

## LAMPIRAN

## Lampiran 1 Kriteria Penilaian Variabel

Tabel 2. 3 Klasifikasi Altman Z-Score

Peringkat	Keterangan	Kriteria
1	Sehat	$Z > 2,6$
2	Grey Area	$1.1 < Z \leq 2,6$
3	Financial Distress	$Z < 1,1$

## Lampiran 2 Hasil Perhitungan Variabel

Data Variabel Altman Z-Score (X1) Periode 2015-2019

No.	Nama Perusahaan	Periode	Modal Kerja	Total Aset	X1
1	Adaro Energy Tbk	2015	638.046	5.958.629	0,107
		2016	948.160	6.522.257	0,145
		2017	1.205.860	6.814.147	0,177
		2018	783.851	7.060.755	0,111
		2019	877.323	7.217.105	0,122
2	Atlas Resources Tbk	2015	-155.459	351.484	-0,442
		2016	-169.254	330.115	-0,513
		2017	-136.896	327.055	-0,419
		2018	-174.997	350.065	-0,500
		2019	-197.689	363.952	-0,543
3	Bumi Resources Minerals Tbk	2015	-808.749.021	1.984.106.661	-0,408
		2016	-265.098.924	1.075.595.267	-0,246
		2017	207.353.013	866.620.848	0,239
		2018	-20.422.338	690.758.183	-0,030
		2019	-75.702.117	713.006.334	-0,106
4	Baramulti Suksessarana Tbk	2015	-9.136.733	173.877.318	-0,053
		2016	5.287.257	183.981.910	0,029
		2017	24.442.409	210.137.454	0,116
		2018	16.004.706	245.100.202	0,065
		2019	13.272.682	250.680.316	0,053
5	Bumi Resources Tbk	2015	-4.932.190.478	3.394.276.258	-1,453
		2016	-235.118.702	3.102.193.700	-0,076
		2017	-2.652.061.693	3.696.498.624	-0,717
		2018	-698.092.478	3.906.773.939	-0,179
		2019	-718.846.011	3.702.805.778	-0,194
6		2015	132.221.775	937.851.728	0,141
		2016	136.028.272	824.686.661	0,165

	Bayan Resources Tbk	2017	7.307.869	888.813.140	0,008
		2018	94.237.604	1.150.863.891	0,082
		2019	-61.361.867	1.278.040.123	-0,048
7	Darma Henwa Tbk	2015	-238.188.980	549.518.597	-0,433
		2016	13.177.482	415.098.432	0,032
		2017	-23.211.897	401.800.150	-0,058
		2018	-28.081.324	381.339.706	-0,074
		2019	7.795.548	372.974.932	0,021
8	Delta Dunia Makmur Tbk	2015	205.314.188	831.796.061	0,247
		2016	79.982.912	882.275.704	0,091
		2017	134.519.590	945.581.412	0,142
		2018	162.906.816	1.184.094.711	0,138
		2019	214.160.210	1.181.911.191	0,181
9	Dian Swastatika Sentosa Tbk	2015	144.418.803	1.998.166.402	0,072
		2016	180.245.416	2.232.507.010	0,081
		2017	272.557.789	2.736.992.648	0,100
		2018	142.570.413	3.386.790.883	0,042
		2019	197.895.431	3.718.973.064	0,053
10	Golden Energy Mines Tbk	2015	125.688.841	369.667.295	0,340
		2016	149.517.407	377.670.000	0,396
		2017	168.228.511	590.469.384	0,285
		2018	79.354.260	701.046.630	0,113
		2019	89.766.155	780.646.167	0,115
11	Garda Tujuh Buana Tbk	2015	1.605.351	60.159.838	0,027
		2016	-369.949	55.106.906	-0,007
		2017	-2.441.555	59.464.951	-0,041
		2018	1.875.039	58.219.033	0,032
		2019	-2.057.645	55.050.624	-0,037
12	Harum Energy Tbk	2015	192.840.382	380.654.005	0,507
		2016	215.241.787	413.365.853	0,521
		2017	257.044.870	459.443.071	0,559
		2018	242.608.024	467.989.195	0,518
		2019	257.119.333	447.001.954	0,575
13	Indika Energy Tbk	2015	321.698.853	2.150.445.211	0,150
		2016	354.454.522	1.822.333.069	0,195
		2017	694.288.027	3.635.705.403	0,191
		2018	789.400.167	3.669.952.693	0,215
		2019	720.015.710	3.616.163.065	0,199
14	Indo Tambangraya Megah Tbk	2015	227.974	1.178.363	0,193
		2016	300.169	1.209.792	0,248
		2017	469.488	1.358.663	0,346
		2018	376.553	1.442.728	0,261
		2019	239.212	1.209.041	0,198

15	Resource Alam Indonesia Tbk	2015	21.213.412	98.541.575	0,215
		2016	29.772.153	98.708.750	0,302
		2017	28.853.552	105.053.598	0,275
		2018	9.434.645	117.265.221	0,080
		2019	21.163.720	126.354.537	0,167
16	Mitrabara Adiperdana Tbk	2015	35.515.663	109.163.029	0,325
		2016	53.468.036	116.375.759	0,459
		2017	74.229.028	160.778.962	0,462
		2018	66.968.716	173.509.262	0,386
		2019	95.435.741	192.527.289	0,496
17	Samindo Resources Tbk	2015	48.702.105	161.232.709	0,302
		2016	64.502.729	147.254.262	0,438
		2017	55.748.649	136.067.975	0,410
		2018	73.115.453	151.326.098	0,483
		2019	79.228.268	160.181.748	0,495
18	Perdana Karya Perkasa Tbk	2015	-16.700	170.599	-0,098
		2016	-25.476.951	157.702.767	-0,162
		2017	38.919.375	137.363.302	0,283
		2018	36.402.714	127.894.510	0,285
		2019	12.695.555	71.655.559	0,177
19	Bukit Asam Tbk	2015	2.675.743	16.894.043	0,158
		2016	3.307.180	18.576.774	0,178
		2017	6.604.519	21.987.482	0,300
		2018	6.490.982	24.172.933	0,269
		2019	6.988.633	26.098.052	0,268
20	Petrosea Tbk	2015	50.246	425.368	0,118
		2016	79.294	393.425	0,202
		2017	63.697	436.844	0,146
		2018	102.310	555.591	0,184
		2019	75.727	551.044	0,137
21	Golden Eagle Energy Tbk	2015	-40.382.437.124	712.785.113.458	-0,057
		2016	-59.907.191.686	636.742.340.559	-0,094
		2017	-94.889.524.558	725.663.914.382	-0,131
		2018	-118.079.233.322	900.566.201.025	-0,131
		2019	-54.385.093.671	871.513.339.763	-0,062
22	SMR Utama Tbk	2015	-28.001.281	192.146.038	-0,146
		2016	18.498.695	180.425.172	0,103
		2017	3.154.946	149.895.107	0,021
		2018	286.451.938.290	1.908.386.848.248	0,150
		2019	33.022.718.894	1.675.570.667.301	0,020
23	Toba Bara Sejahtra Tbk	2015	27.551.478	282.371.637	0,098
		2016	-2.347.223	261.588.159	-0,009
		2017	34.573.594	348.338.028	0,099

