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# LAMPIRAN

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**Riwayat Pendidikan**

## A. Pendidikan Formal

1. 2005-2010: SD Inpres 5/81 Mattoanging, Kabupaten Bone
2. 2010-2013: SMPN 2 Kajuara, Kabupaten Bone
3. 2013-2016: SMKN 1 Sinjai, Kabupaten Sinjai
4. 2016-2020: SI Akuntansi Universitas Hasanuddin

## B. Pendidikan Non Formal

1. Pelatihan *Basic Character Study Skill* Universitas Hasanuddin
2. Studi AI-Quran Intensif UKM LDK MPM UNHAS
3. Pelatihan Sertifikasi Akuntansi Yayasan Widhiyloka
4. Pelatihan Leadership Indonesia Next Telkomsel

**Riwayat Prestasi**

## A. Prestasi Akademik

1. 2015 *Accounting Competition* Universitas Terbuka

## B. Prestasi Non Akademik

1. 2017 *Badminton Cup* UIN Alauddin Makassar

**Pengalaman**

## A. Organisasi

1. Anggota Ikatan Mahasiswa Akuntansi (IMA) Fakultas Ekonomi dan Bisnis Universitas Hasanuddin

2. Anggota Unit Kegiatan Mahasiswa Bulutangkis (UKMB) Universitas Hasanuddin
3. Divisi Perlengkapan Keluarga Mahasiswa Mesjid Darul Ilmi (KMMDI) Fakultas Ekonomi dan Bisnis Universitas Hasanuddin
4. Anggota Palang Merah Remaja Kabupaten Sinjai

B. Kerja

1. Asisten Dosen Mata Kuliah Akuntansi Dasar
2. *Internship* Bank Indonesia Kantor Perwakilan Sulawesi Selatan – Departemen Statistik
3. *Internship* Kantor Pelayanan Keuangan Negara Dan Lelang Sulawesi Selatan – Divisi Lelang
4. Tutor Akuntansi Bimbingan Belajar Olimpia Maros

Demikian biodata ini dibuat dengan sebenarnya.

Makassar, 19 Januari 2023

Mohd. Izzwan

Lampiran 2: Peta Teori

PETA TEORI

No	Penulis/Topik/ Judul/Buku/ Artikel	Tujuan Penelitian/ Penulisan Buku/Artikel	Konsep/Teori/Hipotesis	Variabel Penelitian dan Teknik Analisis	Hasil Penelitian/Isi Buku
1.	Pham, T., Dao, M., dan Brown, V. L, 2014, <i>Investment Opportunities and Audit Report Lag: Initial Evidence</i>	<i>Exmine the association between audit report lag and the level of investment opportuniy</i>	<b>H<sub>1</sub></b> : <i>There is a positive between the level of investment opportunities and audit report lag</i>	Variable: 1. <i>Investment opportunity</i> Analysis Technic: <i>Analysis Multiple Regression</i>	1. <i>There is positive relation between the level of investment opportunities and audit report lag.</i>
2.	Dura, Justita, 2017, <i>Pengaruh profitabilitas, likuiditas, solvabilitas, dan ukuran perusahaan yang terdaftar di Bursa Efek Indonesia (Studi kasus pada pada sektor manufaktur)</i>	Mengetahui dan menganalisis pengaruh profitabilitas, likuiditas, solvabilitas, dan ukuran perusahaan	<b>H<sub>1</sub></b> : Pengaruh profitabilitas terhadap <i>audit report lag</i> <b>H<sub>2</sub></b> : Pengaruh likuiditas berpengaruh terhadap <i>audit report lag</i> <b>H<sub>3</sub></b> : Pengaruh solvabilitas terhadap <i>audit report lag</i> <b>H<sub>4</sub></b> : Pengaruh ukuran perusahaan berpengaruh terhadap <i>audit report lag</i>	Variabel: 1. Profitabilitas 2. Likuiditas 3. Solvabilitas 4. Ukuran Perusahaan Teknik Analisis: Analisis regresi linear berganda	1. Profitabilitas berpengaruh terhadap <i>audit report lag</i> 2. Likuiditas berpengaruh terhadap <i>audit report lag</i> 3. Solvabilitas berpengaruh terhadap <i>audit report lag</i> 4. Ukuran berpengaruh terhadap <i>audit report lag</i>



3.	Hariani, Diana Darsono, 2014, <i>Faktor-faktor pemengaruh audit report lag (Studi Empiris pada Perusahaan-Perusahaan di Bursa Efek Indonesia)</i>	Menguji faktor-faktor pemengaruh <i>audit report lag</i>	<p><b>H<sub>1</sub>:</b> Ukuran perusahaan berpengaruh negatif terhadap <i>audit report lag</i></p> <p><b>H<sub>2</sub>:</b> Struktur modal berpengaruh positif terhadap <i>audit report lag</i></p> <p><b>H<sub>3</sub>:</b> Profitabilitas perusahaan berpengaruh negatif terhadap <i>audit report lag</i></p> <p><b>H<sub>4</sub>:</b> Kompleksitas operasi perusahaan berpengaruh terhadap <i>audit report lag</i></p> <p><b>H<sub>5</sub>:</b> Umur listing yang berpengaruh terhadap <i>audit report lag</i></p> <p><b>H<sub>6</sub>:</b> Jenis industri terdapat perbedaan terhadap <i>audit report lag</i></p>	<p>Variabel:</p> <ol style="list-style-type: none"> <li>1. Ukuran perusahaan</li> <li>2. Struktur modal</li> <li>3. Profitabilitas</li> <li>4. Kompleksitas operasi perusahaan</li> <li>5. Umur listing</li> <li>6. Jenis industri</li> </ol> <p>Teknik Analisis: Analisis regresi berganda</p>	<ol style="list-style-type: none"> <li>1. Ukuran perusahaan berpengaruh signifikan terhadap <i>audit report lag</i></li> <li>2. Struktur modal tidak berpengaruh signifikan terhadap <i>audit report lag</i></li> <li>3. Profitabilitas berpengaruh signifikan terhadap <i>audit report lag</i></li> <li>4. Kompleksitas operasi perusahaan berpengaruh signifikan terhadap <i>audit report lag</i></li> <li>5. Umur listing tidak berpengaruh terhadap <i>audit report lag</i></li> <li>6. Jenis industri tidak terdapat perbedaan terhadap <i>audit report lag</i></li> </ol>
4.	Rahayu, Sri, 2017, <i>Pengaruh proporsi komisaris independen, komite audit, ukuran perusahaan, profitabilitas, dan solvabilitas terhadap audit report lag</i>	Menguji pengaruh proporsi komisaris independen, komite audit, ukuran perusahaan, profitabilitas, dan solvabilitas terhadap <i>audit report lag</i>	<p><b>H<sub>1</sub>:</b> Proporsi komisaris independen berpengaruh terhadap <i>audit report lag</i></p> <p><b>H<sub>2</sub>:</b> Komite audit berpengaruh terhadap <i>audit report lag</i></p> <p><b>H<sub>3</sub>:</b> Ukuran perusahaan berpengaruh terhadap <i>audit report lag</i></p> <p><b>H<sub>4</sub>:</b> Profitabilitas berpengaruh terhadap <i>audit report lag</i></p> <p><b>H<sub>5</sub>:</b> Solvabilitas berpengaruh terhadap <i>audit report lag</i></p>	<p>Variabel:</p> <ol style="list-style-type: none"> <li>1. Proporsi komisaris independen</li> <li>2. Komite audit</li> <li>3. Ukuran perusahaan</li> <li>4. Profitabilitas</li> <li>5. Solvabilitas</li> </ol> <p>Teknik Analisis: Analisis regresi berganda</p>	<ol style="list-style-type: none"> <li>1. Proporsi komisaris independen memiliki pengaruh terhadap <i>audit report lag</i></li> <li>2. Komite audit berpengaruh positif terhadap <i>audit report lag</i></li> <li>3. Ukuran perusahaan berpengaruh terhadap <i>audit report lag</i></li> <li>4. Profitabilitas berpengaruh terhadap <i>audit report lag</i></li> <li>5. Solvabilitas berpengaruh terhadap <i>audit report lag</i></li> </ol>

5.	Sarraf, F., Dehkordi, H, F., Bakhtiar, H, A., 2015, <i>Investment Opportunity in Companies and Audit Report Lag: Evidance from Iran</i>	Exmine the relationship between investment opportunities of companies and a delay in auditing report in ihe companies	<b>H<sub>1</sub></b> : <i>There is a positive relationship between the invesment opportunity in companies and audit report lag</i>	Variable: 1. <i>Investment opportunities</i>  Analysis Technic: <i>Analysis multiple regresion</i>	1. <i>There is a negative relationship between the invesment opportunity in companies and audit report lag</i>
6.	Ramadhan, Gilang, 2016, <i>Pengaruh ukuran perusahaan, struktur modal, profitabilitas, dan kompleksitas operasi perusahaan terhadap audit report lag (Studi empiris pada perusahaan manufaktur di Jakarta Islamic Index)</i>	Mengetahui dan menganalisis pengaruh ukuran perusahaan, struktur modal, profitabilitas, dan kompleksitas operasi perusahaan terhadap <i>audit report lag</i>	<b>H<sub>1</sub></b> : Ukuran perusahaan berpengaruh negatif terhadap <i>audit report lag</i> <b>H<sub>2</sub></b> : Struktur modal berpengaruh positif terhadap <i>audit report lag</i> <b>H<sub>3</sub></b> : Profitabilitas berpengaruh negatif terhadap <i>audit report lag</i> <b>H<sub>4</sub></b> : Kompleksitas operasi perusahaan berpengaruh positif terhadap <i>audit report lag</i>	Variabel: 1. Ukuran perusahaan 2. Struktur modal 3. Profitabilitas 4. Kompleksitas operasi perusahaan  Teknik analisis: Analisis regresi linier berganda	1. Ukuran perusahaan berpengaruh terhadap <i>audit report lag</i> 2. Struktur modal berpengaruh terhadap <i>audit report lag</i> 3. Profitabilitas berpengaruh terhadap <i>audit report lag</i> 4. Kompleksitas operasi perusahaan berpengaruh terhadap <i>audit report lag</i>
7.	Aini, Ninda Salma Nur, 2020, <i>Pengaruh Kompleksitas Operasi Perusahaan, Leverage, Laba Rugi, dan</i>	Menguji pengaruh kompleksitas operasi perusahaan, leverage, laba rugi, dan kepemilikan	<b>H<sub>1</sub></b> : Kompleksitas operasi perusahaan berpengaruh terhadap <i>audit report lag</i> <b>H<sub>2</sub></b> : <i>Leverage</i> berpengaruh terhadap <i>audt report lag</i> <b>H<sub>3</sub></b> : Laba rugi berpengaruh terhadap <i>audit report lag</i> <b>H<sub>4</sub></b> : Kepemilikan institusional berpengaruh terhadap <i>audit report lag</i>	Variabel independen: 1. Kompleksitas operasi perusahaan 2. Leverage 3. Laba rugi 4. Kepemilikan	1. Kompleksitas operasi perusahaan berpengaruh terhadap <i>audit report lag</i> 2. Leverage berpengaruh terhadap <i>audit report lag</i> 3. Laba rugi tidak berpengaruh terhadap <i>audit report lag</i> 4. Kepemilikan institusioanal

	<i>Kepemilikan Institusional Terhadap Audit Report Lag Dan Dampaknya Terhadap Abnormal Return</i>	institusional terhadap <i>audit report lag</i> dan dampaknya terhadap <i>abnormal return</i>	<b>H<sub>5</sub>:</b> <i>Audit report lag</i> terhadap <i>abnormal return</i>	institusional Variabel dependen: 1. <i>Audit report lag</i> 2. <i>Abnormal Return</i> Teknik Analisis: 1. Analisis regresi linier berganda 2. Analisis regresi linier sederhana	berpengaruh terhadap <i>audit report lag</i> 5. <i>Audit report lag</i> berpengaruh terhadap <i>abnormal return</i>
8.	Ariyani, Ni Nyoman Trisna Dewi, dan Budhiartha, 2014, <i>Pengaruh profitabilitas, ukuran perusahaan, kompleksitas operasi perusahaan, dan reputasi KAP terhadap audit report lag</i>	Menguji pengaruh profitabilitas, ukuran perusahaan, kompleksitas operasi perusahaan, dan reputasi KAP terhadap <i>audit report lag</i>	<b>H<sub>1</sub>:</b> Profitabilitas berpengaruh terhadap <i>audit report lag</i> <b>H<sub>2</sub>:</b> Ukuran perusahaan berpengaruh terhadap <i>audit report lag</i> <b>H<sub>3</sub>:</b> Kompleksitas operasi perusahaan berpengaruh terhadap <i>audit report lag</i> <b>H<sub>4</sub>:</b> Reputasi KAP berpengaruh terhadap <i>audit report lag</i>	Variabel: 1. Profitabilitas 2. Ukuran perusahaan 3. Kompleksitas operasi perusahaan 4. Reputasi KAP  Teknik analisis: Analisis regresi linier berganda	1. Profitabilitas berpengaruh negatif terhadap <i>audit report lag</i> 2. Ukuran perusahaan berpengaruh negatif terhadap <i>audit report lag</i> 3. Kompleksitas operasi perusahaan berpengaruh positif terhadap <i>audit report lag</i> 4. Reputasi KAP berpengaruh positif terhadap <i>audit report lag</i>

Lampiran 3: Daftar Sampel Perusahaan Manufaktur

NO	KODE PERUSAHAAN	NAMA PERUSAHAAN	TGL LISTING	INDIKATOR		
				TERDAFTAR SECARA KONSISTEN		
				2016	2017	2018
<b>SEKTOR INDUSTRI DASAR DAN KIMIA</b>						
<b>SUB SEKTOR SEMEN</b>						
1	INTP	Indocement Tunggul Prakarsa Tbk.	12/5/1989	YA	YA	YA
2	SMBR	Semen Baturaja (Persero) Tbk.	6/28/2013	YA	YA	YA
3	SMCB	Solusi Bangun Indonesia Tbk.	8/10/1997	YA	YA	YA
4	WSBP	Waskita Beton Precast Tbk.	9/20/2016	YA	YA	YA
5	WTON	Wijaya Karya Beton Tbk.	4/8/2014	YA	YA	YA
<b>SUB SEKTOR KERAMIK PORSELIN DAN KACA</b>						
6	ARNA	Arwana Citra Mulia Tbk.	7/17/2001	YA	YA	YA
7	IKAI	Inti Keramik Alam Asri Industri Tbk.	6/4/1997	YA	YA	YA
8	KIAS	Keramika Indonesia Asosiasi Tbk.	12/8/1994	YA	YA	YA
9	MLIA	Mulia Industrindo Tbk.	1/17/1994	YA	YA	YA
10	TOTO	Surya Toto Indonesia Tbk.	10/30/1990	YA	YA	YA
<b>SUB SEKTOR LOGAM DAN SEJENISNYA</b>						
11	ALKA	Alaska Industrindo Tbk.	7/12/1990	YA	YA	YA
12	ALMI	Alumindo Light Metal Industri Tbk.	1/2/1997	YA	YA	YA
13	BAJA	Sarana Sentral Bajatama Tbk.	12/21/2011	YA	YA	YA
14	BTON	Beton Jaya Manunggal Tbk.	7/18/2001	YA	YA	YA
15	GDST	Gunawan Dianjaya Steel Tbk.	12/23/2009	YA	YA	YA
16	INAI	Indal Aluminium Industry Tbk.	12/5/1994	YA	YA	YA
17	ISSP	Steel Pipe Industry of Indonesia Tbk.	2/22/2013	YA	YA	YA
18	LION	Lion Metal Works Tbk.	8/20/1993	YA	YA	YA
19	LMSH	Lionmesh Prima Tbk.	6/4/1990	YA	YA	YA
<b>SUB SEKTOR KIMIA</b>						
20	AGII	Aneka Gas Industri Tbk.	9/28/2016	YA	YA	YA
21	DPNS	Duta Pertiwi Nusantara Tbk.	8/8/1990	YA	YA	YA
22	BUDI	Budi Start and Sweteners Tbk.	5/8/1995	YA	YA	YA

23	EKAD	Ekadharma Internasional Tbk.	8/14/1990	YA	YA	YA
24	ETWA	Eterindo Wahanatama Tbk.	5/16/1997	YA	YA	YA
25	INCI	Intan Wijaya Internasional Tbk.	7/24/1990	YA	YA	YA
26	SRSN	Indo Acitama Tbk.	1/11/1993	YA	YA	YA
<b>SUB SEKTOR PLASTIK DAN KEMASAN</b>						
27	AKPI	Argha Karya Prima Industri Tbk.	12/18/1992	YA	YA	YA
28	BRNA	Berlina Tbk.	11/6/1989	YA	YA	YA
29	IGAR	Champion Pasific Indonesia Tbk.	11/5/1990	YA	YA	YA
30	IMPC	Impack Pratama Industri Tbk.	12/17/2014	YA	YA	YA
31	TRST	Trias Sentosa Tbk.	7/2/1990	YA	YA	YA
32	YPAS	Yana Prima Hasta Persada Tbk.	3/15/2008	YA	YA	YA
<b>SUB SEKTOR PAKAN TERNAK</b>						
33	CPIN	Charoen Pokphand Indonesia Tbk.	3/18/1991	YA	YA	YA
34	JPFA	Japfa Comfeed Indonesia Tbk.	10/23/1989	YA	YA	YA
35	MAIN	Melindo Feedmill Tbk.	2/10/2006	YA	YA	YA
36	SIPD	Sierad Produce Tbk.	12/27/1996	YA	YA	YA
<b>SUB SEKTOR KAYU DAN PENGOLAHANNYA</b>						
37	TIRT	Tirta Mahakam Resources Tbk.	12/13/1999	YA	YA	YA
<b>SUB SEKTOR PULP DAN KERTAS</b>						
38	FASW	Fajar Surya Wisesa Tbk.	12/1/1994	YA	YA	YA
39	KBRI	Kertas Basuki Rahmat Indonesia Tbk.	7/11/2008	YA	YA	YA
40	KDSI	Kedawang Setia Industrial Tbk.	7/29/1996	YA	YA	YA
<b>SEKTOR ANEKA INDUSTRI</b>						
<b>SUB SEKTOR MESIN DAN ALAT BERAT</b>						
41	AMIN	Ateliers Mecaniques D'Indonesia Tbk.	12/10/2015	YA	YA	YA
<b>SUB SEKTOR OTOMOTIF DAN KOMPONEN</b>						
42	ASII	Astra Internasional Tbk.	4/4/1990	YA	YA	YA
43	BOLT	Garuda Metalindo Tbk.	7/7/2015	YA	YA	YA
44	GJTL	Gajah Tunggal Tbk.	5/8/1990	YA	YA	YA
45	IMAS	Indomobil Sukses Internasional Tbk.	9/15/1993	YA	YA	YA

46	INDS	Indospring Tbk.	8/10/1990	YA	YA	YA
47	LPIN	Multi Prima Sejahtera Tbk.	2/5/1990	YA	YA	YA
48	PRAS	Prima Alloy Stell Universal Tbk.	7/12/1990	YA	YA	YA
49	SMSM	Selamat Sempurna Tbk.	9/9/1996	YA	YA	YA
<b>SUB SEKTOR TEKSTIL DAN GARMEN</b>						
50	MYTX	Asia Pasific Investama Tbk.	10/10/1989	YA	YA	YA
51	RICY	Ricy Putra Globalindo Tbk.	1/22/1998	YA	YA	YA
52	SSTM	Sunson Textile Manufacture Tbk.	8/20/1997	YA	YA	YA
53	STAR	Star Petrochem Tbk.	7/13/2011	YA	YA	YA
54	TRIS	Trisula Internasional Tbk.	6/28/2012	YA	YA	YA
55	UNIT	Nusantara Inti Corpora Tbk.	4/18/2002	YA	YA	YA
<b>SUB SEKTOR ALAS KAKI</b>						
56	BIMA	Primarindo Asia Infrastruture Tbk.	8/30/1994	YA	YA	YA
<b>SUB SEKTOR KABEL</b>						
57	KBLI	KMI Wire and Cable Tbk	7/6/1992	YA	YA	YA
58	KBLM	Kabelindo Murni Tbk.	6/1/1992	YA	YA	YA
59	SCCO	Supreme Cable Manufacturing and Commerce Tbk	7/20/1982	YA	YA	YA
<b>SEKTOR INDUSTRI BARANG KONSUMSI</b>						
<b>SUB SEKTOR MAKANAN DAN MINUMAN</b>						
60	AISA	Tiga Pilar Sejahtera Food Tbk.	6/11/1997	YA	YA	YA
61	ICBP	Indofood CBP Sukses Makmur Tbk	10/7/2010	YA	YA	YA
62	INDF	Indofood Sukses Makmur Tbk	7/14/1994	YA	YA	YA
63	MLBI	Multi Bintang Indonesia Tbk	1/17/1994	YA	YA	YA
64	MYOR	Mayora Indah Tbk	7/4/1990	YA	YA	YA
65	PSDN	Prashida Aneka Niaga Tbk	10/18/1994	YA	YA	YA
66	ROTI	Nippon Indosari Corporindo Tbk	6/28/2010	YA	YA	YA
67	SKBM	Sekar Bumi Tbk	9/28/2012	YA	YA	YA
68	SKLT	Sekar Laut Tbk	9/8/1993	YA	YA	YA
69	STTP	Siantar Top Tbk	12/16/1996	YA	YA	YA
70	ULTJ	Ultrajaya Milk Industry and Traading Company Tbk	7/2/1990	YA	YA	YA
<b>SUB SEKTOR ROKOK</b>						
71	GGRM	Gudang Garam Tbk	8/27/1990	YA	YA	YA
72	HMSP	Hanjaya Mandala Sampoerna Tbk	8/15/1990	YA	YA	YA

