

APPENDIXES

Appendix 1 Stock Price Development

No	Issuer Code/	ANTM	BBNI	BBRI	BBTN	BJBR
	Period	Close Price	Close Price	Close Price	Close Price	Close Price
1	Apr-20	510	4100	2730	880	805
2	May-20	535	3830	2950	760	760
3	Jun-20	605	4580	3030	1245	760
4	Jul-20	730	4600	3160	1265	935
5	Aug-20	820	5100	3510	1575	1055
6	Sep-20	705	4440	3040	1200	870
7	Oct-20	1055	4740	3360	1390	1085
8	Nov-20	1145	6000	4090	1645	1325
9	Dec-20	1935	6175	4170	1725	1550
10	Jan-21	2220	5550	4180	1570	1470
11	Feb-21	2840	5950	4710	2070	1585
12	Mar-21	2250	5725	4400	1720	1455
13	Apr-21	2490	5700	4050	1590	1390
14	May-21	2450	5400	4260	1635	1385
15	Jun-21	2300	4630	3940	1370	1210

No	Issuer Code/	BMRI	BRIS	ELSA	JSMR	KAEF
	Period	Close Price	Close Price	Close Price	Close Price	Close Price
1	Apr-20	4460	196	196	3150	1,330
2	May-20	4470	300	197	3550	1,160
3	Jun-20	4950	308	220	4400	1,120
4	Jul-20	5800	540	228	3930	2,250
5	Aug-20	5950	965	244	3910	3,040
6	Sep-20	4960	750	194	3610	2,890
7	Oct-20	5775	1,235	212	3560	3,150
8	Nov-20	6325	1,430	294	4190	3,150
9	Dec-20	6325	2,250	352	4630	4,250
10	Jan-21	6575	2,440	358	4320	3,120
11	Feb-21	6150	2,940	402	4170	3,530
12	Mar-21	6150	2,290	344	4040	2,560
13	Apr-21	6175	2,280	356	4150	2,800
14	May-21	6000	1,905	304	3950	2,600
15	Jun-21	5900	2,300	266	3520	3,140

No	Issuer Code/	PGAS	PTBA	PTPP	SMBR	SMGR
	Period	Close Price	Close Price	Close Price	Close Price	Close Price
1	Apr-20	855	1875	670	302	7950
2	May-20	860	1945	725	288	9800
3	Jun-20	1135	2020	870	308	9625
4	Jul-20	1265	2030	975	492	9225
5	Aug-20	1255	2040	970	575	10550
6	Sep-20	925	1970	825	460	9175
7	Oct-20	1075	1960	915	500	9575
8	Nov-20	1390	2360	1360	955	11700
9	Dec-20	1655	2810	1865	1,065	12425
10	Jan-21	1345	2580	1635	805	10600
11	Feb-21	1440	2710	1615	950	10200
12	Mar-21	1315	2620	1370	820	10425
13	Apr-21	1225	2370	1220	815	10425
14	May-21	1115	2210	1115	695	9700
15	Jun-21	1005	2000	915	615	9500

No	Issuer Code/	TINS	TLKM	WIKA	WSBP	WSKT
	Period	Close Price	Close Price	Close Price	Close Price	Close Price
1	Apr-20	466	3500	950	147	605
2	May-20	444	3150	1085	151	610
3	Jun-20	595	3050	1200	196	710
4	Jul-20	760	3050	1190	199	625
5	Aug-20	795	2860	1240	168	650
6	Sep-20	675	2560	1095	137	498
7	Oct-20	830	2620	1205	155	740
8	Nov-20	1070	3230	1620	212	1040
9	Dec-20	1485	3310	1985	274	1440
10	Jan-21	1690	3110	1800	250	1415
11	Feb-21	2220	3490	1740	258	1425
12	Mar-21	1615	3420	1535	212	1155
13	Apr-21	1730	3200	144	202	1110
14	May-21	1600	3440	125	179	1035
15	Jun-21	1490	3150	990	151	880

Appendix 2 JCI Data

No	Period	JCI
1	Apr-20	4,753.61
2	May-20	4,905.39
3	Jun-20	5,149.63
4	Jul-20	5,238.49
5	Aug-20	4,870.04
6	Sep-20	5,128.23
7	Oct-20	5,612.42
8	Nov-20	5,979.07
9	Dec-20	5,862.35
10	Jan-21	6,241.80
11	Feb-21	5,985.52
12	Mar-21	5,995.62
13	Apr-21	5,947.46
14	May-21	5,985,49
15	Jun-21	6.070,04

Appendix 3 Bank Indonesia Rates (BIR)

No	Period	BIR (Monthly)
1	April 14, 2020	4.50 %
2	Mei 19, 2020	4.50 %
3	Juni 18, 2020	4.25 %
4	Juli 16, 2020	4.00 %
5	Agustus 19, 2020	4.00 %
6	September 17, 2020	4.00 %
7	Oktober 13, 2020	4.00 %
8	November 19, 2020	3.75 %
9	Desember 17, 2020	3.75 %
10	Januari 21, 2021	3.75 %
11	Februari 18, 2021	3.50 %
12	Maret 18, 2021	3.50 %
13	April 20, 2021	3.50 %
14	Mei 25, 2021	3.50 %
15	Juni 17, 2021	3.50 %

Appendix 4 Calculation of Realized Return, Expected Return, Variance, and Standard Deviation of each Stock

Aneka Tambang Tbk. (ANTM)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	510			
May-20	535	0.0490196078	-0.0859398136	0.0073856516
Jun-20	605	0.1308411215	-0.0041182999	0.0000169604
Jul-20	730	0.2066115702	0.0716521488	0.0051340304
Aug-20	820	0.1232876712	-0.0116717502	0.0001362298
Sep-20	705	-0.1402439024	-0.2752033239	0.0757368695
Oct-20	1055	0.4964539007	0.3614944793	0.1306782586
Nov-20	1145	0.0853080569	-0.0496513645	0.0024652580
Dec-20	1935	0.6899563319	0.5549969105	0.3080215706
Jan-21	2220	0.1472868217	0.0123274003	0.0001519648
Feb-21	2840	0.2792792793	0.1443198579	0.0208282214
Mar-21	2250	-0.2077464789	-0.3427059003	0.1174473341
Apr-21	2490	0.1066666667	-0.0282927547	0.0008004800
May-21	2450	-0.0160642570	-0.1510236784	0.0228081515
Jun-21	2300	-0.0612244898	-0.1961839112	0.0384881270
Σ		1.8894318998	Σ	0.7300991075
E(Ri)		0.1349594214	σ_i^2	0.05214993625
			Σi	0.22836360535

PT Bank Negara Indonesia (Persero) Tbk. (BBNI)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	4100			
May-20	3830	-0.0658536585	-0.0808270801	0.0065330169
Jun-20	4580	0.1958224543	0.1808490327	0.0327063726
Jul-20	4600	0.0043668122	-0.0106066093	0.0001125002
Aug-20	5100	0.1086956522	0.0937222306	0.0087838565
Sep-20	4440	-0.1294117647	-0.1443851863	0.0208470820
Oct-20	4740	0.0675675676	0.0525941460	0.0027661442
Nov-20	6000	0.2658227848	0.2508493632	0.0629254030
Dec-20	6175	0.0291666667	0.0141932451	0.0002014482
Jan-21	5550	-0.1012145749	-0.1161879965	0.0134996505
Feb-21	5950	0.0720720721	0.0570986505	0.0032602559
Mar-21	5725	-0.0378151261	-0.0527885476	0.0027866308
Apr-21	5700	-0.0043668122	-0.0193402338	0.0003740446
May-21	5400	-0.0526315789	-0.0676050005	0.0045704361
Jun-21	4630	-0.1425925926	-0.1575660142	0.0248270488
Σ		0.2096279019	Σ	0.1841938904
E(Ri)		0.0149734216	σ ²	0.01315670646
			Σi	0.11470268722

PT Bank Rakyat Indonesia (Persero) Tbk. (BBRI)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	2730			
May-20	2950	0.0805860806	0.0498636309	0.0024863817
Jun-20	3030	0.0271186441	-0.0036038057	0.0000129874
Jul-20	3160	0.0429042904	0.0121818407	0.0001483972
Aug-20	3510	0.1107594937	0.0800370439	0.0064059284
Sep-20	3040	-0.1339031339	-0.1646255836	0.0271015828
Oct-20	3360	0.1052631579	0.0745407082	0.0055563172
Nov-20	4090	0.2172619048	0.1865394550	0.0347969683
Dec-20	4170	0.0195599022	-0.0111625475	0.0001246025
Jan-21	4180	0.0023980815	-0.0283243682	0.0008022698
Feb-21	4710	0.1267942584	0.0960718086	0.0092297924
Mar-21	4400	-0.0658174098	-0.0965398595	0.0093199445
Apr-21	4050	-0.0795454545	-0.1102679043	0.0121590107
May-21	4260	0.0518518519	0.0211294021	0.0004464516
Jun-21	3940	-0.0751173709	-0.1058398206	0.0112020676
	Σ	0.4301142963	Σ	0.1197927022
	E(Ri)	0.0307224497	σ ²	0.00855662158
			σ _i	0.09250200853

PT Bank Tabungan Negara (Persero) Tbk. (BBTN)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	880			
May-20	760	-0.1363636364	-0.1910362418	0.0364948457
Jun-20	1245	0.6381578947	0.5834852893	0.3404550829
Jul-20	1265	0.0160642570	-0.0386083484	0.0014906046
Aug-20	1575	0.2450592885	0.1903866831	0.0362470891
Sep-20	1200	-0.2380952381	-0.2927678435	0.0857130102
Oct-20	1390	0.1583333333	0.1036607279	0.0107455465
Nov-20	1645	0.1834532374	0.1287806320	0.0165844512
Dec-20	1725	0.0486322188	-0.0060403866	0.0000364863
Jan-21	1570	-0.0898550725	-0.1445276779	0.0208882497
Feb-21	2070	0.3184713376	0.2637987322	0.0695897711
Mar-21	1720	-0.1690821256	-0.2237547310	0.0500661796
Apr-21	1590	-0.0755813953	-0.1302540008	0.0169661047
May-21	1635	0.0283018868	-0.0263707186	0.0006954148
Jun-21	1370	-0.1620795107	-0.2167521161	0.0469814798
Σ		0.7654164757	Σ	0.7329543161
E(Ri)		0.0546726054	σi ²	0.0523538792
			σi	0.22880970199

Bank Pembangunan Daerah Jawa Barat dan Banten Tbk. (BJBR)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	805			
May-20	760	-0.0559006211	-0.0941477823	0.0088638049
Jun-20	760	0.0000000000	-0.0382471612	0.0014628453
Jul-20	935	0.2302631579	0.1920159967	0.0368701430
Aug-20	1055	0.1283422460	0.0900950848	0.0081171243
Sep-20	870	-0.1753554502	-0.2136026114	0.0456260756
Oct-20	1085	0.2471264368	0.2088792756	0.0436305518
Nov-20	1325	0.2211981567	0.1829509955	0.0334710668
Dec-20	1550	0.1698113208	0.1315641596	0.0173091281
Jan-21	1470	-0.0516129032	-0.0898600644	0.0080748312
Feb-21	1585	0.0782312925	0.0399841314	0.0015987308
Mar-21	1455	-0.0820189274	-0.1202660886	0.0144639321
Apr-21	1390	-0.0446735395	-0.0829207007	0.0068758426
May-21	1385	-0.0035971223	-0.0418442835	0.0017509441
Jun-21	1210	-0.1263537906	-0.1646009518	0.0270934733
Σ		0.5354602562	Σ	0.2552084938
E(Ri)		0.0382471612	σ_i^2	0.01822917813
			σ_i	0.13501547366

PT Bank Mandiri (Persero) Tbk. (BMRI)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	4460			
May-20	4470	0.0022421525	-0.0216375048	0.0004681816
Jun-20	4950	0.1073825503	0.0835028931	0.0069727332
Jul-20	5800	0.1717171717	0.1478375145	0.0218559307
Aug-20	5950	0.0258620690	0.0019824117	0.0000039300
Sep-20	4960	-0.1663865546	-0.1902662119	0.0362012314
Oct-20	5775	0.1643145161	0.1404348589	0.0197219496
Nov-20	6325	0.0952380952	0.0713584380	0.0050920267
Dec-20	6325	0.0000000000	-0.0238796573	0.0005702380
Jan-21	6575	0.0395256917	0.0156460344	0.0002447984
Feb-21	6150	-0.0646387833	-0.0885184405	0.0078355143
Mar-21	6150	0.0000000000	-0.0238796573	0.0005702380
Apr-21	6175	0.0040650407	-0.0198146166	0.0003926190
May-21	6000	-0.0283400810	-0.0522197382	0.0027269011
Jun-21	5900	-0.0166666667	-0.0405463239	0.0016440044
Σ		0.3343152017	Σ	0.1043002963
E(Ri)		0.0238796573	σ_i^2	0.00745002116
			σ_i	0.08631350510