	2018	25.983.376	501.883.194	0,052
	2019	-7.391.022	634.640.456	-0,012

**Data Variabel Altman Z-Score (X2) Periode 2015-2019**

No.	Nama Perusahaan	Periode	Laba Ditahan	Total Aset	X2
1	Adaro Energy Tbk	2015	1.335.827	5.958.629	0,224
		2016	1.574.902	6.522.257	0,241
		2017	1.910.668	6.814.147	0,280
		2018	2.100.391	7.060.755	0,297
		2019	2.223.534	7.217.105	0,308
2	Atlas Resources Tbk	2015	-63.602	351.484	-0,181
		2016	-88.165	330.115	-0,267
		2017	-103.516	327.055	-0,317
		2018	-131.925	350.065	-0,377
		2019	-135.445	363.952	-0,372
3	Bumi Resources Minerals Tbk	2015	-144.619.700	1.984.106.661	-0,073
		2016	-459.997.065	1.075.595.267	-0,428
		2017	-693.678.283	866.620.848	-0,800
		2018	-796.457.433	690.758.183	-1,153
		2019	-795.065.882	713.006.334	-1,115
4	Baramulti Suksessarana Tbk	2015	34.114.713	173.877.318	0,196
		2016	56.408.647	183.981.910	0,307
		2017	73.670.718	210.137.454	0,351
		2018	74.059.402	245.100.202	0,302
		2019	94.097.675	250.680.316	0,375
5	Bumi Resources Tbk	2015	-3.357.134.759	3.394.276.258	-0,989
		2016	-3.289.442.356	3.102.193.700	-1,060
		2017	-2.916.189.852	3.696.498.624	-0,789
		2018	-2.695.778.081	3.906.773.939	-0,690
		2019	-2.688.938.047	3.702.805.778	-0,726
6	Bayan Resources Tbk	2015	-163.720.030	937.851.728	-0,175
		2016	-135.042.287	824.686.661	-0,164
		2017	184.172.870	888.813.140	0,207
		2018	535.471.637	1.150.863.891	0,465
		2019	458.976.638	1.278.040.123	0,359
7	Darma Henwa Tbk	2015	-96.000.236	549.518.597	-0,175
		2016	-96.291.158	415.098.432	-0,232
		2017	-93.530.750	401.800.150	-0,233
		2018	-90.975.099	381.339.706	-0,239
		2019	-87.210.025	372.974.932	-0,234
8		2015	-91.196.303	831.796.061	-0,110

	Delta Dunia Makmur Tbk	2016	-54.434.135	882.275.704	-0,062
		2017	-11.644.377	945.581.412	-0,012
		2018	69.282.604	1.184.094.711	0,059
		2019	87.584.393	1.181.911.191	0,074
9	Dian Swastatika Sentosa Tbk	2015	494.956.843	1.998.166.402	0,248
		2016	550.190.952	2.232.507.010	0,246
		2017	635.017.762	2.736.992.648	0,232
		2018	724.159.554	3.386.790.883	0,214
		2019	773.999.342	3.718.973.064	0,208
10	Golden Energy Mines Tbk	2015	25.775.229	369.667.295	0,070
		2016	44.089.496	377.670.000	0,117
		2017	71.735.183	590.469.384	0,121
		2018	94.505.525	701.046.630	0,135
		2019	135.914.411	780.646.167	0,174
11	Garda Tujuh Buana Tbk	2015	22.013.699	60.159.838	0,366
		2016	16.818.061	55.106.906	0,305
		2017	16.843.392	59.464.951	0,283
		2018	16.908.049	58.219.033	0,290
		2019	11.855.392	55.050.624	0,215
12	Harum Energy Tbk	2015	131.306.368	380.654.005	0,345
		2016	144.606.119	413.365.853	0,350
		2017	189.784.724	459.443.071	0,413
		2018	175.854.858	467.989.195	0,376
		2019	186.619.698	447.001.954	0,417
13	Indika Energy Tbk	2015	277.131.887	2.150.445.211	0,129
		2016	209.537.805	1.822.333.069	0,115
		2017	544.954.817	3.635.705.403	0,150
		2018	565.022.403	3.669.952.693	0,154
		2019	506.862.251	3.616.163.065	0,140
14	Indo Tambangraya Megah Tbk	2015	429.443	1.178.363	0,364
		2016	519.693	1.209.792	0,430
		2017	571.754	1.358.663	0,421
		2018	587.486	1.442.728	0,407
		2019	500.245	1.209.041	0,414
15	Resource Alam Indonesia Tbk	2015	94.008.281	98.541.575	0,954
		2016	102.222.359	98.708.750	1,036
		2017	110.277.302	105.053.598	1,050
		2018	110.394.987	117.265.221	0,941
		2019	116.011.936	126.354.537	0,918
16	Mitrabara Adiperdana Tbk	2015	47.632.187	109.163.029	0,436
		2016	65.420.003	116.375.759	0,562
		2017	95.915.943	160.778.962	0,597
		2018	97.852.341	173.509.262	0,564