73	RMBA	Bantoel Internasional Investama Tbk	3/5/1990	YA	YA	YA
74	WIIM	Wismilak Inti Makmur Tbk	12/18/2012	YA	YA	YA
<b>SUB SEKTOR FARMASI</b>						
75	DVLA	Darya Varia Laboratiria	11/11/1994	YA	YA	YA
76	INAF	Indofarma (Persero) Tbk	4/17/2001	YA	YA	YA
77	KAEF	Kimia Farma (Persero) Tbk	7/4/2001	YA	YA	YA
78	KLBF	Kalbe Farma Tbk	7/30/1991	YA	YA	YA
79	MERK	Merck Indonesia Tbk	7/23/1981	YA	YA	YA
80	PYFA	Prydam Farma Tbk	10/16/2001	YA	YA	YA
81	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk	12/18/2013	YA	YA	YA
82	TSPC	Tempo Scan Pasific Tbk	1/17/1994	YA	YA	YA
<b>SUB SEKTOR BARANG RUMAH TANGGA</b>						
83	CINT	Chitose Internasional Tbk	6/27/2014	YA	YA	YA
84	KICI	Kedaung Indah Can Tbk	10/28/1993	YA	YA	YA
85	LMPI	Langgeng Makmur Industri Tbk	10/17/1994	YA	YA	YA
<b>SUB SEKTOR KOSMETIK DAN KEPERLUAN RUMAH TANGGA</b>						
86	ADES	Akasha Wira International Tbk	6/13/1994	YA	YA	YA
87	KINO	Kino Indonesia Tbk	12/11/2015	YA	YA	YA
88	MBTO	Martina Berto Tbk	1/13/2011	YA	YA	YA
89	MRAT	Mustika Ratu Tbk	7/27/1995	YA	YA	YA
90	TCID	Mandom Indonesia Tbk	9/23/1993	YA	YA	YA
91	UNVR	Unilever Indonesia Tbk	1/11/1982	YA	YA	YA

#### LAMPIRAN 4: Audit Report Lag

NO	KODE PERUSAHAAN	NAMA PERUSAHAAN	2016		2017		2018	
			Hari	Tanggal	Hari	Tanggal	Hari	Tanggal
<b>SEKTOR INDUSTRI DASAR DAN KIMIA</b>								
<b>SUB SEKTOR SEMEN</b>								
1	INTP	Indocement Tunggul Prakarsa Tbk.	72	31 des'16-13 mar'17	74	31 des'17-15 mar'18	78	31 des'18-19 mar'19
2	SMBR	Semen Baturaja (Persero) Tbk.	45	31 des'16-14 feb'17	22	31 des'17-22 jan'18	45	31 des'18-14 feb'19
3	SMCB	Solusi Bangun Indonesia Tbk.	54	31 des'16-23 feb'17	113	31 des'17-23 apr'18	88	31 des'18-29 mar'19
4	WSBP	Waskita Beton Precast Tbk.	33	31 des'16-02 feb'17	59	31 des'17-28 feb'18	51	31 des'18-20 feb'19
5	WTON	Wijaya Karya Beton Tbk.	41	31 des'16-10 feb'17	43	31 des'17-12 feb'18	53	31 des'18-22 feb'19
<b>SUB SEKTOR KERAMIK PORSELIN DAN KACA</b>								
6	ARNA	Arwana Citra Mulia Tbk.	67	31 des'16-08 mar'17	60	31 des'17-01 mar'18	32	31 des'18-01 feb'19
7	IKAI	Inti Keramik Alam Asri Industri Tbk.	88	31 des'16-29 mar'17	81	31 des'17-22 mar'18	87	31 des'18-28 mar'19
8	KIAS	Keramika Indonesia Asosiasi Tbk.	89	31 des'16-30 mar'17	87	31 des'17-28 mar'18	87	31 des'18-28 mar'19
9	MLIA	Mulia Industrindo Tbk.	86	31 des'16-27 mar'17	68	31 des'17-09 mar'18	81	33 des'18-22 mar'19
10	TOTO	Surya Toto Indonesia Tbk.	86	31 des'16-27 mar'17	79	31 des'17-20 mar'18	84	34 des'18-25 mar'19
<b>SUB SEKTOR LOGAM DAN SEJENISNYA</b>								
11	ALKA	Alaska Industrindo Tbk.	86	31 des'16-27 mar'17	86	31 des'17-27 mar'18	86	31 des'18-27 mar'19
12	ALMI	Alumindo Light Metal Industri Tbk.	86	31 des'16-27 mar'17	82	31 des'17-23 mar'18	79	31 des'18-20 mar'19
13	BAJA	Sarana Sentral Bajatama Tbk.	74	31 des'16-15 mar'17	71	31 des'17-12 mar'18	84	31 des'18-25 mar'19
14	BTON	Beton Jaya Manunggal Tbk.	82	31 des'16-23 mar'17	81	31 des'17-22 mar'18	101	31 des'18-11 apr'19
15	GDST	Gunawan Dianjaya Steel Tbk.	80	31 des'16-21 mar'17	81	31 des'17-22 mar'18	101	31 des'18-11 apr'19
16	INAI	Indal Aluminium Industry Tbk.	82	31 des'16-23 mar'17	75	31 des'17-16 mar'18	81	31 des'18-22 mar'19
17	ISSP	Steel Pipe Industry of Indonesia Tbk.	118	31 des'16-28 apr'17	85	31 des'17-26 mar'18	84	31 des'18-25 mar'19
18	LION	Lion Metal Works Tbk.	74	31 des'16-15 mar'17	74	31 des'17-15 mar'18	74	31 des'18-15 mar'19
19	LMSH	Lionmesh Prima Tbk.	74	31 des'16-15 mar'17	74	31 des'17-15 mar'18	77	31 des'18-18 mar'19
<b>SUB SEKTOR KIMIA</b>								
20	AGII	Aneka Gas Industri Tbk.	60	31 des'16-01 mar'17	85	31 des'17-26 mar'18	87	31 des'18-28 mar'19
21	DPNS	Duta Pertiwi Nusantara Tbk.	79	31 des'16-20 mar'17	79	31 des'17-20 mar'18	79	31 des'18-20 mar'19
22	BUDI	Budi Start and Sweteners Tbk.	79	31 des'16-20 mar'17	78	31 des'17-19 mar'18	79	31 des'18-20 mar'19



23	EKAD	Ekadharna Internasional Tbk.	76	31 des'16-17 mar'17	82	31 des'17-23 mar'18	74	31 des'18-15 mar'19
24	ETWA	Eterindo Wahanatama Tbk.	353	31 des'16-19 des'17	176	31 des'17-25 jun'18	176	31 des'18-25 jun'19
25	INCI	Intan Wijaya Internasional Tbk.	83	31 des'16-24 mar'17	85	31 des'17-26 mar'18	84	31 des'18-25 mar'19
26	SRSN	Indo Acidatama Tbk.	76	31 des'16-17 mar'17	71	31 des'17-12 mar'18	86	31 des'18-27 mar'19
SUB SEKTOR PLASTIK DAN KEMASAN								
27	AKPI	Argha Karya Prima Industri Tbk.	81	31 des'16-22 mar'17	82	31 des'17-23 mar'18	85	31 des'18-26 mar'19
28	BRNA	Berlina Tbk.	86	31 des'16-27 mar'17	86	31 des'17-27 mar'18	92	31 des'18-02 apr'19
29	IGAR	Champion Pasific Indonesia Tbk.	48	31 des'16-17 feb'17	78	31 des'17-19 mar'18	86	31 des'18-27 mar'19
30	IMPC	Impack Pratama Industri Tbk.	83	31 des'16-24 mar'17	81	31 des'17-22 mar'18	81	31 des'18-22 mar'19
31	TRST	Trias Sentosa Tbk.	76	31 des'16-17 mar'17	88	31 des'17-29 mar'18	84	31 des'18-25 mar'19
32	YPAS	Yana Prima Hasta Persada Tbk.	69	31 des'16-10 mar'17	68	31 des'17-09 mar'18	70	31 des'18-11 mar'19
SUB SEKTOR PAKAN TERNAK								
33	CPIN	Charoen Pokphand Indonesia Tbk.	88	31 des'16-29 mar'17	86	31 des'17-27 mar'18	88	31 des'18-29 mar'19
34	JPFA	Japfa Comfeed Indonesia Tbk.	58	31 des'16-27 feb'17	59	31 des'17-28 feb'18	64	31 des'18-05 mar'19
35	MAIN	Malindo Feedmill Tbk.	88	31 des'16-29 mar'17	99	31 des'17-09 apr'18	88	31 des'18-29 mar'19
36	SIPD	Sierad Produce Tbk.	76	31 des'16-17 mar'17	75	31 des'17-16 mar'18	80	31 des'18-21 mar'19
SUB SEKTOR KAYU DAN PENGOLAHANNYA								
37	TIRT	Tirta Mahakam Resources Tbk.	82	31 des'16-23 mar'17	80	31 des'17-21 mar'18	84	31 des'18-25 mar'19
SUB SEKTOR PULP DAN KERTAS								
38	FASW	Fajar Surya Wisesa Tbk.	52	31 des'16-21 feb'17	50	31 des'17-19 feb'18	39	31 des'18-08 feb'19
39	KBRI	Kertas Basuki Rahmat Indonesia Tbk.	89	31 des'16-30 mar'17	82	31 des'17-23 mar'18	86	31 des'18-27 mar'19
40	KDSI	Kedawung Setia Industrial Tbk.	59	31 des'16-28 feb'17	57	31 des'17-26 feb'18	70	31 des'18-11 mar'19
SEKTOR ANEKA INDUSTRI								
SUB SEKTOR MESIN DAN ALAT BERAT								
41	AMIN	Ateliers Mecaniques D'Indonesia Tbk.	102	31 des'16-12 apr'17	113	31 des'17-23 apr'18	114	31 des'18-24 apr'19
SUB SEKTOR OTOMOTIF DAN KOMPONEN								
42	ASII	Astra Internasional Tbk.	58	31 des'16-27 feb'17	58	31 des'17-27 feb'18	58	31 des'18-27 feb'19
43	BOLT	Garuda Metalindo Tbk.	45	31 des'16-14 feb'17	61	31 des'17-02 mar'18	74	31 des'18-15 mar'19
44	GJTL	Gajah Tunggal Tbk.	83	31 des'16-24 mar'17	82	31 des'17-23 mar'18	87	31 des'18-28 mar'19
45	IMAS	Indomobil Sukses Internasional Tbk.	82	31 des'16-23 mar'17	81	31 des'17-22 mar'18	87	31 des'18-28 mar'19
46	INDS	Indospring Tbk.	83	31 des'16-24 mar'17	85	31 des'17-26 mar'18	84	31 des'18-25 mar'19

47	LPIN	Multi Prima Sejahtera Tbk.	88	31 des'16-29 mar'17	88	31 des'17-29 mar'18	87	31 des'18-28 mar'19
48	PRAS	Prima Alloy Stell Universal Tbk.	83	31 des'16-24 mar'17	82	31 des'17-23 mar'18	84	31 des'18-25 mar'19
49	SMSM	Selamat Sempurna Tbk.	88	31 des'16-29 mar'17	85	31 des'17-26 mar'18	86	31 des'18-27 mar'19
SUB SEKTOR TEKSTIL DAN GARMEN								
50	MYTX	Asia Pasific Investama Tbk.	166	31 des'16-15 jun'17	116	31 des'17-26 apr'18	147	31 des'18-27 mei'19
51	RICY	Ricy Putra Globalindo Tbk.	80	31 des'16-21 mar'17	82	31 des'17-23 mar'18	81	31 des'18-22 mar'19
52	SSTM	Sunson Textile Manufacture Tbk.	86	31 des'16-27 mar'17	191	31 des'17-10 jul'18	86	31 des'18-27 mar'19
53	STAR	Star Petrochem Tbk.	89	31 des'16-30 mar'17	86	31 des'17-27 mar'18	87	31 des'18-28 mar'19
54	TRIS	Trisula Internasional Tbk.	81	31 des'16-22 mar'17	85	31 des'17-26 mar'18	85	31 des'18-26 mar'19
55	UNIT	Nusantara Inti Corpora Tbk.	82	31 des'16-23 mar'17	75	31 des'17-16 mar'18	84	31 des'18-25 mar'19
SUB SEKTOR ALAS KAKI								
56	BIMA	Primarindo Asia Infrastrutture Tbk.	86	31 des'16-27 mar'17	88	31 des'17-29 mar'18	88	31 des'18-29 mar'19
SUB SEKTOR KABEL								
57	KBLI	KMI Wire and Cable Tbk	80	31 des'16-21 mar'17	87	31 des'17-28 mar'18	86	31 des'18-27 mar'19
58	KBLM	Kabelindo Murni Tbk.	83	31 des'16-24 mar'17	86	31 des'17-27 mar'18	84	31 des'18-25 mar'19
59	SCCO	Supreme Cable Manufacturing and Commerce Tbk	76	31 des'16-17 mar'17	82	31 des'17-23 mar'18	84	31 des'18-25 mar'19
SEKTOR INDUSTRI BARANG KONSUMSI								
SUB SEKTOR MAKANAN DAN MINUMAN								
60	AISA	Tiga Pilar Sejahtera Food Tbk.	116	31 des'16-26 apr'17	180	31 des'17-29 jun'18	401	31 des'18-05 feb'20
61	ICBP	Indofood CBP Sukses Makmur Tbk	79	31 des'16-20 mar'17	75	31 des'17-16 mar'18	78	31 des'18-19 mar'19
62	INDF	Indofood Sukses Makmur Tbk	79	31 des'16-20 mar'17	75	31 des'17-16 mar'18	78	31 des'18-19 mar'19
63	MLBI	Multi Bintang Indonesia Tbk	59	31 des'16-28 feb'17	53	31 des'17-22 feb'18	46	31 des'18-15 feb'19
64	MYOR	Mayora Indah Tbk	74	31 des'16-15 mar'17	74	31 des'17-15 mar'18	74	31 des'18-15 mar'19
65	PSDN	Prashida Aneka Niaga Tbk	86	31 des'16-27 mar'17	85	31 des'17-26 mar'18	85	31 des'18-26 mar'19
66	ROTI	Nippon Indosari Corporindo Tbk	67	31 des'16-08 mar'17	85	31 des'17-26 mar'18	72	31 des'18-13 mar'19
67	SKBM	Sekar Bumi Tbk	86	31 des'16-27 mar'17	81	31 des'17-22 mar'18	81	31 des'18-22 mar'19
68	SKLT	Sekar Laut Tbk	74	31 des'16-15 mar'17	73	31 des'17-14 mar'18	71	31 des'18-12 mar'19
69	STTP	Siantar Top Tbk	157	31 des'16-06 jun'17	157	31 des'17-06 jun'18	89	31 des'18-30 mar'19
70	ULTJ	Ultrajaya Milk Industry and Traading Company Tbk	81	31 des'16-22 mar'17	80	31 des'17-21 mar'18	84	31 des'18-25 mar'19

<b>SUB SEKTOR ROKOK</b>								
71	GGRM	Gudang Garam Tbk	81	31 des'16-22 mar'17	85	31 des'17-26 mar'18	84	31 des'18-25 mar'19
72	HMSP	Hanjaya Mandala Sampoerna Tbk	65	31 des'16-06 mar'17	65	31 des'17-06 mar'18	80	31 des'18-21 mar'19
73	RMBA	Bantoel Internasional Investama Tbk	72	31 des'16-13 mar'17	85	31 des'17-26 mar'18	87	31 des'18-28 mar'19
74	WIIM	Wisnilak Inti Makmur Tbk	87	31 des'16-27 mar'17	81	31 des'17-22 mar'18	77	31 des'18-18 mar'19
<b>SUB SEKTOR FARMASI</b>								
75	DVLA	Darya Varia Laboratoria	68	31 des'16-09 mar'17	68	31 des'17-09 mar'18	81	31 des'18-22 mar'19
76	INAF	Indofarma (Persero) Tbk	59	31 des'16-28 feb'17	71	31 des'17-12 mar'18	87	31 des'18-28 mar'19
77	KAEF	Kimia Farma (Persero) Tbk	54	31 des'16-23 feb'17	50	31 des'17-19 feb'18	53	31 des'18-22 feb'19
78	KLBF	Kalbe Farma Tbk	76	31 des'16-17 mar'17	82	31 des'17-23 mar'18	86	31 des'18-27 mar'19
79	MERK	Merck Indonesia Tbk	60	31 des'16-01 mar'17	60	31 des'17-01 mar'18	74	31 des'18-15 mar'19
80	PYFA	Prydam Farma Tbk	76	31 des'16-17 mar'17	73	31 des'17-14 mar'18	77	31 des'18-18 mar'19
81	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk	72	31 des'16-13 mar'17	87	31 des'17-28 mar'18	46	31 des'18-15 feb'19
82	TSPC	Tempo Scan Pasific Tbk	74	31 des'16-15 mar'17	75	31 des'17-16 mar'18	74	31 des'18-15 mar'19
<b>SUB SEKTOR BARANG RUMAH TANGGA</b>								
83	CINT	Chitose Internasional Tbk	81	31 des'16-22 mar'17	79	31 des'17-20 mar'18	74	31 des'18-15 mar'19
84	KICI	Kedaung Indah Can Tbk	68	31 des'16-09 mar'17	65	31 des'17-06 mar'18	67	31 des'18-08 mar'19
85	LMPI	Langgeng Makmur Industri Tbk	80	31 des'16-21 mar'17	92	31 des'17-02 apr'18	81	31 des'18-22 mar'19
<b>SUB SEKTOR KOSMETIK DAN KEPERLUAN RUMAH TANGGA</b>								
86	ADES	Akasha Wira International Tbk	83	31 des'16-24 mar'17	82	31 des'17-23 mar'18	74	31 des'18-15 mar'19
87	KINO	Kino Indonesia Tbk	79	31 des'16-20 mar'17	79	31 des'17-20 mar'18	84	31 des'18-25 mar'19
88	MBTO	Martina Berto Tbk	79	31 des'16-20 mar'17	86	31 des'17-27 mar'18	72	31 des'18-13 mar'19
89	MRAT	Mustika Ratu Tbk	83	31 des'16-24 mar'17	79	31 des'17-20 mar'18	108	31 des'18-18 apr'19
90	TCID	Mandom Indonesia Tbk	62	31 des'16-03 mar'17	61	31 des'17-02 mar'18	60	31 des'18-01 mar'19
91	UNVR	Unilever Indonesia Tbk	76	31 des'16-17 mar'17	57	31 des'17-26 feb'18	31	31 des'18-31 jan'19

Lampiran 5: Investment Opportunity Set 2016

NO	KODE PERUSAHAAN	NAMA PERUSAHAAN	Capital Expenditure to Book Value Asset			
			Nilai Buku Aset Tetap	Nilai Buku Aset Tetap t sebelum	Total Aset	CAPBVA
<b>SEKTOR INDUSTRI DASAR DAN KIMIA</b>						
<b>SUB SEKTOR SEMEN</b>						
1	INTP	Indocement Tunggal Prakarsa Tbk.	15725958000000	14504506000000	30150580000000	0.040511725
2	SMBR	Semen Baturaja (Persero) Tbk.	3530644962000	1330100964000	3268667933000	0.673223479
3	SMCB	Solusi Bangun Indonesia Tbk.	17323169000000	14739791000000	19763133000000	0.130717028
4	WSBP	Waskita Beton Precast Tbk.	2437866634747	3277827136923	13734267485212	-0.061158012
5	WTON	Wijaya Karya Beton Tbk.	2222382865586	2001188584887	4662319785318	0.047442966
<b>SUB SEKTOR KERAMIK PORSELIN DAN KACA</b>						
6	ARNA	Arwana Citra Mulia Tbk.	900324253233	921601468468	1543216299146	-0.013787578
7	IKAI	Inti Keramik Alam Asri Industri Tbk.	226543480558	246724853235	265028561223	-0.076147916
8	KIAS	Keramika Indonesia Asosiasi Tbk.	1340009000000	1410501000000	1859670000000	-0.03790565
9	MLIA	Mulia Industrindo Tbk.	6133633947000	595602490000	7723578677000	0.717029202
10	TOTO	Surya Toto Indonesia Tbk.	1291232504876	1091478253841	2581440938262	0.077380911
<b>SUB SEKTOR LOGAM DAN SEJENISNYA</b>						
11	ALKA	Alaska Industrindo Tbk.	78294925000	72845543000	136618855000	0.039887481
12	ALMI	Alumindo Light Metal Industri Tbk.	728319096350	818253773565	2153030503531	-0.041771204
13	BAJA	Sarana Sentral Bajatama Tbk.	232796632284	281422152095	982626956424	-0.049485229
14	BTON	Beton Jaya Manunggal Tbk.	48489152832	46561234724	177290628918	0.010874337
15	GDST	Gunawan Dianjaya Steel Tbk.	789972211663	769172269318	1257609869910	0.016539265
16	INAL	Indal Aluminium Industry Tbk.	364749963114	364126725549	1339032413455	0.000465439
17	ISSP	Steel Pipe Industry of Indonesia Tbk.	2763833000000	2528847000000	6041811000000	0.038893305

