	11,085.5558	114.7890	482.5943	120.65	99.66
Mar	13,900	10,406.79	1.0932	11,376.7825	122.1787	471.1942	117.80	99.66
Apr	11,700	10,641.59	0.9812	10,441.9645	112.0479	466.7451	116.69	99.66
Mei	14,950	10,876.39	1.1410	12,409.6625	120.4706	480.2146	120.05	99.66
Jun	17,200	11,111.19	1.2167	13,519.3055	127.2255	490.4246	122.61	99.66
Jul	14,575	11,345.99	1.1122	12,618.7192	115.5030	455.1190	113.78	99.66
Agt	7,500	11,580.79	0.6684	7,740.9359	96.8875	378.1759	94.54	99.66
Sep	5,775	11,815.59	0.7094	8,381.9693	68.8979	321.5994	80.40	99.66
Okt	8,200	12,050.39	0.7829	9,434.3875	86.9161	342.2144	85.55	99.66
Nov	10,700	12,285.19	0.8755	10,755.4591	99.4844	373.9796	93.49	99.66
Des'98	10,425	12,519.99	0.9452	11,833.8445	88.0948	0	0.00	113.28



Lampiran IV.30  
Residu ISAT

VS x R Sikli - Random	Relatif - Sikli	$[(VS \times R) / \text{Relatif Sikli}] \times 100$ Residu	Rata-rata Residu
68.4814	0	0	107.31
84.5300	78.67	107.45	101.30
77.1404	81.52	94.63	99.17
87.2712	82.63	105.61	100.82
78.8484	79.27	99.47	99.91
72.0936	76.71	93.98	98.87
83.8161	85.54	97.99	99.75
102.4315	104.78	97.76	100.12
130.4212	118.92	109.67	97.68
112.4030	113.77	98.80	100.20
99.8347	105.82	94.34	100.37
111.2243	113.28	98.19	98.19
130.8377	121.92	107.31	107.31
114.7890	120.65	95.14	101.30
122.1787	117.80	103.72	99.17
112.0479	116.69	96.02	100.82
120.4706	120.05	100.35	99.91
127.2255	122.61	103.77	98.87
115.5030	113.78	101.51	99.75
96.8875	94.54	102.48	100.12
68.8979	80.40	85.69	97.68
86.9161	85.55	101.59	100.20
99.4844	93.49	106.41	100.37
88.0948	0	0	98.19

Lampiran IV.31  
 9) Deret Berkala ISAT

Bulan	Trend	Variasi Musim	Rata-rata Sikli	Rata-rata Residu	Deret Berkala
Jan '97	7,119.59	1.3797	1.2192	1.0731	12,852
Feb	7,354.39	1.0861	0.9966	1.0130	8,064
Mar	7,589.19	1.0895	0.9966	0.9917	8,172
Apr	7,823.99	0.9779	0.9966	1.0082	7,687
Mei	8,058.79	1.1371	0.9966	0.9991	9,124
Jun	8,293.59	1.2126	0.9966	0.9887	9,910
Jul	8,528.39	1.1084	0.9966	0.9975	9,397
Agt	8,763.19	0.6662	0.9966	1.0012	5,825
Sep	8,997.99	0.7070	0.9966	0.9768	6,193
Okt	9,232.79	0.7802	0.9966	1.0020	7,193
Nov	9,467.59	0.8725	0.9966	1.0037	8,263
Des '97	9,702.39	0.9420	1.1328	0.9819	10,165
Jan '98	9,937.19	1.3797	1.2192	1.0731	17,939
Feb	10,171.99	1.0861	0.9966	1.0130	11,153
Mar	10,406.79	1.0895	0.9966	0.9917	11,206
Apr	10,641.59	0.9779	0.9966	1.0082	10,456
Mei	10,876.39	1.1371	0.9966	0.9991	12,314
Jun	11,111.19	1.2126	0.9966	0.9887	13,276
Jul	11,345.99	1.1084	0.9966	0.9975	12,502
Agt	11,580.79	0.6662	0.9966	1.0012	7,698
Sep	11,815.59	0.7070	0.9966	0.9768	8,132
Okt	12,050.39	0.7802	0.9966	1.0020	9,389
Nov	12,285.19	0.8725	0.9966	1.0037	10,722
Des '98	12,519.99	0.9420	1.1328	0.9819	13,117

INDUSTRI PERLENGKAPAN RUMAH TANGGA DAN KOSMETIKA

1. Unilever

1) Nilai Trend

Bulan	Y Harga (Rp)	u	u.Y	u <sup>2</sup>	T	Y/T
Jan'97	35,200	-23	-809,600	529	37,182.67	94.67
Feb	35,200	-21	-739,200	441	36,673.67	95.98
Mar	35,200	-19	-668,800	361	36,164.67	97.33
Apr	35,200	-17	-598,400	289	35,655.67	98.72
Mai	35,200	-15	-528,000	225	35,146.67	100.15
Jun	35,200	-13	-457,600	169	34,637.67	101.62
Jul	35,200	-11	-387,200	121	34,128.67	103.14
Agt	35,200	-9	-316,800	81	33,619.67	104.70
Sep	31,000	-7	-217,000	49	33,110.67	93.63
Okt	28,000	-5	-140,000	25	32,601.67	85.89
Nov	27,000	-3	-81,000	9	32,092.67	84.13
Des'97	30,000	-1	-30,000	1	31,583.67	94.99
Jan'98	31,000	1	31,000	1	31,074.67	99.76
Feb	35,000	3	105,000	9	30,565.67	114.51
Mar	45,000	5	225,000	25	30,056.67	149.72
Apr	44,000	7	308,000	49	29,547.67	148.91
Mai	31,800	9	286,200	81	29,038.67	109.51
Jun	28,000	11	308,000	121	28,529.67	98.14
Jul	26,000	13	338,000	169	28,020.67	92.79
Agt	22,400	15	336,000	225	27,511.67	81.42
Sep	18,100	17	307,700	289	27,002.67	67.03
Okt	17,500	19	332,500	361	26,493.67	66.05
Nov	25,500	21	535,500	441	25,984.67	98.13
Des'98	30,000	23	690,000	529	25,475.67	117.76
Jumlah	751,900	0	-1,170,700	4,600		

$i = a + b X$

dit  $u$  = tengah bulanan

$Y$  = harga rata-rata saham

$i$  = nilai trend yang ditaksir

$i = 31,329.17$  = nilai trend periode dasar 31 Desember 1997

$b = -254.50$  = penurunan per setengah bulan secara linier

$u$  = unit setengah bulan yang dihitung dari  $u = 0$

$a = 751,900/24$   
 $= 31,329.17$

$b = 1,170,700/4,600$   
 $= -254.50$

$T = 31,329.17 - 254.50 u$

Lampiran IV.33  
 2) Variasi Musim UNVR

Bulan	Y/T		Varian Musim	Indeks Musim
	1997	1998		
Jan	94.67	99.76	97.21	97.27
Feb	95.98	114.51	105.24	105.30
Mar	97.33	149.72	123.52	123.59
Apr	98.72	148.91	123.82	123.88
Mei	100.15	109.51	104.83	104.89
Jun	101.62	98.14	99.88	99.94
Jul	103.14	92.79	97.96	98.02
Agt	104.70	81.42	93.06	93.11
Sep	93.63	67.03	80.33	80.37
Okt	85.89	66.05	75.97	76.01
Nov	84.13	98.13	91.13	91.18
Des	94.99	117.76	106.37	106.43
Jumlah			1,199.34	