		2019	119.270.534	192.527.289	0,619
17	Samindo Resources Tbk	2015	50.940.223	161.232.709	0,316
		2016	61.589.827	147.254.262	0,418
		2017	56.813.994	136.067.975	0,418
		2018	70.370.967	151.326.098	0,465
		2019	77.265.429	160.181.748	0,482
18	Perdana Karya Perkasa Tbk	2015	-27.430	170.599	-0,161
		2016	-42.099.904	157.702.767	-0,267
		2017	-52.590.531	137.363.302	-0,383
		2018	-56.420.380	127.894.510	-0,441
		2019	-97.909.548	71.655.559	-1,366
19	Bukit Asam Tbk	2015	1.584.502	16.894.043	0,094
		2016	1.414.772	18.576.774	0,076
		2017	3.209.209	21.987.482	0,146
		2018	4.340.286	24.172.933	0,180
		2019	3.326.649	26.098.052	0,127
20	Petrosea Tbk	2015	143.736	425.368	0,338
		2016	135.802	393.425	0,345
		2017	144.032	436.844	0,330
		2018	161.527	555.591	0,291
		2019	183.978	551.044	0,334
21	Golden Eagle Energy Tbk	2015	-35.952.037.215	712.785.113.458	-0,050
		2016	-52.388.771.731	636.742.340.559	-0,082
		2017	-21.329.887.107	725.663.914.382	-0,029
		2018	55.281.113.390	900.566.201.025	0,061
		2019	58.606.225.046	871.513.339.763	0,067
22	SMR Utama Tbk	2015	-35.866.677	192.146.038	-0,187
		2016	-52.597.854	180.425.172	-0,292
		2017	-50.248.077	149.895.107	-0,335
		2018	-551.372.601.652	1.908.386.848.248	-0,289
		2019	-735.786.811.115	1.675.570.667.301	-0,439
23	Toba Bara Sejahtera Tbk	2015	33.603.955	282.371.637	0,119
		2016	35.151.402	261.588.159	0,134
		2017	55.723.043	348.338.028	0,160
		2018	94.300.168	501.883.194	0,188
		2019	120.177.212	634.640.456	0,189

#### Data Variabel Altman Z-Score (X3) Periode 2015-2019

No.	Nama Perusahaan	Periode	Laba Sebelum Bunga dan Pajak	Total Aset	X3
1		2015	543.300	5.958.629	0,091

	Adaro Energy Tbk	2016	685.276	6.522.257	0,105
		2017	1.141.502	6.814.147	0,168
		2018	1.210.207	7.060.755	0,171
		2019	964.591	7.217.105	0,134
2	Atlas Resources Tbk	2015	-6.205	351.484	-0,018
		2016	-9.313	330.115	-0,028
		2017	-369	327.055	-0,001
		2018	2.050	350.065	0,006
		2019	41	363.952	0,000
3	Bumi Resources Minerals Tbk	2015	-1.383.561	1.984.106.661	-0,001
		2016	-3.008.576	1.075.595.267	-0,003
		2017	-4.941.495	866.620.848	-0,006
		2018	-4.847.666	690.758.183	-0,007
		2019	-722.563	713.006.334	-0,001
4	Baramulti Suksessarana Tbk	2015	88.458.562	173.877.318	0,509
		2016	77.187.563	183.981.910	0,420
		2017	171.120.477	210.137.454	0,814
		2018	157.417.530	245.100.202	0,642
		2019	110.457.639	250.680.316	0,441
5	Bumi Resources Tbk	2015	40.506.538	3.394.276.258	0,012
		2016	23.372.429	3.102.193.700	0,008
		2017	17.366.667	3.696.498.624	0,005
		2018	146.504.933	3.906.773.939	0,038
		2019	105.083.350	3.702.805.778	0,028
6	Bayan Resources Tbk	2015	122.773.317	937.851.728	0,131
		2016	210.408.484	824.686.661	0,255
		2017	553.579.961	888.813.140	0,623
		2018	846.927.334	1.150.863.891	0,736
		2019	489.361.539	1.278.040.123	0,383
7	Darma Henwa Tbk	2015	23.901.799	549.518.597	0,043
		2016	15.864.599	415.098.432	0,038
		2017	34.383.755	401.800.150	0,086
		2018	23.811.569	381.339.706	0,062
		2019	20.719.729	372.974.932	0,056
8	Delta Dunia Makmur Tbk	2015	125.835.574	831.796.061	0,151
		2016	163.875.841	882.275.704	0,186
		2017	225.143.757	945.581.412	0,238
		2018	215.637.283	1.184.094.711	0,182
		2019	142.645.862	1.181.911.191	0,121
9	Dian Swastatika Sentosa Tbk	2015	318.305.212	1.998.166.402	0,159
		2016	287.817.947	2.232.507.010	0,129
		2017	518.228.682	2.736.992.648	0,189