Bank BRISyariah Tbk. (BRIS)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	196			
May-20	300	0.5306122449	0.2906454322	0.0844747672
Jun-20	308	0.0266666667	-0.2133001461	0.0454969523
Jul-20	540	0.7532467532	0.5132799405	0.2634562973
Aug-20	965	0.7870370370	0.5470702243	0.2992858303
Sep-20	750	-0.2227979275	-0.4627647402	0.2141512048
Oct-20	1,235	0.6466666667	0.4066998539	0.1654047712
Nov-20	1,430	0.1578947368	-0.0820720759	0.0067358256
Dec-20	2,250	0.5734265734	0.3334597607	0.1111954120
Jan-21	2,440	0.0844444444	-0.1555223683	0.0241872070
Feb-21	2,940	0.2049180328	-0.0350487799	0.0012284170
Mar-21	2,290	-0.2210884354	-0.4610552481	0.2125719418
Apr-21	2,280	-0.0043668122	-0.2443336249	0.0596989203
May-21	1,905	-0.1644736842	-0.4044404969	0.1635721156
Jun-21	2,300	0.2073490814	-0.0326177314	0.0010639164
Σ		3.3595353781	Σ	1.6525235789
E(Ri)		0.2399668127	σi ²	0.11803739849
			σi	0.34356571204

Elnusa Tbk. (ELSA)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	196			
May-20	197	0.0051020408	-0.0277420593	0.0007696219
Jun-20	220	0.1167512690	0.0839071689	0.0070404130
Jul-20	228	0.0363636364	0.0035195362	0.0000123871
Aug-20	244	0.0701754386	0.0373313384	0.0013936288
Sep-20	194	-0.2049180328	-0.2377621330	0.0565308319
Oct-20	212	0.0927835052	0.0599394050	0.0035927323
Nov-20	294	0.3867924528	0.3539483527	0.1252794364
Dec-20	352	0.1972789116	0.1644348114	0.0270388072
Jan-21	358	0.0170454545	-0.0157986456	0.0002495972
Feb-21	402	0.1229050279	0.0900609278	0.0081109707
Mar-21	344	-0.1442786070	-0.1771227071	0.0313724534
Apr-21	356	0.0348837209	0.0020396208	0.0000041601
May-21	304	-0.1460674157	-0.1789115159	0.0320093305
Jun-21	266	-0.1250000000	-0.1578441002	0.0249147600
Σ		0.4598174023	Σ	0.3183191303
E(Ri)		0.0328441002	σ_i^2	0.02273708074
			σ_i	0.15078819827

PT Jasa Marga Tbk. (JSMR)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	3150			
May-20	3550	0.1269841270	0.1138957527	0.0129722425
Jun-20	4400	0.2394366197	0.2263482454	0.0512335282
Jul-20	3930	-0.1068181818	-0.1199065561	0.0143775822
Aug-20	3910	-0.0050890585	-0.0181774328	0.0003304191
Sep-20	3610	-0.0767263427	-0.0898147170	0.0080666834
Oct-20	3560	-0.0138504155	-0.0269387898	0.0007256984
Nov-20	4190	0.1769662921	0.1638779179	0.0268559720
Dec-20	4630	0.1050119332	0.0919235589	0.0084499407
Jan-21	4320	-0.0669546436	-0.0800430179	0.0064068847
Feb-21	4170	-0.0347222222	-0.0478105965	0.0022858531
Mar-21	4040	-0.0311750600	-0.0442634342	0.0019592516
Apr-21	4150	0.0272277228	0.0141393485	0.0001999212
May-21	3950	-0.0481927711	-0.0612811454	0.0037553788
Jun-21	3520	-0.1088607595	-0.1219491338	0.0148715912
Σ		0.1832372398	Σ	0.1524909470
E(Ri)		0.0130883743	σ ²	0.01089221050
			σ _i	0.10436575349

Kimia Farma Tbk. (KAEF)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	1,330			
May-20	1,160	-0.1278195489	-0.2284139147	0.0521729164
Jun-20	1,120	-0.0344827586	-0.1350771244	0.0182458295
Jul-20	2,250	1.0089285714	0.9083342056	0.8250710291
Aug-20	3,040	0.3511111111	0.2505167453	0.0627586397
Sep-20	2,890	-0.0493421053	-0.1499364711	0.0224809454
Oct-20	3,150	0.0899653979	-0.0106289679	0.0001129750
Nov-20	3,150	0.0000000000	-0.1005943658	0.0101192264
Dec-20	4,250	0.3492063492	0.2486119834	0.0618079183
Jan-21	3,120	-0.2658823529	-0.3664767187	0.1343051854
Feb-21	3,530	0.1314102564	0.0308158906	0.0009496191
Mar-21	2,560	-0.2747875354	-0.3753819012	0.1409115718
Apr-21	2,800	0.0937500000	-0.0068443658	0.0000468453
May-21	2,600	-0.0714285714	-0.1720229372	0.0295918909
Jun-21	3,140	0.2076923077	0.1070979419	0.0114699692
Σ		1.4083211212	Σ	1.3700445615
E(Ri)		0.1005943658	σ ²	0.09786032582
			Σi	0.31282635090

PT Perusahaan Gas Negara Tbk. (PGAS)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	855			
May-20	860	0.0058479532	-0.0194917567	0.0003799286
Jun-20	1135	0.3197674419	0.2944277319	0.0866876893
Jul-20	1265	0.1145374449	0.0891977350	0.0079562359
Aug-20	1255	-0.0079051383	-0.0332448483	0.0011052199
Sep-20	925	-0.2629482072	-0.2882879171	0.0831099232
Oct-20	1075	0.1621621622	0.1368224522	0.0187203834
Nov-20	1390	0.2930232558	0.2676835459	0.0716544807
Dec-20	1655	0.1906474820	0.1653077721	0.0273266595
Jan-21	1345	-0.1873111782	-0.2126508882	0.0452204003
Feb-21	1440	0.0706319703	0.0452922603	0.0020513888
Mar-21	1315	-0.0868055556	-0.1121452655	0.0125765606
Apr-21	1225	-0.0684410646	-0.0937807746	0.0087948337
May-21	1115	-0.0897959184	-0.1151356283	0.0132562129
Jun-21	1005	-0.0986547085	-0.1239944185	0.0153746158
Σ		0.3547559394	Σ	0.3942145327
E(Ri)		0.0253397100	σ_i^2	0.02815818090
			σ_i	0.16780399549

Bukit Asam Tbk. (PTBA)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	1875			
May-20	1945	0.0373333333	0.0288680626	0.0008333650
Jun-20	2020	0.0385604113	0.0300951406	0.0009057175
Jul-20	2030	0.0049504950	-0.0035147757	0.0000123536
Aug-20	2040	0.0049261084	-0.0035391623	0.0000125257
Sep-20	1970	-0.0343137255	-0.0427789962	0.0018300425
Oct-20	1960	-0.0050761421	-0.0135414128	0.0001833699
Nov-20	2360	0.2040816327	0.1956163619	0.0382657611
Dec-20	2810	0.1906779661	0.1822126954	0.0332014664
Jan-21	2580	-0.0818505338	-0.0903158045	0.0081569445
Feb-21	2710	0.0503875969	0.0419223262	0.0017574814
Mar-21	2620	-0.0332103321	-0.0416756028	0.0017368559
Apr-21	2370	-0.0954198473	-0.1038851180	0.0107921177
May-21	2210	-0.0675105485	-0.0759758192	0.0057723251
Jun-21	2000	-0.0950226244	-0.1034878951	0.0107097444
Σ		0.1185137899	Σ	0.1141700708
E(Ri)		0.0084652707	σi ²	0.00815500506
			σi	0.09030506662

PP (Persero) Tbk. (PTPP)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	670			
May-20	725	0.0820895522	0.0426086036	0.0018154931
Jun-20	870	0.2000000000	0.1605190513	0.0257663658
Jul-20	975	0.1206896552	0.0812087065	0.0065948540
Aug-20	970	-0.0051282051	-0.0446091538	0.0019899766
Sep-20	825	-0.1494845361	-0.1889654847	0.0357079544
Oct-20	915	0.1090909091	0.0696099604	0.0048455466
Nov-20	1360	0.4863387978	0.4468578492	0.1996819373
Dec-20	1865	0.3713235294	0.3318425807	0.1101194984
Jan-21	1635	-0.1233243968	-0.1628053454	0.0265055805
Feb-21	1615	-0.0122324159	-0.0517133646	0.0026742721
Mar-21	1370	-0.1517027864	-0.1911837350	0.0365512205
Apr-21	1220	-0.1094890511	-0.1489699998	0.0221920608
May-21	1115	-0.0860655738	-0.1255465224	0.0157619293
Jun-21	915	-0.1793721973	-0.2188531460	0.0478966995
Σ		0.5527332813	Σ	0.5381033891
E(Ri)		0.0394809487	σ_i^2	0.03843595636
			Σi	0.19605090248

Semen Baturaja (Persero) Tbk. (SMBR)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	302			
May-20	288	-0.0463576159	-0.1343600663	0.0180526274
Jun-20	308	0.0694444444	-0.0185580059	0.0003443996
Jul-20	492	0.5974025974	0.5094001470	0.2594885098
Aug-20	575	0.1686991870	0.0806967366	0.0065119633
Sep-20	460	-0.2000000000	-0.2880024504	0.0829454114
Oct-20	500	0.0869565217	-0.0010459286	0.0000010940
Nov-20	955	0.9100000000	0.8219975496	0.6756799716
Dec-20	1,065	0.1151832461	0.0271807957	0.0007387957
Jan-21	805	-0.2441314554	-0.3321339058	0.1103129314
Feb-21	950	0.1801242236	0.0921217732	0.0084864211
Mar-21	820	-0.1368421053	-0.2248445556	0.0505550742
Apr-21	815	-0.0060975610	-0.0941000114	0.0088548121
May-21	695	-0.1472392638	-0.2352417142	0.0553386641
Jun-21	615	-0.1151079137	-0.2031103640	0.0412538200
Σ		1.2320343052	Σ	1.3185644956
E(Ri)		0.0880024504	σi ²	0.09418317826
			σi	0.30689277974

Semen Indonesia (Persero) Tbk. (SMGR)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	7950			
May-20	9800	0.2327044025	0.2140356937	0.0458112782
Jun-20	9625	-0.0178571429	-0.0365258517	0.0013341378
Jul-20	9225	-0.0415584416	-0.0602271504	0.0036273096
Aug-20	10550	0.1436314363	0.1249627275	0.0156156833
Sep-20	9175	-0.1303317536	-0.1490004624	0.0222011378
Oct-20	9575	0.0435967302	0.0249280214	0.0006214063
Nov-20	11700	0.2219321149	0.2032634061	0.0413160122
Dec-20	12425	0.0619658120	0.0432971031	0.0018746391
Jan-21	10600	-0.1468812877	-0.1655499965	0.0274068014
Feb-21	10200	-0.0377358491	-0.0564045579	0.0031814741
Mar-21	10425	0.0220588235	0.0033901147	0.0000114929
Apr-21	10425	0.0000000000	-0.0186687088	0.0003485207
May-21	9700	-0.0695443645	-0.0882130733	0.0077815463
Jun-21	9500	-0.0206185567	-0.0392872655	0.0015434892
	Σ	0.2613619235	Σ	0.1726749290
	E(Ri)	0.0186687088	σ_i^2	0.01233392350
			σ_i	0.11105819869

PT Timah Tbk. (TINS)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	466			
May-20	444	-0.0472103004	-0.1528091345	0.0233506316
Jun-20	595	0.3400900901	0.2344912560	0.0549861491
Jul-20	760	0.2773109244	0.1717120903	0.0294850419
Aug-20	795	0.0460526316	-0.0595462025	0.0035457502
Sep-20	675	-0.1509433962	-0.2565422303	0.0658139159
Oct-20	830	0.2296296296	0.1240307955	0.0153836382
Nov-20	1070	0.2891566265	0.1835577924	0.0336934632
Dec-20	1485	0.3878504673	0.2822516332	0.0796659844
Jan-21	1690	0.1380471380	0.0324483039	0.0010528924
Feb-21	2220	0.3136094675	0.2080106334	0.0432684236
Mar-21	1615	-0.2725225225	-0.3781213566	0.1429757603
Apr-21	1730	0.0712074303	-0.0343914038	0.0011827687
May-21	1600	-0.0751445087	-0.1807433428	0.0326681560
Jun-21	1490	-0.0687500000	-0.1743488341	0.0303975160
Σ		1.4783836775	Σ	0.5574700916
E(Ri)		0.1055988341	σ ²	0.03981929226
			σ _i	0.19954771925

PT Telkom Indonesia (Persero) Tbk. (TLKM)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	3500			
May-20	3150	-0.1000000000	-0.0964407091	0.0093008104
Jun-20	3050	-0.0317460317	-0.0281867409	0.0007944924
Jul-20	3050	0.0000000000	0.0035592909	0.0000126686
Aug-20	2860	-0.0622950820	-0.0587357911	0.0034498932
Sep-20	2560	-0.1048951049	-0.1013358140	0.0102689472
Oct-20	2620	0.0234375000	0.0269967909	0.0007288267
Nov-20	3230	0.2328244275	0.2363837184	0.0558772623
Dec-20	3310	0.0247678019	0.0283270927	0.0008024242
Jan-21	3110	-0.0604229607	-0.0568636698	0.0032334769
Feb-21	3490	0.1221864952	0.1257457861	0.0158120027
Mar-21	3420	-0.0200573066	-0.0164980157	0.0002721845
Apr-21	3200	-0.0643274854	-0.0607681945	0.0036927735
May-21	3440	0.0750000000	0.0785592909	0.0061715622
Jun-21	3150	-0.0843023256	-0.0807430347	0.0065194377
Σ		-0.0498300724	Σ	0.1169367623
E(Ri)		-0.0035592909	σi ²	0.00835262588
			σi	0.09139270146