Jampiran IV.34  
Variasi Sikli UNVR

X Bulan	Y Harga (Rp)	T Trend	VM Indeks Musim	T x VM	VS x R Sikli - Random	Jumlah bergerak per 3 bulan yang tertimbang	Relatif - Sikli	Rata-rata Sikli
Jan'97	35,200	37,182.67	0.9727	36,166.5176	97.3276	0	0.00	100.78
Feb	35,200	36,673.67	1.0530	38,618.2627	91.1486	358.3774	89.59	99.95
Mar	35,200	36,164.67	1.2359	44,696.9023	78.7527	328.3424	82.09	99.95
Apr	35,200	35,655.67	1.2388	44,172.0210	79.6885	333.6140	83.40	99.95
Mai	35,200	35,146.67	1.0489	36,864.6488	95.4844	372.3435	93.09	99.95
Jun	35,200	34,637.67	0.9994	34,616.3057	101.6862	404.0818	101.02	99.95
Jul	35,200	34,128.67	0.9802	33,452.1311	105.2250	424.5827	106.15	99.95
Agt	35,200	33,619.67	0.9311	31,303.7530	112.4466	446.6082	111.65	99.95
Sep	31,000	33,110.67	0.8037	26,611.7190	116.4900	458.4170	114.60	99.95
Okt	28,000	32,601.67	0.7601	24,780.8795	112.9903	434.7371	108.68	99.95
Nov	27,000	32,092.67	0.9118	29,263.1023	92.2664	386.7694	96.69	99.95
Des'97	30,000	31,583.67	1.0643	33,614.8277	89.2463	373.3216	93.33	93.33
Jan'98	31,000	31,074.67	0.9727	30,225.4410	102.5626	403.1132	100.78	100.78
Feb	35,000	30,565.67	1.0530	32,186.3908	108.7416	441.1834	110.30	99.95
Mar	45,000	30,056.67	1.2359	37,147.8584	121.1375	471.2184	117.80	99.95
Apr	44,000	29,547.67	1.2388	36,605.1262	120.2017	465.9468	116.49	99.95
Mai	31,800	29,038.67	1.0489	30,458.0881	104.4058	427.2173	106.80	99.95
Jun	28,000	28,529.67	0.9994	28,512.0731	98.2040	395.4790	98.87	99.95
Jul	26,000	28,020.67	0.9802	27,465.2111	94.6652	374.9780	93.74	99.95
Agt	22,400	27,511.67	0.9311	25,616.5073	87.4436	352.9526	88.24	99.95
Sep	18,100	27,002.67	0.8037	21,702.5952	83.4002	341.1438	85.29	99.95
Okt	17,500	26,493.67	0.7601	20,138.1231	86.8999	364.8237	91.21	99.95
Nov	25,500	25,984.67	0.9118	23,693.6365	107.6238	412.7914	103.20	99.95
Des'98	30,000	25,475.67	1.0643	27,114.0199	110.6439	0	0.00	93.33

Lampiran IV.35  
Residu UNVR

VS x R Sikli - Random	Relatif - Sikli	$[(VS \times R) / \text{Relatif Sikli}] \times 100$ Residu	Rata-rata Residu
97.3276	0	0	101.77
91.1486	89.59	101.73	100.16
78.7527	82.09	95.94	99.38
79.6885	83.40	95.55	99.37
95.4844	93.09	102.58	100.17
101.6862	101.02	100.66	99.99
105.2250	106.15	99.13	100.06
112.4466	111.65	100.71	99.91
116.4900	114.60	101.65	99.72
112.9903	108.68	103.96	99.62
92.2664	96.69	95.42	99.86
89.2463	93.33	95.62	95.62
102.5626	100.78	101.77	101.77
108.7416	110.30	98.59	100.16
121.1375	117.80	102.83	99.38
120.2017	116.49	103.19	99.37
104.4058	106.80	97.75	100.17
98.2040	98.87	99.33	99.99
94.6652	93.74	100.98	100.06
87.4436	88.24	99.10	99.91
83.4002	85.29	97.79	99.72
86.8999	91.21	95.28	99.62
107.6238	103.20	104.29	99.86
110.6439	0	0	95.62

ampiran IV.36  
Deret Berkala UNVR

Bulan	Trend	Variasi Musim	Rata-rata Sikli	Rata-rata Residu	Deret Berkala
Jan '97	37,182.67	0.9721	1.0078	1.0177	37,073
Feb	36,673.67	1.0524	0.9995	1.0016	38,639
Mar	36,164.67	1.2352	0.9995	0.9938	44,373
Apr	35,655.67	1.2382	0.9995	0.9937	43,844
Mei	35,146.67	1.0483	0.9995	1.0017	36,885
Jun	34,637.67	0.9988	0.9995	0.9999	34,576
Jul	34,128.67	0.9796	0.9995	1.0006	33,435
Agt	33,619.67	0.9306	0.9995	0.9991	31,240
Sep	33,110.67	0.8033	0.9995	0.9972	26,507
Okt	32,601.67	0.7597	0.9995	0.9962	24,660
Nov	32,092.67	0.9113	0.9995	0.9986	29,189
Des '97	31,583.67	1.0637	0.9333	0.9562	29,984
Jan '98	31,074.67	0.9721	1.0078	1.0177	30,983
Feb	30,565.67	1.0524	0.9995	1.0016	32,203
Mar	30,056.67	1.2352	0.9995	0.9938	36,879
Apr	29,547.67	1.2382	0.9995	0.9937	36,334
Mei	29,038.67	1.0483	0.9995	1.0017	30,475
Jun	28,529.67	0.9988	0.9995	0.9999	28,479
Jul	28,020.67	0.9796	0.9995	1.0006	27,451
Agt	27,511.67	0.9306	0.9995	0.9991	25,564
Sep	27,002.67	0.8033	0.9995	0.9972	21,617
Okt	26,493.67	0.7597	0.9995	0.9962	20,040
Nov	25,984.67	0.9113	0.9995	0.9986	23,633
Des '98	25,475.67	1.0637	0.9333	0.9562	24,185

lampiran IV.37

Tancho Indonesia

1) Nilai Trend

X	Y	u	u.Y	u <sup>2</sup>	T	Y/T
Bulan	Harga (Rp)					
Jan'97	3,500	-23	-80,500	529	4,019.92	87.07
Feb	3,675	-21	-77,175	441	3,868.46	95.00
Mar	3,900	-19	-74,100	361	3,717.00	104.92
Apr	4,300	-17	-73,100	289	3,565.54	120.60
Mei	4,500	-15	-67,500	225	3,414.08	131.81
Jun	4,850	-13	-63,050	169	3,262.62	148.65
Jul	5,400	-11	-59,400	121	3,111.16	173.57
Agst	1,975	-9	-17,775	81	2,959.70	66.73
Sep	1,600	-7	-11,200	49	2,808.24	56.98
Okt	1,825	-5	-9,125	25	2,656.78	68.69
Nov	1,500	-3	-4,500	9	2,505.32	59.87
Des'97	1,475	-1	-1,475	1	2,353.86	62.66
Jan'98	1,350	1	1,350	1	2,202.40	61.30
Feb	1,600	3	4,800	9	2,050.94	78.01
Mar	1,800	5	9,000	25	1,899.48	94.76
Apr	1,400	7	9,800	49	1,748.02	80.09
Mei	1,000	9	9,000	81	1,596.56	62.63
Jun	1,000	11	11,000	121	1,445.10	69.20
Jul	1,400	13	18,200	169	1,293.64	108.22
Agst	1,325	15	19,875	225	1,142.18	116.01
Sep	1,100	17	18,700	289	990.72	111.03
Okt	1,200	19	22,800	361	839.26	142.98
Nov	1,500	21	31,500	441	687.80	218.09
Des'98	1,500	23	34,500	529	536.34	279.67
Jumlah	54,675	0	-348,375	4,600		

$$T = a + bX$$

dimit  $u$  = tengah bulanan  
 $Y$  = harga rata-rata saham

$T$  = nilai trend yang ditaksir

$t = 2,278.13$  = nilai trend periode dasar 31 Desember 1997

$b = -75.73$  = penurunan per setengah bulan secara linier

$u$  = unit setengah bulan yang dihitung dari  $u = 0$

$$a = 54,675/24$$

$$= 2,278.13$$

$$b = -348,375/4,600$$

$$= -75.73$$

$$T = 2,278.13 - 75.73 u$$



Lampiran IV.38

2) Variasi Musim TCID

Bulan	Y/T		Variasi Musim	Indeks Musim
	1997	1998		
Jan	87.07	61.30	74.18	68.51
Feb	95.00	78.01	86.51	79.90
Mar	104.92	94.76	99.84	92.21
Apr	120.60	80.09	100.34	92.68
Mei	131.81	62.63	97.22	89.79
Jun	148.65	69.20	108.93	100.60
Jul	173.57	108.22	140.90	130.13
Agt	66.73	116.01	91.37	84.39
Sep	56.98	111.03	84.00	77.58
Okt	68.69	142.98	105.84	97.75
Nov	59.87	218.09	138.98	128.36
Des	62.66	279.67	171.17	158.09
Jumlah			1,299.27	