		2018	628.735.210	3.386.790.883	0,186
		2019	580.367.243	3.718.973.064	0,156
10	Golden Energy Mines Tbk	2015	110.247.701	369.667.295	0,298
		2016	138.201.818	377.670.000	0,366
		2017	314.478.917	590.469.384	0,533
		2018	359.978.886	701.046.630	0,513
		2019	361.457.365	780.646.167	0,463
11	Garda Tujuh Buana Tbk	2015	-2.115.799	60.159.838	-0,035
		2016	-487.038	55.106.906	-0,009
		2017	976.527	59.464.951	0,016
		2018	10.184.294	58.219.033	0,175
		2019	-1.973.569	55.050.624	-0,036
12	Harum Energy Tbk	2015	45.840.128	380.654.005	0,120
		2016	67.988.401	413.365.853	0,164
		2017	111.886.648	459.443.071	0,244
		2018	101.479.367	467.989.195	0,217
		2019	67.529.155	447.001.954	0,151
13	Indika Energy Tbk	2015	88.329.632	2.150.445.211	0,041
		2016	88.701.825	1.822.333.069	0,049
		2017	122.916.837	3.635.705.403	0,034
		2018	641.215.316	3.669.952.693	0,175
		2019	426.701.469	3.616.163.065	0,118
14	Indo Tambangraya Megah Tbk	2015	350.231	1.178.363	0,297
		2016	330.699	1.209.792	0,273
		2017	505.448	1.358.663	0,372
		2018	583.959	1.442.728	0,405
		2019	326.688	1.209.041	0,270
15	Resource Alam Indonesia Tbk	2015	26.472.296	98.541.575	0,269
		2016	23.859.303	98.708.750	0,242
		2017	26.390.481	105.053.598	0,251
		2018	12.984.444	117.265.221	0,111
		2019	16.171.551	126.354.537	0,128
16	Mitrabara Adiperdana Tbk	2015	76.779.189	109.163.029	0,703
		2016	67.962.545	116.375.759	0,584
		2017	115.202.613	160.778.962	0,717
		2018	100.939.711	173.509.262	0,582
		2019	91.420.748	192.527.289	0,475
17	Samindo Resources Tbk	2015	42.270.842	161.232.709	0,262
		2016	35.940.154	147.254.262	0,244
		2017	27.397.717	136.067.975	0,201
		2018	50.203.652	151.326.098	0,332
		2019	41.768.137	160.181.748	0,261
18		2015	-36.661	170.599	-0,215

	Perdana Karya Perkasa Tbk	2016	-2.896.662	157.702.767	-0,018
		2017	-902.837	137.363.302	-0,007
		2018	1.243.467	127.894.510	0,010
		2019	4.879.804	71.655.559	0,068
19	Bukit Asam Tbk	2015	4.139.724	16.894.043	0,245
		2016	4.401.469	18.576.774	0,237
		2017	8.506.506	21.987.482	0,387
		2018	8.545.793	24.172.933	0,354
		2019	7.611.504	26.098.052	0,292
20	Petrosea Tbk	2015	29.143	425.368	0,069
		2016	34.869	393.425	0,089
		2017	40.925	436.844	0,094
		2018	73.119	555.591	0,132
		2019	81.131	551.044	0,147
21	Golden Eagle Energy Tbk	2015	222.465.427	712.785.113.458	0,000
		2016	4.078.980.067	636.742.340.559	0,006
		2017	15.033.075.981	725.663.914.382	0,021
		2018	39.969.369.666	900.566.201.025	0,044
		2019	37.359.715.299	871.513.339.763	0,043
22	SMR Utama Tbk	2015	1.929.696	192.146.038	0,010
		2016	2.124.784	180.425.172	0,012
		2017	6.286.439	149.895.107	0,042
		2018	126.822.695.759	1.908.386.848.248	0,066
		2019	19.580.229.269	1.675.570.667.301	0,012
23	Toba Bara Sejahtera Tbk	2015	70.523.088	282.371.637	0,250
		2016	53.287.800	261.588.159	0,204
		2017	94.108.339	348.338.028	0,270
		2018	124.095.542	501.883.194	0,247
		2019	91.695.528	634.640.456	0,144

#### Data Variabel Altman Z-Score (X4) Periode 2015-2019

No.	Nama Perusahaan	Periode	Nilai Pasar Ekuitas	Nilai Buku Total Utang	X4
1	Adaro Energy Tbk	2015	342.940	2.605.586	0,132
		2016	342.940	2.736.375	0,125
		2017	342.940	2.722.520	0,126
		2018	342.940	2.758.063	0,124
		2019	342.940	3.233.710	0,106
2	Atlas Resources Tbk	2015	67.498	269.491	0,250
		2016	67.498	273.848	0,246
		2017	67.498	287.290	0,235
		2018	67.498	340.079	0,198

		2019	67.498	317.894	0,212
3	Bumi Resources Minerals Tbk	2015	1.743.318.971	896.456.058	1,945
		2016	1.743.318.971	437.872.216	3,981
		2017	1.881.485.536	302.307.854	6,224
		2018	1.881.485.536	171.808.582	10,951
		2019	1.881.485.536	192.682.539	9,765
4	Baramulti Suksessarana Tbk	2015	28.468.640	68.925.942	0,413
		2016	28.468.640	56.636.529	0,503
		2017	28.468.640	60.246.779	0,473
		2018	28.468.640	94.820.865	0,300
		2019	28.468.640	80.362.658	0,354
5	Bumi Resources Tbk	2015	1.614.650.269	6.299.187.989	0,256
		2016	1.614.650.269	5.886.968.507	0,274
		2017	1.831.873.815	5.488.080.288	0,334
		2018	1.832.624.633	3.403.162.098	0,539
		2019	1.832.632.301	3.192.870.099	0,574
6	Bayan Resources Tbk	2015	35.685.809	765.691.713	0,047
		2016	35.685.809	636.535.687	0,056
		2017	35.685.809	373.209.321	0,096
		2018	35.685.809	472.793.557	0,075
		2019	35.685.809	658.959.960	0,054
7	Darma Henwa Tbk	2015	241.169.504	413.652.399	0,583
		2016	241.169.504	146.465.284	1,647
		2017	241.169.504	174.247.616	1,384
		2018	241.169.504	184.294.296	1,309
		2019	241.169.504	315.255.563	0,765
8	Delta Dunia Makmur Tbk	2015	46.051.790	746.795.972	0,062
		2016	46.233.674	755.806.919	0,061
		2017	47.086.785	768.413.436	0,061
		2018	47.283.998	922.583.702	0,051
		2019	47.313.056	901.340.212	0,052
9	Dian Swastatika Sentosa Tbk	2015	72.498.628	816.397.153	0,089
		2016	72.498.628	857.840.775	0,085
		2017	72.498.628	1.121.108.196	0,065
		2018	72.498.628	1.873.497.037	0,039
		2019	72.498.628	2.080.864.382	0,035
10	Golden Energy Mines Tbk	2015	65.065.961	122.155.683	0,533
		2016	65.065.961	112.751.314	0,577
		2017	65.065.961	298.251.273	0,218
		2018	65.065.961	385.233.714	0,169
		2019	65.065.961	422.379.157	0,154
11	Garda Tujuh Buana Tbk	2015	27.805.583	7.537.174	3,689
		2016	27.805.583	7.692.604	3,615