PT Wijaya Karya (Persero) Tbk. (WIKA)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	950			
May-20	1085	0.1421052632	-0.3202180120	0.1025395752
Jun-20	1200	0.1059907834	-0.3563324917	0.1269728447
Jul-20	1190	-0.0083333333	-0.4706566085	0.2215176431
Aug-20	1240	0.0420168067	-0.4203064684	0.1766575274
Sep-20	1095	-0.1169354839	-0.5792587590	0.3355407099
Oct-20	1205	0.1004566210	-0.3618666541	0.1309474754
Nov-20	1620	0.3443983402	-0.1179249349	0.0139062903
Dec-20	1985	0.2253086420	-0.2370146332	0.0561759363
Jan-21	1800	-0.0931989924	-0.5555222676	0.3086049898
Feb-21	1740	-0.0333333333	-0.4956566085	0.2456754735
Mar-21	1535	-0.1178160920	-0.5801393671	0.3365616853
Apr-21	144	-0.9061889251	-1.3685122002	1.8728256422
May-21	125	-0.1319444444	-0.5942677196	0.3531541225
Jun-21	990	6.9200000000	6.4576767249	41.7015886827
Σ		6.4725258521	Σ	45.9826685983
E(Ri)		0.4623232751	σi ²	3.28447632845
			σi	1.81231242573

PT Waskita Beton Precast Tbk. (WSBP)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	147			
May-20	151	0.0272108844	0.0100346285	0.0001006938
Jun-20	196	0.2980132450	0.2808369892	0.0788694145
Jul-20	199	0.0153061224	-0.0018701334	0.0000034974
Aug-20	168	-0.1557788945	-0.1729551503	0.0299134840
Sep-20	137	-0.1845238095	-0.2017000654	0.0406829164
Oct-20	155	0.1313868613	0.1142106055	0.0130440624
Nov-20	212	0.3677419355	0.3505656796	0.1228962957
Dec-20	274	0.2924528302	0.2752765743	0.0757771924
Jan-21	250	-0.0875912409	-0.1047674967	0.0109762284
Feb-21	258	0.0320000000	0.0148237442	0.0002197434
Mar-21	212	-0.1782945736	-0.1954708295	0.0382088452
Apr-21	202	-0.0471698113	-0.0643460672	0.0041404164
May-21	179	-0.1138613861	-0.1310376420	0.0171708636
Jun-21	151	-0.1564245810	-0.1736008369	0.0301372506
Σ		0.2404675818	Σ	0.4621409041
E(Ri)		0.0171762558	σ_i^2	0.03301006458
			σ_i	0.18168672097

PT Waskita Karya (Persero) Tbk. (WSKT)

Period	Close Price	Ri	Ri-E(Ri)	[Ri-E(Ri)] ²
Apr-20	605			
May-20	610	0.0082644628	-0.0402029852	0.0016162800
Jun-20	710	0.1639344262	0.1154669782	0.0133326231
Jul-20	625	-0.1197183099	-0.1681857579	0.0282864492
Aug-20	650	0.0400000000	-0.0084674480	0.0000716977
Sep-20	498	-0.2338461538	-0.2823136019	0.0797009698
Oct-20	740	0.4859437751	0.4374763271	0.1913855368
Nov-20	1040	0.4054054054	0.3569379574	0.1274047054
Dec-20	1440	0.3846153846	0.3361479366	0.1129954353
Jan-21	1415	-0.0173611111	-0.0658285591	0.0043333992
Feb-21	1425	0.0070671378	-0.0414003102	0.0017139857
Mar-21	1155	-0.1894736842	-0.2379411322	0.0566159824
Apr-21	1110	-0.0389610390	-0.0874284870	0.0076437403
May-21	1035	-0.0675675676	-0.1160350156	0.0134641248
Jun-21	880	-0.1497584541	-0.1982259021	0.0392935083
Σ		0.6785442723	Σ	0.6778584379
E(Ri)		0.0484674480	σ^2	0.04841845985
			σ	0.22004195021

Appendix 5 Calculation of Expected Market Return, Variance, and Standard Deviation of JCI

Period	IHSG	Rm	Rm-E(Rm)	[Rm-E(Rm)] ²
Apr-20	4753.61			
May-20	4905.39	0.031929418	0.013377815	0.000178966
Jun-20	5149.63	0.049790129	0.031238526	0.000975845
Jul-20	5238.49	0.017255609	-0.001295994	0.000001680
Aug-20	4870.04	-0.070335154	-0.088886757	0.007900856
Sep-20	5128.23	0.053015992	0.034464389	0.001187794
Oct-20	5612.42	0.094416592	0.075864989	0.005755497
Nov-20	5979.07	0.065328325	0.046776722	0.002188062
Dec-20	5862.35	-0.019521431	-0.038073034	0.001449556
Jan-21	6241.8	0.064726603	0.046175000	0.002132131
Feb-21	5985.52	-0.041058669	-0.059610272	0.003553385
Mar-21	5995.62	0.001687406	-0.016864197	0.000284401
Apr-21	5947.46	-0.00803253	-0.026584133	0.000706716
May-21	5985.49	0.006394326	-0.012157277	0.000147799
Jun-21	6070.04	0.014125828	-0.004425775	0.000019587
Σ		0.259722443	Σ	0.026482274
E(Rm)		0.018551603	σ^2	0.001891591
			σ	0.043492425

Appendix 6 Calculation of Stock Covariance with Market, Variance Error, Alpha, and Beta of Stocks

Aneka Tambang Tbk. (ANTM)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	510			4753.61						
May-20	535	0.0490196078	-0.0859398136	4905.39	0.031929418	0.013377815	-0.001149687	0.0015651675	0.001019488	0.006987893
Jun-20	605	0.1308411215	-0.0041182999	5149.63	0.049790129	0.031238526	-0.000128650	0.0065145963	0.002479057	0.000001850
Jul-20	730	0.2066115702	0.0716521488	5238.49	0.017255609	-0.001295994	-0.000092861	0.0035652084	0.000297756	0.005101510
Aug-20	820	0.1232876712	-0.0116717502	4870.04	-0.070335154	-0.088886757	0.001037464	-0.0086714573	0.004947034	0.000743143
Sep-20	705	-0.1402439024	-0.2752033239	5128.23	0.053015992	0.034464389	-0.009484714	-0.0074351696	0.002810695	0.072446557
Oct-20	1055	0.4964539007	0.3614944793	5612.42	0.094416592	0.075864989	0.027424775	0.0468734854	0.008914493	0.140474765
Nov-20	1145	0.0853080569	-0.0496513645	5979.07	0.065328325	0.046776722	-0.002322528	0.0055730325	0.004267790	0.001717911
Dec-20	1935	0.6899563319	0.5549969105	5862.35	-0.019521431	-0.038073034	-0.021130416	-0.0134689346	0.000381086	0.300654478
Jan-21	2220	0.1472868217	0.0123274003	6241.8	0.064726603	0.046175000	0.000569218	0.0095333756	0.004189533	0.000417203
Feb-21	2840	0.2792792793	0.1443198579	5985.52	-0.041058669	-0.059610272	-0.008602946	-0.0114668355	0.001685814	0.017919958
Mar-21	2250	-0.2077464789	-0.3427059003	5995.62	0.001687406	-0.016864197	0.005779460	-0.0003505526	0.000002847	0.119483278
Apr-21	2490	0.1066666667	-0.0282927547	5947.46	-0.00803253	-0.026584133	0.000752138	-0.0008568032	0.000064522	0.001086036
May-21	2450	-0.0160642570	-0.1510236784	5985.49	0.006394326	-0.012157277	0.001836037	-0.0001027201	0.000040887	0.023456703
Jun-21	2300	-0.0612244898	-0.1961839112	6070.04	0.014125828	-0.004425775	0.000868266	-0.0008648466	0.000199539	0.038793281
	Σ	1.8894318998	Σ		0.259722443	Σ	-0.004644444	0.030407546	0.031300542	0.729284568
	E(Ri)	0.1349594214	E(Rm)		0.018551603	σ_{im}	-0.000331746		σ^2_{ei}	0.052091755
									σ_{ei}	0.228236182
									β	-0.175379363
									α	0.13821299

PT Bank Negara Indonesia (Persero) Tbk. (BBNI)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	4100			4753.61						
May-20	3830	-0.0658536585	-0.0808270801	4905.39	0.031929418	0.013377815	-0.001081290	-0.0021026690	0.001019488	0.006583226
Jun-20	4580	0.1958224543	0.1808490327	5149.63	0.049790129	0.031238526	0.005649457	0.0097500252	0.002479057	0.032445071
Jul-20	4600	0.0043668122	-0.0106066093	5238.49	0.017255609	-0.001295994	0.000013746	0.0000753520	0.000297756	0.000111864
Aug-20	5100	0.1086956522	0.0937222306	4870.04	-0.070335154	-0.088886757	-0.008330665	-0.0076451254	0.004947034	0.009174186
Sep-20	4440	-0.1294117647	-0.1443851863	5128.23	0.053015992	0.034464389	-0.004976147	-0.0068608930	0.002810695	0.021078341
Oct-20	4740	0.0675675676	0.0525941460	5612.42	0.094416592	0.075864989	0.003990054	0.0063794995	0.008914493	0.002584315
Nov-20	6000	0.2658227848	0.2508493632	5979.07	0.065328325	0.046776722	0.011733911	0.0173657574	0.004267790	0.062382767
Dec-20	6175	0.0291666667	0.0141932451	5862.35	-0.019521431	-0.038073034	-0.000540380	-0.0005693751	0.000381086	0.000227271
Jan-21	5550	-0.1012145749	-0.1161879965	6241.8	0.064726603	0.046175000	-0.005364981	-0.0065512756	0.004189533	0.013749437
Feb-21	5950	0.0720720721	0.0570986505	5985.52	-0.041058669	-0.059610272	-0.003403666	-0.0029591833	0.001685814	0.003419908
Mar-21	5725	-0.0378151261	-0.0527885476	5995.62	0.001687406	-0.016864197	0.000890236	-0.0000638095	0.000002847	0.002745525
Apr-21	5700	-0.0043668122	-0.0193402338	5947.46	-0.00803253	-0.026584133	0.000514143	0.0000350766	0.000064522	0.000350596
May-21	5400	-0.0526315789	-0.0676050005	5985.49	0.006394326	-0.012157277	0.000821893	-0.0003365435	0.000040887	0.004532425
Jun-21	4630	-0.1425925926	-0.1575660142	6070.04	0.014125828	-0.004425775	0.000697352	-0.0020142384	0.000199539	0.024794740
	Σ	0.2096279019	Σ		0.259722443	Σ	0.000613664	0.004502598	0.031300542	0.184179670
	E(Ri)	0.0149734216	E(Rm)		0.018551603	σ_{im}	0.000043833		σ^2_{ei}	0.013155691
									σ_{ei}	0.114698259
									β	0.023172641
									α	0.014543532

PT Bank Rakyat Indonesia (Persero) Tbk. (BBRI)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	2730			4753.61						
May-20	2950	0.0805860806	0.0498636309	4905.39	0.031929418	0.013377815	0.000667066	0.0025730666	0.001019488	0.002471657
Jun-20	3030	0.0271186441	-0.0036038057	5149.63	0.049790129	0.031238526	-0.000112578	0.0013502408	0.002479057	0.000015595
Jul-20	3160	0.0429042904	0.0121818407	5238.49	0.017255609	-0.001295994	-0.000015788	0.0007403396	0.000297756	0.000148746
Aug-20	3510	0.1107594937	0.0800370439	4870.04	-0.070335154	-0.088886757	-0.007114233	-0.0077902860	0.004947034	0.006564168
Sep-20	3040	-0.1339031339	-0.1646255836	5128.23	0.053015992	0.034464389	-0.005673720	-0.0070990074	0.002810695	0.027227157
Oct-20	3360	0.1052631579	0.0745407082	5612.42	0.094416592	0.075864989	0.005655030	0.0099385886	0.008914493	0.005432005
Nov-20	4090	0.2172619048	0.1865394550	5979.07	0.065328325	0.046776722	0.008725704	0.0141933564	0.004267790	0.034604337
Dec-20	4170	0.0195599022	-0.0111625475	5862.35	-0.019521431	-0.038073034	0.000424992	-0.0003818373	0.000381086	0.000115384
Jan-21	4180	0.0023980815	-0.0283243682	6241.8	0.064726603	0.046175000	-0.001307878	0.0001552197	0.004189533	0.000831444
Feb-21	4710	0.1267942584	0.0960718086	5985.52	-0.041058669	-0.059610272	-0.005726867	-0.0052060035	0.001685814	0.009356830
Mar-21	4400	-0.0658174098	-0.0965398595	5995.62	0.001687406	-0.016864197	0.001628067	-0.0001110607	0.000002847	0.009283988
Apr-21	4050	-0.0795454545	-0.1102679043	5947.46	-0.00803253	-0.026584133	0.002931377	0.0006389513	0.000064522	0.012094293
May-21	4260	0.0518518519	0.0211294021	5985.49	0.006394326	-0.012157277	-0.000256876	0.0003315577	0.000040887	0.000452148
Jun-21	3940	-0.0751173709	-0.1058398206	6070.04	0.014125828	-0.004425775	0.000468423	-0.0010610950	0.000199539	0.011191715
	Σ	0.4301142963	Σ		0.259722443	Σ	0.000292721	0.008272031	0.031300542	0.119789467
	E(Ri)	0.0307224497	E(Rm)		0.018551603	σ_{im}	0.000020909		σ^2_{ei}	0.008556390
									σ_{ei}	0.092500759
									β	0.011053474
									α	0.03051739