18	LION	Lion Metal Works Tbk.	142999141978	130984950529	685812995987	0.017518174
19	LMSH	Lionmesh Prima Tbk.	64553460204	44656641997	162828169250	0.122195185
<b>SUB SEKTOR KIMIA</b>						
20	AGII	Aneka Gas Industri Tbk.	4367894000000	3929927000000	5847722000000	0.074895318
21	DPNS	Duta Pertiwi Nusantara Tbk.	121222188330	89383644192	296129565784	0.107515587
22	BUDI	Budi Start and Sweteners Tbk.	1839447000000	1773588000000	2931807000000	0.022463621
23	EKAD	Ekadharna Internasional Tbk.	364864547072	105636392761	702508630707	0.369003515
24	ETWA	Eterindo Wahanatama Tbk.	1076162771698	1053891110213	1158935571034	0.019217342
25	INCI	Intan Wijaya Internasional Tbk.	150608013782	62277443498	269351381344	0.327938063
26	SRSN	Indo Acidatama Tbk.	235607137000	133334102000	717149704000	0.14261044
<b>SUB SEKTOR PLASTIK DAN KEMASAN</b>						
27	AKPI	Argha Karya Prima Industri Tbk.	1745763049000	1867322855000	2615909190000	-0.046469429
28	BRNA	Berlina Tbk.	1311380454000	1236754510000	2088696909000	0.03572847
29	IGAR	Champion Pasific Indonesia Tbk.	76461359092	74401083944	439465673296	0.004688137
30	IMPC	Impack Pratama Industri Tbk.	1014079865988	777471622498	2276031922082	0.10395647
31	TRST	Trias Sentosa Tbk.	2110596332518	2219592781923	3290596224286	-0.033123617
32	YPAS	Yana Prima Hasta Persada Tbk.	162149057175	174967745195	280257664992	-0.045738938
<b>SUB SEKTOR PAKAN TERNAK</b>						
33	CPIN	Charoen Pokphand Indonesia Tbk.	12145561000000	12857783000000	24204994000000	-0.029424589
34	JPFA	Japfa Comfeed Indonesia Tbk.	8190016000000	7555312000000	19251026000000	0.032969879
35	MAIN	Malindo Feedmill Tbk.	2158692697000	1934140143000	3919764494000	0.057287257
36	SIPD	Sierad Produce Tbk.	1069054428912	1101607237841	2567211193259	-0.012680222
<b>SUB SEKTOR KAYU DAN PENGOLAHANNYA</b>						
37	TIRT	Tirta Mahakam Resources Tbk.	257395387059	242813093486	815997477795	0.017870513
<b>SUB SEKTOR PULP DAN KERTAS</b>						
38	FASW	Fajar Surya Wisesa Tbk.	6416188282398	5275092810181	8583223835997	0.132944858
39	KBRI	Kertas Basuki Rahmat Indonesia Tbk.	1103454600525	1140330439561	1263726833318	-0.02918023
40	KDSI	Kedawung Setia Industrial Tbk.	432689136851	445834977809	1142273020550	-0.011508493
<b>SEKTOR ANEKA INDUSTRI</b>						
<b>SUB SEKTOR MESIN DAN ALAT BERAT</b>						
41	AMIN	Ateliers Mecaniques D'Indonesia Tbk.	57297211385	53216343553	198974581573	0.020509493

<b>SUB SEKTOR OTOMOTIF DAN KOMPONEN</b>						
42	ASII	Astra Internasional Tbk.	15145200000000	14027400000000	26185500000000	0.042687747
43	BOLT	Garuda Metalindo Tbk.	443082492565	431762573369	938141687362	0.012066321
44	GJTL	Gajah Tunggal Tbk.	11180627000000	10907224000000	18697779000000	0.014622218
45	IMAS	Indomobil Sukses Internasional Tbk.	13993644434929	12668683226177	25633342258679	0.051688976
46	INDS	Indospring Tbk.	1495578398893	1560999122161	2477272502538	-0.026408368
47	LPIN	Multi Prima Sejahtera Tbk.	290784966690	179185358910	477838306256	0.233550986
48	PRAS	Prima Alloy Stell Universal Tbk.	909449856204	876767511874	1596466547662	0.020471675
49	SMSM	Selamat Sempurna Tbk.	800353000000	851550000000	2254740000000	-0.022706387
<b>SUB SEKTOR TEKSTIL DAN GARMEN</b>						
50	MYTX	Asia Pasific Investama Tbk.	1259448000000	1450692000000	1619757000000	-0.118069562
51	RICY	Ricy Putra Globalindo Tbk.	344747101527	346716295288	1288683925066	-0.001528066
52	SSTM	Sunson Textile Manufacture Tbk.	319257825777	344564630339	670963993715	-0.037717083
53	STAR	Star Petrochem Tbk.	303952217458	316323612813	690187353961	-0.017924691
54	TRIS	Trisula Internasional Tbk.	177123059753	147364648688	639701164511	0.046519239
55	UNIT	Nusantara Inti Corpora Tbk.	313203736860	333251959720	432913180372	-0.046310031
<b>SUB SEKTOR ALAS KAKI</b>						
56	BIMA	Primarindo Asia Infrastruture Tbk.	12741118395	16156543877	92041274561	-0.037107542
<b>SUB SEKTOR KABEL</b>						
57	KBLI	KMI Wire and Cable Tbk	647969231227	590237167370	1871422416044	0.030849296
58	KBLM	Kabelindo Murni Tbk.	244353212929	292107971435	639091366917	-0.074722897
59	SCCO	Supreme Cable Manufacturing and Commerce Tbk	430746645965	392226892012	2449935491586	0.015722763
<b>SEKTOR INDUSTRI BARANG KONSUMSI</b>						
<b>SUB SEKTOR MAKANAN DAN MINUMAN</b>						
60	AISA	Tiga Pilar Sejahtera Food Tbk.	3305375000000	4597345000000	9254539000000	-0.139603928
61	ICBP	Indofood CBP Sukses Makmur Tbk	13330586000000	12599124000000	28901948000000	0.025308398
62	INDF	Indofood Sukses Makmur Tbk	53189072000000	49014781000000	82174515000000	0.050797878
63	MLBI	Multi Bintang Indonesia Tbk	1373780000000	1390898000000	2275038000000	-0.00752427
64	MYOR	Mayora Indah Tbk	4182639109001	3888368657134	12922421859142	0.022772082
65	PSDN	Prashida Aneka Niaga Tbk	304340905448	333560579017	653796725408	-0.044692291

66	ROTI	Nippon Indosari Corporindo Tbk	1970226520661	1893332990937	2919640858718	0.02633664
67	SKBM	Sekar Bumi Tbk	482387255105	429564172599	1001657012004	0.052735699
68	SKLT	Sekar Laut Tbk	345553067349	187351832938	568239939951	0.278405693
69	STTP	Siantar Top Tbk	1415277533513	1259876737888	2336411494941	0.066512597
70	ULTJ	Ultrajaya Milk Industry and Trading Company Tbk	1364377767352	1436430855621	4239199641365	-0.016996861
<b>SUB SEKTOR ROKOK</b>						
71	GGRM	Gudang Garam Tbk	21018461000000	20936982000000	62951634000000	0.001294311
72	HMSP	Hanjaya Mandala Sampoerna Tbk	8860781000000	8203394000000	42508277000000	0.015464918
73	RMBA	Bantoel Internasional Investama Tbk	4762520000000	5073295000000	13470943000000	-0.023070026
74	WIIM	Wismilak Inti Makmur Tbk	356709060635	353886039996	1354634132275	0.002083973
<b>SUB SEKTOR FARMASI</b>						
75	DVLA	Darya Varia Laboratiria	462398464000	332448203000	1531365558000	0.084859073
76	INAF	Indofarma (Persero) Tbk	528126857320	465551175363	1381633321120	0.045291092
77	KAEF	Kimia Farma (Persero) Tbk	1705825082776	1333957519415	4612562541064	0.080620601
78	KLBF	Kalbe Farma Tbk	5653479442760	4950951822737	15226009210657	0.046139971
79	MERK	Merck Indonesia Tbk	235319517000	157966847000	743934894000	0.103977741
80	PYFA	Prydam Farma Tbk	83956352140	87205539855	167062795608	-0.019448901
81	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk	1193489000000	1088672000000	2987614000000	0.03508385
82	TSPC	Tempo Scan Pasific Tbk	2200723433147	1979806954851	6585807349438	0.033544327
<b>SUB SEKTOR BARANG RUMAH TANGGA</b>						
83	CINT	Chitose Internasional Tbk	204327188871	177908621968	399336626636	0.066156133
84	KICI	Kedaung Indah Can Tbk	60392394879	60407122024	139809135385	-0.000105338
85	LMPI	Langgeng Makmur Industri Tbk	261791087533	263817382278	810364824722	-0.002500472
<b>SUB SEKTOR KOSMETIK DAN KEPERLUAN RUMAH TANGGA</b>						
86	ADES	Akasha Wira International Tbk	447865000000	376901000000	767479000000	0.092463768
87	KINO	Kino Indonesia Tbk	1408346875231	1121337831987	3284504424358	0.087382754
88	MBTO	Martina Berto Tbk	237197154055	181595314508	709959168088	0.078316954
89	MRAT	Mustika Ratu Tbk	110305672387	116101869515	483037173864	-0.011999485

90	TCID	Mandom Indonesia Tbk	1010618633614	969424309287	2185101038101	0.018852366
91	UNVR	Unilever Indonesia Tbk	10157586000000	9106831000000	16745695000000	0.062747769

### Lampiran 5: Investment Opportunity Set 2017

NO	KODE PERUSAHAAN	NAMA PERUSAHAAN	Capital Expenditure to Book Value Asset			
			Nilai Buku Aset Tetap	Nilai Buku Aset Tetap sebelum	Total Aset	CAPBVA
<b>SEKTOR INDUSTRI DASAR DAN KIMIA</b>						
<b>SUB SEKTOR SEMEN</b>						
1	INTP	Indocement Tunggal Prakarsa Tbk.	15980602000000	15725958000000	28863676000000	0.0088223
2	SMBR	Semen Baturaja (Persero) Tbk.	3936734798000	3530644962000	5060337247000	0.08024956
3	SMCB	Solusi Bangun Indonesia Tbk.	16699392000000	17296183000000	19626403000000	-0.030407559
4	WSBP	Waskita Beton Precast Tbk.	3344604014815	2437866634747	14919548673755	0.060775121
5	WTON	Wijaya Karya Beton Tbk.	2716598920644	2223141399235	7067976095043	0.069815958
<b>SUB SEKTOR KERAMIK PORSELIN DAN KACA</b>						
6	ARNA	Arwana Citra Mulia Tbk.	861156037327	900324253233	1601346561573	-0.02445955
7	IKAI	Inti Keramik Alam Asri Industri Tbk.	221747413000	226543480000	229825182000	-0.020868327
8	KIAS	Keramika Indonesia Asosiasi Tbk.	1240147080324	1340008954586	1767603505607	-0.05649563
9	MLIA	Mulia Industrindo Tbk.	3925670858000	6133633947000	5186685608000	-0.42569827
10	TOTO	Surya Toto Indonesia Tbk.	1509859181493	1291232504876	2826490815501	0.077349155
<b>SUB SEKTOR LOGAM DAN SEJENISNYA</b>						
11	ALKA	Alaska Industrindo Tbk.	28051309000	78294925000	305208703000	-0.164620522
12	ALMI	Alumindo Light Metal Industri Tbk.	675000320828	728319096350	2376281796928	-0.022437901
13	BAJA	Sarana Sentral Bajatama Tbk.	219208835509	232796632284	946448936464	-0.014356608
14	BTON	Beton Jaya Manunggal Tbk.	45340250473	48489152832	183501650442	-0.017160076
15	GDST	Gunawan Dianjaya Steel Tbk.	834935476025	789972211663	1286954720465	0.034937721
16	INAI	Indal Aluminium Industry Tbk.	353167285545	364749963114	1213916545160	-0.009541576
17	ISSP	Steel Pipe Industry of Indonesia Tbk.	2837662000000	2763833000000	6269365000000	0.011776153
18	LION	Lion Metal Works Tbk.	178781614063	142999141978	681937947736	0.052471742
19	LMSH	Lionmesh Prima Tbk.	71593403315	64553460204	161163426840	0.043682014



<b>SUB SEKTOR KIMIA</b>						
20	AGII	Aneka Gas Industri Tbk.	4876579000000	4367894000000	6403543000000	0.079438055
21	DPNS	Duta Pertiwi Nusantara Tbk.	127292399753	121222188330	308491173960	0.019677099
22	BUDI	Budi Start and Sweteners Tbk.	1911967000000	1839447000000	2939486000000	0.02467098
23	EKAD	Ekadharna Internasional Tbk.	383150558716	364864547072	796767646172	0.022950244
24	ETWA	Eterindo Wahanatama Tbk.	1074301617625	1076162771698	1114568571897	-0.001669843
25	INCI	Intan Wijaya Internasional Tbk.	158247751549	150608013782	304788390330	0.025065711
26	SRSN	Indo Acidatama Tbk.	230194328000	235607137000	652726454000	-0.008292615
<b>SUB SEKTOR PLASTIK DAN KEMASAN</b>						
27	AKPI	Argha Karya Prima Industri Tbk.	1742295405000	1745763049000	2745325833000	-0.001263108
28	BRNA	Berlina Tbk.	1246119552000	1311380454000	1964877082000	-0.033213733
29	IGAR	Champion Pasific Indonesia Tbk.	116769698821	77960937688	513022591574	0.075647275
30	IMPC	Impack Pratama Industri Tbk.	1094008896045	1014079865988	2294677493483	0.034832359
31	TRST	Trias Sentosa Tbk.	2143178911104	2110596332518	3332905936010	0.009776027
32	YPAS	Yana Prima Hasta Persada Tbk.	154684926196	162149057175	303542864533	-0.024590039
<b>SUB SEKTOR PAKAN TERNAK</b>						
33	CPIN	Charoen Pokphand Indonesia Tbk.	12801863000000	12387349000000	24522293000000	0.016903558
34	JPFA	Japfa Comfeed Indonesia Tbk.	9899545000000	8495523000000	21088870000000	0.066576445
35	MAIN	Malindo Feedmill Tbk.	2377202703000	2155113280000	4072245477000	0.054537337
36	SIPD	Sierad Produce Tbk.	1071029000000	1069054000000	2239699000000	0.000881815
<b>SUB SEKTOR KAYU DAN PENGOLAHANNYA</b>						
37	TIRT	Tirta Mahakam Resources Tbk.	269385163782	257395387059	859299056455	0.013952973
<b>SUB SEKTOR PULP DAN KERTAS</b>						
38	FASW	Fajar Surya Wisesa Tbk.	6585884935522	6416188282398	9369891776775	0.018110845
39	KBRI	Kertas Basuki Rahmat Indonesia Tbk.	1063968218322	1103454600525	1171234610856	-0.033713469
40	KDSI	Kedawung Setia Industrial Tbk.	487111149583	432689136851	1328291727616	0.040971431
<b>SEKTOR ANEKA INDUSTRI</b>						
<b>SUB SEKTOR MESIN DAN ALAT BERAT</b>						
41	AMIN	Ateliers Mecaniques D'Indonesia Tbk.	54351305271	57297211385	252452307121	-0.011669159
<b>SUB SEKTOR OTOMOTIF DAN KOMPONEN</b>						
42	ASII	Astra Internasional Tbk.	17435300000000	15145200000000	29564600000000	0.077460882
43	BOLT	Garuda Metalindo Tbk.	648545792303	633443538315	1188798795362	0.012703793
44	GJTL	Gajah Tunggal Tbk.	11022798000000	11180627000000	18191176000000	-0.00867613
45	IMAS	Indomobil Sukses Internasional Tbk.	18168082730283	13960057998409	31375311299854	0.134118979

46	INDS	Indospring Tbk.	1390439352214	1495578398893	2434617337849	-0.04318504
47	LPIN	Multi Prima Sejahtera Tbk.	134645700908	290784966690	268116498330	-0.582356053
48	PRAS	Prima Alloy Stell Universal Tbk.	920012749914	909449859604	1542243721302	0.006849041
49	SMSM	Selamat Sempurna Tbk.	873271000000	800353000000	2443341000000	0.029843563
<b>SUB SEKTOR TEKSTIL DAN GARMEN</b>						
50	MYTX	Asia Pasific Investama Tbk.	2694309000000	1259448000000	3458737000000	0.414851144
51	RICY	Ricy Putra Globalindo Tbk.	336623794002	344747101527	1374444788282	-0.005910247
52	SSTM	Sunson Textile Manufacture Tbk.	294095442959	319257825778	605643301307	-0.041546539
53	STAR	Star Petrochem Tbk.	293420665072	303952217458	614705038056	-0.017132692
54	TRIS	Trisula Internasional Tbk.	188121826562	177123059753	544968319987	0.020182397
55	UNIT	Nusantara Inti Corpora Tbk.	293561668218	313209736860	426384622878	-0.046080622
<b>SUB SEKTOR ALAS KAKI</b>						
56	BIMA	Primarindo Asia Infrastruture Tbk.	16942171456	12741118395	89327328853	0.047029874
<b>SUB SEKTOR KABEL</b>						
57	KBLI	KMI Wire and Cable Tbk	1170660360177	647969231227	3013760616985	0.173434853
58	KBLM	Kabelindo Murni Tbk.	686358745338	244353212929	1235198847468	0.3578416
59	SCCO	Supreme Cable Manufacturing and Commerce Tbk	1843231830773	430746645965	4014244589706	0.351868242
<b>SEKTOR INDUSTRI BARANG KONSUMSI</b>						
<b>SUB SEKTOR MAKANAN DAN MINUMAN</b>						
60	AISA	Tiga Pilar Sejahtera Food Tbk.	1100848000000	3305375000000	1981940000000	-1.112307638
61	ICBP	Indofood CBP Sukses Makmur Tbk	15040183000000	13330586000000	31619514000000	0.054067782
62	INDF	Indofood Sukses Makmur Tbk	55424089000000	53189072000000	87939488000000	0.025415397
63	MLBI	Multi Bintang Indonesia Tbk	1433233000000	1373780000000	2510078000000	0.023685718
64	MYOR	Mayora Indah Tbk	4241650228938	4126639109001	14915849800251	0.007710665
65	PSDN	Prashida Aneka Niaga Tbk	303938037558	304340905448	690979867049	-0.000583039
66	ROTI	Nippon Indosari Corporindo Tbk	2239636270392	1970226520661	4559573709411	0.059086609
67	SKBM	Sekar Bumi Tbk	786387877813	482387255105	1623027475045	0.187304668
68	SKLT	Sekar Laut Tbk	369154730541	345553067349	636284210210	0.037092958
69	STTP	Siantar Top Tbk	1394446392829	1416712989013	2342432443196	-0.009505758
70	ULTJ	Ultrajaya Milk Industry and Traading Company Tbk	1746950000000	1364378000000	5186940000000	0.073756781
<b>SUB SEKTOR ROKOK</b>						

71	GGRM	Gudang Garam Tbk	2299544000000	2101846100000	6675993000000	0.029613258
72	HMSP	Hanjaya Mandala Sampoerna Tbk	8960710000000	8860781000000	43141063000000	0.002316331
73	RMBA	Bantoel Internasional Investama Tbk	5078537000000	4762520000000	14083598000000	0.022438655
74	WIIM	Wismilak Inti Makmur Tbk	364539786808	356709060635	1225712093041	0.006388716
<b>SUB SEKTOR FARMASI</b>						
75	DVLA	Darya Varia Laboratoria	465230546000	462398464000	1640886147000	0.001725947
76	INAF	Indofarma (Persero) Tbk	598892560170	528126857320	1529874782290	0.046255879
77	KAEF	Kimia Farma (Persero) Tbk	2434058756549	1705825082776	6096148972533	0.119457985
78	KLBF	Kalbe Farma Tbk	6572288915757	5653479442760	16616239416335	0.055295874
79	MERK	Merck Indonesia Tbk	277117032000	235319517000	847006544000	0.049347334
80	PYFA	Prydam Farma Tbk	81199618735	83956352140	159563931041	-0.01727667
81	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk	1529297000000	1193489000000	3158198000000	0.106328989
82	TSPC	Tempo Scan Pasific Tbk	2385536444634	2200723433147	7434900309021	0.024857497
<b>SUB SEKTOR BARANG RUMAH TANGGA</b>						
83	CINT	Chitose Internasional Tbk	265992975044	205292914147	476577841605	0.127366519
84	KICI	Kedaung Indah Can Tbk	59074367294	60392394879	149420009884	-0.008820958
85	LMPI	Langgeng Makmur Industri Tbk	262308155924	261791087533	8345483746286	6.19579E-05
<b>SUB SEKTOR KOSMETIK DAN KEPERLUAN RUMAH TANGGA</b>						
86	ADES	Akasha Wira International Tbk	545992000000	447865000000	840236000000	0.116785046
87	KINO	Kino Indonesia Tbk	1442190239420	1408346875231	3237595219274	0.010453241
88	MBTO	Martina Berto Tbk	260285678445	237197154055	780669761787	0.029575277
89	MRAT	Mustika Ratu Tbk	113091512551	110305672387	497354419089	0.005601318
90	TCID	Mandom Indonesia Tbk	1085328597888	1010618633614	2361807189430	0.031632542
91	UNVR	Unilever Indonesia Tbk	10964778000000	10157586000000	18906413000000	0.042694085