ampiran IV.39

Variasi Sikli TCID

X bulan	Y Harga (Rp)	T Trend	VM Indeks Musim	T x VM	VS x R Sikli - Random	Jumlah bergerak per 3 bulan yang tertimbang	Relatif - Sikli	Rata-rata Sikli
Jan'97	3,500	4,019.92	0.6851	2,754.1905	127.0791	0	0.00	79.05
Feb	3,675	3,868.46	0.7990	3,090.7574	118.9029	478.6669	119.67	108.27
Mar	3,900	3,717.00	0.9221	3,427.6056	113.7821	476.5942	119.15	108.27
Apr	4,300	3,565.54	0.9268	3,304.4587	130.1272	520.8273	130.21	108.27
Mei	4,500	3,414.08	0.8979	3,065.5874	146.7908	571.4704	142.87	108.27
Jun	4,850	3,262.62	1.0060	3,282.3152	147.7616	575.6951	143.92	108.27
Jul	5,400	3,111.16	1.3013	4,048.5460	133.3812	493.6000	123.40	108.27
Agt	1,975	2,959.70	0.8439	2,497.5959	79.0760	364.9698	91.24	108.27
Sep	1,600	2,808.24	0.7758	2,178.7545	73.4365	296.2217	74.06	108.27
Oktr	1,825	2,656.78	0.9775	2,597.0253	70.2727	260.6259	65.16	108.27
Nov	1,500	2,505.32	1.2836	3,215.8425	46.6441	203.1985	50.80	108.27
Des'97	1,475	2,353.86	1.5809	3,721.2095	39.6377	215.3860	53.85	53.85
Jan'98	1,350	2,202.40	0.6851	1,508.9428	89.4666	316.2137	79.05	79.05
Feb	1,600	2,050.94	0.7990	1,638.6257	97.6428	387.5159	96.88	108.27
Mar	1,800	1,899.48	0.9221	1,751.5922	102.7636	389.5886	97.40	108.27
Apr	1,400	1,748.02	0.9268	1,620.0238	86.4185	345.3555	86.34	108.27
Mei	1,000	1,596.56	0.8979	1,433.5910	69.7549	294.7124	73.68	108.27
Jun	1,000	1,445.10	1.0060	1,453.8235	68.7841	290.4877	72.62	108.27
Jul	1,400	1,293.64	1.3013	1,683.4110	83.1645	372.5827	93.15	108.27
Agt	1,325	1,142.18	0.8439	963.8491	137.4697	501.2130	125.30	108.27
Sep	1,100	990.72	0.7758	768.6436	143.1092	569.9611	142.49	108.27
Oktr	1,200	839.26	0.9775	820.3839	146.2730	605.5568	151.39	108.27
Nov	1,500	687.80	1.2836	882.8639	169.9016	662.9843	165.75	108.27
Des'98	1,500	536.34	1.5809	847.8981	176.9080	0	0.00	53.85

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Lampiran IV.40

4) Residu TCID

VS x R Sikli - Random	Relatif - Sikli	$[(VS \times R) / \text{Relatif Sikli}] \times 100$ Residu	Rata-rata Residu
127.0791	0	0	113.17
118.9029	119.67	99.36	100.08
113.7821	119.15	95.50	100.50
130.1272	130.21	99.94	100.02
146.7908	142.87	102.75	98.71
147.7616	143.92	102.67	98.69
133.3812	123.40	108.09	98.69
79.0760	91.24	86.67	98.19
73.4365	74.06	99.16	99.80
70.2727	65.16	107.85	102.24
46.6441	50.80	91.82	97.16
39.6377	53.85	73.61	73.61
89.4666	79.05	113.17	113.17
97.6428	96.88	100.79	100.08
102.7636	97.40	105.51	100.50
86.4185	86.34	100.09	100.02
69.7549	73.68	94.68	98.71
68.7841	72.62	94.72	98.69
83.1645	93.15	89.28	98.69
137.4697	125.30	109.71	98.19
143.1092	142.49	100.43	99.80
146.2730	151.39	96.62	102.24
169.9016	165.75	102.51	97.16
176.9080	0	0	73.61

Lampiran IV.41

Deret Berkala TCID

Bulan	Trend	Variasi Musim	Rata-rata Sikli	Rata-rata Residu	Deret Berkala
Jan '97	4,019.92	0.7418	0.7905	1.1317	2,668
Feb	3,868.46	0.8651	1.0827	1.0008	3,626
Mar	3,717.00	0.9984	1.0827	1.0050	4,038
Apr	3,565.54	1.0034	1.0827	1.0002	3,874
Mei	3,414.08	0.9722	1.0827	0.9871	3,547
Jun	3,262.62	1.0893	1.0827	0.9869	3,797
Jul	3,111.16	1.4090	1.0827	0.9869	4,684
Agt	2,959.70	0.9137	1.0827	0.9819	2,875
Sep	2,808.24	0.8400	1.0827	0.9980	2,549
Dkt	2,656.78	1.0584	1.0827	1.0224	3,113
Nov	2,505.32	1.3898	1.0827	0.9716	3,663
Des '97	2,353.86	1.7117	0.5385	0.7361	1,597
Jan '98	2,202.40	0.7418	0.7905	1.1317	1,462
Feb	2,050.94	0.8651	1.0827	1.0008	1,922
Mar	1,899.48	0.9984	1.0827	1.0050	2,064
Apr	1,748.02	1.0034	1.0827	1.0002	1,899
Mei	1,596.56	0.9722	1.0827	0.9871	1,659
Jun	1,445.10	1.0893	1.0827	0.9869	1,682
Jul	1,293.64	1.4090	1.0827	0.9869	1,948
Agt	1,142.18	0.9137	1.0827	0.9819	1,109
Sep	990.72	0.8400	1.0827	0.9980	899
Dkt	839.26	1.0584	1.0827	1.0224	983
Nov	687.80	1.3898	1.0827	0.9716	1,006
Des '98	536.34	1.7117	0.5385	0.7361	364

## 1. Mustika Ratu

## 1) Nilai Trend

X Bulan	Y Harga (Rp)	u	u.Y	u <sup>2</sup>	T	Y/T
Jan'97	3,150	-23	-72,450	529	3,323.06	94.79
Feb	3,300	-21	-69,300	441	3,218.70	102.53
Mar	2,950	-19	-56,050	361	3,114.34	94.72
Apr	2,900	-17	-49,300	289	3,009.98	96.35
Mei	2,900	-15	-43,500	225	2,905.62	99.81
Jun	2,600	-13	-33,800	169	2,801.26	92.82
Jul	3,325	-11	-36,575	121	2,696.90	123.29
Agt	3,000	-9	-27,000	81	2,592.54	115.72
Sep	2,975	-7	-20,825	49	2,488.18	119.57
Dkt	2,500	-5	-12,500	25	2,383.82	104.87
Nov	1,850	-3	-5,550	9	2,279.46	81.16
Des'97	975	-1	-975	1	2,175.10	44.83
Jan'98	1,425	1	1,425	1	2,070.74	68.82
Feb	2,025	3	6,075	9	1,966.38	102.98
Mar	2,200	5	11,000	25	1,862.02	118.15
Apr	2,450	7	17,150	49	1,757.66	139.39
Mei	2,450	9	22,050	81	1,653.30	148.19
Jun	1,500	11	16,500	121	1,548.94	96.84
Jul	1,600	13	20,800	169	1,444.58	110.76
Agt	1,000	15	15,000	225	1,340.22	74.61
Sep	850	17	14,450	289	1,235.86	68.78
Dkt	1,050	19	19,950	361	1,131.50	92.80
Nov	1,025	21	21,525	441	1,027.14	99.79
Des'98	950	23	21,850	529	922.78	102.95
Jumlah	50,950	0	-240,050	4,600		

$$T = a + b X$$

unit      u = tengah bulanan  
             Y = harga rata-rata saham

T = nilai trend yang ditaksir

a = 2,122.92 = nilai trend periode dasar 31 Desember 1997

b = -52.18 = penurunan per setengah bulan secara linier

u = unit setengah bulan yang dihitung dari u = 0

$$\begin{aligned} a &= 50,950/24 \\ &= 2,122.92 \end{aligned}$$

$$\begin{aligned} b &= -240,050/4,600 \\ &= -52.18 \end{aligned}$$

$$T = 2,122.92 - 52.18 u$$

Lampiran IV. 43

2) Variasi Musim MRAT

Bulan	Y/T		Variasi Musim	Indeks Musim
	1997	1998		
Jan	94.79	68.82	81.80	81.99
Feb	102.53	102.98	102.75	102.99
Mar	94.72	118.15	106.44	106.68
Apr	96.35	139.39	117.87	118.14
Mei	99.81	148.19	124.00	124.28
Jun	92.82	96.84	94.83	95.05
Jul	123.29	110.76	117.02	117.29
Agt	115.72	74.61	95.17	95.38
Sep	119.57	68.78	94.17	94.39
Okt	104.87	92.80	98.84	99.06
Nov	81.16	99.79	90.48	90.68
Des	44.83	102.95	73.89	74.06
Jumlah			1,197.25	