PT Bank Tabungan Negara (Persero) Tbk. (BBTN)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	880			4753.61						
May-20	760	-0.1363636364	-0.1910362418	4905.39	0.031929418	0.013377815	-0.002555647	-0.0043540115	0.001019488	0.034392172
Jun-20	1245	0.6381578947	0.5834852893	5149.63	0.049790129	0.031238526	0.018227220	0.0317739638	0.002479057	0.355844180
Jul-20	1265	0.0160642570	-0.0386083484	5238.49	0.017255609	-0.001295994	0.000050036	0.0002771985	0.000297756	0.001532676
Aug-20	1575	0.2450592885	0.1903866831	4870.04	-0.070335154	-0.088886757	-0.016922855	-0.0172362828	0.004947034	0.023494206
Sep-20	1200	-0.2380952381	-0.2927678435	5128.23	0.053015992	0.034464389	-0.010090065	-0.0126228552	0.002810695	0.077495221
Oct-20	1390	0.1583333333	0.1036607279	5612.42	0.094416592	0.075864989	0.007864220	0.0149492937	0.008914493	0.018314988
Nov-20	1645	0.1834532374	0.1287806320	5979.07	0.065328325	0.046776722	0.006023936	0.0119846928	0.004267790	0.021995560
Dec-20	1725	0.0486322188	-0.0060403866	5862.35	-0.019521431	-0.038073034	0.000229976	-0.0009493705	0.000381086	0.000481150
Jan-21	1570	-0.0898550725	-0.1445276779	6241.8	0.064726603	0.046175000	-0.006673565	-0.0058160136	0.004189533	0.015687692
Feb-21	2070	0.3184713376	0.2637987322	5985.52	-0.041058669	-0.059610272	-0.015725114	-0.0130760092	0.001685814	0.057079234
Mar-21	1720	-0.1690821256	-0.2237547310	5995.62	0.001687406	-0.016864197	0.003773444	-0.0002853101	0.000002847	0.053266426
Apr-21	1590	-0.0755813953	-0.1302540008	5947.46	-0.00803253	-0.026584133	0.003462690	0.0006071099	0.000064522	0.019980489
May-21	1635	0.0283018868	-0.0263707186	5985.49	0.006394326	-0.012157277	0.000320596	0.0001809715	0.000040887	0.000988860
Jun-21	1370	-0.1620795107	-0.2167521161	6070.04	0.014125828	-0.004425775	0.000959296	-0.0022895072	0.000199539	0.047785869
	Σ	0.7654164757	Σ		0.259722443	Σ	-0.011055833	0.003143870	0.031300542	0.728338722
	E(Ri)	0.0546726054	E(Rm)		0.018551603	σ_{im}	-0.000789702		σ^2_{ei}	0.052024194
									σ_{ei}	0.228088129
									β	-0.41748048
									α	0.062417538

Bank Pembangunan Daerah Jawa Barat dan Banten Tbk. (BJBR)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	805			4753.61						
May-20	760	-0.0559006211	-0.0941477823	4905.39	0.031929418	0.013377815	-0.001259492	-0.0017848743	0.001019488	0.008888493
Jun-20	760	0.0000000000	-0.0382471612	5149.63	0.049790129	0.031238526	-0.001194785	0.0000000000	0.002479057	0.001486342
Jul-20	935	0.2302631579	0.1920159967	5238.49	0.017255609	-0.001295994	-0.000248852	0.0039733309	0.000297756	0.036875018
Aug-20	1055	0.1283422460	0.0900950848	4870.04	-0.070335154	-0.088886757	-0.008008260	-0.0090269716	0.004947034	0.008274747
Sep-20	870	-0.1753554502	-0.2136026114	5128.23	0.053015992	0.034464389	-0.007361683	-0.0092966431	0.002810695	0.045770389
Oct-20	1085	0.2471264368	0.2088792756	5612.42	0.094416592	0.075864989	0.015846624	0.0233328360	0.008914493	0.043320702
Nov-20	1325	0.2211981567	0.1829509955	5979.07	0.065328325	0.046776722	0.008557848	0.0144505052	0.004267790	0.033303647
Dec-20	1550	0.1698113208	0.1315641596	5862.35	-0.019521431	-0.038073034	-0.005009047	-0.0033149599	0.000381086	0.017407384
Jan-21	1470	-0.0516129032	-0.0898600644	6241.8	0.064726603	0.046175000	-0.004149288	-0.0033407279	0.004189533	0.008156311
Feb-21	1585	0.0782312925	0.0399841314	5985.52	-0.041058669	-0.059610272	-0.002383465	-0.0032120727	0.001685814	0.001645759
Mar-21	1455	-0.0820189274	-0.1202660886	5995.62	0.001687406	-0.016864197	0.002028191	-0.0001383992	0.000002847	0.014424231
Apr-21	1390	-0.0446735395	-0.0829207007	5947.46	-0.00803253	-0.026584133	0.002204375	0.0003588416	0.000064522	0.006832731
May-21	1385	-0.0035971223	-0.0418442835	5985.49	0.006394326	-0.012157277	0.000508713	-0.0000230012	0.000040887	0.001740994
Jun-21	1210	-0.1263537906	-0.1646009518	6070.04	0.014125828	-0.004425775	0.000728487	-0.0017848519	0.000199539	0.027079206
	Σ	0.5354602562	Σ		0.259722443	Σ	0.000259366	0.010193012	0.031300542	0.255205954
	E(Ri)	0.0382471612	E(Rm)		0.018551603	σ_{im}	0.000018526		σ^2_{ei}	0.018228997
									σ_{ei}	0.135014802
									β	0.009793937
									α	0.038065468

PT Bank Mandiri (Persero) Tbk. (BMRI)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	4460			4753.61						
May-20	4470	0.0022421525	-0.0216375048	4905.39	0.031929418	0.013377815	-0.000289463	0.0000715906	0.001019488	0.000945533
Jun-20	4950	0.1073825503	0.0835028931	5149.63	0.049790129	0.031238526	0.002608507	0.0053465910	0.002479057	0.003872006
Jul-20	5800	0.1717171717	0.1478375145	5238.49	0.017255609	-0.001295994	-0.000191597	0.0029630843	0.000297756	0.022117714
Aug-20	5950	0.0258620690	0.0019824117	4870.04	-0.070335154	-0.088886757	-0.000176210	-0.0018190126	0.004947034	0.003909465
Sep-20	4960	-0.1663865546	-0.1902662119	5128.23	0.053015992	0.034464389	-0.006557409	-0.0088211482	0.002810695	0.045685168
Oct-20	5775	0.1643145161	0.1404348589	5612.42	0.094416592	0.075864989	0.010654089	0.0155140166	0.008914493	0.007878525
Nov-20	6325	0.0952380952	0.0713584380	5979.07	0.065328325	0.046776722	0.003337914	0.0062217453	0.004267790	0.001560051
Dec-20	6325	0.0000000000	-0.0238796573	5862.35	-0.019521431	-0.038073034	0.000909171	0.0000000000	0.000381086	0.000004215
Jan-21	6575	0.0395256917	0.0156460344	6241.8	0.064726603	0.046175000	0.000722456	0.0025583637	0.004189533	0.000249800
Feb-21	6150	-0.0646387833	-0.0885184405	5985.52	-0.041058669	-0.059610272	0.005276608	0.0026539824	0.001685814	0.002295961
Mar-21	6150	0.0000000000	-0.0238796573	5995.62	0.001687406	-0.016864197	0.000402711	0.0000000000	0.000002847	0.000153586
Apr-21	6175	0.0040650407	-0.0198146166	5947.46	-0.00803253	-0.026584133	0.000526754	-0.0000326526	0.000064522	0.000002915
May-21	6000	-0.0283400810	-0.0522197382	5985.49	0.006394326	-0.012157277	0.000634850	-0.0001812157	0.000040887	0.001930642
Jun-21	5900	-0.0166666667	-0.0405463239	6070.04	0.014125828	-0.004425775	0.000179449	-0.0002354305	0.000199539	0.001408636
	Σ	0.3343152017	Σ		0.259722443	Σ	0.018037832	0.024239914	0.031300542	0.092014215
	E(Ri)	0.0238796573	E(Rm)		0.018551603	σ_{im}	0.001288417		σ^2_{ei}	0.006572444
									σ_{ei}	0.081070611
									β	0.681128496
									α	0.011243632

Bank BRIsyariah Tbk. (BRIS)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	196			4753.61						
May-20	300	0.5306122449	0.2906454322	4905.39	0.031929418	0.013377815	0.003888201	0.0169421401	0.001019488	0.096458429
Jun-20	308	0.0266666667	-0.2133001461	5149.63	0.049790129	0.031238526	-0.006663182	0.0013277368	0.002479057	0.027807770
Jul-20	540	0.7532467532	0.5132799405	5238.49	0.017255609	-0.001295994	-0.000665208	0.0129977312	0.000297756	0.261477786
Aug-20	965	0.7870370370	0.5470702243	4870.04	-0.070335154	-0.088886757	-0.048627298	-0.0553563711	0.004947034	0.171921598
Sep-20	750	-0.2227979275	-0.4627647402	5128.23	0.053015992	0.034464389	-0.015948904	-0.0118118531	0.002810695	0.169262196
Oct-20	1,235	0.6466666667	0.4066998539	5612.42	0.094416592	0.075864989	0.030854280	0.0610560629	0.008914493	0.270123568
Nov-20	1,430	0.1578947368	-0.0820720759	5979.07	0.065328325	0.046776722	-0.003839063	0.0103149987	0.004267790	0.000153204
Dec-20	2,250	0.5734265734	0.3334597607	5862.35	-0.019521431	-0.038073034	-0.012695825	-0.0111941071	0.000381086	0.076581279
Jan-21	2,440	0.0844444444	-0.1555223683	6241.8	0.064726603	0.046175000	-0.007181245	0.0054658020	0.004189533	0.007521120
Feb-21	2,940	0.2049180328	-0.0350487799	5985.52	-0.041058669	-0.059610272	0.002089267	-0.0084136617	0.001685814	0.015342416
Mar-21	2,290	-0.2210884354	-0.4610552481	5995.62	0.001687406	-0.016864197	0.007775327	-0.0003730659	0.000002847	0.236372830
Apr-21	2,280	-0.0043668122	-0.2443336249	5947.46	-0.00803253	-0.026584133	0.006495398	0.0000350766	0.000064522	0.080623279
May-21	1,905	-0.1644736842	-0.4044404969	5985.49	0.006394326	-0.012157277	0.004916895	-0.0010516984	0.000040887	0.178551975
Jun-21	2,300	0.2073490814	-0.0326177314	6070.04	0.014125828	-0.004425775	0.000144359	0.0029289774	0.000199539	0.001537571
	Σ	3.3595353781	Σ		0.259722443	Σ	-0.039456998	0.022867768	0.031300542	1.593735021
	E(Ri)	0.2399668127	E(Rm)		0.018551603	σ_{im}	-0.002818357		σ^2_{ei}	0.113838216
									σ_{ei}	0.337399193
									β	-1.489939954
									α	0.267607587