Lampiran 5: Investment Opportunity Set 2018

NO	KODE PERUSAHAAN	NAMA PERUSAHAAN	Capital Expenditure to Book Value Asset			
			Nilai Buku Aset Tetap	Nilai Buku Aset Tetap t sebelum	Total Aset	CAPBVA
<b>SEKTOR INDUSTRI DASAR DAN KIMIA</b>						
<b>SUB SEKTOR SEMEN</b>						
1	INTP	Indocement Tunggul Prakarsa Tbk.	15472766000000	15980602000000	27788562000000	-0.018275001
2	SMBR	Semen Baturaja (Persero) Tbk.	4179749638000	3936734798000	5538079503000	0.043880706
3	SMCB	Solusi Bangun Indonesia Tbk.	16069515000000	16706805000000	18667187000000	-0.034139584
4	WSBP	Waskita Beton Precast Tbk.	4986256433811	3344604014815	15222388589814	0.107844601
5	WTON	Wijaya Karya Beton Tbk.	3011063902635	2716598920644	8881778299672	0.033153832
<b>SUB SEKTOR KERAMIK PORSELIN DAN KACA</b>						
6	ARNA	Arwana Citra Mulia Tbk.	825318001618	861156037237	1652905985730	-0.021681835
7	IKAI	Inti Keramik Alam Asri Industri Tbk.	1244805083000	211167866000	1337016109000	0.773092568
8	KIAS	Keramika Indonesia Asosiasi Tbk.	1143968238500	1240147080324	1704424579208	-0.056428922
9	MLIA	Mulia Industrindo Tbk.	4111800727000	3925670858000	5263726099000	0.035360858
10	TOTO	Surya Toto Indonesia Tbk.	1558071752917	1509859181493	2897119790044	0.016641553
<b>SUB SEKTOR LOGAM DAN SEJENISNYA</b>						
11	ALKA	Alaska Industrindo Tbk.	26109008000	28051309000	648968295000	-0.002992906
12	ALMI	Alumindo Light Metal Industri Tbk.	665672268860	657000320828	2781666374017	0.003117537
13	BAJA	Sarana Sentral Bajatama Tbk.	209012588320	219208835509	901181796270	-0.011314307
14	BTON	Beton Jaya Manunggal Tbk.	41288766323	45340250473	217362960011	-0.018639257
15	GDST	Gunawan Dianjaya Steel Tbk.	1054202758662	860626423454	1351861756994	0.143192404
16	INAI	Indal Aluminium Industry Tbk.	347308467029	353167285545	1400683598096	-0.004182828
17	ISSP	Steel Pipe Industry of Indonesia Tbk.	2853530000000	2837662000000	6494070000000	0.00244346
18	LION	Lion Metal Works Tbk.	180005988973	178781614063	696192628101	0.001758673
19	LMSH	Lionmesh Prima Tbk.	68439016189	71593403315	160027280153	-0.019711559
<b>SUB SEKTOR KIMIA</b>						
20	AGII	Aneka Gas Industri Tbk.	5061812000000	4876579000000	6647755000000	0.027863993

21	DPNS	Duta Pertiwi Nusantara Tbk.	129888014080	127292399753	322185012261	0.008056285
22	BUDI	Budi Start and Sweteners Tbk.	1920840000000	1911967000000	3392980000000	0.002615105
23	EKAD	Ekadharna Internasional Tbk.	391794832685	383150558716	853267454400	0.010130791
24	ETWA	Eterindo Wahanatama Tbk.	1072197865431	1074301617625	1090658578996	-0.001928882
25	INCI	Intan Wijaya Internasional Tbk.	199869714986	158247751549	391362697956	0.106351381
26	SRSN	Indo Acidatama Tbk.	238529951000	230194328000	686777211000	0.012137303
<b>SUB SEKTOR PLASTIK DAN KEMASAN</b>						
27	AKPI	Argha Karya Prima Industri Tbk.	1836692402000	1742295405000	3070410492000	0.030744097
28	BRNA	Berlina Tbk.	1649527795000	1246119552000	2461326183000	0.163898733
29	IGAR	Champion Pasific Indonesia Tbk.	154006340468	116769698821	570197810698	0.065304778
30	IMPC	Impack Pratama Industri Tbk.	1150061263789	1094008896045	2370198817803	0.023648804
31	TRST	Trias Sentosa Tbk.	2790751028108	2143178911104	4284901587126	0.151128819
32	YPAS	Yana Prima Hasta Persada Tbk.	141284367814	154684926196	330955269476	-0.040490542
<b>SUB SEKTOR PAKAN TERNAK</b>						
33	CPIN	Charoen Pokphand Indonesia Tbk.	13547159000000	12801863000000	27645118000000	0.026959407
34	JPFA	Japfa Comfeed Indonesia Tbk.	10622219000000	8770223000000	23038028000000	0.080388651
35	MAIN	Malindo Feedmill Tbk.	2453332271000	2392823732000	4335844455000	0.013955422
36	SIPD	Sierad Produce Tbk.	1033676000000	1071029000000	2187879000000	-0.017072699
<b>SUB SEKTOR KAYU DAN PENGOLAHANNYA</b>						
37	TIRT	Tirta Mahakam Resources Tbk.	275031024800	269385163782	923366433799	0.006114432
<b>SUB SEKTOR PULP DAN KERTAS</b>						
38	FASW	Fajar Surya Wisesa Tbk.	7434899825106	6585884935522	10965118708784	0.0774287
39	KBRI	Kertas Basuki Rahmat Indonesia Tbk.	1023576985303	1063968218322	1058927511760	-0.03814353
40	KDSI	Kedawung Setia Industrial Tbk.	567240010375	487111149633	1391416464512	0.057587978
<b>SEKTOR ANEKA INDUSTRI</b>						
<b>SUB SEKTOR MESIN DAN ALAT BERAT</b>						
41	AMIN	Ateliers Mecaniques D'Indonesia Tbk.	103240844767	54351305271	360906218575	0.135463278
<b>SUB SEKTOR OTOMOTIF DAN KOMPONEN</b>						
42	ASII	Astra Internasional Tbk.	21110200000000	17430200000000	34471100000000	0.106756094
43	BOLT	Garuda Metalindo Tbk.	678926571637	648545792303	1312376999120	0.02314943
44	GJTL	Gajah Tunggal Tbk.	11038071000000	11022798000000	19711498000000	0.000774827
45	IMAS	Indomobil Sukses Internasional Tbk.	24578947403349	18173870840794	40955996273862	0.156389226
46	INDS	Indospring Tbk.	1347673533357	1390439352214	2482337567967	-0.017228043

47	LPIN	Multi Prima Sejahtera Tbk.	164017700176	134645700908	301596448818	0.097388412
48	PRAS	Prima Alloy Stell Universal Tbk.	996087944744	891138527815	1635543012515	0.064167935
49	SMSM	Selamat Sempurna Tbk.	947721000000	873231000000	2801203000000	0.026592146
<b>SUB SEKTOR TEKSTIL DAN GARMEN</b>						
50	MYTX	Asia Pasific Investama Tbk.	2940027000000	2694309000000	3747570000000	0.065567288
51	RICY	Ricy Putra Globalindo Tbk.	328229218503	333749953858	1539602054832	-0.00358582
52	SSTM	Sunson Textile Manufacture Tbk.	268001620681	294095442959	562174180897	-0.046415903
53	STAR	Star Petrochem Tbk.	283090481639	293420665072	615956006710	-0.016770976
54	TRIS	Trisula Internasional Tbk.	193188478184	188121826562	633014281325	0.008004008
55	UNIT	Nusantara Inti Corpora Tbk.	273935717146	293561668218	419701649147	-0.046761673
<b>SUB SEKTOR ALAS KAKI</b>						
56	BIMA	Primarindo Asia Infrastruture Tbk.	17982777935	16942171456	98190640839	0.010597817
<b>SUB SEKTOR KABEL</b>						
57	KBLI	KMI Wire and Cable Tbk	1071282787641	1170660360177	3244821647076	-0.030626513
58	KBLM	Kabelindo Murni Tbk.	694005261792	686358745338	1298358478375	0.005889372
59	SCCO	Supreme Cable Manufacturing and Commerce Tbk	1854296511604	1843231830273	4165196478857	0.002656461
<b>SEKTOR INDUSTRI BARANG KONSUMSI</b>						
<b>SUB SEKTOR MAKANAN DAN MINUMAN</b>						
60	AISA	Tiga Pilar Sejahtera Food Tbk.	1027433000000	1100848000000	1816406000000	-0.040417726
61	ICBP	Indofood CBP Sukses Makmur Tbk	20245585000000	15040183000000	34367153000000	0.151464452
62	INDF	Indofood Sukses Makmur Tbk	63265178000000	55452746000000	96537796000000	0.080926148
63	MLBI	Multi Bintang Indonesia Tbk	1660540000000	1433233000000	2889501000000	0.078666524
64	MYOR	Mayora Indah Tbk	4943847698762	4241650228938	17591706426634	0.039916393
65	PSDN	Prashida Aneka Niaga Tbk	328589555744	303938037557	697657400651	0.035334705
66	ROTI	Nippon Indosari Corporindo Tbk	2517401081645	2239636270392	4393810380883	0.063217296
67	SKBM	Sekar Bumi Tbk	919955755373	786387877813	1771365972009	0.075403886
68	SKLT	Sekar Laut Tbk	390558055405	369154730541	747293725435	0.028641114
69	STTP	Siantar Top Tbk	1380382987112	1402220068201	2631189810030	-0.008299318
70	ULTJ	Ultrajaya Milk Industry and Traading Company Tbk	2762350000000	1735906000000	5555871000000	0.18474943

<b>SUB SEKTOR ROKOK</b>						
71	GGRM	Gudang Garam Tbk	2381250000000	2299544000000	6909721900000	0.011824788
72	HMSP	Hanjaya Mandala Sampoerna Tbk	8770937000000	8960710000000	4660242000000	-0.004072171
73	RMBA	Bantoel Internasional Investama Tbk	5295235000000	5078537000000	1487958900000	0.01456344
74	WIIM	Wismilak Inti Makmur Tbk	366594172814	364539786808	1255573914558	0.001636213
<b>SUB SEKTOR FARMASI</b>						
75	DVLA	Darya Varia Laboratoria	479449367000	465230546000	1682821739000	0.008449392
76	INAF	Indofarma (Persero) Tbk	574857501241	598892560170	1442350608575	-0.016663812
77	KAEF	Kimia Farma (Persero) Tbk	4090880591619	2434058756550	9460427317681	0.175131818
78	KLBF	Kalbe Farma Tbk	7497917758643	6573500766371	18146206145369	0.050942714
79	MERK	Merck Indonesia Tbk	289804030000	277117032000	1263113689000	0.010044225
80	PYFA	Prydam Farma Tbk	95670027095	81199618735	187057163854	0.077358215
81	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk	1789962000000	1529297000000	3337628000000	0.078098877
82	TSPC	Tempo Scan Pasific Tbk	2739312791477	2385536444634	7869975060326	0.044952664
<b>SUB SEKTOR BARANG RUMAH TANGGA</b>						
83	CINT	Chitose Internasional Tbk	271804189796	265992975044	491382035136	0.011826266
84	KICI	Kedaung Indah Can Tbk	56867615214	59074367294	154088747766	-0.014321306
85	LMPI	Langgeng Makmur Industri Tbk	261030683053	262308155924	786704752983	-0.001623828
<b>SUB SEKTOR KOSMETIK DAN KEPERLUAN RUMAH TANGGA</b>						
86	ADES	Akasha Wira International Tbk	517137000000	545992000000	881275000000	-0.032742334
87	KINO	Kino Indonesia Tbk	1616184956104	1442190239420	3592164205408	0.048437295
88	MBTO	Martina Berto Tbk	255659039408	260285678445	648016880325	-0.007139689
89	MRAT	Mustika Ratu Tbk	129556932688	113091512551	511887783867	0.032166074
90	TCID	Mandom Indonesia Tbk	1111715200615	1085328597888	2445143511801	0.010791433
91	UNVR	Unilever Indonesia Tbk	11197941000000	10964778000000	19522970000000	0.011943009

Lampiran 6: Ukuran Perusahaan 2016

NO	KODE PERUSAHAAN	NAMA PERUSAHAAN	Total Aset	Ln (Logaritma Natural)
<b>SEKTOR INDUSTRI DASAR DAN KIMIA</b>				
<b>SUB SEKTOR SEMEN</b>				
1	INTP	Indocement Tunggal Prakarsa Tbk.	3015058000000	31.03722528
2	SMBR	Semen Baturaja (Persero) Tbk.	3268667933000	28.81540366
3	SMCB	Solusi Bangun Indonesia Tbk.	19763133000000	30.61483935
4	WSBP	Waskita Beton Precast Tbk.	13734267485212	30.2509151
5	WTON	Wijaya Karya Beton Tbk.	4662319785318	29.17053425
<b>SUB SEKTOR KERAMIK PORSELIN DAN KACA</b>				
6	ARNA	Arwana Citra Mulia Tbk.	1543216299146	28.06488986
7	IKAI	Inti Keramik Alam Asri Industri Tbk.	265028561224	26.30310344
8	KIAS	Keramika Indonesia Asosiasi Tbk.	1859670000000	28.25142017
9	MLIA	Mulia Industrindo Tbk.	7723578677000	29.67529893
10	TOTO	Surya Toto Indonesia Tbk.	2581440938262	28.57936886
<b>SUB SEKTOR LOGAM DAN SEJENISNYA</b>				
11	ALKA	Alaska Industrindo Tbk.	136618855000	25.64046081
12	ALMI	Alumindo Light Metal Industri Tbk.	2153030503531	28.3978975
13	BAJA	Sarana Sentral Bajatama Tbk.	982626956424	27.61349539
14	BTON	Beton Jaya Manunggal Tbk.	177290628918	25.90105619
15	GDST	Gunawan Dianjaya Steel Tbk.	1257609869910	27.86023411
16	INAI	Indal Aluminium Industry Tbk.	1339032413455	27.92296839
17	ISSP	Steel Pipe Industry of Indonesia Tbk.	6041811000000	29.42972492



18	LION	Lion Metal Works Tbk.	685812995987	27.25387083
19	LMSH	Lionmesh Prima Tbk.	162828169250	25.81596131
<b>SUB SEKTOR KIMIA</b>				
20	AGII	Aneka Gas Industri Tbk.	5847722000000	29.3970733
21	DPNS	Duta Pertiwi Nusantara Tbk.	296129565784	26.41406292
22	BUDI	Budi Start and Sweteners Tbk.	2931807000000	28.70664007
23	EKAD	Ekadharna Internasional Tbk.	702508630707	27.27792352
24	ETWA	Eterindo Wahanatama Tbk.	1158935571034	27.77852309
25	INCI	Intan Wijaya Internasional Tbk.	269351381344	26.31928261
26	SRSN	Indo Acidatama Tbk.	717149704000	27.29855045
<b>SUB SEKTOR PLASTIK DAN KEMASAN</b>				
27	AKPI	Argha Karya Prima Industri Tbk.	2615909190000	28.59263284
28	BRNA	Berlina Tbk.	2088696909000	28.3675615
29	IGAR	Champion Pasific Indonesia Tbk.	439465673296	26.80882545
30	IMPC	Impack Pratama Industri Tbk.	2276031922082	28.45345466
31	TRST	Trias Sentosa Tbk.	3290596224286	28.82208989
32	YPAS	Yana Prima Hasta Persada Tbk.	280257664992	26.35897525
<b>SUB SEKTOR PAKAN TERNAK</b>				
33	CPIN	Charoen Pokphand Indonesia Tbk.	24204994000000	30.81758009
34	JPFA	Japfa Comfeed Indonesia Tbk.	19251026000000	30.58858547
35	MAIN	Malindo Feedmill Tbk.	3919764494000	28.99705269
36	SIPD	Sierad Produce Tbk.	2567211193259	28.57384129
<b>SUB SEKTOR KAYU DAN PENGOLAHANNYA</b>				
37	TIRT	Tirta Mahakam Resources Tbk.	815997477795	27.4276771
<b>SUB SEKTOR PULP DAN KERTAS</b>				
38	FASW	Fajar Surya Wisesa Tbk.	8583223835997	29.7808307
39	KBRI	Kertas Basuki Rahmat Indonesia Tbk.	1263726833318	27.86508628
40	KDSI	Kedawung Setia Industrial Tbk.	1142273020550	27.76404127

<b>SEKTOR ANEKA INDUSTRI</b>				
<b>SUB SEKTOR MESIN DAN ALAT BERAT</b>				
41	AMIN	Ateliers Mecaniques D'Indonesia Tbk.	198974581573	26.01644292
<b>SUB SEKTOR OTOMOTIF DAN KOMPONEN</b>				
42	ASII	Astra Internasional Tbk.	26185500000000	33.19881203
43	BOLT	Garuda Metalindo Tbk.	938141687362	27.56716683
44	GJTL	Gajah Tunggal Tbk.	18697779000000	30.55942586
45	IMAS	Indomobil Sukses Internasional Tbk.	25633342258679	30.87491505
46	INDS	Indospring Tbk.	2477272502538	28.53817927
47	LPIN	Multi Prima Sejahtera Tbk.	477838306256	26.89253824
48	PRAS	Prima Alloy Stell Universal Tbk.	1596466547662	28.0988139
49	SMSM	Selamat Sempurna Tbk.	2254740000000	28.44405578
<b>SUB SEKTOR TEKSTIL DAN GARMEN</b>				
50	MYTX	Asia Pasific Investama Tbk.	1619757000000	28.11329725
51	RICY	Ricy Putra Globalindo Tbk.	1288683925066	27.8846426
52	SSTM	Sunson Textile Manufacture Tbk.	670963993715	27.23198131
53	STAR	Star Petrochem Tbk.	690187353961	27.26022893
54	TRIS	Trisula Internasional Tbk.	639701164511	27.18426697
55	UNIT	Nusantara Inti Corpora Tbk.	432913180372	26.79380304
<b>SUB SEKTOR ALAS KAKI</b>				
56	BIMA	Primarindo Asia Infrastrutture Tbk.	92041274561	25.24550295
<b>SUB SEKTOR KABEL</b>				
57	KBLI	KMI Wire and Cable Tbk	1871422416044	28.25771991
58	KBLM	Kabelindo Murni Tbk.	639091366917	27.18331327
59	SCCO	Supreme Cable Manufacturing and Commerce Tbk	2449935491586	28.52708281
<b>SEKTOR INDUSTRI BARANG KONSUMSI</b>				
<b>SUB SEKTOR MAKANAN DAN MINUMAN</b>				
60	AISA	Tiga Pilar Sejahtera Food Tbk.	9254539000000	29.85613525
61	ICBP	Indofood CBP Sukses Makmur Tbk	28901948000000	30.99493011
62	INDF	Indofood Sukses Makmur Tbk	82174515000000	32.03986633
63	MLBI	Multi Bintang Indonesia Tbk	2275038000000	28.45301787
64	MYOR	Mayora Indah Tbk	12922421859142	30.18998505
65	PSDN	Prashida Aneka Niaga Tbk	653796725408	27.20606232

66	ROTI	Nippon Indosari Corporindo Tbk	2919640858718	28.70248173
67	SKBM	Sekar Bumi Tbk	1001657012004	27.63267676
68	SKLT	Sekar Laut Tbk	568239939951	27.0658096
69	STTP	Siantar Top Tbk	2336411494941	28.47963732
70	ULTJ	Ultrajaya Milk Industry and Traading Company Tbk	4239199641365	29.0753956
<b>SUB SEKTOR ROKOK</b>				
71	GGRM	Gudang Garam Tbk	6295163400000	31.77338783
72	HMSP	Hanjaya Mandala Sampoerna Tbk	4250827700000	31.38071993
73	RMBA	Bantoel Internasional Investama Tbk	1347094300000	30.23155611
74	WIIM	Wismilak Inti Makmur Tbk	1354634132275	27.93455252
<b>SUB SEKTOR FARMASI</b>				
75	DVLA	Darya Varia Laboratoria	1531365558000	28.05718097
76	INAF	Indofarma (Persero) Tbk	1381633321120	27.95428748
77	KAEF	Kimia Farma (Persero) Tbk	4612562541064	29.15980468
78	KLBF	Kalbe Farma Tbk	15226009210657	30.35402621
79	MERK	Merck Indonesia Tbk	743934894000	27.33521936
80	PYFA	Prydam Farma Tbk	167062795608	25.8416356
81	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk	2987614000000	28.72549619
82	TSPC	Tempo Scan Pasific Tbk	6585807349438	29.51593805
<b>SUB SEKTOR BARANG RUMAH TANGGA</b>				
83	CINT	Chitose Internasional Tbk	399336626636	26.71307057
84	KICI	Kedaung Indah Can Tbk	139809135385	25.66354401
85	LMPI	Langgeng Makmur Industri Tbk	810364824722	27.42075038
<b>SUB SEKTOR KOSMETIK DAN KEPERLUAN RUMAH TANGGA</b>				
86	ADES	Akasha Wira International Tbk	767479000000	27.36637695
87	KINO	Kino Indonesia Tbk	3284504424358	28.8202369
88	MBTO	Martina Berto Tbk	709959168088	27.2884733
89	MRAT	Mustika Ratu Tbk	483037173864	26.90335945
90	TCID	Mandom Indonesia Tbk	2185101038101	28.41268319
91	UNVR	Unilever Indonesia Tbk	1674569500000	30.44916233