## 3) Variasi Sikli MRAT

X Bulan	Y Harga (Rp)	T Trend	VM Indeks Musim	T x VM	VS x R Sikli - Random	Jumlah bergerak per 3 bulan yang tertimbang	Relatif - Sikli	Rata-rata Sikli
Jan'97	3,150	3,323.06	0.8199	2,724.6457	115.6114	0	0.00	82.09
Feb	3,300	3,218.70	1.0299	3,314.9276	99.5497	403.5011	100.88	99.77
Mar	2,950	3,114.34	1.0668	3,322.4342	88.7903	358.6836	89.67	99.77
Apr	2,900	3,009.98	1.1814	3,555.9573	81.5533	332.2031	83.05	99.77
Mei	2,900	2,905.62	1.2428	3,611.1773	80.3062	339.8190	84.95	99.77
Jun	2,600	2,801.26	0.9505	2,662.4810	97.6533	380.7252	95.18	99.77
Jul	3,325	2,696.90	1.1729	3,163.2809	105.1124	429.1942	107.30	99.77
Agt	3,000	2,592.54	0.9538	2,472.8771	121.3162	474.4189	118.60	99.77
Sep	2,975	2,488.18	0.9439	2,348.5456	126.6741	480.5306	120.13	99.77
Okt	2,500	2,383.82	0.9906	2,361.4736	105.8661	427.9039	106.98	99.77
Nov	1,850	2,279.46	0.9068	2,067.0952	89.4976	345.3893	86.35	99.77
Des'97	975	2,175.10	0.7406	1,610.8239	60.5280	294.4837	73.62	73.62
Jan'98	1,425	2,070.74	0.8199	1,697.8426	83.9300	328.3798	82.09	82.09
Feb	2,025	1,966.38	1.0299	2,025.1677	99.9917	394.6646	98.67	99.77
Mar	2,200	1,862.02	1.0668	1,986.4366	110.7511	439.4820	109.87	99.77
Apr	2,450	1,757.66	1.1814	2,076.4802	117.9881	465.9625	116.49	99.77
Mei	2,450	1,653.30	1.2428	2,054.7626	119.2352	458.3466	114.59	99.77
Jun	1,500	1,548.94	0.9505	1,472.2030	101.8881	417.4405	104.36	99.77
Jul	1,600	1,444.58	1.1729	1,694.3944	94.4290	368.9714	92.24	99.77
Agt	1,000	1,340.22	0.9538	1,278.3600	78.2252	323.7467	80.94	99.77
Sep	850	1,235.86	0.9439	1,166.5047	72.8673	317.6351	79.41	99.77
Okt	1,050	1,131.50	0.9906	1,120.8931	93.6753	370.2617	92.57	99.77
Nov	1,025	1,027.14	0.9068	931.4470	110.0438	452.7763	113.19	99.77
Des'98	950	922.78	0.7406	683.3875	139.0134	0	0.00	73.62

Lampiran IV. 45

4) Residu MRAT

VS x R Sikli - Random	Relatif - Sikli	$[(VS \times R) / \text{Relatif Sikli}] \times 100$ Residu	Rata-rata Residu
115.6114	0	0	102.24
99.5497	100.88	98.69	100.01
88.7903	89.67	99.02	99.91
81.5533	83.05	98.20	99.74
80.3062	84.95	94.53	99.29
97.6533	95.18	102.60	100.11
105.1124	107.30	97.96	100.17
121.3162	118.60	102.29	99.47
126.6741	120.13	105.45	98.60
105.8661	106.98	98.96	100.08
89.4976	86.35	103.65	100.43
60.5280	73.62	82.22	82.22
83.9300	82.09	102.24	102.24
99.9917	98.67	101.34	100.01
110.7511	109.87	100.80	99.91
117.9881	116.49	101.29	99.74
119.2352	114.59	104.06	99.29
101.8881	104.36	97.63	100.11
94.4290	92.24	102.37	100.17
78.2252	80.94	96.65	99.47
72.8673	79.41	91.76	98.60
93.6753	92.57	101.20	100.08
110.0438	113.19	97.22	100.43
139.0134	0	0	82.22



## Deret Berkala MRAT

Bulan	Trend	Variasi Musim	Rata-rata Sikli	Rata-rata Residu	Deret Berkala
Jan '97	3,323.06	0.8180	0.8209	1.0224	2,282
Feb	3,218.70	1.0275	0.9977	1.0001	3,300
Mar	3,114.34	1.0644	0.9977	0.9991	3,304
Apr	3,009.98	1.1787	0.9977	0.9974	3,531
Mei	2,905.62	1.2400	0.9977	0.9929	3,569
Jun	2,801.26	0.9483	0.9977	1.0011	2,653
Jul	2,696.90	1.1702	0.9977	1.0017	3,154
Agt	2,592.54	0.9517	0.9977	0.9947	2,448
Sep	2,488.18	0.9417	0.9977	0.9860	2,305
Dkt	2,383.82	0.9884	0.9977	1.0008	2,353
Nov	2,279.46	0.9048	0.9977	1.0043	2,067
Des '97	2,175.10	0.7389	0.7362	0.8222	973
Jan '98	2,070.74	0.8180	0.8209	1.0224	1,422
Feb	1,966.38	1.0275	0.9977	1.0001	2,016
Mar	1,862.02	1.0644	0.9977	0.9991	1,976
Apr	1,757.66	1.1787	0.9977	0.9974	2,062
Mei	1,653.30	1.2400	0.9977	0.9929	2,031
Jun	1,548.94	0.9483	0.9977	1.0011	1,467
Jul	1,444.58	1.1702	0.9977	1.0017	1,689
Agt	1,340.22	0.9517	0.9977	0.9947	1,266
Sep	1,235.86	0.9417	0.9977	0.9860	1,145
Dkt	1,131.50	0.9884	0.9977	1.0008	1,117
Nov	1,027.14	0.9048	0.9977	1.0043	931
Des '98	922.78	0.7389	0.7362	0.8222	413

1) Nilai Trend

X	Y	u	u.Y	u <sup>2</sup>	T	Y/T
Bulan	Harga (Rp)					
Jan'97	9,000	-23	-207,000	529	4,568.24	197.01
Feb	9,000	-21	-189,000	441	5,561.40	161.83
Mar	9,000	-19	-171,000	361	6,554.56	137.31
Apr	9,000	-17	-153,000	289	7,547.72	119.24
Mei	9,000	-15	-135,000	225	8,540.88	105.38
Jun	9,500	-13	-123,500	169	9,534.04	99.64
Jul	9,500	-11	-104,500	121	10,527.20	90.24
Agt	9,750	-9	-87,750	81	11,520.36	84.63
Sep	11,500	-7	-80,500	49	12,513.52	91.90
Dkt	11,500	-5	-57,500	25	13,506.68	85.14
Nov	11,500	-3	-34,500	9	14,499.84	79.31
Des'97	11,500	-1	-11,500	1	15,493.00	74.23
Jan'98	11,500	1	11,500	1	16,486.16	69.76
Feb	13,500	3	40,500	9	17,479.32	77.23
Mar	19,000	5	95,000	25	18,472.48	102.86
Apr	19,000	7	133,000	49	19,465.64	97.61
Mei	20,000	9	180,000	81	20,458.80	97.76
Jun	20,000	11	220,000	121	21,451.96	93.23
Jul	23,000	13	299,000	169	22,445.12	102.47
Agt	23,000	15	345,000	225	23,438.28	98.13
Sep	25,000	17	425,000	289	24,431.44	102.33
Dkt	30,000	19	570,000	361	25,424.60	118.00
Nov	30,000	21	630,000	441	26,417.76	113.56
Des'98	30,000	23	690,000	529	27,410.92	109.45
Jumlah	383,750	0	2,284,250	4,600		

$T = a + b X$

unit      u = tengah bulanan  
             Y = harga rata-rata saham

T = nilai trend yang ditaksir  
 a = 15,989.58 = nilai trend periode dasar 31 Desember 1997  
 b = 496.58 = pertambahan per setengah bulan secara linier  
 u = unit setengah bulan yang dihitung dari u = 0

a = 383,750/24  
 = 15,989.58

b = 2,284,250/4,600  
 = 496.58

T = 15,989.58 + 496.58 u

Lampiran IV. 48

2) Variasi Musim PGIN

Bulan	Y/T		Variasi Musim	Indeks Musim
	1997	1998		
Jan	197.01	69.76	133.38	127.63
Feb	161.83	77.23	119.53	114.37
Mar	137.31	102.86	120.08	114.90
Apr	119.24	97.61	108.42	103.75
Mei	105.38	97.76	101.57	97.18
Jun	99.64	93.23	96.44	92.28
Jul	90.24	102.47	96.36	92.20
Agt	84.63	98.13	91.38	87.44
Sep	91.90	102.33	97.11	92.92
Okt	85.14	118.00	101.57	97.19
Nov	79.31	113.56	96.44	92.27
Des	74.23	109.45	91.84	87.87
Jumlah			1,254.12	