Elnusa Tbk. (ELSA)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	196			4753.61						
May-20	197	0.0051020408	-0.0277420593	4905.39	0.031929418	0.013377815	-0.000371128	0.0001629052	0.001019488	0.000924867
Jun-20	220	0.1167512690	0.0839071689	5149.63	0.049790129	0.031238526	0.002621136	0.0058130607	0.002479057	0.006033167
Jul-20	228	0.0363636364	0.0035195362	5238.49	0.017255609	-0.001295994	-0.000004561	0.0006274767	0.000297756	0.000014274
Aug-20	244	0.0701754386	0.0373313384	4870.04	-0.070335154	-0.088886757	-0.003318262	-0.0049358003	0.004947034	0.003032578
Sep-20	194	-0.2049180328	-0.2377621330	5128.23	0.053015992	0.034464389	-0.008194327	-0.0108639327	0.002810695	0.059848515
Oct-20	212	0.0927835052	0.0599394050	5612.42	0.094416592	0.075864989	0.004547302	0.0087603024	0.008914493	0.002007077
Nov-20	294	0.3867924528	0.3539483527	5979.07	0.065328325	0.046776722	0.016556544	0.0252685032	0.004267790	0.118758793
Dec-20	352	0.1972789116	0.1644348114	5862.35	-0.019521431	-0.038073034	-0.006260532	-0.0038511666	0.000381086	0.029595130
Jan-21	358	0.0170454545	-0.0157986456	6241.8	0.064726603	0.046175000	-0.000729502	0.0011032944	0.004189533	0.000625648
Feb-21	402	0.1229050279	0.0900609278	5985.52	-0.041058669	-0.059610272	-0.005368556	-0.0050463169	0.001685814	0.010395079
Mar-21	344	-0.1442786070	-0.1771227071	5995.62	0.001687406	-0.016864197	0.002987032	-0.0002434565	0.000002847	0.030191643
Apr-21	356	0.0348837209	0.0020396208	5947.46	-0.00803253	-0.026584133	-0.000054222	-0.0002802045	0.000064522	0.000053942
May-21	304	-0.1460674157	-0.1789115159	5985.49	0.006394326	-0.012157277	0.002175077	-0.0009340027	0.000040887	0.031147135
Jun-21	266	-0.1250000000	-0.1578441002	6070.04	0.014125828	-0.004425775	0.000698583	-0.0017657285	0.000199539	0.024636733
	Σ	0.4598174023	Σ		0.259722443	Σ	0.005284584	0.013814934	0.031300542	0.317264582
	E(Ri)	0.0328441002	E(Rm)		0.018551603	σ_{im}	0.000377470		σ^2_{ei}	0.022661756
									σ_{ei}	0.150538221
									β	0.199551742
									α	0.029142095

PT Jasa Marga Tbk. (JSMR)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	3150			4753.61						
May-20	3550	0.1269841270	0.1138957527	4905.39	0.031929418	0.013377815	0.001523676	0.0040545293	0.001019488	0.011824881
Jun-20	4400	0.2394366197	0.2263482454	5149.63	0.049790129	0.031238526	0.007070785	0.0119215801	0.002479057	0.045930638
Jul-20	3930	-0.1068181818	-0.1199065561	5238.49	0.017255609	-0.001295994	0.000155398	-0.0018432127	0.000297756	0.014258104
Aug-20	3910	-0.0050890585	-0.0181774328	4870.04	-0.070335154	-0.088886757	0.001615733	0.0003579397	0.004947034	0.000258055
Sep-20	3610	-0.0767263427	-0.0898147170	5128.23	0.053015992	0.034464389	-0.003095409	-0.0040677231	0.002810695	0.010627817
Oct-20	3560	-0.0138504155	-0.0269387898	5612.42	0.094416592	0.075864989	-0.002043711	-0.0013077090	0.008914493	0.003154393
Nov-20	4190	0.1769662921	0.1638779179	5979.07	0.065328325	0.046776722	0.007665672	0.0115609115	0.004267790	0.021274642
Dec-20	4630	0.1050119332	0.0919235589	5862.35	-0.019521431	-0.038073034	-0.003499809	-0.0020499832	0.000381086	0.011361491
Jan-21	4320	-0.0669546436	-0.0800430179	6241.8	0.064726603	0.046175000	-0.003695986	-0.0043337466	0.004189533	0.009570874
Feb-21	4170	-0.0347222222	-0.0478105965	5985.52	-0.041058669	-0.059610272	0.002850003	0.0014256482	0.001685814	0.000617381
Mar-21	4040	-0.0311750600	-0.0442634342	5995.62	0.001687406	-0.016864197	0.000746467	-0.0000526050	0.000002847	0.001426339
Apr-21	4150	0.0272277228	0.0141393485	5947.46	-0.00803253	-0.026584133	-0.000375882	-0.0002187075	0.000064522	0.000594397
May-21	3950	-0.0481927711	-0.0612811454	5985.49	0.006394326	-0.012157277	0.000745012	-0.0003081603	0.000040887	0.003203316
Jun-21	3520	-0.1088607595	-0.1219491338	6070.04	0.014125828	-0.004425775	0.000539719	-0.0015377483	0.000199539	0.014458670
	Σ	0.1832372398	Σ		0.259722443	Σ	0.010201668	0.013601013	0.031300542	0.148560996
	E(Ri)	0.0130883743	E(Rm)		0.018551603	σ_{im}	0.000728691		σ^2_{ei}	0.010611500
									σ_{ei}	0.103012134
									β	0.3852263
									α	0.005941809

Kimia Farma Tbk. (KAEF)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	1,330			4753.61						
May-20	1,160	-0.1278195489	-0.2284139147	4905.39	0.031929418	0.013377815	-0.003055679	-0.0040812038	0.001019488	0.038946834
Jun-20	1,120	-0.0344827586	-0.1350771244	5149.63	0.049790129	0.031238526	-0.004219610	-0.0017169010	0.002479057	0.003911087
Jul-20	2,250	1.0089285714	0.9083342056	5238.49	0.017255609	-0.001295994	-0.001177196	0.0174096766	0.000297756	0.819612993
Aug-20	3,040	0.3511111111	0.2505167453	4870.04	-0.070335154	-0.088886757	-0.022267621	-0.0246954540	0.004947034	0.001946076
Sep-20	2,890	-0.0493421053	-0.1499364711	5128.23	0.053015992	0.034464389	-0.005167469	-0.0026159206	0.002810695	0.004887032
Oct-20	3,150	0.0899653979	-0.0106289679	5612.42	0.094416592	0.075864989	-0.000806367	0.0084942263	0.008914493	0.027402104
Nov-20	3,150	0.0000000000	-0.1005943658	5979.07	0.065328325	0.046776722	-0.004705475	0.0000000000	0.004267790	0.000064401
Dec-20	4,250	0.3492063492	0.2486119834	5862.35	-0.019521431	-0.038073034	-0.009465412	-0.0068170075	0.000381086	0.025665082
Jan-21	3,120	-0.2658823529	-0.3664767187	6241.8	0.064726603	0.046175000	-0.016922062	-0.0172096615	0.004189533	0.067212923
Feb-21	3,530	0.1314102564	0.0308158906	5985.52	-0.041058669	-0.059610272	-0.001836944	-0.0053955302	0.001685814	0.011578640
Mar-21	2,560	-0.2747875354	-0.3753819012	5995.62	0.001687406	-0.016864197	0.006330515	-0.0004636780	0.000002847	0.171845038
Apr-21	2,800	0.0937500000	-0.0068443658	5947.46	-0.00803253	-0.026584133	0.000181952	-0.0007530497	0.000064522	0.004702520
May-21	2,600	-0.0714285714	-0.1720229372	5985.49	0.006394326	-0.012157277	0.002091330	-0.0004567376	0.000040887	0.040101320
Jun-21	3,140	0.2076923077	0.1070979419	6070.04	0.014125828	-0.004425775	-0.000473991	0.0029338257	0.000199539	0.009374292
	Σ	1.4083211212	Σ		0.259722443	Σ	-0.061494030	-0.035367415	0.031300542	1.227250341
	E(Ri)	0.1005943658	E(Rm)		0.018551603	σ_{im}	-0.004392431		σ^2_{ei}	0.087660739
									σ_{ei}	0.296075562
									β	-2.322082666
									α	0.143672722

PT Perusahaan Gas Negara Tbk. (PGAS)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	855			4753.61						
May-20	860	0.0058479532	-0.0194917567	4905.39	0.031929418	0.013377815	-0.000260757	0.0001867217	0.001019488	0.000659770
Jun-20	1135	0.3197674419	0.2944277319	5149.63	0.049790129	0.031238526	0.009197488	0.0159212621	0.002479057	0.078379602
Jul-20	1265	0.1145374449	0.0891977350	5238.49	0.017255609	-0.001295994	-0.000115600	0.0019764133	0.000297756	0.008063647
Aug-20	1255	-0.0079051383	-0.0332448483	4870.04	-0.070335154	-0.088886757	0.002955027	0.0005560091	0.004947034	0.000062596
Sep-20	925	-0.2629482072	-0.2882879171	5128.23	0.053015992	0.034464389	-0.009935667	-0.0139404600	0.002810695	0.092565461
Oct-20	1075	0.1621621622	0.1368224522	5612.42	0.094416592	0.075864989	0.010380034	0.0153107987	0.008914493	0.010341916
Nov-20	1390	0.2930232558	0.2676835459	5979.07	0.065328325	0.046776722	0.012521359	0.0191427186	0.004267790	0.060528223
Dec-20	1655	0.1906474820	0.1653077721	5862.35	-0.019521431	-0.038073034	-0.006293768	-0.0037217116	0.000381086	0.033465751
Jan-21	1345	-0.1873111782	-0.2126508882	6241.8	0.064726603	0.046175000	-0.009819155	-0.0121240162	0.004189533	0.054770500
Feb-21	1440	0.0706319703	0.0452922603	5985.52	-0.041058669	-0.059610272	-0.002699884	-0.0029000547	0.001685814	0.005313418
Mar-21	1315	-0.0868055556	-0.1121452655	5995.62	0.001687406	-0.016864197	0.001891240	-0.0001464762	0.000002847	0.010886158
Apr-21	1225	-0.0684410646	-0.0937807746	5947.46	-0.00803253	-0.026584133	0.002493081	0.0005497549	0.000064522	0.006637639
May-21	1115	-0.0897959184	-0.1151356283	5985.49	0.006394326	-0.012157277	0.001399736	-0.0005741844	0.000040887	0.011991680
Jun-21	1005	-0.0986547085	-0.1239944185	6070.04	0.014125828	-0.004425775	0.000548771	-0.0013935794	0.000199539	0.014870627
	Σ	0.3547559394	Σ		0.259722443	Σ	0.012261905	0.018843196	0.031300542	0.388536987
	E(Ri)	0.0253397100	E(Rm)		0.018551603	σ_{im}	0.000875850		σ^2_{ei}	0.027752642
									σ_{ei}	0.166591242
									β	0.463023102
									α	0.016749889

Bukit Asam Tbk. (PTBA)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	1875			4753.61						
May-20	1945	0.0373333333	0.0288680626	4905.39	0.031929418	0.013377815	0.000386192	0.0011920316	0.001019488	0.000847025
Jun-20	2020	0.0385604113	0.0300951406	5149.63	0.049790129	0.031238526	0.000940128	0.0019199278	0.002479057	0.000939138
Jul-20	2030	0.0049504950	-0.0035147757	5238.49	0.017255609	-0.001295994	0.000004555	0.0000854238	0.000297756	0.000012515
Aug-20	2040	0.0049261084	-0.0035391623	4870.04	-0.070335154	-0.088886757	0.000314585	-0.0003464786	0.004947034	0.000026059
Sep-20	1970	-0.0343137255	-0.0427789962	5128.23	0.053015992	0.034464389	-0.001474352	-0.0018191762	0.002810695	0.001778474
Oct-20	1960	-0.0050761421	-0.0135414128	5612.42	0.094416592	0.075864989	-0.001027319	-0.0004792720	0.008914493	0.000148966
Nov-20	2360	0.2040816327	0.1956163619	5979.07	0.065328325	0.046776722	0.009150292	0.0133323113	0.004267790	0.038588779
Dec-20	2810	0.1906779661	0.1822126954	5862.35	-0.019521431	-0.038073034	-0.006937390	-0.0037223067	0.000381086	0.032957531
Jan-21	2580	-0.0818505338	-0.0903158045	6241.8	0.064726603	0.046175000	-0.004170332	-0.0052979070	0.004189533	0.008010697
Feb-21	2710	0.0503875969	0.0419223262	5985.52	-0.041058669	-0.059610272	-0.002499001	-0.0020688477	0.001685814	0.001670551
Mar-21	2620	-0.0332103321	-0.0416756028	5995.62	0.001687406	-0.016864197	0.000702826	-0.0000560393	0.000002847	0.001761703
Apr-21	2370	-0.0954198473	-0.1038851180	5947.46	-0.00803253	-0.026584133	0.002761696	0.0007664628	0.000064522	0.010889624
May-21	2210	-0.0675105485	-0.0759758192	5985.49	0.006394326	-0.012157277	0.000923659	-0.0004316845	0.000040887	0.005804909
Jun-21	2000	-0.0950226244	-0.1034878951	6070.04	0.014125828	-0.004425775	0.000458014	-0.0013422732	0.000199539	0.010725885
	Σ	0.1185137899	Σ		0.259722443	Σ	-0.000466449	0.001732172	0.031300542	0.114161855
	E(Ri)	0.0084652707	E(Rm)		0.018551603	σ_{im}	-0.000033318		σ^2_{ei}	0.008154418
									σ_{ei}	0.090301817
									β	- 0.017613614
									α	0.008792031