Lampiran 6: Ukuran Perusahaan 2017

NO	KODE PERUSAHAAN	NAMA PERUSAHAAN	Total Aset	Ln (Logaritma Natural)
<b>SEKTOR INDUSTRI DASAR DAN KIMIA</b>				
<b>SUB SEKTOR SEMEN</b>				
1	INTP	Indocement Tunggal Prakarsa Tbk.	28863676000000	30.99360503
2	SMBR	Semen Baturaja (Persero) Tbk.	5060337247000	29.25245425
3	SMCB	Solusi Bangun Indonesia Tbk.	19626403000000	30.60789687
4	WSBP	Waskita Beton Precast Tbk.	14919548673755	30.33369346
5	WTON	Wijaya Karya Beton Tbk.	7067976095043	29.58659529
<b>SUB SEKTOR KERAMIK PORSELIN DAN KACA</b>				
6	ARNA	Arwana Citra Mulia Tbk.	1601346561573	28.10186599
7	IKAI	Inti Keramik Alam Asri Industri Tbk.	229825182000	26.16058478
8	KIAS	Keramika Indonesia Asosiasi Tbk.	1767603505607	28.20064579
9	MLIA	Mulia Industrindo Tbk.	5186685608000	29.277116
10	TOTO	Surya Toto Indonesia Tbk.	2826490815501	28.67005706
<b>SUB SEKTOR LOGAM DAN SEJENISNYA</b>				
11	ALKA	Alaska Industrindo Tbk.	305208703000	26.44426165
12	ALMI	Alumindo Light Metal Industri Tbk.	2376281796928	28.49655811
13	BAJA	Sarana Sentral Bajatama Tbk.	946448936464	27.57598286
14	BTON	Beton Jaya Manunggal Tbk.	183501650442	25.9354895
15	GDST	Gunawan Dianjaya Steel Tbk.	1286954720465	27.88329986
16	INAI	Indal Aluminium Industry Tbk.	1213916545160	27.82487306
17	ISSP	Steel Pipe Industry of Indonesia Tbk.	6269365000000	29.46669619

18	LION	Lion Metal Works Tbk.	681937947736	27.2482045
19	LMSH	Lionmesh Prima Tbk.	161163426840	25.80568476
<b>SUB SEKTOR KIMIA</b>				
20	AGII	Aneka Gas Industri Tbk.	6403543000000	29.48787255
21	DPNS	Duta Pertiwi Nusantara Tbk.	308491173960	26.45495907
22	BUDI	Budi Start and Sweteners Tbk.	2939486000000	28.70925585
23	EKAD	Ekadharna Internasional Tbk.	796767646172	27.40382894
24	ETWA	Eterindo Wahanatama Tbk.	1114568571897	27.73948851
25	INCI	Intan Wijaya Internasional Tbk.	304788390330	26.44288357
26	SRSN	Indo Acidatama Tbk.	652726454000	27.20442397
<b>SUB SEKTOR PLASTIK DAN KEMASAN</b>				
27	AKPI	Argha Karya Prima Industri Tbk.	2745325833000	28.64092088
28	BRNA	Berlina Tbk.	1964877082000	28.30645081
29	IGAR	Champion Pasific Indonesia Tbk.	513022591574	26.96358572
30	IMPC	Impack Pratama Industri Tbk.	2294677493483	28.46161342
31	TRST	Trias Sentosa Tbk.	3332905936010	28.83486569
32	YPAS	Yana Prima Hasta Persada Tbk.	303542864533	26.43878867
<b>SUB SEKTOR PAKAN TERNAK</b>				
33	CPIN	Charoen Pokphand Indonesia Tbk.	24522293000000	30.83060374
34	JPFA	Japfa Comfeed Indonesia Tbk.	21088870000000	30.67976653
35	MAIN	Malindo Feedmill Tbk.	4072245477000	29.03521568
36	SIPD	Sierad Produce Tbk.	2239699000000	28.4373626
<b>SUB SEKTOR KAYU DAN PENGOLAHANNYA</b>				
37	TIRT	Tirta Mahakam Resources Tbk.	859299056455	27.47938284
<b>SUB SEKTOR PULP DAN KERTAS</b>				
38	FASW	Fajar Surya Wisesa Tbk.	9369891776775	29.86852266
39	KBRI	Kertas Basuki Rahmat Indonesia Tbk.	1171234610856	27.78907953
40	KDSI	Kedawung Setia Industrial Tbk.	1328291727616	27.91491482
<b>SEKTOR ANEKA INDUSTRI</b>				
<b>SUB SEKTOR MESIN DAN ALAT BERAT</b>				
41	AMIN	Ateliers Mecaniques D'Indonesia Tbk.	252452307121	26.25448819

<b>SUB SEKTOR OTOMOTIF DAN KOMPONEN</b>				
42	ASII	Astra Internasional Tbk.	29564600000000	33.32018391
43	BOLT	Garuda Metalindo Tbk.	1188798795362	27.8039645
44	GJTL	Gajah Tunggal Tbk.	18191176000000	30.53195776
45	IMAS	Indomobil Sukses Internasional Tbk.	31375311299854	31.07704244
46	INDS	Indospring Tbk.	2434617337849	28.52081071
47	LPIN	Multi Prima Sejahtera Tbk.	268116498330	26.31468742
48	PRAS	Prima Alloy Stell Universal Tbk.	1542243721302	28.06425943
49	SMSM	Selamat Sempurna Tbk.	2443341000000	28.52438748
<b>SUB SEKTOR TEKSTIL DAN GARMEN</b>				
50	MYTX	Asia Pasific Investama Tbk.	3458737000000	28.87192461
51	RICY	Ricy Putra Globalindo Tbk.	1374444788282	27.94907098
52	SSTM	Sunson Textile Manufacture Tbk.	605643301307	27.12955704
53	STAR	Star Petrochem Tbk.	614705038056	27.14440838
54	TRIS	Trisula Internasional Tbk.	544968319987	27.0239935
55	UNIT	Nusantara Inti Corpora Tbk.	426384622878	26.77860765
<b>SUB SEKTOR ALAS KAKI</b>				
56	BIMA	Primarindo Asia Infrastrutire Tbk.	89327328853	25.21557331
<b>SUB SEKTOR KABEL</b>				
57	KBLI	KMI Wire and Cable Tbk	3013760616985	28.73420979
58	KBLM	Kabelindo Murni Tbk.	1235198847468	27.84225308
59	SCCO	Supreme Cable Manufacturing and Commerce Tbk	4014244589706	29.0208703
<b>SEKTOR INDUSTRI BARANG KONSUMSI</b>				
<b>SUB SEKTOR MAKANAN DAN MINUMAN</b>				
60	AISA	Tiga Pilar Sejahtera Food Tbk.	1981940000000	28.31509728
61	ICBP	Indofood CBP Sukses Makmur Tbk	31619514000000	31.08479558
62	INDF	Indofood Sukses Makmur Tbk	87939488000000	32.10767006
63	MLBI	Multi Bintang Indonesia Tbk	2510078000000	28.55133494
64	MYOR	Mayora Indah Tbk	14915849800251	30.33344551

65	PSDN	Prashida Aneka Niaga Tbk	690979867049	27.26137652
66	ROTI	Nippon Indosari Corporindo Tbk	4559573709411	29.14825025
67	SKBM	Sekar Bumi Tbk	1623027475045	28.11531433
68	SKLT	Sekar Laut Tbk	636284210210	27.17891117
69	STTP	Siantar Top Tbk	2342432443196	28.48221101
70	ULTJ	Ultrajaya Milk Industry and Traading Company Tbk	5186940000000	29.27716504
<b>SUB SEKTOR ROKOK</b>				
71	GGRM	Gudang Garam Tbk	66759930000000	31.83212417
72	HMSP	Hanjaya Mandala Sampoerna Tbk	43141063000000	31.3954964
73	RMBA	Bantoel Internasional Investama Tbk	14083598000000	30.27603197
74	WIIM	Wismilak Inti Makmur Tbk	1225712093041	27.83454309
<b>SUB SEKTOR FARMASI</b>				
75	DVLA	Darya Varia Laboratiria	1640886147000	28.12625755
76	INAF	Indofarma (Persero) Tbk	1529874782290	28.05620701
77	KAEF	Kimia Farma (Persero) Tbk	6096148972533	29.43867837
78	KLBF	Kalbe Farma Tbk	16616239416335	30.44140161
79	MERK	Merck Indonesia Tbk	847006544000	27.46497426
80	PYFA	Prydam Farma Tbk	159563931041	25.7957105
81	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk	3158198000000	28.78102273
82	TSPC	Tempo Scan Pasific Tbk	7434900309021	29.63720629
<b>SUB SEKTOR BARANG RUMAH TANGGA</b>				
83	CINT	Chitose Internasional Tbk	476577841605	26.88989691
84	KICI	Kedaung Indah Can Tbk	149420009884	25.73002704
85	LMPI	Langgeng Makmur Industri Tbk	8345483746286	29.75274164
<b>SUB SEKTOR KOSMETIK DAN KEPERLUAN RUMAH TANGGA</b>				
86	ADES	Akasha Wira International Tbk	840236000000	27.45694864
87	KINO	Kino Indonesia Tbk	3237595219274	28.80585195
88	MBTO	Martina Berto Tbk	780669761787	27.38341806
89	MRAT	Mustika Ratu Tbk	497354419089	26.93256873
90	TCID	Mandom Indonesia Tbk	2361807189430	28.4904482
91	UNVR	Unilever Indonesia Tbk	18906413000000	30.57052229

**Lampiran 6: Ukuran Perusahaan 2018**

NO	KODE PERUSAHAAN	NAMA PERUSAHAAN	Total Aset	Ln (Logaritma Natural)
<b>SEKTOR INDUSTRI DASAR DAN KIMIA</b>				
<b>SUB SEKTOR SEMEN</b>				
1	INTP	Indocement Tunggal Prakarsa Tbk.	27788562000000	30.95564561
2	SMBR	Semen Baturaja (Persero) Tbk.	5538079503000	29.3426689
3	SMCB	Solusi Bangun Indonesia Tbk.	18667187000000	30.55778839
4	WSBP	Waskita Beton Precast Tbk.	15222388589814	30.35378839
5	WTON	Wijaya Karya Beton Tbk.	8881778299672	29.81502291
<b>SUB SEKTOR KERAMIK PORSELIN DAN KACA</b>				
6	ARNA	Arwana Citra Mulia Tbk.	1652905985730	28.13355606
7	IKAI	Inti Keramik Alam Asri Industri Tbk.	1337016109000	27.92146146
8	KIAS	Keramika Indonesia Asosiasi Tbk.	1704424579208	28.16424868
9	MLIA	Mulia Industrindo Tbk.	5263726099000	29.29186028
10	TOTO	Surya Toto Indonesia Tbk.	2897119790044	28.69473818
<b>SUB SEKTOR LOGAM DAN SEJENISNYA</b>				
11	ALKA	Alaska Industrindo Tbk.	648968295000	27.1986497
12	ALMI	Alumindo Light Metal Industri Tbk.	2781666374017	28.65407128
13	BAJA	Sarana Sentral Bajatama Tbk.	901181796270	27.52697285
14	BTON	Beton Jaya Manunggal Tbk.	217362960011	26.10483442
15	GDST	Gunawan Dianjaya Steel Tbk.	1351861756994	27.93250384
16	INAI	Indal Aluminium Industry Tbk.	1400683598096	27.96798152
17	ISSP	Steel Pipe Industry of Indonesia Tbk.	6494070000000	29.50191057
18	LION	Lion Metal Works Tbk.	696192628101	27.26889222
19	LMSH	Lionmesh Prima Tbk.	160027280153	25.79861014



<b>SUB SEKTOR KIMIA</b>				
20	AGII	Aneka Gas Industri Tbk.	664775500000	29.52530032
21	DPNS	Duta Pertiwi Nusantara Tbk.	322185012261	26.49839179
22	BUDI	Budi Start and Sweteners Tbk.	339298000000	28.85272971
23	EKAD	Ekadharna Internasional Tbk.	853267454400	27.47233888
24	ETWA	Eterindo Wahanatama Tbk.	1090658578996	27.71780283
25	INCI	Intan Wijaya Internasional Tbk.	391362697956	26.69290058
26	SRSN	Indo Acidatama Tbk.	686777211000	27.25527578
<b>SUB SEKTOR PLASTIK DAN KEMASAN</b>				
27	AKPI	Argha Karya Prima Industri Tbk.	3070410492000	28.75283238
28	BRNA	Berlina Tbk.	2461326183000	28.53172142
29	IGAR	Champion Pasific Indonesia Tbk.	570197810698	27.06924917
30	IMPC	Impack Pratama Industri Tbk.	2370198817803	28.49399496
31	TRST	Trias Sentosa Tbk.	4284901587126	29.0861187
32	YPAS	Yana Prima Hasta Persada Tbk.	330955269476	26.52524907
<b>SUB SEKTOR PAKAN TERNAK</b>				
33	CPIN	Charoen Pokphand Indonesia Tbk.	2764511800000	30.95047026
34	JPFA	Japfa Comfeed Indonesia Tbk.	2303802800000	30.76816736
35	MAIN	Malindo Feedmill Tbk.	4335844455000	29.09793751
36	SIPD	Sierad Produce Tbk.	2187879000000	28.4139537
<b>SUB SEKTOR KAYU DAN PENGOLAHANNYA</b>				
37	TIRT	Tirta Mahakam Resources Tbk.	923366433799	27.551292
<b>SUB SEKTOR PULP DAN KERTAS</b>				
38	FASW	Fajar Surya Wisesa Tbk.	10965118708784	30.02574032
39	KBRI	Kertas Basuki Rahmat Indonesia Tbk.	1058927511760	27.68827773
40	KDSI	Kedawung Setia Industrial Tbk.	1391416464512	27.96134338
<b>SEKTOR ANEKA INDUSTRI</b>				
<b>SUB SEKTOR MESIN DAN ALAT BERAT</b>				
41	AMIN	Ateliers Mecaniques D'Indonesia Tbk.	360906218575	26.61188398
<b>SUB SEKTOR OTOMOTIF DAN KOMPONEN</b>				
42	ASII	Astra Internasional Tbk.	34471100000000	33.4737275
43	BOLT	Garuda Metalindo Tbk.	1312376999120	27.90286111
44	GJTL	Gajah Tunggal Tbk.	19711498000000	30.61222324

45	IMAS	Indomobil Sukses Internasional Tbk.	40955996273862	31.34351934
46	INDS	Indospring Tbk.	2482337567967	28.5402218
47	LPIN	Multi Prima Sejahtera Tbk.	301596448818	26.4323557
48	PRAS	Prima Alloy Stell Universal Tbk.	1635543012515	28.12299598
49	SMSM	Selamat Sempurna Tbk.	2801203000000	28.66107008
<b>SUB SEKTOR TEKSTIL DAN GARMEN</b>				
50	MYTX	Asia Pasific Investama Tbk.	3747570000000	28.95212875
51	RICY	Ricy Putra Globalindo Tbk.	1539602054832	28.06254509
52	SSTM	Sunson Textile Manufacture Tbk.	562174180897	27.05507757
53	STAR	Star Petrochem Tbk.	615956006710	27.14644138
54	TRIS	Trisula Internasional Tbk.	633014281325	27.17375882
55	UNIT	Nusantara Inti Corpora Tbk.	419701649147	26.76280994
<b>SUB SEKTOR ALAS KAKI</b>				
56	BIMA	Primarindo Asia Infrastrutture Tbk.	98190640839	25.31017674
<b>SUB SEKTOR KABEL</b>				
57	KBLI	KMI Wire and Cable Tbk	3244821647076	28.8080815
58	KBLM	Kabelindo Murni Tbk.	1298358478375	27.89212187
59	SCCO	Supreme Cable Manufacturing and Commerce Tbk	4165196478857	29.05778456
<b>SEKTOR INDUSTRI BARANG KONSUMSI</b>				
<b>SUB SEKTOR MAKANAN DAN MINUMAN</b>				
60	AISA	Tiga Pilar Sejahtera Food Tbk.	1816406000000	28.22788094
61	ICBP	Indofood CBP Sukses Makmur Tbk	34367153000000	31.16812237
62	INDF	Indofood Sukses Makmur Tbk	96537796000000	32.20095572
63	MLBI	Multi Bintang Indonesia Tbk	2889501000000	28.69210494
64	MYOR	Mayora Indah Tbk	17591706426634	30.49844868
65	PSDN	Prashida Aneka Niaga Tbk	697657400651	27.27099399
66	ROTI	Nippon Indosari Corporindo Tbk	4393810380883	29.11121793
67	SKBM	Sekar Bumi Tbk	1771365972009	28.2027721
68	SKLT	Sekar Laut Tbk	747293725435	27.33972415
69	STTP	Siantar Top Tbk	2631189810030	28.59845726
70	ULTJ	Ultrajaya Milk Industry and Traading Company Tbk	5555871000000	29.34587632

<b>SUB SEKTOR ROKOK</b>				
71	GGRM	Gudang Garam Tbk	69097219000000	31.8665356
72	HMSP	Hanjaya Mandala Sampoerna Tbk	46602420000000	31.47267359
73	RMBA	Bantoel Internasional Investama Tbk	14879589000000	30.33101152
74	WIIM	Wismilak Inti Makmur Tbk	1255573914558	27.85861389
<b>SUB SEKTOR FARMASI</b>				
75	DVLA	Darya Varia Laboratoria	1682821739000	28.15149311
76	INAF	Indofarma (Persero) Tbk	1442350608575	27.99729527
77	KAEF	Kimia Farma (Persero) Tbk	9460427317681	29.87813867
78	KLBF	Kalbe Farma Tbk	18146206145369	30.52948263
79	MERK	Merck Indonesia Tbk	1263113689000	27.86460097
80	PYFA	Prydam Farma Tbk	187057163854	25.9546801
81	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk	3337628000000	28.83628149
82	TSPC	Tempo Scan Pasific Tbk	7869975060326	29.69407601
<b>SUB SEKTOR BARANG RUMAH TANGGA</b>				
83	CINT	Chitose Internasional Tbk	491382035136	26.92048774
84	KICI	Kedaung Indah Can Tbk	154088747766	25.76079456
85	LMPI	Langgeng Makmur Industri Tbk	786704752983	27.39111886
<b>SUB SEKTOR KOSMETIK DAN KEPERLUAN RUMAH TANGGA</b>				
86	ADES	Akasha Wira International Tbk	881275000000	27.50463556
87	KINO	Kino Indonesia Tbk	3592164205408	28.90977598
88	MBTO	Martina Berto Tbk	648016880325	27.19718258
89	MRAT	Mustika Ratu Tbk	511887783867	26.96137127
90	TCID	Mandom Indonesia Tbk	2445143511801	28.52512493
91	UNVR	Unilever Indonesia Tbk	19522970000000	30.60261284

## Lampiran 7: Kompleksitas Operasi Perusahaan

NO	KODE PERUSAHAAN	NAMA PERUSAHAAN	Jumlah Anak Perusahaan		
			2016	2017	2018
<b>SEKTOR INDUSTRI DASAR DAN KIMIA</b>					
<b>SUB SEKTOR SEMEN</b>					
1	INTP	Indocement Tunggul Prakarsa Tbk.	17	18	18
2	SMBR	Semen Baturaja (Persero) Tbk.	1	1	1
3	SMCB	Solusi Bangun Indonesia Tbk.	10	10	9
4	WSBP	Waskita Beton Precast Tbk.	0	0	0
5	WTON	Wijaya Karya Beton Tbk.	3	3	3
<b>SUB SEKTOR KERAMIK PORSELIN DAN KACA</b>					
6	ARNA	Arwana Citra Mulia Tbk.	4	4	4
7	IKAI	Inti Keramik Alam Asri Industri Tbk.	1	1	6
8	KIAS	Keramika Indonesia Asosiasi Tbk.	2	2	2
9	MLIA	Mulia Industrindo Tbk.	2	2	1
10	TOTO	Surya Toto Indonesia Tbk.	0	0	0
<b>SUB SEKTOR LOGAM DAN SEJENISNYA</b>					
11	ALKA	Alaska Industrindo Tbk.	5	5	5
12	ALMI	Alumindo Light Metal Industri Tbk.	0	0	0
13	BAJA	Sarana Sentral Bajatama Tbk.	0	0	0
14	BTON	Beton Jaya Manunggal Tbk.	0	0	0
15	GDST	Gunawan Dianjaya Steel Tbk.	0	0	0
16	INAI	Indal Aluminium Industry Tbk.	5	5	5
17	ISSP	Steel Pipe Industry of Indonesia Tbk.	1	1	1
18	LION	Lion Metal Works Tbk.	1	1	1
19	LMSH	Lionmesh Prima Tbk.	0	0	0
<b>SUB SEKTOR KIMIA</b>					
20	AGII	Aneka Gas Industri Tbk.	3	3	3
21	DPNS	Duta Pertiwi Nusantara Tbk.	1	1	1
22	BUDI	Budi Start and Sweteners Tbk.	3	3	3
23	EKAD	Ekadharna Internasional Tbk.	3	3	3
24	ETWA	Eterindo Wahanatama Tbk.	3	3	3
25	INCI	Intan Wijaya Internasional Tbk.	1	1	1
26	SRSN	Indo Acidatama Tbk.	0	0	0
<b>SUB SEKTOR PLASTIK DAN KEMASAN</b>					
27	AKPI	Argha Karya Prima Industri Tbk.	1	1	1
28	BRNA	Berlina Tbk.	5	5	5
29	IGAR	Champion Pasific Indonesia Tbk.	2	2	2
30	IMPC	Impack Pratama Industri Tbk.	10	12	14
31	TRST	Trias Sentosa Tbk.	2	3	4
32	YPAS	Yana Prima Hasta Persada Tbk.	0	0	0
<b>SUB SEKTOR PAKAN TERNAK</b>					
33	CPIN	Charoen Pokphand Indonesia Tbk.	63	60	56