## 3) Variasi Sikli PGIN

X Bulan	Y Harga (Rp)	T Trend	VM Indeks Musim	T x VM	VS x R Sikli - Random	Jumlah bergerak per 3 bulan yang tertimbang	Relatif - Sikli	Rata-rata Sikli
Jan'97	9,000	4,568.24	1.2763	5,830.3475	154.3647	0	0.00	65.33
Feb	9,000	5,561.40	1.1437	6,360.7755	141.4922	556.8518	139.21	104.51
Mar	9,000	6,554.56	1.1490	7,531.2086	119.5027	495.4339	123.86	104.51
Apr	9,000	7,547.72	1.0375	7,830.4291	114.9362	457.8047	114.45	104.51
Mei	9,000	8,540.88	0.9718	8,300.3246	108.4295	439.7793	109.94	104.51
Jun	9,500	9,534.04	0.9228	8,797.5923	107.9841	422.2755	105.57	104.51
Jul	9,500	10,527.20	0.9220	9,705.9806	97.8778	400.5315	100.13	104.51
Agt	9,750	11,520.36	0.8744	10,073.1642	96.7918	390.3612	97.59	104.51
Sep	11,500	12,513.52	0.9292	11,627.9397	98.8997	382.1993	95.55	104.51
Okt	11,500	13,506.68	0.9719	13,126.6502	87.6080	360.0677	90.02	104.51
Nov	11,500	14,499.84	0.9227	13,379.5816	85.9519	343.9825	86.00	104.51
Des'97	11,500	15,493.00	0.8787	13,614.1845	84.4707	309.5487	77.39	77.39
Jan'98	11,500	16,486.16	1.2763	21,040.9353	54.6554	261.3094	65.33	65.33
Feb	13,500	17,479.32	1.1437	19,991.7340	67.5279	279.2285	69.81	104.51
Mar	19,000	18,472.48	1.1490	21,224.9334	89.5174	340.6465	85.16	104.51
Apr	19,000	19,465.64	1.0375	20,194.7494	94.0839	378.2757	94.57	104.51
Mei	20,000	20,458.80	0.9718	19,882.5742	100.5906	396.3011	99.08	104.51
Jun	20,000	21,451.96	0.9228	19,794.9242	101.0360	413.8049	103.45	104.51
Jul	23,000	22,445.12	0.9220	20,694.1921	111.1423	435.5489	108.89	104.51
Agt	23,000	23,438.28	0.8744	20,493.9466	112.2283	445.7192	111.43	104.51
Sep	25,000	24,431.44	0.9292	22,702.4300	110.1204	453.8811	113.47	104.51
Okt	30,000	25,424.60	0.9719	24,709.2424	121.4121	476.0127	119.00	104.51
Nov	30,000	26,417.76	0.9227	24,376.7225	123.0682	492.0979	123.02	104.51
Des'98	30,000	27,410.92	0.8787	24,086.8342	124.5494	0	0.00	77.39

Lampiran IV. 50

4) Residu PGIN

VS x R Sikli - Random	Relatif - Sikli	$[(VS \times R) / \text{Relatif Sikli}] \times 100$ Residu	Rata-rata Residu
154.3647	0	0	83.66
141.4922	139.21	101.64	99.19
119.5027	123.86	96.48	100.80
114.9362	114.45	100.42	99.96
108.4295	109.94	98.62	100.08
107.9841	105.57	102.29	99.98
97.8778	100.13	97.75	99.91
96.7918	97.59	99.18	99.95
98.8997	95.55	103.51	100.28
87.6080	90.02	97.32	99.67
85.9519	86.00	99.95	99.99
84.4707	77.39	109.15	109.15
54.6554	65.33	83.66	83.66
67.5279	69.81	96.73	99.19
89.5174	85.16	105.11	100.80
94.0839	94.57	99.49	99.96
100.5906	99.08	101.53	100.08
101.0360	103.45	97.67	99.98
111.1423	108.89	102.07	99.91
112.2283	111.43	100.72	99.95
110.1204	113.47	97.05	100.28
121.4121	119.00	102.02	99.67
123.0682	123.02	100.04	99.99
124.5494	0	0	109.15

Lampiran IV. 51

3) Deret Berkala PGIN

Bulan	Trend	Variasi Musim	Rata-rata Sikli	Rata-rata Residu	Deret Berkala
Jan '97	4,568.24	1.3338	0.6533	0.8366	3,330
Feb	5,561.40	1.1953	1.0451	0.9919	6,891
Mar	6,554.56	1.2008	1.0451	1.0080	8,292
Apr	7,547.72	1.0842	1.0451	0.9996	8,549
Mei	8,540.88	1.0157	1.0451	1.0008	9,073
Jun	9,534.04	0.9644	1.0451	0.9998	9,607
Jul	10,527.20	0.9636	1.0451	0.9991	10,592
Agt	11,520.36	0.9138	1.0451	0.9995	10,997
Sep	12,513.52	0.9711	1.0451	1.0028	12,736
Okt	13,506.68	1.0157	1.0451	0.9967	14,291
Nov	14,499.84	0.9644	1.0451	0.9999	14,613
Des '97	15,493.00	0.9184	0.7739	1.0915	12,019
Jan '98	16,486.16	1.3338	0.6533	0.8366	12,019
Feb	17,479.32	1.1953	1.0451	0.9919	21,658
Mar	18,472.48	1.2008	1.0451	1.0080	23,368
Apr	19,465.64	1.0842	1.0451	0.9996	22,048
Mei	20,458.80	1.0157	1.0451	1.0008	21,733
Jun	21,451.96	0.9644	1.0451	0.9998	21,616
Jul	22,445.12	0.9636	1.0451	0.9991	22,582
Agt	23,438.28	0.9138	1.0451	0.9995	22,373
Sep	24,431.44	0.9711	1.0451	1.0028	24,865
Okt	25,424.60	1.0157	1.0451	0.9967	26,900
Nov	26,417.76	0.9644	1.0451	0.9999	26,623
Des '98	27,410.92	0.9184	0.7739	1.0915	21,264

INDUSTRI PERKEBUNAN

PP London Sumatra Indonesia

1) Nilai Trend

X Bulan	Y Harga (Rp)	u	u.Y	u <sup>2</sup>	T	Y/T
Jan'97	2,075	-23	-47,725	529	5,786.98	35.86
Feb	6,450	-21	-135,450	441	5,554.96	116.11
Mar	6,050	-19	-114,950	361	5,322.94	113.66
Apr	6,300	-17	-107,100	289	5,090.92	123.75
Mei	6,550	-15	-98,250	225	4,858.90	134.80
Jun	7,700	-13	-100,100	169	4,626.88	166.42
Juli	3,325	-11	-36,575	121	4,394.86	75.66
Agt	2,850	-9	-25,650	81	4,162.84	68.46
Sep	4,000	-7	-28,000	49	3,930.82	101.76
Dkt	3,875	-5	-19,375	25	3,698.80	104.76
Nov	3,275	-3	-9,825	9	3,466.78	94.47
Des'97	3,125	-1	-3,125	1	3,234.76	96.61
Jan'98	2,125	1	2,125	1	3,002.74	70.77
Feb	2,675	3	8,025	9	2,770.72	96.55
Mar	2,725	5	13,625	25	2,538.70	107.34
Apr	1,975	7	13,825	49	2,306.68	85.62
Mei	1,400	9	12,600	81	2,074.66	67.48
Jun	1,150	11	12,650	121	1,842.64	62.41
Juli	1,550	13	20,150	169	1,610.62	96.24
Agt	1,000	15	15,000	225	1,378.60	72.54
Sep	1,100	17	18,700	289	1,146.58	95.94
Okt	950	19	18,050	361	914.56	103.88
Nov	1,325	21	27,825	441	682.54	194.13
Des'98	1,300	23	29,900	529	450.52	288.56
Jumlah	74,850	0	-533,650	4,600		

$$T = a + b X$$

unit u = tengah bulanan  
 Y = harga rata-rata saham

T = nilai trend yang ditaksir

a = 3,118.75 = nilai trend periode dasar 31 Desember 1997

b = -116.01 = penurunan per setengah bulan secara linier

u = unit setengah bulan yang dihitung dari u = 0

$$a = 74,850/24 = 3,118.75$$

$$b = -533,650/4,600 = -116.01$$

$$T = 3,118.75 - 116.01 u$$

Lampiran IV. 53  
 Variasi Musim LSIP

Bulan	Y/T		Variasi Musim	Indeks Musim
	1997	1998		
Jan	35.86	70.77	53.31	49.71
Feb	116.11	96.55	106.33	99.15
Mar	113.66	107.34	110.50	103.04
Apr	123.75	85.62	104.69	97.62
Mei	134.80	67.48	101.14	94.31
Jun	166.42	62.41	114.41	106.69
Jul	75.66	96.24	85.95	80.14
Agt	68.46	72.54	70.50	65.74
Sep	101.76	95.94	98.85	92.18
Okt	104.76	103.88	104.32	97.28
Nov	94.47	194.13	144.30	134.56
Des	96.61	288.56	192.58	179.58
Jumlah			1,286.88	