		2017	27.805.583	12.010.760	2,315
		2018	27.805.583	10.762.271	2,584
		2019	27.805.583	12.514.104	2,222
12	Harum Energy Tbk	2015	28.877.151	37.224.342	0,776
		2016	28.877.151	57.935.532	0,498
		2017	28.877.151	63.582.349	0,454
		2018	28.877.151	79.502.404	0,363
		2019	28.877.151	47.418.441	0,609
13	Indika Energy Tbk	2015	56.892.154	1.318.900.803	0,043
		2016	56.892.154	1.081.223.501	0,053
		2017	56.892.154	2.520.683.083	0,023
		2018	56.892.154	2.542.768.572	0,022
		2019	56.892.154	2.570.388.847	0,022
14	Indo Tambangraya Megah Tbk	2015	63.892	343.806	0,186
		2016	63.892	302.362	0,211
		2017	63.892	400.524	0,160
		2018	63.892	472.945	0,135
		2019	63.892	324.576	0,197
15	Resource Alam Indonesia Tbk	2015	24.039.183	21.780.410	1,104
		2016	24.039.183	14.299.044	1,681
		2017	24.039.183	16.433.699	1,463
		2018	24.039.183	28.862.975	0,833
		2019	24.039.183	32.971.463	0,729
16	Mitrabara Adiperdana Tbk	2015	10.743.672	35.317.283	0,304
		2016	10.743.672	24.745.376	0,434
		2017	10.743.672	38.474.621	0,279
		2018	10.743.672	49.328.008	0,218
		2019	10.743.672	46.886.899	0,229
17	Samindo Resources Tbk	2015	48.352.110	67.885.123	0,712
		2016	48.352.110	39.773.001	1,216
		2017	48.352.110	33.526.632	1,442
		2018	48.352.110	37.338.363	1,295
		2019	48.352.110	37.882.793	1,276
18	Perdana Karya Perkasa Tbk	2015	120.000.000	87.083.602	1,378
		2016	120.000.000	87.917.338	1,365
		2017	120.000.000	78.040.266	1,538
		2018	120.000.000	72.315.757	1,659
		2019	120.000.000	57.327.332	2,093
19	Bukit Asam Tbk	2015	1.152.066	7.606.496	0,151
		2016	1.152.066	8.024.369	0,144
		2017	1.152.066	8.187.497	0,141
		2018	1.152.066	7.903.237	0,146
		2019	1.152.066	7.675.226	0,150

20	Petrosea Tbk	2015	33.438	247.091	0,135
		2016	33.438	222.976	0,150
		2017	33.438	258.309	0,129
		2018	33.438	364.459	0,092
		2019	33.438	338.481	0,099
21	Golden Eagle Energy Tbk	2015	393.750.000.000	313.673.790.462	1,255
		2016	393.750.000.000	255.549.688.996	1,541
		2017	393.750.000.000	306.303.664.687	1,285
		2018	393.750.000.000	342.430.970.325	1,150
		2019	393.750.000.000	287.067.420.462	1,372
22	SMR Utama Tbk	2015	110.469.517	102.593.403	1,077
		2016	110.469.517	106.995.806	1,032
		2017	110.469.517	74.296.773	1,487
		2018	1.249.938.578.200	950.168.275.134	1,315
		2019	1.249.938.578.200	901.770.129.259	1,386
23	Toba Bara Sejahtera Tbk	2015	44.077.885	127.253.438	0,346
		2016	44.077.885	113.843.825	0,387
		2017	44.077.885	173.538.605	0,254
		2018	44.077.885	286.259.322	0,154
		2019	44.077.885	370.500.569	0,119

#### Hasil Perhitungan Model Altman Z-Score

No.	Nama Perusahaan	Periode	X1	X2	X3	X4	Z"	Status	Kategori
1	Adaro Energy Tbk	2015	0,107	0,224	0,091	0,132	2,18	GREY AREA	1
		2016	0,145	0,241	0,105	0,125	2,58	GREY AREA	1
		2017	0,177	0,280	0,168	0,126	3,33	NFD	0
		2018	0,111	0,297	0,171	0,124	2,98	NFD	0
		2019	0,122	0,308	0,134	0,106	2,81	NFD	0
2	Atlas Resources Tbk	2015	-0,442	-0,181	-0,018	0,250	-3,35	FD	1
		2016	-0,513	-0,267	-0,028	0,246	-4,16	FD	1
		2017	-0,419	-0,317	-0,001	0,235	-3,54	FD	1
		2018	-0,500	-0,377	0,006	0,198	-4,26	FD	1
		2019	-0,543	-0,372	0,000	0,212	-4,55	FD	1
3	Bumi Resources Minerals Tbk	2015	-0,408	-0,073	-0,001	1,945	-0,87	FD	1
		2016	-0,246	-0,428	-0,003	3,981	1,15	GREY AREA	1
		2017	0,239	-0,800	-0,006	6,224	5,46	NFD	0
		2018	-0,030	-1,153	-0,007	10,951	7,50	NFD	0
		2019	-0,106	-1,115	-0,001	9,765	5,91	NFD	0
4		2015	-0,053	0,196	0,509	0,413	4,15	NFD	0