PP (Persero) Tbk. (PTPP)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	670			4753.61						
May-20	725	0.0820895522	0.0426086036	4905.39	0.031929418	0.013377815	0.000570010	0.0026210716	0.001019488	0.001000696
Jun-20	870	0.2000000000	0.1605190513	5149.63	0.049790129	0.031238526	0.005014379	0.0099580258	0.002479057	0.018195787
Jul-20	975	0.1206896552	0.0812087065	5238.49	0.017255609	-0.001295994	-0.000105246	0.0020825735	0.000297756	0.006768667
Aug-20	970	-0.0051282051	-0.0446091538	4870.04	-0.070335154	-0.088886757	0.003965163	0.0003606931	0.004947034	0.000801529
Sep-20	825	-0.1494845361	-0.1889654847	5128.23	0.053015992	0.034464389	-0.006512580	-0.0079250709	0.002810695	0.047192867
Oct-20	915	0.1090909091	0.0696099604	5612.42	0.094416592	0.075864989	0.005280959	0.0102999919	0.008914493	0.000054350
Nov-20	1360	0.4863387978	0.4468578492	5979.07	0.065328325	0.046776722	0.020902546	0.0317716992	0.004267790	0.166858701
Dec-20	1865	0.3713235294	0.3318425807	5862.35	-0.019521431	-0.038073034	-0.012634254	-0.0072487665	0.000381086	0.131824712
Jan-21	1635	-0.1233243968	-0.1628053454	6241.8	0.064726603	0.046175000	-0.007517537	-0.0079823692	0.004189533	0.040274927
Feb-21	1615	-0.0122324159	-0.0517133646	5985.52	-0.041058669	-0.059610272	0.003082648	0.0005022467	0.001685814	0.000007900
Mar-21	1370	-0.1517027864	-0.1911837350	5995.62	0.001687406	-0.016864197	0.003224160	-0.0002559841	0.000002847	0.031452588
Apr-21	1220	-0.1094890511	-0.1489699998	5947.46	-0.00803253	-0.026584133	0.003960238	0.0008794741	0.000064522	0.016169933
May-21	1115	-0.0860655738	-0.1255465224	5985.49	0.006394326	-0.012157277	0.001526304	-0.0005503314	0.000040887	0.013357119
Jun-21	915	-0.1793721973	-0.2188531460	6070.04	0.014125828	-0.004425775	0.000968595	-0.0025337807	0.000199539	0.046320661
	Σ	0.5527332813	Σ		0.259722443	Σ	0.021725385	0.031979473	0.031300542	0.520280436
	E(Ri)	0.0394809487	E(Rm)		0.018551603	σ_{im}	0.001551813		σ^2_{ei}	0.037162888
									σ_{ei}	0.192776784
									β	0.82037458
									α	0.024261685

Semen Baturaja (Persero) Tbk. (SMBR)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	302			4753.61						
May-20	288	-0.0463576159	-0.1343600663	4905.39	0.031929418	0.013377815	-0.001797444	-0.0014801717	0.001019488	0.018935283
Jun-20	308	0.0694444444	-0.0185580059	5149.63	0.049790129	0.031238526	-0.000579725	0.0034576478	0.002479057	0.000683116
Jul-20	492	0.5974025974	0.5094001470	5238.49	0.017255609	-0.001295994	-0.000660180	0.0103085454	0.000297756	0.259808929
Aug-20	575	0.1686991870	0.0806967366	4870.04	-0.070335154	-0.088886757	-0.007172871	-0.0118654833	0.004947034	0.010457258
Sep-20	460	-0.2000000000	-0.2880024504	5128.23	0.053015992	0.034464389	-0.009925828	-0.0106031983	0.002810695	0.087831347
Oct-20	500	0.0869565217	-0.0010459286	5612.42	0.094416592	0.075864989	-0.000079349	0.0082101384	0.008914493	0.000378335
Nov-20	955	0.9100000000	0.8219975496	5979.07	0.065328325	0.046776722	0.038450351	0.0594487761	0.004267790	0.657152578
Dec-20	1,065	0.1151832461	0.0271807957	5862.35	-0.019521431	-0.038073034	-0.001034855	-0.0022485417	0.000381086	0.001326223
Jan-21	805	-0.2441314554	-0.3321339058	6241.8	0.064726603	0.046175000	-0.015336283	-0.0158017997	0.004189533	0.117879607
Feb-21	950	0.1801242236	0.0921217732	5985.52	-0.041058669	-0.059610272	-0.005491404	-0.0073956609	0.001685814	0.011359994
Mar-21	820	-0.1368421053	-0.2248445556	5995.62	0.001687406	-0.016864197	0.003791823	-0.0002309081	0.000002847	0.048732014
Apr-21	815	-0.0060975610	-0.0941000114	5947.46	-0.00803253	-0.026584133	0.002501567	0.0000489788	0.000064522	0.007682642
May-21	695	-0.1472392638	-0.2352417142	5985.49	0.006394326	-0.012157277	0.002859899	-0.0009414959	0.000040887	0.053959735
Jun-21	615	-0.1151079137	-0.2031103640	6070.04	0.014125828	-0.004425775	0.000898921	-0.0016259945	0.000199539	0.040818815
	Σ	1.2320343052	Σ		0.259722443	Σ	0.006424621	0.029280832	0.031300542	1.317005877
	E(Ri)	0.0880024504	E(Rm)		0.018551603	σ_{im}	0.000458902		$\sigma^2 e_i$	0.094071848
									σe_i	0.306711344
									β	0.242600805
									α	0.083501817

PT Timah Tbk. (TINS)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	466			4753.61						
May-20	444	-0.0472103004	-0.1528091345	4905.39	0.031929418	0.013377815	-0.002044252	-0.0015073974	0.001019488	0.024620759
Jun-20	595	0.3400900901	0.2344912560	5149.63	0.049790129	0.031238526	0.007325161	0.0169331294	0.002479057	0.050586869
Jul-20	760	0.2773109244	0.1717120903	5238.49	0.017255609	-0.001295994	-0.000222538	0.0047851688	0.000297756	0.029621635
Aug-20	795	0.0460526316	-0.0595462025	4870.04	-0.070335154	-0.088886757	0.005292869	-0.0032391189	0.004947034	0.001043188
Sep-20	675	-0.1509433962	-0.2565422303	5128.23	0.053015992	0.034464389	-0.008841571	-0.0080024138	0.002810695	0.071346208
Oct-20	830	0.2296296296	0.1240307955	5612.42	0.094416592	0.075864989	0.009409595	0.0216808471	0.008914493	0.010155555
Nov-20	1070	0.2891566265	0.1835577924	5979.07	0.065328325	0.046776722	0.008586232	0.0188901182	0.004267790	0.028634945
Dec-20	1485	0.3878504673	0.2822516332	5862.35	-0.019521431	-0.038073034	-0.010746176	-0.0075713960	0.000381086	0.086390568
Jan-21	1690	0.1380471380	0.0324483039	6241.8	0.064726603	0.046175000	0.001498300	0.0089353223	0.004189533	0.000334656
Feb-21	2220	0.3136094675	0.2080106334	5985.52	-0.041058669	-0.059610272	-0.012399570	-0.0128763873	0.001685814	0.051204382
Mar-21	1615	-0.2725225225	-0.3781213566	5995.62	0.001687406	-0.016864197	0.006376713	-0.0004598560	0.000002847	0.139092989
Apr-21	1730	0.0712074303	-0.0343914038	5947.46	-0.00803253	-0.026584133	0.000914266	-0.0005719758	0.000064522	0.000688652
May-21	1600	-0.0751445087	-0.1807433428	5985.49	0.006394326	-0.012157277	0.002197347	-0.0004804985	0.000040887	0.031334874
Jun-21	1490	-0.0687500000	-0.1743488341	6070.04	0.014125828	-0.004425775	0.000771629	-0.0009711506	0.000199539	0.029926279
	Σ	1.4783836775	Σ		0.259722443	Σ	0.008118004	0.035544391	0.031300542	0.554981559
	E(Ri)	0.1055988341	E(Rm)		0.018551603	σ_{im}	0.000579857		$\sigma^2 e_i$	0.039641540
									σe_i	0.199101833
									β	0.306544823
									α	0.099911936

PT Telkom Indonesia (Persero) Tbk. (TLKM)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	3500			4753.61						
May-20	3150	-0.1000000000	-0.0964407091	4905.39	0.031929418	0.013377815	-0.001290166	-0.0031929418	0.001019488	0.009571134
Jun-20	3050	-0.0317460317	-0.0281867409	5149.63	0.049790129	0.031238526	-0.000880512	-0.0015806390	0.002479057	0.000988219
Jul-20	3050	0.0000000000	0.0035592909	5238.49	0.017255609	-0.001295994	-0.000004613	0.0000000000	0.000297756	0.000013646
Aug-20	2860	-0.0622950820	-0.0587357911	4870.04	-0.070335154	-0.088886757	0.005220834	0.0043815342	0.004947034	0.002449303
Sep-20	2560	-0.1048951049	-0.1013358140	5128.23	0.053015992	0.034464389	-0.003492477	-0.0055611180	0.002810695	0.011008322
Oct-20	2620	0.0234375000	0.0269967909	5612.42	0.094416592	0.075864989	0.002048111	0.0022128889	0.008914493	0.000365034
Nov-20	3230	0.2328244275	0.2363837184	5979.07	0.065328325	0.046776722	0.011057256	0.0152100300	0.004267790	0.053600744
Dec-20	3310	0.0247678019	0.0283270927	5862.35	-0.019521431	-0.038073034	-0.001078498	-0.0004835029	0.000381086	0.001042461
Jan-21	3110	-0.0604229607	-0.0568636698	6241.8	0.064726603	0.046175000	-0.002625680	-0.0039109730	0.004189533	0.003802752
Feb-21	3490	0.1221864952	0.1257457861	5985.52	-0.041058669	-0.059610272	-0.007495741	-0.0050168149	0.001685814	0.017409750
Mar-21	3420	-0.0200573066	-0.0164980157	5995.62	0.001687406	-0.016864197	0.000278226	-0.0000338448	0.000002847	0.000217383
Apr-21	3200	-0.0643274854	-0.0607681945	5947.46	-0.00803253	-0.026584133	0.001615470	0.0005167125	0.000064522	0.003364360
May-21	3440	0.0750000000	0.0785592909	5985.49	0.006394326	-0.012157277	-0.000955067	0.0004795745	0.000040887	0.006371839
Jun-21	3150	-0.0843023256	-0.0807430347	6070.04	0.014125828	-0.004425775	0.000357351	-0.0011908401	0.000199539	0.006445312
	Σ	-0.0498300724	Σ		0.259722443	Σ	0.002754493	0.001830065	0.031300542	0.116650260
	E(Ri)	-0.0035592909	E(Rm)		0.018551603	σ_{im}	0.000196750		$\sigma^2 e_i$	0.008332161
									σe_i	0.091280674
									β	0.104012713
									α	-0.005488893

PT Wijaya Karya Bangunan Gedung Tbk. (WEGE)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	165			4753.61						
May-20	160	-0.0303030303	-0.0478785328	4905.39	0.031929418	0.013377815	-0.000640510	-0.0009675581	0.001019488	0.002496074
Jun-20	191	0.1937500000	0.1761744975	5149.63	0.049790129	0.031238526	0.005503432	0.0096468375	0.002479057	0.029347931
Jul-20	194	0.0157068063	-0.0018686962	5238.49	0.017255609	-0.001295994	0.000002422	0.0002710305	0.000297756	0.000002779
Aug-20	190	-0.0206185567	-0.0381940592	4870.04	-0.070335154	-0.088886757	0.003394946	0.0014502094	0.004947034	0.000593375
Sep-20	157	-0.1736842105	-0.1912597130	5128.23	0.053015992	0.034464389	-0.006591649	-0.0092080407	0.002810695	0.038660966
Oct-20	179	0.1401273885	0.1225518860	5612.42	0.094416592	0.075864989	0.009297397	0.0132303505	0.008914493	0.012264208
Nov-20	232	0.2960893855	0.2785138830	5979.07	0.065328325	0.046776722	0.013027967	0.0193430237	0.004267790	0.073567516
Dec-20	256	0.1034482759	0.0858727733	5862.35	-0.019521431	-0.038073034	-0.003269437	-0.0020194583	0.000381086	0.008426992
Jan-21	200	-0.2187500000	-0.2363255025	6241.8	0.064726603	0.046175000	-0.010912330	-0.0141589444	0.004189533	0.059298292
Feb-21	236	0.1800000000	0.1624244975	5985.52	-0.041058669	-0.059610272	-0.009682168	-0.0073905604	0.001685814	0.029481760
Mar-21	202	-0.1440677966	-0.1616432991	5995.62	0.001687406	-0.016864197	0.002725985	-0.0002431008	0.000002847	0.025286875
Apr-21	204	0.0099009901	-0.0076745124	5947.46	-0.00803253	-0.026584133	0.000204020	-0.0000795300	0.000064522	0.000012509
May-21	196	-0.0392156863	-0.0567911888	5985.49	0.006394326	-0.012157277	0.000690426	-0.0002507579	0.000040887	0.003013897
Jun-21	183	-0.0663265306	-0.0839020331	6070.04	0.014125828	-0.004425775	0.000371332	-0.0009369171	0.000199539	0.006924434
	Σ	0.2460570352	Σ		0.259722443	Σ	0.004121831	0.008686584	0.031300542	0.289377607
	E(Ri)	0.0175755025	E(Rm)		0.018551603	σ_{im}	0.000294417		σ^2_{ei}	0.020669829
									σ_{ei}	0.143770056
									β	0.155644916
									α	0.01468804