Lampiran IV. 54  
3) Variasi Sikli LSIP

X Bulan	Y Harga (Rp)	T Trend	VM Indeks Musim	T x VM	VS x R Sikli - Random	Jumlah bergerak per 3 bulan yang tertimbang	Relatif - Sikli	Rata-rata Sikli
Jan'97	2,075	5,786.98	0.4971	2,876.9060	72.1261	0	0.00	108.97
Feb	6,450	5,554.96	0.9915	5,507.7800	117.1071	416.6470	104.16	107.24
Mar	6,050	5,322.94	1.0304	5,484.7036	110.3068	464.4899	116.12	107.24
Apr	6,300	5,090.92	0.9762	4,969.6576	126.7693	506.7759	126.69	107.24
Mei	6,550	4,858.90	0.9431	4,582.6461	142.9305	568.6130	142.15	107.24
Jun	7,700	4,626.88	1.0669	4,936.4449	155.9827	549.2965	137.32	107.24
Jul	3,325	4,394.86	0.8014	3,522.2255	94.4005	448.9246	112.23	107.24
Agt	2,850	4,162.84	0.6574	2,736.6798	104.1408	413.0802	103.27	107.24
Sep	4,000	3,930.82	0.9218	3,623.2525	110.3980	432.6333	108.16	107.24
Okt	3,875	3,698.80	0.9728	3,598.0762	107.6964	395.9979	99.00	107.24
Nov	3,275	3,466.78	1.3456	4,664.7766	70.2070	301.9064	75.48	107.24
Des'97	3,125	3,234.76	1.7958	5,808.9853	53.7960	320.1522	80.04	80.04
Jan'98	2,125	3,002.74	0.4971	1,492.7649	142.3533	435.8749	108.97	108.97
Feb	2,675	2,770.72	0.9915	2,747.1874	97.3723	441.2705	110.32	107.24
Mar	2,725	2,538.70	1.0304	2,615.8508	104.1726	393.4276	98.36	107.24
Apr	1,975	2,306.68	0.9762	2,251.7364	87.7101	351.1417	87.79	107.24
Mei	1,400	2,074.66	0.9431	1,956.7047	71.5489	289.3045	72.33	107.24
Jun	1,150	1,842.64	1.0669	1,965.9232	58.4967	308.6211	77.16	107.24
Jul	1,550	1,610.62	0.8014	1,290.8185	120.0788	408.9930	102.25	107.24
Agt	1,000	1,378.60	0.6574	906.3012	110.3386	444.8374	111.21	107.24
Sep	1,100	1,146.58	0.9218	1,056.8657	104.0813	425.2842	106.32	107.24
Okt	950	914.56	0.9728	889.6552	106.7829	461.9196	115.48	107.24
Nov	1,325	682.54	1.3456	918.4017	144.2724	556.0111	139.00	107.24
Des'98	1,300	450.52	1.7958	809.0443	160.6834	0	0.00	80.04

Lampiran IV. 55  
4) Residu LSIP

VS x R Sikli - Random	Relatif - Sikli	[(VS x R) / Relatif Sikli] x 100 Residu	Rata-rata Residu
72.1261	0	0	130.64
117.1071	104.16	112.43	100.35
110.3068	116.12	94.99	100.45
126.7693	126.69	100.06	99.99
142.9305	142.15	100.55	99.74
155.9827	137.32	113.59	94.70
94.4005	112.23	84.11	100.78
104.1408	103.27	100.84	100.03
110.3980	108.16	102.07	99.98
107.6964	99.00	108.78	100.63
70.2070	75.48	93.02	98.40
53.7960	80.04	67.21	67.21
142.3533	108.97	130.64	130.64
97.3723	110.32	88.27	100.35
104.1726	98.36	105.91	100.45
87.7101	87.79	99.91	99.99
71.5489	72.33	98.93	99.74
58.4967	77.16	75.82	94.70
120.0788	102.25	117.44	100.78
110.3386	111.21	99.22	100.03
104.0813	106.32	97.89	99.98
106.7829	115.48	92.47	100.63
144.2724	139.00	103.79	98.40
160.6834	0	0	67.21

Lampiran IV. 56  
 9) Deret Berkala LSIP

Bulan	Trend	Variasi Musim	Rata-rata Sikli	Rata-rata Residu	Deret Berkala
Jan '97	5,786.98	0.5331	1.0897	1.3064	4,392
Feb	5,554.96	1.0633	1.0724	1.0035	6,356
Mar	5,322.94	1.1050	1.0724	1.0045	6,336
Apr	5,090.92	1.0469	1.0724	0.9999	5,715
Mei	4,858.90	1.0114	1.0724	0.9974	5,256
Jun	4,626.88	1.1441	1.0724	0.9470	5,376
Jul	4,394.86	0.8595	1.0724	1.0078	4,082
Agt	4,162.84	0.7050	1.0724	1.0003	3,148
Sep	3,930.82	0.9885	1.0724	0.9998	4,166
Okt	3,698.80	1.0432	1.0724	1.0063	4,164
Nov	3,466.78	1.4430	1.0724	0.9840	5,279
Des '97	3,234.76	1.9258	0.8004	0.6721	3,351
Jan '98	3,002.74	0.5331	1.0897	1.3064	2,279
Feb	2,770.72	1.0633	1.0724	1.0035	3,170
Mar	2,538.70	1.1050	1.0724	1.0045	3,022
Apr	2,306.68	1.0469	1.0724	0.9999	2,589
Mei	2,074.66	1.0114	1.0724	0.9974	2,244
Jun	1,842.64	1.1441	1.0724	0.9470	2,141
Jul	1,610.62	0.8595	1.0724	1.0078	1,496
Agt	1,378.60	0.7050	1.0724	1.0003	1,043
Sep	1,146.58	0.9885	1.0724	0.9998	1,215
Okt	914.56	1.0432	1.0724	1.0063	1,030
Nov	682.54	1.4430	1.0724	0.9840	1,039
Des '98	450.52	1.9258	0.8004	0.6721	467

## 1) Nilai Trend

X Bulan	Y Harga (Rp)	u	u.Y	u <sup>2</sup>	T	Y/T
Jan'97	2,075	-23	-47,725	529	2,819.74	73.59
Feb	2,075	-21	-43,575	441	2,731.52	75.97
Mar	1,975	-19	-37,525	361	2,643.30	74.72
Apr	1,975	-17	-33,575	289	2,555.08	77.30
Mei	2,000	-15	-30,000	225	2,466.86	81.07
Jun	2,400	-13	-31,200	169	2,378.64	100.90
Jul	3,475	-11	-38,225	121	2,290.42	151.72
Agt	3,450	-9	-31,050	81	2,202.20	156.66
Sep	3,200	-7	-22,400	49	2,113.98	151.37
Okt	2,975	-5	-14,875	25	2,025.76	146.86
Nov	2,650	-3	-7,950	9	1,937.54	136.77
Des'97	1,450	-1	-1,450	1	1,849.32	78.41
Jan'98	1,175	1	1,175	1	1,761.10	66.72
Feb	1,650	3	4,950	9	1,672.88	98.63
Mar	2,075	5	10,375	25	1,584.66	130.94
Apr	1,700	7	11,900	49	1,496.44	113.60
Mei	1,125	9	10,125	81	1,408.22	79.89
Jun	975	11	10,725	121	1,320.00	73.86
Jul	1,200	13	15,600	169	1,231.78	97.42
Agt	650	15	9,750	225	1,143.56	56.84
Sep	725	17	12,325	289	1,055.34	68.70
Okt	675	19	12,825	361	967.12	69.79
Nov	825	21	17,325	441	878.90	93.87
Des'98	850	23	19,550	529	790.68	107.50
Jumlah	43,325	0	-202,925	4,600		