	Baramulti Suksessarana Tbk	2016	0,029	0,307	0,420	0,503	4,54	NFD	0
		2017	0,116	0,351	0,814	0,473	7,87	NFD	0
		2018	0,065	0,302	0,642	0,300	6,04	NFD	0
		2019	0,053	0,375	0,441	0,354	4,90	NFD	0
5	Bumi Resources Tbk	2015	-1,453	-0,989	0,012	0,256	-12,41	FD	1
		2016	-0,076	-1,060	0,008	0,274	-3,62	FD	1
		2017	-0,717	-0,789	0,005	0,334	-6,90	FD	1
		2018	-0,179	-0,690	0,038	0,539	-2,60	FD	1
		2019	-0,194	-0,726	0,028	0,574	-2,85	FD	1
6	Bayan Resources Tbk	2015	0,141	-0,175	0,131	0,047	1,28	GREY AREA	1
		2016	0,165	-0,164	0,255	0,056	2,32	GREY AREA	1
		2017	0,008	0,207	0,623	0,096	5,02	NFD	0
		2018	0,082	0,465	0,736	0,075	7,08	NFD	0
		2019	-0,048	0,359	0,383	0,054	3,49	NFD	0
7	Darma Henwa Tbk	2015	-0,433	-0,175	0,043	0,583	-2,51	FD	1
		2016	0,032	-0,232	0,038	1,647	1,44	GREY AREA	1
		2017	-0,058	-0,233	0,086	1,384	0,89	FD	1
		2018	-0,074	-0,239	0,062	1,309	0,53	FD	1
		2019	0,021	-0,234	0,056	0,765	0,55	FD	1
8	Delta Dunia Makmur Tbk	2015	0,247	-0,110	0,151	0,062	2,34	GREY AREA	1
		2016	0,091	-0,062	0,186	0,061	1,71	GREY AREA	1
		2017	0,142	-0,012	0,238	0,061	2,56	GREY AREA	1
		2018	0,138	0,059	0,182	0,051	2,37	GREY AREA	1
		2019	0,181	0,074	0,121	0,052	2,30	GREY AREA	1
9	Dian Swastatika Sentosa Tbk	2015	0,072	0,248	0,159	0,089	2,45	GREY AREA	1
		2016	0,081	0,246	0,129	0,085	2,29	GREY AREA	1
		2017	0,100	0,232	0,189	0,065	2,75	NFD	0
		2018	0,042	0,214	0,186	0,039	2,26	GREY AREA	1
		2019	0,053	0,208	0,156	0,035	2,11	GREY AREA	1
10	Golden Energy Mines Tbk	2015	0,340	0,070	0,298	0,533	5,02	NFD	0
		2016	0,396	0,117	0,366	0,577	6,04	NFD	0
		2017	0,285	0,121	0,533	0,218	6,07	NFD	0
		2018	0,113	0,135	0,513	0,169	4,81	NFD	0

		2019	0,115	0,174	0,463	0,154	4,60	NFD	0
11	Garda Tujuh Buana Tbk	2015	0,027	0,366	-0,035	3,689	5,01	NFD	0
		2016	-0,007	0,305	-0,009	3,615	4,69	NFD	0
		2017	-0,041	0,283	0,016	2,315	3,20	NFD	0
		2018	0,032	0,290	0,175	2,584	5,05	NFD	0
		2019	-0,037	0,215	-0,036	2,222	2,55	GREY AREA	1
12	Harum Energy Tbk	2015	0,507	0,345	0,120	0,776	6,07	NFD	0
		2016	0,521	0,350	0,164	0,498	6,18	NFD	0
		2017	0,559	0,413	0,244	0,454	7,13	NFD	0
		2018	0,518	0,376	0,217	0,363	6,46	NFD	0
		2019	0,575	0,417	0,151	0,609	6,79	NFD	0
13	Indika Energy Tbk	2015	0,150	0,129	0,041	0,043	1,72	GREY AREA	1
		2016	0,195	0,115	0,049	0,053	2,03	GREY AREA	1
		2017	0,191	0,150	0,034	0,023	1,99	GREY AREA	1
		2018	0,215	0,154	0,175	0,022	3,11	NFD	0
		2019	0,199	0,140	0,118	0,022	2,58	GREY AREA	1
14	Indo Tambangraya Megah Tbk	2015	0,193	0,364	0,297	0,186	4,65	NFD	0
		2016	0,248	0,430	0,273	0,211	5,09	NFD	0
		2017	0,346	0,421	0,372	0,160	6,31	NFD	0
		2018	0,261	0,407	0,405	0,135	5,90	NFD	0
		2019	0,198	0,414	0,270	0,197	4,67	NFD	0
15	Resource Alam Indonesia Tbk	2015	0,215	0,954	0,269	1,104	7,49	NFD	0
		2016	0,302	1,036	0,242	1,681	8,74	NFD	0
		2017	0,275	1,050	0,251	1,463	8,45	NFD	0
		2018	0,080	0,941	0,111	0,833	5,22	NFD	0
		2019	0,167	0,918	0,128	0,729	5,72	NFD	0
16	Mitrabara Adiperdana Tbk	2015	0,325	0,436	0,703	0,304	8,60	NFD	0
		2016	0,459	0,562	0,584	0,434	9,23	NFD	0
		2017	0,462	0,597	0,717	0,279	10,08	NFD	0
		2018	0,386	0,564	0,582	0,218	8,51	NFD	0
		2019	0,496	0,619	0,475	0,229	8,70	NFD	0
17	Samindo Resources Tbk	2015	0,302	0,316	0,262	0,712	5,52	NFD	0
		2016	0,438	0,418	0,244	1,216	7,15	NFD	0
		2017	0,410	0,418	0,201	1,442	6,92	NFD	0
		2018	0,483	0,465	0,332	1,295	8,27	NFD	0
		2019	0,495	0,482	0,261	1,276	7,91	NFD	0
18		2015	-0,098	-0,161	-0,215	1,378	-1,16	FD	1
		2016	-0,162	-0,267	-0,018	1,365	-0,62	FD	1