PT Wijaya Karya Bangunan Gedung Tbk. (WIKA)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	950			4753.61						
May-20	1085	0.1421052632	-0.3202180120	4905.39	0.031929418	0.013377815	-0.004283817	0.0045373383	0.001019488	0.104930988
Jun-20	1200	0.1059907834	-0.3563324917	5149.63	0.049790129	0.031238526	-0.011131302	0.0052772948	0.002479057	0.133226159
Jul-20	1190	-0.0083333333	-0.4706566085	5238.49	0.017255609	-0.001295994	0.000609968	-0.0001437967	0.000297756	0.221179224
Aug-20	1240	0.0420168067	-0.4203064684	4870.04	-0.070335154	-0.088886757	0.037359679	-0.0029552586	0.004947034	0.156530409
Sep-20	1095	-0.1169354839	-0.5792587590	5128.23	0.053015992	0.034464389	-0.019963799	-0.0061994506	0.002810695	0.346712612
Oct-20	1205	0.1004566210	-0.3618666541	5612.42	0.094416592	0.075864989	-0.027453010	0.0094847718	0.008914493	0.146627858
Nov-20	1620	0.3443983402	-0.1179249349	5979.07	0.065328325	0.046776722	-0.005516142	0.0224989668	0.004267790	0.017136402
Dec-20	1985	0.2253086420	-0.2370146332	5862.35	-0.019521431	-0.038073034	0.009023866	-0.0043983470	0.000381086	0.051279092
Jan-21	1800	-0.0931989924	-0.5555222676	6241.8	0.064726603	0.046175000	-0.025651241	-0.0060324542	0.004189533	0.323006296
Feb-21	1740	-0.0333333333	-0.4956566085	5985.52	-0.041058669	-0.059610272	0.029546225	0.0013686223	0.001685814	0.229550211
Mar-21	1535	-0.1178160920	-0.5801393671	5995.62	0.001687406	-0.016864197	0.009783585	-0.0001988035	0.000002847	0.331153445
Apr-21	144	-0.9061889251	-1.3685122002	5947.46	-0.00803253	-0.026584133	0.036380711	0.0072789901	0.000064522	1.852687831
May-21	125	-0.1319444444	-0.5942677196	5985.49	0.006394326	-0.012157277	0.007224677	-0.0008436958	0.000040887	0.349155622
Jun-21	990	6.9200000000	6.4576767249	6070.04	0.014125828	-0.004425775	-0.028580227	0.0977507272	0.000199539	41.717452958
	Σ	6.4725258521	Σ		0.259722443	Σ	0.007349174	0.127424905	0.031300542	45.980629107
	E(Ri)	0.4623232751	E(Rm)		0.018551603	σ_{im}	0.000524941		σ^2_{ei}	3.284330651
									σ_{ei}	1.812272234
									β	0.277512962
									α	0.457174965

PT Waskita Karya (Persero) Tbk. (WSKT)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	605			4753.61						
May-20	610	0.0082644628	-0.0402029852	4905.39	0.031929418	0.013377815	-0.000537828	0.0002638795	0.001019488	0.003615839
Jun-20	710	0.1639344262	0.1154669782	5149.63	0.049790129	0.031238526	0.003607018	0.0081623162	0.002479057	0.004751497
Jul-20	625	-0.1197183099	-0.1681857579	5238.49	0.017255609	-0.001295994	0.000217968	-0.0020658123	0.000297756	0.027640765
Aug-20	650	0.0400000000	-0.0084674480	4870.04	-0.070335154	-0.088886757	0.000752644	-0.0028134062	0.004947034	0.015362785
Sep-20	498	-0.2338461538	-0.2823136019	5128.23	0.053015992	0.034464389	-0.009729766	-0.0123975857	0.002810695	0.111325676
Oct-20	740	0.4859437751	0.4374763271	5612.42	0.094416592	0.075864989	0.033189137	0.0458811552	0.008914493	0.105274706
Nov-20	1040	0.4054054054	0.3569379574	5979.07	0.065328325	0.046776722	0.016696388	0.0264844562	0.004267790	0.082515385
Dec-20	1440	0.3846153846	0.3361479366	5862.35	-0.019521431	-0.038073034	-0.012798172	-0.0075082425	0.000381086	0.154343019
Jan-21	1415	-0.0173611111	-0.0658285591	6241.8	0.064726603	0.046175000	-0.003039634	-0.0011237257	0.004189533	0.018121258
Feb-21	1425	0.0070671378	-0.0414003102	5985.52	-0.041058669	-0.059610272	0.002467884	-0.0002901673	0.001685814	0.002246837
Mar-21	1155	-0.1894736842	-0.2379411322	5995.62	0.001687406	-0.016864197	0.004012686	-0.0003197190	0.000002847	0.045291766
Apr-21	1110	-0.0389610390	-0.0874284870	5947.46	-0.00803253	-0.026584133	0.002324211	0.0003129557	0.000064522	0.002287349
May-21	1035	-0.0675675676	-0.1160350156	5985.49	0.006394326	-0.012157277	0.001410670	-0.0004320491	0.000040887	0.009589185
Jun-21	880	-0.1497584541	-0.1982259021	6070.04	0.014125828	-0.004425775	0.000877303	-0.0021154621	0.000199539	0.036723148
	Σ	0.6785442723	Σ		0.259722443	Σ	0.039450509	0.052038593	0.031300542	0.619089216
	E(Ri)	0.0484674480	E(Rm)		0.018551603	σ_{im}	0.002817893		σ^2_{ei}	0.044220658
									σ_{ei}	0.210287085
									β	1.489694907
									α	0.020831219

Wijaya Karya Beton (WTON)

Period	Close Price	Ri	Ri-E(Ri)	IHSG	Rm	Rm-E(Rm)	[Ri-E(Ri)]x[Rm-E(Rm)]	Ri*Rm	(Rm)*(Rm)	
Apr-20	236			4753.61						
May-20	228	-0.0338983051	-0.0463576685	4905.39	0.031929418	0.013377815	-0.000620164	-0.0010823531	0.001019488	0.003408542
Jun-20	282	0.2368421053	0.2243827419	5149.63	0.049790129	0.031238526	0.007009386	0.0117923989	0.002479057	0.038534887
Jul-20	274	-0.0283687943	-0.0408281577	5238.49	0.017255609	-0.001295994	0.000052913	-0.0004895208	0.000297756	0.001573171
Aug-20	270	-0.0145985401	-0.0270579035	4870.04	-0.070335154	-0.088886757	0.002405089	0.0010267906	0.004947034	0.002792134
Sep-20	222	-0.1777777778	-0.1902371412	5128.23	0.053015992	0.034464389	-0.006556407	-0.0094250652	0.002810695	0.048936739
Oct-20	242	0.0900900901	0.0776307267	5612.42	0.094416592	0.075864989	0.005889454	0.0085059993	0.008914493	0.000089061
Nov-20	350	0.4462809917	0.4338216283	5979.07	0.065328325	0.046776722	0.020292754	0.0291547898	0.004267790	0.153487617
Dec-20	386	0.1028571429	0.0903977795	5862.35	-0.019521431	-0.038073034	-0.003441718	-0.0020079186	0.000381086	0.015530363
Jan-21	342	-0.1139896373	-0.1264490007	6241.8	0.064726603	0.046175000	-0.005838783	-0.0073781620	0.004189533	0.028208813
Feb-21	348	0.0175438596	0.0050844963	5985.52	-0.041058669	-0.059610272	-0.000303088	-0.0007203275	0.001685814	0.003441816
Mar-21	314	-0.0977011494	-0.1101605128	5995.62	0.001687406	-0.016864197	0.001857769	-0.0001648615	0.000002847	0.009025308
Apr-21	300	-0.0445859873	-0.0570453507	5947.46	-0.00803253	-0.026584133	0.001516501	0.0003581383	0.000064522	0.001098883
May-21	284	-0.0533333333	-0.0657926967	5985.49	0.006394326	-0.012157277	0.000799860	-0.0003410307	0.000040887	0.003010142
Jun-21	240	-0.1549295775	-0.1673889409	6070.04	0.014125828	-0.004425775	0.000740826	-0.0021885085	0.000199539	0.026703056
	Σ	0.1744310875	Σ		0.259722443	Σ	0.023804393	0.027040369	0.031300542	0.335840531
	E(Ri)	0.0124593634	E(Rm)		0.018551603	σ_{im}	0.001700314		σ^2_{ei}	0.023988609
									σ_{ei}	0.154882566
									β	0.89888023
									α	- 0.004216306

Appendix 7 Collection of covariance calculations for each stock

No	Issuer Code	σ_{im}
1	ANTM	-0.000331746
2	BBNI	0.000043833
3	BBRI	0.000020909
4	BBTN	-0.000789702
5	BJBR	0.000018526
6	BMRI	0.001288417
7	BRIS	-0.002818357
8	ELSA	0.000377470
9	JSMR	0.000728691
10	KAEF	-0.004392431
11	PGAS	0.000875850
12	PTBA	-0.000033318
13	PTPP	0.001551813
14	SMBR	0.000458902
15	SMGR	-0.000520587
16	TINS	0.000579857
17	TLKM	0.000196750
18	WIKA	0.000524941
19	WSBP	0.002397212
20	WSKT	0.002817893

Appendix 8 A collection of calculations for alpha, beta, and variance error for each stock

No	Issuer Code	α	β	σ^2ei
1	ANTM	0.138212990	-0.17537936	0.052091755
2	BBNI	0.014543532	0.023172641	0.013155691
3	BBRI	0.030517390	0.011053474	0.008556390
4	BBTN	0.062417538	-0.417480480	0.052024194
5	BJBR	0.038065468	0.009793937	0.018228997
6	BMRI	0.011243632	0.681128496	0.006572444
7	BRIS	0.267607587	-1.489939954	0.113838216
8	ELSA	0.029142095	0.199551742	0.022661756
9	JSMR	0.005941809	0.385226300	0.010611500
10	KAEF	0.143672722	-2.322082666	0.087660739
11	PGAS	0.016749889	0.463023102	0.027752642
12	PTBA	0.008792031	-0.017613614	0.008154418
13	PTPP	0.024261685	0.820374580	0.037162888
14	SMBR	0.083501817	0.242600805	0.094071848
15	SMGR	0.023774316	-0.275211112	0.012190652
16	TINS	0.099911936	0.306544823	0.039641540
17	TLKM	-0.005488893	0.104012713	0.008332161
18	WIKA	0.457174965	0.277512962	3.284330651
19	WSBP	-0.006334181	1.267299501	0.029972079
20	WSKT	0.020831219	1.489694907	0.044220658

Appendix 9 Calculation of ERB before sorting

No	Issuer Code	E(R _i)	R _{br}	β_i	σ^2_{ei}	A _i	B _i	ERB	σ_m^2	C _i	α_i	C*
1	ANTM	0.134959421	0.03866667	-0.175379363	0.052091755	-0.324192611	0.59045661	-0.549054079	0.00189159	-0.0006125557	0.138212990	0.0009746812
2	BBNI	0.014973422	0.03866667	0.023172641	0.013155691	-0.041733656	0.04081666	-1.022466315	0.00189159	-0.0000789369	0.014543532	0.0009746812
3	BBRI	0.030722450	0.03866667	0.011053474	0.008556390	-0.010262644	0.01427930	-0.718707723	0.00189159	-0.0000194122	0.030517390	0.0009746812
4	BBTN	0.054672605	0.03866667	-0.417480480	0.052024194	-0.128443449	3.35017107	-0.03833937	0.00189159	-0.0002414325	0.062417538	0.0009746812
5	BJBR	0.038247161	0.03866667	0.009793937	0.018228997	-0.000225389	0.00526201	-0.042833184	0.00189159	-0.0000004263	0.038065468	0.0009746812
6	BMRI	0.023879657	0.03866667	0.681128496	0.006572444	-1.532436572	70.58805391	-0.021709574	0.00189159	-0.0025572850	0.011243632	0.0009746812
7	BRIS	0.239966813	0.03866667	-1.489939954	0.113838216	-2.634661202	19.50066638	-0.135106214	0.00189159	-0.0048064062	0.267607587	0.0009746812
8	ELSA	0.032844100	0.03866667	0.199551742	0.022661756	-0.051271547	1.75718500	-0.029178229	0.00189159	-0.0000966635	0.029142095	0.0009746812
9	JSMR	0.013088374	0.03866667	0.385226300	0.010611500	-0.928561579	13.98476239	-0.066398095	0.00189159	-0.0017111918	0.005941809	0.0009746812
10	KAEF	0.100594366	0.03866667	-2.322082666	0.087660739	-1.640429216	61.51063740	-0.026669033	0.00189159	-0.0027796058	0.143672722	0.0009746812
11	PGAS	0.025339710	0.03866667	0.463023102	0.027752642	-0.222345997	7.72504445	-0.028782488	0.00189159	-0.0004145303	0.016749889	0.0009746812
12	PTBA	0.008465271	0.03866667	-0.017613614	0.008154418	0.065235276	0.03804556	1.714662105	0.00189159	0.0001233896	0.008792031	0.0009746812
13	PTPP	0.039480949	0.03866667	0.820374580	0.037162888	0.017975359	18.10985319	0.000992573	0.00189159	0.0000328758	0.024261685	0.0009746812
14	SMBR	0.088002450	0.03866667	0.242600805	0.094071848	0.127231484	0.62564042	0.203361995	0.00189159	0.0002403854	0.083501817	0.0009746812
15	SMGR	0.018668709	0.03866667	-0.275211112	0.012190652	0.451465608	6.21305199	0.072664064	0.00189159	0.0008440683	0.023774316	0.0009746812
16	TINS	0.105598834	0.03866667	0.306544823	0.039641540	0.517581038	2.37048632	0.218343819	0.00189159	0.0009746812	0.099911936	0.0009746812
17	TLKM	-0.003559291	0.03866667	0.104012713	0.008332161	-0.527118498	1.29841994	-0.405969195	0.00189159	-0.0009946497	-0.005488893	0.0009746812
18	WIKA	0.462323275	0.03866667	0.277512962	3.284330651	0.035797309	0.02344875	1.526619174	0.00189159	0.0000677109	0.457174965	0.0009746812
19	WSBP	0.017176256	0.03866667	1.267299501	0.029972079	-0.908671944	53.58480628	-0.016957642	0.00189159	-0.0015606476	-0.006334181	0.0009746812
20	WSKT	0.048467448	0.03866667	1.489694907	0.044220658	0.330166367	50.18448398	0.006579053	0.00189159	0.0005703932	0.020831219	0.0009746812
					Σ	-7.404901865	311.5155716					