34	JPFA	Japfa Comfeed Indonesia Tbk.	25	26	29
35	MAIN	Malindo Feedmill Tbk.	5	6	6
36	SIPD	Sierad Produce Tbk.	4	4	3
<b>SUB SEKTOR KAYU DAN PENGOLAHANNYA</b>					
37	TIRT	Tirta Mahakam Resources Tbk.	0	0	0
<b>SUB SEKTOR PULP DAN KERTAS</b>					
38	FASW	Fajar Surya Wisesa Tbk.	0	1	1
39	KBRI	Kertas Basuki Rahmat Indonesia Tbk.	2	2	2
40	KDSI	Kedawung Setia Industrial Tbk.	1	1	1
<b>SEKTOR ANEKA INDUSTRI</b>					
<b>SUB SEKTOR MESIN DAN ALAT BERAT</b>					
41	AMIN	Ateliers Mecaniques D'Indonesia Tbk.	0	0	0
<b>SUB SEKTOR OTOMOTIF DAN KOMPONEN</b>					
42	ASII	Astra Internasional Tbk.	34	34	39
43	BOLT	Garuda Metalindo Tbk.	1	1	1
44	GJTL	Gajah Tunggal Tbk.	1	1	2
45	IMAS	Indomobil Sukses Internasional Tbk.	96	80	83
46	INDS	Indospring Tbk.	3	3	3
47	LPIN	Multi Prima Sejahtera Tbk.	10	10	8
48	PRAS	Prima Alloy Stell Universal Tbk.	0	0	0
49	SMSM	Selamat Sempurna Tbk.	14	14	14
<b>SUB SEKTOR TEKSTIL DAN GARMEN</b>					
50	MYTX	Asia Pasific Investama Tbk.	1	1	1
51	RICY	Ricy Putra Globalindo Tbk.	14	14	14
52	SSTM	Sunson Textile Manufacture Tbk.	0	0	0
53	STAR	Star Petrochem Tbk.	5	6	7
54	TRIS	Trisula Internasional Tbk.	8	8	8
55	UNIT	Nusantara Inti Corpora Tbk.	1	1	1
<b>SUB SEKTOR ALAS KAKI</b>					
56	BIMA	Primarindo Asia Infrastruture Tbk.	0	0	0
<b>SUB SEKTOR KABEL</b>					
57	KBLI	KMI Wire and Cable Tbk	0	1	1
58	KBLM	Kabelindo Murni Tbk.	2	1	1
59	SCCO	Supreme Cable Manufacturing and Commerce Tbk	3	3	3
<b>SEKTOR INDUSTRI BARANG KONSUMSI</b>					
<b>SUB SEKTOR MAKANAN DAN MINUMAN</b>					
60	AISA	Tiga Pilar Sejahtera Food Tbk.	24	13	7
61	ICBP	Indofood CBP Sukses Makmur Tbk	15	15	19
62	INDF	Indofood Sukses Makmur Tbk	93	95	91
63	MLBI	Multi Bintang Indonesia Tbk	1	2	2
64	MYOR	Mayora Indah Tbk	5	5	5
65	PSDN	Prashida Aneka Niaga Tbk	4	4	4
66	ROTI	Nippon Indosari Corporindo Tbk	2	2	3
67	SKBM	Sekar Bumi Tbk	9	10	10
68	SKLT	Sekar Laut Tbk	4	4	4
69	STTP	Siantar Top Tbk	22	22	22

70	ULTJ	Ultrajaya Milk Industry and Traading Company Tbk	5	7	6
<b>SUB SEKTOR ROKOK</b>					
71	GGRM	Gudang Garam Tbk	27	27	28
72	HMSP	Hanjaya Mandala Sampoerna Tbk	11	10	10
73	RMBA	Bantoel Internasional Investama Tbk	12	11	4
74	WIIM	Wismilak Inti Makmur Tbk	3	3	3
<b>SUB SEKTOR FARMASI</b>					
75	DVLA	Darya Varia Laboratiria	0	0	0
76	INAF	Indofarma (Persero) Tbk	2	2	2
77	KAEF	Kimia Farma (Persero) Tbk	7	8	9
78	KLBF	Kalbe Farma Tbk	32	34	36
79	MERK	Merck Indonesia Tbk	0	0	0
80	PYFA	Prydam Farma Tbk	0	0	0
81	SIDO	Industri Jamu dan Farmasi Sido Muncul Tbk	3	3	4
82	TSPC	Tempo Scan Pasific Tbk	29	32	31
<b>SUB SEKTOR BARANG RUMAH TANGGA</b>					
83	CINT	Chitose Internasional Tbk	8	8	10
84	KICI	Kedaung Indah Can Tbk	0	0	0
85	LMPI	Langgeng Makmur Industri Tbk	0	0	0
<b>SUB SEKTOR KOSMETIK DAN KEPERLUAN RUMAH TANGGA</b>					
86	ADES	Akasha Wira International Tbk	0	0	0
87	KINO	Kino Indonesia Tbk	7	9	12
88	MBTO	Martina Berto Tbk	2	2	2
89	MRAT	Mustika Ratu Tbk	4	4	4
90	TCID	Mandom Indonesia Tbk	0	0	0
91	UNVR	Unilever Indonesia Tbk	0	0	0

**Lampiran 8: Hasil Output SPSS**

NO	DATA ASLI					HASIL TRANSFORMASI 1 (SQRT)						
	NO. DATA	ARL	IOS	UP	KOMP	OUTLIER	RESIDUAL	SQRTARL	SQRTIOS	SQRTUP	SQRTKOMP	RESIDUAL
209	1	72	0.040512	31.03723	17		-2.68016	8.485281	0.201275	5.571106	4.12310563	0.04682
264	2	45	0.673223	28.8154	1	OUTLIER	-10.65927	6.708204	0.820502	5.367998	1	-1.64846
252	3	54	0.130717	30.61484	10	OUTLIER	-17.25574	7.348469	0.361548	5.533068	3.16227766	-1.00387
270	4	33	-0.06116	30.25092	0	OUTLIER	-44.25848	5.744563	#NUM!	5.500083	0	
268	5	41	0.047443	29.17053	3	OUTLIER	-36.76866	6.403124	0.217814	5.400975	1.73205081	-2.16817
226	6	67	-0.01379	28.06489	4		-17.1225	8.185353	#NUM!	5.297631	2	
28	7	88	-0.07615	26.3031	1		-3.90393	9.380832	#NUM!	5.128655	1	
24	8	89	-0.03791	28.25142	2		5.10951	9.433981	#NUM!	5.315207	1.41421356	
53	9	86	0.717029	29.6753	2		34.73448	9.273618	0.846776	5.447504	1.41421356	1.09514
54	10	86	0.077381	28.57937	0		7.93914	9.273618	0.278174	5.345968	0	0.82062
55	11	86	0.039887	25.64046	5		-4.90434	9.273618	0.199719	5.063641	2.23606798	-0.35939
56	12	86	-0.04177	28.3979	0		2.94187	9.273618	#NUM!	5.328968	0	
189	13	74	-0.04949	27.6135	0		-12.09573	8.602325	#NUM!	5.254854	0	
111	14	82	0.010874	25.90106	0		-7.90237	9.055385	0.10428	5.089308	0	-0.20181
145	15	80	0.016539	27.86023	0		-2.81316	8.944272	0.128605	5.278279	0	0.24453
112	16	82	0.000465	27.92297	5		-2.32913	9.055385	0.021574	5.284219	2.23606798	0.00403
11	17	118	0.038893	29.42972	1	OUTLIER	41.28824	10.86278	0.197214	5.424917	1	2.46325
190	18	74	0.017518	27.25387	1		-11.13693	8.602325	0.132356	5.220524	1	-0.41302
191	19	74	0.122195	25.81596	0		-12.128	8.602325	0.349564	5.080941	0	-0.59721
236	20	60	0.074895	29.39707	3		-15.96841	7.745967	0.27367	5.421907	1.73205081	-0.74581
153	21	79	0.107516	26.41406	1		-5.79384	8.888194	0.327896	5.139461	1	-0.29744
154	22	79	0.022464	28.70664	3		-1.31216	8.888194	0.149879	5.357858	1.73205081	0.16886
175	23	76	0.369004	27.27792	3		3.34928	8.717798	0.607457	5.222827	1.73205081	-0.24112
2	24	353	0.019217	27.77852	3	OUTLIER	269.3089	18.78829	0.138627	5.270533	1.73205081	9.81136
103	25	83	0.327938	26.31928	1		5.93857	9.110434	0.572659	5.130232	1	-0.02022
176	26	76	0.14261	27.29855	0		-4.17317	8.717798	0.377638	5.224801	0	-0.05417
126	27	81	-0.04647	28.59263	1		-1.77564	9	#NUM!	5.347208	1	
57	28	86	0.035728	28.36756	5		4.52286	9.273618	0.18902	5.326121	2.23606798	0.40003
261	29	48	0.004688	26.80883	2	OUTLIER	-39.39931	6.928203	0.06847	5.177724	1.41421356	-2.29462
104	30	83	0.103956	28.45345	10		3.17287	9.110434	0.322423	5.334178	3.16227766	0.16687
177	31	76	-0.03312	28.82209	2		-5.71095	8.717798	#NUM!	5.368621	1.41421356	
220	32	69	-0.04574	26.35898	0		-21.36536	8.306624	#NUM!	5.134099	0	
29	33	88	-0.02942	30.81758	63		-1	9.380832	#NUM!	5.551358	7.93725393	
246	34	58	0.03297	30.58859	25		-20.36915	7.615773	0.181576	5.530695	5	-1.07738
30	35	88	0.057287	28.99705	5		9.52289	9.380832	0.239348	5.384891	2.23606798	0.6949

178	36	76	-0.01268	28.57384	4		-6.29421	8.717798	#NUM!	5.345451	2	
113	37	82	0.017871	27.42768	0		-2.28387	9.055385	0.133681	5.237144	0	0.23776
257	38	52	0.132945	29.78083	0	OUTLIER	-19.80743	7.211103	0.364616	5.457182	0	-0.88972
25	39	89	-0.02918	27.86509	2		4.07171	9.433981	#NUM!	5.278739	1.41421356	
241	40	59	-0.01151	27.76404	1		-25.40697	7.681146	#NUM!	5.269159	1	
18	41	102	0.020509	26.01644	0	OUTLIER	12.8555	10.0995	0.143211	5.100632	0	0.88824
247	42	58	0.042688	33.19881	34		-12.91147	7.615773	0.20661	5.761841	5.83095189	-0.52088
265	43	45	0.012066	27.56717	1	OUTLIER	-39.23591	6.708204	0.109847	5.250444	1	-2.22769
105	44	83	0.014622	30.55943	1		9.3684	9.110434	0.120922	5.528058	1	0.98523
114	45	82	0.051689	30.87492	96		-10.98277	9.055385	0.227352	5.55652	9.79795897	-0.26215
106	46	83	-0.02641	28.53818	3		0.30785	9.110434	#NUM!	5.342114	1.73205081	
31	47	88	0.233551	26.89254	10		7.43182	9.380832	0.483271	5.185802	3.16227766	0.05972
107	48	83	0.020472	28.09881	0		1.16878	9.110434	0.143079	5.300831	0	0.48108
32	49	88	-0.02271	28.44406	14		2.58665	9.380832	#NUM!	5.333297	3.74165739	
7	50	166	-0.11807	28.1133	1	OUTLIER	78.92074	12.8841	#NUM!	5.302197	1	
146	51	80	-0.00153	27.88464	14		-6.60345	8.944272	#NUM!	5.280591	3.74165739	
58	52	86	-0.03772	27.23198	0		-1.00526	9.273618	#NUM!	5.218427	0	
26	53	89	-0.01792	27.26023	5		1.66998	9.433981	#NUM!	5.221133	2.23606798	
127	54	81	0.046519	27.18427	8		-4.92773	9	0.215683	5.213853	2.82842712	-0.27927
115	55	82	-0.04631	26.7938	1		-7.08849	9.055385	#NUM!	5.176273	1	
59	56	86	-0.03711	25.2455	0		-7.96078	9.273618	#NUM!	5.02449	0	
147	57	80	0.030849	28.25772	0		-0.89332	8.944272	0.17564	5.315799	0	0.36931
108	58	83	-0.07472	27.18331	2		-5.98955	9.110434	#NUM!	5.213762	1.41421356	
179	59	76	0.015723	28.52708	3		-5.18954	8.717798	0.12539	5.341075	1.73205081	-0.05851
12	60	116	-0.1396	29.85614	24	OUTLIER	28.9731	10.77033	#NUM!	5.464077	4.89897949	
155	61	79	0.025308	30.99493	15		4.07425	8.888194	0.159086	5.567309	3.87298335	0.46185
156	62	79	0.050798	32.03987	93		-9.23438	8.888194	0.225384	5.660377	9.64365076	-0.10511
242	63	59	-0.00752	28.45302	1		-22.84104	7.681146	#NUM!	5.334137	1	
192	64	74	0.022772	30.18999	5		-1.54967	8.602325	0.150904	5.494541	2.23606798	0.20557
60	65	86	-0.04469	27.20606	4		-2.27008	9.273618	#NUM!	5.215943	2	
227	66	67	0.026337	28.70248	2		-12.95542	8.185353	0.162286	5.35747	1.41421356	-0.48361
61	67	86	0.052736	27.63268	9		1.64521	9.273618	0.229643	5.256679	3	0.09794
193	68	74	0.278406	27.06581	4		-2.94046	8.602325	0.527642	5.202481	2	-0.48233
8	69	157	0.066513	28.47964	22	OUTLIER	73.13909	12.52996	0.2579	5.336632	4.69041576	3.34432
128	70	81	-0.017	29.0754	5		0.08	9	#NUM!	5.392161	2.23606798	
129	71	81	0.001294	31.77339	27		5.17436	9	0.035977	5.636789	5.19615242	0.53737
229	72	65	0.015465	31.38072	11		-8.01222	8.062258	0.124358	5.60185	3.31662479	-0.1924
210	73	72	-0.02307	30.23156	12		-6.68849	8.485281	#NUM!	5.498323	3.46410162	
40	74	87	0.002084	27.93455	3		3.23006	9.327379	0.045651	5.285315	1.73205081	0.36234
221	75	68	0.084859	28.05718	0		-11.6215	8.246211	0.291306	5.296903	0	-0.34502
243	76	59	0.045291	27.95429	2		-22.89002	7.681146	0.212817	5.287181	1.41421356	-1.17525
253	77	54	0.080621	29.1598	7	OUTLIER	-23.51092	7.348469	0.283938	5.399982	2.64575131	-1.33972



180	78	76	0.04614	30.35403	32		-4.31865	8.717798	0.214802	5.509449	5.65685425	-0.12386
237	79	60	0.103978	27.33522	0		-21.45795	7.745967	0.322456	5.228309	0	-1.03425
181	80	76	-0.01945	25.84164	0		-15.22063	8.717798	#NUM!	5.083467	0	
211	81	72	0.035084	28.7255	3		-7.78415	8.485281	0.187307	5.359617	1.73205081	-0.21643
194	82	74	0.033544	29.51594	29		-9.03453	8.602325	0.183151	5.432857	5.38516481	-0.43208
130	83	81	0.066156	26.71307	8		-5.86436	9	0.257208	5.168469	2.82842712	-0.39732
222	84	68	-0.00011	25.66354	0		-23.13842	8.246211	#NUM!	5.06592	0	
148	85	80	-0.0025	27.42075	0		-5.05359	8.944272	#NUM!	5.236483	0	
109	86	83	0.092464	27.36638	0		1.2302	9.110434	0.304079	5.231288	0	0.33274
157	87	79	0.087383	28.82024	7		0.54373	8.888194	0.295606	5.368448	2.64575131	0.11224
158	88	79	0.078317	27.28847	2		-4.02037	8.888194	0.279852	5.223837	1.41421356	-0.12993
110	89	83	-0.012	26.90336	4		-5.13713	9.110434	#NUM!	5.186845	2	
233	90	62	0.018852	28.41268	0		-18.78795	7.874008	0.137304	5.330355	0	-0.67145
182	91	76	0.062748	30.44916	0		3.97166	8.717798	0.250495	5.518076	0	0.75585
195	92	74	0.008822	30.99361	18		-2.22255	8.602325	0.093927	5.56719	4.24264069	0.09879
273	93	22	0.08025	29.25245	1	OUTLIER	-53.82121	4.690416	0.283284	5.408554	1	-3.72791
15	94	113	-0.03041	30.6079	10	OUTLIER	35.82426	10.63015	#NUM!	5.53244	3.16227766	
244	95	59	0.060775	30.33369	0		-13.50613	7.681146	0.246526	5.507603	0	-0.31257
267	96	43	0.069816	29.5866	3	OUTLIER	-32.48854	6.557439	0.264227	5.439356	1.73205081	-1.88677
238	97	60	-0.02446	28.10187	4		-24.3831	7.745967	#NUM!	5.301119	2	
131	98	81	-0.02087	26.16058	1		-9.38185	9	#NUM!	5.114742	1	
41	99	87	-0.0565	28.20065	2		2.25094	9.327379	#NUM!	5.310428	1.41421356	
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159	101	79	0.077349	28.67006	0		1.25653	8.888194	0.278117	5.354443	0	0.45982
62	102	86	-0.16462	26.44426	5		-9.56389	9.273618	#NUM!	5.142398	2.23606798	
116	103	82	-0.02244	28.49656	0		-0.00416	9.055385	#NUM!	5.338217	0	
214	104	71	-0.01436	27.57598	0		-13.94213	8.42615	#NUM!	5.251284	0	
132	105	81	-0.01716	25.93549	0		-9.8072	9	#NUM!	5.09269	0	
133	106	81	0.034938	27.8833	0		-1.05893	9	0.186916	5.280464	0	0.32609
183	107	75	-0.00954	27.82487	5		-10.03987	8.660254	#NUM!	5.274929	2.23606798	
76	108	85	0.011776	29.4667	1		7.42588	9.219544	0.108518	5.428324	1	0.80028
196	109	74	0.052472	27.2482	1		-9.87786	8.602325	0.229067	5.219981	1	-0.38228
197	110	74	0.043682	25.80568	0		-15.03693	8.602325	0.209002	5.07993	0	-0.64713
77	111	85	0.079438	29.48787	3		9.51676	9.219544	0.281848	5.430274	1.73205081	0.75482
160	112	79	0.019677	26.45496	1		-8.86424	8.888194	0.140275	5.143438	1	-0.34859
167	113	78	0.024671	28.70926	3		-2.22221	8.831761	0.15707	5.358102	1.73205081	0.11554
117	114	82	0.02295	27.40383	3		-2.87069	9.055385	0.151493	5.234867	1.73205081	-0.02093
5	115	176	-0.00167	27.73949	3	OUTLIER	91.40751	13.2665	#NUM!	5.266829	1.73205081	
78	116	85	0.025066	26.44288	1		-2.70948	9.219544	0.158322	5.142264	1	-0.01462
215	117	71	-0.00829	27.20442	0		-15.0254	8.42615	#NUM!	5.215786	0	
118	118	82	-0.00126	28.64092	1		1.0481	9.055385	#NUM!	5.351721	1	
63	119	86	-0.03321	28.30645	5		1.78557	9.273618	#NUM!	5.320381	2.23606798	

168	120	78	0.075647	26.96359	2		-6.25927	8.831761	0.27504	5.192647	1.41421356	-0.27864
134	121	81	0.034832	28.46161	12		-1.78703	9	0.186634	5.334943	3.46410162	-0.03168
33	122	88	0.009776	28.83487	3		7.67401	9.380832	0.098874	5.369811	1.73205081	0.6792
224	123	68	-0.02459	26.43879	0		-21.31115	8.246211	#NUM!	5.141866	0	
64	124	86	0.016904	30.8306	60		-0.14424	9.273618	0.130014	5.552531	7.74596669	0.21764
245	125	59	0.066576	30.67977	26		-18.04882	7.681146	0.258024	5.538932	5.09901951	-0.97726
21	126	99	0.054537	29.03522	6	OUTLIER	20.32669	9.949874	0.233532	5.388434	2.44948974	1.2405
184	127	75	0.000882	28.43736	4		-7.27737	8.660254	0.029695	5.332669	2	-0.21238
149	128	80	0.013953	27.47938	0		-4.24559	8.944272	0.118123	5.242078	0	0.13579
259	129	50	0.018111	29.86852	1	OUTLIER	-25.93086	7.071068	0.134577	5.46521	1	-1.23227
119	130	82	-0.03371	27.78908	2		-3.36114	9.055385	#NUM!	5.271535	1.41421356	
250	131	57	0.040971	27.91491	1		-24.95674	7.549834	0.202414	5.283457	1	-1.25916
16	132	113	-0.01167	26.25449	0	OUTLIER	23.51424	10.63015	#NUM!	5.123913	0	
248	133	58	0.077461	33.32018	34		-11.21277	7.615773	0.278318	5.772364	5.83095189	-0.46633
234	134	61	0.012704	27.80396	1		-22.38079	7.81025	0.112711	5.272946	1	-1.05928
120	135	82	-0.00868	30.53196	1		7.41942	9.055385	#NUM!	5.525573	1	
135	136	81	0.134119	31.07704	80		-4.5824	9	0.366223	5.574679	8.94427191	-0.09116
79	137	85	-0.04319	28.52081	3		1.63297	9.219544	#NUM!	5.340488	1.73205081	
34	138	88	-0.58236	26.31469	10		-24.45235	9.380832	#NUM!	5.129784	3.16227766	
121	139	82	0.006849	28.06426	0		-0.45106	9.055385	0.082759	5.297571	0	0.3964
80	140	85	0.029844	28.52439	14		1.79166	9.219544	0.172753	5.340823	3.74165739	0.15897
13	141	116	0.414851	28.87192	1	OUTLIER	51.08532	10.77033	0.644089	5.37326	1	2.37
122	142	82	-0.00591	27.94907	14		-4.53748	9.055385	#NUM!	5.286688	3.74165739	
3	143	191	-0.04155	27.12956	0	OUTLIER	103.49484	13.82027	#NUM!	5.208604	0	
65	144	86	-0.01713	27.14441	6		-1.93751	9.273618	#NUM!	5.21003	2.44948974	
81	145	85	0.020182	27.02399	8		-2.45439	9.219544	0.142065	5.198461	2.82842712	-0.12908
185	146	75	-0.04608	26.77861	1		-14.13347	8.660254	#NUM!	5.174805	1	
35	147	88	0.04703	25.21557	0		-2.98729	9.380832	0.216864	5.021511	0	-0.03581
42	148	87	0.173435	28.73421	1		12.76806	9.327379	0.416455	5.36043	1	0.81367
66	149	86	0.357842	27.84225	1		15.38243	9.273618	0.598199	5.276576	1	0.5769
123	150	82	0.351868	29.02087	3		14.84467	9.055385	0.593185	5.387102	1.73205081	0.56922
4	151	180	-1.11231	28.3151	13	OUTLIER	54.49436	13.41641	#NUM!	5.321193	3.60555128	
186	152	75	0.054068	31.0848	15		1.44224	8.660254	0.232525	5.575374	3.87298335	0.2819
187	153	75	0.025415	32.10767	95		-14.38424	8.660254	0.159422	5.666363	9.74679434	-0.35306
254	154	53	0.023686	28.55133	2	OUTLIER	-27.58334	7.28011	0.153902	5.343345	1.41421356	-1.43272
198	155	74	0.007711	30.33345	5		-1.59684	8.602325	0.08781	5.507581	2.23606798	0.22239
82	156	85	-0.00058	27.26138	4		-1.46181	9.219544	#NUM!	5.221243	2	
83	157	85	0.059087	29.14825	2		7.80875	9.219544	0.243077	5.398912	1.41421356	0.69805
136	158	81	0.187305	28.11531	10		3.03484	9	0.432787	5.302388	3.16227766	0.00091
207	159	73	0.037093	27.17891	4		-12.3729	8.544004	0.192595	5.21334	2	-0.62107
9	160	157	-0.00951	28.48221	22	OUTLIER	70.36659	12.52996	#NUM!	5.336873	4.69041576	
150	161	80	0.073757	29.27717	7		2.65018	8.944272	0.271582	5.410838	2.64575131	0.28351