	Perdana Karya Perkasa Tbk	2017	0,283	-0,383	-0,007	1,538	2,18	GREY AREA	1
		2018	0,285	-0,441	0,010	1,659	2,24	GREY AREA	1
		2019	0,177	-1,366	0,068	2,093	-0,64	FD	1
19	Bukit Asam Tbk	2015	0,158	0,094	0,245	0,151	3,15	NFD	0
		2016	0,178	0,076	0,237	0,144	3,16	NFD	0
		2017	0,300	0,146	0,387	0,141	5,19	NFD	0
		2018	0,269	0,180	0,354	0,146	4,88	NFD	0
		2019	0,268	0,127	0,292	0,150	4,29	NFD	0
20	Petrosea Tbk	2015	0,118	0,338	0,069	0,135	2,48	GREY AREA	1
		2016	0,202	0,345	0,089	0,150	3,20	NFD	0
		2017	0,146	0,330	0,094	0,129	2,80	NFD	0
		2018	0,184	0,291	0,132	0,092	3,14	NFD	0
		2019	0,137	0,334	0,147	0,099	3,08	NFD	0
21	Golden Eagle Energy Tbk	2015	-0,057	-0,050	0,000	1,255	0,78	FD	1
		2016	-0,094	-0,082	0,006	1,541	0,78	FD	1
		2017	-0,131	-0,029	0,021	1,285	0,54	FD	1
		2018	-0,131	0,061	0,044	1,150	0,85	FD	1
		2019	-0,062	0,067	0,043	1,372	1,54	GREY AREA	1
22	SMR Utama Tbk	2015	-0,146	-0,187	0,010	1,077	-0,37	FD	1
		2016	0,103	-0,292	0,012	1,032	0,89	FD	1
		2017	0,021	-0,335	0,042	1,487	0,89	FD	1
		2018	0,150	-0,289	0,066	1,315	1,87	GREY AREA	1
		2019	0,020	-0,439	0,012	1,386	0,23	FD	1
23	Toba Bara Sejahtera Tbk	2015	0,098	0,119	0,250	0,346	3,07	NFD	0
		2016	-0,009	0,134	0,204	0,387	2,15	GREY AREA	1
		2017	0,099	0,160	0,270	0,254	3,25	NFD	0
		2018	0,052	0,188	0,247	0,154	2,78	NFD	0
		2019	-0,012	0,189	0,144	0,119	1,64	GREY AREA	1

#### Data Current Ratio Batu Bara Periode 2015-2019

No.	Nama Perusahaan	Current Ratio				
		2015	2016	2017	2018	2019
1	ADRO	240,39%	247,10%	255,94%	196,01%	171,18%
2	ARII	20,50%	17,72%	23,05%	23,42%	24,08%
3	BRMS	1,07%	1,46%	208,00%	67,07%	33,36%
4	BSSR	83,52%	110,81%	144,91%	121,50%	120,65%

5	BUMI	9,90%	69,24%	22,23%	39,77%	38,71%
6	BYAN	188,54%	254,61%	102,41%	123,72%	89,44%
7	DEWA	36,14%	111,37%	83,52%	79,51%	103,96%
8	DOID	300,25%	136,47%	161,59%	158,43%	183,22%
9	DSSA	154,83%	174,77%	165,99%	121,90%	129,65%
10	GEMS	279,43%	377,43%	168,23%	131,97%	132,29%
11	GTBO	172,27%	72,51%	57,66%	140,71%	45,70%
12	HRUM	691,36%	506,64%	545,06%	455,97%	922,24%
13	INDY	163,63%	213,25%	205,28%	217,75%	201,21%
14	ITMG	180,18%	225,68%	243,35%	196,58%	202,54%
15	KKGI	221,95%	405,09%	354,05%	147,82%	217,36%
16	MBAP	207,31%	340,90%	316,25%	263,79%	360,36%
17	MYOH	232,96%	429,84%	284,51%	347,52%	328,48%
18	PKPK	80,64%	70,69%	1369,13%	11131,26%	14613,02%
19	PTBA	154,35%	165,58%	246,34%	231,51%	248,97%
20	PTRO	155,25%	215,86%	165,41%	169,19%	151,75%
21	SMMT	75,90%	26,56%	21,37%	32,84%	61,09%
22	SMRU	67,46%	161,31%	110,69%	232,34%	114,15%
23	TOBA	139,95%	96,78%	152,56%	122,41%	91,96%
Rata-rata		167,73%	192,68%	235,11%	641,43%	808,06%

#### Data Debt to Asset Ratio Batu Bara Periode 2015-2019

No.	Nama Perusahaan	Debt to Asset Ratio				
		2015	2016	2017	2018	2019
1	ADRO	0,44	0,42	0,40	0,12	0,45
2	ARII	0,77	0,83	0,88	0,97	0,87
3	BRMS	0,45	0,41	0,35	0,25	0,27
4	BSSR	0,40	0,31	0,29	0,39	0,32
5	BUMI	1,86	1,90	0,92	0,87	0,86
6	BYAN	0,82	0,77	0,42	0,41	0,52
7	DEWA	0,27	0,38	0,43	0,48	0,85
8	DOID	0,90	0,86	0,81	0,78	0,76
9	DSSA	0,56	0,55	0,47	0,43	0,44
10	GEMS	0,33	0,30	0,51	0,55	0,54
11	GTBO	0,13	0,14	0,20	0,18	0,23
12	HRUM	0,10	0,14	0,14	0,17	0,11
13	INDY	0,61	0,59	0,69	0,69	0,71
14	ITMG	0,29	0,25	0,29	0,33	0,27
15	KKGI	0,22	0,14	0,16	0,26	0,26
16	MBAP	0,32	0,21	0,24	0,28	0,24
17	MYOH	0,42	0,27	0,25	0,25	0,24
18	PKPK	0,51	0,56	0,57	0,57	0,80

19	PTBA	0,45	0,43	0,37	0,33	0,29
20	PTRO	0,58	0,57	0,59	0,66	0,61
21	SMMT	0,44	0,40	0,42	0,38	0,33
22	SMRU	0,53	0,59	0,50	0,50	0,54
23	TOBA	0,45	0,44	0,50	0,57	0,58
Rata-rata		0,51	0,50	0,45	0,45	0,48