$$T = a + bX$$

unit      u = tengah bulanan  
             Y = harga rata-rata saham

T = nilai trend yang ditaksir

a = 1,805.21 = nilai trend periode dasar 31 Desember 1997

b = -44.11 = penurunan per setengah bulan secara linier

u = unit setengah bulan yang dihitung dari u = 0

$$a = 43,325/24 \\ = 1,805.21$$

$$b = -202,925/4,600 \\ = -44.11$$

$$T = 1,805.21 - 44.11 u$$

Lampiran IV. 58  
2) Variasi Musim UNSP

Bulan	Y/T		Variasi Musim	Indeks Musim
	1997	1998		
Jan	73.59	66.72	70.15	71.25
Feb	75.97	98.63	87.30	88.66
Mar	74.72	130.94	102.83	104.44
Apr	77.30	113.60	95.45	96.94
Mei	81.07	79.89	80.48	81.74
Jun	100.90	73.86	87.38	88.75
Jul	151.72	97.42	124.57	126.51
Agt	156.66	56.84	106.75	108.42
Sep	151.37	68.70	110.04	111.75
Okt	146.86	69.79	108.33	110.02
Nov	136.77	93.87	115.32	117.12
Des	78.41	107.50	92.95	94.41
Jumlah			1,181.55	

X Bulan	Y Harga (Rp)	T Trend	VM Indeks Musim	T x VM	VS x R Sikli - Random	Jumlah bergerak per 3 bulan yang tertimbang	Relatif - Sikli	Rata-rata Sikli
Jan'97	2,075	2,819.74	0.7125	2,009.0468	103.2828	0	0.00	95.40
Feb	2,075	2,731.52	0.8866	2,421.8124	85.6796	346.1859	86.55	98.46
Mar	1,975	2,643.30	1.0444	2,760.5465	71.5438	308.5039	77.13	98.46
Apr	1,975	2,555.08	0.9694	2,476.9020	79.7367	330.2057	82.55	98.46
Mei	2,000	2,466.86	0.8174	2,016.3623	99.1885	391.8078	97.95	98.46
Jun	2,400	2,378.64	0.8875	2,110.9275	113.6941	446.4989	111.62	98.46
Jul	3,475	2,290.42	1.2651	2,897.7117	119.9222	498.0368	124.51	98.46
Agt	3,450	2,202.20	1.0842	2,387.5712	144.4983	544.3713	136.09	98.46
Sep	3,200	2,113.98	1.1175	2,362.4529	135.4524	548.8890	137.22	98.46
Okt	2,975	2,025.76	1.1002	2,228.7012	133.4858	519.2030	129.80	98.46
Nov	2,650	1,937.54	1.1712	2,269.2450	116.7789	450.0967	112.52	98.46
Des'97	1,450	1,849.32	0.9441	1,745.8720	83.0531	376.5275	94.13	94.13
Jan'98	1,175	1,761.10	0.7125	1,254.7725	93.6425	381.5836	95.40	95.40
Feb	1,650	1,672.88	0.8866	1,483.2041	111.2457	441.5153	110.38	98.46
Mar	2,075	1,584.66	1.0444	1,654.9494	125.3815	479.1972	119.80	98.46
Apr	1,700	1,496.44	0.9694	1,450.6533	117.1886	457.4954	114.37	98.46
Mei	1,125	1,408.22	0.8174	1,151.0510	97.7368	395.8933	98.97	98.46
Jun	975	1,320.00	0.8875	1,171.4359	83.2312	341.2022	85.30	98.46
Jul	1,200	1,231.78	1.2651	1,558.3794	77.0031	289.6643	72.42	98.46
Agt	650	1,143.56	1.0842	1,239.8197	52.4270	243.3299	60.83	98.46
Sep	725	1,055.34	1.1175	1,179.3825	61.4728	238.8121	59.70	98.46
Okt	675	967.12	1.1002	1,064.0064	63.4395	268.4981	67.12	98.46
Nov	825	878.90	1.1712	1,029.3668	80.1464	337.6044	84.40	98.46
Des'98	850	790.68	0.9441	746.4506	113.8722	0	0.00	94.13

Lampiran IV. 60  
4) Residu UNSP

VS x R Sikli - Random	Relatif - Sikli	$[(VS \times R) / \text{Relatif Sikli}] \times 100$ Residu	Rata-rata Residu
103.2828	0	0	98.16
85.6796	86.55	99.00	99.89
71.5438	77.13	92.76	98.71
79.7367	82.55	96.59	99.53
99.1885	97.95	101.26	100.01
113.6941	111.62	101.85	99.71
119.9222	124.51	96.32	101.33
144.4983	136.09	106.18	96.18
135.4524	137.22	98.71	100.84
133.4858	129.80	102.84	98.67
116.7789	112.52	103.78	99.37
83.0531	94.13	88.23	88.23
93.6425	95.40	98.16	98.16
111.2457	110.38	100.79	99.89
125.3815	119.80	104.66	98.71
117.1886	114.37	102.46	99.53
97.7368	98.97	98.75	100.01
83.2312	85.30	97.57	99.71
77.0031	72.42	106.33	101.33
52.4270	60.83	86.18	96.18
61.4728	59.70	102.96	100.84
63.4395	67.12	94.51	98.67
80.1464	84.40	94.96	99.37
113.8722	0	0	88.23

Lampiran IV. 60  
4) Residu UNSP

VS x R Sikli - Random	Relatif - Sikli	[(VS x R) / Relatif Sikli] x 100 Residu	Rata-rata Residu
103.2828	0	0	98.16
85.6796	86.55	99.00	99.89
71.5438	77.13	92.76	98.71
79.7367	82.55	96.59	99.53
99.1885	97.95	101.26	100.01
113.6941	111.62	101.85	99.71
119.9222	124.51	96.32	101.33
144.4983	136.09	106.18	96.18
135.4524	137.22	98.71	100.84
133.4858	129.80	102.84	98.67
116.7789	112.52	103.78	99.37
83.0531	94.13	88.23	88.23
93.6425	95.40	98.16	98.16
111.2457	110.38	100.79	99.89
125.3815	119.80	104.66	98.71
117.1886	114.37	102.46	99.53
97.7368	98.97	98.75	100.01
83.2312	85.30	97.57	99.71
77.0031	72.42	106.33	101.33
52.4270	60.83	86.18	96.18
61.4728	59.70	102.96	100.84
63.4395	67.12	94.51	98.67
80.1464	84.40	94.96	99.37
113.8722	0	0	88.23



Lampiran IV. 61  
 5) Deret Berkala UNSP

Bulan	Trend	Variasi Musim	Rata-rata Sikli	Rata-rata Residu	Deret Berkala
Jan '97	2,819.74	0.7015	0.9540	0.9816	1,852
Feb	2,731.52	0.8730	0.9846	0.9989	2,345
Mar	2,643.30	1.0283	0.9846	0.9871	2,642
Apr	2,555.08	0.9545	0.9846	0.9953	2,390
Mei	2,466.86	0.8048	0.9846	1.0001	1,955
Jun	2,378.64	0.8738	0.9846	0.9971	2,041
Jul	2,290.42	1.2457	0.9846	1.0133	2,847
Agt	2,202.20	1.0675	0.9846	0.9618	2,226
Sep	2,113.98	1.1004	0.9846	1.0084	2,310
Okt	2,025.76	1.0833	0.9846	0.9867	2,132
Nov	1,937.54	1.1532	0.9846	0.9937	2,186
Des '97	1,849.32	0.9295	0.9413	0.8823	1,428
Jan '98	1,761.10	0.7015	0.9540	0.9816	1,157
Feb	1,672.88	0.8730	0.9846	0.9989	1,436
Mar	1,584.66	1.0283	0.9846	0.9871	1,584
Apr	1,496.44	0.9545	0.9846	0.9953	1,400
Mei	1,408.22	0.8048	0.9846	1.0001	1,116
Jun	1,320.00	0.8738	0.9846	0.9971	1,132
Jul	1,231.78	1.2457	0.9846	1.0133	1,531
Agt	1,143.56	1.0675	0.9846	0.9618	1,156
Sep	1,055.34	1.1004	0.9846	1.0084	1,153
Okt	967.12	1.0833	0.9846	0.9867	1,018
Nov	878.90	1.1532	0.9846	0.9937	992
Des '98	790.68	0.9295	0.9413	0.8823	610