84	162	85	0.029613	31.83212	27		10.41688	9.219544	0.172085	5.641996	5.19615242	0.81754
230	163	65	0.002316	31.3955	10		-8.21179	8.062258	0.048128	5.603168	3.16227766	-0.19106
85	164	85	0.022439	30.27603	11		8.36256	9.219544	0.149795	5.502366	3.31662479	0.6842
137	165	81	0.006389	27.83454	3		-2.96373	9	0.079929	5.275845	1.73205081	0.01889
225	166	68	0.001726	28.12626	0		-14.42073	8.246211	0.041545	5.303419	0	-0.40955
216	167	71	0.046256	28.05621	2		-10.49671	8.42615	0.215072	5.296811	1.41421356	-0.4015
260	168	50	0.119458	29.43868	8	OUTLIER	-25.33989	7.071068	0.345627	5.425742	2.82842712	-1.54884
124	169	82	0.055296	30.4414	34		1.86401	9.055385	0.235151	5.517373	5.83095189	0.21763
239	170	60	0.049347	27.46497	0		-23.00111	7.745967	0.222143	5.240704	0	-1.03174
208	171	73	-0.01728	25.79571	0		-18.30247	8.544004	#NUM!	5.078948	0	
43	172	87	0.106329	28.78102	3		10.01779	9.327379	0.326081	5.364795	1.73205081	0.6871
188	173	75	0.024857	29.63721	32		-8.61533	8.660254	0.157663	5.444006	5.65685425	-0.39073
161	174	79	0.127367	26.8899	8		-5.00352	8.888194	0.356884	5.185547	2.82842712	-0.42617
231	175	65	-0.00882	25.73003	0		-26.22379	8.062258	#NUM!	5.072477	0	
22	176	92	6.2E-05	29.75274	0	OUTLIER	15.23167	9.591663	0.007871	5.454607	0	1.36413
125	177	82	0.116785	27.45695	0		1.43827	9.055385	0.341738	5.239938	0	0.31542
162	178	79	0.010453	28.80585	9		-2.78096	8.888194	0.102241	5.367108	3	-0.00906
67	179	86	0.029575	27.38342	2		1.52967	9.273618	0.171975	5.232917	1.41421356	0.24583
163	180	79	0.005601	26.93257	4		-8.39051	8.888194	0.074842	5.18966	2	-0.38507
235	181	61	0.031633	28.49045	0		-19.04716	7.81025	0.177855	5.337644	0	-0.70047
251	182	57	0.042694	30.57052	0	OUTLIER	-15.33582	7.549834	0.206625	5.529062	0	-0.39484
169	183	78	-0.01828	30.95565	18		0.65261	8.831761	#NUM!	5.56378	4.24264069	
266	184	45	0.043881	29.34267	1	OUTLIER	-31.83507	6.708204	0.209477	5.416887	1	-1.71057
36	185	88	-0.03414	30.55779	9		10.74133	9.380832	#NUM!	5.52791	3	
258	186	51	0.107845	30.35379	0	OUTLIER	-19.71325	7.141428	0.328397	5.509427	0	-0.81962
255	187	53	0.033154	29.81502	3	OUTLIER	-23.02763	7.28011	0.182082	5.460313	1.73205081	-1.13063
271	188	32	-0.02168	28.13356	4	OUTLIER	-52.17015	5.656854	#NUM!	5.304107	2	
44	189	87	0.773093	27.92146	6		30.70667	9.327379	0.879257	5.284076	2.44948974	0.53047
45	190	87	-0.05643	28.16425	2		2.12553	9.327379	#NUM!	5.307	1.41421356	
138	191	81	0.035361	29.29186	1		3.67471	9	0.188045	5.412196	1	0.56043
89	192	84	0.016642	28.69474	0		4.12191	9.165151	0.129002	5.356747	0	0.69363
68	193	86	-0.00299	27.19865	5		-0.99996	9.273618	#NUM!	5.215232	2.23606798	
164	194	79	0.003118	28.65407	0		-1.51578	8.888194	0.055835	5.35295	0	0.38119
90	195	84	-0.01131	27.52697	0		-1.00296	9.165151	#NUM!	5.246615	0	
19	196	101	-0.01864	26.10483	0	OUTLIER	10.73352	10.04988	#NUM!	5.109289	0	
20	197	101	0.143192	27.9325	0	OUTLIER	23.07499	10.04988	0.378408	5.285121	0	1.45351
139	198	81	-0.00418	27.96798	5		-3.3411	9	#NUM!	5.288476	2.23606798	
91	199	84	0.002443	29.50191	1		6.20808	9.165151	0.049431	5.431566	1	0.73556
199	200	74	0.001759	27.26889	1		-11.66081	8.602325	0.041937	5.221962	1	-0.43906
172	201	77	-0.01971	25.79861	0		-14.38138	8.774964	#NUM!	5.079233	0	
46	202	87	0.027864	29.5253	3		9.76112	9.327379	0.166925	5.433719	1.73205081	0.83426
165	203	79	0.008056	26.49839	1		-9.13688	8.888194	0.089757	5.147659	1	-0.3532

166	204	79	0.002615	28.85273	3		-1.52526	8.888194	0.051138	5.371474	1.73205081	0.17544	
200	205	74	0.010131	27.47234	3		-11.09911	8.602325	0.100652	5.241406	1.73205081	-0.47197	
6	206	176	-0.00193	27.7178	3	OUTLIER	91.32186	13.2665	#NUM!	5.26477	1.73205081		
92	207	84	0.106351	26.6929	1		0.14302	9.165151	0.326116	5.166517		0.05757	
69	208	86	0.012137	27.25528	0		0.90076	9.273618	0.110169	5.220659		0.40021	
86	209	85	0.030744	28.75283	1		5.61236	9.219544	0.17534	5.362167		0.6303	
23	210	92	0.163899	28.53172	5	OUTLIER	15.7893	9.591663	0.404844	5.341509	2.23606798	0.83494	
70	211	86	0.065305	27.06925	2		1.73345	9.273618	0.255548	5.202812	1.41421356	0.18625	
140	212	81	0.023649	28.49399	14		-2.54177		9	0.153782	5.337977	3.74165739	-0.07519
93	213	84	0.151129	29.08612	4		9.49909	9.165151	0.388753	5.393155		2	0.58834
218	214	70	-0.04049	26.52525	0		-19.58925	8.3666	#NUM!	5.150267		0	
37	215	88	0.026959	30.95047	56		3.56331	9.380832	0.164193	5.563315	7.48331477		0.40675
232	216	64	0.080389	30.76817	29		-12.92182		8	0.283529	5.546906	5.38516481	-0.66933
38	217	88	0.013955	29.09794	6		8.0621	9.380832	0.118133	5.39425	2.44948974		0.6498
151	218	80	-0.01707	28.41395	3		-2.78692	8.944272	#NUM!	5.330474	1.73205081		
94	219	84	0.006114	27.55129	0		-0.27982	9.165151	0.078195	5.248932		0	0.36325
269	220	39	0.077429	30.02574	1	OUTLIER	-34.20814	6.244998	0.27826	5.479575		1	-1.96856
71	221	86	-0.03814	27.68828	2		0.12268	9.273618	#NUM!	5.261965	1.41421356		
219	222	70	0.057588	27.96134	1		-11.18564	8.3666	0.239975	5.287849		1	-0.41708
14	223	114	0.135463	26.61188	0	OUTLIER	31.15329	10.67708	0.368053	5.158671		0	1.70967
249	224	58	0.106756	33.47373	39		-10.7497	7.615773	0.326736	5.785648	6.244998		-0.47321
201	225	74	0.023149	27.90286	1		-8.65119	8.602325	0.152149	5.282316		1	-0.22679
47	226	87	0.000775	30.61222	2		12.81754	9.327379	0.027836	5.532831	1.41421356		1.12323
48	227	87	0.156389	31.34352	83		2.4796	9.327379	0.395461	5.598528	9.11043358		0.29057
95	228	84	-0.01723	28.54022	3		1.65093	9.165151	#NUM!	5.342305	1.73205081		
49	229	87	0.097388	26.43236	8		0.29238	9.327379	0.312071	5.141241	2.82842712		-0.13075
96	230	84	0.064168	28.123	0		3.85259	9.165151	0.253314	5.303112		0	0.57927
72	231	86	0.026592	28.66107	14		3.15281	9.273618	0.163071	5.353603	3.74165739		0.24696
10	232	147	0.065567	28.95213	1	OUTLIER	69.58661	12.12436	0.256061	5.380718		1	3.61602
141	233	81	-0.00359	28.06255	14		-5.05383		9	#NUM!	5.297409	3.74165739	
73	234	86	-0.04642	27.05508	0		-1.94495	9.273618	#NUM!	5.20145		0	
50	235	87	-0.01677	27.14644	7		-1.14677	9.327379	#NUM!	5.210225	2.64575131		
87	236	85	0.008004	27.17376	8		-2.37393	9.219544	0.089465	5.212846	2.82842712		-0.10484
97	237	84	-0.04676	26.76281	1		-5.21388	9.165151	#NUM!	5.173278		1	
39	238	88	0.010598	25.31018	0		-3.98804	9.380832	0.102946	5.030922		0	-0.04653
74	239	86	-0.03063	28.80808	1		4.56086	9.273618	#NUM!	5.367316		1	
98	240	84	0.005889	27.89212	1		0.67953	9.165151	0.076742	5.281299		1	0.30788
99	241	84	0.002656	29.05778	3		4.19654	9.165151	0.051541	5.390527	1.73205081		0.50792
1	242	401	-0.04042	28.22788	7	OUTLIER	315.78671	20.02498	#NUM!	5.312992	2.64575131		
170	243	78	0.151464	31.16812	19		7.38016	8.831761	0.389184	5.582842	4.35889894		0.45509
171	244	78	0.080926	32.20096	91		-8.10685	8.831761	0.284475	5.674589	9.53939201		-0.08495
262	245	46	0.078667	28.6921	2	OUTLIER	-32.07709	6.78233	0.280476	5.356501	1.41421356		-1.84995

202	246	74	0.039916	30.49845	5		0.16118	8.602325	0.199791	5.52254	2.23606798	0.3033
88	247	85	0.035335	27.27099	4		-0.11378	9.219544	0.187975	5.222164	2	0.07858
212	248	72	0.063217	29.11122	3		-5.39982	8.485281	0.25143	5.395481	1.73205081	-0.09075
142	249	81	0.075404	28.20277	10		-0.75244	9	0.274598	5.310628	3.16227766	-0.028
217	250	71	0.028641	27.33972	4		-14.11728	8.42615	0.169237	5.22874	2	-0.70196
27	251	89	-0.0083	28.59846	22		2.81907	9.433981	#NUM!	5.347753	4.69041576	
100	252	84	0.184749	29.34588	6		11.18245	9.165151	0.429825	5.417183	2.44948974	0.60496
101	253	84	0.011825	31.86654	28		8.65723	9.165151	0.108742	5.645045	5.29150262	0.73664
152	254	80	-0.00407	31.47267	10		6.82555	8.944272	#NUM!	5.610051	3.16227766	
51	255	87	0.014563	30.33101	4		11.87499	9.327379	0.120679	5.50736	2	0.99295
173	256	77	0.001636	27.85861	3		-7.05307	8.774964	0.04045	5.278126	1.73205081	-0.21271
143	257	81	0.008449	28.15149	0		-1.08608	9	0.091921	5.305798	0	0.36799
52	258	87	-0.01666	27.9973	2		2.9941	9.327379	#NUM!	5.291247	1.41421356	
256	259	53	0.175132	29.87814	9	OUTLIER	-18.98873	7.28011	0.418488	5.46609	3	-1.22372
75	260	86	0.050943	30.52948	36		5.55485	9.273618	0.225705	5.525349	6	0.43071
203	261	74	0.010044	27.8646	0		-9.03547	8.602325	0.100221	5.278693	0	-0.1057
174	262	77	0.077358	25.95468	0		-10.28133	8.774964	0.278133	5.094574	0	-0.40882
263	263	46	0.078099	28.83628	4	OUTLIER	-32.0507	6.78233	0.279462	5.369942	2	-1.89848
204	264	74	0.044953	29.69408	31		-8.45063	8.602325	0.21202	5.449227	5.56776436	-0.40205
205	265	74	0.011826	26.92049	10		-14.583	8.602325	0.108749	5.188496	3.16227766	-0.83613
228	266	67	-0.01432	25.76079	0		-24.31698	8.185353	#NUM!	5.075509	0	
144	267	81	-0.00162	27.39112	0		-4.1256	9	#NUM!	5.233653	0	
206	268	74	-0.03274	27.50464	0		-11.86549	8.602325	#NUM!	5.244486	0	
102	269	84	0.048437	28.90978	12		3.28503	9.165151	0.220085	5.376781	3.46410162	0.26627
213	270	72	-0.00714	27.19718	2		-14.46793	8.485281	#NUM!	5.215092	1.41421356	
17	271	108	0.032166	26.96137	4	OUTLIER	21.68268	10.3923	0.179349	5.192434	2	1.16204
240	272	60	0.010791	28.52512	0		-20.68794	7.745967	0.103882	5.340892	0	-0.78004
272	273	31	0.011943	30.60261	0	OUTLIER	-42.34829	5.567764	0.109284	5.531963	0	-2.40101

DATA TANPA OUTLIER 23					HASIL TRANSFORMASI DATA KE-2						
NO. DATA	ARL	IOS	UP	KOMP	RESIDUAL	SQRTARL	SQRTIOS	SQRTUP	SQRTKOMP	RESIDUAL	
1	72	0.040512	31.03723	17	-4.20538	4.12310563	0.855909366	1.5609299	8.888194417	0.74265	
6	67	-0.01379	28.06489	4	-11.5762	4.69041576	0.887062651	2.3256908	9.591663047	1.74257	
7	88	-0.07615	26.3031	1	7.76382		0.921542448	2.6778021	9.746794345	-1.74275	
8	89	-0.03791	28.25142	2	10.85807		0.900554395	2.2852368	9.695359715	-3.00434	
9	86	0.717029	29.6753	2	7.31975	1.73205081	0.236777038	1.9489558	9.695359715	-0.92304	
10	86	0.077381	28.57937	0	8.05082	1.73205081	0.834093314	2.2123197	9.797958971	-1.28067	
11	86	0.039887	25.64046	5	4.35868	1.73205081	0.856273955	2.7987974	9.539392014	-0.83396	
12	86	-0.04177	28.3979	0	8.18638	1.73205081	0.902698052	2.2529603	9.797958971	-1.31245	
13	74	-0.04949	27.6135	0	-4.70853	3.87298335	0.906960747	2.4207916	9.797958971	0.94767	
14	82	0.010874	25.90106	0	1.11243	2.64575131	0.873051104	2.7518487	9.797958971	-0.00648	
15	80	0.016539	27.86023	0	1.38732		0.869800726	2.3692812	9.797958971	0.07028	
16	82	0.000465	27.92297	5	3.14335	2.64575131	0.87899211	2.3560049	9.539392014	-0.2652	
18	74	0.017518	27.25387	1	-5.39758	3.87298335	0.869237823	2.493964	9.746794345	1.04243	
19	74	0.122195	25.81596	0	-7.31205	3.87298335	0.806782116	2.7672669	9.797958971	1.29153	
20	60	0.074895	29.39707	3	-17.2041	5.38516481	0.835581983	2.0190726	9.643650761	2.2514	
21	79	0.107516	26.41406	1	-1.64252	3.16227766	0.815829014	2.6570029	9.746794345	0.49916	
22	79	0.022464	28.70664	3	1.14142	3.16227766	0.866388451	2.1833661	9.643650761	0.12128	
23	76	0.369004	27.27792	3	-4.54115	3.60555128	0.635679992	2.4891372	9.643650761	0.99573	
25	83	0.327938	26.31928	1	1.60321	2.44948974	0.667198999	2.6747794	9.746794345	-0.06721	
26	76	0.14261	27.29855	0	-3.63762	3.60555128	0.794029047	2.4849904	9.797958971	0.82865	
27	81	-0.04647	28.59263	1	3.355	2.82842712	0.905296635	2.20932	9.746794345	-0.24312	
28	86	0.035728	28.36756	5	7.56041	1.73205081	0.858699073	2.2596827	9.539392014	-1.23129	
30	83	0.103956	28.45345	10	4.09744	2.44948974	0.818007395	2.2405965	9.273618495	-0.45355	
31	76	-0.03312	28.82209	2	-1.48844	3.60555128	0.89789542	2.1567655	9.695359715	0.50943	
32	69	-0.04574	26.35898	0	-11.1867	4.47213595	0.904893091	2.6673493	9.797958971	1.72939	
33	88	-0.02942	30.81758	63	8		0.895833219	1.6297691	5.744562647	-1.91906	
34	58	0.03297	30.58859	25	-19.2909	5.56776436	0.860303835	1.6985706	8.426149773	2.34992	
35	88	0.057287	28.99705	5	10.23372		0.846052783	2.1158154	9.539392014	-2.05744	
36	76	-0.01268	28.57384	4	-1.98417	3.60555128	0.886438261	2.2135687	9.591663047	0.57609	
37	82	0.017871	27.42768	0	2.87752	2.64575131	0.869035129	2.4588718	9.797958971	-0.21761	
39	89	-0.02918	27.86509	2	10.38075		0.895696822	2.368257	9.695359715	-2.93913	
40	59	-0.01151	27.76404	1	-19.7162	5.47722558	0.885777094	2.389495	9.746794345	2.55526	
42	58	0.042688	33.19881	34	-16.9221	5.56776436	0.854637245	0.5243238	7.874007874	1.57279	
44	83	0.014622	30.55943	1	7.47701	2.44948974	0.870902032	1.7071326	9.746794345	-0.95928	
45	82	0.051689	30.87492	96	-0.18325	2.64575131	0.849354809	1.6120833		0.57183	
46	83	-0.02641	28.53818	3	5.08704	2.44948974	0.894148162	2.2216094	9.643650761	-0.58839	
47	88	0.233551	26.89254	10	6.89352		0.734534942	2.5653829	9.273618495	-1.59007	
48	83	0.020472	28.09881	0	4.65488	2.44948974	0.867537257	2.318386	9.797958971	-0.5155	
49	88	-0.02271	28.44406	14	9.16477		0.892075644	2.242693	9.055385138	-1.93696	