### Data Sales Growth Batu Bara Periode 2015-2019

No.	Nama Perusahaan	Sales Growth				
		2015	2016	2017	2018	2019
1	ADRO	-19,27%	-5,97%	29,08%	11,09%	-4,49%
2	ARII	-26,32%	-58,93%	146,81%	32,82%	64,57%
3	BRMS	-22,56%	-82,63%	130,16%	-76,36%	277,37%
4	BSSR	19,30%	-6,34%	61,82%	12,96%	-5,72%
5	BUMI	-34,59%	-42,30%	-25,70%	6302,04%	0,07%
6	BYAN	-43,86%	19,46%	92,15%	57,09%	-17,01%
7	DEWA	2,33%	7,90%	-6,29%	13,72%	24,83%
8	DOID	-6,88%	8,06%	25,09%	16,72%	-1,19%
9	DSSA	26,79%	-6,34%	85,62%	33,83%	-5,79%
10	GEMS	-18,99%	8,82%	97,60%	37,61%	5,97%
11	GTBO	-99,87%	-82,80%	3610,80%	263,82%	-51,80%
12	HRUM	-47,80%	-12,92%	49,96%	3,41%	-22,01%
13	INDY	-1,10%	-29,35%	41,73%	169,65%	-6,08%
14	ITMG	-18,18%	-13,96%	23,55%	18,83%	-14,55%
15	KKGI	-18,23%	-16,55%	-9,58%	-32,02%	101,70%
16	MBAP	70,10%	-14,59%	38,17%	-0,17%	1,05%
17	MYOH	-11,07%	-16,01%	-1,07%	28,20%	5,53%
18	PKPK	-74,09%	-57,56%	32,68%	-38,78%	94,19%
19	PTBA	5,01%	2,37%	38,50%	8,71%	2,93%
20	PTRO	-40,56%	1,23%	24,12%	79,22%	2,30%
21	SMMT	222,07%	94,87%	2,80%	230,36%	31,43%
22	SMRU	41,94%	9,46%	28,59%	15,01%	-17,80%
23	TOBA	-30,26%	-25,92%	20,30%	41,11%	19,86%
Rata-rata		-5,48%	-13,91%	197,26%	314,30%	21,10%

### Lampiran 3 Daftar Perusahaan Yang Termasuk Dalam Sampel

No.	Nama Perusahaan	Kode Perusahaan
1	Adaro Energy Tbk	ADRO

2	Atlas Resources Tbk	ARII
3	Bumi Resources Minerals Tbk	BRMS
4	Baramulti Suksessarana Tbk	BSSR
5	Bumi Resources Tbk	BUMI
6	Bayan Resources Tbk	BYAN
7	Darma Henwa Tbk	DEWA
8	Delta Dunia Makmur Tbk	DOID
9	Dian Swastatika Sentosa Tbk	DSSA
10	Golden Energy Mines Tbk	GEMS
11	Garda Tujuh Buana Tbk	GTBO
12	Harum Energy Tbk	HRUM
13	Indika Energy Tbk	INDY
14	Indo Tambangraya Megah Tbk	ITMG
15	Resource Alam Indonesia Tbk	KKGI
16	Mitrabara Adiperdana Tbk	MBAP
17	Samindo Resources Tbk	MYOH
18	Perdana Karya Perkasa Tbk	PKPK
19	Bukit Asam Tbk	PTBA
20	Petrosea Tbk	PTRO
21	Golden Eagle Energy Tbk	SMMT
22	SMR Utama Tbk	SMRU
23	Toba Bara Sejahtera Tbk	TOBA

#### Lampiran 4 Hasil Output Komputersasi Statistik (SPSS)

Tabel 4.1 Hasil Analisis Statistik Deskriptif

##### Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Financial Distress	115	-12.41	10.08	3.0262	3.59984
CR	115	1.07	14613.02	409.0030	1690.53767
DAR	115	.10	1.90	.4802	.28513
SG	115	-99.87	6302.04	102.6524	675.53565
Valid N (listwise)	115				

Tabel 4.2 Hasil Uji Regresi Logistik Biner

##### Variables in the Equation

B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I. for EXP(B)	
						Lower	Upper

Step 1 <sup>a</sup>	Current Ratio	0.000133	0.000292	.208	1	.649	1.000	1.000	1.001
	Debt to Asset Ratio	9.089	1.753	26.884	1	.000	8855.553	285.196	274971.326
	Sales Growth	-0.000159	.001	.080	1	.778	1.000	.999	1.001
	Constant	-4.347	.816	28.409	1	.000	.013		

a. Variable(s) entered on step 1: Current Ratio, Debt to Asset Ratio, Sales Growth.

**Tabel 4.3 Hasil Uji Hosmer and Lemeshow's Goodness Of Fit Test**

**Hosmer and Lemeshow Test**

Step	Chi-square	df	Sig.
1	5.931	8	.655

**Tabel 4.4 Uji Fit 1**

**Iteration History<sup>a,b,c</sup>**

Iteration		-2 Log likelihood	Coefficients
			Constant
Step 0	1	158.719	-.157
	2	158.719	-.157

a. Constant is included in the model.

b. Initial -2 Log Likelihood: 158.719

c. Estimation terminated at iteration number 2

because parameter estimates changed by less than .001.

**Tabel 4.5 Uji Fit 2**

**Iteration History<sup>a,b,c,d</sup>**

Iteration		-2 Log likelihood	Constant	Coefficients		
				Current Ratio	Debt to Asset Ratio	Sales Growth
Step 1	1	114.204	-2.074	.000	3.916	.000
	2	102.709	-3.497	.000	7.132	.000
	3	101.285	-4.196	.000	8.743	.000
	4	101.244	-4.342	.000	9.077	.000
	5	101.244	-4.347	.000	9.089	.000
	6	101.244	-4.347	.000	9.089	.000

a. Method: Enter

b. Constant is included in the model.

c. Initial -2 Log Likelihood: 158.719

d. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

**Tabel 4.6 Hasil Uji Omnibus**

		Chi-square	df	Sig.
Step 1	Step	57.475	3	.000
	Block	57.475	3	.000
	Model	57.475	3	.000

**Tabel 4.7 Hasil Uji Wald**

**Variables in the Equation**

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 1 <sup>a</sup>	Current Ratio	0.000133	0.000292	.208	1	.649	1.000
	Debt to Asset Ratio	9.089	1.753	26.884	1	.000	8855.553
	Sales Growth	-0.000159	.001	.080	1	.778	1.000
	Constant	-4.347	.816	28.409	1	.000	.013

a. Variable(s) entered on step 1: Current Ratio, Debt to Asset Ratio, Sales Growth.

**Tabel 4.8 Hasil Uji Koefisien Determinasi (Nagelkerke R Square)**

		Model Summary	
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	101.244 <sup>a</sup>	.393	.526

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.