## INDEKS HARGA SAHAM GABUNGAN

## 1) Nilai Trend

X Bulan	Y Point	u	u.Y	u <sup>2</sup>	T	Y/T
Jan'97	691.116	-23	-15,896	529	703.74	98.21
Feb	705.374	-21	-14,813	441	686.82	102.70
Mar	662.236	-19	-12,582	361	669.90	98.86
Apr	652.049	-17	-11,085	289	652.98	99.86
Mei	696.028	-15	-10,440	225	636.06	109.43
Jun	724.556	-13	-9,419	169	619.14	117.03
Jul	721.270	-11	-7,934	121	602.22	119.77
Agt	493.962	-9	-4,446	81	585.30	84.39
Sep	546.688	-7	-3,827	49	568.38	96.18
Okt	500.418	-5	-2,502	25	551.46	90.74
Nov	401.708	-3	-1,205	9	534.54	75.15
Des'97	401.712	-1	-402	1	517.62	77.61
Jan'98	485.938	1	486	1	500.70	97.05
Feb	482.378	3	1,447	9	483.78	99.71
Mar	541.425	5	2,707	25	466.86	115.97
Apr	460.135	7	3,221	49	449.94	102.27
Mei	420.465	9	3,784	81	433.02	97.10
Jun	445.920	11	4,905	121	416.10	107.17
Jul	482.688	13	6,275	169	399.18	120.92
Agt	342.436	15	5,137	225	382.26	89.58
Sep	276.150	17	4,695	289	365.34	75.59
Okt	300.770	19	5,715	361	348.42	86.32
Nov	386.271	21	8,112	441	331.50	116.52
Des'98	398.038	23	9,155	529	314.58	126.53
Jumlah	12,219.731	0	-38,913	4,600		

$$T = a + b X$$

unit u = tengah bulanan  
Y = harga rata-rata saham

T = nilai trend yang ditaksir

a = 509.16 = nilai trend periode dasar 31 Desember 1997

b = -8.46 = penurunan per setengah bulan secara linier

u = unit setengah bulan yang dihitung dari u = 0

$$a = 12,219.731/24 \\ = 509.16$$

$$b = -38.913/4,600 \\ = -8.46$$

$$T = 509.16 - 8.46 u$$

2) Variasi Musim IHSG

Bulan	Y/T		Variasi Musim	Indeks Musim
	1997	1998		
Jan	98.21	97.05	97.63	97.44
Feb	102.70	99.71	101.21	101.01
Mar	98.86	115.97	107.41	107.21
Apr	99.86	102.27	101.06	100.87
Mei	109.43	97.10	103.26	103.06
Jun	117.03	107.17	112.10	111.88
Jul	119.77	120.92	120.34	120.11
Agt	84.39	89.58	86.99	86.82
Sep	96.18	75.59	85.89	85.72
Okt	90.74	86.32	88.53	88.36
Nov	75.15	116.52	95.84	95.65
Des	77.61	126.53	102.07	101.87
Jumlah			1,202.33	

## 3) Variasi Sikli IHSG

X Bulan	Y Point	T Trend	VM Indeks Musim	T x VM	VS x R Sikli - Random	Jumlah bergerak per 3 bulan yang tertimbang	Relatif - Sikli	Rata-rata Sikli
Jan'97	691.116	703.74	0.9744	685.7238	100.7864	0	0.00	93.52
Feb	705.374	686.82	1.0101	693.7561	101.6746	396.3470	99.09	100.19
Mar	662.236	669.90	1.0721	718.1718	92.2114	385.0975	96.27	100.19
Apr	652.049	652.98	1.0087	658.6347	99.0001	396.3860	99.10	100.19
Mei	696.028	636.06	1.0306	655.5514	106.1744	415.9493	103.99	100.19
Jun	724.556	619.14	1.1188	692.6898	104.6004	415.0898	103.77	100.19
Jul	721.270	602.22	1.2011	723.3338	99.7147	401.2363	100.31	100.19
Agt	493.962	585.30	0.8682	508.1569	97.2066	406.3358	101.58	100.19
Sep	546.688	568.38	0.8572	487.2100	112.2079	424.3175	106.08	100.19
Okt	500.418	551.46	0.8836	487.2849	102.6952	396.1656	99.04	100.19
Nov	401.708	534.54	0.9565	511.2910	78.5674	336.0120	84.00	100.19
Des'97	401.712	517.62	1.0187	527.3054	76.1820	330.5331	82.63	82.63
Jan'98	485.938	500.70	0.9744	487.8817	99.6016	374.0986	93.52	93.52
Feb	482.378	483.78	1.0101	488.6656	98.7133	405.2048	101.30	100.19
Mar	541.425	466.86	1.0721	500.5011	108.1766	416.4544	104.11	100.19
Apr	460.135	449.94	1.0087	453.8364	101.3879	405.1658	101.29	100.19
Mei	420.465	433.02	1.0306	446.2894	94.2135	385.6025	96.40	100.19
Jun	445.920	416.10	1.1188	465.5300	95.7876	386.4620	96.62	100.19
Jul	482.688	399.18	1.2011	479.4599	100.6733	400.3155	100.08	100.19
Agt	342.436	382.26	0.8682	331.8778	103.1814	395.2161	98.80	100.19
Sep	276.150	365.34	0.8572	313.1660	88.1801	377.2343	94.31	100.19
Okt	300.770	348.42	0.8836	307.8733	97.6928	405.3862	101.35	100.19
Nov	386.271	331.50	0.9565	317.0819	121.8206	465.5398	116.38	100.19
Des'98	398.038	314.58	1.0187	320.4662	124.2059	0	0.00	82.63

Lampiran IV. 65

4) Residu IHSG

VS x R Sikli - Random	Relatif - Sikli	[(VS x R) / Relatif Sikli] x 100 Residu	Rata-rata Residu
100.7864	0	0	106.50
101.6746	99.09	102.61	100.03
92.2114	96.27	95.78	99.84
99.0001	99.10	99.90	100.00
106.1744	103.99	102.10	99.92
104.6004	103.77	100.80	99.97
99.7147	100.31	99.41	100.00
97.2066	101.58	95.69	100.06
112.2079	106.08	105.78	99.64
102.6952	99.04	103.69	100.04
78.5674	84.00	93.53	99.10
76.1820	82.63	92.19	92.19
99.6016	93.52	106.50	106.50
98.7133	101.30	97.45	100.03
108.1766	104.11	103.90	99.84
101.3879	101.29	100.10	100.00
94.2135	96.40	97.73	99.92
95.7876	96.62	99.14	99.97
100.6733	100.08	100.59	100.00
103.1814	98.80	104.43	100.06
88.1801	94.31	93.50	99.64
97.6928	101.35	96.39	100.04
121.8206	116.38	104.67	99.10
124.2059	0	0	92.19

## j) Deret Berkala IHSG

Bulan	Trend	Variasi Musim	Rata-rata Sikli	Rata-rata Residu	Deret Berkala
Jan '97	703.74	0.9763	0.9352	1.0650	684.32
Feb	686.82	1.0121	1.0019	1.0003	696.65
Mar	669.90	1.0741	1.0019	0.9984	719.82
Apr	652.98	1.0106	1.0019	1.0000	661.19
Mei	636.06	1.0326	1.0019	0.9992	657.55
Jun	619.14	1.1210	1.0019	0.9997	695.17
Jul	602.22	1.2034	1.0019	1.0000	726.15
Agt	585.30	0.8699	1.0019	1.0006	510.44
Sep	568.38	0.8589	1.0019	0.9964	487.34
Okt	551.46	0.8853	1.0019	1.0004	489.38
Nov	534.54	0.9584	1.0019	0.9910	508.66
Des '97	517.62	1.0207	0.8263	0.9219	402.49
Jan '98	500.70	0.9763	0.9352	1.0650	486.88
Feb	483.78	1.0121	1.0019	1.0003	490.70
Mar	466.86	1.0741	1.0019	0.9984	501.65
Apr	449.94	1.0106	1.0019	1.0000	455.59
Mei	433.02	1.0326	1.0019	0.9992	447.65
Jun	416.10	1.1210	1.0019	0.9997	467.20
Jul	399.18	1.2034	1.0019	1.0000	481.33
Agt	382.26	0.8699	1.0019	1.0006	333.37
Sep	365.34	0.8589	1.0019	0.9964	313.25
Okt	348.42	0.8853	1.0019	1.0004	309.20
Nov	331.50	0.9584	1.0019	0.9910	315.45
Des '98	314.58	1.0207	0.8263	0.9219	244.61