51	80	-0.00153	27.88464	14	0.44866	3	0.880125351	2.3641246	9.055385138	0.16277
52	86	-0.03772	27.23198	0	6.8109	1.73205081	0.900449694	2.4983487	9.797958971	-1.13057
53	89	-0.01792	27.26023	5	9.4219	0	0.889391511	2.492689	9.539392014	-2.8201
54	81	0.046519	27.18427	8	0.92638	2.82842712	0.852392708	2.5078797	9.38083152	0.0752
55	82	-0.04631	26.7938	1	2.25064	2.64575131	0.905208594	2.584555	9.746794345	-0.15069
56	86	-0.03711	25.2455	0	4.48576	1.73205081	0.900111165	2.8684882	9.797958971	-0.85897
57	80	0.030849	28.25772	0	1.81045	3	0.861535415	2.2838581	9.797958971	0.01509
58	83	-0.07472	27.18331	2	3.71629	2.44948974	0.920768953	2.5080698	9.695359715	-0.40966
59	76	0.015723	28.52708	3	-2.04892	3.60555128	0.870269961	2.2241054	9.643650761	0.59093
61	79	0.025308	30.99493	15	2.93523	3.16227766	0.864745147	1.5744197	9	-0.23211
62	79	0.050798	32.03987	93	-1.59957	3.16227766	0.849879221	1.1974394	1.732050808	0.53782
63	59	-0.00752	28.45302	1	-18.922	5.47722558	0.883525233	2.240694	9.746794345	2.44821
64	74	0.022772	30.18999	5	-2.27029	3.87298335	0.866210417	1.8121099	9.539392014	0.57485
65	86	-0.04469	27.20606	4	6.50953	1.73205081	0.90431458	2.5035305	9.591663047	-1.10093
66	67	0.026337	28.70248	2	-10.8019	4.69041576	0.864150408	2.1843181	9.695359715	1.64478
67	86	0.052736	27.63268	9	6.35984	1.73205081	0.848738398	2.4168266	9.327379053	-1.07704
68	74	0.278406	27.06581	4	-6.59763	3.87298335	0.7033398	2.5313866	9.591663047	1.2408
70	81	-0.017	29.0754	5	3.54219	2.82842712	0.888869748	2.09722	9.539392014	-0.28107
71	81	0.001294	31.77339	27	5.04157	2.82842712	0.878520493	1.3039707	8.306623863	-0.67801
72	65	0.015465	31.38072	11	-10.2934	4.89897949	0.870418089	1.446723	9.219544457	1.37471
73	72	-0.02307	30.23156	12	-4.59782	4.12310563	0.892279437	1.8006031	9.16515139	0.84632
74	87	0.002084	27.93455	3	8.29788	1.41421356	0.878070951	2.3535452	9.643650761	-1.51253
75	68	0.084859	28.05718	0	-10.5818	4.58257569	0.829598394	2.3273475	9.797958971	1.6582
76	59	0.045291	27.95429	2	-19.7323	5.47722558	0.853112815	2.3493489	9.695359715	2.56246
78	76	0.04614	30.35403	32	-2.11367	3.60555128	0.852615152	1.7662676	8	0.50479
79	60	0.103978	27.33522	0	-19.482	5.38516481	0.817994393	2.4776013	9.797958971	2.58134
80	76	-0.01945	25.84164	0	-4.86856	3.60555128	0.890247981	2.7626241	9.797958971	0.94579
81	72	0.035084	28.7255	3	-5.87337	4.12310563	0.859074338	2.1790437	9.643650761	1.08551
82	74	0.033544	29.51594	29	-4.83857	3.87298335	0.859969907	1.9894194	8.185352772	0.90284
83	81	0.066156	26.71307	8	0.31796	2.82842712	0.840795121	2.6001263	9.38083152	0.15322
84	68	-0.00011	25.66354	0	-13.1333	4.58257569	0.879316726	2.7946706	9.797958971	1.95611
85	80	-0.0025	27.42075	0	0.92888	3	0.880677603	2.4602799	9.797958971	0.12722
86	83	0.092464	27.36638	0	3.58809	2.44948974	0.825002303	2.4713054	9.797958971	-0.36524
87	79	0.087383	28.82024	7	0.79336	3.16227766	0.828075971	2.1571951	9.433981132	0.16628
88	79	0.078317	27.28847	2	-0.60744	3.16227766	0.833532011	2.4870171	9.695359715	0.36599
89	83	-0.012	26.90336	4	3.06007	2.44948974	0.886054204	2.5632729	9.591663047	-0.32331
90	62	0.018852	28.41268	0	-15.9733	5.19615242	0.868470035	2.2496765	9.797958971	2.17996
91	76	0.062748	30.44916	0	0.28042	3.60555128	0.842819553	1.7391277	9.797958971	0.23817
92	74	0.008822	30.99361	18	-2.23675	3.87298335	0.874225525	1.5748405	8.831760866	0.49431
95	59	0.060775	30.33369	0	-16.8489	5.47722558	0.843989009	1.7720141	9.797958971	2.1329
97	60	-0.02446	28.10187	4	-18.5018	5.38516481	0.893057735	2.3177277	9.591663047	2.4261
98	81	-0.02087	26.16058	1	0.43577	2.82842712	0.891044833	2.7042823	9.746794345	0.13246

99	87	-0.0565	28.20065	2	8.85295	1.41421356	0.910817324	2.2963192	9.695359715	-1.59121
100	68	-0.4257	29.27712	2	-7.81031	4.58257569	1.094893071	2.0485633	9.695359715	1.23035
101	79	0.077349	28.67006	0	1.15698	3.16227766	0.83411235	2.1917277	9.797958971	0.13445
102	86	-0.16462	26.44426	5	5.89576	1.73205081	0.968355869	2.651314	9.539392014	-1.04265
103	82	-0.02244	28.49656	0	4.24533	2.64575131	0.891925148	2.2309571	9.797958971	-0.40521
104	71	-0.01436	27.57598	0	-7.85495	4.24264069	0.887383331	2.4285273	9.797958971	1.34057
105	81	-0.01716	25.93549	0	0.23453	2.82842712	0.888961554	2.7455852	9.797958971	0.15733
106	81	0.034938	27.8833	0	2.36059	2.82842712	0.859159384	2.3644085	9.797958971	-0.09531
107	75	-0.00954	27.82487	5	-3.94217	3.74165739	0.88466612	2.3767319	9.539392014	0.8408
108	85	0.011776	29.4667	1	8.20727	2	0.872534478	2.0017571	9.746794345	-1.19428
109	74	0.052472	27.2482	1	-5.50624	3.87298335	0.848893884	2.4950998	9.746794345	1.06152
110	74	0.043682	25.80568	0	-7.09489	3.87298335	0.854055357	2.7691231	9.797958971	1.25047
111	85	0.079438	29.48787	3	7.88883	2	0.83285924	1.9964606	9.643650761	-1.1479
112	79	0.019677	26.45496	1	-1.33828	3.16227766	0.867995086	2.6492958	9.746794345	0.44669
113	78	0.024671	28.70926	3	0.13803	3.31662479	0.865113627	2.182767	9.643650761	0.27633
114	82	0.02295	27.40383	3	2.61624	2.64575131	0.866107571	2.4637164	9.643650761	-0.18951
116	85	0.025066	26.44288	1	4.63186	2	0.864885459	2.6515739	9.746794345	-0.71113
117	71	-0.00829	27.20442	0	-8.30722	4.24264069	0.883959944	2.5038577	9.797958971	1.39885
118	82	-0.00126	28.64092	1	4.27952	2.64575131	0.879974816	2.1983645	9.746794345	-0.4111
119	86	-0.03321	28.30645	5	7.69018	1.73205081	0.8979456	2.2731645	9.539392014	-1.25663
120	78	0.075647	26.96359	2	-1.97963	3.31662479	0.835131901	2.5514979	9.695359715	0.56616
121	81	0.034832	28.46161	12	2.16305	2.82842712	0.859220699	2.2387751	9.16515139	-0.09752
122	88	0.009776	28.83487	3	10.32842	1	0.873679885	2.1538017	9.643650761	-2.06921
123	68	-0.02459	26.43879	0	-12.1551	4.58257569	0.89313079	2.6523459	9.797958971	1.83939
124	86	0.016904	30.8306	60	6.48918	1.73205081	0.869591289	1.6257687	6	-1.2027
125	59	0.066576	30.67977	26	-18.3552	5.47722558	0.840545134	1.6715146	8.366600265	2.26575
127	75	0.000882	28.43736	4	-3.18338	3.74165739	0.878755229	2.2441847	9.591663047	0.74153
128	80	0.013953	27.47938	0	0.94943	3	0.871286173	2.4483351	9.797958971	0.12689
130	82	-0.03371	27.78908	2	3.30508	2.64575131	0.898223824	2.38425	9.695359715	-0.28392
131	57	0.040971	27.91491	1	-21.6929	5.65685425	0.855640776	2.3577134	9.746794345	2.73864
133	58	0.077461	33.32018	34	-16.8816	5.56776436	0.834045374	0.3918464	7.874007874	1.49417
134	61	0.012704	27.80396	1	-17.7402	5.29150262	0.872002738	2.3811264	9.746794345	2.37576
135	82	-0.00868	30.53196	1	6.51289	2.64575131	0.884176847	1.7151588	9.746794345	-0.76905
136	81	0.134119	31.07704	80	-0.02181	2.82842712	0.799358235	1.5481231	4	0.18404
137	85	-0.04319	28.52081	3	7.1157	2	0.903480829	2.2255149	9.643650761	-1.04339
138	88	-0.58236	26.31469	10	8.59933	1	1.164237356	2.6756383	9.273618495	-1.89491
139	82	0.006849	28.06426	0	3.65423	2.64575131	0.875353373	2.3258263	9.797958971	-0.3208
140	85	0.029844	28.52439	14	6.10533	2	0.862118904	2.2247112	9.055385138	-0.92326
142	82	-0.00591	27.94907	14	2.53681	2.64575131	0.882611361	2.3504588	9.055385138	-0.20373
144	86	-0.01713	27.14441	6	6.21127	1.73205081	0.888946152	2.5158138	9.486832981	-1.06323
145	85	0.020182	27.02399	8	4.81581	2	0.867703965	2.5396327	9.38083152	-0.7437
146	75	-0.04608	26.77861	1	-4.7678	3.74165739	0.905081869	2.587493	9.746794345	0.94749



147	88	0.04703	25.21557	0	6.20515	1	0.852093125	2.8737004	9.797958971	-1.54411
148	87	0.173435	28.73421	1	8.87868	1.41421356	0.774375694	2.1770433	9.746794345	-1.56349
149	86	0.357842	27.84225	1	6.29717	1.73205081	0.644399695	2.3730728	9.746794345	-0.98532
150	82	0.351868	29.02087	3	3.5474	2.64575131	0.649017971	2.1101794	9.643650761	-0.2538
152	75	0.054068	31.0848	15	-1.04361	3.74165739	0.847953292	1.545617	9	0.34123
153	75	0.025415	32.10767	95	-5.59189	3.74165739	0.864683278	1.1687846	1	1.18695
155	74	0.007711	30.33345	5	-2.05853	3.87298335	0.874861076	1.7720841	9.539392014	0.53775
156	85	-0.00058	27.26138	4	5.44547	2	0.879588316	2.4924588	9.591663047	-0.8189
157	85	0.059087	29.14825	2	7.62387	2	0.844988733	2.0797782	9.695359715	-1.10506
158	81	0.187305	28.11531	10	1.45866	2.82842712	0.76536782	2.3148247	9.273618495	0.02704
159	73	0.037093	27.17891	4	-6.76095	4	0.857904196	2.5089473	9.591663047	1.21265
161	80	0.073757	29.27717	7	2.36756	3	0.836262989	2.0485513	9.433981132	-0.08298
162	85	0.029613	31.83212	27	9.0276	2	0.862252463	1.2812507	8.306623863	-1.50849
163	65	0.002316	31.3955	10	-10.1649	4.89897949	0.877938629	1.4416071	9.273618495	1.35652
164	85	0.022439	30.27603	11	8.39421	2	0.866402858	1.7882101	9.219544457	-1.27037
165	81	0.006389	27.83454	3	2.16834	2.82842712	0.87561627	2.3746967	9.643650761	-0.08061
166	68	0.001726	28.12626	0	-10.2583	4.58257569	0.878274798	2.3124597	9.797958971	1.6036
167	71	0.046256	28.05621	2	-7.61592	4.24264069	0.852547177	2.3275568	9.695359715	1.31241
169	82	0.055296	30.4414	34	3.81609	2.64575131	0.847228832	1.7413575	7.874007874	-0.45053
170	60	0.049347	27.46497	0	-19.1707	5.38516481	0.850732175	2.4512758	9.797958971	2.53266
171	73	-0.01728	25.79571	0	-7.92861	4	0.889027113	2.7709235	9.797958971	1.34741
172	87	0.106329	28.78102	3	8.98361	1.41421356	0.816555925	2.1662652	9.643650761	-1.59459
173	75	0.024857	29.63721	32	-3.88993	3.74165739	0.865005821	1.958704	8	0.77082
174	79	0.127367	26.8899	8	-1.65391	3.16227766	0.803570811	2.5658976	9.38083152	0.49539
175	65	-0.00882	25.73003	0	-16.0301	4.89897949	0.884258744	2.7827505	9.797958971	2.25934
177	82	0.116785	27.45695	0	2.62302	2.64575131	0.81012809	2.4529123	9.797958971	-0.16911
178	79	0.010453	28.80585	9	0.85539	3.16227766	0.873292234	2.1605267	9.327379053	0.14329
179	86	0.029575	27.38342	2	6.64589	1.73205081	0.862274487	2.4678552	9.695359715	-1.10408
180	79	0.005601	26.93257	4	-0.95715	3.16227766	0.87606578	2.5575689	9.591663047	0.39426
181	61	0.031633	28.49045	0	-16.9196	5.29150262	0.861080732	2.232326	9.797958971	2.26923
183	78	-0.01828	30.95565	18	1.79795	3.31662479	0.889588427	1.5868465	8.831760866	-0.06704
185	88	-0.03414	30.55779	9	12.03461	1	0.898460991	1.7076121	9.327379053	-2.37354
189	87	0.773093	27.92146	6	5.81342	1.41421356	0	2.3563247	9.486832981	-0.70015
190	87	-0.05643	28.16425	2	8.81018	1.41421356	0.910780704	2.3042306	9.695359715	-1.58538
191	81	0.035361	29.29186	1	3.93394	2.82842712	0.858913098	2.0449614	9.746794345	-0.32196
192	84	0.016642	28.69474	0	6.36305	2.23606798	0.869741925	2.18609	9.797958971	-0.82787
193	86	-0.00299	27.19865	5	6.30629	1.73205081	0.880957135	2.5050105	9.539392014	-1.07145
194	79	0.003118	28.65407	0	1.35496	3.16227766	0.877482211	2.1953715	9.797958971	0.0982
195	84	-0.01131	27.52697	0	5.07885	2.23606798	0.885667474	2.4385969	9.797958971	-0.65709
198	81	-0.00418	27.96798	5	2.20957	2.82842712	0.881632234	2.3464326	9.539392014	-0.09191
199	84	0.002443	29.50191	1	7.2757	2.23606798	0.877866224	1.9929418	9.746794345	-0.96946
200	74	0.001759	27.26889	1	-5.33401	3.87298335	0.878256167	2.4909507	9.746794345	1.03213

201	77	-0.01971	25.79861	0	-3.91811	3.46410162	0.890395489	2.7704002	9.797958971	0.8099
202	87	0.027864	29.5253	3	10.08315	1.41421356	0.863266225	1.987065	9.643650761	-1.76786
203	79	0.008056	26.49839	1	-1.25356	3.16227766	0.874663525	2.6410861	9.746794345	0.43469
204	79	0.002615	28.85273	3	1.37022	3.16227766	0.877768456	2.1496506	9.643650761	0.08636
205	74	0.010131	27.47234	3	-5.26621	3.87298335	0.873476833	2.4497732	9.643650761	1.02089
207	84	0.106351	26.6929	1	3.68701	2.23606798	0.816542214	2.6040021	9.746794345	-0.46654
208	86	0.012137	27.25528	0	6.69262	1.73205081	0.872327499	2.4936824	9.797958971	-1.10875
209	85	0.030744	28.75283	1	7.31698	2	0.861596467	2.1727621	9.746794345	-1.05913
211	86	0.065305	27.06925	2	6.17414	1.73205081	0.841301248	2.5307071	9.695359715	-1.03919
212	81	0.023649	28.49399	14	2.08786	2.82842712	0.865704201	2.2315314	9.055385138	-0.09305
213	84	0.151129	29.08612	4	6.13682	2.23606798	0.788646783	2.094662	9.591663047	-0.79278
214	70	-0.04049	26.52525	0	-10.0076	4.35889894	0.90198842	2.6359967	9.797958971	1.59578
215	88	0.026959	30.95047	56	8.89143	1	0.863789998	1.5884764	6.32455532	-2.003
216	64	0.080389	30.76817	29	-13.5107	5	0.832288361	1.6448587	8.185352772	1.80215
217	88	0.013955	29.09794	6	10.40535	1	0.871284767	2.0918389	9.486832981	-2.09019
218	80	-0.01707	28.41395	3	1.9145	3	0.888912407	2.2493941	9.643650761	-0.01281
219	84	0.006114	27.55129	0	5.05642	2.23606798	0.875772879	2.4336055	9.797958971	-0.65186
221	86	-0.03814	27.68828	2	7.20012	1.73205081	0.900686459	2.4052962	9.695359715	-1.18441
222	70	0.057588	27.96134	1	-8.6871	4.35889894	0.845875044	2.3478467	9.746794345	1.44221
224	58	0.106756	33.47373	39	-17.1518	5.56776436	0.816294355	0	7.549834435	1.26897
225	74	0.023149	27.90286	1	-4.65497	3.87298335	0.865992574	2.3602683	9.746794345	0.94735
226	87	0.000775	30.61222	2	11.50633	1.41421356	0.878816102	1.6915981	9.695359715	-2.00573
227	87	0.156389	31.34352	83	6.00629	1.41421356	0.785304617	1.4595233	3.605551275	-1.22645
228	84	-0.01723	28.54022	3	6.06264	2.23606798	0.888999781	2.2211496	9.643650761	-0.79753
229	87	0.097388	26.43236	8	5.89847	1.41421356	0.82201226	2.6535583	9.38083152	-1.20497
230	84	0.064168	28.123	0	5.55562	2.23606798	0.841976623	2.3131648	9.797958971	-0.70981
231	86	0.026592	28.66107	14	7.27468	1.73205081	0.864002559	2.193777	9.055385138	-1.21557
233	81	-0.00359	28.06255	14	1.66274	2.82842712	0.881293588	2.3261948	9.055385138	-0.03766
234	86	-0.04642	27.05508	0	6.62939	1.73205081	0.905267072	2.5335055	9.797958971	-1.10913
235	87	-0.01677	27.14644	7	7.13974	1.41421356	0.888742676	2.5154097	9.433981132	-1.37367
236	85	0.008004	27.17376	8	5.02652	2	0.874693409	2.5099738	9.38083152	-0.77171
237	84	-0.04676	26.76281	1	4.21571	2.23606798	0.905458028	2.5905439	9.746794345	-0.5562
238	88	0.010598	25.31018	0	6.42215	1	0.873209454	2.8571928	9.797958971	-1.57516
239	86	-0.03063	28.80808	1	8.56074	1.73205081	0.89650381	2.1600106	9.746794345	-1.36775
240	84	0.005889	27.89212	1	5.38285	2.23606798	0.875901362	2.3625422	9.746794345	-0.69679
241	84	0.002656	29.05778	3	6.60993	2.23606798	0.877744899	2.1014145	9.643650761	-0.87519
243	78	0.151464	31.16812	19	1.47813	3.31662479	0.788433964	1.5184219	8.774964387	-0.01833
244	78	0.080926	32.20096	91	-2.3534	3.31662479	0.831965396	1.1281719	2.236067977	0.58584
246	74	0.039916	30.49845	5	-1.95956	3.87298335	0.856257073	1.7248997	9.539392014	0.51986
247	85	0.035335	27.27099	4	5.35188	2	0.858928323	2.4905288	9.591663047	-0.80177
248	72	0.063217	29.11122	3	-5.50435	4.12310563	0.842540962	2.0886621	9.643650761	1.0341
249	81	0.075404	28.20277	10	1.88759	2.82842712	0.835277608	2.2958561	9.273618495	-0.04961

250	71	0.028641	27.33972	4	-8.5482	4.24264069	0.862816002	2.476692	9.591663047	1.42724
251	89	-0.0083	28.59846	22	9.72047	0	0.883963736	2.2080014	8.602325267	-2.89072
252	84	0.184749	29.34588	6	6.19678	2.23606798	0.767035291	2.0317114	9.486832981	-0.80463
253	84	0.011825	31.86654	28	8.04692	2.23606798	0.872506607	1.2677507	8.246211251	-1.28293
254	80	-0.00407	31.47267	10	4.94402	3	0.881569475	1.4145861	9.273618495	-0.56552
255	87	0.014563	30.33101	4	10.99147	1.41421356	0.870935777	1.7727707	9.591663047	-1.92443
256	77	0.001636	27.85861	3	-1.78963	3.46410162	0.878325882	2.3696231	9.643650761	0.54891
257	81	0.008449	28.15149	0	2.75159	2.82842712	0.874438778	2.3069968	9.797958971	-0.15111
258	87	-0.01666	27.9973	2	8.49884	1.41421356	0.888682384	2.3401778	9.695359715	-1.5392
260	86	0.050943	30.52948	36	7.78611	1.73205081	0.849794007	1.7158802	7.745966692	-1.36701
261	74	0.010044	27.8646	0	-4.58861	3.87298335	0.873526384	2.3683595	9.797958971	0.93925
262	77	0.077358	25.95468	0	-4.01892	3.46410162	0.834106919	2.7420881	9.797958971	0.83967
264	74	0.044953	29.69408	31	-4.80922	3.87298335	0.853311141	1.9441326	8.062257748	0.89312
265	74	0.011826	26.92049	10	-6.42657	3.87298335	0.87250576	2.5599296	9.273618495	1.15509
266	67	-0.01432	25.76079	0	-13.9781	4.69041576	0.887363439	2.7772168	9.797958971	2.04394
267	81	-0.00162	27.39112	0	1.89167	2.82842712	0.880179752	2.4662945	9.797958971	-0.0395
268	74	-0.03274	27.50464	0	-4.88473	3.87298335	0.897683074	2.4431725	9.797958971	0.9724
269	84	0.048437	28.90978	12	5.64751	2.23606798	0.851266864	2.1363407	9.16515139	-0.75782
270	72	-0.00714	27.19718	2	-7.46476	4.12310563	0.883307566	2.5053034	9.695359715	1.29554
272	60	0.010791	28.52512	0	-17.8183	5.38516481	0.873098582	2.2245455	9.797958971	2.3464