Appendix 10 Calculation of ERB after be sorted

No	Issuer Code	E(Ri)	Rbr	β_i	$\sigma^2 e_i$	Ai	Bi	ERB	σm^2	Ci	α_i	C*
1	PTBA	0.008465271	0.038666667	-0.017613614	0.008154418	0.065235276	0.03804556	1.714662105	0.001891591	0.0001233896	0.008792031	0.0009746812
2	WIKA	0.462323275	0.038666667	0.277512962	3.284330651	0.035797309	0.02344875	1.526619174	0.001891591	0.0000677109	0.457174965	0.0009746812
3	TINS	0.105598834	0.038666667	0.306544823	0.039641540	0.517581038	2.37048632	0.218343819	0.001891591	0.0009746812	0.099911936	0.0009746812
4	SMBR	0.088002450	0.038666667	0.242600805	0.094071848	0.127231484	0.62564042	0.203361995	0.001891591	0.0002403854	0.083501817	0.0009746812
5	SMGR	0.018668709	0.038666667	-0.275211112	0.012190652	0.451465608	6.21305199	0.072664064	0.001891591	0.0008440683	0.023774316	0.0009746812
6	WSKT	0.048467448	0.038666667	1.489694907	0.044220658	0.330166367	50.18448398	0.006579053	0.001891591	0.0005703932	0.020831219	0.0009746812
7	PTPP	0.039480949	0.038666667	0.820374580	0.037162888	0.017975359	18.10985319	0.000992573	0.001891591	0.0000328758	0.024261685	0.0009746812
8	WSBP	0.017176256	0.038666667	1.267299501	0.029972079	-0.908671944	53.58480628	-0.016957642	0.001891591	-0.0015606476	-0.006334181	0.0009746812
9	BMRI	0.023879657	0.038666667	0.681128496	0.006572444	-1.532436572	70.58805391	-0.021709574	0.001891591	-0.0025572850	0.011243632	0.0009746812
10	KAEF	0.100594366	0.038666667	-2.322082666	0.087660739	-1.640429216	61.51063740	-0.026669033	0.001891591	-0.0027796058	0.143672722	0.0009746812
11	PGAS	0.025339710	0.038666667	0.463023102	0.027752642	-0.222345997	7.72504445	-0.028782488	0.001891591	-0.0004145303	0.016749889	0.0009746812
12	ELSA	0.032844100	0.038666667	0.199551742	0.022661756	-0.051271547	1.75718500	-0.029178229	0.001891591	-0.0000966635	0.029142095	0.0009746812
13	BBTN	0.054672605	0.038666667	-0.417480480	0.052024194	-0.128443449	3.35017107	-0.03833937	0.001891591	-0.0002414325	0.062417538	0.0009746812
14	BJBR	0.038247161	0.038666667	0.009793937	0.018228997	-0.000225389	0.00526201	-0.042833184	0.001891591	-0.0000004263	0.038065468	0.0009746812
15	JSMR	0.013088374	0.038666667	0.385226300	0.010611500	-0.928561579	13.98476239	-0.066398095	0.001891591	-0.0017111918	0.005941809	0.0009746812
16	BRIS	0.239966813	0.038666667	-1.489939954	0.113838216	-2.634661202	19.50066638	-0.135106214	0.001891591	-0.0048064062	0.267607587	0.0009746812
17	TLKM	-0.003559291	0.038666667	0.104012713	0.008332161	-0.527118498	1.29841994	-0.405969195	0.001891591	-0.0009946497	-0.005488893	0.0009746812
18	ANTM	0.134959421	0.038666667	-0.175379363	0.052091755	-0.324192611	0.59045661	-0.549054079	0.001891591	-0.0006125557	0.138212990	0.0009746812
19	BBRI	0.030722450	0.038666667	0.011053474	0.008556390	-0.010262644	0.01427930	-0.718707723	0.001891591	-0.0000194122	0.030517390	0.0009746812
20	BBNI	0.014973422	0.038666667	0.023172641	0.013155691	-0.041733656	0.04081666	-1.022466315	0.001891591	-0.0000789369	0.014543532	0.0009746812
					Σ	-7.404901865	311.5155716					

Appendix 11 Calculation of A_i , B_i , C_i , and Cut off Point (C^*) Values for each Individual Stock and Decision on Determining Optimal Portfolio

No	Issuer Code	$E(R_i)$	R_{br}	β_i	σ^2_{ei}	A_i	B_i	ERB	σ_m^2	C_i	α_i	C^*	Decision
1	PTBA	0.008465271	0.038666667	-0.017613614	0.008154418	0.065235276	0.03804556	1.714662105	0.001891591	0.0001233896	0.008792031	0.0009746812	Optimal
2	WIKA	0.462323275	0.038666667	0.277512962	3.284330651	0.035797309	0.02344875	1.526619174	0.001891591	0.0000677109	0.457174965	0.0009746812	Optimal
3	TINS	0.105598834	0.038666667	0.306544823	0.039641540	0.517581038	2.37048632	0.218343819	0.001891591	0.0009746812	0.099911936	0.0009746812	Optimal
4	SMBR	0.088002450	0.038666667	0.242600805	0.094071848	0.127231484	0.62564042	0.203361995	0.001891591	0.0002403854	0.083501817	0.0009746812	Optimal
5	SMGR	0.018668709	0.038666667	-0.275211112	0.012190652	0.451465608	6.21305199	0.072664064	0.001891591	0.0008440683	0.023774316	0.0009746812	Optimal
6	WSKT	0.048467448	0.038666667	1.489694907	0.044220658	0.330166367	50.18448398	0.006579053	0.001891591	0.0005703932	0.020831219	0.0009746812	Optimal
7	PTPP	0.039480949	0.038666667	0.820374580	0.037162888	0.017975359	18.10985319	0.000992573	0.001891591	0.0000328758	0.024261685	0.0009746812	Optimal
8	WSBP	0.017176256	0.038666667	1.267299501	0.029972079	-0.908671944	53.58480628	-0.016957642	0.001891591	-0.0015606476	-0.006334181	0.0009746812	-
9	BMRI	0.023879657	0.038666667	0.681128496	0.006572444	-1.532436572	70.58805391	-0.021709574	0.001891591	-0.0025572850	0.011243632	0.0009746812	-
10	KAEF	0.100594366	0.038666667	-2.322082666	0.087660739	-1.640429216	61.51063740	-0.026669033	0.001891591	-0.0027796058	0.143672722	0.0009746812	-
11	PGAS	0.025339710	0.038666667	0.463023102	0.027752642	-0.222345997	7.72504445	-0.028782488	0.001891591	-0.0004145303	0.016749889	0.0009746812	-
12	ELSA	0.032844100	0.038666667	0.199551742	0.022661756	-0.051271547	1.75718500	-0.029178229	0.001891591	-0.0000966635	0.029142095	0.0009746812	-
13	BBTN	0.054672605	0.038666667	-0.417480480	0.052024194	-0.128443449	3.35017107	-0.03833937	0.001891591	-0.0002414325	0.062417538	0.0009746812	-
14	BJBR	0.038247161	0.038666667	0.009793937	0.018228997	-0.000225389	0.00526201	-0.042833184	0.001891591	-0.0000004263	0.038065468	0.0009746812	-
15	JSMR	0.013088374	0.038666667	0.385226300	0.010611500	-0.928561579	13.98476239	-0.066398095	0.001891591	-0.0017111918	0.005941809	0.0009746812	-
16	BRIS	0.239966813	0.038666667	-1.489939954	0.113838216	-2.634661202	19.50066638	-0.135106214	0.001891591	-0.0048064062	0.267607587	0.0009746812	-
17	TLKM	-0.003559291	0.038666667	0.104012713	0.008332161	-0.527118498	1.29841994	-0.405969195	0.001891591	-0.0009946497	-0.005488893	0.0009746812	-
18	ANTM	0.134959421	0.038666667	-0.175379363	0.052091755	-0.324192611	0.59045661	-0.549054079	0.001891591	-0.0006125557	0.138212990	0.0009746812	-
19	BBRI	0.030722450	0.038666667	0.011053474	0.008556390	-0.010262644	0.01427930	-0.718707723	0.001891591	-0.0000194122	0.030517390	0.0009746812	-
20	BBNI	0.014973422	0.038666667	0.023172641	0.013155691	-0.041733656	0.04081666	-1.022466315	0.001891591	-0.0000789369	0.014543532	0.0009746812	-
					Σ	-7.404901865	311.5155716						

Appendix 12 Calculation of the Proportion of Portfolio Funds

No	Issuer Code	β_i	$\sigma^2 e_i$	ERB	C_i	C^*	Z_i	W_i
1	PTBA	-0.017613614	0.008154418	1.714662105	0.0001233896	0.0009746812	-3.701579625	1.322430771
2	WIKA	0.277512962	3.284330651	1.526619174	0.0000677109	0.0009746812	0.128910931	-0.046054874
3	TINS	0.306544823	0.039641540	0.218343819	0.0009746812	0.0009746812	1.680897968	-0.600519621
4	SMBR	0.242600805	0.094071848	0.203361995	0.0002403854	0.0009746812	0.52193431	-0.186466877
5	SMGR	-0.275211112	0.012190652	0.072664064	0.0008440683	0.0009746812	-1.618429795	0.578202167
6	WSKT	1.489694907	0.044220658	0.006579053	0.0005703932	0.0009746812	0.188798722	-0.067450458
7	PTPP	0.820374580	0.037162888	0.000992573	0.0000328758	0.0009746812	0.000394973	-0.000141108
						Σ	-2.799072516	

Appendix 13 Calculation of Portfolio Return and Portfolio Risk

No	Issuer Code	β_i	σ^2_{ei}	A_i	B_i	ERB	σ_m^2	α_i	W_i	α_p	β_p	σ^2_{ep}
1	PTBA	-0.017613614	0.008154418	0.065235276	0.03804556	1.714662105	0.001891591	0.008792031	1.322430771	0.011626853	-0.023292785	0.010783654
2	WIKA	0.277512962	3.284330651	0.035797309	0.02344875	1.526619174	0.001891591	0.457174965	-0.046054874	-0.021055135	-0.012780824	-0.151259433
3	TINS	0.306544823	0.039641540	0.517581038	2.37048632	0.218343819	0.001891591	0.099911936	-0.600519621	-0.059999078	-0.184086181	-0.023805523
4	SMBR	0.242600805	0.094071848	0.127231484	0.62564042	0.203361995	0.001891591	0.083501817	-0.186466877	-0.015570323	-0.045237014	-0.017541284
5	SMGR	-0.275211112	0.012190652	0.451465608	6.21305199	0.072664064	0.001891591	0.023774316	0.578202167	0.013746361	-0.159127661	0.007048662
6	WSKT	1.489694907	0.044220658	0.330166367	50.18448398	0.006579053	0.001891591	0.020831219	-0.067450458	-0.001405075	-0.100480603	-0.002982704
7	PTPP	0.820374580	0.037162888	0.017975359	18.10985319	0.000992573	0.001891591	0.024261685	-0.000141108	-0.000003424	-0.000115762	-0.000005244
									Σ	-0.072659821	-0.525120831	-0.177761872
E(R _m)		0.018551603										
E(R _p)		-0.082401654										
σ_m^2		0.001891591										
σ_p^2		-0.177240262										

Appendix 14 Optimal Expected Return and Risk of each Stock

No	Issuer Code	E(R _i)%	σ _i %
1	PTBA	0.85%	9.03%
2	WIKA	46.23%	181.23%
3	TINS	10.56%	19.95%
4	SMBR	8.80%	30.69%
5	SMGR	1.87%	11.11%
6	WSKT	4.85%	22.00%
7	PTPP	3.95%	19.61%